

**TECHNICAL
TRANSACTIONS**

ARCHITECTURE

**ISSUE
9-A (15)**

**YEAR
2015 (112)**

**CZASOPISMO
TECHNICZNE**

ARCHITEKTURA

**ZESZYT
9-A (15)**

**ROK
2015 (112)**



**WYDAWNICTWO
POLITECHNIKI
KRAKOWSKIEJ**

TECHNICAL TRANSACTIONS

ARCHITECTURE

CZASOPISMO TECHNICZNE

ARCHITEKTURA

ISSUE 9-A (15)
YEAR 2015 (112)

ZESZYT 9-A (15)
ROK 2015 (112)

Chairman of the Cracow University
of Technology Press Editorial Board

Jan Kazior

Przewodniczący Kolegium
Redakcyjnego Wydawnictwa
Politechniki Krakowskiej

Chairman of the Editorial Board

Józef Gawlik

Przewodniczący Kolegium
Redakcyjnego Wydawnictw
Naukowych

Scientific Council

Jan Błachut
Tadeusz Burczyński
Leszek Demkowicz
Joseph El Hayek
Zbigniew Florjańczyk
Józef Gawlik
Marian Gizejowski
Sławomir Gzell
Allan N. Hayhurst
Maria Kušnierova
Krzysztof Magnucki
Herbert Mang
Arthur E. McGarity
Antonio Monestirolí
Günter Wozny
Roman Zarzycki

Rada Naukowa

Architecture Series Editor

Dariusz Kozłowski

Redaktor Serii Architektura

Section Editor

Dorota Sapek

Sekretarz Sekcji

Proofreading & Typesetting

DjaF

Korekta, skład i łamanie

Native Speaker

Robin Gill

Weryfikacja językowa

Cover Design

Michał Graffstein

Projekt okładki

Cover Photo

Jacek Gyurkovich

Zdjęcie na okładce

The authors bear full responsible for the text, quotations and illustrations
Za tekst, powołania i materiały ilustracyjne odpowiadają autorzy

Basic version of each Technical Transactions magazine is its online version

Pierwotną wersją każdego zeszytu Czasopisma Technicznego jest jego wersja online

www.ejournals.eu/Czasopismo-Techniczne www.technicaltransactions.com www.czasospismotechniczne.pl

Architecture Series

9-A/2015

Executive Editors:

Dariusz Kozłowski, Cracow University of Technology, Poland

Maria Misiągiewicz, Cracow University of Technology, Poland

Editorial Board:

Wojciech Bonenberg, Poznan University of Technology, Poland

Herbert Bühler, University of Münster, Germany

Carlos Marmolejo Duarte, Universitat Politècnica de Catalunya, Spain

Armando Dal Fabbro, Università IUAV di Venezia, Italy

Raimund Fein, Brandenburg University of Technology Cottbus-Senftenberg, Germany

Madelyn Marrero Melendez, University of Seville, Spain

Alberto Pratelli, University of Udine, Italy

Juan Luis Trillo de Leyva, Superior Technical School of Architecture of Seville, Spain

Elżbieta Trocka-Leszczyńska, Wrocław University of Technology, Poland

Stefan Wrona, Warsaw University of Technology, Poland

DEFINING THE ARCHITECTURAL SPACE GAMES AND PLAY OF ARCHITECTURE

**DEFINIOWANIE PRZESTRZENI ARCHITEKTONICZNEJ
GRY I ZABAWY ARCHITEKTURY**

MONIKA EWA ADAMSKA*

**PLAY OF TRADITION AND MODERNITY.
THE INTERWAR COMPETITION FOR THE SEAT
OF THE AUTHORITIES OF THE REGENCY OF OPOLE**

**GRA W TRADYCJĘ I NOWOCZESNOŚĆ.
MIĘDZYWOJENNY KONKURS NA GMACH
SIEDZIBY WŁADZ REJENCJI W OPOLU**

A b s t r a c t

In this paper the architectural competition for the seat of the authorities of the Regency of Opole of 1929 is presented, its formula, participants, the jury are indicated on the background of examples of German competitions of the interwar period. Analysis of the competition entries enabled definition of their style inspired by the ideas of interwar modernism and also architectural tradition. The jury declared decisively on the side of modern architecture, guaranteeing the new edifice the required representativeness and monumentalism.

Keywords: architectural competition, interwar modernism, public utility facilities, Opole, Regency of Opole, Silesia

S t r e s z c z e n i e

W artykule przedstawiono zrealizowany w 1929 r. konkurs na nową siedzibę władz rejencji w Opolu, wskazując jego formułę, uczestników, skład sądu konkursowego na tle przykładów niemieckich konkursów okresu międzywojennego. Analiza prac konkursowych pozwoliła określić ich stylistykę inspirowaną ideami międzywojennego modernizmu jak i architektoniczną tradycją. Sąd konkursowy zadeklarował się zdecydowanie po stronie architektury nowoczesnej gwarantującej nowemu gmachowi wymaganą reprezentacyjność i monumentalizm.

Słowa kluczowe: konkurs architektoniczny, międzywojenny modernizm, obiekty użyteczności publicznej, Opole, rejencja opolska, Śląsk

* Ph.D. Arch. Monika Ewa Adamska, Department of Civil Engineering and Architecture, Faculty of Civil Engineering, Opole University of Technology.

1. Introduction. Historical background

Opole is a town with a multicultural history dating back to the early Middle Ages. Until the 16th century, the town was ruled by the Piast Dynasty of Opole and then by the Hapsburg Dynasty, and in 1742 along with the whole of Silesia it was incorporated into Prussia. In 1945 Opole fell within the new borders of Poland. The history of Opole comprised periods of moderate development and deep stagnation. The decision that significantly changed the town's image and its status was its designation in 1816 as the capital of the Regency in the Silesia Province of Prussia¹. The new administrative function of the town required the construction of representative public utility facilities, especially the seat of the regency's authorities. The first building with this function was constructed in 1830–1833 within the old town walls, and the consultant on behalf of the Prussian government was Karl Friedrich Schinkel. The three-storey form of the office, monumental for the Opole of the time, was designed in the neoclassical style. The building, extended in the 19th century, did not survive the Second World War, and its remains were dismantled in the 1950s. [1, p. 10–11].

In the 1920's, the decision on the construction of a new seat for the Regency and Province of Upper Silesia was taken, resulting from the increasing needs of the Regency's administration. The northern part of Pasieka Island², called Ostrówek, was chosen for its location. This was a place of a special significance in Opole's history (Ill. 1). An early mediaeval wooden settlement functioned there from the 10th to the 13th century when, as a result of the town's foundation on the right bank of the Oder and the establishment of the Duchy of Opole, it gave its place to the duke's seat [3, p. 32–34]. In the 13th century, a stone castle with a cylindrical tower was erected, however, after the 16th century the building gradually fell into ruin. In the second half of the 19th century some of the rooms were adapted for the needs of the Regency of Opole and one of the building's wings was extended and in the area of the old town walls a scenic park was established. At the beginning of the 20th century the last modernisation in the history of the castle was conducted, extending it with a new wing in the neo-renaissance style. As a result of these activities the castle became a complex of buildings of different styles with a 13th-century cylindrical tower. In 1928–1931, as a consequence of the decision to locate the new seat of the Regency's authorities in Ostrówek, the castle was demolished leaving only the mediaeval tower. The importance and prestige of the new building was reflected by conducting careful studies on the possibility of forming a new complex³, and, later on in 1929, the conduct of an architectural competition [2, p. 123].

¹ There were four regencies in 1816: Dzierżoniów, Legnica, Opole, and Wrocław. In 1820, the Regency of Dzierżoniów was liquidated and its territory was divided between the Regencies of Wrocław and Legnica.

² The Pasieka Island of about 43 ha area is bordered by the Oder River and the canal of the Młynkówka River and is located near the Old Town.

³ In the archive of the Voivodeship Conservator of Monuments in Opole, pictures of several models of the proposition of the new seat of the Regency authorities dating at 1928 can be found.

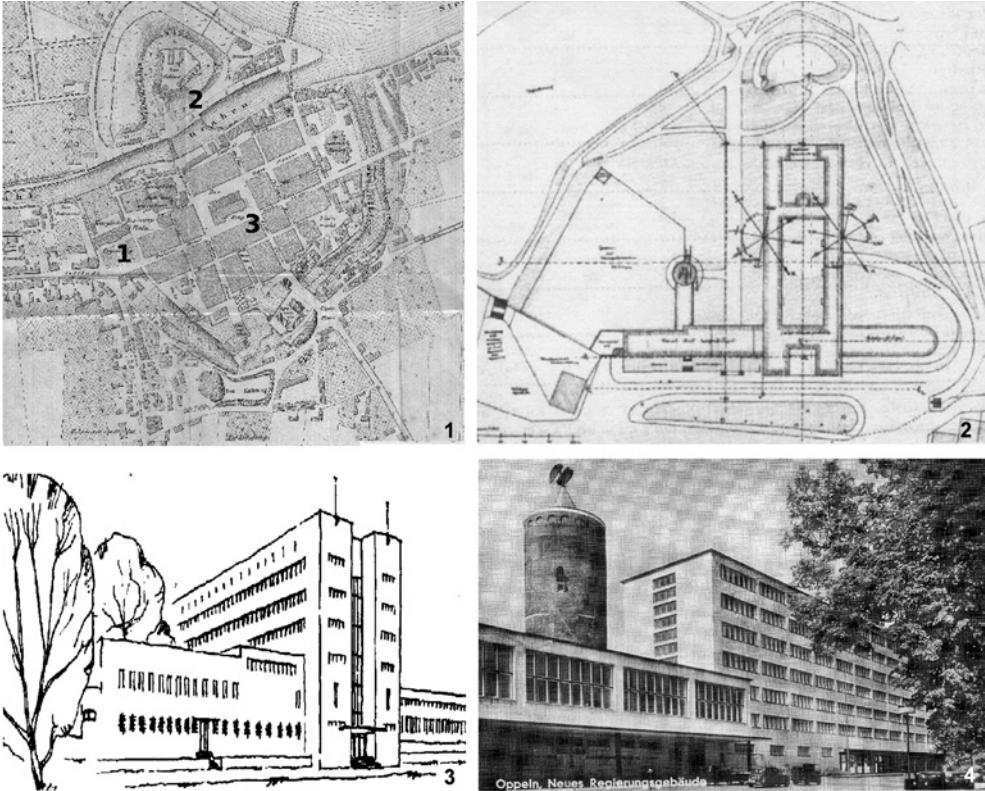
2. Competition for the Seat of the Authorities of the Regency of Opole. Formula, Participants, the Jury

The analysis of the information contained in “Zentralblatt der Bauverwaltung”, a professional periodical related to architecture and civil engineering⁴, writing about architectural and urban competitions in Germany in the 1920s provides information on their scope and formula. To a lot of competitions, only architects born or living in the region of the project’s location were invited; however, sometimes this group was extended to other invited designers. This happened in the case of the competition for the typical small social rental apartments in Karlsruhe announced in August 1928. Beside local architects, Walter Gropius and J. J. p. Oud were also invited to participate in this competition. In the case of important facilities of national significance open competitions were announced. This situation took place in the competition for expanding the Reichstag that was conducted in 1928. Some competitions were closed, upon invitation only. The Opole competition was carried out in this way. Other closed competitions included the competition for the building of a bank in Berlin in 1929, limited to eight invited architects, including Hugo Höring and Max Taut. In the case of religious buildings, the conditions of the competition contained the provision to invite only Roman Catholic or Evangelical architects, respectively. Recognised architects and professors sat on the competition juries, including Paul Bonatz, Theodor Effenberger, and Adolf Rading. Also of interest are the data on the numbers of submitted designs. In the competition for expanding the Reichstag, 278 designs were submitted; for the indoor swimming pool in Munich – 203 designs; for the complex of the church and presbytery near Berlin – 104 designs. Most of the competitions conducted during the interwar period were competitions for realisation, few were studies. The deadlines for submitting the designs were from 1.5 to 3 months. The prices ranged on average from 1000 RM to 5000 RM⁵, also finance was budgeted for acquiring the copyrights to the submitted designs [9].

The competition for the new building of the Regency Office in Opole was closed. Upon the decision of the higher national construction administration, the following six construction counsellors of the Regency from the outside of Opole were invited to participate in the competition: Franz Kaßbaum (Hannover), Fritz Keibel (Berlin – Dahlem), Konrad Lehmann (Piła/Schneidemühl), Hans Malwitz (Berlin – Schmargendorf), Georg Petersen (Berlin), and Walter Wolff (Berlin). Moreover, it was decided to invite three representatives of Opole to participate in the competition: Anton Mokroß, construction counsellor; Gerhard Plagens, master builder; and Friedrich Volkholz, master builder. The competition jury included: Martin Kießling (Berlin), ministerial director; Eggeling (Aurich), higher construction counsellor of the Regency; Wilhelm Eggert (Berlin), secret ministerial construction counsellor; Karl Leyendecker (Wiesbaden), higher construction

⁴ “Zentralblatt der Bauverwaltung” was a periodical published in 1881–1931, until 1920 by the Ministry of Public Works of Prussia, after 1920 by the Ministry of Finance of Prussia. At first, it was published irregularly, from 1898 twice a week, and from 1924 once a week. Its content comprised official announcements, presentations of new realisations financed from public finances, announcements on competitions and their results, information on exhibitions.

⁵ Reichsmark (RM) was the German monetary unit implemented as a result of the change of currency in 1924.



- III. 1. F. Eitner's plan of Opole, 1863. 1. Neoclassical edifice of the seat of the authorities of the Regency of Opole (1830–1833), 2. Former Piast castle on Pasieka island, 3. Medieval location town. Source: [1, p. 11]
- III. 2. Location plan of the project for the seat of the authorities of the Regency of Opole by Konrad Lehmann (1st prize). Source: [6, p. 478]
- III. 3. A perspective sketch of the project for the seat of the authorities of the Regency of Opole by Konrad Lehmann (1st prize). Source: [8, p. 4]
- III. 4. Modern edifice of the seat of the authorities of the Regency of Opole (1930–1933). View in 1935. Source: author's archive

councillor of the Regency; Kurt Wittler (Opole), higher construction counsellor of the Regency; and Dr. Hans Lukaschek, the president of the Regency of Upper Silesia etc. [7, p. 475]. In the competition's conditions, the main issues to be solved were as follows: the necessity for proper incorporation of the complex of new buildings into the urban landscape of Opole and the area of the old castle park, and an appropriate design for the residential part for the Regency's President, along with a suitable functional connection between the office and the ceremonial rooms. In addition, the mediaeval tower and the remaining part of the duke's castle were to be incorporated into the layout of the new administrative buildings, and finally designing the entry zone from Piastowska Street (Hafen Straße) was an issue to be solved.

3. Submitted Designs

Full information on the results of the competition⁶ were published on 24 July 1929 [6, p. 477–484]. The jury awarded four of the nine submitted designs⁷ in the following order:

- I award: Konrad Lehmann (Piła), in cooperation with Kirstein,
- II award: Franz Kaßbaum (Hannover),
- III award: Walter Wolff (Berlin),
- IV award: Gerhard Plagens (Opole).

I award: Konrad Lehmann (Piła), in cooperation with Kirstein (Opole and Piła), master builder

Konrad Lehmann, from 1925, performed the function of construction counsellor in Piła that was at that time the capital of the new Regency of Prussia. Kirsten from Opole, who cooperated with him, was also professionally connected with Piła. Their project, rated highest in the competition, was a geometric composition of cuboid forms (Ill. 2, 3). Two high buildings of 7–8 storeys, situated in parallel with each other and perpendicularly to Piastowska Street, connected through two connectors, comprised a distinctive and strong dominant within the complex. The arrangement was completed by two low, longitudinal buildings situated perpendicularly to the higher part, on both sides. The cylinder of the mediaeval tower, the only part of the dismantled duke's castle, was a free-standing element of the composition, and this solution was judged positively by the jury. In the opinion of the jury, Lehmann's work combined the modern form of the administrative buildings with the monumental look of the seat of the Regency's authorities. The jury also indicated the weak points of the project; however, it assessed the solutions as practical and brilliant, and unanimously decided to continue work on this design. Flat roofs, a vast glazing at the top of the higher part, and the rounded corners clearly indicated the style of German modernism and rational functionalism [4, p. 101].

II award: Franz Kaßbaum (Hannover)

Franz Kaßbaum, invited to the competition, was an architect born in 1885 and linked with Hannover, where he designed a number of constructed facilities for higher education institutions in the styles of cubism and expressionism. The architect participated in the competition a year before his early death in a car accident, in 1930 [5, p. 194]. Franz Kaßbaum's project was a consequent and clear composition of cuboid forms with flat roofs, mostly of one height. The architect proposed a strongly formalised comb layout comprising four regularly repeated buildings connected with a longitudinal, perpendicular element situated in parallel with Piastowska Street. In this combination, the author achieved an effect of a monumental front facade with a square facing Piastowska Street and an intimate

⁶ With the introduction written by the Ministry Director Martin Kießling, the jury's opinions, and drawings and photos of the models of all nine designs.

⁷ All of the submitted designs comprised of drawings, description, and a model.

layout for the interior connected to the park area on the Oder River side. The jury assessed Kaßbaum's design as modern, indicated that the connection of the facilities with the public green areas was appropriate; however, partly building in the tower was considered a disadvantage.

III award: Walter Wolff (Berlin)

Walter Wolff was an architect and an officer of the construction administration of Berlin. In 1928–1932 he cooperated with Martin Kießling on designing and constructing the university hospital in Berlin [10]. His design, awarded third place in the competition, was based on rectangular quadrilaterals of four storeys and flat roofs with an internal courtyard. One of the short sides of the rectangle was elongated and connected to the V-shape lower wing containing the President's apartment. Wolff incorporated the mediaeval tower, which functioned as the staircase into this part. The jury complimented the solution of the main form and internal courtyard; however, they criticised the idea of using the tower as the staircase and expressed doubts about the functional layout of the facility. Moreover, they negatively assessed moving the complex far away from Piastowska Street and the decomposition of the old castle park. The architect used horizontal stripes of windows of horizontal proportion, a solution similar to the one used in the designs awarded 1st and 2nd places. The mediaeval tower, similarly to Kaßbaum's work, was the dominant height of the composition.

IV award: Gerhard Plagens (Opole)

There is little known about Plagens – he was not the architect of any significant facility constructed in Opole during the interwar period. The design submitted by Plagens was the only one among the winning ones with traditional high roofs. The layout plan was based on a composition of two quadrilaterals of different heights connected to each other with internal courtyards. The tower, although partly built-in into the smaller quadrilateral, remained the dominant height of the composition. In the jury's opinion the Plagens' proposition, although rewarded, lacked the charm as well as the qualities of modern administration facilities. Its advantage was the interesting incorporation of the tower into the zone of the main entrance, while the disadvantage was moving away the buildings far from Piastowska Street and taking a substantial part of the green areas.

Other Designs

The solutions contained in the winning designs were based on right angles and straight lines, and arches were used in the layout plans of four other designs. The design of Friedrich Volkholz from Opole, previously engaged in the pre-competition study analyses, was based on a semi-circular layout, and the forms were covered with high roofs. The form of a triangle with arched sides was chosen by Georg Petersen from Berlin, using, similarly to Volkholz, high roofs. In both designs, the cylindrical tower was incorporated in the internal courtyards. Hans Malwitz, an architect and construction officer from Berlin, and the architect of interwar

higher education facilities in Berlin and Królewiec, after that engaged into the post-war restoration of Münster, also based on a triangular form with one arched side. In the design of Fritz Keibel, also from Berlin, the cylindrical tower became the middle of a radial composition of three buildings connected with arched wings and covered with high roofs. Among the works which were not rewarded, only the design of Anton Mokroß, architect and construction officer from Opole, Katowice, Rybnik and Wrocław, engaged in the post-war restoration of Würzburg, had solutions similar to those of the three awarded works: a layout based on a quadrilateral with an additional wing creating the entrance square, buildings with flat roofs, and corners interestingly accented by moved-back staircases.

4. Summary

The nine designs submitted in the competition for the seat of the authorities of the Regency of Opole presented different formal and stylistic solutions. The layout plans of the five designs were based purely on right angles and straight lines, while in four others arches were introduced: segmental or semi-circular. In all designs, except for the proposition of Franz Kaßmaum, an internal courtyard appeared in the shape of a square, rectangle, semi-circle or complex. The style of the solutions varied from simple geometric compositions of blocks with flat roofs referring to the idea of interwar modernism and functionalism to solutions with complex forms and high roofs characteristic of tradition. In the majority of works, the mediaeval cylindrical tower, the remains of the duke's castle, was the dominant height in the composition. Fritz Keibel referred to tradition in the fullest way, also giving the tower the role of compositional dominant in a complex of forms with high roofs. In contrast to the rest of the designs, the winning design by Konrad Lehmann included a high building entering into a dialogue with the tower. The jury, through its decisions, strongly declared its support for the modern architecture, which in the jury's opinion met the representative and monumental needs for the façade the new seat of the Regency to the fullest extent. The new building of the seat of authorities of the Regency in Opole constructed in 1931–1933, a great example of interwar modernism and functionalism, significantly differed, however, from the design submitted for the competition (Ill. 4). One of the reasons for introducing changes was the discovery of adverse ground conditions on part of the area and discovering remnants of settlement from before the foundation of the town.

R e f e r e n c e s

- [1] Adamska M.E., *Dwa gmachy urzędu opolskiej rejencji – od XIX-wiecznego neoklasyzmu do modernizmu okresu międzywojennego* [in:] *Integracja sztuki i techniki w architekturze i urbanistyce*, (ed.) J. Flizikowski, Wydawnictwa Uczelniane Uniwersytetu Technologiczno-Przyrodniczego w Bydgoszczy, Bydgoszcz 2014, p. 9–18.
- [2] Adamska M., *Wybrane aspekty rozwoju przestrzennego Opola w latach 1816–1945*, praca doktorska, Politechnika Wrocławska, Wrocław 2006.
- [3] Chrzanowski T., Kornecki M., *Katalog zabytków sztuki w Polsce*, t. VII województwo opolskie, z. 11 miasto Opole i powiat opolski, Instytut Sztuki PAN, Warszawa 1968, p. 32–34.

- [4] Hamada A., *Architektura Opolia wpisana w dzieje miasta*, Oficyna Piastowska, Opole 2008, p. 101.
- [5] *Hannoversches Biographisches Lexikon*, Dirk Böttcher i in., Schlütersche Verlagsgesellschaft, Hannover 2002, p. 194.
- [6] Kießling M., *Wettbewerb Regierungsgebäude Oppeln*, Jg 49, Nr 30 [in:] “Zentralblatt der Bauverwaltung”, Berlin 1929, p. 477–484.
- [7] „Zentralblatt der Bauverwaltung”, Berlin 1929, Jg. 49, No. 29, p. 475.
- [8] „Zentralblatt der Bauverwaltung”, Berlin 1930, Jg. 50, No. 1, p. 4.
- [9] http://opus.kobv.de/zlb/abfrage_collections.php?coll_id=238 [17.06.2015]
- [10] <http://www.stadtentwicklung.berlin.de> [17.06.2015]

MAŁGORZATA BALCER-ZGRAJA*

EDUCATIONAL PLAYS AND GAMES IN CONTEMPORARY DESIGN AND ARCHITECTURE

GRY I ZABAWY EDUKACYJNE WE WSPÓŁCZESNEJ ARCHITEKTURZE I DESIGNIE

A b s t r a c t

The architecture of contemporary educational facilities is a field of the search for innovative learning spaces. School buildings, along with other facilities and solutions which serve the purpose of permanent informal education, create a varied learning landscape in the public space of the city. This article attempts to see this issue from the angle of ludic culture and discusses its impact.

Keywords: *architecture, space, education, game, play*

S t r e s z c z e n i e

Architektura współczesnych obiektów edukacji jest polem poszukiwań innowacyjnych learning spaces. Budynki szkolne wraz z szeregiem innych, służących permanentnemu, nieformalnemu kształceniu rozwiązań w przestrzeni publicznej miasta tworzą zróżnicowany learning landscape. Artykuł jest próbą spojrzenia na jego kształtowanie przez pryzmat wpływu kultury ludycznej.

Słowa kluczowe: *architektura, przestrzeń, edukacja, gra, zabawa*

* Ph.D. Arch. Małgorzata Balcer-Zgraja, Department of Architectural Design, Faculty of Architecture, Silesian University of Technology.

1. Introduction

‘Play’ means *creating a fictitious desired pretend world enabling better cognizance of the [real] world* [6]. ‘Game’ is a form taken by play; it is its inner structure. Game and play are notions close in meaning.

Play is nowadays considered to be one of the basic needs of human beings of all ages. During childhood, ‘play’ is an exercise that prepares children for adulthood, while in the adult world it is an object of scientific research as a method for improving educational and working results, as well as supporting co-operation and resolving conflicts. Each field of human activity, such as industry, medicine, defence, management, education or design, where creativity and cooperation are the key success factors, may become, with a suitable approach, a serious game. The significance of the ludic element is also accentuated in contemporary artistic ideologies. The joint play of the creator and recipient of a work builds a culture of co-participation – ‘*in each form (...) of modern experimentation in art one may recognise the pursuit of replacing the distance of the spectator with the involvement of the game participant*’ [3, p. 32].

This work aims to examine the impact of ludic culture on the development of architecture that serves educational purposes. The result of such correlative studies is to present a typology of architectural solutions that have their origins in the structure of popular games and play. Objects for testing were selected using the criteria proposed by Harrison and Hutton [4] and the design process characteristics adopted from J. Boys [2].

2. Designing as a play or game

J. Boys [2, p. 7] proposes viewing the contemporary educational space from three perspectives, namely: from the point of view of the players, then its creators – the architect and teacher – and finally from the perspective of the person managing or administering the building. Each time co-operation and conflicts happen, they influence the ‘game board setting’ thus creating a solution which can change the situation in the ‘next deal of the cards’. This article focuses on the architectural aspect of educational space shaping; however, it also bears in mind the importance of other aspects which are elements of a team game. The new generation of facilities serving the purpose of formal and informal education can be divided into three basic categories of learning spaces: schools, further and higher education campuses, and business and cultural facilities. There are sets of solutions available varying in scale, from single elements of equipment and furnishings, and their systems, through rooms and zones of the building, to entire buildings. They all create the modern learning landscape [4, pp. 9–17, 256]. Each type of architectural object in this landscape has specific individual characteristics. What is common to them all is that they house solutions for informal education, such as experimentation, co-operation, e-learning, recreation, and obviously play.

The metaphorical character of architectural solutions used in educational buildings draws the viewer’s attention [2, p. 25]. The adoption of a metaphor as a starting point for the creation of a concept is an expression of the search for innovation in design. There are various types of metaphor, for instance:

Garden	the concept of a green school – farm in Stockholm [3xn].
Playground	the roof of a nursery school in Vereda [Rueda Pizarro Arquitectos] or Olifantsvlei primary school in Johannesburg [Institute of Experimental Architecture /Studio 3]; equipment for Vittra schools in Stockholm [Rosan Bosch Studio]; attractions in the regenerated post-industrial areas on the example of Zollverein Essen, as well as creative places for adults – the interiors of LEGO®PMD, Billund [Rosan Bosch Studio & Rune Fjord] or Google offices in New York, Amsterdam, Dublin, Tel Aviv, London, Mountain View, Pittsburgh, and Zurich.
Multi-functional agora	objects for adult education, such as the Education Centre for VUC Syd Haderslev [Aart Architects + Zeni Architects], or HF & VUC Fyn Adult Education Centre Odense [CEBRA].
Box	higher schools and education centres: Le Fresnoy Art Center [Bernard Tschumi Architects], Sharp Center for Design, Toronto [Alsop Architects], Zollverein School of Management and Design [SANAA].
Natural scenery	Primary School for Sciences and Biodiversity Boulogne-Billancourt [Chartier Dalix Architectes].
Forest	Columbian Sports Center Forest of Hope, Soacha [G.Mazzanti], or Orquideasrama Botanical Garden, Medellín [Plan B Architects + JPRCR Architects].
Other, author's designs	Book Mountain – library, Spijkenisse [MVRDV], or a slice of Swiss cheese – Rolex Learning Centre in Lausanne [SANAA]; cabaret, empty space, sandpit, café as a metaphor of the classroom [2, p. 25]

Various authors play with the form as well as invest it with new significance, building thus a fictitious, metaphorical, allegorical world and experimenting with it. The co-participants in the game include future users, such as: teachers, students, pupils, course participants, random passers-by, visitors, workers, etc. New architectural forms evoke associations with a forest, garden, island, box – in the same way their unconventional use is imposed. The space of the Rolex Learning Center is ‘stringy like melted cheese’, which encourages the search for new ways of using it, as traditional solutions cease to be possible in such an interior. Similarly, in Vittra schools [R. Bosch], the use of ‘The Mountain’ – an iceberg-looking structure; the ‘Multimedia House’ – whose outside walls are made of blackboards; ‘The Cave’ – serving as a house for loners, or the use of other multifunctional toys requires invention. The originator of this architectural object creates new rules of play by forming new shapes for sitting places, colours and sizes of spaces, and organic furniture.



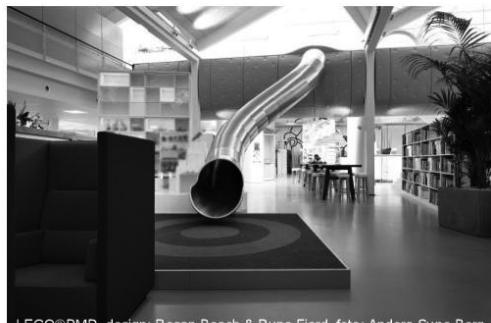
Vitra AB, design: Rosan Bosch Studio, foto: Kim Wendt



Vitra AB, design: Rosan Bosch Studio, foto: Kim Wendt



LEGO®PMD, design: Rosan Bosch & Rune Fjord, foto: Anders Sune Berg



LEGO®PMD, design: Rosan Bosch & Rune Fjord, foto: Anders Sune Berg



Jurapark Park Krasiejów, Goczołowie Architekci Studio Autorskie, Owo Grąbczewscy Architekci

Ill. 1, 2. Vitra AB, Stockholm, Rosan Bosch, photo: Kim Wendt

Ill. 3, 4. LEGO®PMD, Rosan Bosch & Rune Fjord, photo: Anders Sune Berg

Ill. 5. Jurapark Science and Entertainment Park Krasiejów, Goczołowie Architekci Studio Autorskie, Owo Grąbczewscy Architekci

3. Educational toys in architecture

IT solutions and computer games – a virtual educational environment – constitute an integral part of contemporary *learning spaces*. The mutual influence of play, computer games, and architecture is researched by S.P.Waltz [5, p. 133–256]. Following the trail of the ‘archaeology of ludic architecture’, he isolates a new category of physical objects being places-to-play. ‘Playces’ include playgrounds, campuses, city squares, theatres, stadiums, nursery

schools, amusement parks, etc. The objects which traditionally served purely entertainment purposes now support the educational process as a special group of public utility facilities. Waltz enumerates the structures of the architectural environment which originate from the world of games: tessellation, board, labyrinth, map, cave, territory, etc. These can be found in architectural objects connected with culture and education.

Tessellation is used in programming and board games. Tessellation nets of flat tile patterns made from anodized aluminium appear on the facade of the campus of Ravensbourne College of Design and Communication in London [Foreign Office Architects]. The roof cover of the new pavilion of Grueningen Botanical Garden [idA Buerher Wuest Architekten] also has a net structure, and similarly the skins of the multifunctional architectural objects on Federation Square in Melbourne [LAB architecture studio] and the new pavilions at the Korkeasaari Zoo in Helsinki [Beckmann-N'Thépé and TN+], which are a geometrized and processed fragment of the landscape of an island. All these examples refer to the structure of the cover of public utility buildings. Experiments with the use of a tessellation net often relate to temporary structures, such as the LED pavilion with the structure of a honeycomb which was prepared by the students and academic teachers of architecture at Bond University for the Vivid Light Festival in Sydney.

Board constitutes a basic element of logic and strategic games as well as games of chance. Educational boards are used in solutions prepared for the youngest users. Multifunctional play walls were used in nursery schools in Tromsø [70°N Arkitektur]. In the playground building in Utrecht [Mulders van den Berk Architecten of Amsterdam], a geometrical pattern of the floor, walls and ceilings as well as the external wall made of Corian, with a fancy grooved pattern, encourage the children to work on exercises developing their motor system. A sort of ‘board’ consisting of many elements can be also found on the surface of multifunctional squares / parks, such as Superkilen in Copenhagen [Topotek 1, BIG, Superflex]. Also the system of open multifunctional spaces in Ørestad Gymnasium in Copenhagen [3xn], or the exhibition rows in museums and educational centres give rise to associations with the game board.

Labyrinth is used in board games, exercises developing the motor system, and stimulating logical thinking, as well as in the structure of many computer games. The experience of the *maze* [confusion, disorientation in the labyrinth] is a frequent motif of the artistic activity in public spaces. There have been numerous examples of labyrinths over the past few years: a maze made of birch plywood in the atrium of the National Building Museum in Washington [BIG]; a triangular labyrinth of glass walls in the Donald J. Hall Sculpture Park at the Nelson-Atkins Museum of Art, Kansas City [R. Morris]; Transarquitetônica, a plywood installation imitating entangled giant tree roots inside which the visitors can walk – Museu de Arte Contemporânea da Universidade w São Paulo [H. Oliveira]; a mirror maze “Please Touch the Art” [J. Hein] in New York’s Brooklyn Bridge Park;

a reinforced concrete structure The Labyrinth 10Cal Tower in the park next to Gym Burapha University, Bangsaen, erected to commemorate the 100th anniversary of the concern Siam Cement Group [Supermachine Studio].

Map

a plan or network of places is an integral element of computer games. The well-known motif of the map in architecture connected with education was realized in the sphere or the globe constituting the support for spiral stairs going around it: Open-air school in Suresnes [E. Beaudoin / M. Lods, 1931–35]. The drawing of a map has been an inspiration for many solutions in landscape architecture, beginning with the classic multilayer plan of the Parc de la Villette in Paris [B. Tschumi] and ending with the contemporary designs for zoological gardens, such as Korkeasaari Zoo on an island in Helsinki [Beckmann-N’Thépé and TN+], or thematic parks – the plan of JuraPark in Krasiejów [Goczołowie Architekci – Studio Autorskie, Owo Grąbczewscy Architekci].

Cave

has been an object of board games and computer games as well as a popular motif in the interiors of informal education spaces, a place of isolation in the public space. It is one of the five elements/principles of shaping the Swedish schools Vittra [R. Bosch]. The cave motif can be found in the installation Rest Hole made of wooden ribs, on the ground floor of the students’ dormitories in the campus of the University of Seoul [UTAA]. The bends of concrete walls create cave-like rooms in the building of the Faculty of Architecture at Bond University, Queensland [CRAB Studio, p. Cook]. A similar function is played by ‘cocoons’ – compact forms with an external, usually oval, casing. These can be found in the Saltire Centre – the library of Glasgow Caledonian University and the Google headquarters in Zurich. The motif of a hanging cocoon [hanging sack] appears at Crochet Playgrounds, colourful crocheted playgrounds installed in the public space buildings Hakone Sculpture Park, Sapporo, Museum of Contemporary Art, Rome, The Children’s Museum, Winston-Salem [T. H. MacAdam].

Territory

game participants compete in fighting for territory. Three areas of Superkilen [Topotek 1, BIG, Superflex] are individual, separate in terms of colours, zones making up one entity. The solutions are dedicated to different ethnic groups living in the neighbourhood. In the buildings, such as Columbian G.Mazzanti: Flor del Campo Educational Center, Bolívar [with F.Mesa] and Pies Descalzos, Cartagena, the territory and the building are united in one entirety creating an enclave in their vicinity.

4. Summary

Studies have shown that examples of solutions originating from the world of play and games in educational, cultural and business spaces are multiple. The motif of module blocks is often used in universal buildings which are flexible and easily

adaptable. Museums, educational centres, and parks resemble more ‘thematic games’, etc. Architectural multifunctional toys and playgrounds are designed for children, teenagers and adults. Playing and developing are necessary for people of all ages. In today’s pursuit of innovation, learning and experiencing the world through play has become an integral part of both education and creative work. The design of solutions for new school, cultural and business facilities are surprising, metaphorical and ingenious. They are often design experiments which seek an innovative public space. They provide physical solutions supporting a permanent educational process and general development. Such solutions stimulate creative thinking and are conducive to cooperation. New, informal, specially arranged and play-friendly spaces come into existence in the educational landscape and supplement the space of the traditional classroom or lecture room. Education is one of the games played in the architectural space. The architect creates its rules and often actively participates in it. As it was stated by H. G. Gadamer – *Play is such a fundamental function of human life that human culture is unthinkable without the element of play* [3, p. 25].

R e f e r e n c e s

- [1] Balcer-Zgraja M. *Projektowanie jako zabawa formy*, w: Analizy w poszukiwaniu form, Inicjacje w architekturze 3, ed.: Serdyńska J., Maryńczuk, Bytom 2013.
- [2] Boys J. *Towards Creative Learning Spaces, Re-thinking the Architecture of Post-compulsory Education*, London & New York, 2011.
- [3] Gadamer H.G. *Aktualność Piękna*, Oficyna Naukowa 1993.
- [4] Harrison A., Hutton L. *Design for the Changing Educational Landscape. Space, Place and the Future of Learning*, London & New York, 2014.
- [5] Waltz S.P. *Toward a Ludic Architecture. The Space of Play and Games*. ETC Press 2010.
- [6] <http://www.encyklopedia.pwn.pl>
- [7] http://www.ted.com/talks/stuart_brown_says_play_is_more_than_fun_it_s_vital.html
- [8] http://www.ted.com/talks/tim_brown_on_creativity_and_play.html

JANUSZ BARNAŚ*

INSPIRATION OR FASCINATION**INSPIRACJA CZY FASCYNACJA****A b s t r a c t**

The essay discusses the issues related to the phenomenon of inspiration in the process of creating architectural forms. The sources of such inspiration are particularly evident during the process of developing temporary architecture, or architecture which does not have a clear function, or in fact none at all, being more of a sculpture than a building. Structures of this type usually reflect the idea behind them in the most vivid manner – the idea that first settled in the mind of its creator.

Keywords: *architecture, architectural form, impression, inspiration, fascination*

S t r e s z c z e n i e

Artykuł omawia problemy związane ze zjawiskiem inspiracji w procesie tworzenia formy architektonicznej. Źródła inspiracji widoczne są najbardziej w procesie powstawania i w ostatecznym kształcie architektury „czasowej”, bądź też nie obarczonej funkcją. Architektury, która jest bardziej rzeźbą niż budynkiem. Ta architektura oddaje najczęściej obraz idei, która kierowała twórcą w momencie tworzenia. Idei, która go inspirowała i przełożyła się na kształt dzieła.

Slowa kluczowe: *architektura, forma architektoniczna, wrażenie, inspiracja, fascynacja*

* Ph.D. Arch. Janusz Barnaś, Institute of Architectural Design, Faculty of Architecture, Cracow University of Technology.

“From lifeless stones, passion builds a drama. That is architecture.” [10]

1. Introduction

We live in an age of information overload, in which every emerging idea is being spread all across the global village [11] the very moment it has been recorded and saved. Despite the process of globalization, the world still remains culturally diverse, and each culture can be said to have its own civilization [14]. The process of developing architecture is similar to that of baking bread. Just like bread is made from flour, water and yeast, the material matter of architecture is made of such mundane things like water, lime and sand. The creative process which accompanies the development of architecture can be defined in a number of ways.

2. Inspiration

During the process of the creation of the idea of a space, the inspiration phase is perhaps the most important. The elements which make up a work’s inspiration are often visible in the finished work. These sources of inspiration can often be seen most clearly in both the development process and the finished work of “temporary” architecture, or the type which does not have a defined function, or indeed does not have one at all – a sculpture, rather than a building. Architecture of this type is meant to have a striking external form, with its function often being but a pretext for its design. Structures of this type, due to less stress being placed on its function and a unique financial discipline, often radiate their conceptual idea much more strongly, as it has a much more profound impact on their form. The idea that is behind architecture plays a key and timeless [3] role in its creation. Inspiration can be taken from a nearly endless number of sources. The wondrous works of Gaudi were inspired by the world of nature. As a child, Gaudi would spend his days studying nature, in isolation from his peers due to his rheumatoid disease. It is thanks to this fascination with the finely structured skeletons of animals and plant elements that we can now marvel at his colourful works of architecture, inspired by the wealth of natural forms [2, p. 70–71]. Calatrava’s anthropomorphic [8, p. 158–159] forms are quite similar in this regard. Inspiration can sometimes be drawn from the world of pop culture. The building of a computer game development company in the Fujian province of China has a form that is very similar to that of the Enterprise space ship from the Star Trek television series [6].

3. Immaterial architecture

There is a need among some architects to design immaterial structures that are never meant to be built [1]. Some claim to have never been interested in actual construction, due to the inherent constraints of designing with it in mind. To them, freedom and the ability to do and think as they please is the ultimate goal [9, p. 160]. The limitations that are inherent in the physical construction of a building do not weigh the architect down in his pursuit of refining his idea of architecture.

4. The phenomenon of the moment – temporary structures

The type of structures which are often meant to last only a single season, month or the span of a given artistic event are often the fullest reflection of their inspiration and the most relatively robust recording of their author's thoughts and ideas. They are a pretext to unhindered experiments with form and volume. The temporary summer pavilions of the Serpentine Gallery that are traditionally erected in Kensington Park in London are a testament to the multitude of inspirations and ideas that architects can have. The pavilions are built on the border between Hyde Park and Kensington Garden. Each year a different world class architect or studio is invited to design such a pavilion, under the condition that they are not currently working on a different building in the UK. A review of the designs of these pavilions from recent years provides valuable material for discussing the topic of the diversity of inspiration and the resulting “playing with form”, the effects of which, despite the same function and location, are vastly different each time [7]. The “mirror house” [15] in Worthing, UK, has become a catalyst of social events due to its original idea. Its form is typical of the local architectural vernacular tradition, however its acrylic glass surfaces often provoke passers-by to take “selfies” with it in the background. A playground in the form of a labyrinth, made entirely out of snow, complete with slides, a large lighthouse, benches and seats located in Kiruna, Sweden, draws its inspiration from its context and the season. According to its authors, its visitors should treat it as a challenge and an invitation to live out a true adventure. Its users should feel like explorers entering a lost city, which they have found in an icy jungle. This play with geometry ends along with the coming of spring [13].

5. Fascination

Inspiration often turns to fascination. Inspired artists develop their work due to an impulse and an infatuation with the form of each subsequent iteration of their design, refining it each time. Zvi Hecker, inspired by the plan of a citadel that he saw in Tel Aviv at an exhibition, went on to use it in many of his designs. The “sunflower” was the inspiration behind an unimplemented design of a housing development with a shopping centre in Berlin, or the spiral residential house in Ramat Gan, Israel, built in the 1980's [4]. Echoes of this idea can be found in the unimplemented design of the Saratov Apartment Tower from 2008 [5]. The idea, evolving from the view of a sunflower in the direction of an open book had become the basis of the floor plan layout of a school in Berlin [12] that was built in 1995.

6. Summary

One can observe a diverse variety of inspiration in the work of architects. The sources of this inspiration can perhaps be most readily observable in the finished state of temporary architecture, not only of the utilitarian kind, but also that which does not really have a function and is more like a sculpture than a building. This type of architecture, due to a less stringent approach unhindered by the necessities of its function can often express the idea behind it in a fuller manner.



Ill. 1. Parc Güell, Antonio Gaudi, Barcelona, phot. by the author; Ill. 2. TGV Satolas train station in Lyon, Calatrava Santiago., phot. by the author; Ill. 3. Net Dragon Office building, Fujian, China, shaped after the USS Enterprise from the Star Trek TV series, http://www.designboom.com/architecture/star-trek-influenced-office-building-china-05-26-2015/?utm_campaign=daily&utm_medium=e-mail&utm_source=subscribers, [15.05.2015]; Ill. 4. Serpentine Gallery Pavilion, Sou Fujimoto, 2013, London, United Kingdom. <http://www.demotix.com/news/2117989/opening-serpentine-gallery-pavilion-2013-designed-sou-fujimoto#media-2117973>, [07.05.2015]; Ill. 5. Serpentine Gallery Pavilion, Selgas Cano, 2015, <http://www.serpentinegalleries.org/exhibitions-events/serpentine-pavilion-2015>, [07.05.2015]; Ill. 6. Mirror house on Worthing beach, United Kingdom, *Spiegelspiel am Strand: Hütte von ECE Architecture*, Detail Daily, <http://www.detail.de/daily/spiegelspiel-am-strand-huette-von-ece-architecture-33718/>, [01.06.2015]; Ill. 7. *Schwedischer Schnee-Spielplatz von PinPin*, Detail Daily, phot.: PIN PIN, <http://www.detail.de/daily/schwedischer-schnee-spielplatz-von-pinpin-32399/>, [23.02.2015]; Ill. 8. Birds eye view of the Heinz Galinski School, designed by Zvi Hecker, 1995, Berlin, Rattenbury K., Bevan R., Long K., *Architects Today*, Laurence King Publishing in association with Harper Design International, an imprint of HarperCollins Publishers, 2004, <http://www.thecityreview.com/arcnow.html>, [06.06.2015]

This idea, does not only inspire the architect, it becomes fascinating to them. It leads architects to become overwhelmed by it. Some architects have become so attached to their inspirations that they used them throughout their entire careers. At times they were almost like an obsession to them. The creative process, which resembles a game at times, but can nevertheless border on suffering, should lead to the creation of a perfect form. It is a very difficult thing to achieve because “A designer knows he has achieved perfection not when there is nothing left to add, but when there is nothing left to take away” as Antoine de Saint-Exupéry claimed. Regardless of whether the end result is built or remains a scribble on the page of a sketchbook, a cardboard model or a computer model.

R e f e r e n c e s

- [1] Bonnenberg. A., *Techniki reprezentacji architektonicznej a jakość przestrzeni współczesnego miasta*, Czasopismo Techniczne, vol. 15. Architektura iss. 6-A, 2008 Rem Koolhas, interview by T.Fecht for Kunstforum, Berlin, 06.1997, <http://suw.biblos.pk.edu.pl/resourceDetails&rId=4745%7D%3C/opinion&rId=1415, 02.05.20155>. *Warum ich nich baue*, Jahrbuch für Architektur 1981–1982, Deutsche Architekturmuseum, Vieweg, Frankfurt am Main.
- [2] Gössel P., Leuthauser G., *Architektura XX wieku*, Taschen GmbH, Köln, 2006, p. 70–71.
- [3] Helenowska-Peschke, M., *Architektura w kontekście fenomenu wirtualnej rzeczywistości*, Biblioteka cyfrowa Politechniki Krakowskiej, http://suw.biblos.pk.edu.pl/resources/i5/i5/i6/i1/r5561/HelenowskaPeschkeM_ArchitekturaKontekscie.PDF, 2014.02.26.
- [4] <http://www.arcospace.com/features/zvi-hecker/spiral-apartment-house/>, 23.02.2015
- [5] http://www.zvihecker.com/index_entry.html, 23.02.2015
- [6] http://www.designboom.com/architecture/star-trek-influenced-office-building-china-05-26-2015/?utm_campaign=daily&utm_medium=e-mail&utm_source=subscribers, 15.05.2015
- [7] <http://www.serpentinegalleries.org/exhibitions-events/serpentine-pavilion-2015, 07.05.2015>
- [8] Jodidio P., *100 Contemporary Architects*, Taschen GmbH, Cologne, 2008.
- [9] Klotz H., *Warum ich nich baue*, Jahrbuch für Architektur 1981–1982, Deutsche Architekturmuseum, Vieweg, Frankfurt am Main.
- [10] Le Corbusier, *Vers une architecture*, Éditions Crès, Collection de “L’Esprit Nouveau”, Paris, 1923.
- [11] MC Luhan H. M., *The Gutenberg Galaxy*, Toronto, 1962.
- [12] Rattenbury K., Bevan R., Long K., *Architects Today*, Laurence King Publishing in association with Harper Design International, an imprint of HarperCollins Publishers, 2004, <http://www.thecityreview.com/arcnow.html>, 06.06.2015. http://www.zvihecker.com/index_entry.html, 23.02.2015.
- [13] *Schwedischer Schnee-Spielplatz von PinPin*, Detail Daily, <http://www.detail.de/daily/schwedischer-schnee-spielplatz-von-pinpin-32399/>, 23.02.2015.
- [14] Spengler O., [in:] Rafael A. Balboa, Kaon Ko, *Revisiting Memu Meadows*, http://www.domusweb.it/en/architecture/2015/01/15/nest_we_grow.html, 12.04.2015.
- [15] *Spiegelspiel am Strand: Hütte von ECE Architecture*, Detail Daily, <http://www.detail.de/daily/spiegelspiel-am-strand-huette-von-ece-architecture-33718/>, 01.06.2015.

MAŁGORZATA BARTNICKA*

THE MAGIC OF SHADOW IN FUN WITH ARCHITECTURE

MAGIA CIENIA W ZABAWIE Z ARCHITEKTURĄ

A b s t r a c t

Light is at its best in the presence of darkness. Information about the object illuminated by the light is conveyed by two kinds of shadows, its own and those cast. Shadows come into play with architecture in the form of chiaroscuro created by a solid object or some other additional elements constructed especially for this purpose. The cast shadow, which is very susceptible to deformation, can also be used to create some fun projections on surfaces.

Keywords: natural light, chiaroscuro, shadow

S t r e s z c z e n i e

Światło wyeksponowane jest najlepiej w obecności ciemności. Informacje o oświetlanym obiekcie przekazywane są przez światło i dwa rodzaje cienia, własny i rzutowy. Cienie wchodzą w grę z architekturą w postaci światłocienia uzyskiwanego od bryły obiektu lub elementów dodatkowych, specjalnie w tym celu konstruowanych. Cień rzutowy, jako podatny na deformacje, może być ponadto wykorzystywany do tworzenia zabawnych projekcji na płaszczyznach.

Słowa kluczowe: światło naturalne, światłocień, cień

* Ph.D. Arch. Małgorzata Barwicka, Faculty of Architecture, Białystok Technical University.

Louis Kahn said that *the crumpled mass called material casts a shadow, and the shadow belongs to light*. Rudolf Arnheim pointed out that *light and shadow are no longer applied to the objects but constitute them*. [1, p. 328]. Indeed, without light and shadow the perception of surroundings is impossible. Light and shadow, though often cited as adversaries, do not stand in relation to each other in opposition; on the contrary, they are complementary. Light loses its strength without shadow and only in the presence of shadows and darkness does it become clear and can therefore be appreciated. The shadow, understood as the absence of light area, is always present as an absolute darkness, gloom, and as a shadow of objects from the aforementioned matter. When planning illumination, many people focus their attention on the light, meanwhile it is shadows which determine the success or failure of illumination. The ordinary observer looks at an object through the shadows, the artist-designer focuses on the shadows [2, p. 39–47].

Darkness and semi-darkness are usually used to expose and accentuate light. Artists use the maximum contrast between these two phenomena. Transmitted and surrounded by darkness, light carries immense effect, it creates a mood and affects emotions; it can also evoke mystery and incredible drama. Such an effect can be found by observing the light penetrating into the interiors of the Church of Light by Tadao Ando and whilst standing in Louis Khan's Yale University Art Gallery. Light exposure accentuated by shade was used masterfully by Le Corbusier in the Chapel in Ronchamp, as well as in the monastery of La Tourett. In the crematorium designed by Axel Schultes, shadow has become a symbol of sadness and light penetrating into the interior has become a sign of hope [photo a]. The darkness in these cases underlines the importance of light and gives the opportunity to create a theatre of light and brightness.

Darkness is a state that significantly impedes perception of the surroundings. Only brightening clarity defines the space. Light always appears accompanied by two different kinds of shadow – its own and those cast, which provide information about the illuminated object. The object's own shadow, also known as shading or attached shadow, contains a message about the material and spatial characteristics of the illuminated object. This shadow is an inherent, integral part of the illuminated object. The range of space shrouded by this shadow depends on the shape of the illuminated object, on the direction of light incidence and, to a lesser extent, on the distance from the source of light. This kind of shadow is not susceptible to modification or distortion. Intensity of shading depends on the colour of the subject and the background on which it is located.

The second form is more expressive – it is the cast shadow, which is an area of darkness formed behind the object's own shadow. It is a kind of a 'lump' of darkness that pervades the space, and appears only at the time of contact with the surface on which it is cast. This shadow can be very intense, almost black, although its colour to a large extent depends on the colour of the base on which it falls. Due to the phenomenon of diffraction – the flexure of light waves at the edges – the shape of the shadow may be variable depending on the distance from the light source. The more distant the light source is, the more blurred it becomes. It is exactly this kind of shadow that is used for numerous artistic endeavours, introducing the game of light and shadow into architecture, including the creation of 'spatial jokes'.

Shadow Magic is created using two types of illumination: natural and artificial. The use of artificial light in order to obtain intended lighting effects is much easier than the use of natural light for the same purpose. Artificial illumination is used usually at twilight, when the exposure of light is perfectly visible. Designers arrange lighting fixtures in order to achieve

the desired effect. In case of natural solar lighting it is the illuminated object that needs to be adjusted accordingly to the light.

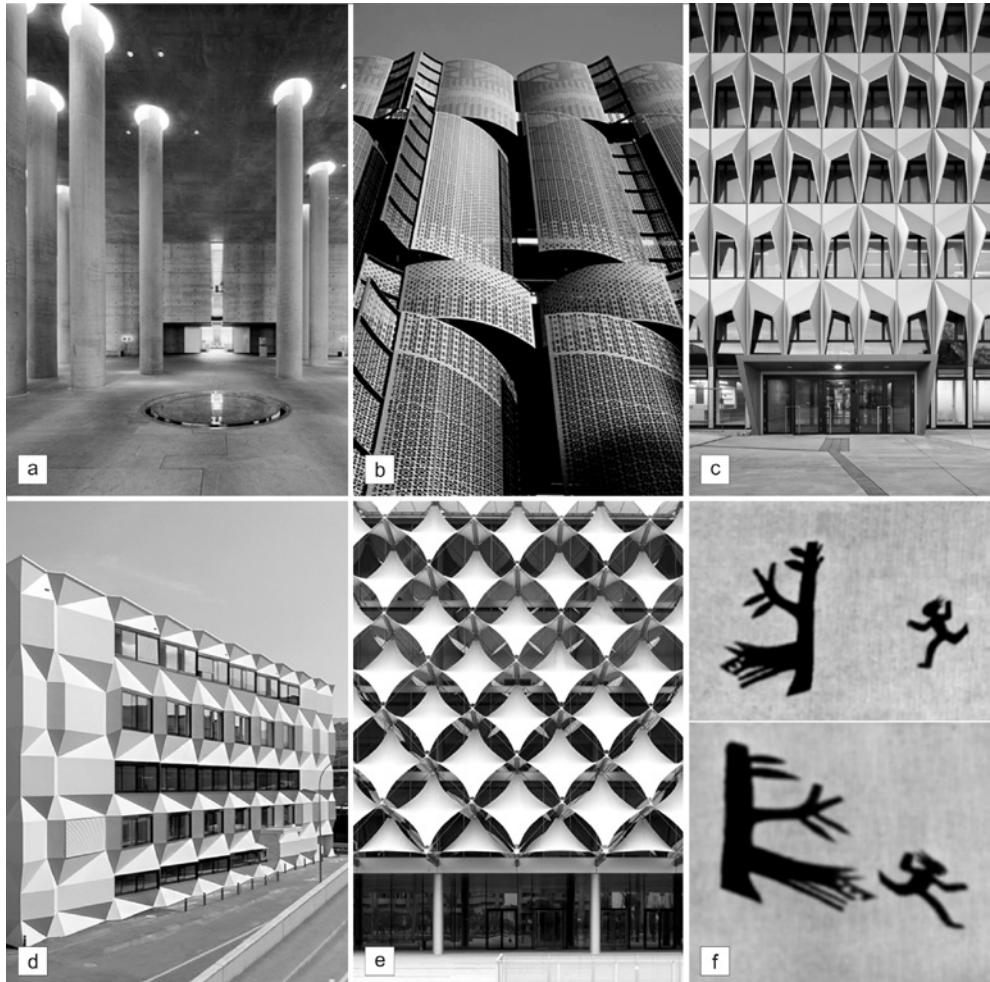
Creating light effects using the Sun is not a new idea; it has been used for centuries. One famous example is the temple in Abu Simbel. This temple, built during the reign of Ramses II, is positioned in such a way that a ray of sunshine on the specific mornings of 19 February and 21 October illuminates the faces of the statues of the sun god Amun-Ra, Ramses II and the god of the early sunshine Re-Horakhty, for about 20 minutes, yet it never fell on the statue of the god of afterlife and darkness, Ptah. Later on, architects of Christian churches used the phenomenon of natural light by filtering it through stained glass windows, creating colourful ‘paintings’ on the floors and walls of churches.

Even today sunlight can be used in different ways, revealing shadows that further highlight:

- The shapes of illuminated objects.
- The interdependencies and spatial relationships between solids.
- The texture of surfaces – from the unintended marking of uneven plaster relief to a very detailed accentuation of a designed relief.
- The plasticity of architectural detail
- The outline of a structure by projecting light onto the illuminated object.

Surfaces lit up by the rays of the sun are in constant motion, changing at different times of the day, rippling under the influence of the motion of warm air, overcast by clouds. Lighting changes every day, it creates long, sculptured and sharp shadows on the facades in June, whilst in December the shadows are flat and short. This variability should be taken into consideration when creating sunlit facades, especially by those designers who consciously try to play with sunlight. Many glass facades of modern buildings have not been designed to use the chiaroscuro effect and ultimately act as rather large mirrors, redirecting light to other, less well-lit areas, which is nevertheless also important in increasingly crowded city centres. A conceptual project to create a skyscraper without shadow was proposed by the London-based NBBJ. In this case, two buildings are planned according to the yearly sun path algorithms of the site, one of the buildings would have surfaces designed in such a way as to make the reflected rays of the sun light up the shadow cast from the second skyscraper. [3]

The idea seems rather difficult to implement, but the assumptions are quite interesting. Modern buildings are not furnished with much intricate detail, unlike e.g. Baroque buildings; there are no window frames, advanced cornices, nor ornaments, which could add a varied array of shadows and light to the facades. However, even nowadays it is possible to take advantage of the shadow/light interplay in order to design attractive architecture and not solely use it as a method of form generation. For example, when it comes to glazed buildings shadow can be used to give protection from excessive sunlight and to create a sophisticated chiaroscuro on the glass and in the interiors. Increasingly common is the use of ‘light breakers’ on the facades, usually horizontal, located above windows. Because of the angle of sunlight incidence in Poland, these often play a more decorative rather than functional role. However, they could be used to create a shaded image on the surfaces of the walls and windows, as well as to direct light beams to the interiors. Alternatively, vertical elements could be used. These fulfil the role of shutting off light that is too strong to a much better extent. The artistic and chiaroscuro effect of an elevation depends on the shape of these horizontal or vertical ‘breaker’ elements. Typically these are vertical rectangles often called ‘razor blades’, although one can also find examples of rounded forms



- III. A. Interior of Baumschulenweg Crematorium, project: Axel Schultes, Charlotte Frank from Berlin, 1998, photo by Mattias Hamren, <http://arquitectura.estudioquagliata.com>, 06.07.2015
- III. B. Shutting off light, Global Change Institute at the University of Queensland in Brisbane, project: HASSELL, 2013, photo by Peter Bennetts, <http://www.architectureanddesign.com.au>, 06.07.2015
- III. C. Hochhaus C10 in Darmstadt, project: Staab Architekten from Berlin, 2011, photo by Werner Hutmacher, <http://www.dai.org>, 06.07.2015
- III. D. University of Luzern, project: Enzmann&Fischer from Zurich, 2009, photo by Kurt Hofmann, <http://www.fotocommunity.de>, 06.07.2015
- III. E. The National Library of King Fahad in Saudi Arabia, project: Gerber Architekten from Dortmund, 2010, photo by Christian Richers, <http://www.designboom.com>, 06.07.2015
- III. F. The use of *vertical shadow projectors*, Twarowski, M, *Słońce w architekturze*, Arkady, Warszawa, wyd. 4, 1996, p. 149

such as in the building of the Global Change Institute at the University of Queensland in Brisbane [Ill. B.] (2013, HASSELL). These ‘breakers’ are usually open, screen-like, as their main task is to filter and scatter light, whilst still creating the effect of chiaroscuro on the facades of the building. Other elements which seem to be becoming fashionable again include full window shutters. Also, ‘curtain walls’ are being mounted on buildings. These contain movable, light, secure, rotating, folding or sliding screens. If the window screening (shutting and opening) process is not fully automatic, the users can themselves decide about the appearance of the facade, which thus becomes a transformable form, such as is the housing unit in Manresa, Spain (2008, Narch). Permanently installed concrete open-work curtain walls, such as on the facades of CNK Bialystok Technical University building (2012, aa_studio, Wroclaw) are yet another example of vertical screening elements. This project is also an example of the use of folk paper cut-out patterns, initiated in the building of the Polish Pavilion at EXPO 2010 in Shanghai (2010, W. Kakowski, M. Mostafa, N. Paszkowska, Warsaw). Naturally, these elements serve to protect from light. All of them not only perform a light filtering function, but also cast a shadow corresponding to the pattern which they carry. Devising a design for such a pattern can become an inspiring form of play with the building’s overall architecture and as well as with its users.

Sunscreens permanently fixed to glazed facades are yet another, often more complex, structure that is coming into use. Interestingly, such projects (with the addition of screens) are also implemented on existing buildings, e.g. the 1956 C10 Hochhaus in Darmstadt [Ill. C.] (2011, Staab Architekten, Berlin). The National Library of King Fahad in Saudi Arabia [Ill. E.] (2010, Gerber Architekten, Dortmund) presents an interesting example of enveloping a historic building in a new glazed form with an incredibly expressive sunscreen. Another design route was followed by the University of Luzern facade creators [Ill. D.] (2009, Enzmann & Fischer, Zurich). In this case the rebuilt wall became a geometric relief, which forms an expressive play of light and shadow.

Another, separate idea that may lead to creating impressive visual effects in architecture is to create designed shadows to be cast onto the buildings. The result is similar to the frequently seen outlines of trees or other buildings on facades. In this instance, physical elements are deliberately set at a certain distance in order to cast a shadow of a certain contour and rhythm. Pergolas and trellises create similar effects when in full sunlight. Projected shadows are created by various lattices, meshes, rods, and artistic screens. Another way of accentuating or distorting the form of the cast shadow can be achieved by casting it on slanted or uneven surfaces. Due to the deformation of shadows this can create interesting additive effects. Such shadow effects can often become visually more prominent than the illuminated objects themselves.

The least used seem to be the idea of playful effects – ‘jokes’ – created with the help of shadows. As an example of this type of intervention and shadow play we might cite Twarowski’s idea, which involves creating various narratives (historical stories) on the facades. Twarowski proposed the use of *vertical shadow projectors* [6, p. 149] and a play in which, depending on the time of the day, a silhouette of child is chasing a wolf or is escaping from it. In such a case the creative possibilities are very rich, and the principle is to rely on the experience gained from the theatre of shadows [Ill. F.]. The individual components, at a specified time, complete a carefully planned image created by the shadows cast. This play with light is very interesting, but also quite difficult to manage due to the variability of the light source. Undeniably, it is certainly worth trying.

R e f e r e n c e s

- [1] Arnheim, R., *Art. and Visual Perception*, University of California Press Ltd, Berkeley and Los Angeles, 1974.
- [2] Bartnicka, M., *Cień w świetle*, Zeszyty Naukowe Politechniki Białostockiej, Architektura, Z. 21 (2008).
- [3] Coop, Ch., *The No Shadow Tower*, <http://meansttheworld.co/community/shadow-tower>, 07.06.2015.
- [4] Feiner, J, *Stosowanie metod światłoprzestrzennych we wnętrzach przeznaczonych do ekspozycji*, Politechnika Krakowska, Zeszyt Naukowy nr 3, Kraków, 1975.
- [5] Gombrich, E.H., *Art. and illusion: A Study in the Psychology of Pictorial Representation*, New York, 1960.
- [6] Twarowski, M, *Słońce w architekturze.*, Arkady, Warszawa, wyd. 4, 1996.

MAGDALENA BĄCZKOWSKA*

ARCHITECTURE AS BACKDROP AND INSPIRATION IN THE WORKS OF PETER BEHRENS AND OSKAR SCHLEMMER

ARCHITEKTURA JAKO TŁO I INSPIRACJA W TWÓRCZOŚCI PETERA BEHRENSA I OSKARA SCHLEMMERA

A b s t r a c t

The scope of the research is the relationship between architecture and the performing arts and their transformation in the works of Peter Behrens in the Darmstadt Artists' Colony Mathildenhöhe and Oskar Schlemmer's later Bauhaus-Bühne in Weimar and Dessau. The stage concepts were compared with the model "Haus Behrens" and "Haus am Horn", with theoretical underpinning of the source text. The result of the study is a scheme illustrating a gradual evolution of architecture and scene arts at the beginning of the 20th century.

Keywords: Peter Behrens, Mathildenhöhe, Gesamtkunstwerk, Jugendstil, Oskar Schlemmer, Bauhaus, history of architecture, history of theatre

S t r e s z c z e n i e

Przedmiot badań stanowi poszukiwanie relacji pomiędzy architekturą, zagadnieniami sztuk performatywnych oraz ich transformacjami w twórczości Petera Behrensa w kolonii Mathildenhöhe w Darmstadt oraz późniejszej Bauhaus-Bühne Oskara Schlemmerra w Weimarze i Dessau. Porównano koncepcje sceniczne z modelowymi „Haus Behrens” oraz „Haus am Horn” na podbudowie teoretycznej tekstów źródłowych. Efektem jest schemat ilustrujący ewolucję architektury i sztuki teatralnej początku XX wieku.

Slowa kluczowe: Peter Behrens, Mathildenhöhe, Gesamtkunstwerk, Jugendstil, Oskar Schlemmer, Bauhaus, historia architektury, historia teatru

* M. Sc. Eng. Magdalena Bączkowska, Department of History of Architecture and Urban Planning, Institute of Architecture, Planning and Protection of Heritage, Faculty of Architecture, Poznań University of Technology.

1. Introduction

Much like theatre performance, architecture is a process of stage production and creation of events which cause certain impressions. This creation and the perception of the established space itself allows deep emotions to be experienced by both architect and recipient. The issues of the relationship between architecture and its theatrical dimension and the role of the theatre at the beginning of the 20th century were the subject of works by Peter Behrens in the Darmstadt Artists' Colony Mathildenhöhe and Oskar Schlemmer's later Bauhaus-Bühne in Weimar and Dessau. It also became the scope of research conducted among others by Stanford Anderson [1, *passim*.], Małgorzata Leyko [10, p. 5–30], and Jadwiga Staniszewska [12, p. 183–190]. This study documents the changes in thinking about space, observed in visual works, painting, architecture, theatre and performing arts based on contemporary Jugendstil and Bauhaus projects. Research questions were selected to formulate this relation. The answers were provided by the projects but above by all the analysis of the source books and the comments of artists and contemporary critics.

2. Research questions and background

To what extent were the ideas of Behrens and Schlemmer applied only to the aesthetic and cultural level? Were they a response to social reform and the needs of modern man?

The situation in the 19th century was the starting point of this study. In architecture and the fine arts this period was defined by historicism and it referred to the aesthetics of a bygone age. Richly decorated house facades expressed the socio-material status of the European bourgeoisie. They were more a concept based on the patterns of the past rather than the result of an innovative design process, and they embodied the ideals of middle-class material well-being. Much like everyday objects, facades were a kind of product created using catalogue production-line items. The stylistic costume and illusive richness of the exterior was a theatre performance played on the stage of urban spaces in big cities.

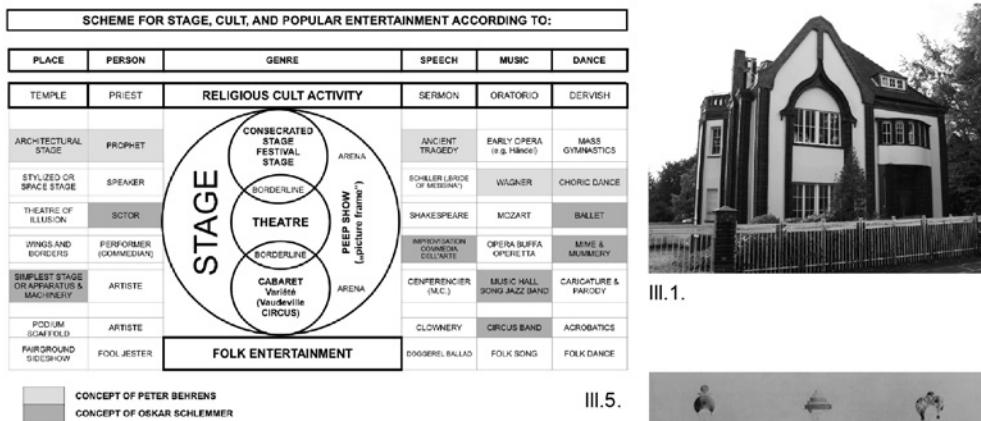
Along with the industrialization and the disappearance of the craft, the gap between life and art, which could be experienced in museums and theatres, widened. Rationalism, realism and naturalism in the visual arts almost excluded the elements of creation, fun, and sensual experience. Likewise, the nineteenth-century theatre, its repertoire, and the issues featured in plays, as well as spatial solutions, literally referred to history in a conventional manner. Current social and political problems were also presented in the form of costume. The role of the stage design and supporting machinery was to create an illusion. Unfortunately, the emergence of new technologies, including electric illumination, exposed the limitations of the previous stage solutions such as scenography, paintings, and the picture-frame stage dating back to the Baroque [7, p. 16]. The clear boundary between the decorative stage and the audience might be compared to the concept of façade in contemporary architecture. In the course of time the symbolic unity and emotional character of experience – the catharsis – had been lost. This was typical of Greek theatre, Shakespearean theatre, and the contemporary Japanese stage in which the actor went across a bridge to engage in better communication with the audience. It was necessary to reform and unify the theatre space.

3. Peter Behrens and the idea of Gesamtkunstwerk

According to the idea of the *Gesamtkunstwerk* – the unity within “the total work of art” – there was a desire to integrate and intensify various manifestations of artistic acts – visual arts, music, and literature. Facing the criticism of the superficiality of the formal solutions in architecture, perception and experience became the crucial concepts. There has been a shift towards the present and the timelessness of classical patterns. The emergence of Jugendstil and Secession was a deliberate break (lat *Secessio plebis*) [6, p. 2] with the past. It represented the superiority of youth and the joy of the creative process. The artistic patronage of Ernst Ludwig of Hesse in Darmstadt helped to create a breeding ground for the Mathildenhöhe artists’ colony. Joseph Maria Olbrich designed all the buildings for the first exhibition in 1901. Peter Behrens’ house was an exception. Despite the fact that he was educated as a painter, he designed his own house (Ill.1), followed by a series of other architectural projects. The creative atmosphere in the colony encouraged interaction while the 1901 exhibition “Ein Dokument Deutscher Kunst” was being prepared. The opening ceremony on 15th May was accompanied by a theatre staging of the play *Das Zeichen (The Sign)* [5] written by Peter Behrens and Georg Fuchs, music composed by Willem de Haan and illuminated. The play was held in architectural scenery such as on the stairs of the Ernst Ludwig Haus in the Mathildenhöhe colony. Hence, it might be compared to the Greek procession typical for theatre performances in honour of Dionysus and during the Roman Bacchanal. The new monumental stage affected both the senses and emotions. In this concept there was reference to the *catharsis* of the Greek theatre. The play was enacted on the monumental stairs, which became a kind of architectural stage. It was a prelude to a later theatre reform [2, p. 401–405]. Behrens created a simple stage which could be accessed by a few steps. It was slightly extended towards the audience. The interior referred to the stages of antiquity and of Wagner. The concept assumed a simplification of the space and the reduction of the fly tower. Symbolic painting and ornamental decoration replaced painted scenography. The actor’s costumes were not a copy but merely a stylistic reference to the past (Ill.2). The project of the Prinzregententheater in Munich designed by Max Littman in 1900 was an early precursor of this idea and had much in common with the Wagner’s theatre in Bayreuth. Rhythm and movement played a key role in the composition of space and its vertical and horizontal linear elements, which formed the stage. The designer assumed that the reformed stage would enable a harmonic perception due to the synergistic use of devices in a symbolic and simplified way. The title of his manifesto “*Feste des Lebens und der Kunst*” (“*Festivals of Life and Art.: Considerations on the Theatre as the Highest Cultural Symbol*”) emphasizes the idea of the theatre as a solemn celebration and a symbol of culture and universal beauty.

4. Oskar Schlemmer’s experimental stage. Bauhaus

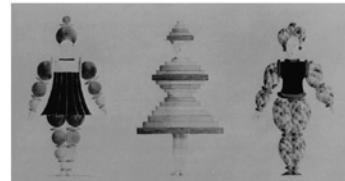
It was the Bauhaus school that soon provided a fundamental change in thinking about the stage and architecture. Similarly to Darmstadt, a group of cooperating artists was essential for the creation of the stage in Weimar (1921–1925) and later in Dessau (1925–1928). Oskar Schlemmer, like Peter Behrens was a painter. Within the collective he established an avant-garde stage and a new language of visual forms. Instead of using a synergy of different artistic devices, Schlemmer focused on the translation of content through colour, mechanized



III.5.



III.1.



III.3.



III.2.



III.4.

- III. 1. Haus Behrens, artists' colony Mathildenhöhe, Darmstadt, 1901, Author: p. Behrens, Fot: M. Bączkowska
- III. 2. Scene design for „Diogenes”, Hagen, 1909, Director: O.E. Hartleben, Scenography: p. Behrens, Source: „Kunstgewerbeblatt”, nr. 3, 1910, p. 41
- III. 3. Costume designs for “The Triadic Ballet”, author: O. Schlemmer, source: W. Gropius, A. Wensinger, The Theater of the Bauhaus: Oskar Schlemmer, László Moholy-Nagy; Farkas Molnár, Middletown, Connecticut 1961 p. 46
- III. 4. „Haus am Horn” Weimar, 1901, Author: G. Muche, Fot: M. Bączkowska
- III. 5. The analysis based on scheme for stage, cult and popular entertainment according to O. Schlemmer elaborated the author, Source: M. Bączkowska

movement in ballet and pantomime, or through geometric or organic costumes. For him the “*stage is a representation abstracted from the natural and directing its effect at the human being*” [8, p. 18]. This progressive approach was reflected in the “The Triadic Ballet” which was the result of a vision of the human body and its movement in a mathematically defined space (Ill.3). The actor did not need a complex and limited stage as in the 19th century theatre, and the play could be performed almost anywhere. Aside from Schlemmer, other Bauhaus artists also provided their visions of the new stage – Fakras Molnar with his “U-Theater”, and Andreas Weininger with “The Spherical Theater” [8, ibid. passim]. Laszlo Moholy Nagy experimented with light, movement and photography and kinetic sculpture. These concepts represented the dream of a “total theatre” – a kind of dynamic system in motion. Due to the difficult financial situation of the Bauhaus school, the stage was never completed. The school campus in Dessau served as an actual stage for artistic activities. In Weimar the stage experiences were accompanied by innovative architectural projects. The model “House am Horn” by Georg Muche (Ill.4), which embodied an idea of simplicity, also provided the space for the viewer’s own interpretation. In contrast to Behrens’ ideas inspired by culture, the Bauhaus theatre created a stage based on clear, elementary forms with the principal role of human being as the source of word, movement and sound. In order to illustrate his concept, Schlemmer introduced a dialogue of two fictitious people: “A: But I should be able to imagine something by seeing that! B: Why? Something is being shown to you. There is something taking place before your eyes, ‘a drama’, ‘a scene’ and you do not have to do anything other than just enjoy this. Keep your eyes open and receive impressions” [10, p. 83]. Colours were not assigned any particular symbolic meaning. It was the play and sensual experience that mattered, especially in the works called “Stick dance” and “Block play”.

5. Conclusion and summary

Considering the play, modern cultural theorist Johan Huizinga sums up that “we might call it a free activity standing quite consciously outside ‘ordinary’ life as being ‘not serious’, but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means” [9, p. 13]. Thus, depending on the situation, the architect can be at the same time a kind of Coryphaeus and Homo Ludens (lat. playing Man, the title of the book written by J. Huizinga) creating a mystery play or moving architecture depending on the choreography created. This is illustrated and modified by the author referring to Schlemmer’s diagram (Ill.5) of stage typology. This classifies the scene in the categories of cult and popular entertainment. Referring to the above and endorsed by the study of the contemporary social situation, architecture might be considered as a game and play in a space. It might also be an inspiration and backdrop for the performing arts. The result of this study is to present the relationship between theatre and architecture. In the project of his own house, Behrens used material solutions and fine details to pursue integrity and aesthetics in everyday life. The “Haus am Horn” as the prototype of a simple form was a response to the situation of growing abstraction in the mechanized world at the beginning of the 20th century. The evolution of the stage gradually encouraged

the viewer to participate by providing space for individual interpretation. Similarly, modern architecture in its simplicity was the scene of life and play. By inviting us to play it raised many more questions than answers.

R e f e r e n c e s

- [1] Anderson S., *Peter Behrens and a New Architecture for the Twentieth Century*, Massachusetts 2000.
- [2] Behrens P., *Die Dekoration der Bühne* w: „Deutsche Kunst und Dekoration”; ilustr. Monatshefte für Moderne Malerei, Plastik, Architektur, Wohnungskunst u. Künstlerisches Frauen-Arbeiten, nr. 6, 1900 p. 401–405.
- [3] Behrens P., *Feste des Lebens und Kunst: eine Betrachtung des Theater als höchsten Kultursymbols; [der Künstlerkolonie in Darmstadt gewidmet]* Leipzig 1900.
- [4] Behrens P., *Ein Dokument deutscher Kunst: Die Ausstellung der Künstler-Kolonie in Darmstadt*, 1901; Festschrift [Ernst Ludwig, dem Großherzog von Hessen und bei Rhein] München 1901.
- [5] Behrens P., de Haan W., Fuchs G. *Das Zeichen: festliche Handlung; dargestellt am 15. Mai 1901... [Ein Dokument deutscher Kunst, die Ausstellung der Künstler-Kolonie in Darmstadt, zur Feier der Eröffnung...]*, Offenbach 1901.
- [6] Burckhard, M., Ver Sacrum w: „Ver Sacrum”, 1898–1903: Mittheilungen der Vereinigung bildender Künstler Österreichs, nr.1, 1898.
- [7] Fuchs G., *Die Schaubühne der Zukunft*, Berlin 1905.
- [8] Gropius W., Wensinger A., *The Theater of the Bauhaus : Oskar Schlemmer; László Moholy-Nagy*; Farkas Molnár, Middletown, Connecticut 1961.
- [9] Huizinga J., *Homo Ludens. A Study of the Play-Element in Culture*, London 1949.
- [10] Schlemmer O., *Eksperimentalna scena Bauhausu*, wstęp, przekład i opracowanie Leyko M., Gdańsk 2010.
- [11] Schur E., *Peter Behrens und die Reform der Bühne* w: „Kunstgewerbeblatt”, no. 3, 1910, p. 41–44.
- [12] Staniszewska J., Wrocławska działalność Oskara Schlemmerra w świetle opinii współczesnej prasy i jego własnych zapisów w: „Roczniki Sztuki Śląskiej”, no. 16, 1997 p. 183–190.

ANNA MARIA BERBESZ*

**FROM MULTIPLICATION TO BIOMIMETICS
– PLAYING WITH STRUCTURE AND ARCHITECTURAL
GAMES OR AN ACTUAL ATTEMPT TO SHAPE
OBJECTS IN THE 21ST CENTURY**

**OD MULTIPLIKACJI DO BIOMIMETYKI
– ZABAWA STRUKTURĄ I GRA W ARCHITEKTURE
CZY REALNA PRÓBA KSZTAŁTOWANIA OBIEKTÓW
ARCHITEKTONICZNYCH XXI W.**

A b s t r a c t

Nature is a perfectly functioning system. Biomimetics (biomimicry) is based on analysis and transposition of processes occurring in nature to the level of technology. Architecture is a search of forms which are complementary to functional and structural solutions. There is a noticeable play with geometry, a play of shapes, and space for multiplication between these processes.

Keywords: *biomimetics, biomimicry, bionics, bio-inspired architecture, mobile structures, temporariness, multiplication, fractals, game and play with structure*

S t r e s z c z e n i e

Natura stanowi perfekcyjnie funkcjonujący system. Nurt biomimetyki (biomimikry) opiera się na analizie i przetransponowaniu procesów zachodzących w naturze na płaszczyznę technologii. Architektura to poszukiwanie form będących dopełnieniem rozwiązań funkcjonalnych i konstrukcyjnych. Pomiędzy tymi procesami zauważalna jest zabawa w geometrię, gra brył oraz przestrzeń mnożliwości. Architektura może stać się płaszczyzną do swoistej gry i zabawy wychodzących znacznie poza swoje podstawowe pojęcia.

Slowa kluczowe: *biomimetyka, biomimikra, bionika, architektura bio-inspirowana, struktury mobilne, tymczasowość, mnożliwość, multiplikacja, fraktały, gra i zabawa strukturą*

* M.Sc. Arch. Anna Maria Berbesz, (Ph.D. Studies), Department of Housing and Industrial Architecture, Interior Design, Rural and Landscape planning, Visual Arts and Structural Systems (W1/K6), Faculty of Architecture, Wroclaw University of Technology.

1. Fun, game, multiplication

When analysing the motives for play in the architectural design process, the question arises of where the boundary between spontaneous, unlimited play and reality is. Following the words of Professor Wincent Okoń¹ who is one of the greatest contemporary Polish educators, “fun is an action performed for your own pleasure and based on the participation of the imagination, which creates a new reality. Although this action is ruled by the principles originating in social life, it is creative in nature and leads to the individual discovering and transforming reality” [2, p. 3].

Architectural design, especially in its conceptual stage, becomes play in the creation of a new spatial-visual reality. At the same time, it might be asked whether the comparison of architectural creation and play is not an abuse. The fun remaining in the space of unlimited creativity is not intended to be a direct confrontation with reality, while the architectural process is being transformed to initiate real and responsible spatial dialogue. Play with architecture should be then perceived in a more general context.

The game becomes the next stage of play. The full spontaneity and freedom constituting the essence of play is transformed into a game by ordering and the imposition of certain rules and strategies. The next stage is the connection between game theory and the architectural process. Tadeusz Platkowski in his *Introduction to game theory* describes this concept as “the science of strategic action in conditions of conflict and cooperation”. He says that over past decades the feedback between game theory and numerous areas of science, e. g. biology, sociology, anthropology, psychology and economy has been noticeable [3, p. 6].

Is it possible to transpose the game and play concept to the architectural process? Architecture understood as a compilation of the search for the optimal function, a response to a sequence of spatial and context issues, adjusting the appropriate shape, selection of the optimal construction system and materials, and above all, providing an ideal space for users of the building, might become the field for game and play extending far beyond its basic concepts. Architecture is a search of forms which are complementary to functional and structural solutions. There is a noticeable play with geometry, a play of shapes and space for multiplication between these processes. This multiplication of forms, motives, and modules is perceptible from the first architectural solutions created by men. This process also occurs in nature. The compilation of these issues leads to the concept of fractals, which is understood as a multiplication of multiscale forms.

2. From the mechanical to the organic model

The beginning of the 20th century abounds with numerous discoveries in different areas, e. g. chemistry or electricity, causing an *atmosphere of technology* in Europe, “a moment later automobile – the tool of speed speed – captured the city, reduced distances, and commenced the age of machines which are entirely obedient to human dreams” [4, p. 11]. Futurism – launched in the 20th century – glorified technical and mechanical thought in

¹ Professor Wincenty Okoń (22.01.1914 – 18.10.2011) was a brilliant educator, creator of theory of teaching – learning process, the theory of multilateral education and a laureate of medal of Honour Member of the Games Research Association of Poland [1].

art and architecture. After joining F. T. Marinetti's movement, Antonio Saint'Elia published the *Futuristic Architecture* manifesto proclaiming that architecture should adopt the latest techniques and materials while rejecting previous historical styles. At the same time, modern principles of Futurism became extremes based purely on contemporary technical solutions and entirely rejecting the solutions developed by previous generations. Antonio Saint'Elia created visions of cities-megastructures as a system of precisely connected functional and structural elements. Futurism was based on the idea of dynamics of life. Hence, the presence in Saint'Elia's projects (i.e. La Citta Nuova, The New City) of the theme of dynamics expressed in the worship of technology and mechanics [4, p. 92–94].

The turn of the twenty-first century has brought an entirely different outlook on understanding and shaping contemporary architecture. In the wake of the search for an architecture outside architecture, its transgression and merging with different areas of science (e. g. biotechnology, chemistry), a new notion extending the basic understanding of the building began to appear in the architectural process. As a consequence, new architectural currents came into existence: *flexible architecture, responsive structure, portable, kinetic and elastic architecture* for instance. In recent architectural theories, the conceptual model of people's living environment has changed from the mechanical to the organic. Furthermore, the concepts of ecological and sustainable design have been reinstated by the interactions between local architectural solutions and the global environment.

The transposition of design concepts from the mechanical level to the fascination with nature has brought biomimetics (biomimicry), bionics and biomorphism to the architectural stage. A living organism is a perfectly functioning system and optimized structure adapted to the space of existence. Moreover, millions of years of evolution have enabled an efficient and flexible adaptation to environmental changes. The multiplicity of forms in an organic space leads to the conclusion that nature is an expert and specialist in shaping forms [5, p. 42–43].

3. Multiplication of form as para-fractals

Most of forms in nature are created while minimizing material, energy, and space at the same time. Organic forms like fractals come into existence in multiscale and a variety of sequences. Nature can be described in mathematical language. One of the most significant relationships in nature is the golden ratio created by Leonardo Fibonacci².

The Fibonacci sequence is perceptible in plant structure geometry, or the DNA code. The logarithmic spiral also known as the golden spiral is created on the basis of the Fibonacci sequence. It is especially noticeable in the process of growth and formation of branches and leaves of plants (phyllotaxis), (ill. 1). The structure of branches and leaves is spirally formed around the trunk according to the principles of the Fibonacci sequence. It leads to maximizing the absorption of solar energy.

The concept of fractals was created and popularized by Benoit Mandelbrot in *The fractal geometry of nature*. At the end of the 19th century numerous examples of geometric objects

² The Fibonacci sequence is a series where every number is the sum of the two preceding numbers: 1, 2, 3, 5, 8, 13... As a result of division any numbers of sequences by the previous one the quotient 1.61804...(phi – the golden ratio) is obtained [5, p. 42–43].



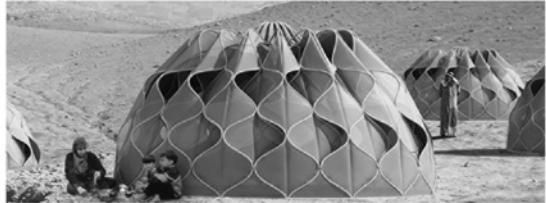
2.



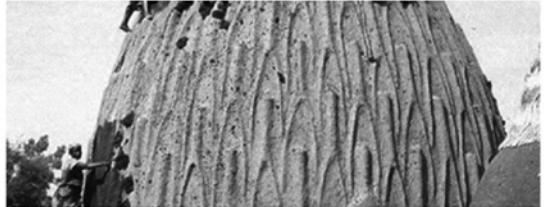
1.



3.



4.



5.

Ill. 1. Phenomenon of phyllotaxis – shape of Aloe leaves [12]

Ill. 2. Clusters in the Air, 1962 r., [13]

Ill. 3. A part of Lotus Dome structure [14]

Ill. 4. Visualization of *Weaving a Home*, [15]

Ill. 5. A part of Mousgoum tribe house [15]

relating to the concept of fractals began to appear: the Cantor set, Sierpinski carpet, van Roc curve and Julia set for instance [6, p. 19].

The multiplication of structural forms have followed urban planning. Para-fractal structures are especially visible, e.g. the traditional house of the Mousgoum tribe in Cameroon³

³ Traditional houses of Mousgoum tribe are shaped from modelled earth (the finest examples of this kind of building are to be found in Central Africa), [9, p. 35].

(ill. 5), in the spatial structures of cities e. g. Timbuktu or in characteristic ornamentation e.g. the Mudejar style (Morocco).

Multiplication of geometric forms is perceivable in numerous projects by megastructure architects, especially in the Japanese Metabolism movement. The manifesto *Metabolism 1960* describes the conception of Japanese architects' activity, presents the intellectual achievements of the Metabolists, a different way of looking at the environment, the natural shaping of architecture, and the dialogue between a space and its users. Following the words of Kisho Kurokawa, one of Metabolism's founders "I believe that what we called space, medium (...) and interspace are important in the formation of the relation between architecture, society and nature" [7, p. 92–94]. The multiplication of forms frequently used by Metabolist members is noticeable in examples such as the *Nakagin Capsule Tower* (proj. Kisho Kurokawa, 1972), *Clusters in the Air* (proj. Arata Isozaki, 1962), (ill. 2), *Helix City* and *Floating City Kasunigaura* (proj. Kisho Kurokawa, 1961) or in one of the most famous capsule projects – *Ocean City* (proj. Kiyonori Kikutake, 1968). The metabolist group created projects – conceptions directly in the earth, as an element of artificial topography, on water, or even in the air by creating vertical megastructures [8, p. 344–370].

In 1997 Michael Batty and Paul Longley created a fractal city motive by transposing the fractal concept to the area of urban planning: "fractal geometry explains not only the way in which order emerges from simple, logical elements, but also how complexity appears (...)" [7, p. 355–358].

From geometric multiplication and para-fractals there is a straight reference to bio-inspired architecture.

4. From bio-inspired architecture to biomimetics

The transposition of fractals to architectural language gives unlimited possibilities of creation. Geometric play transposed to a game of multiplication might provide extraordinary visual, spatial and functional effects. The essence of such creation is not only biomorphic structures⁴, but also an inspiration from nature by bringing processes in nature into engineering (biomimetics).

The next stage is bionics, which connects in a complementary way biology and technology. Bionics connects the analysis of building and functioning of living organisms with the use of these rules in non-organic devices.

5. Interactions and fusions

Thinking about bionics and architecture in the context of game and play it is possible to refer to my own fascination with responsive structures (based on electronic solutions), biomimetics (transposing processes from nature to the design level) and portable structures. Is

⁴ The biomorphical structures are objects of Ivre Makovecz, Grosse Blume by Bruno Taut or characteristic balcony structure in Casa Batllo (proj. Antonio Gaudi), [10, p. 45–46].

it possible to connect these structures, play not only with emblems but transfer of solutions to the design process?

Maybe some of the answers are included in one of the most poetic and sensual projects of portable architecture – the Lotus Dome⁵ (proj. Studio Roosegaarde). The responsiveness of the structure's wall to users reactions is possible by movable aluminium components controlled electronically. The structure of the Lotus Dome (ill. 3) installed in space becomes an interactive game of light and shadow, bringing unusual poetry to relation the space – structure – man.

The conceptual project of autonomous structure *Weaving a Home* (proj. Abeer Seikaly) is the connection between poetic, sensual structure and the actual attempt to shape light portable architecture. It answers the question of contemporary nomadism (ill. 4).

In an architectural context and with concepts of game and play – the ideal solution is to create appropriate interactions, proportional fusions of nature, architecture, living environment, and relations with users. Creating a process which goes significantly beyond an understanding of the function, form and structural system. As a consequence, architecture, understood as an integrally connected and well-functioning organism, could bring in the next stage of the design process.

R e f e r e n c e s

- [1] Juszczyk S., Surdyk A., *Życie i twórczość naukowa profesora Wincentego Okonia*, [in:] Internet source: <http://ptbg.org.pl/dl/2/>
- [2] Myśliwiec A., *Problematyka zabaw i zabawek w księgozbiorze biblioteki Muzeum Zabawek i Zabawy*, Kielce 2007, [in:] Internet source: http://www.muzeumzabawek.eu/mziz/images/stories/wydawnictwa/problematyka_zabaw.pdf
- [3] Płatkowski T., *Wstęp do Teorii Gier*, Uniwersytet Warszawski 2012, [in:] Internet source: <http://mst.mimuw.edu.pl/wyklad/wtg/wyklad.pdf>
- [4] G. Lista, *Futuryzm*, published by Arkady 2002.
- [5] Barwicka J., *Biomimikra, czerpiąc z natury*, „Green² Biomimetyka/ Biomimetics”, nr 2, winter 2010
- [6] Kudrewicz J., *Fraktale i chaos*, published by WNT, Warszawa 2015.
- [7] Jencks Ch., Kropf K., *Teorie i Manifesty Architektury Współczesnej*, Grupa Sztuka Architektury, Warszawa 2013.
- [8] Koolhaas R., Obrist H. U., *Project Japan, Metabolism talks...*, Tashen 2011.
- [9] Kelm T., *Architektura ziemi, Tradycja i Współczesność*, published by Oficyna Wydawnicza PW, Warszawa 2014.
- [10] Barwicka J., *Architektura bio-inspirowowana, formy i mechanizmy świata przyrody*, „Green² Biomimetyka/ Biomimetics”, nr 2, winter 2010.
- [11] <https://www.studioroosegaarde.net/project/lotus/info/> – official site of Studio Roosegaarde

⁵ This project was awarded in Media Architecture Award 2012 in future trends category [11, connection: 12.06.2015]

- [12] <http://altao.pl/2/artykuly/tajemnice-przyrody-i-matematyki-ciag-fibonacciego-i-liczba-fibonacciego.htm>
- [13] <http://poetryconcrete.tumblr.com/post/93697662904/cluster-in-the-air-by-arata-isozaki-1960-62>
- [14] <http://ad009cdnb.archdaily.net/wp-content/uploads/2012/10/1350435060-lotus-dome-by-roosegaarde-highres3.jpg>
- [15] <http://www.abeerseikaly.com/weavinghome.php>

PRZEMYSŁAW BIGAJ*

ARCHITECTURAL GAMES AND PLAY WITH FORM, OR ON THE PURSUIT OF PRETEXTS TO SHAPE THINGS

ARCHITEKTONICZNE GRY I ZABAWY Z FORMĄ,
ALBO O POSZUKIWANIU PRETEKSTÓW
DO NADAWANIA RZECZOM KSZTAŁTU

A b s t r a c t

While shaping things, architects frequently seek pretexts in the world of art, to justify the originality of the accepted solutions. Such pretexts are also spatial games and play with the form of the object devised by architects. They are based on rules and guidelines, which have a direct impact on the idea, composition or implementation plan of the designed facility. Architectural games and play are also repeatedly used in the process of educating future architects.

Keywords: games and play of architecture, pretext, creative idea

S t r e s z c z e n i e

Nadając rzeczm kształt, architekci niejednokrotnie poszukują w świecie sztuki pretekstów, aby uzasadnić oryginalność przyjętych rozwiązań. Takimi pretekstami stają się również wymyślane przez architektów przestrzenne gry i zabawy z formą obiektu. Ich podstawą są reguły i wytyczne, mające bezpośredni wpływ na ideę, kompozycję czy zamysł realizacyjny projektowanego obiektu. Niejednokrotnie architektoniczne gry i zabawy znajdują także zastosowanie w procesie kształcenia przyszłych architektów.

Slowa kluczowe: gry i zabawy architektury, pretekst, zamysł twórczy

* Ph.D. Arch. Przemysław Bigaj, Department of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

The essence of architecture is to give things shape. To this end, architects search for pretexts to justify their creative decisions. Contemporary artistic practices and numerous affinities between architecture and other fields of arts [10], especially sculpture and painting, allow one to treat this ability in shaping things as a kind of spatial game or play justifying the search for original features for the designed facility. In the numerous games and play of architects it is often more important to establish rules directly affecting the very essence of the design idea than to give the final expression to the form of a given work. Doing this requires not only skills, expertise, talent, but, above all, a unique idea to determine the spatial principles for the design of a work – and so finding rules for architectural and games and play with form. Importantly, both compliance with and violation of the rules can be equally important in the search for compositional originality. The most appropriate field for creative experimentation, based on spatial invention of games and play with form, seems to be the theory of architecture. Justifiably, one finds it also in architectural education in the form of numerous exercises on spatial imagination and creativity. The rules and principles of the creative game are also dictated during architectural competitions; many a time, breaking these determined victory. The creative idea and the game of building architecture can be also based on the original implementation of the object. In these games, the architect is not only a draftsman of architecture, but also the initiator and active participant in directing the proposed process of structure erection.

The most interesting architectural games include primarily those relating directly to the essence of composing and creating the image of a building. Here one can find numerous spatial games and play consisting in adding and removing forms. These are closely linked to the issue of the solid and void in architecture, and thus relate to the shape of the architectural object perceived as a kind of built structure together with its interior – limited by surrounding it with a defined matter or hollowed. The image of the building is mostly perceived in the context of a built structure resulting from giving materials appropriate forms and their combination or integration in a coherent, deliberate aesthetic whole. The shaping of the object's form can also take the complex form of Corbusierian “learned game, correct and magnificent, of forms assembled in light.” [6, p. 80], or play in collating and creating relationships between solids, or seek purist moderation maintaining a tight rein on a single elemental solid, tending toward Minimalism. In his book *Experiencing Architecture*, Steen Eiler Rasmussen draws attention to the fact that during the creation of architecture: “it is possible to have quite a different conception. Instead of letting his imagination work with structural forms, with the solids of a building, the architect can work with the empty space – the cavity – between the solids, and consider the forming of that space as the real meaning of architecture” [8, p. 46]. The pretext for seeking the original form of the work can consist here in defining the void, created in the creative process by the skilful use of the principles of matter subtraction from a given volume of a solid. The principle of matter subtraction has been used a number of times in the history of architecture. S. E. Rasmussen recalls several hollowed temples in Karli in India. One can mention here many other structures hollowed out of the rock, such as Egyptian temples and tombs, and objects in Jordan's Petra created this way. These also include the Lycian rock cut tombs of Dalyan in Turkey and such original structures as The Church of Saint George in the Ethiopian town of Lalibela. The void, clearly defined, limited by a partition, formed in the process of rock material subtraction, forms a kind of sophisticated space predisposing it to be perceived in the terms of a classic work of art.

It is said that “architects do not build but draw”. Among the currently drawing architects one can find those for whom capturing the idea of the architectural thing in the relevant matter is closely linked to its original implementation plan. In this case, the creator also plays at builder, designing and supervising the unique process of materialisation of the work. He does not use solutions typical of engineering logic and rationality, but by inventing and imposing a unique method of object implementation he searches for the aesthetic nature of the building, resulting directly from the accepted idea and compositional principle of the work. A reflection then occurs – what was a more important stimulus for the character of the building thus devised? Was the implementation idea planned for the purpose of materialisation of the adopted form of the object, or did an unconventional construction process become a pretext to search for a specific idea of the work? The integrity of both of these creative motives seems to point to the original essence of the idea of an architectural object – the consistency of the work’s implementation rule and its form which was represented in a suitable material. The very act of construction rises to the rank of an extraordinary artistic event – a happening – aimed at the pleasure of creating and erecting architecture. The careful planning of the original process of the “birth” of the object by the creator can contribute to a feeling of sublimity and uniqueness of the work’s form created this way. The frequently adopted manner of its implementation assumes the character of a spontaneous act of creation, more often than not rising with its expression to the rank of an architectural joke – play with shapes, solids, icons. Regardless of the creative convention assumed and the purpose of the building, this phenomenon allows the intended work to be subsumed in the category of contemporary architectural art. In this case, the concept of an object is expressed by the consistency of the design and implementation idea. Their mutual correlation and logical, coherent relationship give the form of the building a unique artistic expression. It is more appropriate for an artist-sculptor than for the profession of architect-engineer. The building is perceived as a sculpture rather than as a machine-installation. Two small buildings can serve as an example illustrating this way of thinking about an architectural work. The first – *Bruder Klaus Field Chapel*¹ was designed by Peter Zumthor [9]. As a result of burning a stack of tree trunks cast in concrete, a unique, sacred interior was created. The object’s implementation concept became the pretext for finding the final form of the building. The second one is a monolithic building *The Truffle*², designed in Ensamble Studio [7]. The titular “truffle” resembles a natural stone, cast in concrete in an earth formwork. Inside, a single space residential interior with modular compressed hay bales was created. Before it was finished, it served as a pasture for a calf. In both cases we deal with a particular form of the game of playing “the creator” whose immediate area of operation is not so much the drawing board itself but the building site – being the “stage” for an architectural performance or artistic event. The design becomes a scenario here. The architect, in turn, is not so much a screenwriter but a director of this performance. The pretext for the emergence of both these objects is the original implementation idea, whose attractiveness is based on a story – an architectural anecdote – possessing its dramaturgy and important turning point, often included in an architectural joke, in the “birth” of an object. When the intention of the work’s concept is correlated with the sculptural act of construction,

¹ *Bruder Klaus Field Chapel*, Peter Zumthor, Mechernich-Wachendorf, Rissdorferweg, Germany, design: 1998–2007, implementation: 2007.

² The Truffle, Ensamble Studio (Ricardo Sanz, Javier Cuesta) & Anton Garcia-Abril, Costa da Morte, Spain, design/implementation: 2010.

there is a subjective sense of unity of form and matter, constituting the entire expression of the architectural work. It is also subconsciously sensed by the observer (the recipient). Discovering the implementation genesis of the observed object completes the understanding of the uniqueness of the idea adopted by the creator. Once the observer has gained the knowledge of the building's creation, they simultaneously discover the justification for its spatial plan – curiosity is satisfied. An interaction ensues – the architect's game with the recipient of the work's mystery hidden in the act of creation (construction), and the audience's fun at guessing the mystery.

Architectural games and play, constituting a pretext to seek the shape of the object, are also widely used in teaching future architects. An example here is the topics of the course designs created under the supervision of Professor Dariusz Kozłowski from the Department of Housing Architecture and Architectural Composition of the Faculty of Architecture at Cracow University of Technology. *The house, or playing with the cube* theme is covered during the third semester [1, p. 22–29]. The student has at their disposal a cube – regarded as the ideal form – and designs an architectural composition – a house – following strict rules. The rules of the game are determined by the assigned modular grid. The essence of this play consists in the game of removing elements from the cubic volume in accordance with the lines set by the orthogonal modular grid. Designing a cubic house is a pretext for learning architectural regulations and rules of composition in the process of architectural education. *Concrete Architecture – Play of Solids – House in the Landscape* is a theme covered during the fourth semester [2, p. 8–35]. The titular *Play of Solids* refers to the Corbusierian “learned game, correct and magnificent, of forms assembled in the light.” [6, p. 80], which in turn is a pretext for seeking the original form of the building. At this point the game of a student contest also appears. An interesting game is also offered to students within the specialised design or diploma seminar. The topic *Place seeking form, form seeking function* becomes, in accordance with the presented assumptions of the exercise, “the search for the lost record of the idea of a City, Monument or House in the World Museum of Imagination through spatial reconstruction of the painting and its application in the real city site” [3, p. 6–7]. The pretext for the topic of the spatial game formulated this way was El Lissitzky's thesis saying that “painting is an interchange station to architecture” [quoted after: 3, p. 7]. The game begins with finding the appropriate painterly composition which can be spatially embedded in the selected context of the urban fabric. Flat compositions of abstract paintings become pretexts to seek the shape of objects and to give their forms a spatial expression suitable to the location [4]. In his book *Zapis myśli o przestrzeni* (*The record of thoughts on space*), Piotr Gajewski described reflections which accompany the attainment of the exercise's objectives: “The works are based on the assumption that every painting, even that created in the manner of non-representative art, is a synthesis of the multidimensional world. If so, it can be tempting to restore the space recorded there. This restitution is not of the nature of a mathematical proof, as is the case of Renaissance *veduta*, but is the hypothesis of the existence of a three-dimensional world under the guise of a flat composition. The concepts of recreating the real world on the basis of the same paintings may be different, just as interpretations of reality are subjective. The experiment conducted by Professor Kozłowski shows that architectural spaces are recorded not only in the Renaissance views of Venice, but also in abstract painting” [5, p. 34].

Nowadays, one can observe the universally prevailing pluralism of creative doctrines in architecture. This phenomenon is conducive to the development of numerous spatial games based on pretexts existing in contemporary art in the broad sense. The focus on the

individualism of creative solutions strengthens the importance of moving away from the existing significance of styles, movements, trends, and a classical concept of beauty in contemporary architecture in favour of the paradigm of form originality and diversity. It is not without reason that this state of affairs is also affected by the widespread reign of the democratic nature of social systems in the countries of the Western World, oriented towards commercial, consumption and often social model of shaping architectural forms. It aims at playing with the audience rather than the pleasure of creating ambitious works seeking higher values in art. Pandering to the masses and creative populism ultimately lead to the fall of the essence of architecture, regarded as a unique art form which expresses human civilization's aspirations in a tangible way. Referring to pretexts from the world of art – primarily painting and sculpture – enables us to save its spirit. Numerous games devised by architects give the opportunity to implement creative ambitions both in the theory of architecture and during the design and implementation of buildings. There is also a rationale for using them in architectural education as they formulate composition principles and the rules for creating forms of buildings. Seeking and finding the appropriate pretexts to justify the adopted creative solutions is also a form of architectural play whose ultimate goal is the pleasure of creating, drawing, naming, classifying and describing things from the world of contemporary architecture.

R e f e r e n c e s

- [1] Kozłowski D. (ed.), *Pretekst*, No 1. 2004: Zeszyty Katedry Architektury Mieszkaniowej, DjaF, Kraków 2004.
- [2] Kozłowski D. (ed.), *Pretekst*, No 2. 2006: Zeszyty Katedry Architektury Mieszkaniowej, DjaF, Kraków 2006.
- [3] Kozłowski D. (ed.), *Pretekst*, No 3. 2010: Zeszyty Katedry Architektury Mieszkaniowej, Politechnika Krakowska, Kraków 2010.
- [4] Kozłowski D. (ed.), *Pretekst*, No 5. 2015: Zeszyty Katedry Architektury Mieszkaniowej, Politechnika Krakowska, Kraków 2015.
- [5] Gajewski P., *Zapis myśli o przestrzeni*, Politechnika Krakowska, Kraków 2001.
- [6] Le Corbusier, *W stronę architektury*, Centrum Architektury, Warszawa 2012.
- [7] Phillips V., Yamashita M., *Detail in Contemporary Concrete Architecture*, Laurence King Publishing, London 2012.
- [8] Rasmussen S. E., *Odczuwanie architektury*, Wydawnictwo Murator, Warszawa 1999.
- [9] Stec B., *Droga. Kaplica brata Klusa*, [in:] Architektura i Biznes, No 7/8[180/181]/2007.
- [10] Świątek G., *Gry sztuki z architekturą*, Fundacja na rzecz Nauki Polskiej, Toruń 2013.

KRZYSZTOF BIZIO*

THE HISTORY OF THE REVOLUTION

ZAPISANA HISTORIA REWOLUCJI

A b s t r a c t

The subject of the article is to discuss the role of manifestos, books and other publications in the creation of the radical architectural vision of the nineteenth century and the beginnings of modernism in the twentieth century. The theoretical basis of avant-garde architecture, which in time became mass architecture, was developed in the main part by theorists. During the nineteenth and twentieth centuries the nature of architectural manifestos has changed, and deviated from the formal description of ordinal architectural solutions towards promoting the idea of *cities of the future* associated with social issues. Particularly noteworthy is the increase in the importance of schematic idea diagrams and constant radicalization of the vision.

Keywords: Theory of architecture, manifesto, modernism

S t r e s z c z e n i e

Tematem artykułu jest omówienie roli manifestów, książek i innych publikacji teoretycznych w tworzeniu wizji radykalnej architektury XIX w. i początków modernizmu w XX w. Podstawy teoretyczne awangardowej architektury, która z czasem stała się architekturą masową, wypracowane zostały w głównej części przez teoretyków. W ciągu XIX i XX w. zmienił się charakter manifestów architektonicznych, które odeszły od opisu rozwiązań formalnych architektury porządkowej w kierunku propagowania idei miasta przyszłości powiązanego z zagadnieniami społecznymi. Na podkreślenie zasługuje wzrost znaczenia schematów ideowych i ciągła radykalizacja wizji.

Słowa kluczowe: Teoria architektury, manifest, modernizm

* Ph.D. Arch. Krzysztof Bizio, Department of Contemporary Architecture and Design Methodology, Faculty of Civil Engineering and Architecture, West Pomeranian University of Technology.

1. The written ordinal architecture and its disintegration

Writing about architecture, visions, needs and deficiencies has been part of the art world since the first ancient architectural treatises. However, a broad revival of theoretical thought occurred in the Renaissance and was continued in subsequent periods of modernity. The theoretical writings were formed by most prominent architects of different periods, who in addition to practical work were trying to formulate demands which usually exceeded the framework of existing conventions. This resulted in the creation of a separate written (and drawn) architectural trend, which anticipated the coming future.

A large part of the architectural manifestos formed until the early nineteenth century referred to interpretation of copyright rules in ordinal architecture. The classical form accounted for their creators' patterns, which could be studied and reinterpreted, but not denied.

The homeland of written modern architecture were the salons of Italian cities, where Leon Battista Alberti, Francesco di Giorgio Martini, Fra Giovanni, Giocondo da Veroina and in the following centuries Barozzi da Vignola Iacomo, Andrea Palladio, or Guarino Guarini proclaimed their treatises and manifestos. The need to express in theoretical architectural discourse soon also appeared in France, where, among others, Villard de Honnecourt, Jean Martin, Jacques Androuet du Cerceau, Jacques-François Blondel, Marc-Antoine Laugier proclaimed their works; in England, where, among others John Shute, James Gibbs, Robert Morris, Isaac Ware created; and in Germany with the statements of such artists as Hans Vredeman de Vries, Wendel Dietterlin, Abraham Leuthner von Grundt, Johann Bernhard Fischer von Erlach, and, summarizing these searches, Karl Friedrich Schinkel.

From the beginning of the nineteenth century, at the same time as the developing architecture of eclecticism, theoretical trends were created and developed binding the architecture of the industrial revolution and social changes. The first proposals had in their genesis the dimension of provocation, criticism of the existing order, and in particular a response to the world of classical form. From that moment there were efforts to change the classical forms, which eventually resulted in their breakdown. A radical, dark vision of the world of the future was presented by Giovanni Battista Piranesi in his etchings. In his case antiquity was mixed with threats and uncertainties, which was a novelty and which created the iconography for the coming age of Romanticism. Diametrically different, optimistic in his vision, was Étienne-Louis Boullée. His world of abstract geometric forms, referring also to classical forms, expressed his faith in rationality. This belief was depicted in his book *Architecture essai sur l'art* and his most famous projects *Cenotaph a Newton* and *Deuxième projet pour la Bibliothèque du Roi*. Further development of the geometrical vision of architecture was promoted by Boullée's student Jean Louis Durand. In his book *Précis des architektury données Leçons d'à l'École Polytechnique* he created the idea of usable art, devoid of decoration, which also became the foundation for future modernism.

At the same time a trend was created and developed propagating new social solutions through architecture. The link between formal ideas of reform and new social concepts was Nicolas Ledoux and his concept of Chaux. Utopian social ideas were developed by Charles Fourier. His concept of phalansteries, which were ideal social organization, was directly linked with architectural solutions. Another social activist and writer on architecture was Robert Owen, who in *Revolution in the Mind and Practice of the Human Race* considered

the relationship between God and Man. In practice, the social ideas in his *Bournville* were initiated by George Cadbury.

2. A new form for a new society

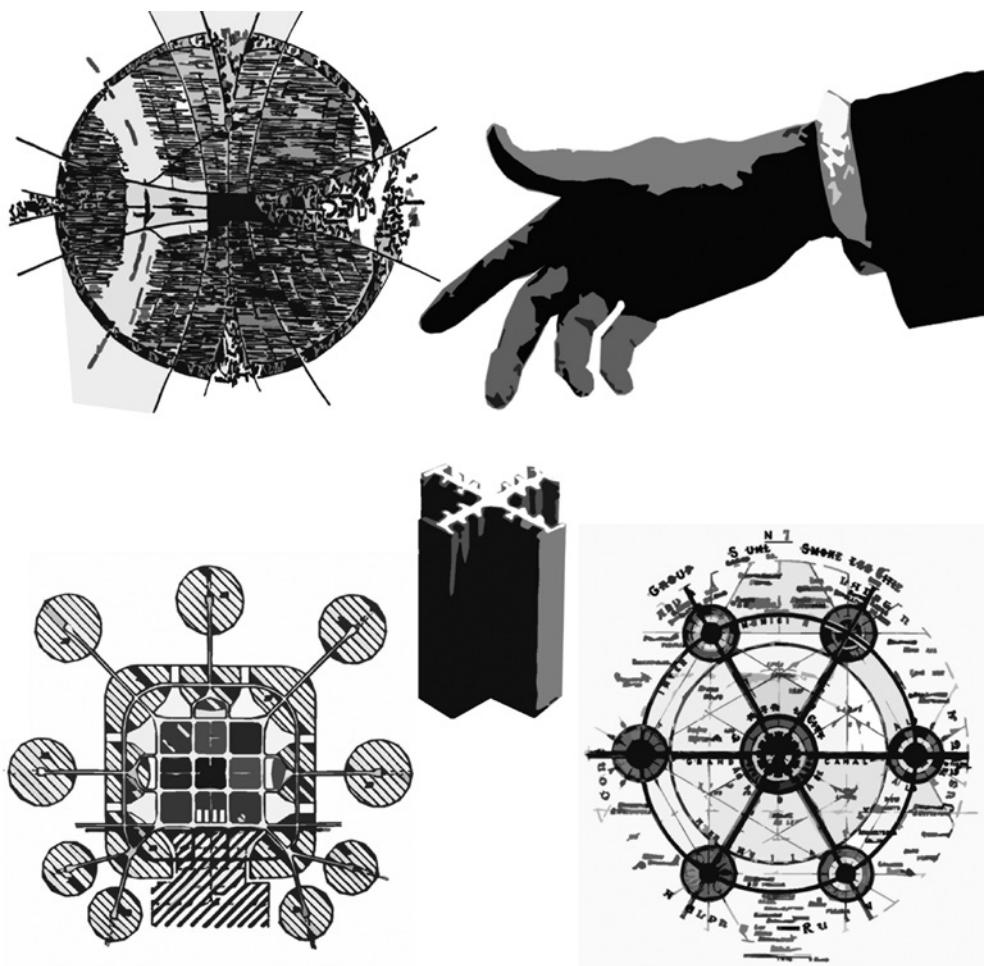
From the late nineteenth century we can observe further radicalization of theoretical statements. After dealing with classical architecture¹, unification of the revolutionary social ideas and new architectural forms followed. Both of these components became the foundation of twentieth-century modernism.

The new model of life constituted the essence of the fundamental concept for the development of twentieth-century architecture by Ebenezer Howard, who describes it in the *To-morrow: A Peaceful Path to Real Reform*. This vision had followers all over Europe who adapted it to local needs. An example of these searches was the theoretical work of Hermann Muthesius, or the broad group of Polish architects working at the beginning of the twentieth century.

Cities of the future became a kind of architectural fetish, which is more a Platonic concept than real space, which through its materiality is full of imperfections. Its development and the discourse of the initial phase took place in the area of theories and manifestos. Following the path traced by Boullée with the elimination of restrictions and perfect geometric shape, Adolf Loos announced his *Ornament und Verbrechen*. The fetish of the vision of modernity was continued in his *Une Cité Industrielle: Étude pour la construction des villes* Tony Garnier. The futuristic city was described by Antonio Sant'Elia and Enrico Prampolini in his *Manifesto dell'arte meccanica futurista*.

World War I was a turning point in society and art which theorists of architecture also could not ignore. In this period we observe the duality of attitudes which translates into architectural rationalism and expressionism. Texts about inspired architecture were written by Bruno Taut, who published *Die Stadtkrone* and *Alpine Architektur*. The mystic Rudolf Steiner created anthroposophy and co-created the architectural concept of the Goetheanum, an architecture that would not have been possible without an innovative ideology. In the early twenties the bible of rationalist modernism in his *Vers une Architecture et Urbanisme* was announced by Le Corbusier. The ideas of the international style and Neue Bauen in *Internationale Architektur* is described by Walter Gropius and Henry-Russell Hitchcock and Philip Johnson in *The International Style: Architecture Since 1922*. One of the most radical visions of modernist architecture was described by Ludwig Hilberseimer in *Grosstadtarchitektur*. A characteristic element that defines the relationship between architecture written and its impact on the reality remains the fact that Hilberseimer a few decades later was able to accomplish only a small part of his conceptual framework.

¹ As an attempt to preserve the traditional values should be regarded *Der Städte-Bau nach seinen künstlerischen Grundsätzen* by Camillo Sitte from 1889. Renaissance of interest in his theories came with the advent of postmodernism and the search for solutions to ensure continuity in the cultural space.



III. 1. Schematic ideological diagrams *To-morrow: a Peaceful Path to Real Reform* by Ebenezer Howard, *Die Stadtcorone* by Bruno Taut, the concept of satellite towns by Raymond Unwin and a fragment of *Plan Voisin* by Le Corbusier

3. Process and schema

During the twentieth century a key element of theoretical expression became not the description of formal solutions, but the illustration of an ongoing process, in which architecture is only a part. The genesis of this attitude was introduced in his diagrams by Ebenezer Howard, who made a graphical shortcut of his ideas. Le Corbusier illustrated his text with collage and pointing the forms of architecture from the products of modern technology². This form of expression, in particular, influenced contemporary urban planning, which had to synthesize a series of processes. Examples of such synthetic vision are the ideological diagrams *Die Stadtkrone* by Bruno Taut, or the concept of satellite towns by Raymond Unwin, which was transformed from a small scheme into a complex reality, with all the consequences of such attitudes.

This method of imaging the design process was also taken up by successive generations of modernist architects. Kisho Kurokawa illustrated his visions of a modern metropolis contained in *Metabolism in Architecture* using sketches and ideological mock-ups. Nowadays Vincent Callebaut describes ideas of radical eco-metropolis through realistic visualizations and diagrams.

4. Word, picture, radicalization and reality

Radicalization of expression has become a feature of fun in written architecture. It manifests the essence of theoretical expression. Due to the lack of materiality, it can be deprived of the utilitarian consequences of its existence and express the Platonic idea of total architecture, to which the whole world is subordinated.

Some radicalization has become a deliberate provocation. Was not *Voisin Plan* just this? Corbusier's vision of Paris' reconstruction in the interwar years certainly brought dreams of a new world. World War II and its destruction have changed the provocation in reality. The *Plan Voisin* in its material form has become an integral part of the city centres of Rotterdam, Berlin, Warsaw, Gdansk, Szczecin and small, once quiet towns across Europe, where people had no idea about the life of Le Corbusier.

At that point the reading of written fun in architecture ends and the play becomes a reality. It would be a truism to say that its original architecture does not begin with the project, but with conversations, books, films and plays. This is where the values pursued by a given community are determined. Here are also determined the values to which architecture should endeavour to attain. A feature of the present is the principle according to which the time for changing the fun of architecture into real architecture is becoming increasingly shorter.

² The same rule, referring to Le Corbusier applied also in his *S, M, L, XL* Rem Koolhaas.

R e f e r e n c e s

- [1] Banham R., *Rewolucja w architekturze. Teoria i projektowanie w pierwszym wieku maszyny*, Warszawa 1979.
- [2] Czyżewski M. *Trzewia Lewiatana. Antropologiczna interpretacja utopii miasta ogrodu-*, Kraków, 2001.
- [3] Gropius W. *Internationale Architektur*. München 1925.
- [4] Hilberseimer L., *Grosstadtarchitektur*. Stuttgart, 1927.
- [5] Le Corbusier, *W stronę architektury*, Warszawa, 2012.
- [6] Pevsner N., *Pionierzy współczesności*, Warszawa 1978.
- [7] Pevsner N., *The Sources of Modern Architecture and Design*, New York 1993.

JOANNA BOGAJEWSKA-DANEK*

GAMES AND ACTIVITIES WITH THE SPACE AND IN THE SPACE AS WAY TO EXPLORE THE ARCHITECTURE

GRY I ZABAWY Z PRZESTRZENią I W PRZESTRZENI JAKO ŚRODEK DO POZNAWANIA ARCHITEKTURY

S u m m a r y

The article presents the project “Science in Space”, which was implemented in secondary schools in Wielkopolska in the second half of 2014. It discusses the realization of scenarios proposed in the project, points to the successes and difficulties in conducting workshops on architecture, and presents the author’s conclusions drawn from the experience gained through those workshops.

Keywords: science in space, study of architecture, architectural workshops, lesson scenario, middle school

S t r e s z c z e n i e

Autorka w swoim artykule przedstawia projekt „Nauka w przestrzeni”, który był realizowany w gimnazjach i liceach na terenie Wielkopolski w drugiej połowie 2014 roku. Omawia realizację scenariuszy, które zaproponowała w ramach projektu. Wskazuje na sukcesy i trudności przy realizacji projektów warsztatowych dotyczących architektury. Wyciąga wnioski z doświadczenia zebranego podczas zajęć z gimnazjalistami.

Słowa kluczowe: nauka w przestrzeni, nauka architektury, scenariusz lekcyjny, warsztaty architektoniczne, gimnazjum

* M.Sc. Arch. Joanna Bogajewska-Danek, Department of History of Architecture and Urban Planning, Institute of Architecture, Planning and Preservation, Faculty of Architecture, Poznan University of Technology.

1. Ah, this architecture...

The living environment of modern man is intertwined with architecture, as we have contact with it repeatedly – every day at every hour and minute. Often a person feels much better in an urban environment than in nature. At the same time, during the whole education process (from preschool to high school) it is not taught as an autonomous subject. Architecture, according to the official curriculum, is one of the components of visual arts classes (in rather numerous company) and some other courses comprise elements of the history of architecture. In the author's opinion, the effect of such an approach on children's and youngster's education in the field of architecture is its 'invisibility'. And since imperceptible elements are not assessed, it does not matter whether they are good or bad, pretty or ugly etc. Consequently, most people do not pay attention to the surrounding buildings, both existing and emerging. Only few struggle for the quality of architecture in their vicinity. In response to this long-term lack of spatial education, the "Science in Space" project was created.

2. "Learning in Space"

The "Learning in Space" project was executed under the "Paths of Copernicus" grant of the Ministry of Science and Higher Education. From the organizational side it was hosted by Poznan University of Technology, the Association of Architects, and the Foundation of Architecture Creators. The main objective of the project was to draw the attention of young people (secondary and high schools) to the space that surrounds them. It was carried out under the supervision of professionals (academic staff, architects and enthusiasts of architecture), who, by joining forces with teachers, showed the mechanisms occurring in the surrounding space in workshops. Working in teams of two (a teacher and a specialist), they created innovative programs of educational activities. The versatility of the scenarios created in this way allow for their use in the future. It is worth noting that in order to develop these scenarios their creators did not have to meet in person. A special web platform was created for the exchange of information. It operated in two ways – an architect interested in landscape architecture could find a teacher eager to take advantage of his/her knowledge in their classroom or a teacher could suggest a topic for their lessons and a specialist in given area could join the team.

The whole process began with registration on the online platform. Then each participant could either create their own project or join an existing one (only two people could participate in each project). The next step was to fill in the scenario template with the following points:

1. issues in the course
2. a thematic path
3. the idea for the scenario (synopsis)
4. compliance with the core curriculum
5. convergence with textbooks
6. goal of the classes – what a student knows and what they can do after completing the course
7. the work plan for the preparation of classes
8. the course of lessons
9. the teaching methods and work techniques
10. evaluation
11. bibliography

Proper preparation of the script allowed for the transition to the next stage – implementation, which was to be held in two lesson hours (2x45 minutes). In the author's intention, the scenarios created (ready for use and always available on the internet platform) are to provide help for teachers nationwide to carry out interesting lessons related to architecture and surrounding space even without the presence of a professional.

Most activities related to the project were held in the first semester of the school year 2014/2015. In December 2014 a conference summarizing the project was carried out.

3. Games and activities with architecture

Within the framework of "Learning in Space", the author realized two separate scenarios at the Stanisław Kostka Public Catholic Secondary School. For the purposes of gaining substantially different experience it was decided to conduct workshops in cooperation with two different teachers leading two different subjects. It was also decided to guide it on two different levels of difficulty: concrete and abstract.

3.1. Scenario No.1 – "With architecture through the ages..."

Lessons conducted according to the first scenario were carried out in collaboration with Mrs. Anna Bielawska MA (history teacher, social studies). The primary objective was to familiarize secondary school students with architectural styles. The class was divided into five groups and each group had to build a physical model of an assigned building. Students received prepared materials for the following: Romanesque – Tum near Leczyca; Gothic – Notre Dame Cathedral in Paris; Renaissance – Villa Rotonda; Baroque – Fara church in Poznan; Classicism – Palace on the Water, Łazienki Park in Warsaw. The materials contained proper plans, sections and elevations drawn up at a scale of 1:100 (with the exception of Notre Dame Cathedral) as well as a few photos (Ill. 2).

The author expected students to respond positively to the different, unusual form of the lesson, and that they would enjoy creating the models. Indeed, this was the case with the majority of the twenty six students in this class.

One of the groups, building the basilica in Tum near Leczyca, did not even require any help. Very soon a group leader was spontaneously singled out. He had good spatial imagination and with only a few hints could efficiently construct a model. The next two groups, building the Villa Rotonda and the Palace, required more help from the author, although finally they succeeded. Creating the model of Notre Dame Cathedral in Paris proved to be very difficult. The last group, dedicated to Fara, had problems with the commencement of work, expected a lot of help, and generally approached the whole idea of creating models negatively. In the end, the scenario exceeded the assumed turnaround time and increased from two to three lessons. Most importantly, the models were created (Ill. 4) and thanks to the uniform scale, the students could see the differences in building size and compare different architectural styles. As part of their homework they had to learn about a given building and present the most important information to the rest of the class. Moreover, by analysing 'their' building, they had to determine the key characteristics of a particular architectural style.



- III. 1. Photo of the scenario “I feel the space!”, photo J.B.-D.
- III. 2. Photo of the scenario “With the architecture through the ages...”, photo J.B.-D.
- III. 3. Photo of the scenario “I feel the space!”, photo J.B.-D.
- III. 4. Model of the basilica in Tum near Leczyca, photo J.B.-D.
- III. 5. Model of the basilica in Tum near Leczyca, photo J.B.-D.

3.2. Scenario No. 2 – “I feel the space!”

The second scenario was carried out with another class and in collaboration with Mrs. Marta Dziecioł (tutor) (Polish teacher, educator). It was designed to draw attention to the neighbourhood space around us. For this workshop a theoretical introduction was necessary, thus, at the beginning of the class, students tried to answer a few questions: what is architecture and interior design,

what is the space and can we distinguish between its types, etc. In the first part of the workshop, participants constructed cardboard walls in the classroom, which formed different types of spaces (tight, narrow, low, high, empty and crowded). The use of cardboard boxes allowed for quick and easy modelling of spatial situations. In second part of the workshop, students painted boxes with basic colours: white, black, red, yellow, blue and built with them again (Ill. 1, Ill. 3).

The aim of the course was to define the space in which the individual feels best. It was important that students could learn from direct experience, they could discover in what type of space they feel good, how colour affects the perception of a given space, etc.

Pre-lesson assumptions proved to be difficult to implement due to the large number of pupils (twenty four), who unfortunately did not listen carefully to instructions, nonetheless all the planned situations were completed. However, kids at this age tend to follow, so if the loudest person opposed the whole idea, it was hard to establish any creative relationship with the rest of the group; therefore only a few pupils drew conclusions and shared them with the rest of the class

In summary, the first scenario was an imitative game with architecture, which allowed pupils to experience the scale of objects, note their diversity as well as to distinguish and describe the characteristics of architectural styles. It was hard work, even physically, which brought tangible results (physical models) that would serve others in history classes (Ill.5). The second scenario was more difficult to carry out due to the assumed interactions with pupils and the lack of tangible results.

4. Conclusion

A few months after the realization of the scenarios the experience was summed up. Several questions were put up on this occasion: is it worth playing with schoolkids in the study of architecture/architectural space, whether it is worthwhile engaging in projects bringing architecture closer to pupils, whether architects should go out to the people to teach about architecture/space, and should architecture appear as a subject in school.

The experience from the ‘Learning in Space’ project shows that the answers to those questions are not clear. The first scenario shows that it is possible to efficiently and effectively mobilize children and youngsters to experience architecture, in particular the history of architecture. The specific tasks in this scenario were completed, bringing measurable results, but at the same time leaving little room for exercising creativity. The second example shows that an excess of creativity can make an activity difficult to carry out, moreover it is impossible to assess its impact on the students’ state of mind. It can be assumed that the process was initiated in the head of each participant to pay more attention to their immediate vicinity, e.g. by consciously choosing the colours of the walls in their rooms.

After analysing the scenarios it is obvious that it is much easier to carry out planned activities in smaller groups, therefore it was easier to conduct the first scenario as work proceeded in subgroups and was specific. It can be assumed that what seemed to be an asset before implementation (two different groups and two modes of action, and so a broader context of activity) proved to be a disadvantage. Working with one group in two ways might give better results. Moreover, the combination of concrete and creative activities is probably the best combination in the long term, where the degree of difficulty increases with the age of the participants.

It is very difficult to determine whether schools should receive an additional subject dealing only with architecture. On the one hand, the pupils schedule seems to be heavily overloaded for many years and additional classes would not be accepted with enthusiasm. On the other hand, the quality of the surrounding architecture indicates that it is necessary to establish a long-term educational program for architecture. In the majority of the population there is a lack of knowledge of the fact that a harmonious environment has a positive effect on the individual's psychophysical condition. Therefore, we should put more emphasis, e.g. in the art classroom, on the perception of surrounding architecture.

Professor Sławomir Ratajski stressed in his speech for the Second Program of the Polish Radio that art and music classes are ‘one of the most important elements affecting the quality of society’¹ [1], they cause the development of innovative attitudes. Therefore it is important to ‘go with architecture amongst the people’, especially to children and young people, who are the future of our country. And, how research has shown that children learn most through play, so let’s play architecture with them.

R e f e r e n c e s

- [1] Bańska A., *Społeczna psychologia środowiskowa*, Wydawnictwo Naukowe SCHOLAR, Warszawa 2002.
- [1] Bańska A., *Architektura psychologicznej przestrzeni życia. Behawioralne podstawy projektowania.*, Gemini S.C., Poznań 1997.
- [3] Nauka w przestrzeni, 2014 (online) homepage: <http://naukawprzestrzeni.put.poznan.pl> [1.06.2015]
- [4] *Przyszłość kraju zależy od lekcji plastyki?* Program Drugi Polskiego Radia, 1.06.2015 (online) homepage <http://www.polskieradio.pl/8/3664/Artykul/1454139,Przyszlosc-kraju-zalezy-od-lekcji-plastyki> [7.06.2015]
- [5] Bell P. A., Greene Th. C., Fisher J. D., Baum A., *Psychologia środowiskowa*, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2004.

¹ Professor Sławomir Ratajski (Academy of Fine Arts in Warsaw) has appeared in radio show on 06.01.2015 ‘O wszystkim z kulturą’ (On all with culture) in which the subject was arts education in schools.

ALINA BUDZYŃSKA*

COLOUR, FORM AND LIGHT FUN: ARTISTIC GLASS IN ARCHITECTURE

FORMA, KOLOR A ZABAWY ŚWIATŁEM CZYLI SZKŁO ARTYSTYCZNE W ARCHITEKTURZE

A b s t r a c t

Art glass has a privileged position in the architectural space. This is due to its basic property of transparency, and its close relationship with light as a factor which determines form, texture and colour. Therefore playing with architectural glass in architecture is related to the most fundamental matters. This article presents several issues related to the effect of art glass on the architectural space. Each of the façade glass examples has been made using a different technique.

Keywords: *art glass, glass facade*

S t r e s z c z e n i e

Użycie szkła artystycznego bywa pretekstem do różnorakich gier i zabaw w przestrzeni architektonicznej. W artykule przytoczono kilka przykładów budowania przegrody szklanej przy zastosowaniu różnych technik monolitycznego szkła artystycznego. Każda z realizacji stanowi swoisty przykład możliwości estetycznych i kompozycyjnych szkła w powiązaniu z funkcją w przestrzeni.

Słowa kluczowe: *szkło artystyczne, fasada szklana*

* M.Sc. Arch., M.Sc. art., Alina Budzyńska, Department of Drawing, Painting and Sculpture, Faculty of Architecture, Technical University of Wrocław.

Fun is fundamental to the creative process. The pleasure that one takes in creation, the freedom and unpredictability of the result lead to freeing the creativity of the artist. When having fun, we are more willing to experiment and find it easier to tackle difficult tasks. We are more open to applying original solutions which we would normally feel were impractical, and which could well prove to be the best solutions once the technical details have been fine-tuned. The way something was created always affects the final result. The creative phase is followed by the painstaking process of refining a project, but the object has at that point already acquired a specific lightness. Fun results in brave, surprising and inspiring architecture. The space that is created forces users to break away from clichés and draws them into the fun.

Art glass is only one architectural component, but in the architectural space it takes on the role of a ‘master of ceremonies’, leading the way in the play with light and special visual effects, and introducing colour and narration.

A transparent, semi-transparent or opaque partition – monochromatic or colour – influences the architectural space by adding more values to light. This phenomenon has an aesthetic and functional purpose. Art glass may be used to modify the physical and functional properties of light, it may regulate the access of light or filter light, partly reducing portions of its spectrum.

Depending on the pattern’s density, light opaque layers, provided in the form of a raster, remove excess and protect against excessive penetration of light and sunrays.

Coloured glass reduces parts of the spectrum, which may be used, for instance, to protect the building from overheating. By changing light colour, blue glass reduces the red and infrared fragments of the spectrum and protects rooms which are exposed to excessive sunlight penetration against overheating.

Monochromatic and colour light introduces a number of additional visual effects into a space. Depending on the technique and surface smoothness, these may include mirror reflections, multiplications created by overlapping multiple glass layers, as well as hot spots. This is further enhanced by additional elements resulting from sunrays penetrating the glass layer, namely monochromatic and colour shades. Relief glass produces even more effects.

1. Indoors – Outdoors – Ornaments

Regardless of the form and techniques applied, the effect of an art glass partition on its surroundings is always significant. It depends on its location within a given space, the size of the glazing, the artistic effects applied, and lighting. Art glass façade effects can be seen on different levels: from urban development, through the nearby surroundings, to the buildings’ exterior and interior. Its presentation differs depending on the time of day and lighting. All monolithic art glass techniques¹ affect the external and internal space in a different way.

¹ Monolithic art glass, as opposed to stained-glass, is a uniform layer, without divisions or connections made using lead sections. Several techniques of building monolithic artistic partitions have been developed, namely screen printing and digital printing, enamelled glass (manual application), laminated glass, glued glass, fusing, slumping or bent glass.

‘Entering a building is a crucial moment in the process of deciphering architecture’ [1, p. 243]. The perception, environment and light – all change. You see a glass partition in a new way. During the day the glass is seen from the outside ‘with light’², and someone who is inside the building sees it ‘against light’³. This is very important as far as the design of the partition is concerned. The majority of materials and techniques used for glass partitions focus only on a single way of viewing. For instance, stained-glass is only meant to be viewed against light⁴. Monolithic art glass is usually developed using more than one technique, one of the reasons for this being the possibility of increasing the viewing range of a partition.

Glass viewed from the outside may seem completely different to what it looks like from the inside. Therefore the same partition may play different roles in shaping a building’s internal and external image, either contrasting or harmonising these images. The library building in Cottbus (Ill. 1) is an example of a great contrast between the elevation made of enamel glass and the character of the interior. The façade of the building, which is based on an irregular plan, has been completely covered with two layers of printed glass. A delicate veil of fine white raster produces an image of writing when seen from afar. The letter shapes are made of several overlapping alphabets. The resulting shapes fill the entire elevation. The printed layer eliminates mirror reflections as well as softening and unifying the glazing. A monochromatic ornament ‘changes’ depending on lighting and the distance from the façade. The printed white colour is seen from a long distance, and as you approach the building the shapes of the imprint composed of several layers become clearer. When seen from a few metres the building’s shapes become blurred and you only see ephemeral shapes of surfaces covered with fine white raster. The monochromatic elevation does not prepare the visitor for a colourful interior. Reading rooms found on several storeys are painted various shades of grey; whereas open storage areas as well as passages boast intense magenta, light green, white and black. The space on all storeys is connected with a vast round staircase. In a number of locations, information desks and leisure areas for visitors and readers can be found. The interior is colourful. The glazing is almost invisible from the inside, and provides a background for other colourful areas.

2. Light and shade

Another example of graphics on glass is Kendrew Quadrangle Café (Ill. 2) within St John’s College in Oxford, United Kingdom. The premises have a central location in the campus and due to this constitute one of its main components. They face the south and provide a view and direct exit into the courtyard. The design was created by Alexander Beleschenko, an artist living permanently in the UK. The glazing goes along the entire width of the premises. The glazing partition is made up of two layers covered with a screen printing pattern. The exterior layer is constituted by a mirror, while the interior layer is an imprint of white enamels. The pattern starts in the lower area of the glazing, at a height of 1.5 m, and increases its density as it goes up. From afar it looks like a composition of vertical elements spread irregularly on

² Viewing glass ‘with light’ – the source of light is located on the same side of the glass partition as the viewer.

³ Viewing glass ‘against light’ – the source of light is located on the other side of the partition.

⁴ ‘Against light’ for an external partition means that during the day the viewer is inside the building. At night, when the interior is lit, the partition is seen from the outside of the building.



- Ill. 1. Herzog & de Meuron, Brandenburg Technical University Library, Cottbus, 2004
 Ill. 2. Alexander Beleschenko, Collage Café, St John's College, Oxford, 2011, <http://www.beleschenko.com/>
 Ill. 3. Martin Donlin, The Empire Theatre, Liverpool, 2002, <http://martindonlin.com/portfolio/the-empire-theatre-liverpool/>
 Ill. 4. Jaap Drupsteen, Netherlands Institute for Sound and Vision, Hilversum, 2006

a glass façade. When you stand a few metres away, you can see bits of the surroundings and passers-by reflected in the mirror paint.

The white and the mirror layer overlap, creating unique effects. While sunshine penetrates, portions of the mirror layer cast a shadow on the thin white paint layer, which provides additional values to the building. Vertical paint elements constitute a spatial curtain. The mirror layer, reflecting sunrays, protects the interior against excessive exposure to sunlight and overheating.

3. Colour and form

The wall of the back entrance into an extension built for the National Theatre in Liverpool (Ill. 3) in 2002 was covered with glazing designed by British artist Marina Donlin. This monumental abstract composition, which passes through three storeys, is composed of several flat interpenetrating forms of white, red and blue. The artist was inspired to play with this design by a theatre ticket found on the construction site during a visit. The design combines screen printing, manual enamel application techniques and sandblasting. The paint layer has varied transparency. The upper and lower areas are constituted by semi-transparent sandblasted surfaces. The middle part, made of screen printing and manually applied paint, is opaque. These varied transparency levels, combined with the variety of texture and colour, add life to the composition and emphasise its decorative function. The fact that the glazing faces north explains why the red colour was used. The glazing is located along the axis of a street at the back of the theatre. This free composition is in contrast to the brick walls in the yard. Inside the building, the view of the glazing is limited. It can only be fully appreciated in a small space between the exit and lift. Parts of it are seen from the mezzanine between the 1st and 2nd floors.

4. Narration and relief

Art glass designers and architects have been introducing figurative elements into façade compositions increasingly more often. One interesting example is the Netherlands Institute for Sound and Vision in Hilversum (Ill. 4). The building's functions are: museum, exhibition, office and archive. It was designed as a cube, half of which is underground, where car parks and the storage area of the archive are housed.

Almost the entire building is covered with glass panels made using the slumping technique⁵ [6], the only exception being parts of the elevation located on the ground floor, where a strip of transparent glazing can be found. The glazing has been put in a section of the northern and southern façade, and along the width of eastern façade. In the office area in the western part, panels including art glass are combined with transparent float panes.

The elevation was originally designed as a colourful layer covering the entire façade. The design was prepared in cooperation with graphic designer Jaap Drupsteen. The façade glass is a combination of slumping and colour enamels. 750 scenes from the institute's archive have been impressed in the façade glass. Usually, a single scene is put on two adjacent rectangular sheets.

Coated relief glass have been made using innovative solutions which combine thermal fixing of enamel and shaping glass in a single instance of firing. A colour layer, prepared digitally beforehand, was first put on glass in a specially developed printing machine. At the same time, matrices engraved in an MDF board were created. The boards were impressed in an aluminium oxide layer, with which the furnace bottom was lined. On the relief impressed in the floor, glass panels were laid, covered with colour pigments, and burnt at 800°C.

⁵ Slumping – a glass treatment technique the aim of which is to make a relief out of a flat pane. This technique uses loose or solid forms. It is applied for small glass forms as well as large projects.

The colour layer, which covers the façade, is seen in the museum space in only a few places. A large area of it has been exposed in the finial of the multipurpose space located right behind the main entrance into the building. This space is spread between the office part, located on the western side of the building, and the museum part on the eastern side. The interior of the hall is painted in light colours, combined with orange. The background for the multi-coloured glass and orange seat elements and underground interior is provided by light grey stone floors and white plastic linings on walls. Glass constitutes an important decorative element of the interior. The multi-coloured transparent layer is reflected in the adjacent glass wall, optically increasing the glazing and magnifying the effect. Colourful reflexes are also dispersed by the white plastic lining which covers the museum area wall descending by steps. An important interior element is the glass wall going through all the storeys, on which faces of media personalities have been placed, made using black and white screen printing.

The above examples show only some of the aesthetic and functional possibilities provided by monolithic composition glass. They may be used to analyse some of the issues related to the essence of and the reasons for using an art glass partition in a building façade. Looking at the use of art glass as fun is fully justified, as most of the referenced designs are about fun. Creating an alphabet for a non-existent language and covering an entire building with such writing; playing with geometric mirror planes; creating large abstract compositions inspired by an accidentally found theatre ticket; or impressing important events from Dutch television and cinema in glass as a relief are enough evidence to conclude that art glass may be a starting point for having good fun during the creative process, but also the architecture resulting from such process may provide fun.

R e f e r e n c e s

- [1] Basista A., *Jak czytać architekturę*, Universitas, Kraków 2012. p. 243.
- [2] Basista A., *Notatki architekta na temat kompozycji*, ASP, Kraków, 2001.
- [3] Hoffmann B., *The Impact of Digital Printing with Ceramic Inks on Decorative and Functional Glass*, Glass International, 2013.
- [4] Moor A., *Colours of Architecture*. Octopus Publishing Group, London 2006.
- [5] Petrie P., *Glass and Print*, A&C Publishers London, 2006.

MARCIN CHARCIAREK*

PLAYING “HIDE AND SEEK” OR PENETRATING ARCHITECTURE

ZABAWA „W CHOWANEGO”
CZYLI DRAŻENIE ARCHITEKTURY

A b s t r a c t

Creating a relationship between space and the matter of a work of art has resulted in the fact that the relationships between the exterior and the interior are more important than ever before during the development of modern architecture. Together with the modernist revolution, the engagement of creators in surpassing the threshold of the visible exterior to enter the purely internal plane became the basis for the most radical manifestation of freedom and everything that is connected with defining the new architecture.

Keywords: carving, matter, stereotomy

S t r e s z c z e n i e

Nadanie relacji pomiędzy przestrzenią a materią dzieła spowodowało, że kwestia związków pomiędzy zewnętrznym i wewnętrznym nigdy nie była tak ważna, jak w czasach rozwoju architektury współczesnej. Właściwie należałoby powiedzieć, że począwszy od modernistycznej rewolucji zaangażowanie twórców w przekraczanie progu widzialnego zewnętrznego na plan czystoewnętrzny stało się podstawą najradikalniejszej manifestacji wolności i wszystkiego, co można by było nazwać definowaniem nowej architektury.

Słowa klucz: drążenie, materia, stereotomia

* Ph.D. Arch. Marcin Charciarek, Department of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

1. “A magic box”. Architectural space is defined by its limitation, a kind of confinement in the form. Architecture is a *limited* space whose meaning and understanding are expressed by the matter of the limitation chosen by the author. The universalism of this definition entails understanding this architectural space which, through being encapsulated in the form, is an interpretation of some archetype based on relationships between the “closed” exterior and the “open” interior. This architectural game of “hide and seek” is situated on the opposite pole of another architectural ideology – that based on an open and abstract architecture dematerialised by Le Corbusier’s five points of architecture.

For those who believe in creating an architectural “void in the mass” this is simply a game of *subtraction*, for others a game of “choosing”, “carving” in a predefined matter. Still others treat it as the formal rigour of a “magic box” – a *boîte à miracle* which serves to deprive architecture of its external content for the benefit of demonstrating internal forms. For all supporters of this type of discipline architecture consists in rejecting the rule of discovering other original forms in the “visual culture” of the 20th century – oculocentrism. The widely disputed Brother Claus Field Chapel in Wachendorf (2006) created by Peter Zumthor and carved from one piece of concrete seems to be an example of just such a programmatic negation when viewed in the context of the entire programme formalism – a conviction that apparently art does not need expression, the conviction that it is not only useless, but even harmful. This is confirmed by the architect and phenomenologist Juhani Pallasmaa – an advocate of tactile values in architecture and admirer of Zumthor’s works.

The history of architecture teaches us, however, that the division is compatible with the bipolar concept of architectural space – one rule revolves around creating architecture through the prism of a solid or the play of solids, while the other – antagonistic – defines the value of void in a solid. Steen Eiler Rasmussen even claims that some architects seek the “structure”, others the “void”, and that some architectural periods tend to create solids while others prefer “voids” [4, p. 48]. The critic gives the example of the Gothic, with its “structural” cathedrals, and the Renaissance, represented by the concept of “voids” of Michaelangelo’s St. Peter’s Basilica in Rome. Still another group of “hidden objects” includes the monolithic temple of Bet Giyorgis carved in the 13th century from a variation of limestone which was commissioned by the emperor of Lalibela.

2. Mass and void. The establishment of the relationship between the space and the matter of a work of art has resulted in the fact that the relationships between the *exterior* and the *interior* are more important than ever before, at the time of the development of modern architecture. Despite artists’ involvement in forming the “visible”, the most radical manifestation of independence and what can be called defining the new architecture was surpassing the threshold of the *exterior* and entering the world of the *interior*. The certainty with which Adolf Loos spoke about the “barbaric splendour” of architecture one hundred years ago expressed his firm belief that modern architects also have other, non-formal standards of excellence. The ideal of rational restraint is built upon metaphoric rhetoric and is inseparably connected with the classical and monumental tradition. Loos’s disregard for the avant-garde was only a prelude to attempts at defining the identity of architecture. In this way he established a clear and consequent continuity – a building should be *silent on the outside and speak only inside*. Through a free play of **Raumplan** the Villa Muller in Prague (1928) and the house of Tristan Tzara in Paris (1925) introduced modernism into the world of architecture created from solid matter enclosed by the impassable for the eye barrier of the building’s walls. The

search – a characteristic feature of the whole period of modernism – in Loos's works took the form of a logical structure for the interior, discovering forms and economical spaces similar to the function of a house. Thanks to this tradition we can quote Loos as saying: only two small elements belong to architecture: *the monument and the tomb*. Everything else, which serves a particular purpose, needs to be excluded from the kingdom of art [2., p. 153].

A similarly radical approach to the method of building modern monoliths is today observed in the works of Alberto Campo Baeza. The road to success is the rule of interchangeability and differentiation of architectural definitions in relation to tectonic-stereotomic deliberations. An example of this today may be those objects in which an important part of creating the architecture is celebrating the properties of **mass** [*gravidad*] and **void** [*vacío*] – light and dark structure. According to Baeza, the strength of existence of every space lies mainly in mass and void. This is because creating a dialogue in architecture seems to be creating a metaphoric connection between the matter-content with the form – “the content and the vessel”. Beaza's method, in its search for the essence of spatial connections, is a return to Loos's idea of modernism – it gives a new dimension to the cross-section drawing representing the third dimension, as opposed to a projection as a two-dimensional confirmation of the correctness of functional solutions. The architectural idea, which must generate a form, means for the Spanish architect generating a composition, the arrangement of forms and then solids in the physical substance and appropriate construction.

Raimund Fein also relates to Adolf Loos's theory of *Raumplan* in his work titled *Design by Theory*. The three-dimensional design method described by the architect is in line with the idea of architectural space created by a sequence of “penetrations”. He writes: [...] *Space is the void defined by what fills it, or surrounds it*”. In the three-dimensional – stereotomic – method space is understood as an element defined from within, as if the space was carved from a three-dimensional solid mass. According to this theoretical approach space is the void which remains between the “mass” of walls and ceilings [1, p. 24].

3. A cave. There is also another starting point to understanding architectural space. There is the phenomenon of the skyline which separates the shape created “underground” or “under the sky”. This is a **cave** (or grave, bunker, bulwark, tunnel) providing first shelter and safety – a hollow space, connected with soil or rock (later with reinforced concrete) and there is a **shed** (later house, palace, monument), which is a manifested form, connected with the matter of bones or wood (later bricks, steel) revealing to the observer the logic of the matter and the shape of the building it is formed with. The archetype of *cave* creates a world of mass, darkness, void and mystery, seclusion from the outside world – it is stability and is connected with the foundation. *Cave* needs light, in a *grotto* light plays a crucial role – the role of a guide showing “the ultimate purpose to the quest” and “the shape of the place” in the interior. According to Raimund Abraham the *cave* refers us through the universe of the mythical element to the primacy of the language, the mystery of the ritual, work, wall, or solid structure. It originates the genetics of this architecture which is based on a return to original natural rules, to the simplicity of forms and their purpose.

An important role in this trend was played by André Bloc of the “*Éspace*” group, with his concept of a concrete-brick amalgam as an “inhabited sculpture” (*Sculpture habitacle nr 2*, 1964; *La Tour*, Meudon, 1966). Unhampered forms (“follies”) were supposed to become a space which organically created the full virtue of humanism in architecture, close in



Ill. M. Charciarek, *Museum*, stereotomic sketches, 2004–2006.

meaning to the original sense of “existence” in architecture. The time of Bloc’s formal deliberations is also drawn attention to by the moment of discovery of the strength of the vivid architecture of bunkers of the Atlantic Wall by Paula Virilio from the “Architecture Principe” group and the meaningful significance of “survival” in the monolithic “grotto” of the Sainte-Bernadette-du-Banlay church in Nevers (1966). For both French architects, as with the work of a sculptor, there is a rule which is subtle but critical for mastering the brutalist work of art: when transposing a shape in one material, one needs to create this shape from within towards the exterior. For Bloc and Virilio, the form is in a way a premonition of the surface, which a sculptor attains by imagining that he is inside the monolith standing in front of him. The continuation of this creation is the house of *La Trufa* in Spanish Laxe built by the Ensamble Studio in 2010. The amorphous building by Antón García-Abril, undefined in terms of form and situated on a seaside cliff, is an attempt at searching for the integration of architecture (a hole in the ground) with the nature of a seaside cliff using an organic, non-defined image of concrete substance and the surrounding ground.

In the studio of Mauricio Pezo and Sofia von Ellrichshausen, at each stage of thinking, making drawing notes and designing, architecture is an attempt at identifying the properties of the context for extracting the form from the substance of absolute nature. In the practice of the Chilean couple this process ends with creating a physical building – an acknowledgement of “the continuum” of matter and confirmation of the fact that architecture as a part of the landscape structure complements its morphology. In the cubical building of the *Casa Poli*, concrete plays the role of exhibiting the “virgin” relationship between nature and architecture, between the structure of the terrain and the expression of the monolithic concrete. The cubical building not only becomes a part of the surroundings in its applied articulation of openings, walls, entresols and ceilings, but also plays the important role of joining the elements of the external and internal worlds. The *Casa Poli* seems to be a fragment of its environment in which it exists and rediscovers the meaning of the charm of architecture rooted in a coherent relationship with nature, in its immanent need to coexist. Concrete and rock are the main elements showing the meeting of two monoliths present in their physical form, without symbolising anything except for mutual interchangeability of meanings [3, p. 138].

This stylistics is continued in the works of architects from the Portuguese group Aires Mateus, which includes their involvement in formal experiments whose aim is to mark the significance of architecture as a thing carved out of a solid landscape. In the house in Alavalade (1999) designed in a square, the thickness of the external and internal walls as well as the arrangement of functions exhibits an affection for traditional “centripetal” organisation of space in Mediterranean houses. The entire structure of this approach is connected with a conscious underlining the importance of the building material of part of the architecture. A wall as an element expressly founded in the ground implies that the two dependent and interchangeable substances are strongly mutually interdependent like shapes in a negative picture or in a sculptural relief.

4. Stereotomy. Modern architecture became a sculpture which you can enter, and even inhabit. In order to fully understand the spatial concept of a building it is necessary to understand architecture via its cross-section. The term **stereotomy** connected with this notion, which means “carving in stone”, today seems, however, more appropriate to the method of formation of concrete monoliths. Concrete as “liquid stone” or “hollowed stone” is most predestined to creating the impression of a structurally homogeneous sculpture, in which the

architect tries to express an individual method. Thanks to the idea of monolithism, which gave the matter the basis for instantaneous transformation of thoughts into forms, concrete brought architecture closer to the art of free choice, in which the artist presents both the inner essence of the building as well as what is *ideal* about it. While in sculpture, monolithism created a pretext for using the three-dimensional way of thinking about construction, structure and form freely, in architecture unsurmountable states of possibilities of monolithic matter defined the boundaries of modern atectonics. Modern artists look at themselves as well as at former achievements, where among sculptural architecture those were distinguished which attained the status of model residential sculptures – the concrete secession of Barcelona tenement houses, the *Las Pedreras* (“quarries”) by Antonio Gaudi or the *Goetheanum II* (1928) by Rudolf Steiner in Dornach, typical of early modernism. In particular, the coherence of shape of *Goetheanum*, exposing the relationship between voids and masses, became the example authenticating the meaning of purely intuitive gestures in architecture, which, in turn, authenticate the natural image of architecture made of sculptural concrete.

Among architectural motivations, one of the basic five notions relating to the stereotomic essence, “the game of confinement in the form” is the *labyrinth*. The intended freedom to form and the instinctive, supra-rational articulation is responsible for the shape of this space, which is not a continuation of the mythical symbolism of Dedal’s building or the Piranesian *Carceri*, but is responsible for the sources of specific trends in expressionism. Among all kinds of labyrinth systems an appropriate interpretation entailed in the structure of a building is the City Cultural Centre in Ofunato (2008), a project created by the Chiaki Arai studio. The concrete monolith, resembling on the outside a biomorphic metaphor (crustacean), in its interiors reveals additional, unique shape interpretation of a rocky marine morphology. The sculptured body of the building creates a concrete pattern of arches of Anatooshi-Iso – a local tourist attraction composed of eroding inselbergs embedded in the ocean. Similarly, the interiors of the foyer and the auditorium, clearly geological in character, resemble a labyrinth in their tectonics of contours and grottos which fulfil the role of topophilia due to their monolithic representation – a subjective, emotional reception of the identity of the place and its material character.

A similar reference to the concrete labyrinth can be found in the works of Fernando Menis. The *Magma* Congress Centre (1998) in Tenerife, the Holy Redemeer Church in La Laguna, or the almost completed Congress and Culture Centre – CKK Jordanki in Toruń – are all underlining the isotropic properties of concrete and stone: carving, hollowing, grooving, forging, shifting figures – decomposing in order to highlight the labyrinth properties of its architecture. Each time the search for a new identity for concrete through reinterpretation of the monolithic figure serves the purpose of exhibiting the full homogeneity of deformed figures. As a result, the mixture of concrete and volcanic rock *picón canario* (la Laguna) invented by the architect, or the conglomerate of concrete and bricks (Jordanki) not only gives the buildings their mimetic character, but also takes on a noise and light absorbent function, which further brings out the mystery of the “geological” structure.

A project created in 2004 for the X International Architecture Biennale as part of the confrontation on the new location of the Cricoteka – the Museum of Tadeusz Kantor – is a suitable point of reference in deliberations on the idea of *boîte à miracle*. The reduced concrete and cast cuboidal solid interpreting the artist’s thought on the role of objecting to the rule of imposing the “meaning” on the form in modern art became its ideological principle. The monument of the Cricoteka tries to do without light, colour, visible structure, and framework.

According to Kantor's will it is to be a manifesto against expression, and so should be devoid of any aesthetic values and engaging content. The museum is designed to be simply a material object – a thing rejecting any external message. The content for this form is a metaphor hidden in a labyrinth of cast-iron. The idea behind penetrating this substance (the cast-iron) is to involve the spectator in the game of discovering invisible meanings: "the house", "the tunnel", "the wandering" – presented in parts on stereotomies selected by the author. The building has no traditional ceilings, walls, or windows as its essence is celebrating the aesthetic idea formed by thickness, weight, solid, and void. This thought is the conviction that architecture means defining space by means of a "purpose" (rooms) and "the way" (exhibition). The project is also a presentation of a metaphoric "house" filled with "rooms" – the mysterious and intimate space providing shelter for objects and ideas.¹

R e f e r e n c e s

- [1] Fein R., *Design by Theory*, [in:] *Definiowanie przestrzeni architektonicznej. Projektowanie architektury a teoria*. Kraków 2002. p. 24; [also:] Project *Troll* in Competition for Center of Art and Theatre in Sundsvall in 2008 (4 Award).
- [2] Loos A., *Architektura*, [in:] *Ornament i zbrodnia. Eseje wybrane*, Tarnów 2013.
- [3] Pareyson L., *Estetyka. Teoria formatywności*, Kraków 2009.
- [4] Rasmussen S. E., *Odczuwanie architektury*, Warszawa 1999.

¹ The project in 2004 was awarded the Grand Prix of the X Architecture Biennale, entitled "Architecture – the art of the future. The place of art in the city".(authors: Marcin and Katarzyna Charciarek).

MICHał CHODOROWSKI*

THE ROLE OF THE ARCHITECT – TO SAVE OR TO PLAY?

ARCHITEKT (Z)BAWI?

A b s t r a c t

The 20th century was a period of many revolutions, including in architecture. On the one hand, public engagement with the second search for a new aesthetic led to a social experiment with all its consequences and subsequent criticism. During this experiment the Demiurge architect, the artist, the practical joker, and many other roles appeared. Now the question is whether the role of the architect is to save or to play.

Keywords: Theory of Architecture, Modernism, Post-Modernism

S t r e s z c z e n i e

XX wiek był okresem wielu rewolucji, m.in. w architekturze. Z jednej strony zaangażowanie społeczne z drugiej poszukiwania nowej estetyki doprowadziły do eksperymentu społecznego ze wszystkimi jego konsekwencjami oraz późniejszą krytyką. W czasie tego eksperymentu zaistniał architekt demiurg, artysta, żartowniś i wiele innych. Nasuwa się pytanie czy rolą architekta jest zbawić czy bawić.

Slowa kluczowe: teoria architektury, modernizm, postmodernizm

* M.Sc. Arch. Michał Chodorowski, Department of Housing Architecture, Faculty of Architecture, Białystok University of Technology.

The architect (and also the urban planner) as a creator creates in the cultural space of their time. And so their thought, words and form should be considered in context. There have always been currents, dogmas, and trends in which the creator created, discussed, or against which they rebelled. This paper aims to draw attention to the form of selected works in the literature of the theory of architecture, an indication of the role that marked the creator. The research material included in the paper covers example extracts of architectural manifestos. The form of these texts and the literary means employed are inscribed in the cultural context of a given period and at the stage of literary works become part of the accepted canons.

In the first half of the 20th century there was a need for a cultural change and for the existing patterns to be replaced. The political situation in Europe favoured revolutionary movements, and the next stage of the industrial revolution focused on technological progress. The then avant-garde creators were eager to use these new techniques. The atmosphere of the era favoured the Futurists, who were focused on the future and building new revolutionary utopias. The Modernist movement, whose leading representative was Le Corbusier, created the avant-garde movement in architecture in the 1920s. Le Corbusier's urban and architectural work, as well as his texts, are part of this trend briefly described above. The text to be considered are excerpts from the book "Towards architecture" as the leading manifesto of the era on architecture and urbanism, as well as one of the most outstanding works of the genre¹. During my studies, not only the content of the book interested me, but also the manner of its writing and the methods of transmission it used. The material and conclusions will serve in confrontation with the analogously conducted analysis of selected passages that followed modernism, although these are not only postmodern.

In his book "Towards architecture", Le Corbusier "plays" with form. The very structure of the book is non-linear, consisting of a single stand-alone chapters. The absence of linearity permeated many contemporary avant-garde works, including cinema. The book also presents images, and an additional treatment includes its unusual statements. The chapters deal with academic issues, but also issues related to those technical achievements which lead to further considerations². Le Corbusier used the latest mnemonic techniques, played with the form of expression, and changed the person of the narrator to create a sense of connectedness with the reader. The form of the manifesto enabled the use of equivalent sentences, which makes the text more "mechanistic". The text contains the bare minimum of content, especially in the titles. The slogans the reader will remember will not necessarily be understood. There are of course more academic parts, but the author still maintains a peremptory tone leaving no room for controversy. At the same time he creates a new architect on a mission of revolution, to overthrow the old system and build a new better world. This type of narrative is on the one hand very evocative, while on the other its form does not leave much room for independent thinking, and assumes one correct view.

An interesting characteristic in the form of a manifesto was created by Krzysztof Sołoducha in the introduction to the book *Theories and manifestos of modern architecture* [2], yielding an attractive manifesto: "A proneness to intellectual violence, religious fervour, the military strategy of a jealous god who wants to be alone in the arena, to sweep away all opponents, to win souls, to build an order of followers, a sect of fanatical supporters by

¹ After Reyner Banham *Toward a new architecture* is the only book about architecture being the great work of twentieth-century literature. After Leśniak A., *Nota edytorska do wydania polskiego*. [3, p. 5].

² M. Leśniakowska, *Oczy Le Corbusiera* [3, p. 28].

reducing and mocking the enemy”³. And the author of the article would attribute these characteristics to Le Corbusier’s manifesto while at the same time appreciating his artistry.

The first half of the 20th century saw the formation of new moves to improve living conditions in cities, whose ideas were incorporated into the work of the International Congress of Modern Architecture (CIAM) in the 1930s, while combining it with the postulates of the avant-garde movement in architecture. The postulates for healing were put forward by socially engaged activists: doctors, hygienists, social workers – and finally architects dominated the final debate. CIAM mimicked the structure of the Communist Party, with its chief committee (CIRPAC), responsible for propaganda activities, imitating solutions from the revolutionary Soviet Union, although directed towards activities within capitalist societies [4, p. 26–27]. The increasing impact on the organization of the Swiss-French group in the 30’s and 40’s marginalized architects from Germany and Great Britain, and aided the creation of local centres of modernist thought in the UK and Scandinavia [4, p. 163–168]. The space for pluralism grew ever smaller, as was noticed by some activists. The international influence of CIAM in the postwar period led to the formation, as defined by Charles Jencks, of the “mechanicist modernist church”. During this period, the architects received legal instruments for the realization of the principles of “healing” towns and constructing new projects, especially housing, regardless of the authorities. The scale of these projects, their mass character, was worthy of the architect demiurge. In contrast, the architect as “saviour” was defeated, especially criticized in terms of modernist urban planning and socialist and modernist dehumanized housing estates.

The directions that emerged in the period after modernism lasted in a “relationship” with modernism, or criticized and opposing it, whether continuing or expanding it. The multitude of architectural directions makes it difficult to formulate an unambiguous position. But Jencks saw architecture, in the pluralism which arose after the departure of modernist, as a new force corresponding to today’s society. In this part will be presented extracts from two texts by Robert Venturi and Coop Himmelblau.

Robert Venturi in his text “Complexity and Contradiction in Architecture” directly refers to his manifesto as mild. It is a manifesto in which he confronts his vision of architecture appearing in the first person (“I understand”, “I strive”, “I prefer”, “I’m for”) with the state described. He creates a whole string of slogans – antonyms relating to the forms which determine his relationship to the “purist language of orthodox Modernist architecture. In the passage, “I’d rather mixed forms than *purist*, compromise than *pure*, distorted from *straightforward, ambiguous* rather than *understandable*, perverse and impersonal, boring and *interesting*, rather standard than *designed*, including, and not *excluding*, exaggerated rather than simple, rudimentary and innovative, rather ambiguous and inconsistent than simple and clear...” the author expressed his views on the principle of confrontation of his ideas in relation to the demands of the modernists. Knowledge of modernist postulates in this case allows Venturi’s assumptions to be understood, it is a text that is based on a polemic with the current state. The internal contradiction is housed in the adopted direction – architectural complexity, based also on the context of cultural transformations. Venturi’s text is in its own way perverse, and expresses the fundamental idea of his time taking into account the richness and complexity of the modern world; it indicates a new plane of intellectual inquiry (concepts

³ K. Soloducha, *Od Wydawcy*, [2, p. 15–16].

like ambiguity, complexity, contradiction and compromise and at the same time limiting order)⁴. The architecture of this period is the opposite of the purism of modernist architecture, and without understanding one it is impossible to fully know the other and appreciate its intellectual achievements.

Opposed to the peaceful tone of Venturi is a fragment of the “fiery” manifesto of Coop Himmelblau. This short text from the 1980s, which is difficult to treat as a set program, but rather in the category of artistic happening, which it actually accompanied⁵. It evokes emotions, but besides the slogan it is difficult to define any direction. According to the manifesto architecture should be “*cavernous, fiery, smooth, hard, angular, brutal, round, delicately colourful, obscene, sensual, idealistic, charming, repulsive, wet, dry, and pulsing.*” The use of so many contradictory but radically formulated epithets, in many places relating to sexuality, and contradictory meanings, is meant to arouse emotions in the audience. The form of the happening precludes the need to understand, “pointless expediency” is an assumption in itself. The author of the text ends with the sentence “architecture must burn”⁶.

Nobody expects any longer the idealistic vision of the architect saviour who would change the world. The last half-century has revealed a remarkable diversity of creators’ research fields corresponding to a pluralistic society. Each of these texts was created in its time and used the “language” of recipients of that period. Le Corbusier’s text, despite its craftsmanship, is now exclusively associated with an agitator’s style. Venturi’s text does not arouse as much emotion as it did during the uprising and polemics of the 70s, as with Coop Himmelblau’s happening from the 80s.

But precisely therein lies the fun. The architect “plays” not only in designing, but also in describing his intellectual exploration and presenting his way of seeing to others, thereby enabling controversy in space.

R e f e r e n c e s

- [1] Jencks Ch., Kropf K., *What is postmodernism*, London, 1996.
- [2] Jencks Ch., Kropf K., *Teorie i Manifesty Architektury Współczesnej*, Warszawa 2013 / *Theories and Manifestoes of Contemporary Architecture*, Wiley-Academie, A Division of John Wiley & Sons LTD., 2006.
- [3] Le Corbusier, *W stronę architektury*, Warszawa 2012.
- [4] Mumford E., *The CIAM Discourse on Urbanism, 1928–1960*, London, 2002.

⁴ R. Venturi, *Złożoność i sprzeczność w architekturze*, [2, p. 57–60].

⁵ The text was accompanied by a Coop Himmelblau architectural happening in Graz. Its main element was a blazing wing steel frame with a nozzle suspended in the air from which flaming gas jets burned.

⁶ Coop Himmelblau, *Architektura musi płonąć*, [2, p. 313].

MONIKA GAŁA-WALCZOWSKA*

**THE GAME OF SOLIDS
IN THE ARCHITECTURE OF A CONTEMPORARY HOUSE
– THE ART OF INTERPRETATION OF GEOMETRY**

**GRA BRYŁ
W ARCHITEKTURZE WSPÓŁCZESNEGO DOMU
– SZTUKA INTERPRETACJI GEOMETRII**

A b s t r a c t

Contemporary architecture, perceived as a work of art, uses the abstract language of geometry in search of completeness, harmony of proportions, contemporary concept of beauty and, above all, novelty, and originality of forms and architectural composition. The architecture of contemporary single-family houses is based on Euclidian geometry, as well as its transformations and decomposition. The character of the architecture is also created by the material, in case of the houses discussed here – concrete. The architectural form of a house, enhanced by construction and plastic qualities of the building material, often creates high quality architecture, representing architectural poetry.

Keywords: *contemporary architecture, single family house, play of volumes in architecture, concrete architecture poetics*

S t r e s z c z e n i e

Architektura współczesna, postrzegana jako dzieło sztuki, posługuje się abstrakcyjnym językiem geometrii, w poszukiwaniu pełni, harmonii proporcji i dzisiejszego wymiaru piękna, a nadto wszystko nowości, oryginalności formy i kompozycji architektonicznej. Architektura współczesnych domów jednorodzinnych czerpie z zasobów geometrii euklidesowej, jej przekształceń i dekompozycji. Charakter architektury współtworzy także materiał, w omawianych domach – beton. Forma architektoniczna domu wzbogacona przez walory konstrukcyjne i plastyczne betonowego budulca stanowi niejednokrotnie o wysokiej jakości architektury, uosabiając architektoniczną poezję.

Slowa kluczowe: *architektura współczesna, dom jednorodzinny, gra brył w architekturze, poetyka architektury betonowej*

* Ph.D. Arch. Monika Gała-Walczowska, Chair of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

*The world has not been created once and for all
but is created anew every time an original pair of eyes looks at it.*

Marcel Proust

1. The game of Architecture

Both in the past and contemporarily it is first a thought, a concept and later an idea and its creative development in a project that decides on the shape of a building. *Architecture is a game of solids in one's imagination*, Dariusz Kozłowski says [7, p. 27]. A *pre-image*, which appears in the author's imagination, is consolidated by drawing and defined by geometry, which is called the language of architecture. *A play of geometry, maybe a game of solids, has many forms to be chosen: first there is the cube, the cuboid, the pyramid... there is also the sphere, still in the game. Later, there is the space of multiplication, shapes between shapes and their decomposition* [12].

Through the architecture of the contemporary house, architects play a *game with a place*. They analyse the conditions of a location – a landform, compass directions of the world, vistas, the shape of a plot – and they consciously start: a neutral or, on the contrary, incisive and contrasting, and sometimes synergic, relation with a landscape.

The quintessence of the art of architecture is the *game with architectural form*, defined by geometry and a certain compositional rule: an elementary solid, juxtaposition of solids, cutting out of solids, and sculptural deconstruction of solids. *The game with construction* is a means, which guarantees the durability as well as originality of the architectural form, which enables an unusual way of connecting architecture and the landscape.

The game with material has always been a challenge, reflecting, over the years, local building habits. Nowadays this kind of *architectural game* surprises us with a wide range of global possibilities. *Contemporary art has discovered the value and fecundity of material*, Umberto Eco says, *artists have always known that they must hold a dialogue with the material and that they have to find a source of inspiration in it* [1, p. 403] In this meaning concrete and its myth, created by Le Corbusier [9, p. 88–89], seem to have a special importance. Nowadays a continuation of the modern *architectural game with concrete* is visible. Concrete enables the most sophisticated shapes to be created. Concrete, a material of great poetic potential, interacts via *the game of structures* – roughness vs. velvet surface, the *game of colours, shades*, and also *the game of contrasts* between the mass of a building material and the transparency of glass.

The game of light, which in architecture might be treated as the most subtle “material”. *Light*, Dariusz Kozłowski says, *creates immaterial architectural forms, which complete material*¹. In architecture light brings out the beauty of proportions, the sophistication of shapes, the diversity of textures. Together with aerial perspective, light enables the deepness of the architectural space to be experienced.

¹ P. Pięciak, an interview with Prof. Dariusz Kozłowski, *In the World of Fiction, Opera, Magnificent Lie and Concrete*, [at:] www.architekturabetonowa.pl [date of admission: 21.06.2015].

2. The game of solids in the architecture of a contemporary house

We can talk about the **game with an elementary solid** when the shape of a house is described by a *cohesive solid*: a cuboid, less often a cube or a cylinder. *In a world of forms simplicity defines the highest level of explicitness*, Juliusz Żórawski says, *in that way simplicity is a synonym for calm, certainty, resolvedness*[17, p. 78]. Architects Graça Correia and Roberto Ragazzi undertook this kind of game, when designing **Casa Gerês**, completed 2004–2006 in the Peneda-Geres National Park, in the north of Portugal. The architectural form is defined by a one-storey rectangular solid, impressively overhanging above a slope, descending towards a river valley. The elongated solid, like a telescope, has been directed towards a panoramic view. The reinforced concrete construction was anchored to the ground in a way that let the solid foundations balance the overhanging part of the building. The architectural drama of the house is completed by the ductility of raw concrete and a game of contrasting materials – concrete and glass. The glazing, extending over the full height of the storey, creates a visual connection between the interior and the landscape. The way of connecting the house with the landscape creates the originality of its architecture. The fusion of human work and nature makes it unique.

The architectural form of a house as a composition of a number of elementary solids is the result of **the game of juxtaposition of solids**. The leading factor is the superordinate rule of composition. The architectural form resembles the Vitruvian *décor* and a concept of perfection. *Perfection is something accomplished, finished*, Władysław Tatarkiewicz says, *it means complete, something that can't be supplemented, but can't be reduced either* [15, p. 22]. An example of such a game is the **De Blas House**, designed by Alberto Campo Baeza, completed in 2000, in the outskirts of Sevilla la Nueva. The architectural composition of the house is based on a composition of two cuboids, placed one on top of the other. The solid shaped in concrete is the living level which seems to outcrop from a slope. The dark grey colour and rough texture of the concrete base intensify an impression of being rooted in the ground. The smaller solid, which was placed in the middle of the bigger base, is different. It is a glass *belvedere*, which lets you enjoy a magnificent view of the Sierra de Guadarrama [10, p. 130–131]. The glass walls and light steel construction of the solid create a contrast with the concrete base. *Below there is a “cave”, which is a shelter space*, the architect explains the design concept, *the upper part is a booth, a showcase, which is a space for contemplation of nature*². The target was to create a house which lets you enjoy the surrounding countryside, calm down, contemplate, and enable the owner to carry out literary activity.

The game of cutting out of solids is connected with subtracting regular or, less frequently, irregular parts from an elementary solid. According to Władysław Tatarkiewicz: *perfection is harmonious, built in accordance with one rule* [15, p. 14]. The architecture of a house is determined by the relation between the mass of the ideological solid and the space of emptiness. This kind of a game can be found in the architecture of the **Casa Olajossy**. The house was built between 2006 and 2011 in the outskirts of Lublin, and was designed by Dariusz Kozłowski and Tomasz Kozłowski. The architectural form is, first of all, defined by a cylinder. The perfection of the circular base of the solid enabled placing the house on a trapezoidal

² Alberto Campo Baeza, author's description, [source:] www.campobaeza.com, [date of admission: 11.06.2013]



Ill. 1. *Casa Gerês* (www.archdaily.com), 2. *De Blas House* (www.archinnovations.com), 3. *Casa Olajossy* (www.dariuszkozlowski.arch.pk.edu.pl), 4. *Moebius House* (www.unstudio.com)

plot. The originality of the house is accomplished by the game of a sculpturally deconstructed cylinder, created by cutouts, and a cube, seen inside the house and treated as a solid designed as a usable space [4, p. 54–58]. *The game of open-closed was proposed, as well as a game of outer-inner and a game of covering-unveiling*, the authors explain, *a labyrinth as the antithesis of clarity has been chosen*[14, p. 84–89]. The composition of the elevation is determined by a game of plans, cut-outs, undercuts, openings, a game of figures on a background. The atmosphere of the house is also created by a game of materials and textures – raw concrete and smooth plaster, a game of colours – dominating grey and accents of primary colours. The architecture of the *Casa Olajossy* is a sign in the landscape, it seems to be an architectural manifesto from the authors. Making the place recognizable, the architecture of the villa

creates a specific character for a new neighbourhood being created on the border between the city and the countryside.

The game of sculptural deconstruction of solids is connected with an inability to define an unequivocal compositional rule, as the form of the house is the result of simultaneous juxtaposing, superimposing, cutting out, and overlapping of solids. The term which reflects the character of the architecture is *atomization of form for creative reasons* [5, p. 31]. The main goal seems to be a search for novelty and originality in architecture. Once again the ideas of Władysław Tatarkiewicz may support the thesis: *perfection is unanimous in diversity* [15, p. 15], which enables us to perceive the lack of a clear composition rule as a kind of rule itself. *The game of sculptural deconstruction of solids* has been undertaken by Ben van Berkel and the team of UNstudio when designing the **Moebius House**, completed 1993–1998 in the Netherlands, near Amsterdam. The architectural form of the house was inspired by curvilinear shape of *The Moebius Strip*. However, the irregular shape of the solid is not a literal reflection of the curvilinear geometrical shape, and perception of the architecture might be connected with free interpretation. The sculpturally deconstructed form is the result of moving, superimposing, overlapping of irregular solids derived from the curvilinear. A monolith construction enabled the creation of this expressive and dynamic solid. *In architecture the transformation of reinforced concrete on the aesthetic and technical level*, Maria Misiagiewicz says, *bears its dynamic by the sense of provocative qualities of the shape* [11, p. 22–23]. The omnipresent concrete intensifies the sculptural character of the architectural form. It is an example of a contemporary spacetime, defined by contrast and changeability of materials – concrete and glass, closed inside the time loop of the daily rhythm of life of the residents [16, p. 127–128]. The architecture of the *Moebius House* evokes connotations with a concrete residential sculpture frozen in motion, integrated with the landscape, and highlighting qualities of nature.

3. The game of the spirit of Architecture – poetics of concrete architecture

The architectonic game delineates a playing field for thoughts: of shapes, colours, textures, light and shadow, Maria Misiagiewicz says, *it reveals something real, because it is a game* [9, p. 23]. The architecture of a contemporary single family house is perceived as a work of art which uses the abstract language of geometry. It uses the resources of Euclidian geometry, its transformations and decomposition, aiming for a completeness, harmony of proportions, and a contemporary concept of beauty. However, nowadays the most important goal seems to be the search for novelty, and originality of form and architectural composition. *Extremely original architecture, even if sometimes not fully understood*, Tomasz Kozłowski says, *is commonly accepted. Novelty and originality are characteristic of different fields of architecture* [8, p. 186]. The above examples of contemporary houses might all be characterized by a clear form inspired by geometry and concrete as main building material. Once again the words of Maria Misiagiewicz may be quoted: *For an architect, the motivation for using reinforced concrete as a building material is not only its practical efficiency, but also an idea supported by a poetic magic which has a soul and sets the goal of defining a shape of a building* [11, p. 22–23]. Concrete architecture moves us and surprises because it has almost unlimited constructional possibilities, as well as the ambiguity and ductility of the material. *Not only is concrete architecture a “free game of solids in light”, but it is also poetry*, Dariusz Kozłowski says [3, p. 12]. Concrete is often an integral part of truly extraordinary architecture.

Architecture may evoke deep feelings, Antonio Monestiroli says, *not short-term impressions, but real feelings, which let us identify values, which last in time* [13, p. 39]. It is possible that this is the ultimate factor which defines the core of *the architectural game*. The game of immateriality of material – of the spirit of architecture, of a quality of space, of a fusion of the work of an architect – an artist with a place. And finally the game of a sense of the sense of human existence, also of happiness, whose ephemeral nature is so commonly caused by the Art of Architecture...

R e f e r e n c e s

- [1] Eco U., *From abstract Forms to the Depths of Material*, [in:] *On Beauty*, Eco U. (ed.), London 2004.
- [2] Kozłowski D., *Magical Architecture*, [in:] *Research Bulletin of the Department of Housing Architecture*, issue 2/1994.
- [3] Kozłowski D., *Classical Concrete and Architecture of Le Corbusier's Children*, [in:] *Concrte Architecture*, Kozłowski D. (ed.), Cracow 2006.
- [4] Kozłowski D., *The House – an attempt of description or „soft” and „hard” material of architecture of the Villa in Fortezza*, [in:] *Defining the Architectural Space – Architectural material, Technical Magazine*, issue. 9 – A/2006.
- [5] Kozłowski D., *Designs and Buildings 1982–1992, Figurativeness and Disintegration of Form in the Age of Postfunctionalism*, Cracow 1992.
- [6] Kozłowski D., *On Beauty of (contemporary) Architecture*, [in:] Pretext No. 3/2010, Kozłowski D. (ed..), Cracow 2010.
- [7] Kozłowski D., *Between the Light and the Darkness of Architecture*, [in:] *Defining of architectural space*, Cracow 2001.
- [8] Kozłowski T., *Expressionist Tendencies in Contemporary Architecture*, Cracow 2013.
- [9] Misiągiewicz M., *Architectural geometry*, Cracow 2005.
- [10] Misiągiewicz M., *Architectural Signs in Natural Landscape*, Housing Environment 7/2009, Cracow 2009.
- [11] Misiągiewicz M., *Ambiguous Space of Concrete Architecture or Decomposed Space*, [in:] *Construction Technologies Architecture. Polish Cement*, 4/2002.
- [12] Misiągiewicz M., Kozłowski D., Thesis of the XIV International Scientific Conference of Chair of Housing and Architectural Composition FA CUT *Defining the Architectural Space – Games and Plays of Architecture*, Cracow 2015.
- [13] Monestiroli A., *Reaction of Form, Short Lecture on Architecture*, [in:] Pretext, No. 3/2010, D. Kozłowski (ed..), Cracow 2010.
- [14] Mycielski K., *Single –family House in Lublin*, Architecture Murator 5/2011.
- [15] Tatarkiewicz W., *On Perfection*, Lublin 1991.
- [16] Winskowski P., *Modernity of Reconstruction. Technical Inspirations in the beginning of XXI century*, Cracow 2000.
- [17] Żórawski J., *On the construction of the Architectural Form*, Warsaw 1962.

DOROTA GAWRYLUK*

PLAYING AT BARRACKS OR PLAYING WITH BARRACKS?

ZABAWA W KOSZARY,
CZY ZABAWA KOSZARAMI?

A b s t r a c t

This article attempts to organize the activities that have been carried out in the recent decades in relation to historic barracks located in Poland, in comparison to the analogous processes taking place abroad. It presents examples of old post-military complexes whose function has recently been changed. There are two approaches to the adaptation of these buildings: enclosing in the historic context (“playing at barracks”) and contrasting with the historic background (“playing with barracks”).

Keywords: historic barracks, modernization

S t r e s z c z e n i e

W artykule podjęto próbę uporządkowania działań prowadzonych w ostatnich dekadach w stosunku do zabytkowych koszar znajdujących się w Polsce w odniesieniu do analogicznych procesów toczących się za granicą. Zaprezentowano przykłady dawnych zespołów powojskowych, których funkcja została współcześnie zmieniona. Wśród adaptacji obiektów można wyróżnić dwa podejścia: wpisanie w historyczny kontekst („zabawa w koszary”) i skontrastowanie z zabytkowym tłem („zabawa koszarami”).

Słowa kluczowe: zabytkowe koszary, modernizacja

* Ph.D. Arch. Dorota Gawryluk, Landscape Architecture Teaching Team, Faculty of Civil and Environmental Engineering, Bialystok University of Technology.

Parts of the legacy of the Partitions period in the territory of Poland are numerous preserved barracks complexes. Usually erected on the outskirts of cities in the nineteenth century, over the years they have been absorbed by these cities and today they are often in their inner districts. Post-military complexes are compact urban complexes, so they are legible in the spatial structure of the cities.

The contemporary fates of these historic barracks are very different, and range from intentional destruction (barracks buildings at the Royal Baths Park in Warsaw, 2011) to their revitalization aimed at transforming the barracks into a new symbol of the city (Poznań, Gdańsk Wrzeszcz, Ełk). “Playing” with barracks covers the whole spectrum of activities from destruction to creation of a new quality space honouring the history of the place.

Polish realizations of recent decades have fallen within the scope of activities carried out in relation to historic barracks in Europe and around the world.

1. Modern foreign realizations

Contemporary modernization activities on historic barracks complexes are based on the need for functional changes, and thus result in formal changes. They concern either the whole complexes or single buildings. Post-barrack complexes, extensive spatially and organized in their structure, are adapted to different functions that correspond with their rich program to the scale of post-military complexes.

1.1. “Playing” with function

Noteworthy is the realization at the post-barracks grounds in Tübingen (Germany). In the 1990s, after the French army units stationed there moved out of the historic Prussian barracks (dating from the late nineteenth century), the complex underwent modernization and transformation into housing developments. French Housing (Französisches Viertel) developed on the site of the Hindenburg barracks (Hindenburg – Kaserne) was awarded the German Urban Prize for 2001. The density and extension of barrack buildings was increased with new buildings (both residential and of service function i.e. offices, doctor’s surgeries, restaurants, shops, kindergartens, multi-storey garages, etc). Also modernized was a second barracks complex Loretto, where a new Loretto estate was built (Loretto-Areal) [6]. The new facilities were entered in an orderly urban context.

In Erlangen (Germany) Prussian barracks complexes dating from the second half of the 19th century were occupied after World War II by American forces, who left them in 1994. Ferris Barracs. The area of barracks, now called Rotherheimpark, was subjected to modernization. The grounds of the former barracks were made denser by including modern buildings. The functional program of the new district of houses, Siemens Medical Department, Erlangen University (Medical Department and Natural Sciences) and includes related functions, i.e. offices, apartment blocks, a school, kindergarten, sports facilities, etc. [17].

Universities are an interesting group of examples of barracks complexes being adapted to the needs of a university. In Barcelona, in the Pompeu Fabra University, a library wing was built inside a post-barrack building. The Technical University in Cartagena got a wing in one

of the buildings which enclosed the courtyard (Antigones Barracks) and in the second – a sail like roofing of the courtyard. In Bayonne in France the university functioning in the former barracks has been extended with a new library building.

Another group of objects located in barracks are museums. In this case the historic buildings are both museum buildings and exhibits. Military exhibitions are presented in Dublin (Military History Museum, Collins Barracks), in Dresden (Militäerhistorisches-museum), and in Sydney (Sydney Hyde Park Barracks). Exhibitions of contemporary art are presented in a new building erected on the site of the former barracks in Rome's Flaminio (National Museum of the 21st Century in Rome, MAXXI).

1.2. “Playing” with form

Examples of modernized barracks buildings can be divided into two main groups with respect to the approach to the historic tissue of the complexes. The first includes buildings distinguished from the historical context, in some cases predestined to be called works of art – icons of modern architecture. The second group of buildings undergoing modernization is that in which new elements are part of the historical background, not competing with it.

The MAXXI Museum, the work of Zaha Hadid and her team, was opened in 2010 after ten years of construction. The object, with its dynamic form, was created in the context of nineteenth-century buildings and the complex of the former Montello barracks. A modern, light grey, concrete-and-glass form stands out from the neighbourhood buildings covered with plaster in the ochre tint characteristic of Rome. The museum building clearly contrasts with the surroundings. “Set in a new style, which Hadid and her colleague Patrik Schumacher called the trend of parametricism in architecture” [11, p. 222]. MAXXI is considered to be the best, so far, of Zaha Hadid’s realizations, which is reflected in the prestigious awards granted to the author [11, p. 222; 5].

The Museum of Military History (Militäerhistorisches-museum) in Dresden was built in 2008–2011, and designed by Daniel Libeskind. The building is located in the nineteenth-century Wilhelminian barracks built in the Neoclassical style. Thanks to its location in the arsenal building it is particularly exposed in the context of the historic complex. Libeskind crosses the bulk of the historic building with the dynamic form of a “gigantic arrow”. The contemporary intervention in the historical building has its symbolic justification. “According to the architect it will show the openness and transparency of new detail in opposition to the absence of transparency and solidity of the existing historical shape” [11, p. 80]. Libeskind’s deconstructive work is the value entered by contrast into the historic environment.

Another concept by Libeskind related to the location of an object in the area of the former barracks was the project for the new Leuphana University AudioMAX auditorium centre in Lüneburg (Germany). The designer’s intention was that the deconstructed military form changed the nature of the space created by the brick buildings of the barracks [16]. The futuristic shape of the building is designed to symbolically indicate the future as a direction for the university’s development. The building was to be completed in 2014, but its construction is still ongoing.

The university library in Bayonne (France) by architect Jean de Giacinto, realized in the first decade of the twenty-first century, is another example of an object modern in form and



Ill. 1. Hotel “Loft 1898” in Suwałki (photo Andrzej Stetkiewicz, 2015)

contrasting with the context of a complex of former barracks [1]. The modern building is included in the orthogonal plan of the historic complex. The modern body is covered with an openwork structure screening a slanted wall enclosing the courtyard. The texture of the library facade stands out of the historical context.

The second group of historic barracks complex modernizations includes those in which the supreme value is the historical context. The new objects are a part of the background, they do not compete with the historical value of the buildings. In the Museum of Military History (Military History Museum) located in Collins Barracks (from the beginning of the eighteenth century) in Dublin (Ireland) the interior was expanded to the needs of exposure [14]. A new wing and connectors between the blocks of the barracks are in the form of minimalist, neutral inclusions into the historic complex. A similar concept characterizes the modernization of the nineteenth-century Barracks Museum in Hyde Park (Hyde Park Barracks Museum) in Sydney (Australia) [10]. An interesting contemporary detail in its neighbourhood is the Irish Famine Orphan Memorial integrated into the fence of the museum, dedicated to the orphans and lonely Irish immigrants who lived in the barracks when they were a poorhouse. The main Library of the Technical University of Carthage (Spain) was placed in a new western wing attached (2000–2006) to the eighteenth-century barracks of Antigone. The idea of the architects Martin Lejarraga and Fulncio Aviles was to restore the historic barracks complex by introducing new forms of scale and proportion harmonized with the monument [15]. The minimalizotic form of the library makes a neutral complement to the historic courtyard.

2. Modern Polish realizations

Realizations of recent decades related to modernizing historic barrack complexes in Poland can also be divided into two groups due to the changes in function and due to the changes in the form of buildings. The history of the three Partitions is readable in various architectural forms of historical complexes and does not predestine a new special function of any kind. It should be emphasized that although the objects are associated with a difficult period in the history of Poland (a symbolic manifesto of the invaders' power), nowadays in most cases they are not regarded negatively. They are etched into the landscape of Polish identity of individual regions, and are a heritage accepted by society.

2.1. “Playing” with function

The scale of the former barracks complexes predisposes them to be restored into facilities with rich functional programs.

In 2007 the adaptation and reconstruction of the old barracks of the 15th Cavalry Regiment in Poznań was completed. Arch. Sławomir Rosolski used the concept of inverse issues in the process of designing this complex in order to incorporate new functions into the existing historical form [7, p. 19–30]. The City Park of his authorship is an urban planning scheme (apartments, offices, hotel, shopping mall, commercial premises). This realization was awarded the Jan Battista Quadro prize (2009). In 2009 the CDF Architects office created a project for the Modena Park in Poznań covering the revitalization of the former Modena factory area, located in another barracks complex in Poznań. The new premises include buildings with living, commercial, service and office functions. *“A merger of historical buildings, old trees and modern architecture into a coherent complex will create a unique part of the city”* [2].

In Olsztyn in the years 2006–2014 a nineteenth-century post-military complex was revitalized into the Barracks Park, designed by architects from the Dżus GK Architects atelier. In the old artillery barracks flats were made and space for offices, retail, and services was added [13]. In Gdańsk Wrzeszcz an investment is being carried out by Hoss covering more than 20 ha of the former barracks of the Black Hussars. The project is the work of architects from the GI Hossa Design Studio managed by Marcin Woyciechowski [9]. The realization is proceeding in stages (the investor bought the area in 2005, the first buildings were completed in 2012). Historic buildings have been complemented with numerous new facilities. A rich functional program complements the residential development with offices, services, trade and cultural facilities.

Cracow University of Technology has been housed for decades in the former barracks of Archduke Rudolf located on Warszawska Street. Gradually the buildings have been modernized one by one [3, p. 1–2]. Noteworthy are the following buildings: the Boiler house, Detention Building and Artillery completed in 2014, where the old names were retained in order to emphasize the historic nature of the place. The Faculty of Social Sciences of the University of Wrocław (Koszarowa Street) also operates from a former barracks. The characteristic details at the entrances to the individual buildings bear witness to their contemporary modernization.

A valuable example of a post-barracks object adapted to be used for exhibitions is the Home Army Museum in Kraków, which has operated in its regenerated premises since 2011, realized according to the design of Air Jurkowscy Architects Studio.

“Brama Mazur” is a revitalized area of the nineteenth-century barracks located in the centre of Ełk. In 2011 the CDF architectural studio developed documentation for this location including a shopping centre, a cinema, and a restaurant connected by public squares [2]. The revitalized complex of buildings – now a symbol of the region – has been functioning since 2014.

In Ostróda, the “White Barracks” built in the years 1913–1927, were used after World War II until 2001 by the Polish army. After the renovation (2009–2013) they house the District Court and the Prosecutor’s Office, the Starostwo Powiatowe (District Office) and the Centre for Public Service, where there is room for 50 non-governmental organizations [4].

2.2. “Playing” with form

Among the Polish examples of contemporary regenerated barracks, similarly to foreign realizations, we can distinguish two approaches due to the treatment of these premises of historical value. In the first group there are buildings in which the activities in the new buildings contrast with the historic background. The second group includes realizations where the historic value of the buildings is superior and new inclusions do not compete with the historic form of the structure.

“Playing” with the form and space of barracks is particularly clear in the new complexes dominated by residential use, realized in Gdańsk Wrzeszcz and Poznań (City Park, Modena Park). In the urban scale, selected new buildings make strong accents standing out of the former regular structure. In Ełk the scale of the historic buildings is continued in the complex of the “Brama Mazur” (Mazury Gate) with their height, the tectonics of facades, and the colour of the cuboidal forms making up the shopping centre.

In the scale of the objects, the contemporary inclusions are visible in the form of details contrasting with the historical background, for example overbuilt with oval, glassed overlap floor with a swimming pool in the body of the main building of the complex, or the glassed link building spanning the street at the City Park in Poznań. In Suwałki in the old tsarist barracks at Dwernickiego Street, one of the buildings was converted into a hotel “Loft 1898”, designed by Atelier ZETTA from Białystok. The object was opened in 2015. (Ill. 1). A contemporary wing was added to the front of the historic building and on the hotel corpus some details were realized that accent the main entrance and the selected corners. Despite these additions, the historical values of the premises are still clear.

In the complex of Barracks Park in Olsztyn the new features were added to the existing buildings in such a way that the legibility of the historic urban space and architectural form were preserved as much as possible. A similar approach characterizes the modernization of the White Barracks in Ostróda. The example of the Home Army Museum in Kraków shows that a successful revitalization of the historic building gives it a new life and at the same time “restores” the historical value of the degraded object. The museum is at the same an exhibit in its own right. A similar role is also played by the Boiler House, Detention Building and Artillery – regenerated buildings of the Cracow University of Technology, which in their preserved or reconstructed forms, along with the context of historic university buildings, evoke the history of the place – the former Archduke Rudolf barracks.

3. Conclusion

Playing at barracks or playing with barracks are terms readable mainly in the form of metamorphosis of historic buildings. Playing at barracks corresponds to an attitude that honours the superiority of historical value and results in subtle interventions harmonized with the context of the former building complexes. In playing with barracks the historic objects become converted. We often have to deal with a spectacular metamorphosis. A new building, element or detail contrasts with the historical background, stands out, and attracts attention. In most of the examples presented the readability of the historical value of the objects was preserved.

R e f e r e n c e s

- [1] bruynzeel-storage.com/portfolio-item/universiteit-van-bayonne-frankrijk/ – 01.02.2015.
- [2] cdf.net.pl/modena-park-w-poznaniu.html i cdf.net.pl/galeria-handlowa-brama-mazur-w-elku.html – 5.05.2015.
- [3] Holewiński M., *Atlas Twierdzy Kraków. Koszary Arcyksięcia Rudolfa*, seria I, tom 6, Kraków 1996.
- [4] Iwaniec M., „*Białe Koszary*” w *Ostródzie*, „Renowacje i Zabytki”, 4/2013, p. 148–152.
- [5] Moore R., *Zaha Hadid's new Roman gallery joins the pantheon of the greats*, “The Guardian”, 2010.06.06.
- [6] pl.wikipedia.org/wiki/Tybinga – 10.04.2015.
- [7] Rosolski S., *City Park – tożsamość miejsca w mieście w aspekcie zagadnień odwrotnych*, „Zeszyty Naukowe Politechniki Poznańskiej. Architektura i Urbanistyka”, 31/2014, p. 19–30.
- [8] Skrobot W., *Historyczne zespoły pokoszarowe w Ostródzie, woj. warmińsko-mazurskie – rewitalizacja, zmiana funkcji czy rozbiór?*, Kraków 2010.
- [9] trojmiasto.gazeta.pl/trojmiasto/1,35636,7151329,Artysci_chca_zamienic_dawne_koszary_w_sale_wystaw.html – 3.04.2015.
- [10] UNESCO World Heritage Centre – World Heritage Committee inscribes seven cultural sites on World Heritage List, whc.unesco.org/en/news/642 – 31.06.2010.
- [11] Węclawowicz-Gyurkovich E., *Architektura najnowsza w historycznym środowisku miast europejskich*, Kraków 2013.
- [12] www.atelierpositif.com/bibliotheque-universitaire-bayonne – 15.06.2015.
- [13] www.bryla.pl/bryla/1,85301,17557888,Olsztyn__dawne_koszary_wojskowe – 5.05.2015.
- [14] www.collen.com/Conservation/military-history-museum-collins-barracks.aspx – 10.05.2015.
- [15] www.lejarraga.com/en/?portfolio=rehabilitacion-del-cuartel-de-antigones-unive – 03.03.2015.
- [16] www.leuphana.de/en/about-us.html – 14.01.2015; architecturalcities.blogspot.com/2013/06/leuphana-university-in-luneburg-by-12.02.2015.html.
- [17] www.nbg-mil-com.de/Ferris/fe.html – 4.04.2015.

JOANNA GIL-MASTALERZYK*

**THE GAME OF SPACE – THE ARRANGEMENT
OF SACRAL ARCHITECTURAL ELEMENTS
AND INTERIOR DECOR IN POST-WAR CHURCHES
IN THE ARCHDIOCESE OF CRACOW**

**GRA W PRZESTRZEŃ – DYSPOZYCJA ELEMENTÓW
ARCHITEKTONICZNYCH I WYSTROJU
WNĘTRZ SAKRALNYCH W POWOJENNYCH
KOŚCIOŁACH ARCHIDIECEZJI KRAKOWSKIEJ**

A b s t r a c t

After 1945, the architecture and decor of sacred buildings were adapted to the function and created in accordance with the needs of their users. At various times during the 20th century, especially in the 70s and 80s, it underwent frequent modifications – according to the program objectives and the needs of the parish. In the game of sacred space, in its artistic expression, a significant role was played by modern architectural solutions, overcoming many iconographic conventions and exploring original compositional approaches.

Keywords: *sacred architecture, sacred space, decor, church*

S t r e s z c z e n i e

Po 1945 r. architektura i wystrój wnętrz obiektów sakralnych dostosowywany był do funkcji i tworzony zgodnie z potrzebami użytkowników. W różnych okresach czasowych XX w., a w szczególności w latach 70. i 80., ulegał częstym modyfikacjom – odpowiednio do założeń programowych i potrzeb parafii. W grze przestrzeni sakralnej, jej wyrazie plastycznym, znaczącą rolę odgrywały – nowoczesne rozwiązania architektoniczne, przełamanie wielu konwencji ikonograficznych oraz poszukiwanie oryginalnych ujęć kompozycyjnych.

Słowa kluczowe: *architektura sakralna, przestrzeń sakralna, wystrój wnętrz, kościół*

* Ph.D. Arch. Joanna Gil-Mastalerzyk, Department of Architecture and Town Planning, Faculty of Civil Engineering and Architecture, Kielce University of Technology.

The transformation in the shaping of forms of architecture and interior design in Catholic churches which took place between 1945 and 2000 in the Archdiocese of Cracow remains fascinating and unusual. Studies attest that, despite a great crisis in the field of religious architecture, there are a wealth of original and innovative architectural and functional solutions. These were associated with a number of circumstances, among which the prevailing political, economic and social situation in the country undoubtedly exerted an influence [1].

In all public buildings, which includes churches, error-free layout of the space is essential, according to the purpose of the building, i.e. its usefulness.

In religious buildings, interior space is an important element created by the architecture. It arouses specific emotions and creates a space for concentration, revealing at the same time the symbolism of the sacred.

In the years 1945–2000 the architecture and interior design of religious buildings in the Archdiocese of Cracow were adjusted to the functions and created in accordance with the needs of their users. At various times¹, and especially in the 70s and 80s, they underwent frequent modifications – according to the program objectives and the needs of the parish. In churches of the first period – from 1945–1970 – the architecture and interiors were characterized by conscious architectural composition adapted to the requirements of utility. The organization of the internal space, thanks to the nave, the separation of the chancel from the main nave and isolated side chapels – created a climate conducive to a sense of the sacred and an intimate and prayerful atmosphere. The interiors, after the conciliar year, were distinguished by architectural solutions adapted to the requirements of the renewed liturgy, with a group of individual functions around the central altar.

In buildings of worship of the second period – the 70s and 80s – the organization of the interior space was designed primarily to facilitate a bringing together of all the faithful. Therefore, the interior disposition of most churches is traditionally distinguished by the desire to maximize the amount of space, especially full visibility of the presbytery and the altar. The interior design, as well as the form, is sculptured and monumental, which expresses an emotional content that is easily read by its users, but also harmony and peace. The most common are interiors of symmetrical shape. There are also interiors with varied space, with clearly accentuated asymmetry and irregular composition. This occurs in the Church of St. Queen Jadwiga in Krowodrza in Cracow designed by R. Loegler and J. Czekaj.

The altar, both in central and longitudinal churches, stresses the hierarchical system of the interior. It is placed traditionally, easily visible from the entire space and especially close to the wall closing the presbytery. It is the main and exposed centre, which focuses the attention of all users. The effect of enhancing the altar is especially emphasised in the composition of single-space interiors. This solution was used, among others, at St. Brother Albert in Cracow designed by W. Cęckiewicz. Equally consistently well thought out is the system of a multi-level interior – the Ark of the Lord church in Nowa Huta, designed by W. Pietrzylk, where the main altar – planned at the lowest level of the church, was visible to all the faithful, including from the balconies. Such a composition of the space, combined with the play among individual design elements, creates an atmosphere conducive to prayer and builds the specific nature of the sacred [1].

¹ The correctness of the organization and creation of the space shall be given to evaluation for the following generation.

In the special play a significant role is played by the paintings and sculptures – with visible influences of historicism, expressionism, and deconstructivism. This becomes more apparent in the sculpture of the second period. It becomes the dominant component in the artistic expression of the interiors – such as: the Christ Crucified designed by M. Zychowicz in the church in Krowodrza, or the expressive sculpture of “Christ Triumphant” designed by W. Pietrzyk, in the church in Bieńczyce. Both these extremely expressive sculptures distinguish the spaces of these contemporary churches and in various ways draw upon the mystery of the liturgy.

In addition to the sculptures, the game of sacred space includes the Stations of the Cross, often with content that is suggestively both political and patriotic (“Ark of the Lord” in Bieńczyce), as well as iconography, metalwork (St. Jadwiga in Krowodrza), and regional decoration derived from traditional trends (the Church of Our Lady in Olcza, designed by T. Gawłowski) – particularly regenerating in the second period, and mosaics, sgraffito (St. Wojciech in the Bronowickie Estate in Cracow, designed by W. Seruga).

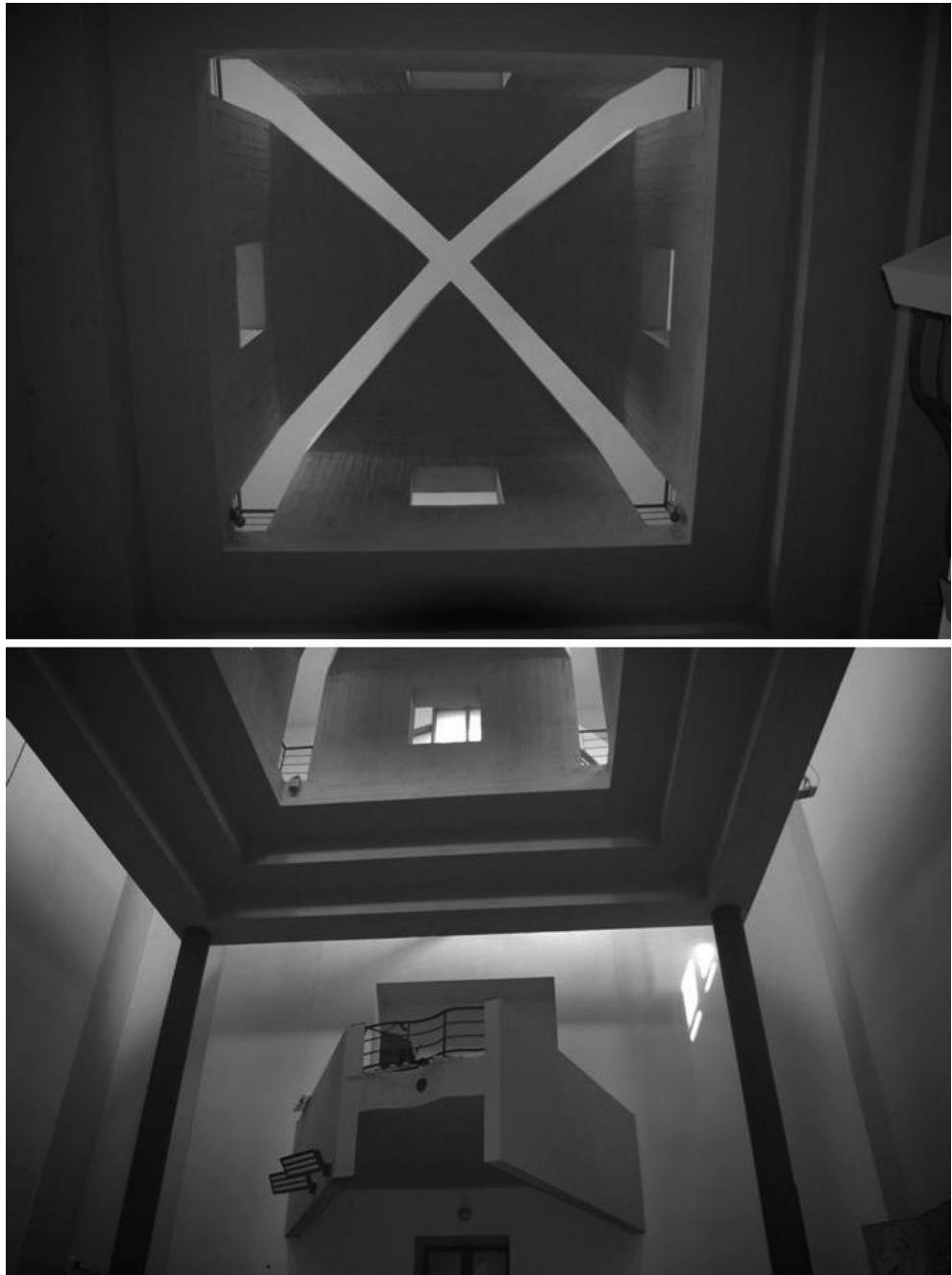
A major role in shaping the interior design, modelling and reading the sacred space is carried by the play of light. The conscious play and creation of this natural parameter brings harmony to the structure, and emphasizes the perfect proportions of forms and articulation of spaces. In many ways it draws attention to the altar, imposes concentration, subjects to strong emotions, and bears the hidden mystery. In most churches, good lighting mostly concentrates on the choir and serves to accentuate the center of the altar. This effect was visualized especially by E. and J. Gyurkovich, and T. Szafer in the Church of St. Peter the Apostle in Wadowice and in the Church of St. Brother Albert in Czyżyny designed by W. Cęckiewicz. The stream of natural light falling into the interior – through hidden skylights – illuminates in an interesting way the presbytery with the altar, and also illuminates the interior of the church. Its mysterious introduction and the conciseness of the symbolism of forms awaken the impression of a hidden, mystical world.

In shaping the church in Wadowice, of particular importance is the play of the double “columns of light” of Christological expression, inextricably linked to the symbolism of the sanctuary. The intersection of the nave and transept has a *four-cornered form*, and is based not on material supports, but on *columns of light* [7, p. 161].

In the Emmaus Church in Zakrzówek in Cracow, designed by D. Kozłowski, W. Stefanski, and M. Misiągiewicz, the light penetrating into the interior brings out the matter of the concrete, its shape and meaning – uncovering at the same time the symbolism of the sacred. It illuminates the space important for the liturgy and brings out the perfect shapes to then extinguish in the gloom. The play of light and darkness gives the space an abstract sanctity and provides experience of the sacred.

Using somewhat different conventions, T. Gawłowski, in the sculptural church in Olcza in Zakopane, through the appropriate indirect flowing of a large amount of natural light, obtained an equally interesting artistic expression, and warm mood in the interior. In the church in Bieńczyce the mystical darkness of the interior and the play of rays penetrating through the stained-glass windows produces a sense of a hidden world and enables the objects introduced to achieve an impenetrable mysterious character.

Contemporary church architecture is characterized not only by modern architectural solutions and new forms of design, but also: *the overcoming of many an iconographic convention, and exploring original compositional approaches* [6, p. 146], as exemplified by the XX. Zmartwychwstańców Complex at Zakrzówek in Cracow.



Ill. 1. Complex of the XX. Zmartwychwstańców in Cracow, 1985–1993, D. Kozłowski, W. Stefański, M. Misiągiewicz, fragment of the interior “Confession”, photo. author, 2013

The interiors of the entire complex are characterized by spaciousness and irregularity. They operate on a specific theme – a form of vault which appears in the corridors and halls, and in the hall and chapels. The vaults, made as reinforced concrete elements, raw, are contrasted with the simple white plaster and the geometrical arrangement of floors – made of black stone [2, p. 66]. In the single-space center, inside the Emmaus church, a big deconstructed concrete “confession” dominates – open up. On the side wall the choir has been suspended, in the form of a trapezoid cutting into the interior of the nave [Ill. 1]. On the white wall, the altar was designed, dominated by rectangular window openings – filled with stained glass. By using the play of forms and colours, the creators transmit warm emotions and create a soulful sacred mood in the interior. The idea of composing space, the play of the diversity of textures and the concrete in context with other materials, co-create the mood of sacred space and enable it to be defined as poetry, while her creator is high among the *poets of concrete* [3, p. 47–57].

In church projects from the 70s and 80s the “model of associations of a large-scale nave with side annexes – chapels on an intimate scale” appeared [5, p. 15]. The interior features dispense altogether with the transept, which involves the resignation of the cross system (at St. Brother Albert in Nowa Huta – there is a suggestion of a chapel and transept system [8, p. 320]). At the end of the eighties, in the process of shaping the interior, a return to the traditional longitudinal system, emphasizing an axial alignment, may be noted. There is the desire to separate the presbytery, or arranging the choir to display the main altar. The division and fragmentation of the interior becomes apparent, a return to designing shrines, indication of places for individual meditation, circumventions for the faithful that enrich the overall spatial layout.

The interiors of churches in the second period is multi-level in nature. Most common are two-storey solutions: Main floor – the top with the church, and auxiliary with rooms for catechistic and other functions, usually localized to the lower storey – situated partly below ground level (Church of Our Lady on Olcza, St. Jadwiga in Krowodrza, “Ark of the Lord” in Bieńczyce).

In the finishing of the predominant number of churches, especially in the type of laying floors and interior decorating items, the most traditional materials have been applied, such as: natural stone – of domestic and foreign origin – brick and wood. In the expression of the artistic sacral realization, of crucial importance is raw concrete (reinforced concrete). It is an ideal and versatile architectural material – both in physical and metaphorical terms. The use of the natural fingerprints of formwork and planks, with no smoothing of imperfections and accidental traces of residues revives the concrete surface and gives it its original value. Modern technologies, unlimited design opportunities, material solutions and their availability, especially during the 90's, enabled – in terms of organising the interior – a highly flexible capacity to process it, and the creation of unlimited structural systems.

In summary, the churches presented in the Archdiocese of Cracow are characterized by skillful composition of space – “the play of geometry, shapes among shapes, decorating the space”, and the play of interior design elements – that mean that they do not lose their specific mood and community character.

I would venture to say that many Artists, when creating these spaces, felt *noble*, “happy and beautiful, just as a spectator – when in contact with art”. These objects reflect the leading ideological and artistic currents and the skills of the artists. In a spiritual sense, they produce a unique atmosphere and the presence of the sacred, because: “Art uses beauty, expressed in

harmony, balance (...), the ratio of the masses, balanced tectonics, geometry, speaking of the power of the intellect, because beauty is perfect (...), and perfection is an attribute of God, hence beauty contains the sacred – a reflection of God – God's perfection. Architecture and sacred art (...) It seeks to express in some way in human work the infinite divine beauty, and beauty – as Socrates said – is the shape of holiness, so that the talent of the artist contributes significantly to the sanctification of beauty, and the material and artistic splendour of the church is intended to facilitate the believer in achieving mystical union” [9].

In conclusion, we can leave with the words of Mary Misiągiewicz, who wrote that “whether there arises an ordinary work, an exceptional work, or an immortal work depends on the talent of the author” [4, p. 452].

R e f e r e n c e s

- [1] Gil-Mastalerczyk J., *O przemianach architektury sakralnej Archidiecezji Krakowskiej w latach 1945–2000*, doctor al dissertation, doctor al superviser dr hab. inż. arch. Andrzej Białkiewicz, prof. PK, Kraków 2013.
- [2] Kozłowski D., *Projekty i budynki 1982–1992. Figuratywność i rozpad formy w architekturze doby postfunkcjonalnej*, Kraków 1992.
- [3] Kucza-Kuczyński K., *Sakralizacja betonu*, [in:] *Architektura betonowa*, Dariusz Kozłowski, (ed.), Kraków 2001.
- [4] Misiągiewicz M., *Punkt widzenia. Rozmowa ze studentami: architektoniczne tworzywo* [in:] *Czasopismo Techniczne, Architektura*, z. 9-A/2006, year 103, special no.; *Definiowanie Przestrzeni Architektonicznej, Architektoniczne Tworzywo*, Wyd. PK, Kraków 2006.
- [5] Mroczek A., Kucza-Kuczyński K., *Nowe Kościoły w Polsce*, Warszawa 1991.
- [6] Olszewski A. K., *Dzieje sztuki polskiej 1890–1980*, Warszawa 1988.
- [7] Szafer T. P., *Sacrum Wadowickie*, [in:] *Udział pracowników Politechniki Krakowskiej w życiu Kościoła katolickiego za pontyfikatu Jana Pawła II*, Flaga K., Paluch M., Pawlicki B.M., (ed.), Kraków 1998.
- [8] Wroński J. Sz., *Kościoły Krakowa zbudowane w latach 1945–1989, jako wyraz przemian architektury sakralnej w Polsce na tle rozwoju architektury na świecie*, Kraków 2010.
- [9] Wroński J. Sz., *Pojęcie i znaczenie sacrum w architekturze*, [in:] www.sztukasakralna.pl, [7.06.2009]

RAFAŁ GRACZYK*

**THE GAME OF ARCHITECTURE
IN THE URBAN SPACE
OF SMALL TOWNS IN WIELKOPOLSKA**

**ZABAWA „W ARCHITEKTURĘ”
W PRZESTRZENI URBANISTYCZNEJ
MAŁYCH MIAST WIELKOPOLSKI**

A b s t r a c t

Each region has its own individual approach to shaping architectural and spatial forms. It has many patterns that attest to its distinct identity in the country. In small towns, new buildings and developments negatively affect historical buildings. Many designers and building owners seem not to notice the risks to the urban structures of small towns and their physiognomy.

Keywords: regional architecture, detail, architectural form, variability

S t r e s z c z e n i e

Każdy region posiada własne indywidualne podejście do kształtowania form architektonicznych i przestrzennych. Dysponuje wieloma wzorcami, które świadczą o jego tożsamości w przestrzeni kraju. W małych miastach powstająca obecnie zabudowa i nowe zagospodarowanie negatywnie wpływa na historyczną zabudowę. Wielu projektantów oraz właścicieli budynków zdaje się nie zauważać zagrożenia wynikające dla historycznych układów urbanistycznych małych miast i ich fizjonomii.

Słowa kluczowe: architektura regionalna, detal, forma architektoniczna, zmienność

* Ph.D. Arch. Rafał Graczyk, Department of Urban and Spatial Planning, Institute of Architecture, Planning and Preservation, Faculty of architecture, Poznań University of Technology.

A designer's actions always refer to the existing spatial context and neighbourhood. It should force respect for a specific space and cultural environment [12, p. 41], but while experiencing a small town, we can observe quite the opposite. Many contemporary designers working in such a space necessarily want to distinguish the design of their buildings. Small towns are very sensitive to such experiments. This leads to the degradation of the historical and cultural spatial systems by repeating negative patterns. In contrast to the big cities, where examples of such a play with form and shape are present in every new plot, in small towns such experiments can, for a very long time, disrupt their normal sustainable development and aesthetically destroy the immediate surroundings. Space that should be subordinate to the existing historical traditions of building and planning quickly degrades.

Determinants of the identity of a city are represented by its cultural characteristics and unique atmosphere resulting from the preservation of historical complexes, mainly in the centre, as a local cultural heritage with a number of outstanding architectural dominants in the urban space [13, p. 24]. In small towns, you can find immutable traits of spatial structure, such as a separate built-up urban area with clear boundaries, the human scale of the city, an often picturesque location, and the use of local building materials. Urban interiors – squares and streets – usually with irregular contours, give the impression of the scenic spatial systems and determine the specificity and identity of the urban context. A characteristic feature of modern small towns is a growing spatial disintegration, or the lack of connections between recent and historical buildings. Historic buildings in small cities were partly replaced in the second half of the 20th century by a new, often styleless architecture, and as a result, most of it constitutes prefabricated housing developments that disturb the existing harmony of the space and change the composition of small towns.

The emerging residential building in Kostrzyn (Ill. 2) totally denies the understanding of the neighbourhood and the scale and size of buildings. Details and forms of buildings of all historical European eras can be found in the facade and form of the mentioned building. The question may be asked: Can such play with architectural shapes be beneficial to the urban space? The answer is simple, 'No!'. Architectural forms were assigned to the era in which they were created. The same historical period demarcated the corresponding details on the facades of the building [1, p. 7]. The investor in this case probably wanted to show off his social status and wealth. The resulting object screams with its form and dominates the surrounding. The space which was created following the impact of this building on the environment will dictate the quality of other further buildings. How can another architect approach designing buildings in this area? Probably by erecting further "original" buildings with no respect for the history of the city in which it is founded.

Such misunderstood play by designers in small towns will continue until the regulations are changed – these should allow cities to draw up a law for spatial development plans and oblige investors to follow them strictly. Another challenge is the aesthetic education of society. Raising awareness and knowledge about the role of harmonious building so that new developments do not result in spatial chaos.

Many of the developments that treat design as fun – a game without rules – have never even seen the hand of a designer. These are ideas that originated in the imagination of the investor and his lack of understanding for spatial context. Renovation and thermo-modernization of one of the family houses (Ill. 1), resulted in an amusing result – by decorating the cubic house facade with polyurethane mouldings. It is not known why the owner of the facade decorated it with these items. We can only guess that it was a kind of advertisement

for the capabilities of such a product. Projects – such as house insulation – that are repeated in small towns (Ill. 3) often show what process those buildings went through. In this case, thermo-modernization forced covering the clinker facade of the building. However, according to the law, a place for the administrative number had to be preserved, so the contractor did not add the insulation where that number was located.

Thermo-modernization of existing facilities is a complex problem. Every small town has in its spatial structure multi-family building blocks from the 1960s. This was due to the creation of state-owned farms (PGR). These buildings are often modernized in many ways, more or less successfully. Usually they receive styrofoam facade cladding and are then painted. The problem that seems to be unseen by the municipal authorities is the colouring of the facade. A kind of “work of art” that appears to be advertising building companies and facade paints is created. The colours and shapes of those buildings become a negative dominant disfigurement of the landscape [7, p. 56]. Almost every building has a facade painted in patterns and colours that are foreign to small towns. It spoils the physiognomy of the city and disturbs its panorama. Block buildings scream with colour, preponderate in the city and create a negative contrast to the historic centre [5, p. 221].

In single-family developments, semi-detached houses that are subject to modernization can often be found. A common example is the treatment of the halves of those buildings as separate buildings, which creates two versions of the facade of the building. Some of the buildings are also equipped with canopies and artificial elements aiming to beautify them. The building is not treated as a whole. A visual artist and e.g. a lawyer will treat their shares differently, each of them with a need to express himself, and show their profession and prestige with a different symbolism. These examples show that the aesthetics of the building is of secondary importance for users [6, p. 55]. However, designers should take care of this important element of the building.

Such activities in space and specific play with materials takes place in all small towns. Regionalism and the typical construction of specific forms for specific regions is in decline. To a large extent the reason for this lies in typical projects, which, like blocks in the hands of a small child, are placed without rhythm or context – loosely thrown into space. Such play, ending in complete spatial chaos, is displayed by modern ‘developer’ buildings. As an urban planner, let me say that issuing building conditions is an investor’s game in the design of the city. The lack of local spatial plans in most cities results in the issuing of vague and broad building decisions. The result is inconsiderate and intensive residential building. Clearly, these changes are visible in most of the vacant lands in small towns. Plots on which stand-alone buildings have been created are dominated by new terraced developments of high intensity. Islands of housing are created – a collection of buildings in a tight arrangement, in many cases without the legally required biologically active space, which has been converted into car parks. Such actions result in the disappearance of exposed panoramas of the city, which, due to the natural and cultural values, are attractive to tourists and should be protected. An example of such negative practices is permission to build single-family houses in the buffer zones of national parks, which destroys exposure zones. Another aspect of such ill activity by designers result in neighbourhood misunderstandings.

These examples show the importance of diverse detail for users of this architecture and space in the city, which has arisen from playing with architecture. Residents are looking for uniqueness and ways to express themselves. This is largely due to a lack of positive imitation and education on the part of the majority of the population. An example of the use of stucco



- III. 1. Added alien forms to the facade of a family home, Kostrzyn, phot. by author, 2015
 III. 2. Emerging family home, Luboń, phot. by author, 2015
 III. 3. Finishing detail: numbering on family home, Kostrzyn, phot. by author, 2015
 III. 4. Added 'beautifying' form on a 'cube' family home, Kostrzyn, phot. by author, 2015
 III. 5. Highlighting the entrance to private terrain, Kostrzyn, phot. by author, 2015

in the form of leaning out figures and body parts clearly shows the homeowner the manner of expression. The flat facade of the 'cube' house had to be distinguished from the environment. These types of buildings are often furnished with various special additives that are more or less disfiguring (III. 4). The same can be said about places for advertising on the facades of buildings. The matter is even worse in the case of historic buildings, in small towns and cities there are old spaces for advertising on those buildings. These are usually accented by a border of concrete forms; however, these designated places are often wrongly used, for example,

advertisements extend beyond the borders etc. The placement of such advertising space in a place that is not adapted to it disfigures the style of the building. There is a lack of consistency in the layout of mullions or colours in the woodwork of buildings. Clearly, small towns are scarred by a lack of respect for historical forms.

There are also positive examples of architectural play that promote the city and arts and crafts. In Nowy Tomyśl, the Museum of Wicker and Hops, which is engaged in the promotion of wicker crafts, has organized an annual open-air wickerwork festival for several years. Objects – from abstract forms to useful – different in size, entirely made of wicker, are created in the urban space. They are virtually everywhere, from the Market Square, Old Town streets, to parks, squares and traffic junctions. The success of this event caused the residents to begin to identify with the city. Individual wickerwork elements added to the fences and windows enhance the charm of the streets and single plots.

Wielkopolska has a rich history and building traditions, and many examples of this are preserved. It is strange that designers do not study them. Many of the mentioned negative examples could have been avoided. The hardest thing is to maintain moderation in bulky objects, in which colour, detail and additives are random and ad hoc. Playing with these tools in the wrong hands, especially young designers, wanting to make a name for themselves, leads to changes incompatible with aesthetics. You cannot create a city in negation of its traditional layout. It seems important to establish the basic rules of composition and respect for the history and traditions of the place where new buildings are designed. Only then does a small town have the opportunity to be a finite whole and not an area of games for the designers.

The paper is financed by National Science Center (NCN), referring to a scientific project: ID: UMO-2011/01/D/HS6/02553, titled: “The role of historic and cultural urban layouts in the development of small towns in Wielkopolska Region”.

R e f e r e n c e s

- [1] Bardzińska-Bonenberg T., *O nie architektonicznej genealogii detali współczesnych budynków*, [w:] „Definiowanie przestrzeni architektonicznej – detal architektoniczny dziś”, Czasopismo Techniczne Politechniki Krakowskiej, Kraków 2012, Zeszyt 15, Rok 109.
- [2] Basista A., *Postrzeganie architektury*, [w:] *O percepcji środowiska*, praca zbiorowa pod red. J. Bogdanowskiego, Instytut Ekologii PAN, Oficyna Wydawnicza, Zeszyty Naukowe nr 9, Warszawa 1994.
- [3] Biegański P., *Architektura – Sztuka kształtowania przestrzeni*, Wydawnictwa Artystyczne i Filmowe, Warszawa 1974.
- [4] Bogdanowski J., *Krajobraz miasta jako problem tożsamości i jakości życia* [w:] *Człowiek i Środowisko*, Warszawa 1987.
- [5] Drozdź-Szczybura M., Blokowiska „uczłowieczone”, [in:] Zeszyty Naukowe Politechniki Poznańskiej, seria: Architektura i Urbanistyka, Poznań 2006, Zeszyt 6.
- [6] Fross K., *Nowoczesność w architekturze – forma czy coś więcej? Nowoczesne projektowanie z wykorzystaniem badań jakościowych*, [in:] *Nowoczesność w architekturze*, Gliwice 2012, Tom 6/2.

- [7] Graczyk R., *Identyfikacyjna funkcja dominanty architektonicznej w strukturze malego miasta*, Poznań 2015.
- [8] Gzell S., *Fenomen małomiejskości*, Akapit-Dtp, Warszawa 1996.
- [9] *Co to jest architektura?/What Is Architecture?* red. Budak A., Kraków 2002.
- [10] „Definiowanie przestrzeni architektonicznej – detal architektoniczny dziś”, Czasopismo Techniczne Politechniki Krakowskiej, Kraków 2012, Zeszyt 15, Rok 109.
- [11] Kosiński W., *Aktywizacja turystyczna małych miast*. Politechnika Krakowska, Kraków 2000.
- [12] Loegler R. M., *Miasto to nie architektoniczna zabawa*, Białystok/Kraków 2011.
- [13] Wejchert K., Wejchert H. A., *Małe Miasta*, Arkady, Warszawa 1986.
- [14] Zeszyty Naukowe Politechniki Poznańskiej, seria: Architektura i Urbanistyka, Poznań 2006, Zeszyt 6.

RENATA GUBAŃSKA*

ARCHITECTURE AS FUN OR HAVING FUN WITH ARCHITECTURE? – SELECTED EXAMPLES

ARCHITEKTURA ZABAWĄ CZY ZABAWA ARCHITEKTURĄ? – WYBRANE PRZYKŁADY

A b s t r a c t

In this article the issue of architecture as fun or having fun with architecture will be discussed on the basis of some concrete architectural examples, namely the Hundertwasserhaus in Vienna, the “Crooked House” in Sopot, the “Baj Pomorski” Theatre building in Toruń and the so-called “Spider” in Gorzów Wielkopolski. Notwithstanding the positive or negative result of the design, we shall consider the issue of having “good” fun in the process of creating a building.

Keywords: *architecture, Crooked House, designer, Hundertwasser, play*

S t r e s z c z e n i e

W niniejszym artykule zagadnienie: architektura zabawą czy zabawa architekturą zostanie omówione na zrealizowanych przykładach architektonicznych, a mianowicie Hundertwasserhaus w Wiedniu, Krzywym Domku w Sopocie, budynku Teatru „Baj Pomorski” w Toruniu oraz tzw. „Pająku” w Gorzowie Wielkopolskim. Niezależnie od pozytywnego czy negatywnego rezultatu projektowego, zostanie rozważona kwestia „dobréj” zabawy w trakcie tworzenia obiektu.

Slowa kluczowe: *architektura, Hundertwasser, Krzywy Domek, projektant, zabawa*

* Ph.D. Arch. Renata Gubańska, Institute of Landscape Architecture, Faculty of Environmental Engineering and Geodesy, Wrocław University of Environmental and Life Sciences.

1. Introduction

For most of the people the word ‘fun’ is associated with the period of childhood and carefree adolescence, when every spare moment was spent having fun with friends. To be sure, this time has a certain idyllic quality but also, and perhaps above all, unrestrained creativity, adapted to the age of course. A child’s imagination is “infinite”, hence it is possible to have fun in so many ways with the minimum of tools or toys. It is generally believed that playing time is learning time, but does this only apply to children? Or perhaps it may be also extended to adults?

An insightful etymology of the concept of fun in Polish was given by Aleksander Brückner. The author argues that this word derives from “be”, “stay”, followed by “busy”, “employed” and only at the end it takes on the attributes of cheerfulness, merrymaking in the present sense of the word [1, p. 642–643]. An explanation of this concept, which is much closer to us, is given for example by *The Dictionary of the Polish Language*, from which we learn that fun means, inter alia, “activities that please us, that we enjoy, that allow us to spend time nicely; entertainment” [5].

In my opinion, the most general definition of fun was given by Johan Huizing, who claimed that “fun is a voluntary act or activity carried out within certain limits of time and space, according to voluntarily adopted, but unconditionally binding rules; it is an objective in itself, it is accompanied by the feeling of tension and joy and awareness of dissimilarity to ordinary life” [2, p. 22]. Looking at the above explanation of the term, it appears that the concept of fun is not only about making free time more pleasant and does not only apply to children, but everyone (regardless of age), who by doing a certain activity is feeling some sort of emotional state similar to contentment.

2. Discussion of the topic on selected examples

When looking at some completed works of architecture, it seems that the designer played with the shape of the building, its form, and even the texture and colour. In a sense, these are the outcome of some fun that the architect had with the designed building. In the surrounding reality, we find both positive and negative activities of this type. However, both types are the result of creative attempts to transform reality, and since they have been implemented, it means they brought some sort of satisfaction to the designer. When looking at the design process in this way (of course oversimplifying somewhat) we can compare it to fun as explained in the definition given by Wincenty Okoń namely, that it is “an activity done for your own pleasure, which is based on your imagination that creates a new reality. Although this activity is governed by rules, content of which is mainly derived from social life, it is creative in nature and leads to understanding and transforming reality” [3, p. 44].

2.1. The Hundertwasser House in Vienna

An interesting example of an approach to the design process treated as “good” fun is the work of Friedensreich Hundertwasser – an artist who, after only a few months, had abandoned his studies at the Vienna Academy of Fine Arts [4]. Hundertwasser has left a legacy not only in painting, but also in architectural designs, next to which no one can stay aloof;

the observer is either delighted or surprised that “something like that” was allowed. A distinguishing feature of all Friedensreich Hundertwasser’s works was his passion for wavy lines, putting bright contrasting colours together and adding plant-like forms. While in buildings, he used windows of various sizes and sometimes placed them in quite surprising places; in addition, he always found space to put coloured ceramic tiles, columns and gold-plated balls or onion-shaped helmets – which became characteristic elements of his architectural works. For this reason, his architecture can be unmistakably recognized.

One of the most recognizable works by this artist is the Hundertwasserhaus in Vienna, situated on the corner of the streets Kegelgasse and Löwengasse. It was built in 1983–1985 and immediately became one of the many tourist attractions of the capital of Austria. Its architecture is typical of the work of Friedensreich Hundertwasser, entailing a complete lack of horizontal lines – only waves, the distribution of variously sized windows at different heights, and the use of colours on the façade more referring to illustrated books for children than a building serving commerce and residential functions. Further, the designer did not forget about his distinguishing features, such as Baroque-like columns and golden balls placed as finials of selected elements. Both the area of the plot and the façade with balconies and other bays is covered with vegetation, which is a kind of aesthetic completion of the visual reception of the building.

On the one hand, the use of the above components in the design proves Hundertwasser’s great courage, on the other, however, it shows that the designer had excellent fun when creating his work (this also applies to other buildings). Combining such different and diverse architectural components probably gave the artist a lot of pleasure, and in the end brought him some kind of satisfaction. In accordance with the definition cited above, it was some kind of fun – “good” fun.

2.2. The Crooked House in Sopot

In Poland, in Sopot, on Bohaterów Monte Cassino Street (the popular “Monciak”), there is an architectural feature which is the result of an architect’s “good” fun. We are talking about the Crooked House of course, which appeared on one of the most elegant and famous streets in Sopot in 2003 and immediately entered the cultural landscape of the city. Currently, no one could imagine Sopot, or more specifically the “Monciak”, without the Crooked House.

Previously, the architects Małgorzata Kruszko-Szatyńska and Szczepan Szatyński, inspired by the drawings of the famous graphic designer from Cracow – Jan Marcin Szancer and the Swedish graphic designer residing in, among others, Sopot – Per Oscar Gustav Dahlberg, played, during the design phase, with the shape and the form, to ultimately obtain a building whose architecture resembles far more the illustrations from children’s books than buildings in a health resort. The structure surprises by its complete lack of straight lines, everything is “crooked” (including window and door openings) – hence its name. This two-form little tenement serving commercial functions has three floors, a habitable attic and interesting, warm colours both on the façade and in the interior.

The Crooked House, although it is a relatively new feature among Sopot’s buildings, has already become a city symbol, a kind of hallmark. Each patient of the health resort and tourist of the city has this place on their sightseeing route. The popularity of the Crooked House has already exceeded the borders of Poland. This unique, fairytale house was placed on a list of the world’s 50 strangest buildings published by the Village of Joy portal and ended up as one of eleven on the list of unusual features announced by the American television station CNN [6].



Examples of “good” and “bad” play architecture (photographs made by J. Gubański)

Proposing and constructing such an original building with unique architecture was only possible due to an unconventional approach to design and creating the space without any design inhibitions and restrictions. The final result shows that the architects had great fun when creating it.

2.3. “Good” and “bad” fun with architecture

Equally intriguing and unusual playing with architecture can certainly be noticed when looking at the modernized “Baj Pomorski” Theatre building in Toruń, put into reuse in 2006. This is an interesting example, primarily due to the entry area, which is formed in the shape

of an open wardrobe with lots of drawers and compartments. Looking at the façade at the entrance, we have the feeling that we will soon cross the threshold of an enchanted wardrobe. Such a presentation may seem rather infantile to some, but when we know that the main users of this facility are children and young people, it becomes extremely accurate.

This fabulous effect was possible only due to the designers' extremely creative look at the space surrounding them, not giving in to the historical pressure of this place and being open to unprofessional, but also unique perception of the architecture, which resulted in inviting Pavel Hibicka, the stage designer, to the design process [7]. The final result of their cooperation displays openness and unlimited creative enthusiasm, and thus good fun.

Although the building of the Puppet Theatre definitely stands out due to its architectural costume, it blends perfectly with the buildings of the Old Town – it has to be mentioned that it is situated in the immediate vicinity of the ruins of a mediaeval castle built by the Teutonic Knights, and forms a part of the landscape in this historical part of the city, which is entered on the UNESCO List of World Heritage Sites.

A completely different example of playing with architecture is the “Spider” in Gorzów Wielkopolski. The structure, considered strange, to put it mildly, by most viewers, is situated in the city centre at the roundabout. You can only access it from an underground passage, which does not, however, lead from the main circulation route, which is the Staromiejski Bridge. It is also unclear what the function of the feature is, since it is hardly accessible in terms of public circulation, and it turns out that it serves a wide variety of functions, from information desks and toilets, through a light fountain, a sculpture – sign-post, an underground passage, to an architectural landmark with an observation platform (located at a height of approx. 20 m). And this architectural landmark gives rise to the greatest controversy, and not only among the inhabitants of Gorzów Wielkopolski. A building located in the heart of a city should refer to its history or be directly associated with its present time, while the “Pająk” surprises all viewers; what is it and why was it situated there. This feature disfigures the view of Gorzów from every point, whether from one of the most beautiful bridges in the city – the Staromiejski Bridge – or from the historical, half-timbered granary.

Still, there are also completely different opinions on the “Spider” in Gorzów Wielkopolski. For example, in the online guide to unusual places in Poland we can read: “The design is one of the most interesting achievements of 21st-century architecture in Gorzów Wielkopolski” [8]. You can certainly say that the example is not one of the most fortunate ones – the architects played with architecture, but it is possible that they had good fun when they created this design.

3. Summary

Looking at the examples discussed above, we can see that regardless of the final effect, there is a strong likelihood that the designers had good fun with architecture during the design process. They demonstrated not only great creativity in shaping the space, but also openness to the place and not allowing themselves to be overwhelmed by the historic character and history of the site, while at the same time showing creative courage in order to implement the designs for features of this type. It seems that in all cases, the architecture was fun and the designers had fun with the architecture.

R e f e r e n c e s

- [1] Brückner A., Etymological Dictionary of the Polish Language, Krakowska Spółka Wydawnicza, Kraków 1927.
- [2] Huizing J., *Homo ludens. Fun as a source of culture*, Wyd. Czytelnik, Warszawa 1985.
- [3] Okoń W., *Fun and Reality*, Wyd. Szkolne i Pedagogiczne, Warszawa 1987.
- [4] Rand H., *Hundertwasser*, Publisher: Taschen GmbH, Germany 2007.
- [5] Polish Language Dictionary, [25.05.2015].
- [6] <http://www.tvp.info/9891553/informacje/rozmaitosci/krzywy-domek-wsrod-swiato-wych-atrakcji/>, publikacja: 27.01.2013, [25.05.2015].
- [7] <http://miastodzieci.pl/katalog/firma/5435:teatr-baj-pomorski-w-toruniu>, [25.05.2015].
- [8] <http://www.polskaniezwykla.pl/web/place/19545,gorzow-wielkopolski-rondo-sw-jerzego.html>, [25.05.2015].

MARIA HELENOWSKA-PESCHKE*

PROGRAMMING GEOMETRY AS CREATIVE PLAY WITH ARCHITECTURAL FORM

PROGRAMOWANIE GEOMETRII JAKO TWÓRCZA ZABAWA FORMĄ ARCHITEKTONICZNĄ

A b s t r a c t

In the twenty-first century “programming” is a key word that opens up unprecedented opportunities for the design and materialization of geometrically complex architectural objects. From the digital designer’s perspective programming geometry can be seen as creative play with form and a process of generation/exploration, as well as the possibility of applying computing power as a co-designer in the process of finding solutions for complicated architectural design tasks.

Keywords: algorithms for generating geometry, parametric modelling-algorithmic, genetic algorithms

S t r e s z c z e n i e

W XXI wieku słowem kluczem, który otwiera niespotykane dotąd możliwości projektowania i materializacji złożonych geometrycznie obiektów architektonicznych jest „programowanie”. Celem artykułu jest pokazanie iż programowanie geometrii z perspektywy projektantki/ta cyfrowego może być postrzegane jako twórcza zabawa formą i/lub możliwość włączenia mocy obliczeniowej procesora jako współgrającego w procesie poszukiwania rozwiązań dla coraz to bardziej złożonych architektonicznych zadań projektowych.

Słowa kluczowe: algorytm generujący geometrię, modelowanie parametryczno-algoritmiczne, algorytmy genetyczne

* Ph.D. Arch. Maria Helenowska-Peschke, Department of Visual Arts, Faculty of Architecture, Gdańsk University of Technology.

1. Introduction

The process of searching for architectural form depends on an architect's individual style of work; however, an important role is always played by the means of recording a preliminary idea. As soon as designers discovered computer modelling capabilities for NURBS surfaces, animation and morphing¹, their interest in curvilinear geometry increased. "Playing with digital clay" was appealing – it gave greater freedom of language, stimulated creatively, opened up architecture to a world without domination of planes, and enabled virtual testing of innovative spaces. Visually attractive sculptural forms began to appear in competition entries and the architectural literature. They were often detached from utilitarian requirements and the realities of the building trade which resulted from the capabilities of software which was originally designed for the world of games and movies (e.g. 3DS Max, Maya). The task of translating virtual models into a workable structure fell on the shoulders of the constructors assisted by professional programmers. For some observers and architecture critics computer modelling was nothing more than a game for technology enthusiasts. The results of this were largely attributed to happy coincidence rather than a serious creative intellectual or design effort.

After 2009 when Explicit History made it possible to edit algorithms graphically, consequently programming geometry became available to people who did not have extensive computer knowledge (read: traditionally educated architects). Its successor, "Grasshopper", is currently very popular among innovative-minded students of architecture and professionals. With programming, architects not only gained the freedom to create, modify, optimize and analyse geometrically complex architectural objects, but also construct new design strategies based on mathematical, algorithmic notation of rules. The area of searching architectural ideas expands with new abstract concepts such as: emergence, the theory of deterministic chaos, self-organizing systems, cellular automata, L-systems etc.

The core of digital design is to focus attention on the generative process, rules and dynamic interdependencies instead of building a virtual representation of a previously determined rigid geometry. From this perspective, programming can be seen as instructive, creative play in geometry formation/generation that allows a wide range of variations within a design space to be examined. Programming can also be seen as an opportunity for CPU utilization as well as a co-player in the process of finding innovative solutions to complicated design problems.

2. Digital clay models

Programming geometry using Grasshopper leads to a parametric-algorithmic model/system that is a program which "includes the record of spatial relations, the rules for inheritance of features for sub-elements of the structure and the rules and principles for generating successive levels of hierarchical model." [2, p. 29] The search for shape begins with the development of design procedures in the form of a graphic diagram. This

¹ Special effects in motion pictures and animations that changes (or morphs) one image or shape into another through a seamless transition.

procedure is translated into a script and then run in Rhinoceros environment which results in geometric objects. The selection of key constraints/parameters – their number, role and location in the algorithm – will determine the range of variation within the same generative logic. By means of mathematical equations and parameters it is possible to build into a software controlled geometry demands that cover different aspects of design: such as its dimensions, structural rigidity, energy consumption, acoustic conditions, characteristics of building materials, and production.

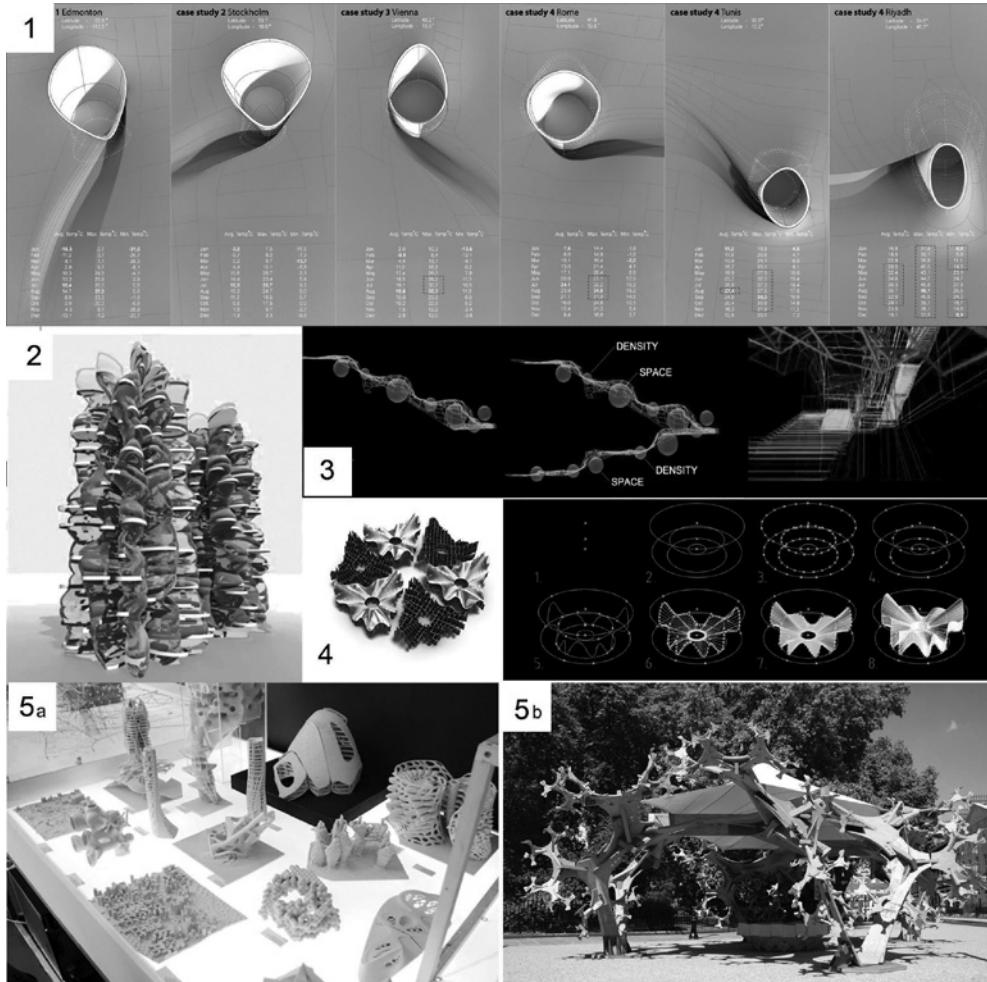
In return for the additional intellectual effort associated with the development of a scheme, the architect gains the opportunity to study numerous “what if” scenarios in real time. Due to the rerunning algorithm, it is possible to interact with the model by changing the values of the parameters determining its formal and efficiency characteristics. “Moulding digital clay” inevitably blurs the boundary between creative play and serious design effort. Driven by needs to meet the design requirements or pure human curiosity, testing every different design option provides design knowledge and shapes intuition. It also directs further exploration thanks to feedback in the form of geometrical instances and numerical analysis results.

The project Re-thinking Lascaux [6] is a fine example of how programming allows for new and innovative way of solving the weighty issue of energy consumption. Instead of focusing on applying the latest technology in the form of external mechanical systems, the designers from “moh-architecture” found the answer to the question of how space itself can help create an efficient sustainable solutions for a one family house. Precise, software controlled deformations of the house’s form allowed the thermal efficiency of different climate zones to be optimized (Ill. 1).

Unfortunately the ease of playing with interactive geometry also results in the production of bizarre architectural propositions just because it is possible. Solving real architectural problems by means of programming geometry requires discovering and identifying the dependences in categories which used to stand outside the interests of the profession. The author shares the opinion that there is a need to broaden the architectural curriculum in architectural geometry programming and algorithms. “We don’t let children drive or smoke or handle a firearm so why we are so eager to give to laymen the control over a powerful CAD package?” [4]

3. Toys to digitally explore forms

The digital designer community is involved in tools testing and development, sharing experiences and exchanging original scripts through a global non-profit network. Statements posted on parametric-algorithmic design and evolutionary forums show that programming geometry is usually accompanied by passion, satisfaction, and emotional commitment from the designer that is similar to the emotions experienced during play. Play is “one of the forms of human activity, voluntarily undertaken by an individual or a team, in which practical considerations, gathering and production of goods do not play any role, while the positive course of emotional experiences, and the sense of freedom of action and imagination are an indispensable prerequisite distinguishing it from work” [1]. This “positive course of emotional experience” is also revealed by the naming conventions for the software and interface graphics evoking associations with toys e.g. balloon, leaping kangaroo, origami. Starting from the already mentioned Grasshopper there is Kangaroo, Lunchbox, Galapagos, Weaver, Firefly.



- III. 1. Re-thinking Lascaux design by moh architects, 2005
- III. 2. Evolutionary study of residential building by Bakunowicz A, 2015
- III. 3. Evolutionary design of Lidabashi subway station in Tokyo by Makoto Sei Watanabe, 2000
- III. 4. Study of form by Students' Research Circle for Parametric Design WA PG, 2013
- III. 5a. Students' projects, III. 5b. summer pavilion, Architectural Association School of Architecture, 2009

These applications are used to perform serious calculations and tasks. For example, Kangaroo is a physics engine for interactive simulation, optimization and exploration of form, Karamba is used for parametric engineering analysis of spatial trusses and frames, Galapagos lets you search for formal solutions based on evolutionary algorithms. The author's own experience shows that simply getting to know the possibility of new tools is addictive and educational fun with both processes and forms.

4. Form exploration and the “Game of Life”

Design activity is sometimes referred to as a team game in which designer, engineers, installers, investor, and a group of future users participate. Programming of geometry could in turn (under certain conditions discussed further) be seen as an experimental, conceptual game between two participants, namely the designer – a human being and a machine – the computer. In this game, the design space becomes a terrain of struggle in which a large amount of rapidly processed information/data gives a creative advantage over teammates. The computing power, which exorbitantly exceeds the computational capabilities of the human mind, can be used to generate solutions that go beyond the realm of complexity accessible to the designer. In practice it means the possibility of expanding the design space with abstract mathematical concepts such as chaos theory, fractals, random functions etc. “Concepts such as: randomness, infinity, limits, infinitesimal and even more complicated, such as complexity, emergence and recursion are incomprehensible to man not because they are metaphysical, mystical or magical, but because they rely on intellectual resources that are external and alien to the human mind” [5].

Generative procedures based on open algorithms seem particularly attractive to innovative designers. Open algorithms are those in which the solution to the problem is not pre-defined but is sought and found during the process e.g. as a result of the optimization mechanisms taken from nature (adaptation, selection, inheritance, self-organization etc.)². This is due to the built-in algorithm internal generative feedback loop through which the program uses its own results as data input. A good example is designers’ attempts to utilize cellular automata³, a mechanism popularized by the “Game of Life”. Invented by John Conway, the “Game of Life” was initially treated as a game, but aroused the interest of scientists in the field of physical simulators. Currently through the mechanism of cellular automation designers are trying to “grow” complex urban structures in accordance with definite rules (arising from the requirements and limitations of the program, context, etc.) (Ill. 2). Input arrangements and principles are specified by the designer, but the indirect results, and therefore the final outcome are not subject to full control (although they fall within the range of a predetermined generative logic). Data/information can be fed to the program directly by the user or by means of environmental sensors, which emphasizes the form’s ability to spontaneously “take shape” and adapt. An example of the use of evolutionary computation methods in a real life project is the Oedo-Lidabashi subway line extension (Tokyo) by Makoto Sei Watanabe [7]. In the design phase, the network of underground corridors was created via a spontaneously evolving structure. (Ill. 3)

At the present level of knowledge, evolutionary computation methods are of limited usefulness in generating geometry because of the difficulty of resolving issues of internal cohesion of form and its meaning as an architectural object. Elements of structures obtained by these techniques can normally be materialised only by 3D printing, due to the complexity and irregular surface curvature. (Ill. 3)

² Such procedures are appropriate for evolutionary design. J.H. Frazer pioneered this area of research in the field of architecture.

³ The “game” is a zero-player game, meaning that its evolution is determined by its initial state, requiring no further input. One interacts with the Game of Life by creating an initial configuration and observing how it evolves or, for advanced players, by creating patterns with particular properties.

5. Conclusions

Operating in innovative computational design workshop remains the domain of an elite group of designers, which is due to the fact that programming skills have been considered until recently to be completely unrelated to the practice of architecture. The interest of the younger generation of architects and students of architecture in Poland provides evidence that the role of computers in the search for architectural form in the future will also increase in Polish architectural studios. (Ill. 4, 5a,b) This perspective opens up the possibility of transforming “the computational power of computers” in the “power of creative exploration.” “The development of computational methodology intends to transform the role of the architect from the “originator of forms” to the controller of generative processes (design tool designer) in which the final product is not the result of human imagination but the generative capacity of specific processes.” [2, p. 179] Computers introduce elements of a game, surprise and contrariness into the exploration of forms.

Psychologists maintain that the boundary between education and play or work and play is often difficult to determine. In the author's opinion geometric programming is intellectual work, which has elements of joyous fun – it inspires and liberates the imagination. Apparently, during the game, we tend to take a step into the unknown, we realize the illusory wishes which otherwise cannot be realized in the real world. Programming geometry allows interactive exploration of a form in virtual reality, which allows the realization of creative visions and concepts that may now represent a “pure dream” but which may materialize in the future. “This game full of charm requires not naive amateurs practising it only in free evenings, but someone who has completely assimilated its sizable part and who demands full devotion and completely draws in its service.” [3]

R e f e r e n c e s

- [1] Gilewicz Z., *Teoria wychowania fizycznego*, SiT, Warszawa 1964.
- [2] Helenowska-Peschke M., *Parametryczno algorytmiczne projektowanie architektury*, Wyd. PG, Gdańsk 2014.
- [3] Hesse H., *Gra szklanych paciorek*ów, Wyd. Poznańskie, Poznań 1971, p. 404.
- [4] Tedeschi A., *Wywiad z Davidem Ruttenem*. MixExperience Magazine 2011, nr 1, p. 28, online <http://content.yudu.com/Library/A1qies/mixexperiencetoolsnu/resources/index.htm>
- [5] Terzidis K., *Algorithmic Architecture*, Architectural Press, Elsevier 2009.
- [6] http://www.moh-architecture.com/projects_p005.htm, [06.2015].
- [7] http://www.makoto-architect.com/movie_youtube/iidabashi_m.html

GRAŻYNA HRYNCEWICZ-LAMBER*

(IL)LEGIBLE GAME OF CONNOTATIONS?
COMMENTS ON THE REPRESENTATION
OF JUSTICE IN ARCHITECTURE

(NIE)CZYTELNA GRA ZNACZEŃ ?
UWAGI NA TEMAT REPREZENTACJI IDEI
SPRAWIEDLIWOŚCI W ARCHITEKTURZE

A b s t r a c t

The facades of palaces of justice (not always intentionally) reflect the meaning attributed to those buildings. Judicial pride aims to immortalize power, administrative efficiency and humanistic openness here gains a specific expression. Despite the fact that justice procedures seem difficult and obscure, one of the fundamental principles of a fair trial is the principle of democratic transparency of proceedings, embodied strongly in the architecture of constitutional courts.

Keywords: Architecture of the third power, transparency, iconography of architecture

S t r e s z c z e n i e

W projektach fasad pałaców sprawiedliwości (nie zawsze intencjonalnie) odzwierciedlają się znaczenia, przypisywane tym gmachom. Swoistą ekspresję uzyskują tu pucha dążącej do uniesienia władzy, administracyjna efektywność i humanistyczna otwartość. Pomimo że procedury wymiaru sprawiedliwości wydają się trudne i niejasne, jedną z podstawowych zasad uczciwego procesu jest zasada demokratycznej przejrzystości postępowania, ucieleszniana najsielniej w architekturze sądów konstytucyjnych.

Słowa kluczowe: architektura III władzy, przezroczystość, ikonografia architektury

* Ph.D. Arch. Grażyna Hryncewicz-Lamber, W1 / K6, Faculty of Architecture, Wroclaw University of Technology.

1. Quid pro Quo – Wroclaw Justitia

A bronze sculpture of an ethereal woman inspecting the location with bright eyes, emblems of judicial power in both hands, is placed above the door of the modernist wing of Wroclaw regional court (Werner Haberland, c. 1930), – Justice, sculpted by Theodor Von Gosen. In 2005, as spokeswoman for the court, Judge M. Lamparska recounted “we added a blindfold (...) because we were constantly questioned about why Wroclaw Themis could see. Lawyers and their clients either joked about it or even demanded that it changed.” Only after intervention by the Municipal Conservator was the sculpture restored to its original state because “von Gosen had made *Iustitia*, which is the personification of Justice and not *Themis*, who is the goddess of Justice and the Law. Themis is sometimes depicted with a blindfold on, but Justice sees judiciously”[2].

This example illustrates the exceptional durability of general cultural clichés imprinted in the public and at the same time reflects the type of expectations regarding the iconography of the facades of justice facilities. Construction of law courts used to belong in the academic ariergarde of architecture rather than to the avant-garde. With the functionalist revolution of the mid- twentieth century changing the architectural scene, the distinction between building types ceased to exist, and a new language of symbols was needed. The response to the surfeit of formal and excess symbolism of earlier justice buildings was to adopt a model of extreme functionalism (represented for example in Chicago’s Federal Building and Courthouse by Mies van der Rohe of 1964): abstract skyscrapers of power.

It would be extremely difficult to discuss the topic of legal iconology, historical repertoire of motifs and themes of meaning being too replete. However, we should underline the importance of transition from creation of complex, multi-layered narrative decoration, complementing the past architecture of the judiciary, to the simple, often abstract message, preferred today by both artists and patrons of this architecture.

Linda Mulcahy states: “A common approach to the issue of ensuring that courthouses are legible to court users in ways which undermine the impression of an impenetrable facade is to use glass in place of walls of brick and concrete. (...) Glass is seen as an important medium in communicating the openness and accountability of a court is its community and suggests a justice system open to public scrutiny and inclusive of public participation”[3, p. 152].

The answer to the question that emerges here of whether the reception of a message is universal, and the *signifier* and the *signified* are indeed interrelated, should be left to the social sciences. I would like, based on a number of examples, to examine one of the trends: the softening of the image of the palace of justice. Realizations of constitutional and supreme courts, representing the highest social ideas, seem especially expressive in this regard.

2. In search for a universal symbol of transparency: the Federal Constitutional Court of Germany in Karlsruhe

The Constitutional Court in Karlsruhe is probably the most famous example of late modern architectural interpretation of political ideas of transparency and justice. According to the authors of the building, the court embodies the principle of Anglo-Saxon law, “Justice must not only be done, it must also be seen to be done” [1, p. 8]. The unique cultural significance of the court is emphasized by its location: the building is situated between the princely

palace (nowadays housing the court offices) and the city museum of art, in the very centre of the city's radial urban arrangement. Built to a design by Paul Baumgarten in the years 1965–1969, it was enlarged and partly rebuilt without losing its character and in the years 2011–14 has undergone a complete refurbishment, (Assem Architekten et al., the landscape architecture: West 8).

The building consists of five pavilions (courtroom, offices of judges, library, canteen, administration) linked by an axis of a glass corridor. The facades are curtain walls, with strong horizontal lines of aluminium panels and glass. The main courtroom, separated from waiting hall by glass partitions, is located on the upper floor of the pavilion closest to the public path in the surrounding park. The interior is strikingly austere: behind the judges' bench extends a wall clad in timber with an eagle sculpture (the symbol of the republic) – the bench and wall are made of the same wood. The hall around the courtroom is almost transparent and opens up to views of the city. The building seems to be transparent and inviting, a feeling of openness is underpinned by the discreet form of security – there is no fence at the front. Rational and minimalist in its formal aspect, Baumgarten's project suited the need for a building completely different in architectural expression to its Third Reich predecessors and reflecting the ideals of the Bonn Republic: accessibility, transparency, democracy, and modesty [1, p. 19]. This latter feature would be reflected in the ascetic choice of materials. Within the architectural practice, as Michael Wilkens, one of Baumgarten's co-workers reports, there were heated discussions about the idea of radical simplicity being violated through supplanting the more modest facades of sheet aluminium with individually produced corrugated aluminium panels (like the solutions used in facades of banks) [1, p. 77]

With the popularity of the use of large expanses of glass in courthouse facades, the encoded meaning of transparency has become less symbolically evident. The connotation of openness was blurred even more with the subsequent practice of installing facades of opaque, or reflective glass.

3. In search of a language of symbolic synergy of contemporary forms and references to ancient Rome: Warsaw

The modern idiom did not triumph in Poland completely (see Warsaw municipal courts from 1935, by B. Pniewski), and the post-modern age saw return to the architectural syntax of historical symbols, not always perfectly reflecting the present day. These include, among others, quotes from the architecture of socialist realism and a repertoire of references to the Roman idiom: images of Themis, symbolic paraphernalia, eagles, and ancient quotations.

The design for Warsaw's Supreme Court (M. Budzynski, Z. Badowski et al., 1998) contains a unique collection of symbols: the building is characterized by the monumentality of its colossal row of pillars bearing quotes from Roman law-givers, and the colour scheme of its facade evokes the colours of the patina-covered copper roofs of the old town. One of the critics said that the use of Latin inscriptions on the façade gives it an “intellectual patina” and the architect, Professor M. Budzynski, describes described the symbolism of the deployment of columns with Roman quotations as a reflection of “the rhythm of law.” The inscriptions were described in a monographic book from which the following quotation is extracted: “The initial intention of the author of the project was to put fragments of binding Polish law on the columns (...) The concept (...) met with reservations from Supreme Court justices, who



- III. 1. Karlsruhe – Constitutional Court seen from the Botanical Garden (during refurbishment works 2014), photo: author
- III. 2. Warsaw – a fragment of the Highest Court's facade, photo: C. Szabla
- III. 3. Seoul – Constitutional Court, photo: author

(...) feared the rapid fall into obsolescence of many of the inscriptions(due to changes in the Polish law system) “[6, p. 13] The 86 columns with inscriptions in Latin and Polish translations wrapping the building create a didactic narrative, which adds to the edifice’s magnitude.

The rhythms of the building’s facade were underlined by planting topiary shrubs in front of the building and on the roof the green, instead of weakening of the impression of formal rigour, strengthens it. The use of glass seems to be equally ambiguous – a symbol of accessibility and transparency – here in a reflective version coloured green, forms the unreal glass scenery of the buildings’ entrance and its interiors.

4. In search of an equilibrium: Seoul

The Constitutional Court of the Republic of Korea (Hui-su Kim and Sung-dong Kim) is an example of mixed references to two traditions: western (the authority of the government emphasized through motifs imported from another culture, as the idea of constitutional justice is new to the Korean judiciary), and the native (cultural values and the details drawn from local architectural tradition). The building is located outside of the main governmental campus consisting of inaccessible high-rise public buildings (the high court, prosecutor's office, and numerous ministries), in the historic district of traditional hanook type houses. The most characteristic feature of this humble example of post-modern style, beyond the neoclassical expression of a well-balanced façade (clear reference to the North American Art Deco), is a clear reference to the fundamental values of Korean culture – namely, to communion with nature. Inaugurated in 1993, the building is surrounded by a publicly accessible garden housing the national monument – a 600 year-old lacebark pine. The courthouse is pasted into the landscape in a distinctive Korean way – the context for the architecture is a mountaintop and greenery – and therefore the symmetry of the facade does not seem tedious, and the five-storey volume does not dominate the surroundings. The form of the courthouse corresponds to the traditional notion of a major building: the front is composed as a colossal row of pilasters and glazing (with a classic division into plinth, wall and entablature), crowned with a small dome. The stone pilasters are topped with reliefs of *mugunghwa* – the national symbolic flower. The abstract symbolism of vertical and horizontal divisions of the facade is unintelligible to Europeans and is intended to mean: horizontal lines – the constitutional principle of equality, vertical parts (highlighted by the pilasters) – the separation of powers, the central dome – the supremacy of the Constitution as the supreme law. [7] The Constitutional Court distinguishes itself by an efficient combination of motifs taken from native Korean culture – a series of stone steps, with fountains in bas-relief stone pools (references to the architecture of temples and palaces), cultured topiary greens, a horizontal layout interlaced with motifs of universal architectural vocabulary – a colossal row of pilasters with a curtain of glass between them.[III. 2].

5. In search of individuality: Constitutional Hill in Johannesburg

There are various levels of symbolic encoding in the Constitutional Court of South Africa (J. Masojada, A. Makin: OMM Design and p. Wygers: Urban Solutions, 2004): from the building's location to architectural details, reliefs and artwork selection. The main object was to recycle the symbolic space of past oppression – the court is located on the site of a former prison where anti-apartheid activists were incarcerated, among others, Gandhi and Mandela. The physical recycling of construction materials and fragments of the existing prison buildings took place (staircases were incorporated into the court building, the museum block holds maintained and partially adapted prison cells), and the space of the former prison was opened to create a city square in front of the court complex. The court itself is a modest, non-dominant volume. The main entrance façade is decorated with reliefs – the name of the building in all 11 official languages of South Africa. The main wooden door frames are decorated with carvings explaining the symbolism of fundamental rights, (representation of hands depicting the rights in sign language are the most expressive elements of the composition). The interior

of the main hall is, unlike the French courts' *salles de pas perdu* (waiting rooms in courts – called the “halls of steps lost”), a powerful, inviting space filled with works of art, evoking rather the feeling of being in a museum or theatre rather than a hall of justice. The symbolic presence of history and local culture in this place, sometimes described as “theatrical” and “sentimental” [4, p. 121], may be too overwhelming; the walls with preserved barbed wire, the magnificent multi-coloured carpets with traditional designs, the cow leather lining the judges’ bench in the main courtroom never stopping to preach values. The building is programmed as a *gesamtkunstwerk*, an account of human values (the fight against apartheid, equality between western and native cultures, freedom, etc.), and was intended to become a socio-cultural factor in the urban rehabilitation of downtown Johannesburg, which has not been fully achieved.

Local architects, interviewed by urban geographers about the legibility of the new Constitutional Court of South Africa’s symbolism, often answered that “the South African public is largely illiterate with regard to architecture”, therefore it is impossible for them to refer to the symbolic content of the building [4, p. 124]. Is it really possible not to understand the signs (and writings upon buildings) used by contemporary architecture to encode ideas of justice?

6. Summary

Discussion on the courthouse as a carrier of symbolic content [5] is present in many countries (especially among theorists of law), while the practice of design seems to be heading in two directions, distant (sometimes even hostile) from reflection upon the iconic:

- firstly towards the implementation of the courthouse, understood as an autopoietic architectural artefact – an icon of architecture (a trend established by R. Rogers’s design of the courthouse in Bordeaux 1998, continued by the same author’s court in Antwerp, visible in the circular plans of court buildings of the proposed Justice Campus in Madrid, with civil courts by Zaha Hadid)
- secondly, to the expression of efficiency, building objects “unrecognizable among other public buildings” (the Justice Campus in Barcelona by David Chipperfield, the new courts in Manchester by Denton Corker Marshall, or the slender 160-metre high new Palace of Justice by the Renzo Piano Building Workshop now in construction in Paris-Batignolles).

How do the Polish architectural circles respond to the problem? At the dawn of the twenty-first century, a considerable number of courthouses of different instances were erected. However, the potential discussion on this subject is absent, partly because of the lack of a solid critique. Individual designs, such as the Warsaw Supreme Court, and the Katowice District Court (Archistudio Pilinkiewicz & Studniarek) are marked by symbolic connotations, while others like Cracow District Courts (W. Obtulowicz et al.), Rzeszów District Court (Konior Studio) or the Supreme Administrative Court Warsaw (SAMI Architects, M. Lewandowski et al.) are laconic and universal architectural forms.

R e f e r e n c e s

- [1] Buerklin, T., Limbach, J., Papier, H.J., Wilkens, M., *Das Bundesverfassungsgericht in Karlsruhe*, Bazylea, 2004.
- [2] Maciejewska, B.: *Sąd oślepil Sprawiedliwość*, [in:] „Gazeta Wyborcza”, Wrocław, 2006-01-25.
- [3] Mulcahy L., *Legal Architecture: justice, due process and the place of law*. New York, 2011.
- [4] Patel, Z., van der Merwe, C. D., *Constitution Hill: Just Space or Space of Justice?*, [in:] Simon J., Temple N., Tobe, R., [eds], *Architecture and Justice: Judicial Meanings in the Public Realm*, Farnham, 2013.
- [5] Resnick, J., Curtis, D., *Representing Justice: Invention, Controversy, and Rights in City-States and Democratic Courtrooms*, New Haven, London, 2011.
- [6] Wołodkiewicz, W. [red.], *Regulae Iuris. Łacińskie inskrypcje na kolumnach Sądu Najwyższego Rzeczypospolitej Polskiej*, wyd.2, Warszawa, 2006.
- [7] on-line CCK information: http://www.ccourt.go.kr/home/att_file/ebook/1338546386275.pdf [2015-06-11].

RENATA JÓZWIK*

THE SCENOGRAPHIC CHARACTER
OF AN ARCHITECTURAL BUILDING OR PLACE
AS THE SUBJECT OF A SPATIAL NARRATIVE GAME

SCENICZNOŚĆ OBIEKTU ARCHITEKTONICZNEGO
LUB MIEJSCA JAKO PRZEDMIOT GRY
NARRACJĄ PRZESTRZENNĄ

A b s t r a c t

In this paper we describe the connection between theatrical scenography and urban design of the public space. Reference is made to the contemporary transformation in culture – especially post-modern trends which promote a narrative attitude to the creation of a place's identity and also changeability, flexibility, temporariness, and ephemerality in contemporary architecture.

Keywords: architectural context, spatial narrative, genius loci, scenography

S t r e s z c z e n i e

W artykule poruszono kwestię związku scenografii teatralnej z projektowaniem przestrzeni miejskiej. Odwołano się do współczesnych przemian kulturowych nurtu ponowoczesnego, które promują narracyjne podejście do kreowania tożsamości miejsca, a także zmienność, elastyczność, tymczasowość, efemeryczność architektury współczesnej.

Słowa kluczowe: kontekst architektoniczny, narracja przestrzeni, genius loci, scenografia

* Ph.D. Arch. Renata Józwik, The Department of Landscape Design and Conservation, Faculty of Horticulture and Landscape Architecture, University of Life Sciences in Lublin.

1. An introduction

Comparing theatrical scenography to contemporary public space and taking the cultural transformations of both into account (organization of space, artistic and architectural expression, new media etc.) similarities and connections can be observed which stimulate further research in this area. Initially theatrical stage design benefited from architectural knowledge and heritage, but the development of modern avant-garde theatre (sometimes named ‘experimental theatre’) made scenographic art more autonomous towards architecture and more often in relation to a literary work – becoming the art itself. Consequently some plots and elements of scenographic art became an inspiration and motivation for conscious and unconscious architectural creation and specific urban site shaping as a stage decoration – an arrangement for a real urban drama – city life going on in urban interiors and places.

In the paper general contemporary trends in the shaping of a theatrical scenography and an architecture of public space are identified and selected projects with elements of a stage decoration, creation, and other theatrical practice are presented.

The main thesis of the paper is “form follows narration”.

2. An anonymity of place

Marc Augé described no-places as a space with an unidentified identity, without meaning, no creating context, no initialising social activities, no making relationships between people and relations with surroundings [1, p. 53] – that is, to some extent deprived of basic ethical attributes: truth, beauty and goodness. No-places are in opposition to places, which have two additional features – place has a centre and limits. They can be formally limited or conventionally, giving the *genius loci* [7, p. 16]. It is a concrete expression interacting on the perception of the viewer.

3. A searching for meanings – between literature and architecture

The ability to create many narrations in architectural space means we can recognize cities and their objects as open works. Umberto Eco developed the idea of *open work* in opposition to: shapelessness, disorder, randomness, uncertainty of intentions, and, above all, ambiguity in art and literature. This thought induces the next – that there is the perspective for interpretation and dialectical perspective between the form of a work and its openness guarantees meanings and relations [2, p. 8]. Juliusz Źórawski noticed this aspect writing about the cohesion of form [9, p. 19].

Therefore we can put the question – who is the narrator and who is the interpreter of a work in architectural space? In the essays *The Legends of Modernity* written by Czesław Miłosz we read that a man wandering the city has many associations, reflections, images of people and situations – so he is both narrator and interpreter [6, p. 46]. The same role is played by the architect, but s/he has the special position of narrator-author, not reader of art.

In the search for meaning, context plays the main role. Creating a relationship between an object and its surroundings can take place in both directions – by making the building

compatible with its surroundings and vice versa. The third possibility is when a complex architectural creation covers a broad territorial and semantic range. Arranging a space with the aim of creating a narration resembles work on a theatrical stage – not just as a profession, but also at present there are many similarities in applied operation.

4. The theatrical stage as laboratory

Theatre combines almost all elements of artistic activity, and in addition is a kind of space-laboratory where we can safely experiment and recognize the reality – through the drama, but also through the context of the stage. The recall of the theatricality of the city was connected with the launch of daily life, street arts [8, p. 193–206], while the impact of architecture on the development of theatrical space was repeatedly perceived – there almost from the beginning of the dramatic arts. It created such concepts as, for example, the *Total Theatre* of Erwin Piscator and Walter Gropius, or the *Simultaneous Theatre* of Andrzej Pronaszko and Szymon Syrkus. Jan Kosinski writes ‘we must say that any scenography in a theatrical place has always been architecture – not an image or subject, but clean architecture understood directly, closing and describing the space around the man, which shows limits, capabilities of moving, and behaviour’ [4, p. 115,116].

Changes in the theatrical stage and space rely mostly on the gradual abandonment of realistic scenery to be replaced with collusive, minimalist or illusionistic scenery. The shaping which includes the central perspective aimed at the stage is replaced by a fragmented recognition of the scenery. Increasingly the performances also take place outside the stage, so there is no longer a formal division between the stage and the audience. To this arrangement, modern multimedia techniques are added that multiply the message, reinforcing the performance. There is also experimentation in lighting and movement. In each case the aim is to create a performative space, a certain spaciousness for the show, the spectacle, the performance [3, p. 176].

These trends are concurrent with the social and cultural transformations described as postmodernism. The disappearing limits between emptiness and materiality, reality and fiction, can be found in the dramatic arts and in architecture.

5. Scenography in shaping the architectural space

A stage design development of architectural space implies first of all emphasizing its narrative character – is it permanent or temporary, and increasingly often implies a potential change and adaptation to current needs. This all primarily violates one of the strongest architectural features formulated by Vitruvius – durability. Today, there are many buildings that by premise are created as temporary, by definition different from others, characterized by originality and uniqueness of solutions. Although the theatre no longer has such a strong principle of separation between stage and auditorium, in the shaping of space it refers to the slot design (scene boxed), which often emphasizes the attractive views, which in turn become marketing tools help to identify the space. What is important is the superficiality of architecture, which defines the interior or blurs the line between inside and outside. Developments in technology and the ease of adaptation to various applications has meant that elements of



- III.1. Museum of the History of Polish Jews in Warsaw – model, Warsaw, photo: R. Jóźwik, 2015
 III.2. Serpentine Gallery Pavilion, London, photo: R. Jóźwik, 2014
 III.3. Renewal of King's Cross Station, London, photo: R. Jóźwik, 2014

architecture are increasingly mobile, electronically controlled. There are multimedia screens that directly produce specific content or narrative information. The expression of these means of expression is becoming stronger. All these elements contribute to the paradigm of scenography design of architectural space, the essence of which is: form follows narration – space is created as abstract, narrative or poetic in a pragmatic context, which is the structure of the city. Kevin Lynch wrote: “A vivid and integrated physical setting, capable of producing a sharp image, plays a social role as well. It can furnish the raw material for the symbols and collective memories of group communication. A striking landscape is the skeleton upon which many primitive races erect their socially important myths” [5, p. 5].

6. Examples

The Museum of the History of Polish Jews (arch. Reiner Mahlamaki) was opened in 2015. Apart from the narrative of museum exhibition, the building itself and the process of its formation have features that create its meaning. In front of the museum, in the park, a temporary object was built – a pavilion-tent (herb. Ohel), which foreshadowed further architectural events, being a kind of prologue (Arch. Group CENTRALA, 2009). Its form alluded to the project selected in the competition – in conception has narration – entrance through a spatial installation.

In viewing the museum as a whole, it is most readable from the Ghetto Heroes monument, which became the inspiration for the design of the building. Based on the linear narrative form of the transition it can be read as follows: the monument is a symbol of heroism, but also recalls the extermination of Jews in the Warsaw Ghetto; the building introduces the issues of the history of Polish Jews; at the end of the museum the spectator-visitor encounters a large panoramic window, behind which grows a big tree, which can be interpreted as a symbol of life (as in the funerary symbolism of Judaism) [Ill.1]. The tree and the monument determine the context – the museum located on the axis is the element which makes the narrative complete. The scenographic additional element of nature is the entrance resembling the entrance behind the scenes, a mysterious and enigmatic place.

The annual projects of the Serpentine Gallery Pavilions show how there can be various interpretations in the same place – and thus different architectural narratives. Since 2000, the challenge has been faced by famous architects. During this time, the results have been projects with different relationships between space and surroundings: inward, isolated, open etc.

In 2014 the commission chose a pavilion designed by Smiljan Radić, resembling a Neolithic stone or cocoon and as a result of modelling took the form of a torus [Ill.2]. The formed shell, made of glass fibre “closed” the user inside. Contact and communication with the outside are enabled by an opening: entrance/exit directed to the main building of the Serpentine Gallery, a terrace open to the north part of the park, tree cropping window and opening the “epicenter” of the space. The building was also the setting for sponsored Friday night meetings with poetry, music, film, and literature. Thanks to the translucent shell, the pavilion was lit from interiors.

The earlier pavilion designed by Sou Fujimoto had a completely different character. The white spatial structure was dissipated in the landscape, resembling a white cloud. It was possible to go inside, but this form was more open than the Radić pavilion.

A place designed with a traditional stage design approach, taking into account specific views and curtains as “interior walls”, is the area of the ex Renault car factory in the town of Boulogne-Billancourt near Paris. In the area of the park special places were marked out which are directed to the best views of the landscape. For this purpose a special set of tall chairs has been arranged. The park’s plant and architectural framework, which is the heart of a new district, resembles a unified stage cohesive in nature.

Some elements supporting the architecture (e.g. artificial light – illuminations, but also the location in relation to the cardinal directions) also affect the scenography of a site. A very good example is the new philharmonic building in Szczecin (Estudio Barozzi Veiga, 2014). Originally the form of building was completely white block. During the building of the project it was supplemented by colourful illumination which could be controlled depending on needs and circumstances. It includes the possibility of change, comprising a different expression

within the building. A similar effect was used in a commercial building – M&M World at Leicester Square in London (Pompei AD, 2011). The whole glass facade is adorned with elongated light sources that change colour. Another example is the highlight of the covering of the newly redeveloped London's King's Cross station (John McAslan + Partners, 2014) [Ill.3].

7. Conclusion

Contemporary architectural transformations of space are inspired by scenography art – implementing: variability, mobility of elements, various and strong means of expression, and spatial narratives creating *genius loci*.

R e f e r e n c e s

- [1] Augé M., *Nie-miejsca: wprowadzenie do antropologii hipernowoczesności*, Publishing House PWN, Warsaw 2010.
- [2] Eco U., *Dzieło Otwarte: forma i nieokreśloność w poetykach współczesnych*, Publishing House Czytelnik, Warsaw 1994.
- [3] Fisher-Lichte E., *The Transformative Power of Performance: A New Aesthetics*, Taylor & Francis, London, New York 2008.
- [4] Kosiński J., *Legalne i nielegalne związki scenografii i jej integralność*, [in:] idem, *Kształt teatru*, Publishing House PIW, Warsaw 1984.
- [5] Lynch K., *Obraz miasta*, transl. T. Jeleński, Publishing House Archivolta, Cracow 2010.
- [6] Miłosz Cz., *Legendy Nowoczesności*, Publishing House Wydawnictwo Literackie, Cracow 2009.
- [7] Tuan Y.-F., *Przestrzeń i miejsce*, przekł. A. Morawińska, Publishing House PIW, Warsaw 1987.
- [8] Tyszka J., *Miasto jako teatr i przestrzeń teatralna – palimpsest problemów...*, [in:] *Miasto w sztuce – sztuka miasta*, Rewers E. (red.), Publishing House Universitas, Cracow 2010.
- [9] Żórawski J., *O budowie formy architektonicznej*, Publishing House Arkady, Warsaw 1962.

SEBASTIAN KIESIEWICZ*

DRAWINGS AND REALIZATIONS IN THE ARCHITECTURE OF JÓZEF PIUS DZIEKOŃSKI

RYSUNKI I REALIZACJE ARCHITEKTURY JÓZEFA PIUSA DZIEKOŃSKIEGO

A b s t r a c t

On the basis of Józef Pius Dziekoński's projects: a house for the Industrial "Saturn" Society officials in Czeladź (1907), transformer building for the "Saturn" mine in Czeladź (1907), the administration building for the "Saturn" Society in Czeladź (1910), industrial architecture that is not just a package for technology, but creates a new aesthetic and functional qualities, is shown. Such architecture also provides added value to the technology. Analysis of the projects can lead to the conclusions that the work of architect can create the origins of new concepts, ideas and styles.

Keywords: industrial architecture, Józef Pius Dziekoński, Polish modernism

S t r e s z c z e n i e

Na podstawie projektów: *domu dla urzędników Towarzystwa Przemysłowego „Saturn” w Czeladzi* (1907), *budynku transformatorowni na kopalni „Saturn” w Czeladzi* (1907), *budynku administracji dla Towarzystwa Przemysłowego „Saturn” w Czeladzi* (1910), autorstwa Józefa Piusa Dziekońskiego przedstawiono architekturę przemysłową która nie jest tylko opakowaniem dla technologii, ale tworzy nowe wartości estetyczne i funkcjonalne. Architektura ta stanowi również wartość dodaną do technologii która jest w jej wnętrzu. Przez przeprowadzenie analizy w/w projektów można dojść do wniosków że praca architekta może tworzyć zalążki nowych koncepcji, idei i stylów.

Słowa kluczowe: architektura przemysłowa, Józef Pius Dziekoński, modernizm polski

* M.Sc. Arch. Sebastian Kiesiewicz, (Ph.D. Student), Faculty of Architecture, Cracow University of Technology.

*The essence of art is immutable, similar to human thought,
Which always blunders around the same issues.
The only variables are social conditions, technology, and the historical situation [5]*

1. Introduction

In connection with the theses presented by the organizers of the conference, I would like to refer to one of these saying that there is still a belief in the magic of the sketch [8]. In my article, I would like to point out the fact that the drawing of concepts and architectural projects has considerably raised their merit and receptive value. Currently, projects are carried out using computer programs, which makes them more soulless, more mass. It is also noticeable that there is a lack of personalization in the design catalogues on offer today, in which the houses are for everyone, i.e. for no one. Not so long ago, drawing concepts and architectural projects played an elementary and decisive role in the creative process of the architect, and gave his work unique value which in turn was closely related to those commissioning the project. It also raised the importance of the creative process in the mind of the investor and the recipient. Presenting the concept was brought to the level that the investor should understand the spatial complexities. Frequently there was a sketch representation, which had to meet the requirement of transparency. With the large difference in potential between the imagination of the creator and the recipient in this system, there was a significant challenge for the creator. The projects here; the house for civil servants on 21 Listopada St. in Czeladź, the rallying hall/administrative building on Dehnelów Street in Czeladź, and the transformer building for the “Saturn” mine on Dehnelów Street in Czeladź will serve as examples of the magic of drawing concepts and projects. A magic that today is unfairly considered obsolete and unrepresentative. The result of this consultation of the initial phase sketch of the project with the investor is no longer practised in architectural studios. The plans for these buildings come from the turn of the twentieth century. Józef Pius Dziekoński drew them for the “Saturn” Industrial Society in Czeladź. To shed some more light on this topic I would like to briefly introduce the historical background and a profile of the architect.

At the turn of the century, the reconstruction of Polish independence was a priority for Polish intellectuals. One of the many tools used to achieve this objective was architecture, and in particular “national” architecture. It was meant to manifest the affiliation between historic lands under occupation. In Czeladź this form appeared multi-dimensionally, through the manor style (“Saturn” mine watchtower), as well as academic classicism (mine office building, the director’s house), and a form characteristic of Art Nouveau (the rallying hall/administration building). The “Saturn” mine was host to very interesting and stylistically varied industrial architecture. Also interesting is the fact that the aforementioned building and, inter alia, the home for “Saturn” officials (8 21 Listopada St), was designed by a graduate of the St. Petersburg Academy, Józef Pius Dziekoński. “The architect of the Archdiocese of Warsaw and a specialist in religious architecture” [6], in whose oeuvre the mining objects created for the needs of the “Saturn” Industrial Society in Czeladź appear to be unique and special.

Józef Pius Dziekoński was born on March 19, 1844 in Płock, the son of Antoni and Prospera nee Malewska. In 1852 he enrolled in the real secondary school in Warsaw, and in 1859 was admitted to the Warsaw Academy of Fine Arts, which as a result of the reforms of Aleksander Wielopolski changed into a university. At that time, architecture was taught there by: S. Baliński,

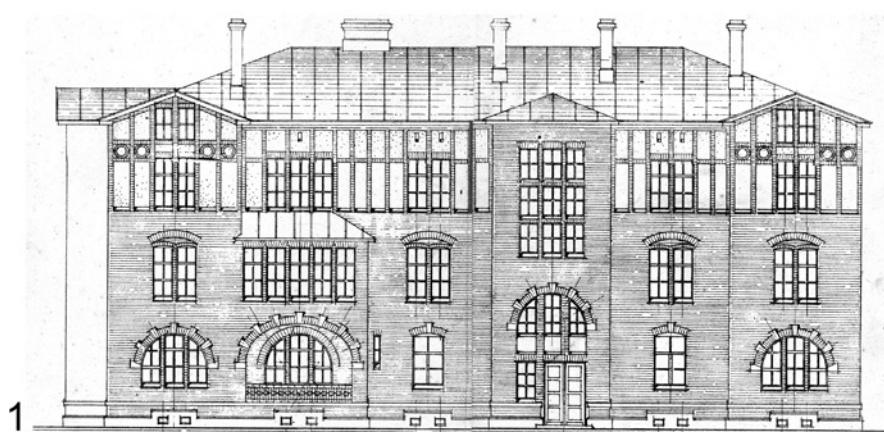
B. Podczaszyński, and H. Marconi. After graduating from the school in 1864, he worked with, inter alia: Adolf Wolin, Marcelli Berent, Emilian Falkowski, and Julian Ankiewicz, as an assistant. His first independent project was built between 1876–1877. It was the Church of the Holy Family in Zakopane. In subsequent years, this eminent architect of the late 19th and early 20th centuries, and one of the leading representatives of academic classicism, i.e. the early beginnings of Polish modernism realized successive religious projects: *The Church of St. Alexander in Warsaw, the Church of St. Stanisław in Wola, the Church of Our Saviour on Marszałkowska, and also carried out the restoration of the Church of St. Anne in Vilnius, as well as secular realizations: The Child Jesus Hospital, the Moraczyńskiego house in Aleje Ujazdowskie, the Gothic brick house at Marszałkowska Street No. 127, the Wawelbergs bank building on Kotzebue Street, and many others* [6]. The “Foreman” as he was called by his students (incl: Z. Mączeński, C. Romaniewski, J. Heppen, H. Kuder, Z. Lewiński, Fr. Lilpop, H. Luft, A. Nieniewski, L. Panczakiewicz, F. Michalski T. Szanior, J. Holewiński, p. Hoser), was also “an idealist and enthusiast, at the same time a pessimist in words, always worrying about the outcome of each personal action, whether social, his own, or someone else’s. In spirit, however, he was a typical Pole – an optimist, glad when someone managed to resolve his tide of pessimism with some convincing arguments” [4].

2. Józef Dziekoński – his drawings and projects

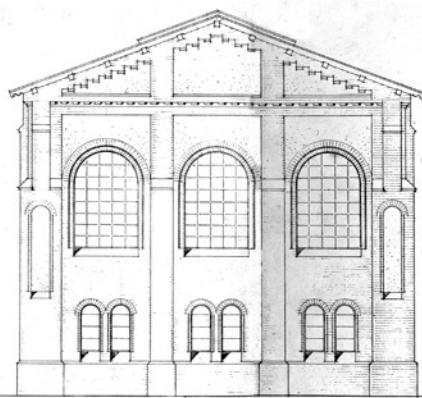
However, there are projects by the “Foreman” that have been somewhat forgotten, and besides this there are those that do not fully correspond to his earlier architectural work. These are the plans of the buildings included in the “Saturn” Mining and Industrial Association complex in Czeladź. These are unique realizations in Dziekoński’s works.

The House for officials (1907) on 21 Listopada Street in Czeladź. The block is very spacious. “There is a noticeable emphasis on the most important parts of the building (balconies, entry, living rooms) with a projection which is multiplied in each elevation. The areas of the projections are characterized by multi-wedge-shaped arches over larger window openings, and balconies occurring only in these areas. The drawing suggestively shows the division of the level of the building into three zones. The basement area with an emphasised plinth, and outlined within it the basement windows. The central zone with the balconies and the largest apartments, accentuated in the drawing by walls of full brick. The attic zone which contained only small window openings located between the vertical strips of bricks arranged in a neat row surrounding the building” [1]. This is a good example of zoning living space according to the activity and positions occupied in the workplace. The designer’s work allows us to understand how comprehensive his thinking about the architectural theme was and how large was the range of knowledge involved.

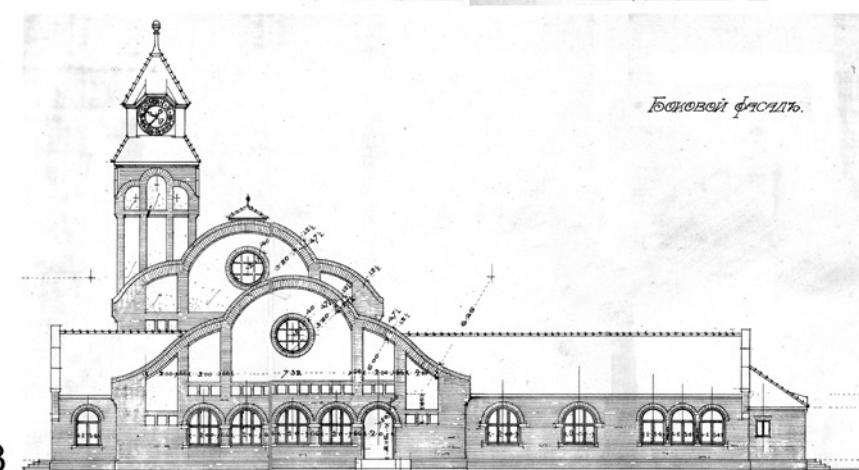
The transformer building (1907) for the Saturn mine in Dehnelów Street in Czeladź. The shape of the building represents the style of historicism. The figure reveals the designer’s deep analysis regarding the styles of old, and a large field of aesthetic experimentation. All the facades are marked by elements characteristic of the style presented. “Here there are Lombard-pilaster strips system combined with teething under the frieze, and a multiaxial facade, as well as stylised semi-circular bay windows with shutters. In addition, you will notice that each pilaster is highlighted in stylized form. In the areas between the pilaster strips are lodgings containing extensive window openings, and above them a small stylized arcade



1



2



3

III. 1. Project for House for officials, the State Archives in Katowice.

III. 2. Project of the transformer building, the Saturn Museum Archives in Czeladź.

III. 3. Project for administration building for the Saturn mine in Czeladź, State Archives in Katowice

gallery. The cornice with teething clearly divides the facades horizontally into two zones – commercial and ceiling” [2]. Under the cornice we can see stylized entablature, which is proof that the academic classicism was not just a generic style, but it was exploratory in the very early stages of modernism in Poland. In the basement section, there is a plinth surrounding the whole building, accentuated by the designer.

An interesting architectural form is the building of the rallying hall aka the administration building (1910) designed by Józef Pius Dziekoński. “The form of the building is marked by Art Nouveau, although it does not represent the typical Secession” [3]. It also has elements of Baroque style. The difference in style of this building from the other historicist designs followed from its destination and location. It was the representational building for the “Saturn” Industrial Society, the most prominent and formed the entrance to the mine. It housed a part of the mine administration, the library, the chapel, the pithead, the lamp room, and the bathroom, which was supplied with water from a tank located in the tower dominating the building, and which is also dominant in the broader planning view of the plant. The tower served many important functions. It accented the entrance to the plant, and was a kind of packaging for the water tank that supplied water to the factory bathrooms. The tower also served as a landmark, and information (clock) in the urban space of the mine. The entire body of the building is “drawn” with an exquisite delicacy of line cornices, which also subtly emphasize the plan of individual elements of the building, as well as naturally bringing out their purpose on the individual facades. On the northern elevation the tower also dominated, at the same time marking the main entrance to the mine. On the right side of the tower there is a rhythm of seven large semicircular windows with buttresses. From these elements of detail we can read that the function for this part of the building is the chapel. “On the left side of the tower windows are arranged rhythmically, but they are of different shapes and sizes. They are smaller and occur during seven times repeated triple windows, and are located at a height of roughly the first floor, which gives an idea of the size of the room” [3]. In this way, the designer emphasized another important function of this building – the pithead.

3. Conclusion

These examples of projects are just a slice of the rich creative achievements of Józef Pius Dziekoński. It is, however, a unique slice, based on which interesting conclusions may be drawn. Firstly, industrial architecture in Dziekoński’s project drawings is not just for packaging technology, but creates new aesthetic and functional qualities, as well as adding value to the technology that is inside it. This is a prerequisite to achieving fuller integration in relationship of art to technology, and also creative and developmental for both areas. Secondly, as a result of the thorough architectural drawing the creator deepens his research work thus often creating the seeds of new concepts, ideas and styles. And thirdly and finally, this work, exploratory in nature, enriches the designer’s oeuvre, and the results of his work. It means that the architect survives experiences and identifies more with the architecture he has created. This also creates new ideas for other presentations of creative concepts. Thus, these examples may refute the assertion that classicism (in particular academic classicism) is an imitative style which adds nothing to the history of architecture. In the light of these projects it is fair to say that classicism was an area where new values were sought by the architects of that era, and was thus instrumental in the germination of Polish modernism. Architects like

Józef Pius Dziekoński were its precursors and representatives of new creative thought in the new State of the Second Polish Republic. Speaking of creative thought, this tendency has remained variable for hundreds of years and is best expressed by the words of the American architect Philip Johnson: *Architecture is the most difficult of the arts. I have often envied my colleagues who write, paint, or compose music. They live where they want, work when they want, they have no problems with bad materials, leaky roofs, or blocked sewers. But despite this, can you feel more emotion than when working on a project for a building, erected in three dimensions, combining painting through colour and detail, and sculpture due to the form and mass of the building for other people who can appreciate the effect of the work* [7].

R e f e r e n c e s

- [1] Project documentation, *design for a house for officials for the “Saturn” mine in Czeladź*, State Archives in Katowice.
- [2] Project documentation, *design for a transformer building at the “Saturn” mine in Czeladź*, the Saturn Museum Archives in Czeladź.
- [3] Iconography, *View of the rallying hall building at the “Saturn” mine in Czeladź*, the Archive Museum of the History of Coal Mining in Zabrze.
- [4] Mączeński Z. *speech by arch. Z. Mączeńskiego presented at the Warsaw University of Technology in connection with celebrations of the late Joseph Dziekoński*, Warsaw 28.06.1939. Architektura i Budownictwo 15/6 (1939) p. 27–28.
- [5] Olszewski A.K. *Nowa forma w architekturze polskiej 1900–1925*, Wydawnictwo Polskiej Akademii Nauk, Kraków 1967, p. 23.
- [6] Piłatowicz J., *Józef Pius Dziekoński (1844–1927)*, Biblioteka Główna Politechniki Warszawskiej, Praca Historyczna no. 91.
- [7] Woźny p. *Historia wystawy „zapis idei”*, Arch, Magazyn architektoniczny SARP, marzec/kwiecień 2014.
- [8] XIV Międzynarodowa Konferencja Naukowa, tezy, Kraków 2015.

AGNIESZKA KŁOPOTOWSKA*

**THE ALPHABET OF NON- VISUAL ARCHITECTURE
– TOWARDS A METHODOLOGY OF ENABLING PEOPLE
WITH VISUAL IMPAIRMENT TO PARTICIPATE
IN ARCHITECTURAL PLAY**

**ABECADŁO AWIZUALNEJ ARCHITEKTURY
– KU METODOLOGII UDOSTĘPNIANIA GRY
ARCHITEKTONICZNEJ OSOBOM Z DYSFUNKCJĄ
WIDZENIA**

A b s t r a c t

Sight is the main sensory channel that determines access to the world of architecture. Any deficit in this sense constitutes a serious obstacle disrupting the physical, mental and emotional relationships with the developed environment. The idea of equal access for visually impaired users of architectural space requires consideration of all of these. The author's statement is an attempt to draw attention to the need to develop methods that would open the way for emotional reception of architecture conditioned by visual dysfunction.

Keywords: people with visual impairment, making the architectural space accessible, education for the blind and visually impaired

S t r e s z c z e n i e

Zasadniczym kanałem sensorycznym determinującym dostęp do świata architektury jest wzrok. Deficyt tego zmysłu stanowi poważną przeszkodę, zaburzającą fizyczne, umysłowe i emocjonalne relacje ze środowiskiem wybudowanym. Realizacja idei równego dostępu niewidzących odbiorców przestrzeni architektonicznej wymaga uwzględnienia wszystkich wymienionych wartości. Autorska wypowiedź jest próbą zwrócenia uwagi na potrzebę opracowania metod, otwierających drogę do emocjonalnego odbioru architektury w warunkach dysfunkcji widzenia.

Słowa kluczowe: osoby niewidome, udostępnianie przestrzeni architektonicznej, tyfloedukacja

The publication was carried out as part of statutory research no S/WA/1/12.

* Ph.D. Arch. Agnieszka Kłopotowska, Unit for Urban and Spatial Planning, Faculty of Architecture, Białystok University of Technology.

1. Introduction

Architecture is a spatial environment, a constructed living space. The exploration and targeted use of this space is one of the basic human needs.

Architecture is also a discipline of knowledge – the science of the technological achievements and progressive ideas of each successive civilization. Knowledge of these facts and events is part of the general knowledge that shapes human intellectual resources.

Architecture is finally an art – an area of sensitive feeling of space, the transformation of the constructed material world to the spiritual world of architectural ideas. The desire to commune with art is one of the most important manifestations of humanity

The main information channel determining the access to these “worlds” of architecture is sight. Any deficit in this sense constitutes a serious obstacle, disrupting the physical, mental and emotional access to the constructed environment. The author’s statement is an attempt to draw attention to the need to develop methods that will open the way for an emotional reception of architecture conditioned by visual dysfunction.

2. The existing methods of “opening” the architectural space.

The subject of safe movement in architectural space is one of the leading research problems in vision rehabilitation that has been present in this science since its crystallization. Very quickly these studies have become multidisciplinary in nature, involving methods and techniques from many partner disciplines (medical, technical, social science, etc.). Architectural research has also had a significant impact on development in this area of knowledge, by enabling the “spatial” context of matters related to functioning of the visually impaired to be highlighted. Currently available vision rehabilitation methods, intended to improve quality of life in the constructed environment, are based on the compensation for spatial orientation deficit by means of personnel and (human guide, guide dog, white cane, simple obstacle detectors, other technological solutions) environmental technologies which favour independent movement (elimination of spatial barriers, equipment of the space in a user-friendly solution for people with this kind of sensory deficit)¹. A complementary issue is the matter of proper preparation of users to move within the architectural space. Such training (although often only at a basic level) has already been an integral part of the general vision rehabilitation for a number of decades².

The quality of the contemporary architectural space, on the scale of Polish cities, buildings and their interiors still leaves much to be desired. However, it is worth noting that the

¹ Modern research indicate the undeniable value of universal solutions aimed at the broadest possible audience (e.g. legible, well-zoned spatial layouts, sounded crossing the road, multisensory SIM, etc.), and only then the special solutions dedicated strictly to visually impaired people (e.g. complex textural floor marking systems).

² An important part of them is learning to use the direct information (derived directly from the environment), but also indirect sources (e.g. plans, maps, models and other tyflo-logic aids), that support planning the route and independent movement. Particularly noteworthy is the innovative method of spatial orientation with the use of the environment sounds which was developed at the Adam Mickiewicz University in Poznan, under the direction of E. Hojan [5].

basic directions of deployments expected over the next decade are noticeable today, with a huge contribution of Polish architects – E. Kuryłowicz [6], H. Grabowska-Pałecka [2] and M. Wysocki [7] – calling for the creation and enforcement of effective regulations, implementation of accessibility standards, effective education of future designers and decision makers on the public space, and the fight against prejudicial social stereotypes that generate barriers in various areas of life.

3. Existing methods for mentally “opening” the architectural space

Understanding the rules that determine the shaping of architectural space is the key to active use of the environment, but it also intellectually enriches the individual. This belief is reflected in visual awareness education that includes this knowledge as an essential part of general education [4, p. 229–233]. The completion of the core curriculum with blind students requires special compensation methods, based primarily on the role of surrogate senses: touch (haptic “representations” of space³) and hearing (description, a comment or a verbal instruction). Similar methods of transmission of knowledge about objects and architectural spaces are also increasingly frequently used in practical situations. In Polish cities and utilities, touch reliefs (accompanied by relevant text comments and sometimes audio) and models presenting architectural principles and buildings appear in an increasing number. Verbal forms e.g. audioguides or specially organized tours with audio description, describing specific works, but also tools such as audiobooks or reading programs allowing independent gaining of this knowledge from public sources of information, also serve to expand the knowledge of architecture. Effective use of touch didactic aids depends on their proper development. Carefully prepared standards that eliminate the risk of errors should be the quality guarantee for all solutions implemented [1]. The degree of usefulness of these facilities also depends on proper preparation of the user, who must master not only the basic rules for their use, but also have specific knowledge of the theory and history of architecture and urban planning.

4. In search of methods for mentally “opening” the architectural space.

The physical and mental aspects of the availability of creations of the art of building are still only a narrow “gateway” revealing just a fragment of the rich world of architecture to people with visual impairments. Architecture, like any of the arts, is also a kind of “game of emotions”, in which the architect, who operates a unique code of meanings, values, symbols, and contexts, can deeply influence the recipient. The emotional perception of creative communication determines the quality of the encounter between man and architectural space no less than the physical and mental relationships.

Interacting with intentional visual architecture, a blind person without assistance remains completely helpless. Specific difficulties in the emotional response to the phenomenon of space make anyone with a visual disability a passionless participant of performances

³ The intensive work on optimization and distribution of modern forms of educational assistance should be noted (including extremely practical “brajlons” – half-spatial tactile graphics, which are characterized by durability, ease of use and ease of duplication) [4, p. 229–233].

designed for sighted people. The consequence of these barriers and restrictions can easily result in irritation and unwillingness to explore architecture. Skilful translation of impressions to the “languages” of other sensory systems or other arts provide a real opportunity to open this art to the needs of blind and partially sighted people.

This problem has been raised by a number of Polish architects⁴ and has been the subject of the author’s research for a number of years. It relates to making various disciplines of art accessible to people with impaired vision. In the author’s opinion a very important aspect that determines the possibility of sensitive contact with architectural works of art is the matter of the recipient’s in-depth architectural education. An overview of scientific studies on this topic indicates a particular shortage of methods and techniques that might constitute the basis of such an education.

This observation, as well as the author’s deep conviction of the possibilities for effective communication of architectural emotions (established by participation in demonstration lessons with blind children⁵) became an inspiration for practical research into the possibilities of teaching that would include the emotional dimension of architecture. One project, implemented for a number of semesters with students of the Technical University in Białystok and Lublin University of Technology, entails the development and creation of an aid kit – tactile toys that facilitate sightless understanding and the emotional feeling of contemporary architecture’s “language” by the blind⁶. The idea is based on the belief that developing the architectural sensibility is much easier thanks to the use of abstract geometric models. Specific issues – contemporary trends in architecture (e.g. “deliberate creation of clutter”, “a shape full of holes”, “an impression of falling” etc.) are explained first using simple compositions, consisting of various “cubes”, and then exemplified by means of corresponding models of concrete buildings. Learning with the use of the proposed aid kit would therefore be undertaken according to the following scheme: abstract composition – emotions – object – emotions. The target audience of the project may be people of any age wishing to learn more and truly experience the art of architecture.

⁴ Incl: E. Kuryłowicz (who indicates the possibility of using non-visual elements to support non-visual reception of architectural composition: e.g. rhythms, accents, guide elements, spatial culmination), H. Grabowska – Pałecka (who presents the advantages of the so-called. sensory pathways – using multi-sensory narrative for the transmission of values of architectural space and M. Wysocki (who continues these considerations and refer to non-visual potential or multi-sensory artistic events, supporting reception of architecture).

⁵ The lesson was held in the primary school in Laski near Warsaw on 03.01.2013. In the classes, conducted by the director of the institution, S. A. Badeński, participated 5-pupil group of blind students from Class IV [4, p. 229–233].

⁶ The starting point for the author analyzes was a student survey, aimed at selecting the objects – icons depicting the achievements of modern architecture, followed by indication of the features which were considered particularly attractive by the contemporary recipients. Analyzing the results of the survey and further discussions the author has attempted to identify and systematize selected “values” – architectural ideas underlying the specific creations or trends. The result of this phase of work was identifying and naming the phenomena in three basic categories: context, block, facade, in which the features regarded as the leading values and promoted by contemporary architects were specified and the corresponding emotions of the (seeing) recipient were identified. A further step, carried out by several student teams from both of the mentioned Universities was an attempt to translate the selected values into the language of touch.

Based on the methodological development in the creation of tactile graphics, as well as expert advice, the strategic objectives of the project were set out: the ease and convenience of perception, maximum simplicity of the message, emotionally active, funny and universally understandable verbal briefing, bright conclusion, the element of surprise.

The toys constructed on these foundations, consulted with a specialist in the field of vision rehabilitation, changed their shape many times. The formula of the proposed exercises also evolved over time – it aimed towards the recipient's ability to explore mobile models and self-discover rules – in accordance with the conviction that such experiences generate stronger feelings in the recipient and leave a deeper and longer remembered emotional trace.

The expected result of the team members' work is a set of experimental vision substitute tools – “A handy glossary of architectural jokes”, composed of several sets with a verbal briefing that illustrate haptically the specified architectural phenomena, characteristic of contemporary architecture. Due to lack of funding the models are currently made of cardboard. However, the author and members of her team treat them as the first step and the beginning of a path that can and should be developed further. In the author's opinion this method, implemented in a variety of variants, can become a kind of architectural alphabet game with the user – supporting the collection by each student of their own “emotional patterns library” to which resources newly cognized objects and architectural phenomena could be related.

This view seems to be shared by the project consultants – experts in the field vision rehabilitation education – who believe that similar toys can effectively help the process of architectural education, leading to more sensitive and more fully experienced architecture.

5. Conclusion

Providing architectural discipline for the blind and partially sighted is not just about the liquidation of the physical and mental barriers that hinder the reception and use of the constructed environment. These aspects, while extremely important, are not sufficient to fully understand (and love!) architecture, the essence of which is stimulation of the recipients' emotions. Due to the specific difficulties in understanding the emotional language of architecture, it is very important to develop effective assistance and didactic methods that would provide access to the architectural “game with the recipient”. The development of architectural sensitivity can and should become a complementary way of sharing this art with visually impaired people. To achieve these objectives further research is needed, aimed at developing the methodological basis for this form of education.

References

- [1] *Instrukcja tworzenia i adaptowania ilustracji i materiałów tyflograficznych dla uczniów niewidomych* (ed. S. Więckowska), Bydgoszcz, Kraków, Laski, Owińska, 2011.
- [2] Grabowska – Pałecka H., *Niepełnosprawni w obszarach i obiektach zabytkowych*, Kraków 2004.
- [3] Kłopotowska A., *Detal architektoniczny w poznaniu bezwzrokowym*, Czasopismo Techniczne. Architektura, R. 109, z.15 – t.2, Kraków 2012, p. 269–273.

- [4] Kłopotowska A., *Brajlon jako metoda zapisu przestrzeni architektonicznej w edukacji uczniów z dysfunkcją widzenia* [w:] *Definiowanie przestrzeni architektonicznej. Zapis przestrzeni architektonicznej*, T. 2, (ed. M. Misiągiewicz, D. Kozłowski), Kraków 2013.
- [5] Kłopotowska A., *Akustyczne obrazy przestrzeni miejskiej. Słuch jako narzędzie orientacji przestrzennej osób z dysfunkcją widzenia*, 2015, author's manuscript.
- [6] Kuryłowicz E., *Projektowanie uniwersalne. Udostępnianie otoczenia osobom niepełnosprawnym*, Warszawa 1996.
- [7] Wysocki M., *Projektowanie otoczenia dla osób niewidomych. Pozawzrokowa percepcja przestrzeni*, Gdańsk 2010.

ANNA KOSSAK-JAGODZIŃSKA*

HOW PLAYING AND HAVING FUN WITH GEOMETRY OF SPATIAL OBJECTS CAN BE INSPIRATIONAL IN CREATIVE ARCHITECTURE DESIGN

ZABAWA GEOMETRIĄ BRYŁ INSPIRACJĄ W TWÓRCZYM PROJEKTOWANIU ARCHITEKTONICZNYM

A b s t r a c t

Playing with transformations of a simple cube or plain sheet of paper using generative forming and folding is an exercise performed by first-year students at the Faculty of Architecture of the Silesian University of Technology in classes on single-family house design. The purpose of this architectural exercise is the search for inspiration and to stimulate students' creative thinking. It is a kind of initiation for young people who from the school bench in high school go to study architecture. Young people surprise themselves with their inventiveness and creative maturity while maintaining a fresh outlook. How to use this potential? What tools can be used in teaching so that they can effectively assimilate new ways of working and master new tools? How can we help the adepts of the profession to find the moment of transition to a higher level of creative initiation and how can we motivate them towards further research? The first year of study at the Faculty of Architecture is a very important experience for young people and a responsible task for teachers.

Keywords: generative forming, folding method, the creator, creativity, stimulation of creativity, search for inspiration, students' work, single-family houses

S t r e s z c z e n i e

Zabawa w przekształcanie prostej kostki sześciennej czy płaszczyzny kartki papieru metodą generatywnego formowania i metoda faldowania – takie ćwiczenia wykonują studenci pierwszego roku Wydziału Architektury Politechniki Śląskiej w ramach zajęć z Projektowania domów jednorodzinnych. Celem tej architektonicznej zabawy jest poszukiwanie inspiracji i pobudzenia ich kreatywnego myślenia. To rodzaj inicjacji dla młodych ludzi, którzy z ławki uczniowskiej w szkole średniej przechodzą na studia architektoniczne. Młodzi ludzie zaskakują swoją inwencją i twórczą dojrzałością, a jednocześnie świeżym spojrzeniem. W jaki sposób wykorzystać ten potencjał? Jakich narzędzi używać w pracy dydaktycznej, by mogli oni skutecznie przyswoić sobie nowe metody pracy i opanować nowe narzędzia? Jak pomóc adeptom zawodu, by moment przejścia na wyższy poziom wtajeniowania był twórczy i motywował do dalszych poszukiwań? Pierwszy rok studiów na Wydziale Architektury jest dla młodych ludzi bardzo ważnym doświadczeniem, a dla nauczycieli akademickich odpowiedzialnym zadaniem.

Słowa kluczowe: metoda generatywnego formowania, Metoda faldowania, twórca, twórczość, pobudzanie kreatywności, poszukiwanie inspiracji, prace studenckie, domy jednorodzinne

* Ph.D. Arch. Anna Kossak-Jagodzińska, Chair of Architectonic Designing RAr-2, Faculty of Architecture, Silesian University of Technology.

1. Introduction

There are different sources of inspiration in the search for creative architectural design. They may be the context of the place, buildings created in different historical periods, in different styles, the works of other contemporary architects, innovative design solutions, but can also be art, which consists of images, music, or biological processes, products of the world of living and inanimate nature, models, graphs and mathematical modules, and rules and principles of geometry. It may also be playing with plain and simple geometric objects, their composition, the search for relationships in space, or their transformation, deformation, or multiplication. The search for analogies in technical fields, natural sciences, social (and therefore beyond architecture as such) offers the highest level of creative discovery. As Gasparski says: "Designing is creating new totals (new systems) from known parts (known subsystems or components)" [6].

2. Searching for inspiration

Didactic exercises (experiments) in teaching architectural design introduced at the Faculty of Architecture, Silesian University of Technology in the classes of Single-family House Design, in order to seek inspiration and stimulate their creative thinking.

Generative moulding method

The method of generative forming is an example of the practical application of theoretical reflections on the universality of the language of space. One useful and inspiring directory is the set of activities named in words and depicted graphically, based on the geometry of spatial form presented in the *Operative Design – A catalogue of Spatial Verbs* [4] by Anthony Di Mari and Nora Yoo (young architects and teachers of architecture). It is a tool that helps to consciously control the unlimited possibilities of architectural moulding. Each step can be named and thereby consciously used. The catalogue is open to authorial supplementation by each architect, giving opportunities to build an infinite number of multilevel manipulation operations on form and space. It shows the components of the formation process, which is initiated by a basic action, then developed – according to merging principles – into a complex system of 3D formal transformations. [18]

Folding method

This design process was introduced by Sophia Vyzoviti, using her didactic experience in teaching architectural design at the Faculty of Architecture at the Technical University of Delft in the book *Folding Architecture: Spatial, Structural and Organisational Diagrams* [20]. The principle of the method is to convert the plane of the paper (the paper) into a spatial form while maintaining the condition of continuity in the material used. Any activity intuitively leading to an acceptable spatial form can be used. A set of verbs defining these activities creates an open list of activities called generative, i.e. causing the projected space and form. This is done morphogenetically, in which the final form is obtained as a result of a sequence of transformations. [18]

Table 1.

Open catalogues of activities in the method of forming and folding method – juxtaposition of terms. [18]

Catalogue of generative core activities on spatial forms by Anthony Di Mari & Nora Yoo:	Catalogue of generative operations used in the strategy by Sophia Vyzovity folding:
SPATIAL FORMAL OPERATION:	GENERIC ACTIONS:
1. Extrude 2. Inflate 3. Branch 4. Merge 5. Nest 6. Offset 7. Bend 8. Skew 9. Split 10. Twist 11. Interlock 12. Intersect 13. Lift 14. Lodge 15. Expand	16. Overlap 17. Rotate 18. Shift 19. Carve 20. Compress 21. Fracture 22. Grade 23. Notch 24. Pinch 25. Shear 26. Taper 27. Embed 28. Extract 29. Inscribe 30. Puncture
METHODS of AGGREGATIONS:	
31. REFLECT 32. PACK 33. STACK 34. ARRAY 35. JOIN	1. Fold 2. Press 3. Crease 4. Pleat 5. Score 6. Cut 7. Pull Up 8. Rotate 9. Twist 10. Revolve 11. Wrap 12. Pierce 13. Hinge 14. Knot 15. Weave 16. Compress 17. Unfold

Exercise:

The task for the students was the following:

- in the first place, transform a simple geometric block (cube or rectangular made of foam, styrofoam or plasticine), into a living space for people, performing 3–5 operations on the object;
- in the second place, convert an ordinary sheet of paper, cardboard or piece of plexiglas into a 3D object using 3–5 operations while maintaining the continuity of the object.

The paper or foam model is normally deprived of scale. By adopting the scale of the object its space can be analysed for adaptation to necessary features. The operation manually performed on a piece of paper or on a styrofoam block can successfully be replaced by 3D operations performed on the computer.

The purpose of this architectural game was to find inspiration for the project and stimulate creative thinking. It's a kind of initiation for young people who go to study architecture after secondary school. This is the beginning of their road to becoming creative artists. [18]

3. Creativity, creator and creative thinking

According to Tatarkiewicz [13] the word ‘**creativity**’ has a double meaning. The first is the process in the mind of person creating (creator), the second refers to the product of this process (works). The features that distinguish between creative and non-creative works are: **novelty** and **mental energy**. The feature of **novelty** entails bearing a quality which was not there before. **Mental energy** as the second measure of creativity is the hallmark of works that particularly show the ability of creator, their talent, genius, their creative tension, and the specific energy they used to produce this work.

According to E. Nęcki, [9] in addition to **novelty**, there is a second requirement, which is the **value**.

The subject of creative activity is the person we call the **Creator**, if he/she has the capacity to produce creations that are characterised by the simultaneous presence of two features: novelty and value. It is worth quoting A. Troskolański [14] on the traits attributed to the creative man that have functioned in psychology for many years: ‘In Arthur Koestler’s famous work *The Act of Creation*. [8] containing *The theory of the creative process*, there is the notion of the *gift of creativity*, as an *individual property* of individual who, thanks to an *innate disposition*, *unique perceptivity, intuition, and fluency of thoughts*, is able to pluck *the grains of truth*, from the tortuous reality of the world. These features constitute *the creative activity of man*’ [18].

The creative feature of the individual is assumed to be called **creativity**.

The creativity of the individual (developers) is subject to analysis. J. p. Guilford [7] introduced tests that enabled the features of the creative attitude to be examined, such as:

- liquidity – this feature defines the ease of coming up with ideas.
- flexibility – is the willingness to change the direction of thinking.
- originality – is the ability to create atypical, unique, unusual behaviours [18].

In any profession the passive, imitative attitude characteristic of the poor craftsman can be present. The good craftsman is an artist. We should be interested in the creative attitude, seeking new challenges, discussing with the existing reality, to change it and improve it. This requires a proper inner attitude and, despite appearances, is not obvious even for “professional” architects. (...) Prerequisites to creative activities are: **the search for innovation** and **recognition of the value** in what you are doing” [Zubel 16 p. 25].

4. Learning of creative thinking

Fortunately, creative thinking skills can be learned. Ways to encourage creativity are numerous and in fact different approaches are required for different people.

We train our mind to search for original solutions. We develop in our thinking a broader openness to creating ideas that would be contrary to the laws of logic and adopted rules. We stimulate the imagination to create unusual and improbable things by playing with the creative imagination.

It is difficult to find new solutions and create interesting, original ideas if we continually repeat our behaviours and duplicate the same strategies. As Abraham Maslow said, “If the

only tool they use is a hammer, everything will be treated as nails". Habit is the biggest barrier to creative thinking. [Maryńczuk 11 p. 14–16]

Human creativity is a feature of human nature, but we have only recently begun to understand its essence. Thanks to it we are able to look at the problem from a different perspective, apply innovative solutions and create scenarios for complex actions. Creativity is not a skill with which we are born. You can develop it by 3 steps:

- first we have to recognize the restrictions that we impose upon ourselves;
- secondly, we must reject or eliminate this assumption as too limiting;
- thirdly, we must consider the consequences of such a rejection.

Participation in the development of a project is great fun. Getting rid of the constraints, which leads to the free play of the imagination, is a liberating and exciting experience. Dealing with it can be compared to playing a role of the almighty in a limited world, receiving creative experience, which is necessary for each artist. [Maryńczuk 16 p. 9–11]

5. Stimulating creativity through play

Mary Lou Cook used to say: "Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes and having fun." Fun aids creative thinking. It allows you to break through emotional obstacles, actuates activity, activates the energy potential, and provides strong creative motivation [Maryńczuk 11 p. 17].

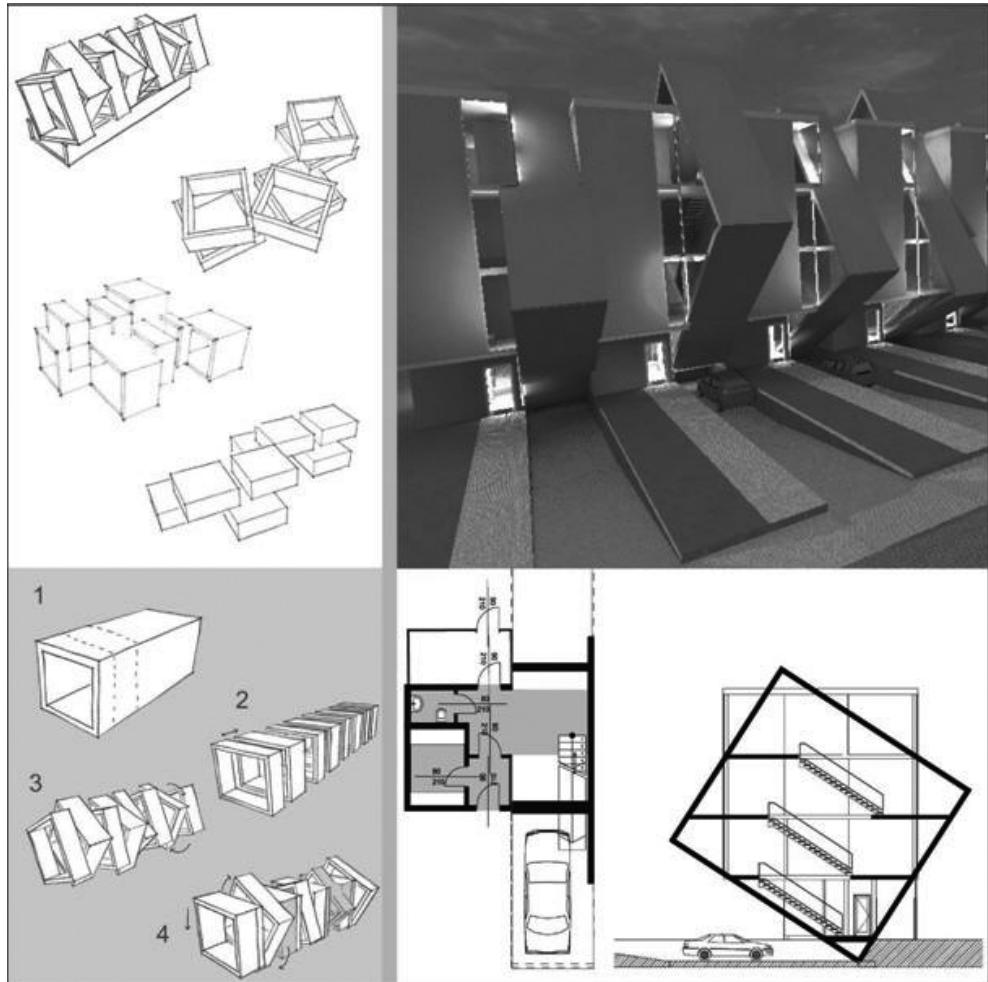
What kind of criteria must be met in order to call an action playful/fun? According to Groos, Buytendijk, Claparède play/fun is a cognitive exercise which is characterized by fictitiousness, playing with space, creativity, tendency to repetition, pleasure, relaxation, freedom, and youthful dynamics [6]. A design exercise can meet most of these criteria.

Following the definition in the PWN Encyclopaedia, playing/having fun is: creating a fictional, desired "pretended" world in order to understand it better. The basic features of playing include: the ability to choose, spontaneity, metamorphosis, creativity, impracticality, voluntarism and altruism, remaining in opposition to seriousness and work [Balcer-Zgraja 17 p. 64].

Without going deeper into the issues related to the psychology of creativity, we can see, based on everyday experiences, a simple relationship between the enjoyment of work and the final result of study research. "Where there is no play there is depression" [2] crippling inhibitions and fears. In contrast, a satisfactory effect appears wherever the author draws pleasure from their work.

Playing/having fun with form is a series of experiments carried out in a systematic way, and goes beyond hackneyed thinking and is rewarding. J. Kollartis attempts to clearly identify what fun is in the process called *jeux scientifiques*, scientific fun. [2]

Wherever research and creative explorations might be pursued – in design, art, education, science and management, play experienced again by adults can become a source of success [2]. "It is much easier to take risks in play than work. So why not treat these first attempts to build architectural form as fun?" [Serdyńska 16 p. 92]. Many serious contemporary entrepreneurs bring accents associated purely with fun into their workplaces, they also participate in studies on the effect of fun on the increase in employees' creativity [3]. Observations and



III. 1. An example of poster project implemented within the framework of exercise of Design of houses the Faculty of Architecture University of Technology in Gliwice, Stud.: Marta Rajczykowska, leader: Ph.D. Arch. Anna Kossak-Jagodzińska

studies show that deriving pleasure from their work, jokes, distance, and the attempt to free themselves from the shackles of stereotyped thinking programmed in the educational process usually lead to very good results [Balcer-Zgraja 17 p. 68].

6. Inspiration to design

The single-family home project carried out in the 2nd semester of studies is the first strictly architectural task that the student meets in the course of education. For the first

time in his/her life s/he must confront the problem of designing a space for a required function. The fact that the knowledge of what a single-family home looks like is widespread, despite appearances, only complicates and hinders the matter, because on first impulse the student tries to copy, more or less consciously, solutions s/he already knows. The role of the teacher is to make the student realise that designing is a creative activity, requiring the beaten track to be abandoned, and questioning ready-made solutions. [Serdyńska 16 p. 91]

According to the Polish Language Dictionary PWN an inspiration is:

inspiration, creative enthusiasm, luck
the impact on someone's suggestion

Translating this definition into academic realities, on the one hand we have a student looking for inspiration, on the other a teacher who should inspire him/her.

Peter Zumthor [19] defines architecture teaching as follows: "Young people come to the university, they want to be architects, they want to find out whether they have a knack for it. What shall be transmitted to them in the beginning? First you have to explain to them that the teacher standing in front of them is not one who asks questions and knows the answer in advance. To create architecture is to ask questions to yourself, is to get closer to your own answers, to revolve around them and to find them with the support of the teacher. Always and constantly."

In this specification, there is no place for absolute authority of the infallible teacher. The teacher of architecture is someone who provokes the student to ask questions and helps them to find answers. What is even more amazing, most likely there is no single, correct objective response – the answers are the student's own, so subjective, and the process of discovery is continuous. A good answer yesterday may not be a good one today. The essence of learning is the constant search [Serdyńska 16 p. 91]

7. Summary

The ability to design is one of the areas in which knowledge is derived from experience. According to Confucius: "Tell me and I will forget, show me and I may remember, involve me and I will understand". In the twentieth century this became an inspiration for experimental learning theorists. Experiential learning is the process of making meaning from direct experience. Aristotle once said: "For the things we have to learn before we can do them, we learn by doing them" [Balcer- Zgraja 16 p. 78].

"In architectural education, teaching approaches are more important than just teaching the profession. Fixing the whole range of knowledge and experience is extremely important from the beginning, only then can the student grasp the sense of the whole aspect. Such an approach in teaching would prompt the designer to creative effort, which would aim to simultaneously fuse the design, construction and economics of the particular task with its social objectives" [Walter Gropius, VI CIAM Congress Bridgewater England 1947].

In Department of Architectural Design at the Faculty of Architecture, Technical University of Silesia we have been conducting research on how to teach students creative thinking for several years, which has resulted in a series of publications "*Initiations in Architecture*" [1, 11, 15, 16, 17].

References

- [1] Balcer-Zgraja M., Czarnecki J., Kossak-Jagodzińska A., Serdyńska J., Radwański D., *INICJACJE w ARCHITEKTURZE – W poszukiwaniu funkcji – postmodernizm.* (Tom 2 część 2) Red. Serdyńska J., Maryńczuk P. Wyd. M-Projekt Biuro Usług Projektowych Paweł Maryńczuk, Gliwice 2012.
- [2] Brown S., *Zabawa to nie tylko przyjemność. To również obowiązek.*
http://www.ted.com/talks/stuart_brown_says_play_is_more_than_fun_it_s_vital.html [dostępny 10.06.2015].
- [3] Brown T.: O kreatywności i zabawie
http://www.ted.com/talks/tim_brown_on_creativity_and_play.html.
- [4] Di Mari A., Yoo N., *Operative Design: A Catalogue of Spatial Verbs.* BIS Publishers, Amsterdam 2012.
- [5] Elkonin D., *Psychologia zabawy.* Wydawnictwa Szkolne i Pedagogiczne, Warszawa 1984.
- [6] Gasparski W., *Projektowanie: koncepcyjne przygotowanie działań.* PWN, Warszawa 1978.
- [7] Guilford, J. P., *Natura inteligencji człowieka.* PWN, Warszawa, 1978.
- [8] Koestler A., *The act of creation.* Hutchinson Co., London, 1966.
- [9] Nęcka E., *TRoP...Twórcze Rozwiązywanie Problemów.* O.W. Impuls, Kraków, 1994.
- [10] Nęcka E., *Psychologia twórczości.* Gdańskie Wydawnictwo Psychologiczne, Sopot 2003.
- [11] Maryńczuk P., Olejko W., Załęcka M., Zubel H., *Inicjacje w architekturze – W poszukiwaniu funkcji – funkcjonalizm.* (Tom 2 część 1) Red. Maryńczuk P., Wyd. M-Projekt Biuro Usług Projektowych Paweł Maryńczuk, Gliwice 2012.
- [12] Szmidt K., *ABC kreatywności.* Difin SA, Warszawa 2010.
- [13] Tatarkiewicz W., *Twórczość – dzieje pojęcia.* 1988, p. 288–311.
- [14] Troskolański A.T., *O twórczości. Piśmiennictwo naukowo-techniczne.* PWN, 1982.
- [15] Załęcka-Myszkiewicz M., Czarnecki J., Maryńczuk P., Olejko W., Radwański D., *Inicjacje w architekturze – W poszukiwaniu formy.* (Tom 3 część 1) Red. Maryńczuk P., Wyd. M-Projekt Biuro Usług Projektowych Paweł Maryńczuk, Gliwice 2013, ISBN: 978-83-934068-8-3.
- [16] Zubel H., Kossak-Jagodzińska A., Czarnecki J., Balcer-Zgraja M., Serdyńska J., Maryńczuk P., *Inicjacje w architekturze – Model w poszukiwaniu idei projektowej.* (Tom 1) Red. Maryńczuk P., Wyd. M-Projekt Biuro Usług Projektowych P. Maryńczuk i Urząd Miasta Radzionków, Gliwice 2011.
- [17] Zubel H., Kossak-Jagodzińska A., Balcer-Zgraja M., Serdyńska J., *Inicjacje w architekturze – W poszukiwaniu analizy formy.* (Tom 3 część 2) Red. Serdyńska J., Maryńczuk P. Wyd. M-Projekt Biuro Usług Projektowych Paweł Maryńczuk, Gliwice 2013.
- [18] Zubel H., *Diagramowy zapis koncepcji w procesie twórczego projektowania architektonicznego na przykładzie prac własnych ze szczególnym uwzględnieniem Domu Kultury w Grodzisku Mazowieckim.* Praca doktorska obroniona na Wydz. Architektury Pol. Śl., Gliwice 2014.
- [19] Zumthor Peter., *Myślenie architekturą.* Wyd. Krakter, Karaków 2010.
- [20] Vyzoviti S., *Folding Architecture: Spatial, Structural and Organizational Diagrams.* BIS Publishers, Amsterdam 2012.

IZABELA KOZŁOWSKA*

**RULES OF THE GAME WHILE PLAYING
WITH ARCHITECTURE
IN THE CULTURAL ENVIRONMENT**

**REGUŁY GRY I ZABAWY ARCHITEKTURĄ
W ŚRODOWISKU KULTUROWYM**

A b s t r a c t

Frequently the built-up environment, including historical, becomes the venue of creative activity for an architect. The environment requires an architect to have the relevant conservation background, the ability to assess the value of a historical monument and its cultural context, and above all humility in his/her design work. This article presents the rules of the game applicable to the cultural environment, rules which are defined by conservation theory and the doctrine shaped by the Venice Charter.

Keywords: architectural design, monument, the Venice Charter, ICOMOS

S t r e s z c z e n i e

Środowiskiem twórczych działań projektanta jest często zagospodarowane środowisko, w tym historyczne, które wymaga od niego wiedzy konserwatorskiej, umiejętności oceny wartości zabytku i jego otoczenia kulturowego, a przede wszystkim pokory w podejmowanych działaniach projektowych. Artykuł przedstawia reguły gry obowiązujące w środowisku kulturowym, które ujęte są w ramach teorii i doktryny konserwatorskiej ukształtowanej przez Kartę Wenecką.

Słowa kluczowe: projektowanie architektoniczne, zabytek, Karta Wenecka, ICOMOS

* Ph.D. Arch. Izabela Kozłowska, Institute of Architecture and Spatial Planning, Faculty of Civil Engineering and Architecture, West Pomeranian University of Technology.

Games and play with architecture take place simultaneously, both in the virtual world created by architects during the design process and in the real world when architectural visions are finally implemented. It frequently happens that built-up areas, including the historical and cultural, become the environment for creative activity. This environment requires the architect to have a conservation background, an ability to assess the value of a historical monument and its cultural context, but first and foremost humility in his/her design effort.

When commencing any game, architectural included, its participants need to follow principles and rules that they should learn in advance. Omission of that stage may lead to conflicts between the parties involved and finally the failure of the game. It is this framework, which is defined for all parties in the game of architecture, such as architects, conservation officers, investors, and users, which determines the success or failure.

These games in the historical context enjoy a long tradition and have a sound foundation in terms of principles developed over the past two centuries by distinguished conservation authorities such as Eugène E. Vilolet le Duc, John Ruskin, Alois Riegl, Georg Dehio, and Camil Boito. The principles of conservation and design have developed through frequent conflicts and debates moving in the spectrum of theory and practice from refraining from intervention to complete freedom of intervention [3, p. 121].

At the moment, the basis for the contemporary game of architecture in the cultural environment is established by charters, declarations, and conventions, which define cohesive principles and rules that are gradually updated and complemented. The list of documents defining the doctrine, which are a kind of catechism for the architectural game in the cultural environment (by reference to *Katechismus der Denkmalpflege* by Max Dvořák of 1916) includes the following:

- International Charter for the Conservation and Restoration of Monuments and Sites – the Venice Charter, 1964,
- Declaration of Amsterdam adopted by the Congress of European Architectural Heritage, 1975,
- Convention for the Protecting of Architectural Heritage in Europe – the Granada Convention, 1985,
- International Charter for the Conservation of Historic Towns and Urban Areas, ICOMOS – the Washington Charter, Toledo – Washington, 1987,
- Charter for the Protection and Management of the Archaeological Heritage, ICOMOS, Lausanne 1990,
- Charter on the Protection and Management of the Underwater Cultural Heritage, ICOMOS, Sofia 1996,
- Declaration of San Antonio 1996,
- Declaration of Sofia 1996,
- Principles for the Preservation of Historic Timber Structures, ICOMOS, Mexico 1999,
- International Cultural Tourism Charter, ICOMOS, Mexico 1999,
- Burra Charter, Australia ICOMOS 1999,
- European Landscape Convention, Florence, 2000,
- ICOMOS Charter – Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage, 2003,
- Valletta Principles, 2011,
- Cracow Charter, 2000,
- Charter of Historical Ruins – Resolution of Polish National Committee of ICOMOS, 2012.

ICOMOS, an international organization established in Warsaw in 1965 and based in Paris, cares for historical sites and promotes cultural landscape protection activities. Its Polish counterpart, namely the Polish National Committee of ICOMOS, is a self-governing association “aimed at developing and supporting the preservation, conservation and appropriate use of the historical facilities that comprise the cultural heritage in Poland”. (Association Statutes of 19 April 2000, §1.1.). The Association is very active in publishing documents, and organizing conferences on the protection and conservation of Polish historical sites¹. Its output includes about 19 publications².

In particular in the Polish context, the impression may be received that the discussion on improving conservation doctrines and theories supported by the community of theoretical conservators is detached from practice. Despite the well-established opinion regarding the rules of the game in the field of cultural heritage, the rules are challenged, especially during the design process (crisis of practice?). The reasons behind this situation can be found, inter alia, in the insufficient implementation of conservation theory in Polish law. The main legal document in the field of historical site conservation is the Act of 23rd July 2003 defining the “object, scope and form of historical site protection and conservation, principles underlying the national programme for protection of historical monuments and conservation, restoration and construction works on historical facilities, as well as establishing bodies responsible for historical monument conservation” (art. 1). The Law does not define theoretical rules applicable to design, conservation and execution, or the values of historical facilities that need to be protected. Moreover, no additional requirements are set for designing and designers, apart from technical standards that stem from construction law and technical standards to be met by buildings and their locations³. Summarizing, since the law does not specify the rules, the rules become non-obligatory. The application of these rules depends on conservation guidelines (applicable only to facilities listed), and the sensitivity of the designer, his/her background and creative awareness, as well as the power to convince the investor that it is necessary to protect historical values in line with the conservation doctrine, and not only mere economic calculation.

As regards the doctrine itself, design in culture specific areas should be guided by “the idea of protecting a historical facility as evidence of the past”, contrary to the common opinion that it focuses on restoring the lost grandeur [3, p. 124]. “Basic values of a facility include: **genuineness** (no false elements), **completeness** (integrity) and **clear historical message**. The message, however, can be complex and include various layers (...), as well as reflection of elapsed time in the form of patina, traces of use, and damage. ... Protection of a monument (including its conservation) should be preceded by a thorough analysis of its historical message and the defining historical information it conveys, and distinguishing

¹ Website of the Polish National Committee of ICOMOS: <http://www.icomos-poland.org/>.

² ICOMOS Poland publications are available at (15.06.2015): <http://www.icomos-poland.org/index.php/pl/publikacje-pkn-icomos>.

³ Construction Law of 7 July 1994 (JoL 1994 No 89 item 414), Regulation of the Minister of Infrastructure of 12 April 2002 on technical conditions to be met by buildings and their locations (JoL 75 item 690). Proposed *Standards for developing design documentation for immovable historical facilities* developed by Prof. J. Tajchman in 2003 available at (15.06.2015): <http://www.icomospoland.org/images/dokumenty%20doktr%20i%20uchwaly/Jan%20Tajchman%20Standardy%20dla%20tzw%20zabytk%C3%B3w%20nieruchomych%20%28propozycja%29.pdf>



1



2



3



4



5



6

- III. 1, 2. Greifswald – Pommersches Landesmuseum, an adaptation of historic buildings for the museum by Architektenbüro Gregor Sunder – Plassmann (contest in 1996). In front of the main building is square with an underground garage. Source: I. Kozłowska, 2014
- III. 3. Greifswald – modern fountain in front of the gothic – baroque town hall. Source: I. Kozłowska, 2014
- III. 4. Greifswald – example skilfully shaped the cultural environment: in the foreground part of the medieval walls, behind the underground garage in front of the Pommersches Landesmuseum, in the background – silhouette of the Gothic cathedral. Source: I. Kozłowska, 2014
- III. 5. Greifswald – a modern building erected on the site of the former mediaeval walls, with reference to historic material and form. Source: I. Kozłowska, 2014
- III. 6. Greifswald – modern buildings in historic street, which retain the historical scale, parceling and form. Source: I. Kozłowska, 2014

between primary and secondary values of that information, as well as the role of the facility in the larger context (architectural, urban and landscape) [3, p. 126].

Design in a historical environment is guided by the conservation theory defined in the Venice Charter, which can be described by **seven golden rules**:

1. *Primum non nocere* – first do not harm,
2. Maximized respect to authentic substance and tangible and intangible values related to it,
3. Reduced intervention,
4. Removing deteriorating elements from a genuine facility (preservation of layers developed over each period),
5. Possibility of distinguishing new elements from the authentic substance,
6. As regards methods and materials, ensuring reversibility, repeatability and use,
7. As regards heritage, any activity should be in line with the best knowledge and good will [2, p. 107].

The major rules presented above should be supplemented by the provisions of the Venice Charter, such as:

8. Using a facility for social purposes is desired when it does not change the arrangement or decoration of that facility,
9. Restoration ends when guessing starts,
10. Research should precede all work,
11. Complementary work may use an architectural composition containing traces of modernity,
12. Traditional techniques should be used,
13. Extensions are possible, provided they link harmoniously with a historical facility and its historical surrounding, with due respect to all major parts of the building (comprehensive reconstructions are unacceptable)⁴.

The above rules should be complemented with further regulation taking into consideration new technologies and doctrine development:

1. Preservation of a historical message over contemporary use,
2. A historical facility should not be a background for developing contemporary architecture. Modern elements should be subordinated to the historical values of a facility and promote preservation and presentation of the latter,
3. Complement to rule 5: apart from the possibility to distinguish new and restored elements, aesthetic harmonization should be ensured,
4. Complement to rule 2: elements which from a technical point of view cannot be preserved should be replaced using original technologies and form,

⁴ Rebuilding of historical facilities damaged during WWII, which are well documented and deeply established in social awareness is an advisable practice used while restoring a number of buildings in Poland. At the moment, our western neighbour also follows those rules in reconstruction, e.g. rebuilding of Faruenkirche in Dresden in 1992–2005, Royal Town Palace in Potsdam in 2005 – 2012 and Royal Castle in Berlin in 2013–2019. The same applies to reconstruction of buildings resulting from experimental architectural and archaeological projects, e.g. Villa Urbana in Wroxeter, Great Britain. Apart from ruins of a Roman villa discovered in 1914, the project of 2010 reconstructed a building using traditional Roman materials and techniques.

5. Any activity in the historical environment should be documented and archived [3, p. 128],
6. When providing missing elements in historical cities their spatial arrangements should be preserved together with the division into plots, scale of existing buildings, and highlighting the nature and values of historical facilities,
7. Contemporary elements can be included, provided they are harmonized with the rest of the development,
8. Instead of rebuilding historical ruins, it is better to protect them against further deterioration and make them accessible to tourists⁵.

Not only should the rules of the game presented in this article play the role of a catechism for conservators, but primarily for architects designing in the cultural environment. The artistic sensitivity of architects (architecture is after all the art of shaping space), their technical knowledge, and knowledge of the rules applicable to the historical environment and determination in promoting those rules among other parties in the game determine the success or failure of design.

R e f e r e n c e s

- [1] *Zabytek i historia. Wokół problemów konserwacji i ochrony zabytków w XIX wieku. Antologia*, ed. J. Krawczyk, Oficyna Wydawnicza Mówią Wieki, Warsaw 2002.
- [2] Rauba B. J., *Teoria w praktyce polskiej ochrony, konserwacji i restauracji dziedzictwa kultury*, in: *Współczesne problemy teorii konserwatorskiej w Polsce*, ed. B. Szmygin, ICOMOS, Lublin University of Technology, Warsaw – Lublin 2008, p. 101–120.
- [3] Stępień p. M., *Kryzys teorii – czy kryzys praktyki? Co powinniśmy naprawić w systemie ochrony dziedzictwa architektonicznego*, [in:] *Współczesne problemy teorii konserwatorskiej w Polsce*, ed. B. Szmygin, ICOMOS, Lublin University of Technology, Warsaw – Lublin 2008, p. 121–132.
- [4] Strumiło K., *Trwanie i przemiany architektury – pawilony tymczasowe*, *Czasopismo Techniczne Politechniki Krakowskiej – Architektura*, 2012 R. 109 V. 4, p. 405–410.
- [5] Tajchman J., *Podstawowe zagadnienia metody konserwacji i restauracji dziedzictwa w zakresie zabytkowych budowli*, ed. B. Szmygin, ICOMOS, Lublin University of Technology, Warsaw – Lublin 2008, p. 159–167.

⁵ In recent years in Poland, reconstruction was provided to a number of historical ruins, e.g. Royal Castle in Poznan, Castle of Tykocin, Piast castle in Bobolice, Castle of Tropsztyn in Wytrzyszcze. The reconstruction was heavily criticized by the conservation and architecture community as unacceptable.

WIOLETTA KOZŁOWSKA*

ARCHITECTURAL GAMES WITH HISTORY

GRY ARCHITEKTURY Z HISTORIĄ

A b s t r a c t

The text discusses architectural games related to the conservation of historic monuments. Two museum designs are presented connected by an innovative design approach despite being fifty years apart. Between 1957 and 1974, Carlo Scarpa began an architectural game with the museum building in Verona. In the twenty-first century Daniel Libeskind continues Scarpa's unusual approach to design, but does so in an even bolder way, abandoning modernism and creating his own unique style.

Keywords: architecture, game, art, conservation of historic monuments, museum

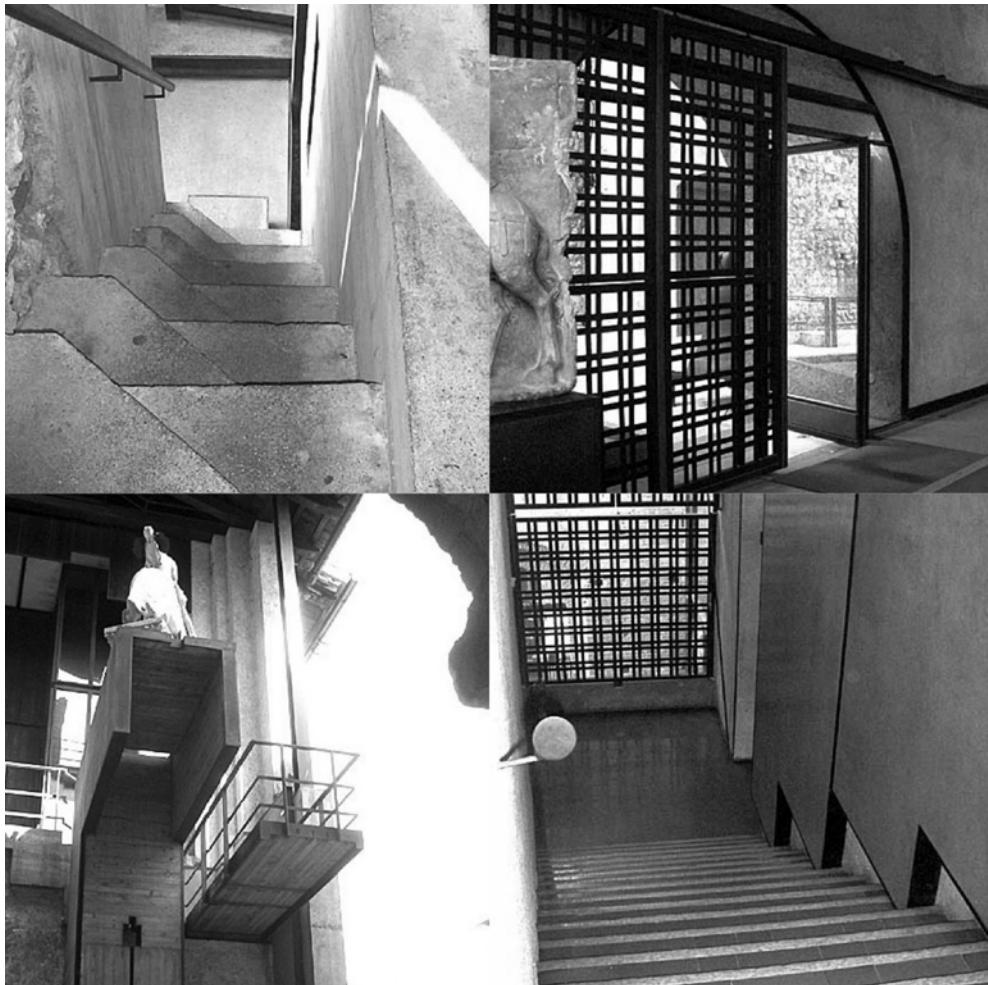
S t r e s z c z e n i e

Tekst opowiada o grach architektury związanych z konserwacją zabytków. Przedstawiono dwa projekty muzeów, które, mimo pięćdziesięciu lat różnicy, łączy nowatorskie podejście do projektowania. W latach 57–74 Carlo Scarpa zapoczątkował gry z architekturą budynku muzeum w Weronie. Daniel Libeskind w XXI wieku kontynuuje niecodzienne podejście Scarpy do projektowania, ale dokonuje tego w jeszcze odważniejszy sposób, zrywając z modernizmem i tworząc swój niepowtarzalny styl.

Słowa kluczowe: architektura, gra, sztuka, konserwacja zabytków, muzeum

* M.Sc. Arch. Wioletta Kozłowska, Institute of History of Architecture and Monument Preservation, Faculty of Architecture, Cracow University of Technology.

1. In architecture all sorts of games can be found: cheerful, joyful, recognizable, intellectual, imitating. However, there is a kind of architecture that conceals its games deep inside, and once we guess them, they are serious, not to say restrained. These are the restorers' games. The precept of *First, do no harm – Primum non nocere* – may intimidate builders who do not want to prejudice existing monuments. This precept derived from the very serious science of medicine, usually leads to a certain conservative approach to design, which is not treated as a pejorative term here. *Nulla regula sine exceptione – No rule without exception*, which may be a rule in the art, as which architecture should be considered. Architectural conservators or more broadly architects designing within the sphere of historic monuments face the problem of integrating new into the old fabric, not always treating a historical building with the seriousness it deserves. Nowadays, it seems, conservation actions are conducted with tongue in cheek.



Ill. 1–4. Carlo Scarpa, Castelvecchio, Verona, 1959–1973

2. The first major architectural game with historic monuments can be seen in the work of Carlo Scarpa from the years 1957–1974. What first comes to mind here is the fact that the architect did not think of the Hippocratic Oath, and perhaps just the opposite. Castelvecchio museum in Verona is located in a converted mediaeval castle. Carlo Scarpa created what one should call an architectural artwork, as it certainly was not a mere modernisation, combining two aesthetics – historical and modern. Known for his passion for concrete forms, the architect creates its temple here. Despite its technical shortcomings, it is not a usual material, but rather “the sophisticated concrete of Carlo Scarpa”, as described by Dariusz Kozłowski [3, p. 86]. The whole was connected with indissoluble bonds, and does not mean the durability of concrete here, giving the observer the ability to perceive the architect’s interference in the historical matter. The work is thoroughly modernist and fits Andrzej Kadłuczka’s description of modernism: “[it] is a concept as broad as ambiguous... in architecture, trends for the detachment from historicism, quests for simple forms or the use of rationalist functional and structural solutions” [2, p. 56]. The architect adorns everything with modern concrete additions. The stairs do not seem comfortable, but that was probably not the creator’s intention. Although being completely modern, the massive door fittings are reminiscent of mediaeval handicraft. According to Ewa Węsławowicz-Gyurkovich, despite the passage of time “... his recipes showing how to separate raw concrete or iron details from historic substance proved successful and are still up-to-date” [8, p. 56]. Perhaps the rationality of the applied means and integration in the historic walls was to be the beginning of a certain *Gesamtkunstwerk*, allowing one to perceive the combination of the destroyed castle, architectural work and exhibitions accompanying the whole. Perhaps it was just the architect’s game with a confused observer, the Futurists’ dream about the lack of ornamentation. After all, Antonio Sant’ Elia wrote in the Manifesto of Futurist Architecture from 1914: “No architecture has existed since 1700. A moronic mixture of the most various stylistic elements used to mask the skeletons of modern houses is called modern architecture. The new beauty of cement and iron are profaned by the

superimposition of motley decorative incrustations that cannot be justified either by constructive necessity or by our (modern) taste, and whose origins are in Egyptian, Indian or Byzantine antiquity and in that idiotic flowering of stupidity and impotence that took the name of neoclassicism.” [6, p. 306–307]. One will not discover whether the said Scarpa’s design would have been futuristic enough for the Futurists, but the museum certainly makes a great impression on the average visitor.

3. The world of contemporary museums is already completely futuristic. Scarpa’s tentative creation was a mere prelude to what was to come in fifty years. In creating a new form, Daniel Libeskind goes much further than his predecessor, oblivious to our likings and fears. Admittedly, there is no struggle of concrete here, but it is, as described by Tomasz Kozłowski, the struggle of an expressive single crystal with a historical object [4, p. 103]. Daniel Libeskind constructed the Militärhistorisches Museum der Bundeswehr in Dresden in 2011. It is an extension of the existing museum building which houses the arsenal from the years 1873–1877. The building was erected in the form of a palace with a body and two wings forming a kind of courtyard. Seen for the first time, the design seems to be an expressionist reference to (overturn of?) Ieoh Ming Pei’s Pyramid at the Louvre. The extension takes the form of a huge wedge which tries to scythe through the building. Decomposition of the whole is accomplished by penetrating to the inside of the back courtyard and breaks open the entire historical intent. The abstract form grows out of the cuboid installation shaft,

and disturbs the monumental the building's axiality. One can look inside the disquieting element whose façades are covered with metal, perforated, translucent elements. The interior, however, reveals constructions to us. The whole, it seems, is a pure form created probably to bolster the architect's ego. The function of this "ornament" may be that of any other artworks – uselessness. Modern architecture today has to be abstract, as the contemporary work of art is, after all, abstract. According to Ewa Węclawowicz-Gyurkovich: "it seems that abandoning the previous established order in architecture, deconstruction, has blurred the boundaries between possibility and impossibility of implementation. An architectural work – like a trembling, restless sculpture – stands in stark contrast to the surroundings. It often consciously creates a new value positioned within the historical structures," [8, p. 190]. The form of the "new" building is the most paramount, more important than its function. After all, Paul Valéry claimed that "what we call content is only an impure form" [7, p. 200]. Perhaps this is a source of modern architects' reluctance to emphasize the role of functions, or perhaps they are no longer able to design as in the past.

4. Bonawentura Maciej Pawlicki recalls: *Prepon – aptum – decorum* – Aristotle's three principles of the correlation of content and form, but they are no longer valid in modern art. "This category obliged the space shaping masters to use different structures and forms, depending on the type of buildings so that they become more beautiful, more magnificent and more enticing" [5, p. 109–110]. Like the words of Vitruvius two thousand years ago. He asserted three qualities of architecture: *firmitatis, utilitatis, venustatis*. Also those words can no longer be treated in a literal way as the exponent of beauty today, in the twenty-first century, in the era of information and continuous alterations in building assignments. Once museums were constructed according to the canon, style. They were recognizable, monumental, sometimes pompous, but even Le Corbusier used to say that "styles" are a lie, which gave us the basis for these considerations. After all, we are in the museum and here everything is, or at least should be, art. Let us remember that "...nothing is really beautiful but that which cannot be made use of..." [1, p. 52]. Therefore, let us praise even the useless shapes of buildings where equally beautiful useless items can be found.

R e f e r e n c e s

- [1] Gautier T., Preface, *Mademoiselle de Maupin*, Warszawa 1958.
- [2] Kadłuczka A., *Modernizm a ochrona zabytków*, [in:] *Ochrona zabytków architektury*, Vol I, *Zarys doktryny i teorii*, Kraków 2000.
- [3] Kozłowski D., *Beton surowy w architekturze lat 60. i pięćdziesiąt lat później*, *Czasopismo techniczne (Technical Transactions)* 3-A 2011, Kraków 2011.
- [4] Kozłowski T., *Tendencje ekspresjonistyczne w architekturze współczesnej (Expressionist Tendencies in Contemporary Architecture)*, Kraków 2013.
- [5] Pawlicki B. M., *Transformacja i eskalacja przekształceń zabytkowych miast (Tożsamość – degradacja – przeszłość)* [in:] *Megaron*, Kraków – Zamość, 2011.
- [6] Saint'Elia A., *Architektura futurystyczna*, 11 lipca 1914 [in:] Ch. Baumgarth, *Futuryzm*, Warszawa 1978.
- [7] Valéry P., *Estetyka słowa*, Warszawa 1971.
- [8] Węclawowicz-Gyurkovich E., *Architektura najnowsza w historycznym środowisku miast europejskich*, Kraków 2013.

ADA KWIATKOWSKA*

**GAMETECTURE:
ARCHITECTURAL FORM
IN AUGMENTED REALITY**

**GRATEKTURA:
FORMA ARCHITEKTONICZNA
W ROZSZERZONEJ RZECZYWISTOŚCI**

A b s t r a c t

Architectural forms of the digital age are based on games and computer simulations: formation, information, transformation. Formation means creation of structures as extensions of the kinetic potential of the human body (form as skin or wrapper). *inFormation* is based on the active power of information (interactive and intelligent structures). *transFormation* means sequences of forms as mutations of primary structures in topological space (metamorphic forms).

Keywords: architectural form, strategic games, spatial simulations, virtual reality

S t r e s z c z e n i e

Architektoniczne formy ery digitalnej powstają na drodze gier i symulacji komputerowych: formacja, informacja, transformacja. Formacja oznacza tworzenie struktur jako przestrzennej ekstensji kinetycznego potencjału ludzkiego ciała (forma jako skóra lub opakowanie). *inFormation* jest równoznaczna z kreacją form w oparciu o sprawczą rolę informacji (interaktywne i inteligentne struktury). *transFormation* oznacza tworzenie sekwencji form jako mutacji struktur pierwotnych w przestrzeni topologicznej (formy metamorficzne).

Słowa kluczowe: forma architektoniczna, gry strategiczne, przestrzenne symulacje, rzeczywistość wirtualna

* Ph.D. Arch. Ada Kwiatkowska, Department of Housing, Industrial, Interior, Rural, Visual Art and Structural Design, Faculty of Architecture, Wroclaw University of Technology.

Architectural games with space-time are an intellectual adventure in search of the potential and possibilities of architectural form's transformations in digital era of design. Virtual space-time can be defined as a digital representation of the real world, controlled on different levels of complexity of multidimensional information space. The architectural software makes it possible to create virtual representations of real structures and to generate every sequence of spatial objects in n-dimensional space. Simulation games, based on 3D-computer programs, are the tools for creating new generations of architectural forms thanks to differentiation of their inner structures.

Models of virtual space are founded on the fundamental dimensions of reality, such as: space, time, matter, energy and information. These dimensions are not treated as separate and independent, but constitute a unity. This means that every change in a parameter of spatial structures in one dimension influences parametric quantities in other dimensions [17]. The architectural form in VR can be defined as organized and informed space-time structure [5, p. 405–408; 7, p. 59–67].

Concepts of architectural form refer to different philosophical ideas, describing the spatial settings of an individual's life in the aspect of a phenomenon of human nature. In the digital era, the individual is confronted with such artificial creatures as *avatar*, *cyborg* or *hybrids*. Discoveries in genetic engineering make it possible to manipulate human genes. A new kind of human being can come into existence in the way of passing from natural to cultural evolution (from *homo sapiens* to *robo sapiens*), which could have an impact on the mutual relations between the individual and the spatial settings of human life [III. 1].

The concepts of human being and architectural form, according to Georges Teyssot, were defined from a spiritual, organic or structural point of view in the history of architecture [20, p. 72–84]. Today, we can observe a different way of thinking about the individual and spatial structures – the macroscopic perspective – which describes all the phenomena in the system-information categories.

1. The individual and their extensions: a reflection on the human condition

Present-day artists and architects show different possible ways of exploring space-time in the near future, which require re-definitions of the notion of the individual and architectural form. These artistic visions are like litmus papers, showing possible directions of development for our civilization [2]. Analysing their hidden meanings, it is possible to distinguish some fundamental trends in the search for definition of the individual and their spatial settings: the human body as the biological, biotechnological or trans-biotechnological organism, connected with different concepts of spatial context of the body (wrapper, electronic peripheries and hybrid extensions).

In the world of artistic experiments, the spatial settings of biotechnological or hybrid human bodies transform continuously. These experiments are an inspiration for the futuristic visions of architects, who try to define different design strategies in relation to changes in the concept of the individual: from formation, leading to creation of the spatial structures as

wrappers for the biological body of the individual, through *information*, initiating the interactive structures, addressed to biotechnological concept of the individual, to transformation, generating the sequence of metamorphic forms for trans-biotechnological concept of the individual [5, p. 405–408].

2. Skin and the wrapper: reflection about sensuality of architectural form

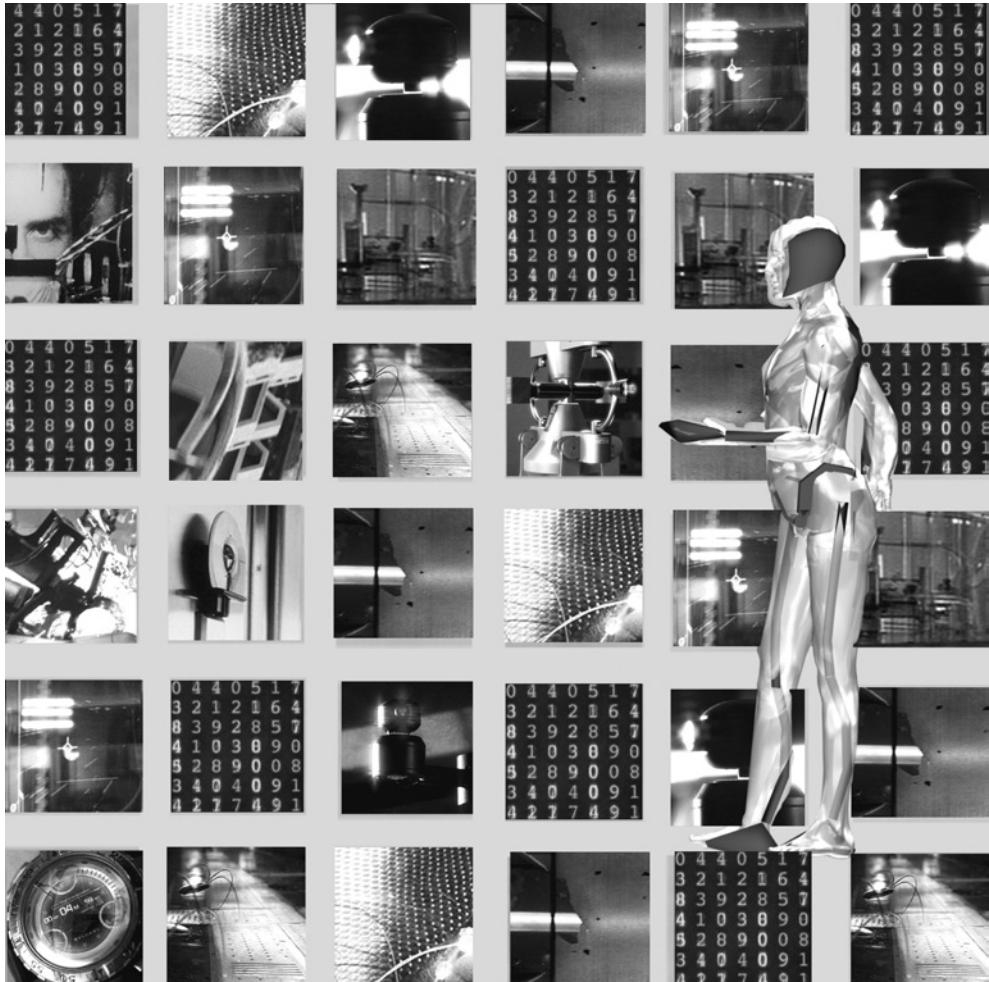
Formation as design strategy is a structured process of shaping of the space, addressed to the biological concept of the individual. Space becomes a sensory and kinetic extensions of the human body, forming the invisible framing – a spatial bubble around it, which harmonizes with the motion of the body, the sphere of kinaesthesia. Architectural forms inspired by the process of formation in contact area with body are the derivative of its shape and its kinetic features.

Architectural form as the expression of the human body (*third skin*, Hundertwasser [15]), relates to its physical structure (skin, skeleton and internal organs) or to the concept of dress, covering the body. Form as *skin* becomes a biological organism, which can breathe, evolve and grow old. Form as *dress* becomes a wrapper for the individual's body, expressing their individuality and likings. Form inspired by the concept of wrapping can be characterized as the neutrality of package's shape in relation to its content, e.g. *Basic house*, arch. M.R. de Azúa [18]. Architectural form as the alternative skin or dress adapts itself to the human body's needs, regarding ergonomic and aesthetic requirements, e.g. *Refuge wear*, arch. L. Orta [18]. In this meaning, the spatial structures become either the extension of the body' limbs or the spherical bubble enveloping the human being.

Mobile forms take their inspirations from the movement of the body and they translate its dynamic postures into the spatial pattern language of architectural structures. These forms result from the architects' fascinations with mobility, flexibility, and liquidity of space. They express a concept of architecture as *motion and flow*, defined by Archigram [4], which found its continuation in current digital architecture. Forms generated by dynamic forces imprint the trajectories of movement in the structural substance, e.g. *Ether*, arch. DECOi [22]. Mobile forms, correlating to the human being's body, often generate additional response and body' movements, e.g. *Turnon*, arch. AWG [18].

3. Interactive structures: reflection about the artificial intelligence of architectural form

*in*Formation as design strategy is a structured process of shaping space in relation to the biotechnological human body, equipped with electronic devices and sensors. Space is treated as a digital extension of the intellectual potential of the individual [9, p. 52–58]. Space becomes intelligent thanks to its saturation with electronic devices, peripherals, and interactive technologies. Extending the consciousness of the built-environment or granting artificial intelligence to architectural objects can be realized in different ways, from concept of forms as machines to info-media, interactive or illusory forms.



Ill. 1. *Robo sapiens* in augmented reality (image by author)

Forms as machines are created according to the fundamental principles of mechanics. They are subordinated to such aims as: simulation of movement of structural elements, introduction of an active time factor to architecture, and energy conversion, e.g. *Portable House*, arch. Philippe Gregoire, Claire Petetin [1]. Spatial patterns shaping the mechanistic forms are connected with an acceptance of certain assumptions of the necessity of: gaining energy from alternative natural sources and designing the circulation of a closed energy system in a structure, inspired by the idea of *perpetuum mobile*, e.g. *Intelligent House*, arch. K. Sakamura [16, p. 35–40].

Info-media forms operate on artistic expressions taken from the language of electronic media; a language which is based on the active power of information. Space becomes a medium between sender and receiver, emitting bits of information and images, e.g. Schauberg

DuMont, arch. J. Nouvel [12]. Shapes of architectural forms seemingly disappear because of the screens' omnipresence. The only messages from media facades manifest in space, which allows the users to express their own narrations, manifestoes, or aesthetic preferences.

Interactive forms are based on different game strategies, which make possible interactive communication between users and architectural structures on different levels of complexity. The experimental forms are characterized by the use of interactive walls, screens or membranes, e.g. *Aegis*, arch. dECOi [22]. Interactive forms, saturated with information and electronic devices, make it possible for users to steer the work of the structures, to interact with other users, or to travel in the virtual world, e.g. *Media Galaxy*, arch. MVRDV [11].

Illusory forms come into existence within the concept of virtual reality, e.g. *Virtual New York Stock Exchange*, arch. Asymptote [1]. Illusory space can be reduced to a machine emitting holograms, which are the expression of any structures in three-dimensional space. According to the diagnosis of Marcos Novak, relating to directions of development of future architecture, form will follow fiction, not function (*form follows fiction* [13, p. 43–47]). In illusory space, forms can change their own expressions with no limitation; they can appear or disappear thanks to use of new technologies, e.g. optical camouflage, hologram, or stereoscopic projections [19], making it possible for users to live in a virtual, illusory space, e.g. CAVE, and i-CONE [21, p. 344].

4. Metamorphic forms: reflection on the limits of formation

transFormation as design strategy is a structured process of shaping space in relation to the trans-biotechnological, hybrid human body, connected with interference into the genetic code – algorithm of the spatial structures. Architectural form is treated as a variable state of structural organization in the topological space. In this way of thinking, games with space-time reach furthest, raising fundamental questions about the limits of formation, keeping intellectual discipline, or the criteria of architectural valuation. *transFormation* as design strategy leads to creation of sequences of metamorphic, convertible, transgenic, generative and animated forms.

Metamorphic form is characterized by structural transformations, passing from one to another state of structural organization in topological space. These processes require the application of organic materials to architecture, which allows the spatial structures to extend, transform and evolve.

Convertible forms are based on data transmission and the mutual convertibility of information, energy, matter, time and space in a multidimensional reality. The information stream, passing through the structure, causes transformation of the architectural object according to the direction of informed energy flow, e.g. *Saltwater Pavilion*, arch. K. Oosterhuis [22]. The fundamental challenge is to maintain and equalize the energy in the structure during the conversion process, e.g. V2Lab, arch. NOX [22].

Generative forms come into existence thanks to mutations in information codes and experiments with algorithms of spatial structures. Generative forms, e.g. *Data-Driven Forms*, arch. M. Novak [22], can only be realized in the case of using of nanomaterials in architecture; materials which enable access to the internal codes of spatial structures.

Transgenic forms are characterized by transformations of the substances of spatial structures as a consequence of passing through different states of aggregation of matter, e.g. *Blur Building*, arch. Diller & Scofidio [10], or in the way of modifications of internal algorithms, influencing the variability of structural substances, e.g. *Embryo house*, arch. G. Lynn [22]. These forms mean a combination of the physical components of built-environment – *urbs* – or architectural structures – *archs* – with the information codes – *bits* (*the physical urbs are replaced by bits* [14, p. 7]).

Animated forms come into existence thanks to simulation of the observer's movement. They are characterized by liquidity and non-determination of the mutual relationship between forms and context. Perception of the animated object is based on the simulation of one or many viewpoints in the space-time, e.g. *Enteractive, Electroland* [3]. Animated forms, besides the introduction of complexity in perception of spatial structures, define afresh the relations between form and context, according to which a form can transform into context, and inversely – the context can become a form, e.g. *Haptic horizon*, arch. S. Perrella [22].

5. Conclusions

In the era of digital design, *gametecture* – an architectural game with space-time – causes the creation of infinite sequences of spatial structures. In consequence of the inflation of forms created by simulation games, the valuation of spatial structures based on the traditional criteria of the beauty of form or logic of the structure loses its meaning because of the permanent changes and mutations of forms in time. Simulated forms are variable and transformable thanks to the flow of information, energy, and matter through space-time.

New technologies break down the barriers between place and space, creating a category of liquid fuzzy spaces and augmented reality. Nowadays, close and distant places are connected thanks to digital and time communication, and not because of spatial proximity. The liquid architectural object becomes a context for itself, while the liquid context can become an object in the continuous transformations of architectural forms [6, p. 32–41; 8, p. 62–67]. *Gametecture* blurs the borders between interior and exterior, place and space, form and context, object and process. Is there any form here?

References

- [1] *ArchiLab – Radical Experiments in Global Architecture*, Orléans 2001.
- [2] *Art Now – Artists of the Rise of the New Millennium*, Köln 2005.
- [3] Enteractive, <http://www.electroland.net/flash.php>, [21.05.2007].
- [4] Jencks Ch., *Ruch nowoczesny w architekturze*, Warszawa 1987.
- [5] Kwiatkowska A., *Informative-Interactive Design Theory of Software Age*, Environment-Behavioral Studies for the 21st Century, Tokyo 1997.
- [6] Kwiatkowska A., *Transformation in the Age of Virtuality*, Transportable Environments 2, London 2003.

- [7] Kwiatkowska A., *Forma eksperimentalna w erze digitalnych technologii*, no. 1, Architectus, 2004.
- [8] Kwiatkowska A., *Metafory – metamorfozy*, no. 3, Archivolta, 2005.
- [9] Kwiatkowska A., *Forma architektoniczna jako kod digitalny w erze elektronicznego ekosystemu*, no. 4, Archivolta, 2006.
- [10] Marotta A., *Diller + Scofidio Blurred Theater*, Raleigh 2011.
- [11] *MVRDV 1991–2002*, Madrid 2003.
- [12] Nouvel J., *Jean Nouvel – Emmanuel Cattani*, Zurich 1992.
- [13] Novak M., *Transmitting Architecture*, no. 118, Architectural Design, 1995.
- [14] Pearce M., *From Urb to Bit*, no. 118, Architectural Design, 1995.
- [15] Restany P., *The Power of Art – Hundertwasser*, Cologne 1998.
- [16] Sakamura K., *TRON-Concept: Intelligent House*, no. 4, Japan Architect, 1990.
- [17] Schmitz-Günther Th., *Living Spaces*, Cologne 1998.
- [18] Smith C., Topham S., *Xtreme Houses*; Munich 2002.
- [19] Tachi S., *Telexistence and Retro-reflective Projection Technology*, 5th Virtual Reality Conference, Paris 2003.
- [20] Teyssot G., *Hybrid Architecture*, vol. 11, no. 4, Convergence, 2005.
- [21] Weiss P., *Deep Vision: When Walls Become Doors into Virtual World*, no. 22, Science News, 2002.
- [22] Zellner P., *Hybrid Space*, London 1999.

ALEKSY ŁAPKO*

**FROM SKETCHES TO ARCHITECTURAL PROJECT.
INSPIRATION BY NATURE AS THE GENESIS OF
ARCHITECTURAL FORM BASED ON SELECTED
BUILDINGS BY SANTIAGO CALATRAVA**

**OD SZKICU DO ZAPISU PRZESTRZENI.
INSPIRACJA NATURĄ JAKO GENEZA
FORMY ARCHITEKTONICZNEJ – NA PRZYKŁADZIE
WYBRANYCH OBIEKTÓW SANTIAGO CALATRAVY**

A b s t r a c t

The architectural object may arise as a result of inspiration from Nature. But firstly, the idea appears in the mind of the architect, which is then realized in the form of a drawing. The first concept sketches that support the idea of the project are the base of a project, and thus an architectural object. This paper briefly describes the design process based on selected buildings by S. Calatrava.

Keywords: *inspiration of nature, the design process, S. Calatrava*

S t r e s z c z e n i e

Dzieło architektoniczne może powstać w wyniku inspiracji Naturą. Lecz w pierwszej kolejności rodzi się idea w umyśle architekta, która następnie zostaje urzeczywistniona w postaci rysunku. Czy pierwsze szkice koncepcyjne mogą być nośnikami idei projektowej, na bazie której powstaje projekt, a następnie obiekt architektoniczny? W przypadku S. Calatravy, zabawy w rysowanie architektury można traktować całkiem poważnie.

Slowa kluczowe: *inspiracja naturą, proces projektowy, S. Calatrava*

* M.Sc. Arch. Aleksy Łapko, The Department of Architecture of Local Cultures, Faculty of Architecture, Technical University of Białystok.

Inspiration from Nature has manifested itself in art since the beginning of human civilization. Actually, you could venture to say that the mapping of Nature was something peculiar and natural to human society from the first moments of its existence.

The manifestations of inspiration from Nature in art, especially in architecture, took on different forms and characters depending on the prevailing philosophical views, the current intellectual currents, the place that art occupied in society, as well as many other factors. Threads adapted from nature can be found both in architectural detail as well as in the proportion of the components of architectural objects, but also in the same architectural form. Without wishing to go into the issues concerning the relationship between architecture and nature, as that would require a far broader discussion, it is worth mentioning that this problem has been exhaustively analysed in the work of Andrzej Czastka *Architecture and Nature. The problem of mimesis in architecture* [1, p. 64].

In touching on this topic, it seems reasonable to pay attention to how the inspiration of Nature can initiate the design process and analyse, even in summary form, the issue. In order to illustrate this, a few examples from the circle of contemporary architecture have been used, namely several buildings by the distinguished engineer and architect Santiago Calatrava.

The fascination of and inspiration from Nature is clearly used in the work of Calatrava. What is characteristic of his work is the expression manifested in the forms of architectural buildings that fully harmonize with the design, reveal its structure, and clearly present the work of construction. Calatrava's architectural objects can be compared to enormous sculptures. It is probably the sculptural form that makes the relationships between the architecture created by Calatrava and Nature so clear and recognizable.

In the case of Calatrava, this inspiration from Nature is also reflected in his sketches. Are these sketches a kind of archetype of an architectural object? You should think so. In this case, the architect's drawings, with apparently little in common with architecture, are important media of the idea of the project. An architectural landmark becomes the result of the fun of drawing.

Among Calatrava's many great works, 3 buildings have been chosen to discuss the topic.

- The planetarium in Camino de las Moreras in Valencia is a clear example of an architectural object inspired by Nature, in this case – the human body (as in the case of many other works by Calatrava) (Ill. 1). The architectural form of the building is associated with the human eye. The association is also justified by the moving steel structure which obscures and reveals the planetarium just like an enormous eyelid. An interesting yet fully understood solution used by the author is the use of reflection of the architectural form on the surface of the water, which makes the idea of the design very clear and the composition creates an unambiguous whole (Ill. 2. and Ill. 3.).
- The TGV station in Liège (Ill. 6) is a building that is distinguished by its lack of facades (traditionally understood), giving the impression of "transparency". This approach has created an interaction between the inside of the station and the environment. The glazed steel decking allows both the perception by the recipient (underneath the overlap) surrounding the station, as well as allows people outside to observe the structure of the interior. The composition of the architectural form of the station manifests what is peculiar to many of Calatrava's works, namely the expression which can be seen in the structure of its main elements, designed as gently overlapping hatch lines that form the basic structural elements of the building. The large spans of the arches were justified by functional conditions, and at the same time

helped to create a free interior space not divided by supporting objects. After analysing the architectural form of the TGV train station, it seems to be reasonable to say that it was created under inspiration from Nature. Mild, penetrating arc lines – the main elements of the composition, which are also the basic elements of construction – may be associated with liquidity of motion, and the soft and gentle shapes of the human body (Ill.4 and Ill.5). Calatrava, in modest statements, explains to us, the recipients, his intentions in the design:

I imagined a building without facades with a soaring roof above offering protection from the elements (particularly the ever present rain of the Belgian Winter). This could maintain the views through and of the station. The vaulted shape was a natural development of this vision while the soft (perhaps feminine) undulating curve of the roof was selected to mimic the graceful rise and fall of the Cointe hills beyond. [4]

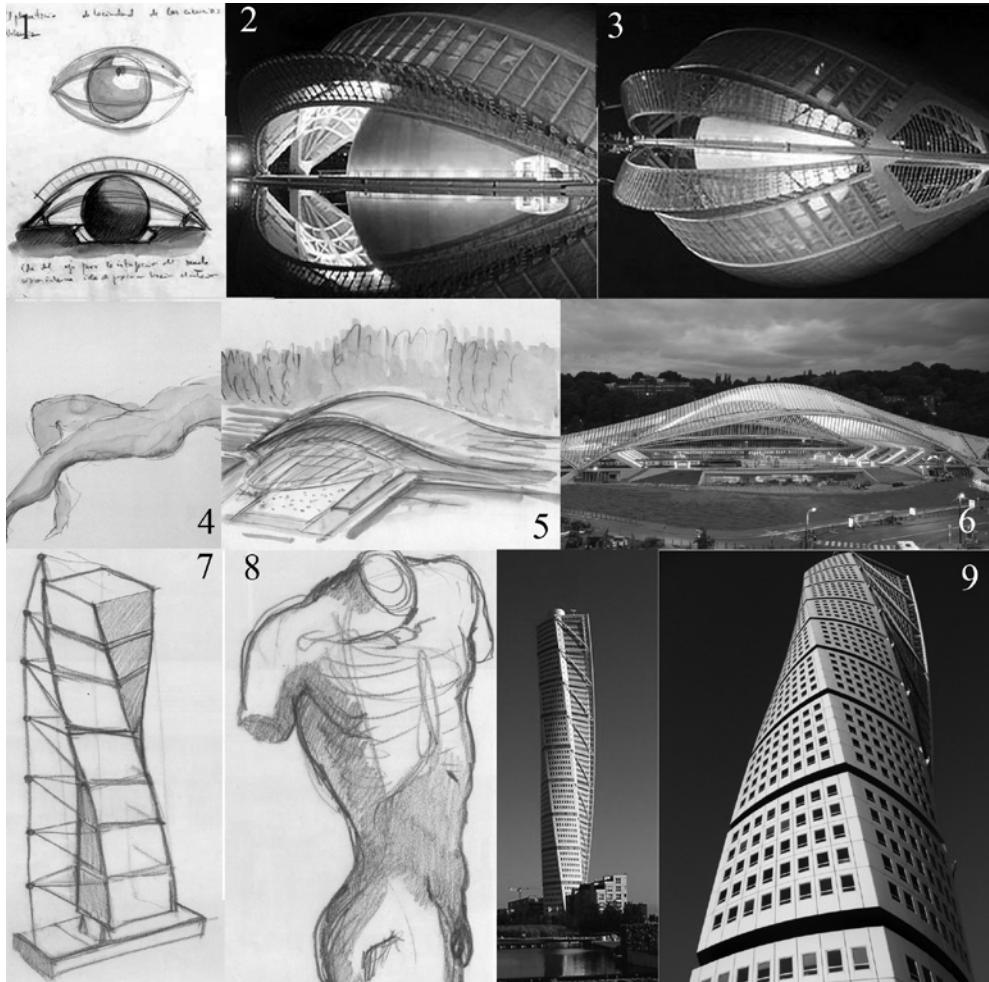
- Turning Torso in Malmö is a 54-storey residential building (Ill.9), the prototype of which was Calatrava's sculpture "Twisting Torso". The architectural form of the building was inspired by the movement of the human body (as indicated by its name), but the realized idea of the design is not as immediately clear and obvious as in the case of the planetarium in Valencia. The Turning Torso's architectural form has been created in such a way that, although it does not cause an immediate association with the human body, you can see the different components of the composition, which can be seen as a further or closer analogy to human body parts. One of these elements of composition (which also has a structural role) is an exterior steel vertical lattice. Comparing the building to the human body, such an element can be interpreted as the spine. The shape of this architectural form may evoke associations with a twisting human body (Ill.7 and Ill.8). This "twisting" of the building around its own axis causes the building to be perceived differently depending on where the observer stands. As in the case of observing the human body from various directions, the impression is that it spreads upward, or conversely, narrows (this effect is increased by light and shade).

The aforementioned architectural objects reveal Calatrava's inspiration from Nature (many other of his buildings also confirm this). At the same time, the examples, as well as concept sketches, allow us to magnify the process of creating the work.

The archetype which is inspired by a future architectonic item undergoes some creative transformation in the mind of its creator. This creates the first conceptual outline, which then becomes the basis for the process of creating the architectural form. At this point, it is worth quoting Andrzej Czastka's monograph:

"The image as the source and prototype of concepts of architectural works [...] is a special kind of artistic creation, with infinite potential ability to construct an individual version of the real world, making it the "medium" between Nature and the world of imagination of the artist manifest in the shape of works" [1, p. 64].

Given this thought (which can be regarded as a claim), it is appropriate to refer to the previously mentioned examples of the works of Calatrava. In his case, the records of the thoughts presented in the form of sketches become the "prototype" final architectural form. Inspirations drawn from nature are preserved in the mind of the author and converted into



- III. 1. Conceptual sketches by S. Calatrava to design Planetarium Camino de las Moreras [5]
 III. 2, 3. Planetarium Camino de las Moreras [7]
 III. 4, 5. Conceptual sketches by S. Calatrava to design TGV station in Liége [3, p. 88,89]
 III. 6. TGV station in Liége [8]
 III. 7, 8. Conceptual sketches by S. Calatrava to design Turning Torso in Malmö [3, p. 392]
 III. 9. Turning Torso in Malmö [9]

images. These images then receive real shapes defined by the artist in the form of a two-dimensional sketch or in three-dimensional form, e.g. a sculpture.

In a sense, such two-dimensional or three-dimensional records can be treated as a specific game (seemingly frivolous). However, this game is nothing more than a record of the architectural space. If we look at architecture in the broad context, not only in the context of a specific, formed and composed space, it becomes a medium for an idea, thought or symbol.

R e f e r e n c e s

- [1] Cząstka A., *Architektura a Natura. Problem Mimesis w architekturze*, Kraków 2007.
- [2] Flaga K., Januszkiewicz K., Hrabiec A., Cichy-Pazder E., *Estetyka konstrukcji mostowych*, Kraków 2005.
- [3] Jodidio Ph., *Santiago Calatrava*, Taschen, 2003, p. 88, 89.
- [4] <http://www.arcospace.com/features/santiago-calatrava/liege-guillemain-tgv-station/>
- [5] http://www.domosfera.pl/blogi/talamala/2012/05/inspirowane_ludzkiem_cialem/1
- [6] <http://www.jmhdezhdez.com/2011/03/libro-book-turning-torso-calatrava.html>
- [7] http://www.projectclassica.ru/v_o/11_2004/11_2004_v_02c.htm
- [8] <http://picasaweb.google.com/lh/photo/8ynvS3h39G399ed5Pz8Rww>
- [9] http://s133.photobucket.com/user/baratkyy/media/450px-The_Turning_Torso_Malmo.jpg.html

MONIKA MAGDZIAK-GRABOWSKA*

THE GAME IN DECRYPTING GEOMETRY WHICH HIDES THE HISTORY OF PLACE

ZABAWA W ROZSZYFROWYWANIE GEOMETRII SKRYWAJĄCEJ HISTORIĘ MIEJSCA

A b s t r a c t

The city is a multilayered structure composed from multiple pieces, each of which has been subjected to the individual influence of history and changes of time. The city is a game board where architects play at refilling empty fragments. The rules of the game allow geometric deformations of space, in order to establish the context of the concealed history of the place. The goal of the game is to bring what is most valuable and precious from the existing urban structure, or build a new value that will last the test of time.

Keywords: *fragments of the city, multilayered structure, geometry, deformation*

S t r e s z c z e n i e

Miasto to wielowarstwowa struktura, złożona z wielu fragmentów, z których każdy ulegał indywidualnym wpływom historii i przemianom w czasie. Miasto to plansza do gry, na której architekci bawią się w uzupełnianie pustych fragmentów. Reguły gry pozwalają na geometryczne deformacje przestrzeni, w celu nawiązania kontekstu do skrywanej historii miejsca. A celem gry jest wydobycie z istniejącej tkanki urbanistycznej tego, co wartościowe i cenne, lub zbudowanie nowej wartości, która przetrwa próbę czasu.

Słowa kluczowe: *fragmenty miasta, wielowarstwowe układy przestrzenne, geometria, deformacja*

* Ph.D. Arch. Monika Magdziak-Grabowska, Department of Housing Architecture, Faculty of Architecture, Białystok Technical University.

1. Playing the game called THE CITY

Cities are the infinite sum of fragments which retain their identity and specific kind of autonomy, and those pieces are interlinked and act on each other.

Bernard Tschumi [8, p. 227]

The image of cities changes over the years – old buildings or historical street layouts tend to be lost or overwhelmed by new layers of the developing city. Once we look at more we can observe those scraps of the past, empty postindustrial buildings awaiting new functions, forgotten empty spaces waiting for a better future, or small objects overwhelmed by newer and larger buildings. This contrast between fullness and emptiness, between the old and the new, is what characterizes the fragmented urban landscape. That hidden history shines through newly built roads and buildings arising in the place of their predecessors. This complexity and diversity protects the place from unification and monotony. It is a multi-layered game board on which architects play at refilling empty fragments. The rules of the game allow geometric deformations of space in order to establish the context for the concealed history of place. The goal of the game is to bring what is most valuable and precious from the existing urban structure, or build a new value that will stand the test of time. Playing the game called The City, it is fun to build the city, but also to decode history, to seek order in chaos or logic in some order. This is a game of establishing the relationship between buildings and relations with the users of the space. Because the whole point is to pull everyone into the game.

2. Multi-level game board

The plan of the city survives on different levels: sometimes it is diverse in its features, often deformed, but in their substance remains in place.

Aldo Rossi [7, p. 29]

The best fun is in the places where spatial layouts accumulate over years of history, old buildings are demolished and in its place new facilities are created. Despite the fact that the average consumer might not know the history of a place, he can take part in the game and subconsciously feel the echo of the past by observing the deformation of space, and the balance and geometric order of the streets. You only need to play a detective, search for the rhythms and look at the geometry of space to learn about the history. You can then also recognize these hidden layers, unnoticed at first glance, lost by time, elements that are unique individual fragments of the space.

3. Searching for hidden *spatial codes* of the particular location

In every city you can find places where the historical grid elements are lost in the contemporary order of streets and buildings. In the geometrical spatial relations these are what distinguishes them from the norm. Buildings set at odd angles to a newer building, betray the course of streets that no longer exist. They create a spatial code of what has already passed and yet is still present in the scraps of history that have survived to our times.

The theory of hidden *spatial codes* which reflect the history of a place in its complex geometry was formulated by Jacek Dominiczak [1]. The main assumption of this idea is to reach the hidden layers that contain deeper information discreetly hidden from our consciousness. We receive them at higher levels of perception. Finding this information, which stem from changes in the geometry of given area and its deformation over time, allows us to refer to the context of site and participate in a game that relies on continuing the story told by this place. The main goal of the game in searching for hidden *spatial codes* is to reach the specific local features of the selected fragment of the urban space. According to J. Dominiczak, these local characteristics generally are not immediately noticed by us. Noticing and appreciating these features requires a lot of attention. “Reaching out to this hidden information brings us closer to reading the architectural mechanisms that participate in the construction of mood, atmosphere and local spirit of the site” [1]. So the whole game lies in finding and decoding the history reflected in the geometry of space, or rather in its changes and deformations. So to identify fragments of the city at the level of the mathematical model, through the analysis of the city plan in terms of architectural and urban connections of space elements and their geometrical relationships. The intention of this game is that, “... architectural data represent knowledge about the place parallel to the historical source” [1]. They help the recipient to feel the architecture – it is not necessary to understand it. At this level, it is easier to pull the ordinary passer-by into the game and turn their attention to the fragment of space which differs from the standard and hides a mystery that flows from history or creates a new story by itself.

4. Game strategy – mental matrix and deformation method

Jacek Dominiczak, in describing the method of constructing the city code, explains that “neuroscience research shows that this deformation is exactly the kind of information which is remembered and which enables the recognition of objects previously known. Thus, information on deformation in its own way encodes the entire object so that it becomes later recognizable” [1]. This method, based on Gestalt Psychology¹ in order to determine deformations, uses geometry to obtain some kind of mental map² in the form of a spatial grid that records what we consciously see and which results from a mathematical model of space. As a result of this game on the background of the existing city plans new geometries are created. Playing at comparing the actual terrain maps and the “mental map” at the level of geometric differences reveals the differences between what we see and what we perceive on not fully understood levels of consciousness. Based on the similarities and differences the code of deformation is formed, which then becomes a new frame – a reference point for future events. It is a prototype or archetype which defines a new geometry of the site that refers to its history.

¹ According to Gestalt psychology, mental life should be treated as an entity composed of some emerging whole. Before World War II, it was a theory of perception alternative to other well-known theories accepted in the early twentieth century.

² Cognitive map (mental map) – a set of representations of the individual or group containing information about the spatial organization of phenomena. The study of these maps is based on an analysis of the documents made by the subjects investigated. They were either sketches or verbal descriptions. We analyse the method of making drawings, the drawing orientation, the mutual arrangement of objects, the presence or absence of certain elements, and zoom in or out of certain areas.



III. 1. Project and the constructed part of the South Friedrichstadt, Berlin – arch Peter Eisenman, source: Eisenman P., Robertson J., Koch-/Friedrichstrasse, Blok 5, Architectural Design, 7–8/1983, p. 91–93

5. Example of the game – geometrical excavations

One of the most interesting examples of such geometrical, architectural games is Peter Eisenman's project "The City of artificial excavation – southern Friedrichstadt"³ in Berlin. The project site was almost completely destroyed during World War II. It was bounded on the north by the Berlin Wall and completed by three preserved buildings. The architect, in the existing difficult situation, escapes from direct contextualism and creates a new space by referring to the geometrical grids, he boldly creates them on the basis of long-lost traces of history. Eisenman refers to the geometry of walls from the 17th century, foundations from the 19th century and early 20th century preserved buildings. He starts having fun with an artificial reconstruction of these layers, not trying to get to know the true history of the place, but to find geometric order that hypothetically ruled this space in the past. The architect subjectively creates a geometrical and historical matrix that are the frame of the project and that rooted it in the past. He allows us to have fun in decoding the complex geometry and deformation of the space in which is hidden the memory and anti-memory of space. Because this multi-layered structure slightly blurs reality, but also refers to the truth of the past places through buildings that survived the test of time, that stand out from the surroundings with their otherness. They seem to be mismatched to the place where they stand, and yet they were here first and if we take part in the game of seeking geometrical order we can decode their history, or at least we can subconsciously feel the spirit of the place concealed in the deformation of the urban grid.

6. Conclusions

Having fun in creating prototypes or looking for deformation arising from the complex geometry of streets is extracting the mystery of what has already passed. Deformation reveals the secret, hidden relations in the meeting of buildings that preserve their individuality. Separateness adds value, it is an advantage, it is better than melting into one whole. In a magical way, we can touch the history of the place by looking for order in the geometrical deformation of a new architectural form. This is a game of emotions and feelings emerging between the existing space and new object. According to A. Jakimowicz, this kind of play with an architectural project, based on an analysis of the historical context fragment of space, gives us the ability "... for architecture to exist and develop that will last not only for now but also in the future" [5, p. 155]. In this game, this is the purpose leading to victory.

³ This project and its partial realization is the result of a closed architectural competition announced in 1980 by IBA 1984 (Internationale Bauausstellung Berlin 1984).

R e f e r e n c e s

- [1] Dominiczak J., *Ukryte warstwy tożsamości miasta i zagadnienia metodologii projektowania*, [w:] *Tożsamość miasta odbudowanego: autentyzm – integralność – kontynuacja*, red. R. Cielątkowska, Gdańsk 1998.
- [2] Dominiczak J., *Miasto dialogiczne – cz. IX – Architektura ukrytego*, Architektura Murator 6/2003.
- [3] Eisenman P., Robertson J., Koch-/Friedrichstrasse, Blok 5, Architectural Design, 7-8/1983, p. 91–93.
- [4] Hawrylak M., Hawrylak P., *Fragmnetaryzacja Miasta*, Czasopismo Techniczne Politechniki Krakowskiej z.2-A/2007.
- [5] Jakimowicz A., *Wybrane aspekty pojmowania czasu w architekturze współczesnej – czas i przestrzeń jako matryca*, Czasopismo Techniczne Politechniki Krakowskiej z.4-A/2011.
- [6] Magdziak-Grabowska M., *Zapomniane fragmenty miasta*, Czasopismo Techniczne Politechniki Krakowskiej z.4-A/2011.
- [7] Rossi A., *The architecture of the city*, MIT Press, 1984.
- [8] Tschumi B., *Architecture and Disjunction*, MIT Press 1996.

BEATA MAKOWSKA*

ARCHITECTURAL SKETCH AS AN AMBIGUOUS INTERACTIVE GAME

SZKIC ARCHITEKTONICZNY
JAKO WIELOZNACZNA INTERAKTYWNA GRA

A b s t r a c t

The experience of playing during the process of drawing alters our mode of thinking. Then the resulting interaction between the drawing and the author is helpful in developing his working methods and creativity, discovering new truths, stimulating the production of more design alternatives. It can be a kind of individual game or others can participate in it, influencing the presentation and its truth.

Keywords: architectural sketch, freehand drawing, architect's professional skills

S t r e s z c z e n i e

Doświadczenie gry w trakcie szkicowania zmienia nasz sposób myślenia. Powstająca wtedy interakcja między rysunkiem i autorem jest pomocna w rozwijaniu jego metod pracy i kreatywności, odkrywaniu nowych prawd, tworzeniu większej liczby alternatyw w projektowaniu. Może być ono rodzajem gry indywidualnej lub mogą w niej brać udział inne osoby, co ma wpływ na sposób prezentacji i jej prawdziwość.

Słowa kluczowe: szkic architektoniczny, rysunek odręczny, warsztat architekta

* Ph.D. Arch. Beata Makowska, Division of Freehand Drawing, Painting and Sculpture, Faculty of Architecture, Cracow University of Technology.

(...) any form of game consists of it being played. The charm of the game, the fascination it exerts, consists precisely in the fact that the game masters the players [5, p. 125].

1. Introduction

We start to create architectural forms by sketching. This long lasting process of design becomes a serious form of play, sometimes recorded only on paper and not completed by the building of the form. The experience of playing during the process of drawing alters our mode of thinking [10, p. 32]. It opens up new sources of inspiration and allows a breaking with conventional ways of solving a design problem. It supports and develops cognitive activities in design, which are mainly carried out and developed by drawing and then interpreting and analysing the images [4, p. 3]. Freehand drawings “help to channel the vague ponderings of the mind into visual images of a germinating concept” in this gameplay [9]. The quick and ambiguous drawings start “(...) a process of abstraction that produces unexpected forms. These undefined forms can encourage manipulation and transformation” [12, p. 91]. They give the opportunity for a quick and multiple glance at the different alternatives which are created. The repetition of the sequences of sketches “(...) infused with different scenarios, reveals the play factor in learning” through problem solving [12]. The ambiguity of such freehand drawings “(...) allows multiple interpretations and thus stimulates the production of more design alternatives” [4, p. 1]. Sketching becomes an interactive game in the search for new paths in design, new ‘open gates’ for the imagination.

There are several variants of the drawing game. At least two people can participate in it – when a drawing is shown to someone (an expert or a person outside the architectural profession). It can also be a kind of individual game in which the author forgets about the co-players-observers, focusing on the essence of a sketch – the depiction of ideas and the search for the best solution. In the first variant, in addition to the drawer, there is the player-observer (or even a few players), interaction occurs between them, influencing the presentation and its truth.

2. A drawing game with the connoisseur (observer-player)

According to Hans-Georg Gadamer the essence of every presentation is presenting to someone [5, p. 127]. Similarly, an architectural sketch is predominantly addressed to someone – an observer, an investor, a builder, a judge in a competition etc. The form which it then takes is significant for understanding its message. Sometimes, however, the drawing’s meaning is elusive and mysterious, aimed at the refined observer-connoisseur. The process of decoding it then is “(...) a conscious element of an intellectual game whose task is to draw the observer into the world of the author’s idea” [8, p. 33]. Mostly it requires an “educated” and sensitive observer who is able to read the implied meanings, although this is not always possible. An ordinary awareness of the convention of architectural drawing is insufficient in the case of the works of avant-garde visionaries (e.g. John Hejduk, Massimo Scolari). It requires knowledge concerning the authors’ ideology and the wider context of their other works. Such drawing forces you to think and guess the hidden meanings – as Wim van den Bergh wrote: “Holy games of guessing gave rise to philosophical thinking” [1]. In this way a dialogue with the observer is sustained; the drawing has a magical ability to play with his

imagination [10, p. 130]. Such ambiguous drawings may become extremely interesting and intriguing. The more we look at them, the more we begin to see [10, p. 15]. What is important is “what is happening ‘inside’ the drawing, what takes place between the drawing and the observer’s mind” [8, p. 89].

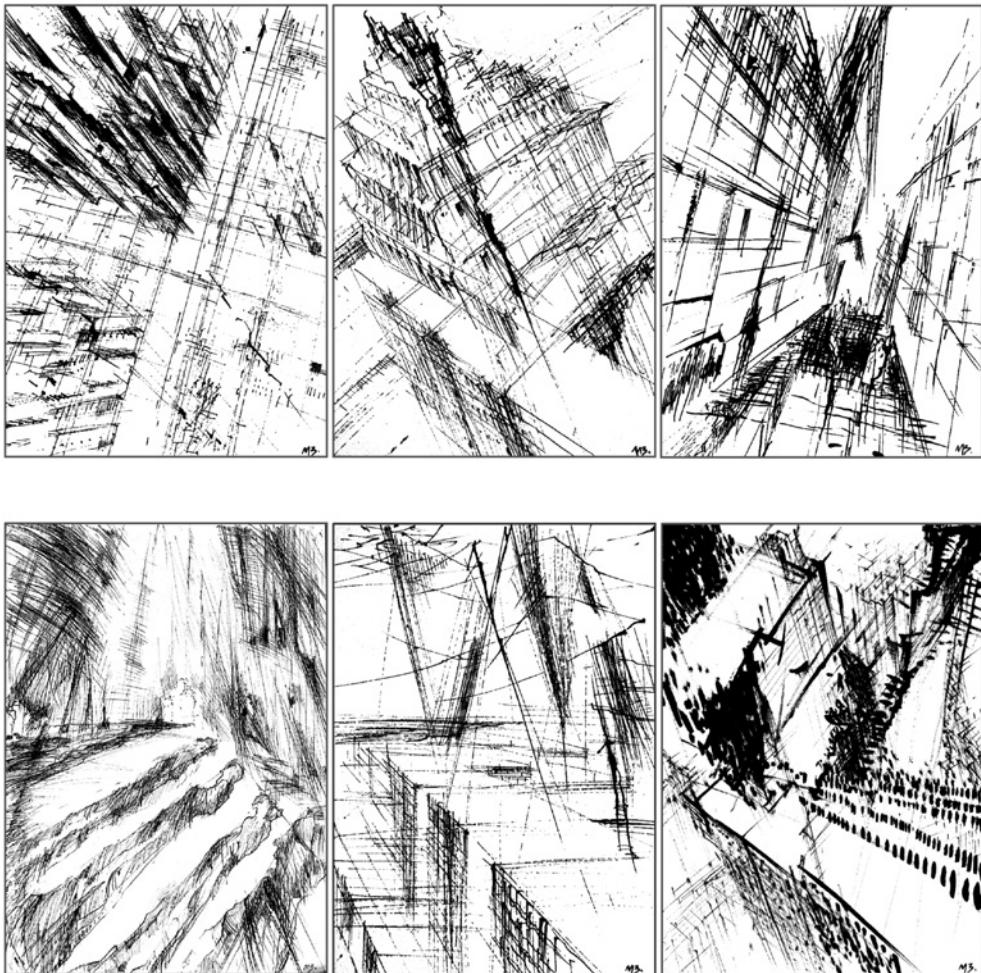
3. A drawing game with the investor

When a recipient of a drawing is a person from outside the architectural profession, it often comes close to realism so that it will be understood and accepted. Making a good impression and the spectacular selling of his ideas is important to the author. “The self-presentation game influences in this way that the player, when he is playing in something, i.e. he is presenting something, comes to his own self-presentation” [5, p. 127]. In this case it is a self-presentation for commercial purposes. The principal is drawn into a kind of a game whose purpose is the realisation of forms, even when the drawing is not entirely truthful. Different perspectives let the observer (the investor) imagine the form, seeing it in a three-dimensional space. Thanks to this, the future architectural form defined by the sketches is created in his imagination. In this case, the “rules and principles determining the filling of the space of the game are the essence of the game” [5, p. 126]. The drawings can also be part of the documentation of the design process. A reliability and genuineness must then characterise them. Such an architectural sketch precisely explains the details of the project to the builder.

An interesting variant is when an architect is designing for himself. His preliminary sketches are then a stage of the creative process, undisturbed by another person’s glances. In the creative act the architect is trying to show what is best in it, which lies deep in his personality. He is designing for a person whom he knows well. The drawings accompanying this process may be more direct and sincere. They may disclose a truth about the author and be a part of his self-presentation, which is closer to reality.

4. Enjoyment space of the drawer-player

Enjoyment in the drawing of the proposed architecture is a serious and addictive pastime. It is characterised by a loop (*feedback*), a certain repetitiveness – coming back to a point of departure in order to solve a problem in a different, better way. “It is always about a certain move in one or another direction” [5, p. 123] – a move in which the game repeats itself by continually repeating different versions. It resembles reading in a number of ways – *Hopscotch* written by Julio Cortázar (the whole book or without the chapters, which are not essential). The several versions of the aforementioned book are like several alternatives of a designed architectural form – with the necessary elements, which it is possible to arrange in different ways, and the secondary elements, which you cannot do without. Sequences of sketches become an inspiration to make further attempts to solve a problem by the drawer-player, creating diverse analogies, mutations and combinations of forms. They are an important part of the process of making corrections and fitting solutions to the established rules of the game. These rules while sketching architecture define the context of the imagined architecture, the function of the building, requirements of the investor, financial possibilities, planning regulations, material etc. Although aware of the predetermined output, the first sketches are



Ill. 1–6. Author's sketches (2011–14)

largely free from these restrictions; they are a free exploration of ideas – they have something more which the final drawings don't have: unobscured freedom and the documentation of the changes, taking place in the process of thinking [12, p. 84]. The context in such a case is inspiring, but not limiting. The recipient of these initial “sincere” sketches is only the author. As Gadamer describes it: “The real subject of the game (the experience in which only one person is playing shows it exactly) is not the player but the game itself. The very play bewitches the player, gets him caught up in the game, and maintains him in the game” [5, p. 125]. The author while drawing ‘forgets himself’, which is why this action is more real. Particularly fast, economic and expressive sketches are engrossing – “the relationship between the physical speed and speed of mind in the game … helps designers crank up” [12, p. 88]. These drawings are not commercially-oriented ways of self-presentation of a drawing, which is

sometimes the appearance of a game. The author doesn't think about the person to whom he will be introducing the drawings; he is focused on the search for the best ideas and better solutions for the design task. "Architectural sketches, like the process of architecture, reflect the past, facilitate the present, and attempt to foretell the future. Their meaning remains personal and speaks to each individual architect. As with memory, imagination, fantasy and play, it is possible to examine their traits, but as entities they may remain elusive" [10, p. 123]. This kind of elusiveness is not a weakness but a strength of the sketches. It refers to the concept of the game that allows you to see more of the hidden meaning-alternatives in the sketches, not only by the author himself but also by the recipients.

5. The rough draft– preliminary play

Architects often draw forms that record passing thoughts and inspirations (Ill. 1–6), "spontaneously 'playing with' space on the paper" [8, p. 101]. It happens that this area of activity is inaccessible to the audience. It takes the form of a diary or rough draft covered with images-memories. Sometimes architects' drawings are treated as a serious form of artistic work universally presented, representing their professional status. Leszek Maluga calls them autonomous architectural drawings – "open letters" (as opposed to "the letter to the builder", which is part of the design documentation process), in which the author is free from the need for explicitness and legibility of the recording [8, p. 97]. From such drawings can start a real career – as it was in case of Daniel Libeskind or Zaha Hadid, who started building their projects relatively late. Zaha Hadid recalls that her parents instilled in her a passion for exploring: "they never made a distinction between science and creativity. We would play with math problems just as we would play with pens and paper to draw – math was like sketching" [6]. The fascination of geometry and mathematical logic has become inspirational in the architecture designed by her. Such an approach to science and art is treated as a kind of fun and a tool for finding out the truth that affects the development of creativity. Learning through play is a form of casual learning which is pleasing. The full involvement causes the fascinated drawer to be completely absorbed in his occupation, it is under its control. "The player knows well what the game is, and that what he does 'is just a game', but he does not know what he 'knows' here" [5, p. 122]. The culmination of this situation may be its explanation, when the drawer 'wins the game' i.e. there is a satisfactory solution to the design problem. Defeat in the game also teaches something – learning from one's mistakes, dealing with problems and encouraging the efforts.

6. Summary

Freehand drawings teach thinking through engrossing gameplay. In this process it is important that it becomes an experience that transforms the author. Sketching develops his spatial imagination – extremely important in the creative process [3, p. 59] and shapes the method of his work [2, p. 156–157]. In drawing treated as a fun game, what is valuable is what we can't plan, what comes out casually. This is possible thanks to the fact that the image in the sketches "exists close to the border between reality and unreality" [10, p. 131], in a place where the mind of the drawer interpreting the image can make the right choices. Then the resulting interaction

between the drawing and its author and heuristic methods (the ability to detect new facts and associate them with each other, which is dependent on previous experience and acquired knowledge) are helpful in discovering new truths, developing the working methods and creativity of the author, based on the ability to use the process of combining and restructuring [7, p. 21].

R e f e r e n c e s

- [1] Bergh W. van den, *Icarus' Amazement or the Matrix of Crossed Destinies*, [in:] Hejduk J., *The Lancaster/Hanover Masque*, London 1992.
- [2] Białkiewicz A., *The Role of Drawing in a Modern Architect's Workshop. Krakow School against the Background of the Achievements of Selected European and Polish Universities*, Monograph No 315, Ed. Cracow University of Technology, Kraków 2004.
- [3] Białkiewicz A., *On Architectural Drawing*, “Commission of Architecture, Urban Planning Landscape Studies Polish Academy of Sciences”, Lublin 2006, 53–60.
- [4] Do E., Gross M. D., *Drawing as a means to design reasoning*, [in:] *Artificial Intelligence in Design '96 Workshop on Visual Representation, Reasoning and Interaction in Design*, Palo Alto, CA., 1996, <http://depts.washington.edu/dmgftp/publications/pdfs/aid96-mdg.pdf>
- [5] Gadamer H. G., *Truth and Method*, Kraków 1993.
- [6] Hadid Z., *Zaha Hadid's Iraq: Math was like sketching*, Special for CNN, London, 30.10.2014, <http://edition.cnn.com/2014/10/30/business/zaha-hadid-stem-month>.
- [7] Makowska B., *The Significance of Sketches in the Education of Architects and in the Development of their Professional Skills*, “Technical Transactions”, 4-A/2015, Ed. Cracow University of Technology, 17–23.
- [8] Maluga L., *Autonomic architectural drawings*. Ed. Wrocław University of Technology, Wrocław 2006.
- [9] Reisner Y., *The Sketches of Zvi Hecker*, “The Architectural Review”, 31.01.2013, <http://www.architectural-review.com/the-sketches-of-zvi-hecker/8641729.article>.
- [10] Smith K. S., *Architects' sketches: dialogue and design*, Elsevier/Architectural Press, Amsterdam 2008.
- [11] Smith K. S., *Architects' drawings: a selection of sketches by world famous architects through history*, Elsevier/Architectural Press, Amsterdam 2005.
- [12] Smith A. C., Smith K. S., *Developing your Design Process. Six key concepts for studio*, Routledge Taylor & Francis, New York 2014.

MARIA MALZACHER*

GAMES AND PLAY BETWEEN ARCHITECTURE AND ART IN VIEW OF THE PERCEPTION OF SPACE

GRY I ZABAWY ARCHITEKTURY ZE SZTUKĄ W KONTEKŚCIE PERCEPCJI PRZESTRZENI

A b s t r a c t

This paper is focused on reflections concerning games and play of architecture with art, taking place in the context of a new paradigm of interactive perception of sensual space, analysed on selected representative examples. In the face of globalization, games and play with architecture in the form of ironic or whimsical designs offer diverse aesthetic perceptions, bordering on kitsch and consumer and commercial mega-gadgets.

Keywords: *games, plays, architecture, art, perception of space*

S t r e s z c z e n i e

W artykule przedstawiono refleksje na temat gry i zabawy architektury ze sztuką rozgrywane w kontekście nowego paradymatu percepacji interaktywnej przestrzeni sensualnej, zanalizowane na wybranych reprezentatywnych przykładach. W dobie współczesnej globalizacji odmienne doznania estetyczne oferują też zabawy z architekturą w ironicznych i żartobliwych koncepcjach projektów z pogranicza kiczu, megaladżetu konsumpcyjno-komercjalnego.

Slowa kluczowe: *gry, zabawy, architektura, sztuka, percepcaja przestrzeni*

* PhD. Arch. Maria Malzacher, Department of the Design, Theory, and History of Architecture, Faculty of Architecture, Silesian University of Technology.

1. Introduction

Recent architecture integrated with art at the turn of the 20th century abolishes the so-far stable material order of the universe, introducing new visionary and hybrid labile structures into the game of the perception of space, in contradiction of the Vitruvian triad principles of: durability (*firmitas*), usability (*utilitas*) and beauty (*venustas*) [7, p. 32]. Modern architectural realizations, based on state-of-the-art technology and digital software, intervene in the reality, and, have introduced, in the last few years, an extended concept of space and architectural perception.

Architecture as an art of space formation, in accordance with the traditional definition of modernists, had an explicitly defined place among the arts. The place of architecture in the arts and the mutual relations have been the subject of theoretical research and important discourse in “post-medialization”. The issue of the role of architecture in our modern art system was the main concept of Gabriela Świtek’s book: *Games of art with architecture. Modern affinities and modern integration of the arts*, in which the author, from the point of view of an art historian, investigates the co-dependence between architecture as a spatial art and visual arts, against the wide and retrospective historical and modern background, entwining various forms of mutually connected games in the narration [6]. The author draws in readers by evoking the emblems of the famous *Blur Building* pavilion (2002), created by Elizabeth Diller and Ricard Scofidio, New York, which is an accomplishment bordering on architecture and the art of modern architectural installation, compiled with previous Warsaw designs (unimplemented) of *Clouds Creator* (1999) by artist Jarosław Kozakiewicz simulating the concealment of The Palace of Culture in Warsaw and *Cloud* installation (1994) at “Piłsudskiego Square” in Warsaw by architect Jan Damięcki, which are appropriate examples of the modern affinities of arts pertaining to the new theory of architectural space.

2. Games of illusion in architecture

The abovementioned architectural works are connected by the common symbolic idea of “a cloud/ pall” difficult to define in the category of art. As accurately stated by Gabriela Świtek: “Clouds slip the traditional systematization of arts: they are neither architecture, nor sculpture, nor painting”. Following *A Theory of Cloud* by Hubert Damish, Świtek states: “A cloud has no body, no surface, no definite colour, no shape and no limits (...), yet, you can still see it” [6, p. 11].

This description exactly corresponds to the *Blur Building*, a misty pavilion, which interlines the recent history of art as one of the symbols of the 21st-century architecture. This spectacular exhibition pavilion was built for Swiss Expo 2002 on Lake Neuchatel, and, according to its authors’ intention, was to paraphrase a cloud suspended over the Lake and introduce spectators to the world of ephemeral space by means of the game of illusion. The mist generated from the Lake water by state-of-the-art technologies – a system of nozzles spraying steam – floats above the Lake, it has variable spatial parameters and shields the actual construction, causing sensory disorientation and leading to the loss of the sense of time and real space among the participants of a live spectacle [2, p. 110]. One may dare to recall the role of artificial clouds generated in the staging of Richard Wagner’s *Gesamtkunstwerk*, which were devised to blur the boundaries between the scene, orchestra and spectators [6, p. 12]. The

intention of architects Diller + Scofidio was to invoke the game of emotions in the perception of a variable space, which they expressed by stating: “Unlike entering a space, entering Blur (...) is like stepping into a habitable medium, one that is formless, featureless, depthless, scaleless, massless, surfaceless, and dimensionless” [2, p. 110]. Roman Rutkowski, describing the emotional state accompanying the penetration of the space of the pavilion, poses a question: “Is the Blur building the same thing that we know so very well from computer monitors: a space without end and beginning, a space in which nearly everything is possible?” [5, p. 49]. The concept of the pavilion was a form of criticism and devious game of reaction to modern trends in world exhibition design, packed with hyper-technologies and digital visual stimulation. “High definition has become the new orthodoxy. By contrast, Blur is decidedly low-definition,” according to the architects of this project [2, p. 110]. They also admitted that it was inspired by the works of Japanese artist Fujiko Nakaya, who created “misty sculptures”, and, in particular, the misty pavilion at Expo’70 in Osaka [5, p. 50].

In the last few years simulations have frequently been used by practising architects and modern artists to create a dynamic architectural space. According to Beata Juchniewicz: “Such a condition changes the status of architecture, which becomes increasingly devoid of matter, which operates on light, transitory images generated by screens, emerging from the illusion of mirrors and glass facades”. Juchniewicz also states that: “Thanks to advanced technologies, it is possible to create mobile space of variable conditions, not only limited to lighting conditions” [3, p. 353].

A master of creating the illusion of space, often by means of the visual effects of steam, mist, lighting illuminations and mirror representations is Olafur Eliasson, a Danish artist of Icelandic origin. In his works Eliasson concentrates on the perception of the landscape through the prism of the four elements: water, air, earth and fire. *The Weather Project* is one of his most recognized spectacular installations at the borderline of art and architecture, presented within the frameworks of Turbine Hall exhibition, Tate Modern in London, 2003/2004. The concept of the project was based on a subjective weather experience and meditations on metamorphic space. Inside a huge empty hall, the author created a metaphor of the sky and gigantic sunset constructed by a system of lamps emitting mono-chromatic light. The subtle, ephemeral effect of the atmosphere of a variable aura of space was reinforced by delicately sprayed mist, cumulating clouds, and the slabs of mirrors mounted on the entire surface of the ceiling. By such arrangement of the interior of the mirror images, the author generated a variable space with user participation, introducing, through the play of light and effects of artificial mist, the illusion of a natural space of the external landscape, experimenting with its dislocation and creating a friendly atmosphere of recreation, play and contemplation, master architectural magic of mysterious space [2, p. 116].

Olafur Eliasson’s project compels to recall the inspirations by the works of famous Renaissance and Baroque masters of illusion, who, by creating visual mirages and blurring the borderlines between the tangible and imaginary worlds, drew spectators into the game of space. In particular, there are strong connotations with “di sotto di su” techniques and paintings, as well as with the Italian non-collinear perspective technique, the “quadrature” of architectural space, which created the illusion of the depth of infinity in the interiors, above the spectators’ heads [8]. The association between “di sotto di su” and the *Weather Project* boils down to a similar approach to forms reflected in the ceiling of the mirrors, as if floating in the expanse of the sky; however, in a reversed “upside down” view, and not, as typical for “di sotto” perspective, from the feet upwards.

3. Games of sensory architecture

Nowadays in the perception of architectural space, the sensory field is being broadened by the engagement of the recipients' other senses. The renaissance of the interest in sound in architecture has led to a focus on sonic research and experiments involving the use of the sense of hearing in the experience of space. The reflections of this trend are spectacular realizations bordering on architecture and art, for example: the distinguished 2012 Polish Pavilion by artist Katarzyna Krakowiak at the 13th International Biennial of Architecture held in Venice: "Common Ground". The author defined her work as "a sculpture of sound" and labelled it as: *Making The Walls Quake as if They Were Dilating with the Secret Knowledge of Great Powers*, which is a quotation from Charles Dickens's novel: *Dombey and Son* [9]. Similarly to the already discussed *Weather Project* by Olafur Eliasson, the pavilion was a minimalist presentation of the form of the object with the main emphasis on the interpretation of the game played between the spectators and their perception of sensual space. The concept of the project assumed an intriguing game between architectural interaction and sound, experienced by spectators by emitted sounds of buildings and coded conversations, trembling of the walls, detection of complicated equipment and the system of sensors. "Such a space makes it possible to hear, not only see," as expressed by the Jury Committee of this most prestigious architectural exhibition in the world [9]. The advancement of new technologies and interactive media extends the range of sensual perceptions in the experience of space. The integration of architecture with sound is also presented in *Son-O-House* in Ekkersrijt exhibited in 2004 following Lars Spuybroek's design in cooperation with composer Edwina van der Heide [2, p. 290]. This Dutch interactive sound pavilion, reacting to the movement of the visitors by changes in the modulation of sound, entices the game with the spectators, drawing them into space exploration. According to Ewa Cisek: "The architecture of Son-O-House may be compared to a continuous process, in which human movement creates the sound existing in space (...) In such confrontation, visitors unavoidably participate in the creation of new sounds (...) Man and architecture become a part of the connected field of co-feeling and complementarity" [1, p. 47, 50].

4. Plays with architecture

As far as games with architecture may be treated as a kind of intellectual activity, in the modern globalized culture, we are facing a separate category of the play of architecture perceived as ironic and playful realizations of projects bordering on kitsch. The ongoing machinery of consumption and commercialism addressed to accommodate the taste of an average recipient introduces in the public space a new alternative species, bordering on pseudo-art and entertainment architecture. Such are the numerous quizzical designs of houses or installations in the type of mega-gadgets, which are purely aimed at tourism or recreation. Such a category entails world-wide trends and realizations of "upside down" houses that multiply at a threatening speed, spoiling the traditional cultural landscape. Currently, in Poland, there are several cases of such architecture, among which the best known is *Crooked House* (2003) in Sopot, *Upside Down House* (2006) in Szymbark, Kaszubskie Lake District, *House Otherwise* in Zakopane and similar inverted houses in Władysławowo, Leba, Kołobrzeg, Miłkow near Karpacz afar others. The inspiration for these houses was, undoubtedly, Ewin Wurm's *House*

Attack (2006), which is perched in a precarious position into the roof of the Modern Kunst Museum in Vienna. Among other realizations of similar design are: *Wonder-House* (Orlando, Florida), *House of Katmandu* (Magaluf, Majorca), *Sakasa Resuto* (Matsumoto, Japan) [10].

5. Recapitulation

Closing the circle of reflections, it should be emphasized that the games and play with architecture happen in the field of variable time limits, creating a new quality of sensual space. Modern architecture is open to the dynamics of ongoing processes and it creates its own unpredictable scenarios. The ever-lasting principles of Vitruvius: durability, usability and beauty, in the context of modern ephemeral architectural realizations – variable, temporary, interactive – have somehow been endowed with anachronism. The aesthetics of modern architectural forms is often difficult to qualify according to the category of beauty, often fascinating and sometimes amusing. Accordingly, architecture in its integration with art attempts to make the world aesthetic and give it a new image. In conclusion, it is worth recalling the statement by Henryk Kiereś: “Aesthetics is an art of games and play (...) the number of possible games – the synthesis is infinite, so accordingly, the game becomes a metaphysical deposit of culture” [4, p. 56].

References

- [1] Cisek E., *Interaktywna architektura dźwięku* (*Interactive architecture of sound*), Technical Periodical, No 15, Architecture, 7–12, 2010, p. 46–51.
- [2] Jodidio P., *Architektura dzisiaj 3* (*Architecture Now! 3*), Taschen 2004.
- [3] Juchniewicz B., *Iluzje architektury* (*Illusions of Architecture*), Technical Periodical, No 15, Architecture, 7–12, 2010, p. 350–354.
- [4] Kiereś H., *Spór o sztukę* (*Dispute about Art*), Lublin 1996.
- [5] Rutkowski R., *Blur*, Architecture & Business, 2/2003, p. 44–51.
- [6] Świtak G., *Gry sztuki z architekturą. Nowoczesne powinowactwa i współczesne integracje* (*Games of architecture and art. Modern affinities and current integrations*), Toruń 2013.
- [7] Vitruvius, *Ten Books on Architecture*, Warsaw 1999.
- [8] http://www.opoka.org.pl/biblioteka/I/S/jak_slonce.html (access: 20.05.2015).
- [9] <http://www.tvn24.pl/kultura-styl,8/polski-pawilon-jak-szpiegowska-centrala> (access: 20.05.2015).
- [10] <http://www.najbardziej.com/kreatywne/84-niesamowite-budowle-swiata/> (access: 25.05.2015).

KAROLINA MAZURKIEWICZ*

**PLAY WITH ME
– THE PRITZKER PRIZE AS A GAME IN ECOLOGY**

**ZAGRAJ ZE MNĄ
– NAGRODA PRITZKERA JAKO GRA W EKOLOGIĘ**

A b s t r a c t

The most prestigious architectural prize is the Pritzker Prize. However, competing for it there is an awareness of participation. In recent years, the award has been given to architects who in their work referred to ecology, sustainable development, regionalism, and natural and cultural values. Has this architectural game explained the principles and aimed towards highlighting those whose work concerns cooperation with nature rather than negation?

Keywords: *Pritzker Prize, sustainable development, traditional architecture, modern architecture*

S t r e s z c z e n i e

Najbardziej prestiżową nagrodą architektoniczną jest Nagroda Pritzkera. Jednak konkurując o nią nie ma się świadomości uczestnictwa. W ostatnich latach nagroda przyznawana była architektom, którzy w swojej twórczości odnosili się do ekologii, zrównoważonego rozwoju, regionalizmu i wartości przyrodniczo-kulturowych. Czyżby ta gra architektoniczna klarowała zasady i zmierzała w kierunku wyróżniania tych, których praca dotyczy współpracy z naturą a nie negacji?

Słowa kluczowe: *Nagroda Pritzkera, zrównoważony rozwój, architektura tradycyjna, architektura nowoczesna*

* M.Sc. Eng. Karolina Mazurkiewicz, Department of Architecture of Housing, Industrial, Interior, Ruralistics, Landscape, Visual Arts and Structural Systems, Faculty of Architecture, Wroclaw University of Technology.

Progress begins from fun.

Antoni Kępiński

What do the participants in the largest architectural game play? What are “the judges of Architects’ World Cup” playing? How to select the card to be noticed in the hand of “Architectural Nobel Prize”?

Analysing the portfolios and biographies of the architects who for the past five years were awarded the Pritzker Prize, it is difficult to discern the rules of managing this most prestigious of awards. The only clearly marked trend is offset from the “big names” in favour of not lesser ideas. Another regularity is the origin of the winners. Since 1979 the Pritzker Prize has been received by eight Americans and six Japanese. In the group of 40 architects (three times a pair of creators were awarded) there are only two women – Zaha Hadid (Pritzker Prize in 2004) and Kazuyo Sejima, who in 2010 received the award together with Ryue Nishizawa. The most perverse of the rules that guide the jury awarding “Pritzker” is the fact that the architect participating in the contest finds out about it at the moment of victory. This deprives the game aspect of the sense of defeat. Nominations for the awards are granted through the acceptance of the candidate. Nominees represent different areas, characterized by the progress of knowledge and interest in architecture. As in the case of the Nobel Prize, the Pritzker Prize may only be received by a living artist. Even so, the game, though it seems absolute, has its deviations. In 2015, the laureate died at the age of 89 years, less than two weeks before the announcement of the results.

In addition to a financial award, the Pritzker Prize carries additional, long-term benefits in the form of undying prestige. It is not accidental that the realization of the Serpentine Gallery summer pavilion invited architects with the “Pritzker”. Although the building only guests for three months in Kensington Gardens, its implementation is considered to be ennobled. Thus the “Playing the Pritzker” also provides an entrance to further games and activities.

In the past five years, the statements and projects of the winners invariably hold a reference to the laws of nature, respect for natural heritage, and attention to sustainable development. Perhaps it would be that the road to the highest of architectural awards, at the head of the “big three” (the Pritzker Prize, the Mies van der Rohe Award, the Praemium Imperiale), leads by understanding and adapting to these laws of nature and natural conditions. In 2011 the concept that the project was to adapt to local conditions and respect for tradition appeared in the grounds of the jury’s selection.

1. Eduardo Souto de Maura – the Pritzker Prize in 2011 – A game of neomodernist regionalism

This outstanding Portuguese architect has been winning awards for his projects since 1980. How does the Pritzker jury justify “his legacy is convincing proof of the expressive potential of the modern idiom and the possibility of its adaptation to local conditions”? In his work he is not limited to local materials but also examines the context, the environment, and local traditions. Combining what is rooted in the culture of modern design he creates objects inextricably embedded in natural, individualized place in space. An example of this is the municipal stadium in Braga, a portion of which structure was hewn in granite residuals on the site of the planned investment. It is a kind of game in which the architect has proposed two independent players – the environment and the projected object. At the junction of two

opposing “teams” a contrast is created, a collision that breaking the mould begins to penetrate. Equally spectacular is the Casa das Histórias in Cascais. In the design of the building the elements of historic architecture of the region were used, and are presented in a modern way. The establishment is easily identifiable by two squat pyramid-shaped towers and the red colour of the concrete used to build them. The earth and trees that were on the construction site have also been included as one of the elements of the project. This project meets the requirements posed by the museum and its various functions. The architect does not forget to invite visitors into the game, preparing a welcome for them in the form of the entry zone. In the Casa das Historias project, the author adopted an approach which can be determined as “regionalism.” Looking at the location of the building, blending the surroundings, as well as use the scale and form, we see clearly a reference to the region. Noticeable references and regularity were obtained without resorting to unnecessary decorative ornaments.

A Polish accent in the biography of de Maura is the fact that he was a juror in an international architectural competition for the design of the building of the Museum of Polish History in Warsaw.

2. Wang Shu – the Pritzker Prize in 2012 – Game of tradition, having fun in modernity

This architect of Chinese origin has ideas similar to Souto de Maura, but the place in which he had to work – one of the most rapidly expanding regions of the world, determines the way of working itself and its goals. The urbanized zone of Ningbo city, for which Wang Shu designed the Museum of Modern Art, has almost 5.5 million inhabitants, in Hangzhou, where the Exhibition Hall of the Imperial Street of Southern Song Dynasty there are 2 million people. The architect himself is sceptical about progressive change in his opinions. With the current 50% degree of urbanization of China, raising this to the planned 70% will result in the urbanization of rural areas. As a supporter of sustainable development, traditional materials, and the manufacturing method of creation, Wang Shu had to work with multimillion-inhabitant agglomerations that, as a result of transformation, completely lost their human dimension. His designs are a contrast, a rejection of the developments typical of modern China. Instead of dominating the area and eroding the urban tissue, Shu designs in such way that he interferes with the natural landscape as little as possible. A characteristic feature of his projects are efforts to use materials from the demolition of buildings removed from the site of the new investment. This procedure was applied in Hangzhou where to build the campus of the Academy of Fine Arts 2 million ceramic tiles remaining from the ancient cottages were used. A similar recycling of material is embedded into the body of the History Museum in Ningbo. To create this unusual building he used bricks from demolished buildings, combining them with modern materials. The resulting “mountain” is also the architect playing with the customer. By cutting “valleys” into the body of the building the symbolic effect of the mountain is heightened, and in addition the multitude of entrances covered by arcades refers to Chinese garden art. The building itself serves as an island where function and form are subordinated to clear principles and rules. In giving the award to Wang Shu, the Pritzker Prize jury noted his paying special attention to design based on sustainable development: “The work of this year’s winner goes beyond the age-old dispute – whether to respect the tradition of localism or to be swept away by modernity. Shu’s architecture is deeply rooted in the local context and at the same time universal,” said Lord Palumbo, chairman of the jury.

3. Toyo Ito – the Pritzker Prize in 2013 – Game of perfection

To characterize the works of Toyo Ito it is necessary to create a separate category, to which he belongs, of unpredictable architecture creators. Although he is referred to as an architect, his conceptual projects elude imposed frameworks. Among his projects can be found the concept of light and transparent buildings, which in the 80s was a novelty and challenge. The next cards to be dealt by Ito were ideas and projects that have become benchmarks in new trends in architecture. Among his flagship projects are the two towers forming the Torres de Toyo Ito complex in Barcelona. The biggest challenge in the design of the Porta Fira tower was its shape. The design was inspired by a lotus flower. The facade consists of a double skin. On the inner wall there is a curtain wall system, while the outer wall has a fixed pipe system (with a characteristic red shade) that adapts to the form of the tower. Although the reference to the lotus may seem a far-reaching simplification, Ito himself describes the relevance of his projects to nature thus:

“Before we think about the idea of ecology we should look for relationships between architecture and nature and the environment. Traditional Japanese architecture, especially wooden, is open to nature. The boundary between nature and the building is blurred here – they interpenetrate. However, in the case of contemporary architecture this remains very distinct and artificial. I would like change it, but I cannot go back to the past. I believe, however, that by blurring and widening the zone of interpenetration of the building and nature, it can become more environmentally friendly. “

To play the game in which the “Game Master” is the Japanese architect, we must understand the idea of what guided the creation, among others, of the Tokyo ZA-KOENJI public theatre building. The building was constructed to strengthen a sense of joy and fun. The theatre consists of three halls, literary archives, cafes and administrative space. It looks like a big tent, where some people come to the theatre, others to study literature, others in the role of actors. It is intended to be a meeting place for everyone, regardless of age or sex.

Despite many awards and honours Toyo Ito still seems to be an unfulfilled creator. As he says: “I never set the style for my architecture and I will never be satisfied with my work”. So the game in the architecture of Toyo Ito & Associates will continue to be unpredictable, full of rule changes and innovative stratagems, which effectively deceive world architecture. Yung Ho Chang sitting in the Pritzker Prize jury described the work of Ito: “Although Mr. Ito has realized a huge number of buildings in the course of his entire career, in my opinion, the whole time he has been working on one issue – to push the boundaries of architecture. And to achieve this goal, he is not afraid to reject what he has achieved before”.

Toyo Ito is also known for building projects that, beyond their artistic qualities, can provide security during natural disasters. Among the solutions he has used are design barriers against seismic shocks or flood protection.

4. Shigeru Ban – the Pritzker Prize in 2014 – Playing humanitarianism

The biggest surprise still seems the laureate whose work has been recognized not because of the architectural values but its humane dimension. The architect is not regarded as an artist, but as a creator, for which the most important are the needs of viewers of his work. “Shigeru Ban – because he is the winner of this year’s the Pritzker – is in

fact primarily known for designing temporary shelters for victims of natural disasters". Originally Shigeru Ban focused on the possibility of using local, simple materials and building a strong relationship with the surroundings, context and tradition. However, only the use of cardboard, from which he today builds houses, churches, public utility buildings, has allowed him to extensively use his knowledge in dramatic and extreme situations. The turning point was the earthquake in Kobe in 1995. Hundreds of thousands of Japanese were left homeless and Shigeru Ban showed that cardboard was ideal for building temporary shelters for people who had become homeless during the disaster. The game, which he expressed in traditional construction, was based on inexpensive materials, lightweight, easy to transport and use, and surprisingly durable and safe. Thanks to him, cardboard became an extreme building block that is used to this day. The winning party with his strong conviction about construction materials has provided shelter and any other necessary buildings for the victims, among others, of earthquakes and hurricanes in Turkey, China, Japan, India, Haiti, USA, Italy, New Zealand, and Sri Lanka.

5. Fei Otto – the Pritzker Prize in 2015 – Fun with the sky

The fortieth laureate – Fei Otto – in his remarkable work has combined architecture with the work of environmentalists, biologists, engineers, philosophers, historians, artists, and other architects. As a supporter of team games he is famous for his filigree structures of roofs and covers. In addition to the undisputed aesthetic, Otto's structures are characterized by a number of advantages in the economic and environmental sense. Tom Pritzker, chairman and president of the Hyatt Foundation, said: "The jury unanimously decided that the career of Fei Otto is a model and should be a template for future generations of architects." The architect himself, a few days before his death, commented about the award: "I am very happy that I have been awarded the Pritzker Prize and I enormously thank the jury and the whole Pritzker family. I've never done anything to receive this award. My path led me to the architectural design of new types of buildings that can help the poor, especially those who have suffered as a result of natural disasters and other catastrophes. So what better could meet me than receiving this prize. I will use all the time that I have left to do what I've done so far, to help. You have here a happy man."

The Pritzker Prize undoubtedly allows for participation in the game at the highest level. An additional complication is the fact that the rules of the game do not allow any preparation or intentional actions. Even the apparent eco-trend does not enable anyone to conduct their career in order to be invited to this race with the best in the future.

R e f e r e n c e s

- [1] <http://www.pritzkerprize.com>
- [2] http://archirama.muratorplus.pl/architektura/rozmowa-z-toyo-ito,67_177.htm
- [3] http://www.sztuka-architektury.pl/index.php?ID_PAGE=38844
- [4] <http://archinea.pl/frei-otto-laureatem-nagrody-pritzkera-2015/>
- [5] <http://www.e-architect.co.uk/architects/eduardo-souto-de-moura>
- [6] <http://www.pritzkerprize.com/laureates/2012>

MAŁGORZATA MEŁGES*

HISTORICAL OVERVIEW OF THE IMPORTANCE OF BUILDING MATERIALS IN ARCHITECTURE

HISTORYCZNY PRZEGLĄD ZNACZENIA MATERIAŁÓW BUDOWLANYCH W ARCHITEKTURZE

A b s t r a c t

The title of the conference *Defining architectural space – Games and play of architecture* should be regarded as a kind of intellectual provocation, given that without a profound comment, these “games and play” should above all be understood as extremely costly ones. However, taking for granted the “game” motif (in the sense of artistic manipulation of the structure’s shape and detail embedded in space), the author has decided to raise the subject of the role that building and finishing materials play in the design concept and practice of the architect.

Keywords: autochthonous materials, properties of building materials, universality, eternity of the stone, artistic thought, art, humanistic message, cathedral, church, temple, tomb, new technologies.

A b s t r a k t

Tytuł konferencji: *Definiowanie przestrzeni architektonicznej – gry i zabawy architektury* uznać trzeba, jak sądzę, za swego rodzaju prowokację intelektualną, zważywszy, że bez głębokiego skomentowania trzeba by je rozumieć jako „gry i zabawy” przede wszystkim niezmiernie kosztowne. Biorąc jednak za dobrą monetę motyw „gry” (w sensie artystyczno-plastycznej manipulacji kształtem budowli i detalem osadzonymi w przestrzeni), podjęłam temat roli, jaką w zamyśle projektowym i praktyce architekta pełnią materiały konstrukcyjno-budowlane i wykończeniowe.

Słowa kluczowe: materiały rodzime, cechy materiałów budowlanych, uniwersalność, wieczność kamienia, myśl plastyczna, sztuka, przesłanie humanistyczne, katedra, kościół, świątynia, grobowiec, nowe technologie

* Ph.D. Arch. Małgorzata Melges, The Institute of Building Design, Faculty of Architecture, Cracow University of Technology.

1. Introduction

Buildings have always been special challenges for all kinds of creative thought – both engineering and artistic. It has been and will probably always be this way. It has to be mentioned, though, that everything that was related to art and architecture was usually based on autochthonous materials, and to a lesser degree on imported ones. As a result, the processes and methods of acquiring and processing a variety of materials used in construction determined every implemented structure. Thus, people living in different corners of the world processed the obvious and relatively cheap the materials available to them directly – such as wood, stone, earth (clay, sand), various minerals, etc. Using them, they created works of art – often including buildings – which even today fire our imagination, arousing curiosity and justified delight. The creative inventiveness of construction artists was based very specifically on a variety of materials – diverse in terms of quality, durability (resistance to physical factors), weight (important for structural analysis), ease of processing, but also in terms of artistic value (e.g. texture, colour – light reflection etc.). Hence, it was important to the artist or builder whether he had linden wood or ebony, limestone, basalt or granite at his disposal.

The kind of universality of solutions and architectural forms applied by people from different continents may be surprising. Their contacts were very limited and information from travel rather scarce and available only to selected recipients. What is more, residents of Europe and the Americas had remained in utter ignorance about one another until Columbus and the conquistadors. Yet, buildings of similar use were constructed there at roughly the same time, while local builders used similar building materials of native origins.

2. Historical overview based on selected examples

In order to grasp the enormity of the cultural heritage in this field retrospectively and stimulate the imagination, the author wishes to recall the chronology of the most important selected examples of shaping space as a primeval benefit surrounding the individual and human communities. Man took the first step towards architecture probably approx. 350 thousand years BC in Africa, building primitive huts of detritus. This was the beginning of the work that continues to this day, and the effects derived from his technical idea have reached an unimaginable scale at the beginning of the twenty-first century. Around 8 000 BC, the use of mud for making bricks, then dried in the sun, became the turning point. Although the boundary between construction as such and architecture is quite clear, the moment when construction ends and art begins is very subtle and difficult to identify unambiguously¹.

It is impossible not to take into account in this intellectual journey the prehistoric art leading to ancient Egypt with its unique buildings, pyramids, gigantic temples and other facilities, as well as interesting buildings in other countries. The Egyptians mastered the art of construction and creation with the use of accessible stone. It seems that everywhere in the world

¹ Jonathan Glancey proposes an interesting definition of the art of building in his book *Historia architektury* (The Story of Architecture), Wydawnictwo Arkady, Warszawa 2002, p. 9. He writes among other things that (...) People create architecture. To put it bluntly it is the science and art of construction, and speaking more poetically – the moment when the building is infused with magic that transforms it from an ordinary shelter into a conscious work of art. This art may offend, embarrass, but also delight.

the idea of using stone (regardless of different religious or scientific and astronomical functions) stemmed from its timeless – on a human scale – durability, which became an inherent part of the eternal problem of the opposition between existence and death – the transience of human life and the eternity of the stone.

In turn, the architectural art of ancient Greece – with its humanistic message and attention to beauty and proportions – also paved the way for the stone buildings of the Roman Empire – with the famous triumphal arch in Rome erected to commemorate the victories of Emperor Constantine who reigned from 306 to 337.

After the fall of the Roman Empire, Roman civilization continued to grow. A great example of this period is the extraordinary work of human genius – the Hagia Sophia in Constantinople – originally a Christian church built during the reign of the Emperor Justinian in the years 532–537, which is a treasure trove of construction and architectural craft as well as detail. The technical solutions in the construction of the dome applied here and the introduction of buttresses were a huge step forward in the history of architectural thought. The short period of construction of this huge temple inspires no less admiration.

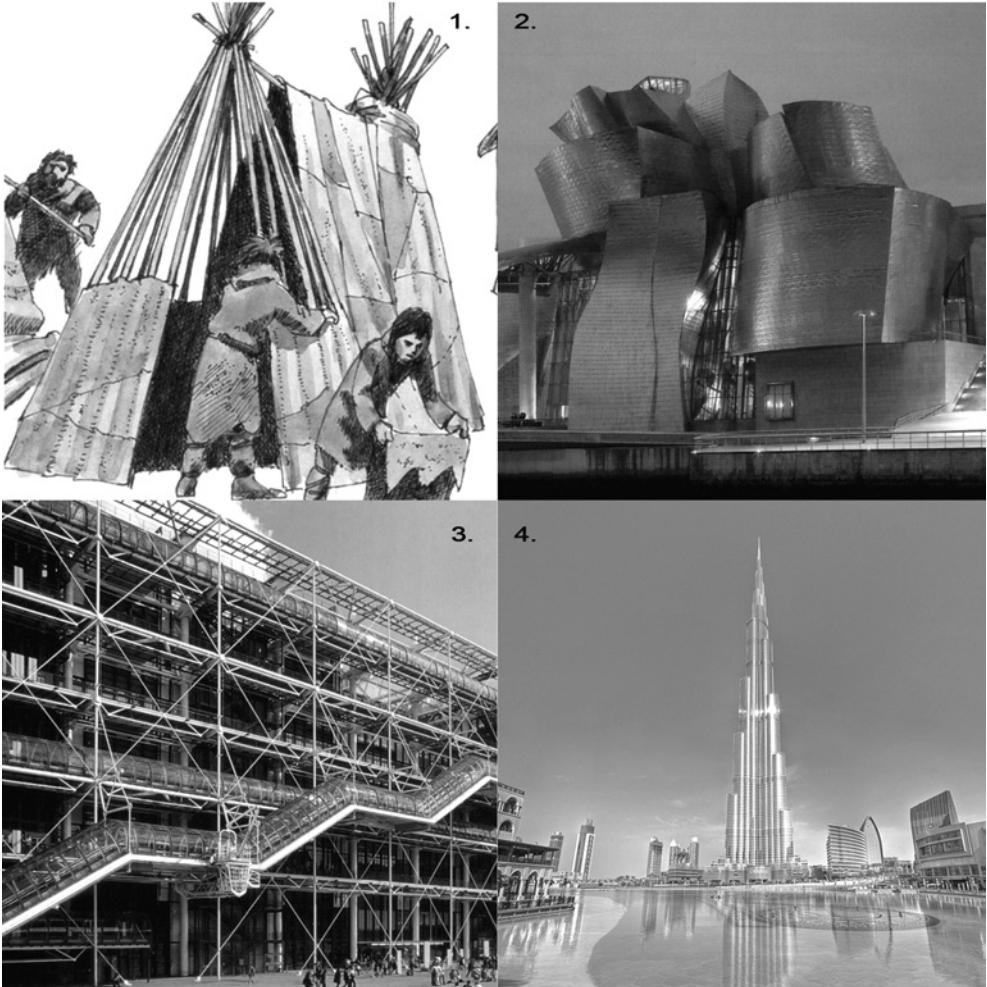
The Middle Ages is replete with examples of Romanesque architecture, based on a number of solutions derived from ancient Rome. A classic example of Romanesque art is the eleventh-century church of Sainte-Foy in Conques in France, at the Benedictine Abbey. What especially delights is the working of stone as the main building material.

The later mediaeval years were dominated by the Gothic style. The Gothic style introduced unique skeleton construction systems, which consisted of arched cross-ribbed vaults, resistance arches, buttresses, etc. A particular example of the Gothic construction is one of the largest and finest achievements of the Gothic, Notre Dame Cathedral in Chartres (1194–1225) in France – with lancet windows, soaring roof and equally soaring towers as well as unique stained-glass windows. Absolute mastery was achieved here in stone processing, sculptures, stained-glass windows and rosettes. Similarly, Siena Cathedral in Italy (1258–1285) presents the highest craftsmanship of stone processing – using various colour, mosaic and incrust combinations.

At the same time – in parallel – a massive architectural bloom followed in other parts of the world, which refers to Ethiopian (Coptic), Indian, Chinese, Cambodian, Inca, Japanese and other examples of architecture. Also there the dominant building material is stone. Sometimes the human genius allowed a stone temple to be carved (with rich veins of minerals) by hollowing the whole mountain from the inside [2]². Impressive works of art were created using different colour types of stone for encrustation, geometric mosaics, openwork and arabesque decorations; light, sound and water were used to potentiate artistic experiences.

From the late fifteenth century (the end of Gothic and Middle Ages), the sixteenth century was dominated by the art of the Renaissance in architecture, whose chief message was to draw attention to the power of human thought and perception of man as a kind of “centre” of the world. The more that fine arts, literature, music, sculpture, painting and architecture were supported by the new philosophical currents – focused on the legacy of Greek and Roman antiquity. The cradle of Renaissance art was Italy. The magnificent Cathedral of Santa Maria del Fiore in Florence is an excellent example of the architecture of that period. The basic building material here is stone with wonderful mosaic and sculptural compositions, spiral columns, etc.

² The author writes about Mount Kailas here. The Kailasa temple of Lord Shiva was created from it in this way. [5, p. 81 and further].



III. 1. Prehistoric structures about 35 000 years BC (Fiona MacDonald, Budownictwo, od szallasow do wiezowcow, Arkady, Warszawa 1998, s. 8); III. 2. Frank O. Gehry Guggenheim Museum in Bilbao (1993–1997) (Rolf Toman, Historia Architektury, Paragon, 2009, s. 328); III. 3. Richard Rogers and Renzo Piano – Paris – Centre Pompidou (1971–1077) (Rolf Toman, Historia Architektury, Paragon, 2009, s. 308) III. 4. Burj Khalifa – The Tower, Dubai (2010) United Arab Emirates (<http://www.abc-dubaj.pl/drapacze-chmur/burdz-chalifa.html>)

Around that time, in 1410, a great palace complex for the imperial family of the Ming Dynasty (Forbidden City) was built in Beijing.

At the end of the sixteenth century a new style called Baroque was born in Italy. This style spread throughout Europe and lasted until the mid-seventeenth century.

In the second half of the seventeenth century the classical style evolved, which was a kind of opposition to the lavishness and gilt which dominated the Baroque. Splendid examples of

this style include the Church of Santa Maria della Salute in Venice (1681), the White Heron Castle in Himeji in Japan (1608), the Palace of Versailles (1678) and Shah Abbas' Mosque in Isfahan, Iran (1628).

The beginnings of the nineteenth century in architecture and construction were dominated by the industrial revolution, which, in simplest terms, changed the world. The buildings of that period were adjusted to technological and production needs of large industrial plants and factories. Above all, new types of building materials, in particular iron and glass, had an impact on the industrial revolution. They created new possibilities for architects. Extremely durable metal frameworks were created of iron, and the spaces between the steel frame elements were filled with brick, concrete or glass. New technologies initiated the era of skyscrapers, as exemplified by the first (ten storeys, which seems tiny now) skyscraper in the world – the Home Insurance Building in Chicago (1871) of steel structure filled with bricks. Peculiar buildings of that period were also the Crystal Palace (1851), a giant exhibition pavilion of glass and steel (designed by Joseph Paxton) for British inventions at the World Exhibition in London and the 300-metre-high Eiffel Tower (1889) in Paris, the highest building of the time, a symbol of the greatest technical capabilities.

The beginning of the twentieth century is a special period for technological challenges, being the leaven of a new architectural style called Modernism. Modernist buildings were characterised by simplicity and functionalism. Every metre of the surface was carefully designed in that respect. New building materials were constantly improved through the use of e.g. chrome, plastic, etc., which was conducive to the creation and implementation of increasingly bolder visions. And thus, Antonio Gaudi (1903) builds a remarkable work of architecture in Barcelona – the Sagrada Família church. By combining different technologies and construction materials, bold spatial solutions, sculptural works, mosaic decorations, etc., he achieved an effect that surpassed all perceptions referring to the contemporary understanding of art.

In the years 1929–1931 the tallest building at the time was erected in New York – the Empire State Building (designed at the Shreve, Lamb and Harmon architectural firm) with 102 storeys. Apart from glass and brick, precast concrete slabs placed directly on the steel skeleton (according to an innovative system) were used to fill the openwork structure of the skyscraper.

The beginning of the twentieth century is also a great variety of architectural ideas and architectural styles, and at the same time a kind of manifesto of the independence of architectural thought, which does not refer to the past intentionally, having the ambition to provide completely innovative solutions. One of the examples, otherwise very spectacular, is the city of Brasilia in Brazil (1955, since 1960 the capital of Brazil) built from scratch with its innovative architecture and urbanism (according plans and designs by L. Costa and O. Niemeyer and other eminent architects), characterized by imaginative architectural forms in close liaison with sculptures and paintings (the city was inscribed on UNESCO's World Heritage List).

An undoubtedly highlight in the sphere of development of architectural thought was the movement called functionalism. According to its assumptions the shapes and forms of the buildings were completely subordinated to their functions. A leading example of this way of thinking is the Centre Pompidou in Paris (designed by Richard Rogers and Renzo Piano, 1976). The structure, communication, function and technical infrastructure of the building were fully brought to the fore, i.e. "thrown" outside. Norman Foster presented a similar way

of thinking with the implemented design of the Hong-Kong and Shanghai Bank in Hong Kong (1979–1986).

As it turned out, these achievements, and also spatial and architectural experiments, resulted in the formation of postmodern buildings (or were a kind of reference point for some other quests). These were often an attempt to “make fun of the past”; architects made use of the latest achievements in construction and technical thought and contemporary materials and technologies (metal, including copper and aluminium, glass, brick, concrete, etc.).

New technological possibilities and new construction materials mean that there are basically no boundaries for contemporary architectural projects. Architects and investors – especially in Asian cities like Hong Kong, Shanghai, Beijing or Tokyo – participate in a peculiar race for ever taller buildings. The imposing skyscrapers of the Petronas Tower in Kuala Lumpur, Malaysia (452 metres, 1999) aroused widespread admiration for their design thought not so long ago. Currently the undisputed first place belongs to the Burj Khalifa structure (829 metres high) in Dubai (2010, United Arab Emirates). And it is common knowledge that there are plans to build other height record-holders.

3. Conditions of visions and selection of architectural implementations

These conditions are as different as are human values and personal motivations, as well as the economic capabilities of investors (principals) or backers (sponsors) of buildings. Sometimes, the choice of work is influenced by seemingly simple and existential arguments like love of your beloved (the Taj Mahal palace-tomb in Agra, India, 1631–1648); the desire to possess a haughty tomb (not only in the form of pyramids – beautiful, though minuscule in comparison to the pyramids, examples can be found at the Warsaw Powązki Cemetery or the Lychakiv Cemetery in Lviv and many other cemeteries); the intention to distinguish oneself, show off; prestige, and very often megalomania or just a peculiar whim – e.g. the famous Neuschwanstein castle in the Alps erected by King Ludwig II of Bavaria.

Even today, these motivations and expectations present architects and engineers with ever new challenges related to building materials, new technologies, statics of the structure, function and originality of architectural vision.

It sometimes happens that pure accident becomes decisive in those fields, as occurred in the case of the unprecedented invention of reinforced concrete by the French gardener Joseph Monier who patented it in 1867 as a... reinforced concrete flower pot. And today? Today, we know and use several hundred types of concrete, aerated concrete and reinforced concrete, and also hundreds of types of building, construction and decoration glass, a range of extremely durable and flexible structural metal alloys, self-bonded carbides, multiple species of bricks, sheet metal, grain and decorative stonework etc. Technology and space technology deliver new material solutions every single day. Science progresses in quantum leaps to provide opportunities for underwater or underground construction (including tunnels) or construction in the permafrost zone. In the light of modern material possibilities, in terms of artistic expression, and even different “whims”, architecture knows no bounds.³

³ According to Dariusz Kozłowski: (...) “Architecture consists in constructing fictitious objects in such a way that they look real”. *Pomiędzy światłem i ciemnością (architektury)* [2, p. 29].

R e f e r e n c e s

- [1] Glancey, J., *Historia architektury*, Wydawnictwo Arkady, Warszawa 2002.
- [2] Kozłowski, D., *Pomiędzy światłem i ciemnością (architektury)*, [in:] *Definiowanie przestrzeni architektonicznej*, Międzynarodowa Konferencja Naukowa Instytutu Projektowania Architektonicznego, Kraków 23–24 November, 2001.
- [3] Borngasser, B., T. Rolf, *Historia architektury od starożytności po czasy współczesne*, Parragon, Bath, New York, Singapore, Hong Kong, Cologne, Delhi, Melbourne, 2000.
- [4] Gössel P., G. Leuthäuser, *Architektura XX wieku*, Taschen/TMC Art., 2006
- [5] Zin W., *Piękno potężne*, Arkady 1972.

ANNA MIELNIK*

**“PLAYING GAMES WITH ARCHITECTURE”
– PER KIRKEBY’S FAKE BUILDINGS**

**„GRY Z ARCHITEKTURĄ”
– FAŁSZYWE BUDYNKI PERA KIRKEBY**

A b s t r a c t

The text describes play with architecture in the work of the Danish artist Per Kirkeby. His spatial installations, bordering between sculpture and architecture, show the interaction between the obvious and elusive, real and fictional, abstract and archetype.

Keywords: *sculpturality of architecture, architecturality of sculpture, Per Kirkeby*

S t r e s z c z e n i e

Tekst opisuje gry z architekturą w twórczości duńskiego artysty Pera Kirkeby. W jego instalacjach przestrzennych sytuujących się między rzeźbą a architekturą widoczna jest interakcja między oczywistym a nieuchwytnym, rzeczywistym a fikcyjnym, abstrakcją a archetypem.

Słowa kluczowe: *rzeźbiarskość architektury, architektoniczność rzeźby, Per Kirkeby*

* Ph.D. Arch. Anna Mielnik, Department of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

1. Sculpturality of architecture and architecturality of sculpture

The boundaries between architecture and the visual arts are nowadays becoming increasingly obscure. The continuous breach of the once universally recognized attributes of independent fields is noticeable. The work of architects who enter the field of art and artists who design architecture, can be seen as symptomatic of the image of the visual arts and architecture at the turn of the 21st century.

Sculpture is an area where the trend of an interest in architecture is particularly noticeable. Architecture and sculpture – as “the arts of real space” [6, p. 15] – share a common territory where the experience of space and its multisensoriality are most important. Architecture is still determined by the permeability and usability, but building techniques and forms, which have always enabled an easy distinction between these disciplines, have changed significantly. Likewise, gone are the times when sculpture was understood solely as a compact solid limited in itself, curved through subtraction of fragments of the material or modelled by the addition of it. Today sculpture reaches for forms, matters, and themes typical of other arts. Creators undertake such artistic activities that either draw inspiration from architecture or encroach on its territory. Many of them use construction materials traditionally used in architecture, or the techniques and forms of architectural representation, e.g. models [6, p. 221], they address the issue of shelter, architectural styles, structures, and forms. In the experimental works of Dan Graham, Rachel Whitehead and many others – by addressing aspects such as space, phenomenology, perspective, and scale – architecture has invaded the field of sculpture. In turn, architects, from Le Corbusier’s chapel at Ronchamp to Frank Gehry, experiment with extremely sculptural forms of buildings.

The creators – architects and visual artists – play a game with the audience consisting in creating appearances, pretending. Eschewing the traditional systematization of the arts, they play the game – “Guess what am I?” – with the spectator. In his essay *Architecture’s Expanded Field* from 2004 Anthony Vidler asks how we are to define particular arts as integral practices when “there no longer seems to be any division between [...] the aesthetically contrasted spatial and the functionally constructed spatial” [6, p. 78]. The question of whether it is a game – a conscious, purposeful activity based on a principle – or, as determined by Gabriela Świtek [6, p. 107], an inevitable quest for affinities of practices that sets the directions of artistic and architectural exploration today, remains open.

In this context, it seems obvious to recall the works of German artist Erwin Heerich who erected walk-in-sculptures on the Museum Island Hombroich, which look like magnified cardboard sculptures-models of composed cubes that he created serially. The walk-in sculpture becomes a walk-in architecture without function.

2. Playing with architectural form

An artist whose works also sustain a visual and conceptual dialogue with architecture is the Danish sculptor and painter Per Kirkeby. He creates three-dimensional objects where the interior and exterior (not always), structure, form, matter and scale – typical of architecture – can be distinguished. The use of architectural elements, building material (brick) and construction techniques considered to be traditionally architectural, as well as the scale of structures, means that his brick sculptures are perceived rather as “buildings of no function” [4, p. 148].

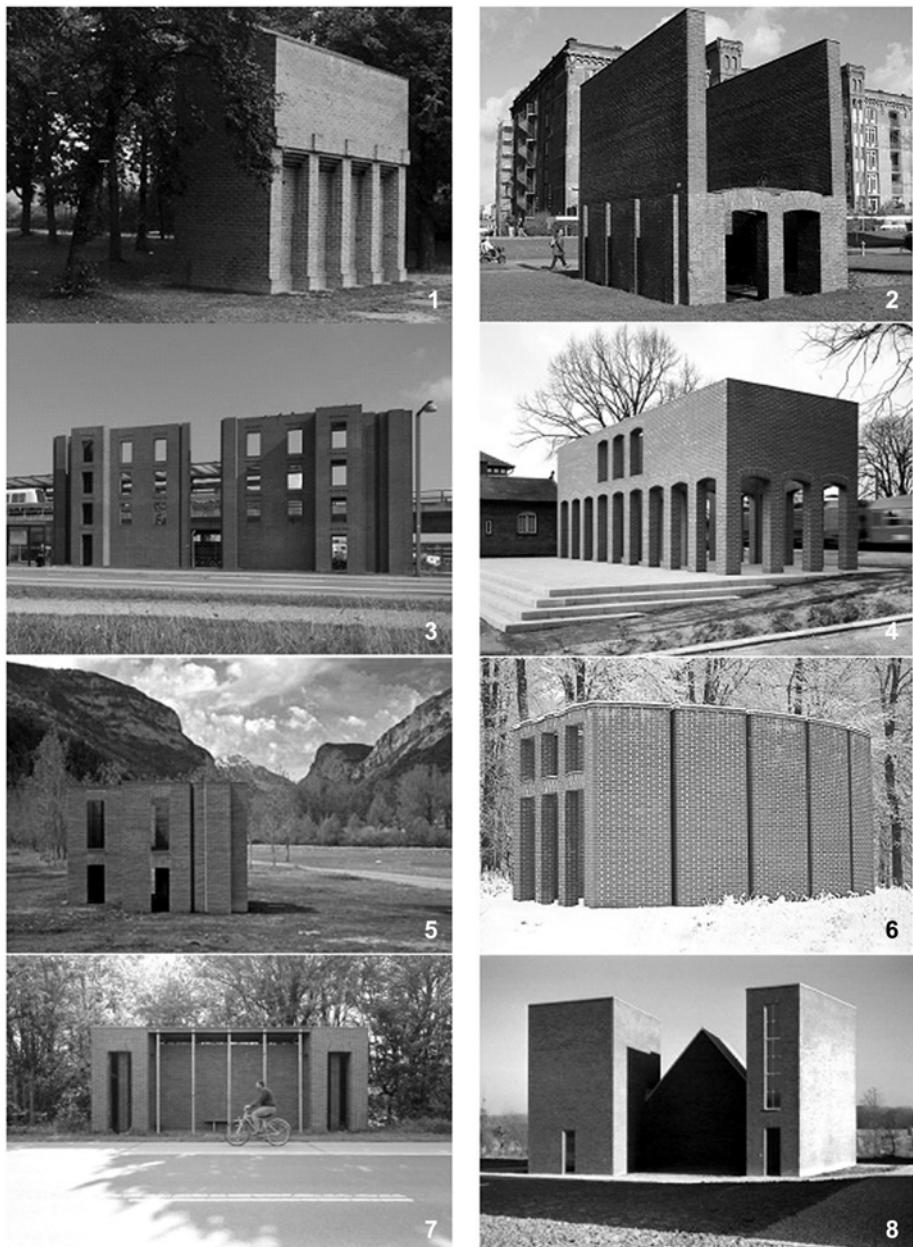
The concept of architectural sculpture is strongly associated with the 60s and 70s American Minimalism movement. However, in response to the exclusion of any references from a work (metaphorical or symbolic) to anything other than the work itself (literal art) by such artists as Robert Morris, Carl Andre, or Donald Judd, Per Kirkeby already in his first sculptures tended towards craftsmanship and discovering representational references to the architectural language [1, p. 613].

In the early stage of his artistic creativity, Kirkeby built smaller, brick structures commissioned by art galleries. Since the 70s he has been creating architectural sculptures “released” from closure in the form of walls, mazes, and towers in public spaces in cities and extra urban landscapes mainly in northern Europe. The first outdoor sculpture “Huset” (1973) was erected in the village of Ikast in Jutland. The small brick building, which referred to the Danish craftsmanship tradition, Mayan temples, and Byzantine churches, triggered a series of subsequent sculptures, more or less monumental, and either closed or walk in.

His sculptures embedded in the city space are not monuments commemorating or celebrating a specific event or person. They do not operate exclusively as aesthetic objects either. Silent like tombs without names, they become objects that represent the relationship of time and space, creating a frame for the memories, underpinning the concept of memory [1, p. 621]. By entering into relationships with the shape of space, directing attention to the immediate environment, conducting a dialogue with the space and the audience, they act as a “signpost of a place”. Highlighting the architectural and historical conditions of the site, they restore its lost identity. They seem to remind us then, e.g.: “there is / was a city”. Kirkeby’s architectural sculptures, for the use of inhabitants and passers-by, condense fragments of time and history and the collective memory of the place [1, p. 613, p. 622].

Some of the sculptures are closed, tectonic structures that do not let the audience inside. Others allow a multiplicity of paths to traverse them. Some tend towards stereotomics and, as free-standing walls, have been stripped of floor and roof. Kirkeby uses borrowings from architecture, selected elements like pillars, walls, arches, vaults, platform, passages, colonnades, arcades, mazes, gates, and benches. Without quoting specific objects, elements and details, he plays with references to close and distant typology. One can spot the observatory, chimney, Roman aqueduct, or chapels in them. In the game we must allow for exaggeration, some features are exposed, others are not displayed. By abstracting specific elements, depriving them of their assigned purpose or giving other functions, Kirkeby plays with the possibilities of interpreting his works. “Kirkeby investigates the contradiction between the human inclination to read meanings into objects and images, and art’s attempt to empty these very objects and pictures of meaning” [1, p. 616].

The syntax of sculptures consists of brick modules and structural elements of architecture. Kirkeby builds architectural sculptures according to the traditional notion of design logic. He emphasizes the physicality, the strong materiality of objects, and the truth of the material. Devoid of ornamentation, they possess only modest details typical of brick buildings, such as lintels, serrations, and graphic elements rather than symbols. The artist turned to brick buildings because the architectural language allowed him to introduce figurative connotations and historical references. [1, p. 615] In his works he also shows the ability to achieve an extraordinary balance between abstraction and figuration, through the play of clean, simple forms composed of recognizable architectural elements and reaching for archetypes. It should be noted that addressing the issues of



Ill. 1. Per Kirkeby, *Building (Brick sculpture)* for Dokumenta 7, Kassel, 1982 [13]; Ill. 2. Per Kirkeby, *Brick sculpture*, Amsterdam, 1990 [9]; Ill. 3. Per Kirkeby, *Brick sculpture*, Copenhagen, 1994 [11]; Ill. 4. Per Kirkeby, *Brick sculpture*, Humlebæk, 1994 [12]; Ill. 5. Per Kirkeby, *Brick sculpture*, Centro de Arte y Naturaleza, Spain, 2009 [7]; Ill. 6. Per Kirkeby, *Brick sculpture*, Wanås (1994) [14]; Ill. 7. Per Kirkeby, *bus stop "Neuss-Minkel 2"*, Museum Insel Hombroich, 2000 [10]; Ill. 8. Per Kirkeby, *Three Chapels*, Museum Insel Hombroich, 2003 [8]

sustainability, types, archetypes, and identity, the past is particularly close to architecture of neoclassical origin. The main theme of the sculptures, however, is not a form of architectural representation, but the way they can transform the experience of the audience, the observer.

3. Playing with function

The artist uses forms typically immediately associated with architecture, yet deprived of functionality. He undermines the essence of architecture as a functional discipline. He questions the practical need, underlining its possible pointless beauty. The observer wonders whether it resembles architecture, and if it does, is it architecture? [6, p. 273]. Architecture freed from the postulate of *utilitas* allows for standing beside, challenging the dominance of functionality. “It finally eludes the power of utility defined as a supreme being, which everything, including form, is subordinated to” [5, p. 76]. Rigorous, based on simple and clear principles, ordinary, Per Kirkeby’s sculptures are both peculiar and strange; they evoke a sense of disorientation. The artist plays with the mind of an observer who recognizes the forms but feels that not all adds up. The game between the obvious and elusive, real and fictional, architecture and archetype follows. The audience begins to wonder whether this is a “real” building and what this concept really means. This game can give pleasure.

4. Playing with ruin

Robert Morris defined ruin as a type of structure devoid of functionality and situated on the border between architecture and sculpture: “The ruins are exceptional spaces of extraordinary complexity, where unique relations between the availability and the barrier, between open and closed, horizontal and vertical, a plane and the wall [...]” [6, p. 281]. In point of fact, some of Per Kirkeby’s sculptures resemble ruins abandoned somewhere in a public space. They produce the same specific mood that one feels in the vicinity of “dead” buildings. The artist gives a unique character to ordinary elements – of a ruin, vacancy, an uninhabited structure, a solitary wall with empty windows that emanate emptiness. These objects can be understood as a contemporary residue, remains – of buildings, a city, a culture. The selection of material is significant in this context – brick, which is the material which is culturally assigned to ruins. Brick is a seemingly ordinary material that stimulates associations.

These “false” ruins may become real ruins themselves in the course of time. Ruins fascinate, stimulate curiosity concerning their origin, as they seem to contain hidden or forgotten stories. “Ruins can be considered as a special case of criticism of architecture: a building in ruins loses one of the most important architectural features – spatial functionality, while remaining merely an aesthetic form. Ruins, as recalled by Morris, are not perceived as a sculpture, because they are usually an architectural remnant. Yet, devoid of functionality, a ruin becomes a sculpture, since the manners of space perception and aesthetic perception assumed in relation to it are subject to change” [6, p. 281]. In these sculptures-ruins one can discern the fight between the abovementioned classicism and romanticism.

5. Playing with the audience

In 1982, Per Kirkeby lured the audience of the contemporary art exhibition Documenta 7 in Kassel to a building hidden in the greenery of a park, which proved to be a sculptural object, without doors. It resembled a neoclassical building for a small power station. This and other small, brick, romantic objects of his authorship pretend architecture for some time. From afar. Once approached, they often turn out to be smaller than “real” buildings.

The sculpture located at the entrance to the railway station in the Danish Humlebæk (1994) is a kind of gateway, an invitation to the nearby Louisiana Museum of Modern Art. It refers to the architecture of the nearby railway buildings with its form (repeating arcs), material (red brick), and scale. It harmoniously fits the context. Situated on the hill, the “two-storey” rectangular sculpture consisting of arcades bearing complete walls above was deprived of the roof and thus the potential possibility of shelter from the rain and wind. Without function, it remains a pure form, rather a reference to a building, to something that everyone is familiar with and recognizes. In this way, the sculpture seems to position itself somewhere between that which we pass while travelling by train, and art whose experience we pursue. [12]

Another place chosen for a sculpture was an empty area near the DR-Byen Ørestad metro station Nord in Copenhagen (1994). This sculpture, in the form of a high wall, has a different function. There is no roof, no entrance. The wall, marked with holes resembling windows, becomes an ornament. It constitutes a portent of the city. It is ordinary but at the same time so specific that it becomes a sign of the “new” place, which, according to some residents, lacks a “spirit”. Here, among the new, modern buildings, the sculpture looks like a portent of a house, or an empty shell, abandoned during construction (maybe it arose a little too close to the tracks?). Craftsmanship (masonry) transformed into art becomes a commentary on the contemporary dominance of concrete, steel, and glass.

In the Spanish Centro de Arte y Naturaleza, Per Kirkeby created (2009) not so much a physical structure, situated amid pastures on the banks of the Cinqueta River, but an “aphorism” which possesses materiality and form. The sculpture, based on the intersection of two equal squares, creates three spaces which can be entered through a series of openings mimicking the doors of a house. One could also draw a parallel between the openings in the upper part and the idea of windows, even though it is impossible to look through them. The object gives the impression of an abandoned place, ruins indicating that there once was a house. Through the openings we see the tops of the mountains and the sky over the Pyrenees, which intensifies its extraordinariness. [7]

Kirkeby completed his installation in the Danish Wanås (1994) on an estate neighbouring a castle, in the place where the park becomes a forest. The sculpture is reminiscent of a roofless park pavilion. The rounded, unbroken long sides have niches where one can rest. The structure can be entered through the openings at each end. The openings in the walls frame the surrounding wilderness, the upward opening frames the sky. The structure can be perceived as both open and closed, depending on the place one is looking from. The creator explores the issue of transparency with the sculpture.

Per Kirkeby’s works in the German museum of “architectural sculptures” Insel Hombroich could not be missed. Here he still does not transform sculpture into functional architecture ultimately, but he certainly enters its territory more confidently. The first building erected by the artist in the museum is the small and prosaic bus stop “Neuss-Minkel 2” (2000). It is reminiscent of his “useless” walk-in sculptures, but the insertion of a bench and naming the

building proved enough for it to gain functionality. One can see how thin the line is. This simple, geometric, symmetrical object can be treated as the first stop to the world of art. In point of fact, it even corresponds with material, structure and form to Erwin Heerich's pavilions.

The name "chapel" could result from the external formal language of the three buildings, as well as the nature of the interiors which evoke the spaces of churches. Light and simple, they give the visitor the feeling that they will find peace inside. "The modest temples" are devoted to art here. Each of the three chapel consists of a low cuboid building with a gable roof which is adjoined by one or two higher tower structures. It seems, however, that as in the case of all objects within a museum, which in accordance to Erwin Heerich's idea was to provide a place for architecture as sculpture free of usefulness, function is secondary, what matters is their pure existence.

6. Conclusion

In the policy statement of the SITE architecture organisation, which referred to the interpretation of architecture as art, it was concluded that "art is critical, while design is passive and utilitarian". [6, p. 295] The artistic activities through which artists play the critical game with the conventional division of disciplines, and the discussions which such games arouse, can help restore architecture to its rightful place as one of the arts. They can show one how seemingly close it is from a civil engineering structure to a work of art. At the same time they demonstrate how difficult it is to cross this border, and that only a few succeed in it. Objects that are not architecture but look like architecture, buildings which have a function but look like sculptures, make the observer ask themselves: "How thin is the border between the functionalism of architecture and the formalism of sculpture?" [6, p. 510].

R e f e r e n c e s

- [1] van Acker W., Davidts W., *If Walls Could Talk: The Brick Sculptures of Per Kirkeby*, [in:] *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 31, Translation*, Christoph Schnoor (ed.), Auckland, New Zealand: SAHANZ and Unitec ePress; and Gold Coast, Queensland: SAHANZ, 2014.
- [2] *Archisculpture. Dilogues between Architecture and Sculpture from the Eighteenth Century to the Present Day*, Markus Brüderlin (ed.), Fondation Beyeler, Hatje Cantz Verlag, Riehen/Basle 2004.
- [3] *Architecture & Arts 1900/2004: A Century of Creative Projects in Building, Design, Cinema, Painting, Photography, and Sculpture*, G. Celant (ed.), Milano 2004.
- [4] Henney G., *Brickworks*, A&C Black, London 2003.
- [5] Kozłowski D., *Transfiguracja form, albo – niech szczeźnie funkcjonalizm!*, [in:] *Definiowanie przestrzeni architektonicznej – Architektura jako sztuka*, Kraków 2004.
- [6] Świttek G., *Gry sztuki z architekturą*, Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń 2013.
- [7] <http://www.art-agenda.com/shows/per-kirkeby-at-cdan-centro-de-arte-y-naturaleza>
- [8] http://www.baunetz.de/meldungen/Meldungen_Kirkeby-Raeume_auf_Hombroich_fertiggestellt_15825.html

- [9] <http://www.buitenbeeldinbeeld.nl/Zeeburg/kirkeby.htm>
- [10] <http://www.inselhombroich.de>
- [11] http://www.kulturarv.dk/1001fortaellinger/en_GB/an-artwork-for-oerestaden/images/newest/1/dsc3207-kopi-jpg-2
- [12] <http://www.kunsteder.dk/case/per-kirkeby-naar-kunsten-mimer-stedet>
- [13] http://www.museum-kassel.de/index_navi.php?parent=10666
- [14] <http://www.wanas.se/svenska/Konst/Konstn%C3%A4rer/Konstn%C3%A4r.aspx?fid=29>

ROBERT MUSIAŁ*

GAME OF ASSOCIATIONS: THE SHAPE OF A TALL BUILDING

GRA W SKOJARZENIA: KSZTAŁT WIEŻOWCA

A b s t r a c t

Tall buildings, which refer to spiral, pyramid or obelisk shapes, or the shape of a gate or triumphal arch, may resemble old buildings of symbolic importance. Tall buildings that relate to these shapes and forms and are associated with them are still being designed. The relatively easy recognition of these building shapes is used to create distinctive large-scale landmarks.

Keywords: *shape of a tall building, spiral shape, pyramid shape, obelisk, gate, triumphal arch*

S t r e s z c z e n i e

Wieżowce, które nawiązują do kształtu spiralnego, piramidalnego, formy obelisku oraz do kształtu bramy lub łuku triumfalnego, mogą przypominać dawne budowle o znaczeniu symbolicznym. Wciąż projektowane są wieżowce, które nawiązują do wspomnianych kształtów i form i które są z nimi kojarzone. Stosunkowo łatwa rozpoznawalność, jaka cechuje omawiane kształty budowli, wykorzystywana jest do tworzenia charakterystycznych znaków o wielkiej skali.

Słowa kluczowe: *kształt wieżowca, kształt spiralny, kształt piramidalny, obelisk, brama, łuk triumfalny*

* M.Sc. Arch. Robert Musiał, Ph.D. Studies, Faculty of Architecture, Cracow University of Technology.

1. Introduction

Shapes of skyscrapers are sometimes compared to various forms that are man-made or occur in nature. Such buildings are often named after the forms and objects they are commonly associated with. *Tour Montparnasse* is referred to by Parisians as “the cleaver” [11, p. 106]; *30 St Mary Axe (Swiss Re)* in London is commonly called the gherkin; and *The Leadenhall Building*, built in recent years also in the City of London – the cheese-grater [25, p. 19]. There are many examples of various types of names that refer to tall buildings due to their shape (although, as in the case of the tall building in Paris, it is probably not only the shape but also the spatial impact that is referred to).

In scientific terms, the shape of tall buildings can be seen in terms of symbolism. The issue of symbolism of buildings is expressed in shapes referring to well-known archetypes of forms. There are types of shapes of tall buildings that are associated with characteristic structures and forms with fixed meaning and symbolism. *Torre Velasca*, built in the late 50s in Milan, is a well-known tall building that resembles a mediaeval tower [9, p. 234].

The symbolism of tall buildings is sometimes analysed along with the imageability of such structures. S. Krishnan and M.M. Ali (2004) consider in this context such aspects as the power of the pyramid shape (*Pyramid Power – From Madurai To San Francisco*) and analogies to nature (*Analogy in Nature*) [20].

A tall building, thanks to its symbolic shape, can be a very distinctive landmark in its environment and thus an easily recognisable building. The authors of analyses of tall buildings, on the basis of studies by Lynch (1960), Appleyard (1969, 1976) and Evans, Smith and Pezdek (1982), list the shape of a building as one of the factors that can affect its functioning as a landmark [2, 10].

2. Shapes of tall buildings

Sometimes the shapes of tall buildings suggest a link with a distinctive historic building, which is reflected in some classifications of the shapes of such buildings.

According to C. Jencks (1980), there are three types of shapes of tall buildings: *skyprickers* – tall buildings developed from obelisks, spires and pyramids (e.g. *Chrysler Building*, New York); *skyscrapers* – with longitudinal, rectangular masses and plans (e.g. *John Hancock Tower*, Boston); and *skycities* – combinations of buildings or masses forming tall structures (e.g. WTC, New York). Each of these three types of structures is represented by a number of variants. The author compares some of the shapes to different objects and forms that occur in nature. Such tall buildings are represented by sharp-edged skyscrapers – “skyknife and skyberg” [19].

According to L.S. Beedle, M.M. Ali and P. J. Armstrong (2007), one more trend of the present era is the style of twisted, tilted, deconstructivist and other poetic, kinetic or cinematic forms. All these represent a new style of tall buildings – “outside the box” [10, p. 87]. Such buildings are distinguished by their unusual geometry and are characteristic due to their relatively small number.

In recent years, classifications of the shapes of tall buildings which take into account current trends have been introduced. The classification by A. Sev and F. Tuğrul (2014) proposes

a breakdown of forms of tall buildings with shapes other than orthogonal, into four basic groups: pyramidal, leaning, twisted, and free forms. Sev and Tuğrul list *The Shard*, built recently in London, as one of the tall buildings with a pyramidal shape [26].

3. Spiral shape

The spiral shape of a tall building can be seen as a reference to the image of the *Tower of Babel*. In the words of p. Gajewski (2001): “The image of a spiral tower, tapering upwards with several tens of metres in diameter at the base in the shape of a circle (ellipse), is a late invention, but still managed to make an outstanding career. It became forever the image of the Tower of Babel.” The author compares this image to a *ziggurat* [14, p 136].

According to Beedle, Ali and Armstrong (2007) *Bishops Gate Tower* is a spiral building [10, p. 87]. J. Gyurkovich and E. Węclawowicz-Gyurkovich (2008) agree: “The transparent tower will have a nearly cylindrical shape and will gradually taper and spiral upwards” [15, p. 16]. Another association which this building may bring to mind is a rolled textile, which forms a spiral top with its bevelled edge.

According to E. Höweler (2003), *Parkhaven Tower* in Rotterdam has a spiral form [16, p. 120]. The reference to the spiral shape is most clearly visible at the top.

One Vanderbilt Place in New York designed by Kohn Pedersen Fox Associates is also a spiral. The building is to comprise of “four interlocking, tapering volumes that spiral up to the sky” [21].

4. Pyramid shape

The pyramid shape is one of the most recognisable architectural forms. Designs of tall buildings which refer to such a shape have been created for a long time. It is sufficient to recall H. Sauvage’s design for the “Place de la Victoire” competition, organised in Paris in 1930. In a group of tall buildings called Pyramids in College Park, Indianapolis, and dating from the early 70s, the effect of association with pyramidal form, achieved thanks to its shape, is enhanced by the duplication of the building mass.

S. Krishnan and M.M. Ali (2004) in their considerations regarding the pyramidal shape of a tall building (*Pyramid Power – From Madurai To San Francisco*), observe a relationship between a gopuram and skyscraper. According to Krishnan and Ali, the *John Hancock Center* in Chicago and *Transamerica* in San Francisco (Ill. 1) have “the pyramidal flavour” [20]. Many authors define *Transamerica* simply as a building that has the shape of a pyramid. D. Appleyard and L. Fishman (1977), analysing its shape, recall the circumstances and unfavourable atmosphere that accompanied the reception of this building. It has been called “The Egyptian Embassy” [7, p. 91–92].

When it was built, it received mixed reviews. In the 80s, Jencks put this building in a group of objects that, as far as architecture is concerned, present “unintentional humour” [18, p. 78]. However, the building became the symbol of the city primarily due to its shape. Many studies positively assess the importance of this building in the landscape of San Francisco [8, 27].



1



2



3



4

Ill. 1. San Francisco. *Transamerica*, photo by Roland Halbe. Courtesy of Roland Halbe Fotografie
Ill. 2. Paris. *Triangle*, © Herzog & de Meuron. Courtesy of Herzog & de Meuron

Ill. 3. Frankfurt am Main. *Meseturm*, photo by author

Ill. 4. Madrid. *Puerta de Europa*, photo © Robert Royal 1998. Courtesy of R. Royal

A tall building designed in Paris, the *Triangle* (also called the *Tour Pyramide*) has proportions quite clearly similar to the ancient pyramids (when looking at its wider sides) (Ill. 2). According to J.-F. Pousse (2009), this building offers a “new approach to the long history of monumental buildings” [24, p. 174]. If it is built, it would be a characteristic triangular mark in the silhouette of Paris.

5. Obelisk

The obelisk can be associated with many tall buildings through similar proportions – the ratio of its base to its height. The *Meseturm* in Frankfurt am Main is a building constructed on a square plan, with a symmetrically tapered mass and a pyramid-shaped top (Ill. 3). If we accept the typology proposed by Jencks, this tall building is a *skypricker* that resembles an obelisk. In the words of J. Dupré (2008): “In its basic form, the Meseturm is a modified obelisk” [12, p. 107].

There are also tall buildings, the shape of which differs from the traditional form of obelisk, yet they are associated with such a building. A. Jasiński (2014) believes that the black *New York Trump World Tower* resembles an obelisk [17, p. 42]. Interestingly, this building has a rectangular shape, but the slender proportions combined with a significant height and a smooth and uniform coating result in the fact that this building can be associated with this type of form. The “solid” mass of the tall building is one of the objects that stand out against the background of the diversity of Manhattan silhouette. According to Höweler (2003), its “simple form, slender proportions, and minimal facade treatment make it an enigmatic sculptural monolith” [16, p. 96].

6. Gate and triumphal arch

Twin towers or two buildings equally high or with slightly different heights positioned close to each other create a landmark that can be associated with a gate or a gigantic portal. Buildings that refer to the shape of triumphal arches and portals also form spatial gates with symbolic significance.

Twin tall buildings with in-between space are sometimes referred to as buildings that act as a gateway to the city [23, 4]. The no longer extant WTC in New York was a spectacular example of the above. M.M. Ali (2005), in his considerations on the symbolism and imageability of skyscrapers, defines the interaction of the two WTC towers as a gateway to New York City [1, p. 2].

Puerta de Europa in Madrid is also referred to as a gateway or a portal (Ill. 4). The comparison is justified not only by configuration and shape of the buildings but also by their location – the buildings flank an important artery of the city – Paseo de la Castellana.

Buildings with shapes that resemble the form of a triumphal arch are a very characteristic type of tall buildings. *La Grande Arche de La Défense* can serve as an example.

J. Gyurkovich and E. Węclawowicz-Gyurkovich (2008) analysed modern gates and towers, including the aforementioned buildings in Madrid. According to the authors, modern tall buildings represent “images, constantly present in our subconscious, of archetypes of the forms that have already existed in the past, such as gateways to cities and city towers” [15, p. 20].

Tall buildings that through their configuration, shape and location become similar to historic gates or triumphal arches are a specific type of tall buildings. Kheir Al-Kodmany (2011) classifies *Puerta de Europa* in Madrid in the same category as the *Gate of the Orient* in Suzhou (China) – “two towers that joint at the top to form an arch (or a gate)”, as landmarks in the form of towers that create gateways [3, p. 258].

7. Summary

Tall buildings, which refer to spiral, pyramid or obelisk shapes, or the shape of a gate or triumphal arch, may form characteristic landmarks that resemble old buildings of symbolic importance. The examples provided show that tall buildings which refer to these shapes and forms and are associated with them are still being designed. The relatively easy recognition of these building shapes is used to create distinctive large-scale landmarks, which are reminiscent of famous buildings. The power of symbolism, which lies in archetypes formed long time ago, is such that we even associate those tall buildings or their configurations that, in their shapes, are quite far from the originals with such forms.

R e f e r e n c e s

- [1] Ali M.M., The Skyscraper: Epitome of Human Aspirations, [in:] Proceedings of the 7th CTBUH World Congres on Tall Buildings and Urban Habitat: Renewing the Urban Landscape, 16–19 October 2005, New York City.
- [2] Ali M.M., Armstrong p. (eds), *Architecture of Tall Buildings: Planning and Environmental Criteria*, McGraw-Hill, Inc, New York 1995.
- [3] Al-Kodmany Kheir, Placemaking with Tall Buildings, Urban Design International, vol. 16, 4, 2011, p. 252–269.
- [4] Al-Kodmany Kheir, Ali M.M., *The Future of the City: Tall Buildings and Urban Design*, WIT Press, Southampton, Boston 2013.
- [5] Appleyard D., Why Buildings Are Known: A Predictive Tool for Architects and Planners, Environment and Behavior, 1, 1969, p. 131–156.
- [6] Appleyard D., *Planning a Pluralist City*, MIT Press, Cambridge 1976.
- [7] Appleyard D., Fishman L., High-Rise Buildings Versus San Francisco: Measuring Visual and Symbolic Impacts, [in:] D.J. Conway (ed.), *Human Response to Tall Buildings*, Dowen, Hutchinson & Ross Inc, Stroudsburg 1977, p. 81–100.
- [8] Attoe W., *Skylines: Understanding and Molding Urban Silhouettes*, John Wiley & Sons, Chichester 1981.
- [9] Basista A., *Architektura i wartości*, Universitas, Kraków 2009.
- [10] Beedle L.S., Ali M.M., Armstrong p. J., *The Skyscraper and the City: Design, Technology, and Innovation*, The Edwin Mellen Press, Lewiston 2007.
- [11] Bień K., Kształtowanie przestrzeni miasta XXI wieku na przykładzie Krakowa, [in:] J.M. Małecki (ed.), *Krajobraz Krakowa wobec zagrożeń*, Towarzystwo Miłośników Historii i Zabytków Krakowa, Kraków 2007, p. 95–108.
- [12] Dupré J., *Skyscrapers: A History of the World's Most Extraordinary Buildings*, Black & Dog Leventhal Publishers, Inc., New York 2008.
- [13] Evans G.W., Smith C., Pezdek K., Cognitive Maps and Urban Form, Journal of the American Planning Association, Vol. 48, No. 2, 1982, p. 232–244.
- [14] Gajewski P., *Zapisy myśli o przestrzeni*, Wydawnictwo Politechniki Krakowskiej, Kraków 2001.
- [15] Gyurkovich J., Węclawowicz-Gyurkovich E., Współczesne miejskie bramy i wieże, Kwartalnik Architektury i Urbanistyki, Warszawska Drukarnia Naukowa PAN, tom LIII, zeszyt 2/2008, p. 3–21.

- [16] Höweler E., *Skyscraper: Vertical Now*, Universe Publishing, New York 2003.
- [17] Jasiński A., Przyszłość wieżowca, Architektura & Biznes, 11, 2014, p. 38–47.
- [18] Jencks Ch., *Architektura późnego modernizmu i inne eseje*, tł. B. Gadomska, Arkady, Warszawa 1989.
- [19] Jencks Ch., *Skyscrapers – Skyprickers – Skycities*, Rizzoli, New York 1980.
- [20] Krishnan S., Ali M. M., Rethinking the Symbolism and Imageability of Skyscrapers, [in:] Proceedings of the 2nd Annual Hawaii International Conference on Arts and Humanities, Honolulu, 8–11 January, 2004.
- [21] KPF (<http://www.kpf.com/project.asp?T=14&ID=529>)
- [22] Lynch K., *The Image of the City*, MIT Press, Cambridge 1960.
- [23] Mitsui Jun, Architecture and Urban Responsibility in High-Rise Design, *Long-Span and High-Rise Structures*, IABSE Reports, Volume 79, 1998, p. 553–559.
- [24] Pousse J.-F., European Chronology 1898–20.., [in:] I. Taillandier, O. Namias, J.-F. Pousse (eds), *The Invention of the European Tower*, Picard, Paris 2009, p. 80–190.
- [25] Rees P., Name that Tower, [in:] “CTBUH Journal”, Issue II, 2013, p. 18–19.
- [26] Sev A., Tuğrul F., Integration of Architectural Design with Structural Form in Non-Orthogonal High-Rise Buildings, *Journal of Sustainable Architecture and Civil Engineering*, No. 2, 2014, p. 31–42.
- [27] Stamps A. E., *Psychology and the Aesthetic of the Built Environment*, Kluwer Academic Publishers, Boston 2000.

ADAM MUSIUK*

**WHO PLAYS WITH WHOM?
ARCHITECTURE, THEOLOGY AND CONSTRUCTION
AS ASPECTS OF THE DESIGN
OF AN ORTHODOX CHURCH**

**KTO Z KIM GRA?
ASPEKTY PROJEKTU ŚWIĄTYNI PRAWOSŁAWNEJ
Z UWZGLĘDNIENIEM ARCHITEKTURY,
TEOLOGII I KONSTRUKCJI**

A b s t r a c t

The process of designing an Orthodox church includes several conditions which significantly affect the final outcome. Only two groups of aspects mentioned in the paper, theological and construction, considerably narrowed the array of solutions. This shows that the designer is limited in his choices to a confined portfolio of solutions. This again explains why the architecture of Orthodox churches, irrespectively of their location or architect, is similar and distinctive.

Keywords: designing, Orthodox church, church structure

S t r e s z c z e n i e

Proces projektowania świątyni prawosławnej wskazuje na szereg uwarunkowań znacząco wpływających na końcowy projekt. Jedynie dwa zaznaczone w pracy czynniki, teologiczny i konstrukcyjny, zdecydowanie ograniczyły liczbę rozwiązań. Wskazuje to na ograniczenie projektanta do wyboru efektu końcowego w wąskiej grupie rozwiązań. Nie przypadkowo więc architektura cerkwi, bez względu na miejsce jej wybudowania, czy nazwisko autora, jest zbieżna i na ogół rozpoznawalna.

Slowa kluczowe: projektowanie, świątynia prawosławna, struktura świątyni

The article was written as a part of research work S/WA/1/2011

* Ph.D. Arch. Adam Musiuk, Faculty of Architecture, Bialystok University of Technology.

1. Introduction

Architectural design is a specific puzzle game. The architect joins the game as the key player. He creates architectural solutions on the basis of his own knowledge, experience and aesthetic taste. Any tender for architectural design shows the above, as the number of participating architects usually equals the number of original architectural solutions.

Nonetheless, on closer inspection, this design puzzle reveals specific boundary conditions. These are the laws of physics, the construction regulations, or the investor's requirements, to name just a few. In fact, these conditions constitute the rules of the design puzzle and oblige the architect to strictly adhere to them. Consequently, even though the architect is the chief creator of his work, his participation in puzzle solving, resulting ultimately in an architectural design, is limited by the said 'rules of the game.' The greater the number of rules, the more arduous designing becomes, while the final effects of different architects' work become more similar.

It occurs that such imposition of further design conditions may lead in the end to limiting architectural work to a very narrow set of solutions. Thus, a situation may be taken in which the number of rules for the design puzzle is so great that, to a large extent, the rules themselves decide on the final design result. Designing a church is undoubtedly a case in point. Here, above all aforementioned stipulations, theological requirements are imposed. The matter is even more complex when it comes to designing an Orthodox church, since architecture is in Orthodoxy a form of expression of the doctrinal tradition of the Church [9, p. 33].

2. Start of the game

For the architect, to design is to skilfully arrange a jigsaw puzzle of several factors in such a manner as to obtain the final result of a finished design ready for execution. Pieces of the puzzle may be such factors as: aesthetics, functionality, construction, building code regulations, land-use planning, laws of physics, technical solutions of infrastructure, etc. Depending on the type of the building, the design makes allowances for a greater or smaller number of rules, as some rules come into view while others disappear.

The following dissertation discusses the specific conditions which designing Orthodox churches entails. Due to the limited size of the thesis, however, only two categories of conditions are analysed: theology- and construction- related.

3. Rules of the game – theology

In commencing design of a church, no matter of which rite, it is necessary to look at the building as a place intended to hold religious services, prayers of the faithful, but also as an edifice expressing principles of faith. This is clearly visible in the architecture of the Christian church, which refers directly to its Old Testament model [18, p. 609]. It was in the Old Testament where God, through his prophet Moses, gave people precise directions on the look of the Tabernacle [2, Exodus 25, 10–40; 26, 1–37; 27, 1–19; 30, 1–5; 35, 4–19. 36, 8–38; 38, 10–20; 40, 33]. Thus, architecture became the expression of the Doctrine of the Church.

This relationship is particularly evident in the Orthodox Church. For Orthodox believers, the architecture and internal design of a church constitute not only an illustration, in the

sense of *Biblia pauperum*, but rather an embodiment of transcendental reality. The architectural forms of the church, frescos, mosaics, icons, utensils and vestments live, included in the mystery of liturgy [12, p. 55]. Saint Symeon of Thessalonica commented on it directly: "Therefore the church is the house of God, despite it being constructed of matter without spirit [14, p. 179]." The thought was further developed by Saint John of Damascus who argued that the church is a representation of the whole of creation [5, p. 232]. He also emphasized the obligation to follow the model that had been given, referring to the words God had spoken to Moses: "And look that thou make them after their pattern, which was shewed thee in the mount[2, Exodus 25, 40; Hebrews 8, 5]".

It is worthwhile to examine a few selected elements of the symbolic structure of an Orthodox church – symbolic because symbol in the realm of the sacred is of fundamental meaning. Only with the use of symbols one can directly convey the unconveyable, and the history of Church proves that symbol has been an essential category [15] [16].

To begin with – the dome – the most obvious element of the Orthodox church. The symbolism of the dome is naturally related to the idea of heaven. "There the vault extends above like the sky without columns (...) and its dome is like the highest of heavens [7, p. 32]." – This is how St. Maximus the Confessor described the dome in his hymn worshipping the church of St. Sophia in Edessa. The significance of the church dome is emphasized particularly strongly in the Orthodox Church. The cosmological symbolism of the structure of the church, and the church nave in particular, as representing the cosmos, "a new heaven and a new earth" or "Heavenly Jerusalem," has been rooted in the religious consciousness since its beginning [15].

Another structural element of the church are the pillars, columns and walls. They appeared as early as in the Old Testament in the Tabernacle [2, Exodus, 10–18; 36, 36–38; 38, 10–20], in the Ark of the Covenant [2, Exodus 25, 10–22; 37, 1–9], as well as in Solomon's Temple [2, 1 Kings 6]. In the New Testament Jesus Christ was called a Column [4, p. 271] on several occasions, while in the Acts of the Apostles St. Paul names James, Cephas and John the pillars [2, Gal 2, 9]. The Church Fathers also invoked the symbol of pillar. St. Andrew of Crete wrote in his *Encomium* to St. Nicholas the Wonderworker of Myra: "I call you the pillar and the foundation of the Church (...) [1, p. 229]". It must also be noted that the location itself of the above-mentioned structural elements of the church generates symbolic interpretation: the internal pillars of the church symbolise saints, while engaged columns – the angelic forces [6, p. 128].

Finally, an element which must be discussed here is the iconostasis, as it is inseparably connected with the Orthodox Church and through its form radically influences the interior of the church. For the believers the iconostasis constitutes a wall separating the sanctuary from the laymen, while in fact it originated on entirely different grounds. It was not to separate but to unite heaven and earth. The iconostasis – with its architectural meaning, combined with the idea of the church as a microcosm [18] and interacting with frescos and polychrome decorations, creates its own peculiar iconographic program of the church. As Paweł Floreński said, an icon does not represent but reveals, and the iconostasis is a revelation [8, p. 84]. While designing an iconostasis one must first and foremost serve its theological purpose, whereas its aesthetic expression is of secondary meaning. Mircea Eliade aptly commented on it: "The rite of creating the sacred area is effective as far as it recreates the work of God [3, p. 152]".

The three examples given above are sufficient to show clearly of how great importance are architectural elements of the Orthodox church for the theological program of the Church.

Still, aside from the aforementioned, there are also foundations, supports, vaults, spheres, arches, arcades, friezes, cornices, stairs, tops, pediments, towers, bell towers, windows, doors, etc., and their location in the church, as well as their form, cannot be accidental.

4. Rules of the game – construction

This outline of principles regarding the theological idea of the church is to be in a way overlaid with a construction design which can simultaneously ensure the load bearing capacity of the church and create the form desired by the architect. This was an especially difficult task when the first Christian temples had been erected. At that time, on the one hand the designer was expected to obtain great volumes without the use of intermediate supports, while on the other hand his work was limited by the capabilities of the materials – all he could use then was stone and brick and those materials had limited bending parameters. The set of solutions to the task thus formulated was therefore very narrow, leaving the designer solely with structures based on the idea of arch, which is a construction of compressive stresses rather than tensile ones.

The wide use of arches and domes, which were also the desired forms from the theological perspective, quickly led to the creation of impressive large-span coverings in sacral buildings. Of this the Pantheon was the ultimate example, with its monolithic dome with a diameter of 43 metres [10, p. 303]. To obtain such a considerable span was possible not only thanks to erecting a construction which employed compressive stresses, i.e. the dome, but also by giving it specific dimensions, that is the height of the dome, measured from its base, was equal to the dome diameter. Such a dome could contain a sphere, a form with a unique meaning in both geometrical and cosmological senses [15, p. 165–167]. Further methods of creating even more powerful and impressive sacral spaces called for the use of additional construction forms. Examples of this were systems of pillars, arches, walls and side domes, all visible in the structure of Hagia Sophia, an edifice considered to be one of the greatest, both in terms of architecture and construction, to have been built in the first millennium AD [13, p. 246–258].

5. Result of the game

Even though only two categories of conditions are discussed briefly in this paper, the example of Orthodox church design shows clearly how dramatically they limited the number of design solutions. It is also worth noting that although the analysis of church construction proves that the architectural proposals based on theological symbols are often simultaneously the best solutions from the point of view of construction mechanics [11], designers are still very restricted in their choices. It is therefore not accidental that the architecture of Orthodox churches, irrespective of their location or the name of the architect, is similar and distinctive in shape. This allows the conclusion to be drawn that in this particular case the rules of the design game are of such a strict and rigorous nature that they force the designer-player to look for a very small group of similar results of the game or, rather, design solutions. These rules, however, cannot be perceived as limitations but rather as an inherent part of the design puzzle, as important as the designer who takes part in the game. The outcome of the game is the design of a perfect church, fulfilling all the requirements given.

References

- [1] Sw. Andrej Krimskij, *Pochwalnoe słowo Swjatitelju i Czudotworcu Nikołaju*, Christianskoe Cztenie, 1984, x. IV.
- [2] *Biblia*. Brytyjskie I Zagraniczne Towarzystwo Biblijne, Warszawa 1988.
- [3] Eliade M., *Święty obszar i sakralizacja świata*. (w:) Antropologia kultury. Zagadnienia i wybór tekstów. Wiedza o kulturze, cz. 1, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2005, p. 149–157.
- [4] Evdokimov P., *Prawosławie*. PAX, Warszawa 1986.
- [5] Św. Jan Damasceński *Wykład wiary prawdziwej*. Przeł. B. Wojkowski, PAX, Warszawa 1969.
- [6] Floreński P., *Ikonostas i inne szkice*. Przeł. Podgórzec Z., Bractwo Młodzieży Prawosławnej w Polsce, Białystok 1997.
- [7] Hani J., *Symbolika świątyni chrześcijańskiej*. Znak, Kraków 1994.
- [8] Kudrjacew M., Kudrjawcew T, *Russkij prawosławny chram. Simboliczeskij jazyk architekturnych form*. 9-że-1 „K swetu”, nr 17, Moskwa 1992.
- [9] Bp Maximos (Aghiorgoussis), *Wiara Kościoła*. [w:] *Prawosławie. Światło wiary i zdrój doświadczenia*. Prawosławna Diecezja Lubelsko-Chelmska, Lublin 1999.
- [10] Mączeński Z., *Poradnik budowlany dla architektów*, Budownictwo i architektura, Warszawa 1954.
- [11] Musiuk A., *Konstrukcja i jej odbicie w strukturze przestrzenno-liturgicznej świątyni*. (w:) ELPIS r. XIII (XXIV), z. 23–24 (36–37), Uniwersytet w Białymstoku, Białystok 2011, p. 181–191.
- [12] Paprocki H., *Związki pomiędzy ikoną, teologią i liturgią*. (w:) ELPIS r. XIII (XXIV), z. 23–24 (36–37), Uniwersytet w Białymstoku, Białystok 2011, p. 39–58.
- [13] Salvadori M. *Dlaczego budynki stoją*. Murator, Warszawa 2001.
- [14] *Soczinienija blażenego Simeona, archebiskopa fessalonikijskiego, Pisanija sw. Otcow i uczitelej cerkwi, otnosjaszczijasja k istołkowaniju prawoslawnego bogosłużenija*. Sankt Petersburg 1856.
- [15] Uścinowicz J., *Symbol, archetyp, struktura, hermeneutyka tradycji w architekturze świątyni ortodoksyjnej*. Politechnika Białostocka, Białystok 1997.
- [16] Uścinowicz J., *Struktura symboliczna architektury świątyni: wprowadzenie do teologii wyrazu sztuki sakralnej*. (w:) ELPIS r. XIII (XXIV), z. 23–24 (36–37), Uniwersytet w Białymstoku, Białystok 2011, p. 139–180.
- [17] Walter C., *Sztuka i obrządek Kościoła bizantyjskiego*. PWN, Warszawa 1992.
- [18] *Zakon Božij*. Tip. preb. Iowa Poczajevskago, New York 1987.

WOJCIECH NIEBRZYDOWSKI*

BRUTALIST GAMES INVOLVING PHYSICAL MOVEMENT

ZABAWY RUCHOWE BRUTALIZMU

A b s t r a c t

Brutalist architecture is widely regarded as gloomy and unfriendly. At its origin was the post-war austerity, but also a fascination with the child and its way of seeing the world. Therefore it is not surprising that the space and forms of brutalist buildings should be perceived by people moving along the routes designed by architects and discovering new views in a dynamic way. This peculiar spatial game is full of surprises and even jokes.

Keywords: theory and history of architecture in the 20th century, topological space, brutalism

S t r e s z c z e n i e

Architektura brutalistyczna powszechnie uważana jest za ponurą i nieprzyjazną. U jej genezy rzeczywiście stoi powojenna surowość, ale także fascynacja dzieckiem i jego sposobem widzenia świata. Nie powinno zatem zaskakiwać, że przestrzeń i formy brutalistycznych obiektów należy poznawać w ruchu, przemieszczając się wzduż dróg wyznaczonych przez projektantów i odkrywając nowe widoki. W tej swoistej zabawie przestrzenią nie brakuje zaskoczeń a nawet żartów.

Słowa kluczowe: teoria i historia architektury XX wieku, przestrzeń topologiczna, brutalizm

* Ph.D. Arch. Wojciech Niebrzydowski, Faculty of Architecture, Bialystok University of Technology.

1. Introduction

Brutalism was the architectural trend which was developed in Europe after the World War II. It quickly spread all over the world, reaching its apogee in the 1960s. Its decline in the 1970s was accompanied by criticism and condemnation. Some historians of architecture¹ claim that the worst in brutalism was the name, which gave it a pejorative connotation from the very beginning. Combined with the raw and massive forms of the buildings and the exposed concrete surfaces, it caused brutalist architecture to be deemed unfriendly and gloomy. Was brutalism really so deadly serious? Wasn't there place for playing with space and form? Did brutalist architects appreciate, however, the power of surprise, astonishment or even joke?

The conditions under which brutalism was born may explain its severity. The society in post-war England suffered poverty. James Graham Ballard, the British writer, reminisced on his return to his homeland in 1945: "Looking at the English people around me, it was impossible to believe that they had won the war. They behaved like a defeated population... Hope itself was rationed, and people's spirits were bent low" [1, p. 122]. It was in London where Alison and Peter Smithson developed their theory of the New Brutalism. It was supposed to be the architecture based on objective reception of reality and corresponding to the daily life of ordinary people. Anthony Vidler emphasizes that "the New Brutalism was born out of the post-war culture of 'austerity Britain'" [8, p. 106].

2. Movement and search for relationships

The New Brutalism rejected the existing principles of composition and proportion, looking for architecture reaching to the roots, to the basics – *une architecture autre* (other architecture). Crucial for the brutalists was a figure of the child, symbolizing a new life and a fresh perspective on the world. It was the child's perception of reality that became the main source of inspiration for them. "As Jean Piaget demonstrated at this time, children see topologically, and in channelling this view, New Brutalism began to move beyond the inherited geometries of Renaissance perspective into a spatial order characterized by affinity and spontaneity." [3, p. 5] When a child learns space, it is not guided by geometric features. A child instinctively finds some basic relationships, such as proximity, separation, continuity, closure, etc. "Alison and Peter Smithson [...] were able to look at the world with the intensity of a small child, and their work has shown us how to really see what is around us." [5, p. 137] This topological way of organizing a space, typical of brutalism, was used by the Smithsons for the first time in 1953 in the famous exhibition "Parallel of Life and Art". They created there a kind of game which was made up of 122 panels with black-and-white photographic enlargements. The game consisted of finding the links between the photographs. These relationships were not semantic in nature, but were recognized on a simplified, more immediate level – the level of form, which is based on the shapes, patterns and textures of the photographic images. Another element of the Smithsons' game was the arrangement of panels. They were placed at different heights – some close to the ground, some under the ceiling hanging at

¹ Such as Michael Kubo, Chris Grimley and Mark Pasnik.

different angles. Alex Kitnick claims: “It would have been difficult to focus on one without another coming into view. Positioned in different ways, the photographs asserted themselves as physical entities, simultaneously engaging the space of the gallery and bringing about an increased emphasis on the subject’s position within it. Shedding their status as solitary units, the photographs emerged as points in a three-dimensional matrix, creating a kind of ‘architecture of images’ or ‘image ecology’, a space in which they were able to reach out to one another to form various relationships of affinity and difference” [4, p. 73]. The observer was forced to move from place to place, to stand at a suitable angle relative to the individual boards, to move away from them, or to come closer. The aspect of movement, exploration of new views, and the search for relationships between elements forming the building became the most important feature of the spatial games of brutalism.

3. Spatial games of brutalism – examples

We can see this aspect in many brutalist buildings whose forms are seemingly inconsistent and overly complex. We can find the logic of their composition only by following the route, or more frequently many routes, planned by the architect. Le Corbusier in his only building built in the USA – the Carpenter Center for the Visual Arts in Cambridge (1959–1963), subordinated the architectural form to the meandering ramp. This “sky-high promenade” in the shape of the letter “S” starts at Quincy Street, turns and rises upward piercing the building on the third floor level. On the other side it turns again and falls slowly to the level of Prescott Street. The route along the ramp arranges the comprehensible sequence of views of rectangular and oval concrete solids. Its culmination is the grid of sun-breakers on the highest wall (Ill. 1). There are also other ways of penetrating the building and the surrounding space, including the routes under the structure and under the solids raised on *pilotis*.

The movement of man is directed by curiosity. What is behind the next corner? What will I see at the end of the tunnel? These questions are asked by people passing through the South Bank Arts Centre – the building complex in London. The seemingly chaotic mass of concrete built in the late 1960s housed the Queen Elizabeth Hall (designed by Sir Hubert Bennett) and the Hayward Gallery (designed by Norman Engleback). “The real purpose of the quirky topology is not the earnest expression of building system but a playful invitation to romp around, through, over, and under the structures. Multilevel terraces and serpentine paths wrap the buildings like the tortuous promenades of a classical Chinese garden.” [6, p. 101] The South Bank Arts Centre encourages people to play games involving physical movement to such an extent that its space has become a favourite place for skaters and skateboarders. More conservative users, unable to understand its idea, criticize the building. Charles Jencks explains to them: “The architects were not trying to create a building in any conventional sense but rather a sequence of extended places and events along a route” [9, p. 4]. One of these routes leads through the tunnel under the street to the adjacent building of the National Theatre (1963–1976). Here the movement of users is guided by the system of terraces connected by staircase-towers (Ill. 2). According to the idea of architect Denys Lasdun, terraces were supposed to be not only spaces of circulation, but also stages for various social activities. In this way, “the whole building could become theatre” [2, p. 545].

The concrete form of the National Theatre is also a game of associations, of which the most common is the association with rock strata. Gideon Fink Shapiro does not hesitate to



Ill. 1. Le Corbusier, Carpenter Center for the Visual Arts – Harvard University, Cambridge (Mass.), 1959–1963; Ill. 2. Denys Lasdun, National Theatre, London, 1963–1976; Ill. 3. Paul Rudolph, Art and Architecture Building – Yale University, New Haven (Conn.), 1958–1964; Ill. 4. Kallmann, McKinnell & Knowles, Boston City Hall, Boston (Mass.), 1963–1968

say that, “Brutalism embodied a yearning for architecture as formidable as mountains and as malleable as earth” [6, p. 101]. This statement is also confirmed in the Art and Architecture Building designed by Paul Rudolph for Yale University (1958–1964). The building surprises not only with its geomorphic form which uplifts in the heart of New Haven, but also with other spatial solutions. The famous American architect liked surprises, played with users and checked their perceptiveness. Finding the entrance to Rudolph’s building is often a challenge. In the Art and Architecture Building the main doors are hidden in the deep slit on the end of the architectural form (Ill. 3). Once inside another surprise awaits us. The interior is designed

on 39 different levels, which is not shown on the facades. Alexander Maymind called this solution “the vertiginous free-section” [6, p. 63] and identified it as Rudolph’s significant innovation, comparable to “free-plan” or “free-facade”. Rudolph not only entertains users with surprises, but also frightens. “Moving around the A&A Building, one frequently finds oneself on a walkway, balcony or staircase in close proximity to a drop that raises the frightening possibility of a fall. Also the jagged texture of its walls threatens injury if one brushes too hard against it. Confrontations with these suggestions of peril work to thrill and impel alertness” [7, p. 8].

4. Summary

Admittedly, brutalism was never expected to induce a sense of pleasure. Its spatial and formal games were rather supposed to thrill people and evoke emotions. Brutalism is not an easy architecture and it demands perceptual and physical effort. It forces people to move, to observe carefully and to search for relationships and affinities. The movement is the primary factor and this fact is reflected in the buildings. Circulation spaces are extremely big and oversized in most brutalist buildings. In their forms circulation elements are emphasized, e.g.: flights of stairs, ramps, staircase-towers, street-decks, or bridges. Sometimes these elements were treated in almost playful way – for example the hanging flight of stairs (Ill. 4) in the monumental Boston City Hall, designed by Kallmann, McKinnell & Knowles (1963–1968). It can therefore be concluded that despite its seriousness brutalism even joked sometimes, though it did so with a straight face.

R e f e r e n c e s

- [1] Ballard J. G., *Miracles of Life: Shanghai to Shepperton: An Autobiography*, London 2008.
- [2] Curtis W. J. R., *Modern Architecture Since 1900*, London 1996.
- [3] Kitnick A., *New Brutalism: Introduction*, October – MIT Magazine, 2011, Vol. 136 (1).
- [4] Kitnick A., *The Brutalism of Life and Art*, October – MIT Magazine, 2011, Vol. 136 (1).
- [5] Lichtenstein C., Schregenberger T., *As Found: the Discovery of the Ordinary*, Zürich 2001.
- [6] May K. (Ed.), *Brutalism*, Canada 2013.
- [7] Sroat H., *Brutalism: An Architecture of Exhilaration*, [in:] Conference Proceedings: Paul Rudolph Symposium, North Dartmouth 2005.
- [8] Vidler A., *Another brick in the wall*, October – MIT Magazine, 2011, Vol. 136 (1).
- [9] Vidler A., *Learning to Love Brutalism*, Docomomo Journal, 2012/2.

ANNA NOWAK*

**PLAYING NATURE
IN THE CONTEMPORARY SEARCH
IN SHAPING STRUCTURAL SURFACES**

**GRA W NATURĘ WE WSPÓŁCZESNYCH
POSZUKIWANIACH KSZTAŁTU POWIERZCHNI
STRUKTURALNYCH**

A b s t r a c t

The contemporary image of shaping modern architectural designs increasingly entails a synergy of design solutions in terms of form and structure. As a result, shaping integrated structures in the form of structural surfaces takes on particular importance. Modern trends are increasingly looking for analogies to the natural world. Playing Nature are projects inspired with cylindrical shapes, referring to the forms found in nature or using a bionic structure.

Keywords: *structural surfaces, bionic, biomorphism, curvilinear architecture*

S t r e s z c z e n i e

Współczesny obraz kształtowania nowoczesnych obiektów architektonicznych to coraz częściej synergiczne rozwiązywanie projektowe w zakresie formy i struktury budynku. Znaczenia nabiera kształtowanie zintegrowanych struktur w postaci powierzchni strukturalnych. Obecne tendencje w większym stopniu poszukują analogii do świata przyrody. Gra w Naturę to projekty inspirowane obłymi kształtami, nawiązującymi do form spotykanych w naturze lub wykorzystującymi bioniczne struktury.

Słowa kluczowe: *powierzchnia strukturalna, bionika, biomorfizm, architektura krzywoliniowa*

* M.Sc. Arch. Anna Nowak, Department of Structural Design, Building Structure and Technical Infrastructure, Faculty of Architecture, Warsaw University of Technology.

1. Introduction

The modern image of shaping architecture is seeking new forms in terms of geometry, space and structural surfaces. Increasingly, architectural projects refer to the forms found in nature. The development of digital tools used in the design process has enabled the development of irregularly shaped forms, resembling the aesthetics found in the natural world. The approach to the design process, which increasingly introduces interdisciplinary design, is also an important change. As a result, achievements from other fields are used in shaping architecture, which until now have not been associated with it. A number of new methods and design tools allow the architect to Play Nature in the search for processes and systems which form living organisms, the search for aesthetics, or analogous spatial forms. As a result, we can distinguish trends in shaping structural areas which affect the form and nature of architectural objects inspired by rounded elements from the natural world, forms found in nature, or the principles of living organisms.

2. Contemporary Trends in Shaping Structural Surfaces Inspired by Elements from the Natural World

The forms found in the natural world have always interested and inspired architects. The development of building technology and design tools has enabled the use of a variety of references to the natural world in the contemporary architecture. As a result we can distinguish architecture that incorporates elements from the natural world in the development of architectural expression, biomorphic architecture, bionic architecture, and curvilinear architecture inspired by soft forms found in nature.

The application of simple analogies from the natural world was already visible in the historical architecture in the form of plant and animal ornaments. Today, replicating nature can be seen in architectural buildings, the form of which has been tritely shaped as vegetable elements or animal silhouettes, or may be a qualitatively new ornament in shaping a variable and dynamic architecture with the use of inanimate (water) and animated (vegetation) elements from the natural world.

The Blur Pavilion, erected at the EXPO 2002 in Yverdon-les-Bains, Switzerland, is an interesting design, which has an “unstable” form. The project, by Diller Scofidio studio + Renfro architects, assumed the use of artificial fog (which is a combination of two elements symbolic of air and water) as an element of one object’s aesthetic appeal. The project’s construction is a cable-bar tensegrity system with a set of nozzles that allow the formation of free and fleeting forms for the pavilion.

The use of water in shaping the object’s architectural expression was also visible in the Water Digital Pavilion project presented at the EXPO 2008 exhibition in Zaragoza, Spain. Architects from the Carlo Ratti Associati Studio designed a pavilion, the façade of which is a curtain of water controlled by a computer system. The water supply system was designed on the roof, placed on telescopic poles, so that the roof can change its position relative to the ground surface.

Thanks to the development of building technology, floral ornaments can be replaced by modern living plants that may form vertical gardens. The Caixa Forum in Madrid is an interesting example of a self-supporting, green wall located on the square. The Herzog & de

Meuron architectural project, realized in collaboration with Patrick Blanck, introduces a new element of ornamentation in shaping the architectural surface. The plants used as green walls make it possible to design a time-variant architectural elevation.

Inspiration by elements of the natural world is also evident in the development of architectural objects abstractly referring to forms found in nature. These design ideas that are a part of biomorphic architecture are visible in the shaping of exhibition pavilions and facilities related to culture.

The temporary Serpentine Gallery pavilion project, created in London in 2013 by the architect Sou Fujimoto, assumed integrating the forms into the landscape. The irregular structure of the building is light and transparent, and refers to the shape of clouds. The spatial rod structure that served as a support was modelled parametrically.

The Cultural Centre in Guangzhou, China is another example. Suiseki served as the inspiration in shaping the body of the building compositions, resembling natural landscapes laid with pebbles. The object's form was generated using digital tools. A structural triangular spatial mesh acts as the supporting structure of the pavilion.

Harpa Reykjavik Concert Hall and Conference Centre in Iceland presents similar analogies in the case of the irregularly structured surface, which refers to the shape of individual basalt boulders. The twelve-sided spatial modules constituting the structure of the facade are made of steel. This project, by Henning Larsen Architect, coupled with Olafur Eliasson's artistic involvement, assumed emphasizing the object's specific location by references to nature in its form and elevation.

In its search for natural world elements, contemporary architecture increasingly refers to nature, which is particularly evident in the design of curved forms representing a reference to the aesthetics found in nature in their rounded shapes and soft lines. The development of digital tools allowed for the design of curvilinear architecture using NURBS. Modelling of the organic shapes using Non-Uniform Rational B-Spline curves is done by changing the position of the control points.

The Kunsthaus project in Graz by architects Peter Cook and Colin Fournier is an example of shaping curvilinear architecture buildings. The soft form of the blob object gives a unique character to the building. Topological transformations were used in the project in order to search for optimal meshes in the organic spatial forms, enabling the creation of an optimal rod structure constituting the roof covering of the museum [13, p. 69–75].

A dynamic and organic effect was also obtained in the temporary Chanel Mobile Art pavilion project by Zaha Hadid Architects. The building was designed as a transformation of the torus referring to the golden spiral found in nature. The object's body was parametrically distorted according to the functional requirements. The building's design was made of steel sections divided into modules to enable mobility of the pavilion's complex form.

Another design trend in contemporary architecture is the use of natural world patterns and the transfer of biological processes, which is reflected in bionic architecture. An integral part of this project idea is to describe biological structures and processes by means of mathematical models that allow you to move the functioning of living organisms to technology, which is the goal of bionics.

Currently in architectural design we use mapping algorithms that mirror morphogenetic processes which allow for a form's creation in terms of specific parameters, including environmental reasons. The Embryological House project by Greg Lynn is one of the first designs that uses these algorithms. During the computer simulation used in developing the form,

which Greg Lynn called animation as a way of form development, topologically inconsistent solutions were eliminated. As a result, the structure was built in a dynamic way. By transforming the original form with a Bézier curve, it became possible to raise curvilinear forms under complex transformations referred to as the topological manifold [13, p. 69–75].

Mathematical models describing natural shaping processes play a particularly important role in shaping structural bionic surfaces. The use of the models created in architecture enables the elimination of unnecessary geometry and the search for the optimal shape of the object. As a result, the form and structure of the building are designed in a synergistic manner.

The use of bionic mathematical models can be seen in the Research Pavilion project of 2011, created by architects from the Institute for Computational Design and Institute of Building Structures and Structural Design in Stuttgart. The form and structure of the building was designed using Voronoi diagrams that describe the structures, found in the wing of a dragonfly. The resulting forms are verified in terms of space and strength, taking into account the production capacity as well. The structure of the building has the characteristics of biological structures, i.e. diversity, anisotropy and hierarchy.

An equally interesting example is the design of the SUTD Library Pavilion on the Singapore University of Technology and Design campus, designed by the Form Lab City studio in collaboration with engineers from ARUP studio. Thanks to the arc-shaped chain based curves constituting the object's structure, it was possible to form the roofing without any intermediate supports. The construction of the pavilion roof covering was made with elements of plywood triangles joined by steel connectors.

Mathematical models are also used in pure classical geometrical forms, such as the Water Cube swimming pool in Beijing designed by PTW Architects. The construction of the rectangular body is made of a metal space frame based on the Wheaire-Phelan structure. As a result, an optimal dimensional structure was constructed. The use of digital tools in the project significantly influenced the parametric design of individual elements of the structure.

Shaping objects based on patterns found in nature is also reflected in the Federation Square project in Melbourne. The Lab Architecture Studio project assumed the use of aperiodic Pinwheel tiling with the characteristics of a fractal image in both structural elements and cladding divisions. As a result of using an algorithm, a free fractal structure was obtained.

3. Summary

The formation of modern structural surfaces defining the spatial form is increasingly becoming a play on finding a geometry that refers to the natural world. Depending on the design detail ideas, it has become possible to design optimal structures (bionic architecture), architectural concepts that are an abstract or commonplace reflection of forms inspired by nature (biomimetic architecture), architectural aesthetics modelled on curved shapes (“curvilinear” architecture), or simply using elements from the natural world. The architect decides which way the geometry will be played out. The result the designer wants to achieve is quite significant, which is: aesthetic quality, structural efficiency, organic quality of materials, or freedom of the spatial form. The design ideas inspired by nature strive for the excellence encountered in the natural world, which can become a token for the designer in the geometric play on Nature.

References

- [1] Burry J., Burry M., *The new mathematics of architecture*. Londyn 2010.
- [2] Cała I., Jóźwik A., Michalak H., Nowak A., Pietrzak J., Rokicki W., *Współczesne tendencje kształtowania fasad a ich rozwiązania techniczno-materiałowe*, Warszawa 2013.
- [3] Gawell E., Rokicki W., *Morfogeneza w procesie kształtowania współczesnych obiektów architektonicznych*, [w:] Dornowski W. (red.), *Problemy Współczesnej Architektury i Budownictwa Materiały VI Konferencji Naukowej Archbud 2013*, Warszawa 2013.
- [4] Ginatta C., *Architecture without architecture. Biomimicry design*, Saarbrücken 2010.
- [5] Januszkievicz K., *O projektowaniu architektury w dobie narzędzi cyfrowych. Stan aktualny i perspektywy rozwoju*, Wrocław 2010.
- [6] Nowak A., Rokicki W., *Aspekty projektowania bionicznego w kształtowaniu nowoczesnych elewacji*, Warszawa 2014.
- [7] Nowak A., Rokicki W., *Bioniczne aspekty projektowania architektury w dążeniu do struktur antropomimetycznych*, [w:] Dornowski W. (red.), *Problemy Współczesnej Architektury i Budownictwa. Materiały Konferencji Naukowej ARCHBUD 2013*, Warszawa 2013.
- [8] Pawlyn M., *Biomimicry in architecture*, Londyn 2011.
- [9] Picon A., *Digital culture in architecture. An introduction for the design professions*, Basel 2010.
- [10] Rokicki W., Wysokińska E., *Algorytmy w kształtowaniu form strukturalnych w architekturze*, [w:] Dornowski W. (red.), *Problemy Współczesnej Architektury i Budownictwa. Materiały Konferencji Naukowej ARCHBUD 2012*, Warszawa 2012.
- [11] Rokicki W., Wysokińska E., *Dyskretyzacja powierzchni strukturalnych w kształtowaniu współczesnej architektury*, [w:] Kuczera M. (red.), *Nowe trendy w naukach inżynierijnych 3*, Kraków 2012.
- [12] Słyk J., *Źródła architektury informacyjnej*, Warszawa 2012.
- [13] Wysokińska E., *Topologia w procesie poszukiwania form architektonicznych*, [w:] Kuczera M. (red.), *Młodzi Naukowcy dla Polskiej Nauki cz. VII, nauki inżynierijne*, Kraków 2012.

BEATA NOWOGOŃSKA*

**THE PERMANENCE
OF A BUILDING
IN THE GAME OF SHADOWS**

**TRWAŁOŚĆ BUDYNKU
W GRZE CIENI**

A b s t r a c t

The contrast “old architecture” – “new architecture” is the result of consolidating fine relics of the past with the beauty of contemporary architectural forms. The game of contrasts: is the expression of an old building with the perfection of new elements a problem or an art?

Keywords: protection of cultural heritage, renovation, permanence

S t r e s z c z e n i e

Kontrast „architektura stara” – „architektura nowa” jest dziełem scalania szlachetnych pamiątek z pięknem współczesnych form architektury. Gra kontrastów: ekspreśja starego budynku z perfekcją nowych elementów jest problemem czy sztuką?

Słowa kluczowe: ochrona dziedzictwa kulturowego, renowacja, trwałość

* Ph.D. Beata Nowogońska, Institute of Construction, Faculty of Civil and Environmental Engineering and Architecture, Zielonogórski University.



The image of architectural relics along with simultaneously coexisting modern architecture reflects a passing reality. Should “old architecture” be the shadow in a landscape of new constructions, or should the shadow rather be modern style among relics of the past?

1. Protection of cultural heritage

In the modern-day world, the protection of cultural heritage is connected with the needs of civilization. Historical objects are used. The modernization of historical structures and their adaptation to modern needs is inevitable: “Modern-day conservation doctrine is based around changing the emphasis from instrumental to more personal treatment of a relic, a concept of which evolves over time, nowadays signifies not only an increasingly extensive scope of protection but also the multiplication of meanings which this relic is a carrier of,” A. Kadłuczka [1, p. 7–16]. Dynamic changes taking place around the world and technological

advancement are completing the guidelines of the Venice Charter. General assumptions regarding the different approaches to handling relics of course remain. The rules of fully respecting the original substance or choosing solutions which do not harm the object are always current. The rule of minimal interference calls for maintaining form and substance; however, it does not exclude introducing contemporary elements. These elements may not distort the historical content. Another rule regarding the clarity and distinctiveness of the insertions also allows for contemporary additions. The elements reproduced during construction work cannot dominate over the authentic matter. They must be distinctive but at the same time should not create aesthetic dissonance.

2. Combining buildings

The coexistence of landmarked buildings and modern architectural forms is currently an inseparable element of the landscape. Reconstructions, expansions, and insertions of infill buildings in frontages are all carried out. The new form always emphasizes the image of the historical object. New elements are introduced in an environment of landmark buildings in two ways, as new architectural forms directly attached to the fabric of historical buildings or in their nearest proximity. Modern-day additions, when it comes to aesthetic value, are in harmony with buildings of the past and do not blur the differences between that which is new and that which is old. The idea behind modernization and adaptation is to combine the historical magic of relics with the language of contemporary architecture in common dialogue. In the case of new objects built next to renovated historical ones, forms reflecting the historical surroundings are being created. The current functional standards that are an integral part of technological novelties do not destroy the historical urban fabric.

The interiors of historical objects subjected to renovation which incorporates contemporary details into the historical design are one of a kind. The original ceilings, columns, wood-work, balustrades or brick walls combined with the bold lines and bright modern colours of modern-day solutions give the interiors a unique character. Connecting history with the contemporary ideas of a designer results in the creation of inimitable objects.

The modernization and adaptation of historical objects is the result of ever-changing human needs. Adapting post-industrial objects in residential areas for modern-day uses has become something of a trend. The beauty of a historical building, however, has made it so that the changes carried out in the object are small. The novelties introduced are essentially fitted into the existing architecture. The protection of cultural heritage is starting to be viewed as “an exceptionally creative process directed towards the future and incorporating innovations in order to maintain and enrich the valuable resource that heritage constitutes,” [2, p. 11].

However, the skill of combining buildings often raises controversy. An example of this is the Louvre Pyramid, which continues to be a controversial issue to this day. The renovation of the Palace was overshadowed by the criticism of the newly opened underground entrance. The underground complex was necessary in order to improve the flow of tourist traffic; however, the glass pyramid in the courtyard of a Renaissance palace was a topic of wide-reaching discussion. Nowadays, the steel and glass construction has become yet another particularity of the Louvre. However, the Louvre does not lie in the shadow of this construction. Nothing can overshadow the beauty of the palace.

There are no clearly defined rules as to introducing new architectural forms in a historical landscape. The added form should always be distinct from the historical form. Contemporary elements added during the renovation of buildings are not a carefree pastime, but the finesse of good architectural taste.

R e f e r e n c e s

- [1] Kadłuczka A., *Idea zrównoważonego rozwoju a problemy ochrony dziedzictwa kulturowego na przykładzie Florencji i Krakowa*, Wiadomości Konserwatorskie, Conservation News, 23/2008.
- [2] Purchla J., *Jak powstał nowoczesny Kraków*, Wyd. MCK, Kraków 1990.

PIOTR OPałKA*

BLURRING THE BORDERS BETWEEN ARCHITECTURE AND THE VISUAL ARTS

ZACIERANIE GRANIC POMIĘDZY ARCHITEKTURĄ I SZTUKAMI WIZUALNYMI

A b s t r a c t

Traditional fields of visual arts – sculpture and painting – have been connected with architecture in different ways. At the end of 20th century, artistic practices within these arts intensified efforts aiming to incorporate architecture in an unprecedented manner into the area of interest as a source of inspiration. The contemporary phenomena have not only expanded, but very often introduced new actions and experiences of space perception that escape classical classification of fine arts.

Keywords: architecture, architectural sculpture, unity of arts, visual arts

S t r e s z c z e n i e

Tradycyjne dziedziny sztuk wizualnych – rzeźba i malarstwo, w różny sposób były powiązane z architekturą. Pod koniec XX wieku praktyki artystyczne w obszarze tych sztuk nasiliły działania włączające architekturę, w sposób dotąd nieobecny, w obszar zainteresowań jako źródło inspiracji. Współczesne zjawiska nie tylko rozszerzyły, ale często wprowadziły nowe działania i doświadczenia percepacji przestrzeni, wymykające się klasycznym klasyfikacjom sztuk pięknych.

Słowa kluczowe: architektura, jedność sztuk, rzeźba architektoniczna, sztuki wizualne

* Ph.D. Arch. Piotr Opałka, Civil Engineering and Architecture Department, Faculty of Civil Engineering and Architecture, Opole University of Technology.

1. Introduction

The traditional place of sculpture and painting in architecture was always subjected to architectural structure and was used mainly as a decoration. Architectural objects were used as a medium dressed in the costume of sculpture decoration, often a polychrome – in order to become a distinguishing factor evocative of a higher value, fine art. But often the architecture united to such a large extent with sculpture and painting that the borders lost their distinction. Thereby, experiencing the art was not limited only to perceiving a painting or walking around a sculpture, but also by bringing architecture into the game, the art could be perceived from the outside as well as from the inside.

The concept of integration of the arts was particularly visible in ancient art. It is impossible to separate the figural presentations of the facade of the small temple in Abu Simple dedicated by Ramesses II to his wife Nefertari from the architectural tissue. The reliefs filling the metopes in the decorative friezes of Greek temples had not just decorative and symbolic value, but at the same time brought narrative. In the space of tympana, reliefs harmonised starting from corners and expanding towards central figural groups. Separate forms of architectural sculpture were columns in form of atlantes and caryatids that for example in the Southern portico of the Athenian Erechtheion combined sculpture with architecture – not only in a material aspect, but also by forming a part of complex linguistic system. In the Pergamon Altar the sculpture follows the forms of the architecture. In the Middle Ages, architecture completed by sculpture and painting serving their didactic role as *Biblia pauperum*, carried a narrative in an evident manner and transported the recipient into the world of *sacrum*. In the times of the Renaissance, the monumental forms are visibly inspired by sculptural goldsmith forms, which when enlarged became architecture; *vide* dome of the Church of Santa Maria del Fiore in Florence by Filippo Brunellesco. The unity of visual arts is particularly well visible in the illusionist representations in the spaces of baroque domes. The baroque *theatrum sacrum*, being a synthesis of painting and sculpture, in the environment filled with light and musical effects, aroused the emotions of the bystander; *vide* “The Ecstasy of Saint Teresa” sculptural group by Gianlorenzo Bernini. However, at this time the idea of the synthesis of arts was materialized by opera that combined not only visual arts, but also literature, music and theatre. In the era of Romanticism the total work of art (*Gesamtkunstwerk*) combining the concept of consistency in the material of various arts (poetry, music, painting, dance) manifested itself in the form of one visual work of art. Indeed, theatre and opera become a nucleus for creation that allowed different fine arts to speak. During opera performances, in order to blur the border between the stage, the orchestra and the audience, Richard Wagner applied various methods, including artificial clouds and light [1]. By continuously changing reference points, thus changing the perspective, he put the viewer into different levels of reality with the materiality of architecture blurred. After 1960, such solutions become one of the nuclei for the concept of *environment art*.

For the most of 20th century, if the connections between architecture and other visual arts were not avoided, they were at least reduced to archaising elements following the motto “Ornament is a crime”. Sigfried Giedion, in his view of creative the limitations of artists working in the field of visual arts, in the urbanistic composing indicates “a need for some modesty allowing architects and artists to work together from the very beginning” [2, p. 19]. At the same time he points out realisations of Le Corbusier, who was at the same time architect, painter and sculptor, where not only architecture, but the entire urban composition is treated from the point of view of a sculptor.

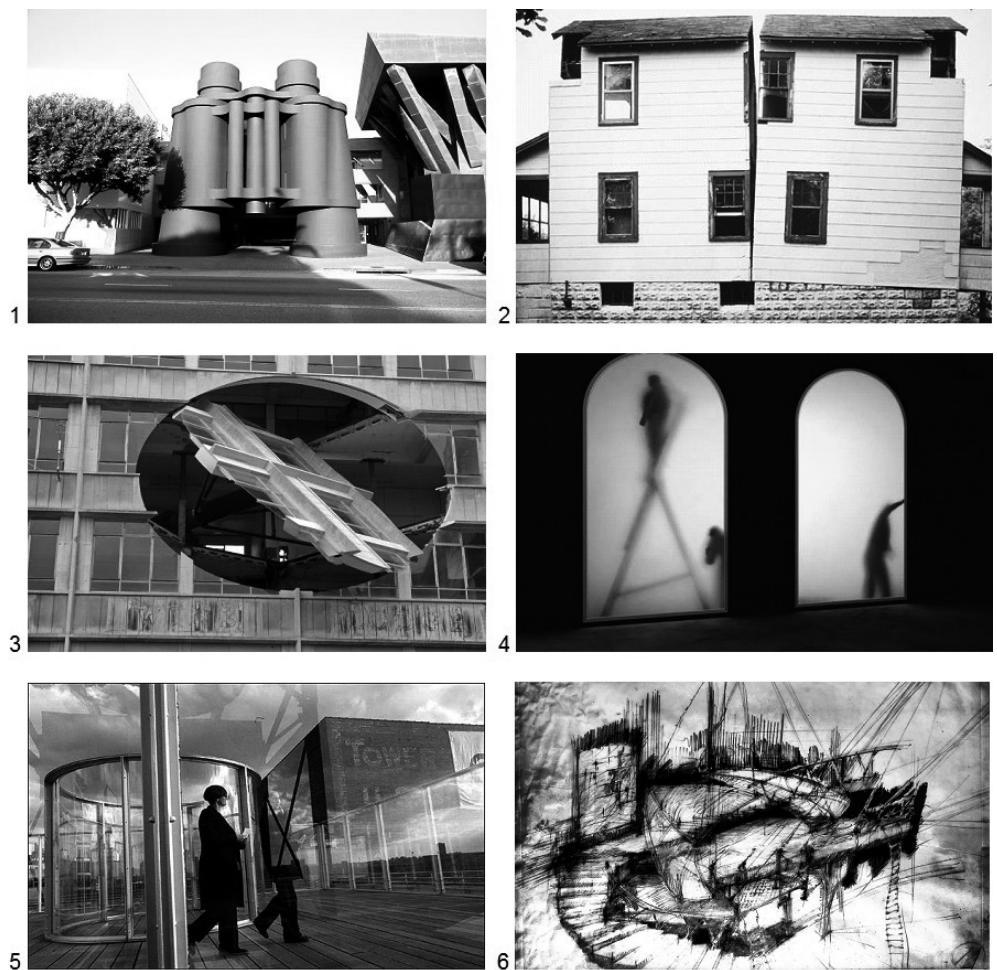
2. Architecture as a source of artistic inspiration

Historian and critic of architecture, Anthony Vidler in his essay “Architecture’s Expanded Field” of 2004 points out the fact that architecture after several decades of autonomy, at the end of 20th century became open to the fine arts, including the visual arts, by entering and blurring the borders between them [5, p. 143–154]. The criticism of architectural autonomy led to the revaluation of its perception, particularly in terms of interactions of new visual arts – performance, installations, *environment art*, *site-specific art*, assemblage and embal-lage. The wave of postmodern revolt in the 1970s brought a new perspective to the affinity of architecture and sculpture by referring to reminiscence and aware decoration. An example of works combining of architecture with sculpture, but with preferred compilation over the avant-garde, become the works of Frank O. Gehry, Mario Botti, Hans Hollein, Philip Johnson, or Aldo Rossi, which repeatedly were made in cooperation with sculptors.

The sculpture-building “Binoculars” was created in 1991 in Venice neighbourhood of Los Angeles, California as a work by a couple of sculptors, Claes Oldenburg and Coosje van Bruggen (Ill. 1). The structure, of dimensions $13.7 \times 13.4 \times 5.5$, is part of office an complex designed by Frank O. Gehry. Scaled up, realistic sculpture sends a message competing in size with the main building. Sculpting the building block in the later works became for the architect almost a punching machine, made to give an external effect.

A novel example of treating the architectural tissue as a sculpting material were the artistic interventions of Gordon Matta-Clark (1943–1978), one of the most important New York artists of the 60s and 70s, and a trained architect. Up to this moment sculpture at the contact with architecture was utilitarian – as an addition, even if playing a structural role, or as furniture. By different forms of “building cuts” he revealed their inside, just as did Lucio Fontana in the series of “cut” paintings “Quanta”. The intervention involved cutting, misplacing, shifting, tilting or removing parts of the buildings. The result was a change of perception of the space of the structures, including their relationship with the environment, as well as a change of perspective. These actions were short-lived and unstable, and were most often performed on objects destined for demolition. The only traces of them are preserved elements of sculpture-buildings, video tapes and photos taken by the artist or his friend. Matta-Clark „by breaking the borders between architecture and art, photography and film, performance and installation (...) became a critique of modern functionalism, post-war urbanism and social consequences of liquidation of urban slums, as well as the critique of autonomy of art that separates itself from the practice of everyday life in the city” [4, p. 365]. In 1974, expression of this was his most famous intervention “Splitting”, performed in the Englewood district, inhabited mainly by Afroamericans in New Jersey, USA (Ill. 2). Matta-Clark cut in half a building typical of this area. Then the foundations of one part were lowered by several centimetres and in the final phase tilted and at the same time deposited on new foundations. The result of this was a gap approx. 5 degrees wide. The intervention was not only a criticism of urban degradation, but also a criticism in terms of the social and economic dimensions. The symbolism of splitting a house refers to the disintegration of social ties, including the myth of the American family living in a house in the suburbs.

Another famous intervention of Matta-Clark was the project “Conical Intersect”, created as part of the 1975 Biennale de Paris, in the vicinity of the construction site of the Centre Georges Pompidou. In two 17th-century houses to be demolished, the artist cut out the form of a shifted cone of base of 4m diameter, by cutting through the walls and ceiling. When looking at the gap in the facade resembling a gigantic spyglass in form, the object was opened to



- Ill. 1. Claes Oldenburg i Coosje van Bruggen (sculpture), Frank O. Ghery (architecture), „Binoculars”, Veinice, Los Angeles, Kalifornia. Source: www.losangelesloveaffair.wordpress.com
- Ill. 2. Gordon Matty-Clark „Splitting”, Englewood, New Jersey, USA, 1974. Source: <http://www.ionoi.it>
- Ill. 3. Richard Wilson, „Turning the Place Over”, Liverpool, 2007. Source: www.flickr.com
- Ill. 4. Krzysztof Wodiczko, „Guests”, 53rd Biennale in Venezia, 2009. Source: www.magazyn.o.pl
- Ill. 5. Dan Graham, „The Rooftop Urban Park Project Two-Way: Mirror Cylinder Inside Cube”, Nowy Jork, 1981. Photo Marilyn K. Yee, The New York Times
- Ill. 6. Piotr Obracaj, scenography for the show by Michał Markowski „Prywatne życie Piotrusia Pana” in Teatr Nowy in Zabrze, 1980. Fig. Piotr Obracaj

view the Eiffel tower and the futuristic Centre Georges Pompidou. While from the outside, the viewer could see the “bloodstream” of the building. The intervention was mainly a criticism of the demolition of historical structures. Including the demolitions in 1971, despite much public controversy, of buildings located near Les Halles, built during Paris’ reconstruction following Baron Haussmann. The form of a cone was inspired by Anthony McCall’s film „Line Describing a Cone” of 1973. The intervention of Matta-Clark became an inspiration for the project “Turning the Place Over” by English sculptor, Richard Wilson, who in 2007 cut in the external wall of Old Yate’s Lodge in Liverpool a circle of eight metres diameter, that, when turning, also revealed the inside of the building (Ill.3).

Initiating the play of the visual arts with architecture, where the former become reduced to utilitarian purposes, was met by criticism by Rosalyn Deutsche, art historian, lecturer at the Columbia University in New York [2, p. 150–165]. Deutsche emphasises the creations of Krzysztof Wodiczka, a Polish visual artist and art theoretician living in the USA, whose works in the form of visual arts are presented not only inside the galleries, but also on architectural structures. In 1985, the artist, protesting against apartheid, displayed an image of a swastika on the Tympanon of the South African embassy in London. While in 2005, on the wall of Warsaw Zachęta gallery he displayed recordings of women talking about traumatic events in their lives. In 2009, on 53rd Venice Biennale in the Polish Pavilion in Giardini, the artist presented his famous installation “Guests” on the subject of presence of immigrants in society (Ill.4). The images displayed inside the Pavilion in the form of windows, organically integrated with the architectural form, suggesting their partial transparency, showed a virtual and at the same real world – immigrants at various activities.

The sculpture in the direct vicinity of architecture can also interact with it. The series of sculptural objects named pavilions created by Dan Graham, New York artist and writer, also blur these borders. Graham’s creations are made of several glass panes, mirrors and half mirrors that can be both reflecting and transparent. The sculptures being at the same objects of streetscaping are a kind of hybrid between quasi-functional space and installations, which form optical illusions that disorient the viewer about his location in the environment. As the artist himself says they: „are hybrid, [...] are halfway between one thing and the other at the same time” [6]. One of his most famous works is the transparent and reflecting pavilion “Two-Way Mirror Cylinder Inside Cube”, created in 1981, which is a part of the project “The Rooftop Urban Park Project” in New York (Ill. 5). In the creation of the work, architects Mojdeh Baratloo and Clifton Balch were also involved. Similar games based on optical illusion, on the border of the real world and imagination are conducted by Monika Sosnowska. During the exhibition “Clandestini” at the 50th Venice Art Biennale, deconstructing the architecture, created over a dozen metre long corridor with typical of PPR architecture green panelling, where by bringing the walls closed introduced a convergent third dimension of perspective, thus suggesting to the viewer that the corridor is infinite.

The theatre was obviously a field for other artistic activities. Prof. Piotr Obracaj, architect and stage designer, in 1980 created a scenography in Zabrze Teatr Nowy for the play by Michał Markowski “Prywatne życie Piotrusia Pana” (“The Private Life of Peter Pan”)

directed by debutant Adam Gessler (Ill. 6). The stage designer intended to open the auditorium to a somewhat larger audience by introducing an element of surprise. The effect was obtained by placing the audience in front and behind the stage and introducing mirrors, so that part of the audience saw the show in mirror image. Additionally, another stage was built, suspended over the heads of the audience.

3. Summary

The appearance in the second half of 20th century of numerous new visual arts, which were often a result of marriage with architecture, is a prognostication of new ones, even more innovative. While the development of the contemporary IT revolution and the appearance with it of new technologies and communication media will inevitably multiply all the existing arts, giving them new meaning and mutating them with new ones. Consequently, an increasingly important question is about the quality of the art, including the architecture as the most exposed medium, as well as its message and its form. Particularly, in the era of uniformisation and domination of technological efficiency and race created by economy, it must be paramount to connect all artistic activities with the context of site, time and tradition.

R e f e r e n c e s

- [1] Damisch H., (*Teoria obłoku*). W stronę historii malarstwa, Wyd. słowo/obraz terytoria. Gdańsk 2011.
- [2] Deutsche R., *Architecture of the Evicted*, [in:] *Theory in Contemporary art since 1985*, ed. Kocur Z., Leung S., MA: Blackwell Publishing, 2005, p. 150–165.
- [3] Giedion S., *Przestrzeń, czas i architektura, Narodziny nowej tradycji*, PWN, Warszawa, 1968.
- [4] Świtek G., *Gry sztuki z architekturą*, Monografie Fundacji na rzecz Nauki Polskiej, Toruń 2013.
- [5] Vidler A., *Architecture's Expanded Field*, in: *Architecture Between Spectacle and Use*, Sterling and Francine Clark Art Institute, Williamstown, Mass., 2008, p. 143–154.
- [6] Interview Peter Lodermeyer with Dan Graham, Dan Graham studio, New York, USA, 15 March 2008, www.personalstructures.org.

JOLANTA OWERCZUK*

ARCHITECTURE „IN LINES”

ARCHITEKTURA „W LINIE”

A b s t r a c t

A line is an integral element accompanying architecture. It is the first line in a project idea record. A line can describe the form of a building, it can also be its main mean of expression. We perceive architecture by lines. A line as art in situ enriches the architectural space due to the perspective it plays with the viewer and the substance.

Keywords: *line, perception of architecture, linear architecture, anamorphoses*

S t r e s z c z e n i e

Linia to nieodłączny element towarzyszący architekturze. To pierwsza kreska w zapisie idei projektowej. Linią opisać można formę budowli, może też ona być jej głównym środkiem wyrazu. Poprzez linie postrzegamy architekturę. Linia jako sztuka in situ wzbogaca przestrzeń architektoniczną, dzięki perspektywie gra z widzem i materią.

Slowa kluczowe: *linia, postrzeganie architektury, architektura linearna, anamorfozy*

* Ph.D. Arch. Jolanta Owerczuk, Engineering Design Studio, Department of Housing Architecture, Faculty of Architecture, Białystok University of Technology.

*You play the green? I do.
You've got green? I have¹*

According to the teachings of Euclidean geometry only three dimensions suffice to describe the shape of any form and determine the relative positions of masses. A point, a straight line and a plane are in the classical approach the basic elements, the fundamental concepts. All other shapes can be expressed using these concepts. Lines, planes and solids, as noted by Bohdan Lachert, reflecting edges, surfaces and volumes, are the elements of architectural plastic. Compiled by the creator's vision one-, two- and three-dimensional elements of space define both the structure, the outer shell of the work, and the shape of its interior [4, p. 23]. According to the Dutch architect Cornelis van Eesteren, associated with the De Stijl group, by abstracting the tensions and functions of the construction elements and treating the substring as a line and a wall as a platform, the architect creates the architectural space „from the general space – from the chaos” [4, p. 23].

While playing the green game, it is necessary to have something in this colour always with you in order to stay in the game. Thinking about architecture as a kind of a game, it may seem that a line is an always accompanying, necessary element of the game. You play architecture? I do. You've got a line? I have. The line, as a term in the context of architecture, appears in different situations and can have many meanings. The first thought most commonly combines it with a drawing, a sketch – a record of ideas, the technical development of a project, or a memo or a drawing from nature. A solid shape, topography is sometimes called a line. Understood in this way becomes an element of the perceived view. It can also be understood as the shape of a building or land. There are works in which the composition of lines makes the main mean of expression. The line is also art accompanying the architecture. Once it included wall paintings, painted ceilings and polychromes. Today street art is popular.

A line, although from the point of view of geometry is devoid of width or depth and is length only, is an important element to form any visual construction. Wassily Kandinski indicating the role of a line in sculptural and architectural compositions highlights the fact that any expanding of the form means „expanding the linear form”. He refers to the Eiffel Tower as an example of the first and most important attempt to construct a particularly high building of lines only. In this case, as he adds *the line eliminated the plane* [3, p. 110].

The words of Paul Cézanne also focus our attention on the importance of elementary forms in reading space. The painter wrote to Emile Bernard:... *look at nature through cubes, spheres and cylinders, everything in proper perspective* [7, p. 126]. Furthermore, these words indicate that we will perceive a line in the spatial compositions in accordance with the laws of perspective. Thus, its impact will depend not only on the shape of the line, but also on its orientation in space and the position from which it will be seen.

It should also be mentioned that apart from the edge lines defining the shape of the mass, planes and lines forming decorative motives on facades and floors, there are those which are not given a physical form. These are axes, the lines connected with the structure of the form, binding its parts, defining the proportion of divisions.

¹ A fragment of a dialogue accompanying the once popular play “The green game”.

1. The play of lines as an element of the perceived form

Seeing requires from the viewer a certain activity – it is not enough to be passive, to wait until the image is shaped on the retina of the eye. The retina can be compared to a cinema screen on which a variable sequences of images are constantly shown, but the controlling brain consciously records only a few. On the other hand, only a vague visual impression or even a little detail is needed to recognize that one knows whether this or that thing was seen [8, p. 35]

As noted by Juliusz Żórawski, while watching the eyesight moves from point to point. Wandering along straight lines, it takes the shortest possible path between them. [14, p. 25] These lines form a grid of straight lines. Any such grid is based on a galaxy of points freely chosen by the viewer. By this arbitrarily chosen galaxy of points we see all the scenery. When attempting to recall a view from memory, the galaxy of points is simultaneously recalled which was most obvious at the time of this experience. *Everything that surrounds us always and everywhere we reconstruct in thoughts on the basis of experience built by correspondence points most variously related to each other* [14, p. 75]. Architecture is all the more understandable, clear to a wider audience, the more it includes general, common cognitive elements. This allows us to communicate through the simplest of verbal or pictorial messages [14, p. 20].

The form „drafting” lines are different in direction and shape and give the perceived buildings more or less dynamic character, accentuate the shape, keep an eye, and sometimes they cheat.

The least complicated in visual terms is a straight line. As an invention of the human sense of sight it is characteristic of the shapes that man creates [1, p. 326]. Straight lines make it easier to understand the whole architectural composition, and enhance the interaction between its different parts [13, p. 92].

We can assume that the simplest of all directions of a line are vertical and horizontal directions. Our whole concept of space is based on the vertical-horizontal reference system. Wassily Kandinski, for whom the lines are characterized by a tension-dependent direction, determines the horizontal line as passive and cold [3, p. 57]. We sense it as calm and steady because the individual is most accustomed to the long line of the horizon [11, p. 14].

Different in nature and expression is the arc, as opposed to a straight line devoid of width and depth, it *has the germ of a plane hidden in it*. With its curvature it defines a fragment of the plane. In addition, tracing a straight line differs from the time course of tracing the curve. The more mobile a curve is, the longer time it takes [3, p. 85].

Shortening the distance in frames of the perceived space depending on the place of observation makes the curve of the road, the contour of the curved wall seen once as a gentle curve, but sometimes more rapidly twisting than in reality. With the change of scene the dynamics of the curve line image changes.

2. Linear form

Among the architectural realizations of recent decades, examples of forms constructed from lines can be found (the Eiffel Tower mentioned above) and buildings of a linear form.

At the end of 2009 the National Museum of Art and Architecture in Rome designed by Zaha Hadid was opened to the public. The project was developed at the end of the 1990s. *The building, which Hadid proposed, was like a giant knot of snakes* [12].

After the announcement of the competition results, the project was presented several times in magazines. The illustrations presented conceptual sketches and photos of the model, in which the mass of the museum could be seen primarily in plan view. The expressive form was read as a composition of curved lines. Horizontal parts of the building, corresponding to levels, writhed in space giving the impression of climbing on each other like *a flyover on a highway* [5]. The view of the museum fixed in the memory was confronted, two years ago, with the building realized in reality. The mass appearing before the eyes, while close to it, does not look like the picture coded years ago. On the ground level the high concrete walls can be seen, slightly waved, overlapping and cut by fragments of glazing. The logic of the composition can be discovered inside the building. The ceilings, lighting and stairs wave and intermingle in a way that recalls the shapes known years ago.

Completely opposite to the curved lines intertwined in space of MAXXI is the aesthetics of Agora's headquarters building at Czerska Street in Warsaw. The building was constructed in 2002 on the basis of the JEMS Architects team project. The main mass is in the shape of a cuboid with a horizontal layout. As in the previous example, the building is perpendicular to the frontage of the road. The main element determining the expression of Agora's architecture is the multi-layered front facade. The attention of people going along Czerska Street focuses on a fragment of the wall visible in the perspective of this street and it directs their eyes deep into the lot. Agora is, as the building is defined by one of the authors, an architecture of „meshes and textures” [10, p. 27]. The horizontal arrangement of the building is emphasized by the horizontal steel beams that divide the elevations into horizontal stripes corresponding to the five floors. On the facades visible from the street, in a perspective cut, they create a drawing of converging lines and lead the passer-by’s sight along the facade to the entrance situated within and into the property. The wide cedar planks, perpendicular to the face of the wall, form, together with the steel beams, an orthogonal grid. Their place seen in the perspective cut concentrates as we move away; the planks, „overlapping” each other form the „full” strips. Meandering behind this sun protection curtain the external, proper glass wall is „hidden” from the views from the street and the building gains a closed character that emphasizes privacy.

To those staying on the premises the building appears in a frontal view, which because of the proportions of the square (long and narrow) covers a part of the facade. This view, „opens” before the viewer the full depth not only of the façade’s “flesh”, but also the „transparent” interior. The building’s location and the resulting play of views, showing the building in such diverse scenes, helped to create a dynamic image despite its laconic mass. The composition of the Agora’s facade, built exclusively of straight lines in orthogonal divisions and levels, thanks to the perspective, gained a particular image in the perceived pictures.

3. A grid of straight lines

A grid of straight, conventional lines, leading the eyes when perceiving the form, which was discussed above, „materializes” in the Pavilion 2002 designed for the Serpentine Gallery in London by Toyo Ito. The walls and roof of this rectangular, single-storey block with a square plan have the form of a steel and glass raster composed of intersecting lines and geometric shapes of sharp angles, often connected only at the vertices. The corner edges of the pavilion get lost in the variety of directions and relaxed composition of the straight lines. The presence of a corner is revealed only by beams placed within the outline of the building at its base, defining, seen from

the side, right angled arms. These are the only clearly defined edge lines. This play of lines gave the lapidary rectangular block a dynamic character. A similar composition, resulting from the same construction scheme as the one adopted in the pavilion in Hide Park, was proposed by Toyo Ito for the Tod's building in Tokyo. The concrete raster of the exterior walls has a more organic form here, inspired by the trees along the street. The reinforced concrete facade is entirely covered with glass panes. Reflections on the glass, complementing the play of lines and shapes, make the weight and shape of the mass unreal, deepening the illegibility of the corner.

4. Anamorfosis – the play of perspective

Based on the rules of perspective, defined in the Renaissance, the art of illusionistic decoration i.e. *trompe l'oeil* was developed. Images casting three-dimensional space in a very suggestive way were made not only on the plane. They were created on the surfaces of vaults and domes. Leonardo da Vinci illustrating in the *Treaty* his method for transferring the image of a man to the surface of the barrel vaults adds that: “the eye (...) is not to care about the planes or curvature of the walls, but about the items shown on its surface in various places of the fictional space” [9, p. 146]. The artists creating the illusion of the real world on the surfaces of cylinders and spheres have used the phenomenon of anamorphosis, intentional distortion of the picture, which disappears when you look at it at the right angle. The most famous use of anamorphosis in painting is an elongated object at the feet of Ambassadors presented on the portrait by Hans Holbein (1533). Viewed at an angle of twenty-seven degrees it turns into a human skull – a symbol of death and transience.

A contemporary artist from Switzerland, living in Paris, Felice Varini uses the phenomenon of anamorphosis in his work. His „canvas” is the architectural space and its surroundings. He has raised play with perspective to the rank of art. Using a projector he creates geometric constructions, simple shapes, on the surfaces of the urban landscape and interiors – circles, polygons, compositions of straight lines that can be seen in the proper configuration from one point only. They exist only in the space in which they are placed, without it they have no *raison d'être*. They then seem suspended in the space, when in fact they are deformed shapes marked on the surfaces of walls, ceilings, floors and other elements. Viewed from another angle they become incoherent tangle of lines and fields [2]. When the observer again approaches the viewpoint, the individual fragments begin to lay out in a clear whole.

One of the older works of Varini is an ultramarine square created on the concrete structural elements inside the School of Architecture in Nancy. The lines that seem to be haphazardly scattered, at one point in the hall on the second floor make a distinctive shape, which has become almost an emblem of the school. From April to August 2015 in the La Villette Park pavilions four recent works by the artist can be seen.

Each piece of work by Felice Varini is a kind of a mere trifle with the viewer, a game of art and architecture, play with a line in the architectural reality.

Lines: passive horizontal, vertical active or the most dynamic of all the straights – bevels, and finally curved lines that changing in nature are a regular part of the play in architecture. They help to perceive the form, but sometimes they cause delusions that deceive the eye. The architectural form is sometimes subordinated to the line. And finally, in the artist's hands it becomes an instrument of flirtation with the art of architecture. They introduce additional values to the built-up space.

R e f e r e n c e s

- [1] Arnheim R., *Sztuka i percepcja wzrokowa*, Gdańsk 2004.
- [2] <http://www.rynekfarb.pl/felice-varini-maluje-miasto/> [dostęp: 15.06.2015 r.]
- [3] Kandyński W., *Punkt i linia a płaszczyzna*, Warszawa 1986.
- [4] Lachert B, *Rozważania o niektórych cechach twórczości architektonicznej*, „Architektura” 1983 nr 1.
- [5] *MAXXI muzeum w Rzymie*, [za:] http://www.bryla.pl/bryla/1,85302,7257285,MAXXI_muzeum_w_Rzymie.html, [dostęp: 13.06.2015 r.]
- [6] Owerczuk J., *Postrzeganie architektury. Perspektywa*, Praca doktorska, Kraków 2008
- [7] Parramon J. M., *Rysunek artystyczny*, Warszawa 1993.
- [8] Rasmussen S. E., *Odczuwanie architektury*, Warszawa 1999.
- [9] Rzepińska M., *Leonarda da Vinci „Traktat o malarstwie”*, Wrocław 1984.
- [10] Stiasny G., *Agora*, „Architektura – Murator” 2002 nr 4.
- [11] Szparkowski Z., *Zasady kształtowania przestrzeni i formy architektonicznej*, Warszawa 1993.
- [12] *Zaha Hadid i betonowa świątynia sztuki*, [za:] http://www.bryla.pl/bryla/1,85298,7965360,Zaha_Hadid_i_betonowa_swiatynia_sztuki.html, [dostęp: 13.06.2015 r.]
- [13] Żórawski J., *O budowie formy architektonicznej*, Warszawa 1973.
- [14] Żórawski J, *Siatka prostych*, Kraków 2012.

KATARZYNA PIĄDŁOWSKA*

PLAYFUL INTERACTIONS BETWEEN SPACE AND THE AUDIENCE

GRA PRZESTRZENI Z CZŁOWIEKIEM

A b s t r a c t

Architecture very often interacts with people by showing them different types of behaviour and provoking specific actions. This article discusses public spaces of various specificity whose shapes, textures, and hidden values and symbols exert an impact on people's mood, their ways of spending free time, and even on the formation of social relations.

Keywords: a game of architecture, human activities, square, park, Warsaw escarpment

S t r e s z c z e n i e

Architektura nierzadko wchodzi w interakcję z człowiekiem, sugerując mu różne formy zachowania, wywołując określone aktywności. W tekście przeanalizowano przestrzenie publiczne o odmiennej specyfice, w których różnorodna atmosfera, kształt, faktura i ukryte wartości i symbole, wpływają na nastrój jednostki, sposób spędzania czasu a nawet na budowanie relacji międzyludzkich.

Slowa kluczowe: gra architektury, aktywności ludzkie, plac, park, skarpa warszawska

* M.Sc. Arch. Katarzyna Piądłowska, Department of Landscape Art, Faculty of Horticulture, Biotechnology and Landscape Architecture, Warsaw University of Life Science.

1. Introduction

Architecture very often interacts with people by showing them different types of behaviour, thus inducing specific activities. People design, create and manage space; however, they are also an inseparable component of it. A given space exerts a certain influence on its audience. This process takes place on the basis of feedback.

Therefore, spatial reality as well as architecture should always be considered from the human perspective. The space sends out a signal to its users which, upon its receipt, evokes a specific behaviour. A dynamic process consisting in an incentive and response to it can be observed here [7, p. 41]. The examples subject to the foregoing analysis deal with the living (plants, one person or a group of people) as well as non-living matter (squares, buildings, sculptures). A certain game may be spotted among these elements...

2. Piazza del Campo in Siena

The motto engraved on the Porta Camollia welcomes visitors to the city with the following words: “Cor magis tibi Seni pandit” (“Siena has its heart wide open for you”). Siena is a Gothic city situated on the hills of Tuscany with numerous yellow and orange buildings with green shutters. The city itself is dominated by a high tower called the Palazzo Pubblico (the town hall). It is also home to one of the most famous and most beautiful squares in the world, namely the Piazza del Campo [6].

The shape of the square is based on the motive of a shell or fan with white and pink stripes. The characteristic feature of the Piazza del Campo is an outstanding harmony of colours applied in the square itself as well as in its surroundings (the orange shades of the awnings and umbrellas, the warm colours of the facades and the red roof tiles and stone floors). The square is located at the intersection of all the most important streets. It is also where important historic events occurred and now where city life bustles. On a daily basis the Piazza del Campo is visited by flocks of pigeons as well as by crowds of city dwellers and visitors to the city who spend their time lying, sitting or walking on the square. The city centre is closed to traffic. Even cyclists are banned from entering the city centre therefore pedestrians are those with the strongest rights and feel totally free when in the square. The social life bustles in the cafe-gardens and restaurants located around the shell. There are benches protruding from the mediaeval facades where people of all ages, from children to the elderly, rest during the day and at night.

In the past squares like the Piazza del Campo used to play the role of a social salon where all the most important social events took place including both unplanned everyday events such as trade fairs or frequent fights and organised celebrations such as ruler’s welcome parties, sermons by St. Bernard from the nearby pulpit or public executions of heretics. At present, apart from the solemn horse races taking place twice a year (on Palio di Siena), the square plays the role of a social area where people can take a walk, have a rest, show off or watch the others.

According to one of the most prominent theorists of modern architecture, Christopher Alexander, attractive walls of public spaces are the warranty of bustling life. The first stage consists in taking the passer-by through a gate from which an attractive view of a square is

to be seen. The passer-by is then encouraged to stop for a moment, e.g. by means of appealing shopping windows, newsstands, information boards or kiosks, which are the so called “pockets of activity”. The final stage embraces gradual engagement of the person so that he stays on the square for a longer time which in turn results in other people starting to gather at the borders of the urban interior thus drawing attention of other passers-by. Thanks to that, activities of the users may become more and more unrestrained and therefore start to influence the inside of the square as well [1, p. 609].

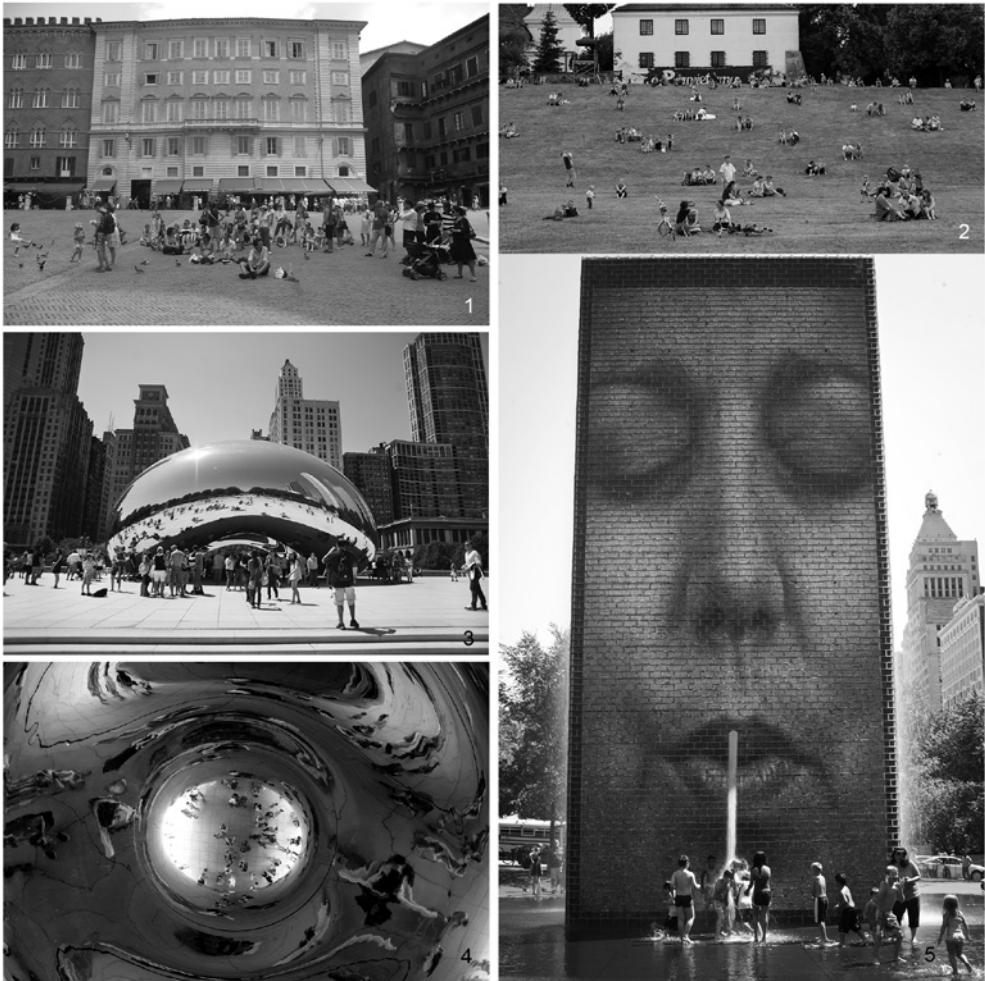
In what way does the harmonious space of Piazza del Campo stimulate human behaviour and, what is most important, attracts people? How does the individual start playing the subtle game of architecture, complying with its rules?

Most of this is determined by the unique terrain relief and exceptional floor of the square which, in the 19th century, was paved with red brick replacing the original fieldstone foundation. “Eight white lines protrude from the city centre dividing the Campo into nine parts which symbolise the reign of the “Nine” – the nine officials elected from among craftspeople, traders and bankers who were responsible for the period of the city’s greatest development (1287–1355) [6]. At the same time the geometric segments of the square are a symbol of the folds of the protective coat outstretched by the Mother of God [3, p. 339].

The surface of the Piazza del Campo, which forms a market square, radiates inside thus creating a foreground and background. The uneven floor, pastel colours as well as attractive slopes amaze all the visitors to the city. The amphitheatrical nature of the square and water splashing from the located nearby Fonte Gaia encourage visitors to take a rest and relax even for a single moment. People sitting on the floor that is not a lawn in the park are nowhere to be seen. Here in Siena, in the home of architecture and art, one may forget about all social conventions and customs. The users of the square cannot resist the temptation of having a moment of relaxation on the bricked surface. Despite a variety of restaurants and cafes, it is the floor itself that attracts the greatest number of guests who sit there, eat their take-away meals and, most of all, observe the others.

A major role in this small “game” of architecture is played by the light. The warm climate of Tuscan towns attracts crowds of tourists; however during siesta the strong light becomes extremely disturbing. The shade cast by the tower of Palazzo Publico, which is the seat of the municipal authorities, moves as if in the sundial thereby imposing its own rhythm and direction of movement on the square users since most of them sit exactly in its shade. A careful observer may admire this intriguing game of buildings which dictates its own terms. The best view can be seen from the Torre del Mangia tower, which is approximately 90 metres high, crowned with a white stony bell tower.

The Piazza del Campo constitutes an example of a carefully planned urban form. It is hard to believe that the mediaeval constructors had such great intuition since the towns that they built were not based on any spatial development plan. Frequently, the process of building settlements was slow thereby enabling constant evolution and adjustment of the space to serve urban functions. Jan Gehl emphasised the fact that Piazza del Campo earned the name of a proper meeting space that meets the needs and expectations of its present and past users. This is mainly thanks to its compact spatial structure, orientation towards the sun and the climate as well as owing to an astonishing fountain with suitable location and cross-section of the square in the form of a basin [4, p. 41].



- III. 1. People sitting on the brick floor of the Piazza del Campo in Siena
- III. 2. Warsaw escarpment as an amphitheatre
- III. 3, 4. Games and playful interactions at the Crown Fountain in the Millennium Park
- III. 4. Interactive sculpture – Cloud Gate in Chicago

3. Warsaw escarpment

Another example of terrain relief that exerts a direct impact on the types of human actions as well as on the creation of interpersonal relations is the space of Warsaw Escarpment. This green thread meandering through the entire capital city of Warsaw, from Buraków to Konstancin, connects the Vistula Valley with the postglacial upland and builds the identity of the city.

Warsaw Escarpment used to be overgrown with a forest, and therefore its individual parts exhibit different characters. In some places, it is represented by greenery in the form of contemporary squares and monumental parks and gardens originating from the turn of the 19th century. In other places, the escarpment is intersected with streets accompanied by frontages of buildings, stairs, footbridges and areas of unarranged greenery that cannot be found in other cities – these include, for instance, the Skarpa Ursynowska nature reserve together with its surrounding meadows and peat bogs. Apart from its aesthetic and defensive functions, which were of utmost significance in the period when Warsaw was established, Warsaw escarpment performs the role of an ecological corridor thus initiating the city aeration system.

Warsaw escarpment writes various scenarios for the inhabitants. Some of its areas which offer a peaceful linear communication tract hidden from the noise of the city encourage visitors to have a stroll or go jogging there. Why do people desire to walk there? Despite the lack of continuity of the path, which is interrupted by fenced institutions or streets, Warsaw escarpment seems to be uniquely interesting. This undoubtedly results from the romantic genius loci which shows its guests around winding, mysterious slopes and passages that are covered from the wind.

According to Gordon Cullen, an urban landscape features a specific art of relations – a dramatic phenomenon composed of both buildings and trees, traffic, nature or water. People get an impression of the inside of streets, squares or parks by means of a series of images that consist of the existing and the appearing view. Warsaw escarpment together with its variegated relief exerts its influence on the people “changing blind facts into a tension-filled situation” [2, p. 8–12]. Pedestrians climb up a sandy path to finally see the outstanding view of the Vistula Valley and then climb down and turn to unexpectedly spot the tower of a nearby church. The mysteriousness of this place is the result of the game between the foreground and the background, between different heights and contrasts, a game in which various buildings are hidden from the audience to be then revealed, a game of opening and closing the space. The potential of Warsaw escarpment as a place where people desire to take a walk, not just to move mindlessly to a certain point, lies in the viewing sequences which are to be observed on its paths.

Similarly to the square in Siena, Warsaw escarpment also provokes its visitors to stay there for a longer time. Spontaneous winter games including, for example, snowman building or sledging, as well as summer time bike rides, picnics, rolling down the hill, and standing or sitting on a green slope can be seen there.

The “Hidden Dimension” by Edward T. Hall [5] gives an explanation why most people prefer to stop at remote areas such as mountain edges or woodland boundaries. Contrary to the centre of space, when being in a remote place an individual can keep his distance from other people as well as avoid standing out in a crowd.

The escarpment offers exceptionally beautiful views that outstretch from its crown. The area located at the height of the Old Town and the Royal Route, especially along Krakowskie Przedmieście and Nowy Świat, constitutes the most important viewing point as regards the historical development of Warsaw. Other viewing points are situated, most of all, in the area of the old aristocratic residences constituting monumental palace-garden complexes [9, p. 120].

The comfort of getting a distant view as well as cultural events that are held in the space under Warsaw escarpment (e.g. at the New Town Market Square) attract crowds of visitors. On warm days the green hill, like a natural amphitheatre, is full of individuals or

groups of people sitting there to watch. It may seem that these people look at the Vistula Valley that emerges from behind Wiślostrada and the right side of Warsaw... but first and foremost they observe others. As Tyrmand wrote: "There are people for whom watching others is as absorbing and addictive as biting seeds (...). For such people the intersection of Marszałkowska Street and Aleje Jerozolimskie in the early afternoon hours becomes a source of great pleasure similar to that experienced when you wash your feet with water with St. John's salt after a long walk in tight shoes in the July sun – the pleasure is so strong that the person experiencing it wants to keep his feet in the bowl for the next three years" [10, p. 103].

The architecture of this place builds its atmosphere and energy, and this is what attracts or repels visitors. According to Juhani Pallasmaa, one of the tasks of architecture consists in reflection of the passing away of history. "The time of architecture is time frozen: in the most magnificent buildings time is frozen". This means that buildings may take you to the past, just like a time machine. In a narrow mediaeval street the sensitive eyes and other organs of perception will spot and feel the dirty sandals going on the procession to a Gothic cathedral [8, p. 65–66].

An original, intimate atmosphere can be felt in Profesorska Street, which crosses the Warsaw escarpment. The street misleads its guests through a game of stairs, villas and wild gardens. Kolonia Profesorska, running from Myśliwiecka Street to Hoene-Wrońskiego Street, was built in the 1920s. A complex of more than a dozen single-family houses was designed and inhabited by architects from the Technical University of Warsaw. The idyllic and romantic character of this place is emphasised by a gate with the name of the street which takes visitors inside just like into a magical garden. This manner of spatial development where art, culture and nature permeate encourages visitors to contemplate or lovers to take a walk there. The architecture of abandoned villas brings the guests closer to their ancestors, thus stimulating the imagination and a nostalgia for interwar Warsaw.

4. Millennium Park in Chicago

An extremely peculiar example of space is the Millennium Park, which was set up over a railway and a ceiling that covers underground car parks. Therefore, the Millennium Park is considered by the inhabitants of Chicago and multiple tourists as the most amazing green roof in the world. The local architecture exerts a significant impact on the people by offering a variety of play and games. This contemporary complex that was opened for public in 2004 is situated in the city centre and covers an area of approximately 16 ha. It is composed of various functional zones for a wide spectrum of users. The group of its architects which included Skidmore Owings & Merrill was supported by well-known architects Frank Gehry and Thomas Beeby [11].

Visitors are attracted to the park by the architectonic structure of the Cloud Gate, which is situated on the AT&T Plaza. This steel sculpture was designed by the world famous artist, Anish Kapoor. The design, which was selected in a contest, refers with its form and colour to liquid mercury and is commonly called the "bean" since its shape is similar to this leguminous plant. A deformed city panorama, especially the Historic Michigan Boulevard District and the local sky, is reflected in the silver surface of the installation. Its organic oval

shape stimulates social interaction and plays with the audience, thus creating an attraction that resembles a mirror chamber in the amusement park. The users surround the sculpture and go under its arch observing their own deformed faces as well as interesting reflections merged into this fairytale city world. The Cloud Gate intrigues as well as provokes laughter and unpredictable behaviour both in children and adults. Each visitor comes to the metal surface and preserves his original artistic poses and effects in photographs. The sculpture has become an icon of Chicago that is well-known not only in the USA but also worldwide. The architecture of this place provides visitors with an illusion and the optical tricks applied here allow nobody to remain indifferent to it.

A greater rumble can only be heard at the Crown Fountain where children wearing costumes run around the water surface. The modern form of the fountain uses the latest achievements in the field of audiovisual art. Two 15-metre high rectangular towers constructed from glass blocks have diodes installed which enable projection of digital video films. Portraits of the inhabitants are the most common motive displayed on the external surface of these structures. Images are integrated with the water splashing unexpectedly from the mouth of displayed characters thus creating a spectacular show. The youngest participants do not stay passive but on the contrary, they splash in the water and play games, thereby becoming actors in this water show. This interactive installation was designed by a Catalonian, Jaume Plens, famous for his artistic works that represent conceptual art, including light and water dualism. This object, which is quite controversial due to its large size and aesthetics, has quickly joined the canon of American pop culture, thus meeting the entertainment needs of the inhabitants [12]. This place integrates whole families offering an inimitable playground and providing the possibility of escape from the weather on a boiling hot day.

5. Summary

On the one hand, architecture reflects its times and creators; however, on the other hand, it tells us a lot about its contemporary audience. The creator builds a record of space that inspires people to a variety of behaviours. Buildings, original floors as well as artistic installations play with the audience through different optical tricks, illusions and mysteries. The atmosphere of a place, its shape, texture as well as its hidden values and symbols influence the mood of an individual, his manner of spending free time and even the creation of social relations.

R e f e r e n c e s

- [1] Alexander Ch., *Język wzorców. Miasta – budynki – konstrukcja*, Gdańsk 2008.
- [2] Cullen G., *Obraz miasta*, Lublin 2011.
- [3] Egert J., Leszkowicz B., Łozińska T., *Włochy*, Warszawa 2007.
- [4] Gehl J., *Życie między budynkami. Użytkowanie przestrzeni publicznych*, Kraków 2009.
- [5] Hall T. E., *Ukryty wymiar*, Warszawa 1976.
- [6] Moncznik A., Bylica A., *Toskania*, Kraków 2009.
- [7] Ostrowska M., *Człowiek a rzeczywistość przestrzenna*, Szczecin 1991, p. 41.

- [8] Pallasmaa J., *Oczy skóry. Architektura i zmysły*, Kraków 2012.
- [9] Skalski J., *Ocena walorów krajobrazu w procesie postrzegania na przykładzie krajobrazu doliny Wisły w Warszawie*, Warszawa 2011.
- [10] Tyrmand L., *Zły*, Warszawa 1990.
- [11] <http://www.faktychicago.com> (poprano dn. 10.06.2015).
- [12] https://en.wikipedia.org/wiki/Millennium_Park (poprano dn. 10.06.2015).

MARTA PIECZARA*

LABYRINTH GAME

GRA W LABIRYNT

A b s t r a c t

The notion of labyrinth is often a subconscious reference to the perception of a path travelled by a human across space. The labyrinth game played by an architect with the architecture's user relies on sensibly leading the user's steps towards the intended direction, on inviting him to enter certain spaces and on refusing him access to those which are reserved for another group of users. Becoming conscious of this game's full potential is crucial as it helps to guide the user's steps in a far more discreet way than placing signposts.

Keywords: labyrinth, game, difficult peregrination, confused footpath, knot, the path's selection, distribution principles, simplification and impediment, denial of access

S t r e s z c z e n i e

Pojęcie labiryntu stanowi nierzadko podświadome odniesienie do postrzegania drogi pokonywanej przez człowieka w przestrzeni. Labiryntowa zabawa architekta z użytkownikiem architektury polega na świadomym kierowaniu jego kroków w zamierzonyą stronę, na zapraszaniu go do jednych miejsc oraz na odmawianiu mu dostępu do tych, które są zarezerwowane dla innego rodzaju użytkowników. Uświadomienie sobie potencjału tej gry jest cenne, ponieważ daje możliwość sterowania krokami użytkownika w bardziej dyskretny sposób niż stosując drogowskazy.

Slowa kluczowe: labirynt, gra, utrudniona wędrówka, pogmatwana ścieżka, węzeł, wybór drogi, zasady dystrybucji, uproszczenie i utrudnienie, odmowa dostępu

* Ph.D. Arch. Marta Pieczara, Institute of Architecture and Planning, Faculty of Architecture, Poznan University of Technology.

1. The term

Since the time when architect Daedalus was commissioned by King Minos to design a labyrinth, a prison to the mythic Minotaur, the notion of labyrinth has rooted deeply in the human collective unconscious. Available in most encyclopaedias, the definition of labyrinth describes it mainly as “a system of more or less tangled paths among which one leads to the target”¹, but also as “an edifice composed of numerous rooms and passages arranged in such a way that once inside it is impossible to find the way out.”² The etymological origin of the word “labyrinth” alone evokes broad discussions among archaeologists and semiologists. Some theories derive its beginnings from the word “labrys”, signifying a double-headed axe, considered to be Daedalus’ invention and found in many forms in the excavations at Knossos [8, p. 58], whereas other theories point out its relationship with the word “labra”, the primary meaning of which would be “a cave, a mine composed of numerous drifts and corridors” [8, p. 58–59]. Paolo Santarcangeli has proposed his own and a very interesting hypothesis of the discussed term’s origin. It would actually emerge as a conjunction of the word “labra” (a cave, a mine) with the prefix “inda”, reserved for designating children’s games. “Labrinda”, and subsequently “labyrinthos”, would therefore signify “the cave game” or “the mine game” [8, p. 61]. This game, which consists of challenging human’s spatial imagination, has taken various forms across the history of mankind. “There are no limits to the labyrinth and the appearance it takes in a given epoch, in a particular social context, is always an expression of a certain style, of a certain way of living” [8, p. 42].

2. The question of style

Like architecture, the style of a labyrinth’s graphic representation is therefore an expression of the epoch. The oldest known type of meander drawing, called the “Palace” sign, was used in ancient Egypt to seal, *inter alia*, the belongings of the deceased monarch being buried [8, p. 72]. The same motif, brought up to a larger scale, also served as a principle of planning palaces, temple complexes, and tombs. The Egyptian labyrinth was characterised by its strictly geometrical design and by a very high level of complication, with an extensive network of corridors, numerous cul-de-sacs and many dangerous traps. These were all meant to prevent an intruder from finding his way back to the exit and, by doing this, to protect the sanctity enclosed within the labyrinth’s centre. And, in accordance with the religious principles shared by the society of ancient Egypt, which believed in the monarch’s divinity, this sanctity was often represented by the body of the deceased Pharaoh.

In other civilisations the labyrinth is often reduced to a two-dimensional drawing, the centre of which can embrace, for example, the tribal chief’s house, like for the Zulu people [8]. In the Hindu and the Tibetan tradition, in turn, the labyrinth drawing is associated with the tales of life’s peregrination, dotted with obstacles and inevitably leading towards death and rebirth. The graphic representation of this peregrination obtains its most artistic shape in the form of mandala, but was also present in the indigenous cultures of Oceania and, on

¹ *Wielka Encyklopedia Powszechna*, PWN, Warsaw 1965.

² Littré E., *Dictionnaire de la langue française*: „Édifice composé d’un grand nombre de chambres et de passages disposés tellement, qu’une fois engagé on n’en pouvait trouver l’issue.”

the other edge of the world, among Mayan and other Indian people. In the latter cases, the labyrinth serves as a formal representation of a journey to the world of the dead or to Hell [8].

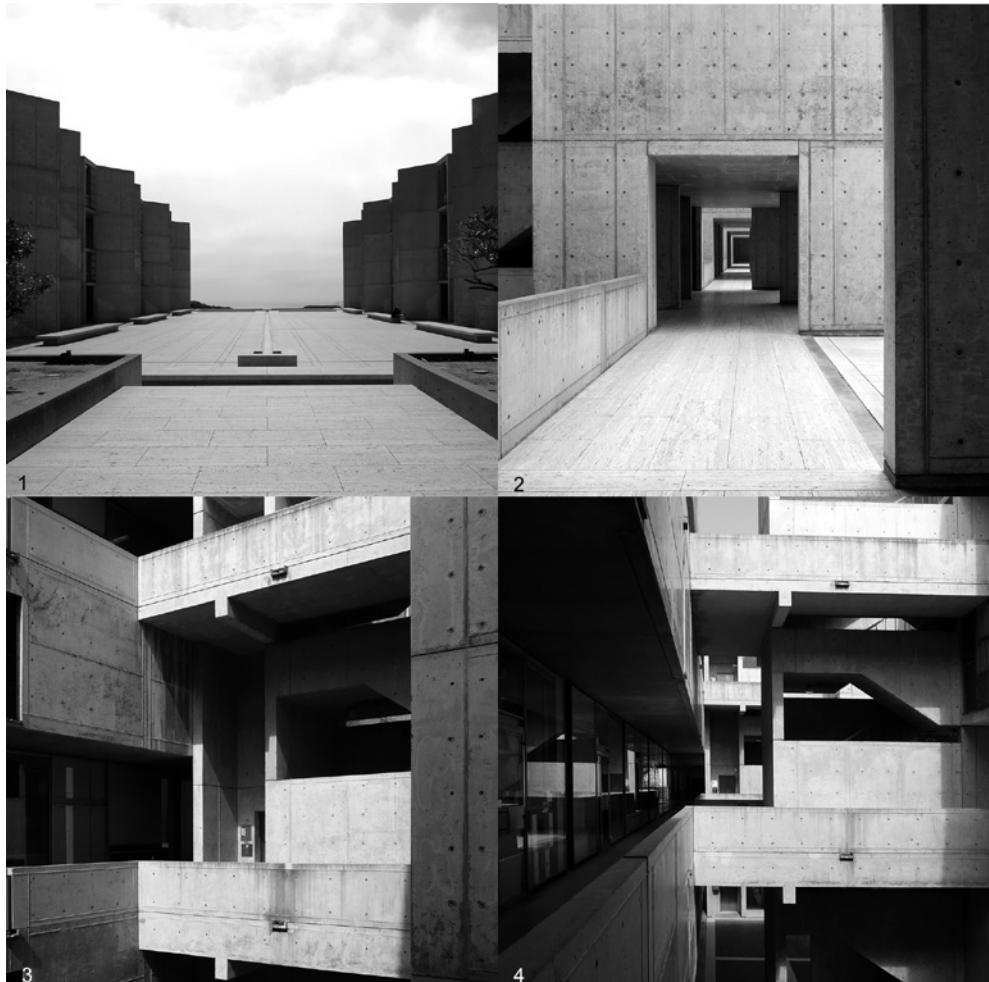
The images of knots and tangles, to which the labyrinth drawing is conceptually related, find their particular form of graphic representation as arabesque, typical of Islamic art. Modelled on the world of plants arabesques or strictly geometrical interlaces are usually drawn with a single, continuous line, which loops or bends repeatedly and, at the same time, rigorously, revealing the mathematical precision of the Islamic artists.

Metaphoric references to the labyrinth viewed as a magical sign or to its underlying concept of a complicated system built of rooms and passages, which has anchored deeply in our collective mind, are not foreign to the society of today. Besides its frequent use as a graphically intriguing symbol, like for example in Alfa Romeo's advertisement from the 1960's, the labyrinth continues to be more than a formal inspiration. For architects, in particular, it constitutes a subconscious reference to the path walked by an individual in space. While designing space, we naturally trace his steps, with a special regard to where he turns, where he will have to stop, and where will he direct his sight at that moment. Such considerations form one of the fundamental design principles and they directly affect the rules of distribution.

3. Network of distribution

The labyrinth game that an architect plays with the architecture's user mainly relies on a conscious leading his steps towards the intended direction, on inviting him to enter certain spaces and on refusing him to access those which are reserved for another group of users. At the same time, the direction the user takes automatically leads his eyes towards a determined perspective where he will see a view worth attention and remembering. Carefully arranged by the architect, this view will evoke certain feelings in the user. Permanently inscribed in his memory, these feelings will then become integral parts of his personal map of imagination representing the space he travelled through. This phenomenon becomes, in turn, a foundation for debating phenomenology as well as psychology of space. Both these domains remain nowadays in the focus of society's attention, constantly concentrated on one's individualism as well as on the need to consolidate human relationships.

Narrowly related to the architectural type, the principles of distribution in a building are generally based on an analysis of functional connection and are one of each design's foundations. Properly resolved, the network of distribution ensures a user ease in moving through space. In a building designed with a careful regard to this issue we need neither signage nor arrows in order to find its main entry or its entrance hall. At first glance, it seems that this is our intuition that leads our steps accurately to the place we desired to find. But in reality, the easiness of reaching the target is due to the countless hours of thought the architect has sacrificed so that he can ably lead us through the labyrinth of a designed building. He discreetly guides our steps and, at the same time, he restricts access to these areas which are designated for other users. Moreover, he urges us to contemplate the spaces we walk through. The architectural labyrinth game does not, therefore, aim at getting the user lost. On the contrary, its authentic goal is to most efficiently lead him through the projected spaces, directing his attention to the most attractive viewing axes and to the neatly designed interiors. It seems best to investigate a few examples.



Ill. 1. Louis I. Kahn, The Salk Institute, La Jolla CA, USA, 1959–65. The spaces of distribution: [1] Central plaza. [2] Portico. [3], [4] Labyrinth of passages leading to the laboratories as well as to the scientists' private cabinets (photos by the author)

4. “Anti-labyrinth”. Kimbell Art Museum, Louis I. Kahn

The distribution layout of this building is transverse to the structure and it intentionally leads the visitor, in the simplest way, from the main entry related to the street, through the entrance hall and the stairs, up to the exhibition level. Here, on the first floor, our gaze falls first on the entrance overlooking the park and to the right or to the left, where the exhibition halls are located. Behind the stairs there is a bookshop area, which is also open to the public. The average visitor will not even be conscious of other existing spaces, use of which is closed to the public, like for example a conservator's workshop, a storage area equipped with a ramp

to load or unload precious works of art, or a two-storey library. Only insiders or inquisitive ones are able to identify a way to the rooms otherwise restricted to the personnel. Designed by Louis I. Kahn, the Kimbell Art Museum building can therefore be referred to as an “anti-labyrinth”, as it leaves no hesitation concerning the choice of a path.

5. Intended confusion of distribution as a denial of access. Salk Institute, Louis I. Kahn

The characteristic feature of this building is that its principal spaces of distribution are outdoor, which is, besides, conditioned by the Californian climate. The paths of entry to the entire complex lead on the bias through the native eucalyptus forest, before bringing the visitor to a few outdoor steps and a raised platform, limited on its both sides by the orange grove. This place, which serves as a threshold of the laboratories complex, precedes a descent down to the central courtyard, also referenced to as the central plaza (ill.1). Every visitor to the Salk Institute owns a photograph of this courtyard, which spectacularly opens over the ocean. This view appears as a unique and highly individual discovery to everyone and at every time. This feeling is inevitable because the distribution of the whole complex was designed with a particular regard to that place. The architect intentionally introduces the visitors at an angle and through a narrowed, raised passage in order to intensify their wait and, subsequently, to enchant them with the unfolded view. On both sides of the courtyard there are also two rows of porticos (ill.2) which are a shelter from the sun and open, at the same time, new viewing axes on the vast landscape of the Pacific coastline. The porticos belong to the area open to the public, but they also give the beginning to a confusing labyrinth of passages, stairs and galleries leading to the laboratories as well as to the scientists' private study rooms (ill.3 and 4). Their intended confusion is an unequivocal sign that further access is not for visitors. This prominent labyrinth of architecture constitutes a bold psychological barrier, thanks to which there was no need to install either coded gateways or other forms of restricting access in this area.

6. Concentric labyrinth. Exeter Library, Louis I. Kahn

The idea of a precisely centred plan of this building was based on two main principles. Firstly, the architect has seen the role of a library within the university campus as its intellectual heart. Secondly, the central location of the project in relation to the whole campus was translated into the concept of an “entry from everywhere around.” So was conceived the portico which encircles the library building, offering a shelter to users coming from all directions and guiding them around the building till they reach the entrance. This first “ring” of the labyrinth introduces the users from two opposite sides into the library's vestibule, from which, subsequently, two symmetrical, semicircular flights of stairs lead to the inside. Their official, institutional character prepares the visitors for the view of the library's main hall, whose concrete walls provided with immense circular openings give an insight on all the building's storeys and, by doing this, they reveal to the visitor's eyes dozens of shelves filled with books. This space reflects the architect's conviction that in a library all books should be visible straight after entering [10, p. 182]. This thought was doubtless inspired by the famous vision of the Bibliothèque royale designed by Étienne-Louis Boullée, but it might

also be related to a visit in Stockholm Public Library designed by Gunnar Asplund in the 1920's. Similarly as with the Salk Institute referenced above, the main representative space of the Exeter Library is open to the public and gives a beginning to further communication. However, the placement of two staircases connecting the following storeys within the building's corners along with their less representative character are a sign of restricted access. It may be less explicit than in the case of the Salk Institute, but it is still perceptible. On the library's upper floors, the repeated layout of spaces invites the user to circle around its central hall. This layout consists of (respectively): a gallery surrounding the central space, the space of bookshelves and, finally, the outer "ring" of the labyrinth. The latter contains places to read books and overlaps the exterior portico. Exactly like in a round labyrinth, the users of this building move in a circular, a centripetal and a centrifugal motion.

7. Centrifugal labyrinth. Rolex Learning Center, SANAA

Comparably to the previous example of the Exeter Library, the architects of the Rolex Center made an assumption that the building's users would be coming from all directions and they should be brought into its centre in the most effective manner [6]. As an answer to this principle, they proposed the idea of lifting all four facades more or less in the middle of their lengths, so that the users could walk underneath, just like under bridges, until they reach the building's heart. Contrary to the traditionally perceived labyrinth, the centre of the whole is therefore smoothly reached. Here, the main entrance is found. Starting from this point, however, the distribution network starts to complicate. The authors lead us through a labyrinth of ascending or descending spaces, presenting minutely composed views. Stepping unsteadily, we ask ourselves the question of where the books are stored in this library [4]. In our search, we pass through a labyrinth of rounded spaces, directing ourselves outward from the centre and getting closer to the glazed facades. In their proximity library departments, reading rooms, and an auditorium, as well as other functions housed in the building are situated.

8. The labyrinth as an element of architect's practice

The labyrinth game is played, in a more or less conscious way, by every architect. While designing space and a communication system that connects its individual units, it is impossible not to consider the path walked by its user. Depending on the need, or more precisely on the building's purpose together with the designation of its certain areas to a given group of users only, this path can be simplified or made difficult. Realising the whole potential of the labyrinth game is important, as it gives the possibility to control the user's steps in a far more discreet and "architectural" way than placing signage.

R e f e r e n c e s

- [1] Burckhardt T., *L'art de l'Islam. Langage et signification*, éditions Sindbad, Paris 1985.
- [2] Jung C.G., *The Archetypes and the Collective Unconscious*, Princeton University Press, Princeton NJ 1969.
- [3] Louis I.Kahn. *Silence and Light. Actualité d'une pensée*, Cahiers de théorie 2/3 (red. Mestelan P.), Presses polytechniques et universitaires romandes, Lausanne 2000.
- [4] Mestelan P., *Le Rolex Learning Center ou la bibliothèque évanouie*, [in:] Tracés, num. 11, Lausanne 2010, p. 18–21.
- [5] Mestelan P., *L'ordre et la règle. Vers une théorie du projet d'architecture*, Presses Polytechniques et Universitaires Romandes, Lausanne 2005.
- [6] Obrist H.U., *SANAA. Kazuyo Sejima & Ryue Nishizawa*, The Conversation Series 26, Verlag und Buchhandlung Walther König, Köln 2012.
- [7] Ronner H., Jhaveri Sh., Vasella A., *Louis I. Kahn. Complete Work 1935–74*, Birkhäuser, Zurich 1977.
- [8] Santarcangeli P., *Księga labiryntu*, trad. I. Bukowski, Wiedza Powszechna, Warsaw 1982.
- [9] Stoller E., *The Salk Institute*, Building Blocks, Princeton Architectural Press, Princeton NY 1999.
- [10] *What Will Be Has Always Been: The Words of Louis I. Kahn*, red. Wurman R.S., Rizzoli, New York 1986.

ANNA POREBSKA*

PLAYING ARCHITECTURE

GRA W ARCHITEKTURĘ

A b s t r a c t

The very word “game” has a very wide meaning. As a game can be considered a prototype of culture as well as a metaphor, a simulacrum, and a simulation of the real world, the article is a reflection on architecture seen through the prism of three very old games: hide-and-seek, musical chairs and the goose game.

Keywords: musical chairs, hide-and-seek, goose game, experiencing architecture, comfort, gentrification, contemporaneity, architectural practice

S t r e s z c z e n i e

Gra jest pojęciem niezwykle pojemnym. Przyjmując, że gra jest nie tylko prototypem kultury, lecz może być również metaforą, symulakram i symulacją rzeczywistości, artykuł proponuje spojrzeć na architekturę przez pryzmat trzech starych gier: gry w chowanego, gry w gorące krzesła i gry w gęś.

Slowa kluczowe: gra w chowanego, gra w gorące krzesła, gra w gęś, odczuwanie architektury, przeludnienie, gentryfikacja, projekt architektoniczny

* M.Sc. Arch. Anna Porębska, Institute of Architectural Design, Faculty of Architecture, Cracow University of Technology/ Scuola di dottorato in Architettura e Pianificazione dell'Università degli Studi di Sassari.

1. Architecture as game

Architecture – the game between convergent lines, rhythm, mimicry and optical illusions, colours, textures, smells and sounds, planes and volumes, light and shadow – plays incessantly on our emotions. It is architecture's task to render vivid to us who we might ideally be – admits Alain de Botton gloomily in his essay *Architecture of Happiness*. – Taking architecture seriously therefore makes some singular and strenuous demands upon us... It means conceding that we are inconveniently vulnerable to the colour of our wallpaper and that an unfortunate bedspread may derail our sense of purpose [3]. This vulnerability, described by the silver tongued author of bestsellers on all topics, is a state quite new and typical of the citizen of our modern world, so used to the comfort zone. Throughout the ages, life within architecture was usually quite short and miserable, with days passing by in modestly decorated, poorly lit, and unheated interiors. Humanity ground on forward, sleeping together in crowded chambers, on tables, benches and piles of hay on the floor. Only the more affluent could afford beds – often intentionally made too narrow and short, so that the body would find it harder to achieve a supine position, which, according to folklore, aided Death in its dirty work. At times, the contrary was the rule, with beds large enough for entire families to sleep together.

The ill comforts of church stalls and refectory benches had their practical implications: it was not appropriate for someone to fall asleep in church, while the dining hall was not a place for wasting precious daytime more than necessary. At the same time, these areas had carefully calculated proportions and opulent decorations, so that the eyes could be soothed while the bottom ached.

The tradition of uncomfortable seats that are meant to keep us awake has survived in the form of seats at schools or on train stations. However, the quality of the surroundings has shed gradually over time. It is no wonder, then, that having sat in non-places for years (a classroom fulfils all the criteria to be labelled as such), we have become immune to the beauty of architecture. We are now trying to reverse this process by means of architectural education for children, public participation programs, etc.. While these ventures are valuable in and of themselves, the true solution to the problem is, so to speak, bottom-up oriented. A good example of this is the case of the Roma-Fiumicino Airport.

FCO, with its nearly 39 million passengers in the year 2014, is the largest Italian airport, and the sixth largest in Europe. It is also crowded, oppressive and just generally seems like the result of first class ineptitude, a polycentric one at that. The bars and restaurants equipped with normal chairs are grouped on the top floor, which is connected with the main terminal by a stairwell acting like a bottleneck, while the bars and restaurants located on the lower floor mostly do not offer seats. The reason for this is perhaps the extremely quick pace at which the numbers of the entry gates are called, probably the quickest in all of Europe. The end result is that a couple of hours at the FCO can easily derail – at least temporarily – our sense of purpose and successfully strip anyone of any sympathy towards modern architecture.

The same interior and the same asphalt and concrete landscape of the airstrip become almost unrecognizable near gate B4 where old, decrepit couches akin to those of the classic LC4 type designed by Le Corbusier are set. As soon as one manages to secure a place, the thankful body sends a signal to the brain – it's fine, rest now, look around, breath in, listen. The grey of the ceramic tiles, pillars and ceilings suddenly start to take on distinct shades, the traces of children's noses and fingers on the glazing become visible, the conversations

of people nearby emerge from the white noise, as do shapes, colours, smells and sounds of architecture, that a moment ago, had, and made, no sense. Again we find ourselves embodied in time and place instead of giving in to the oblivion of waiting.

2. Musical chairs

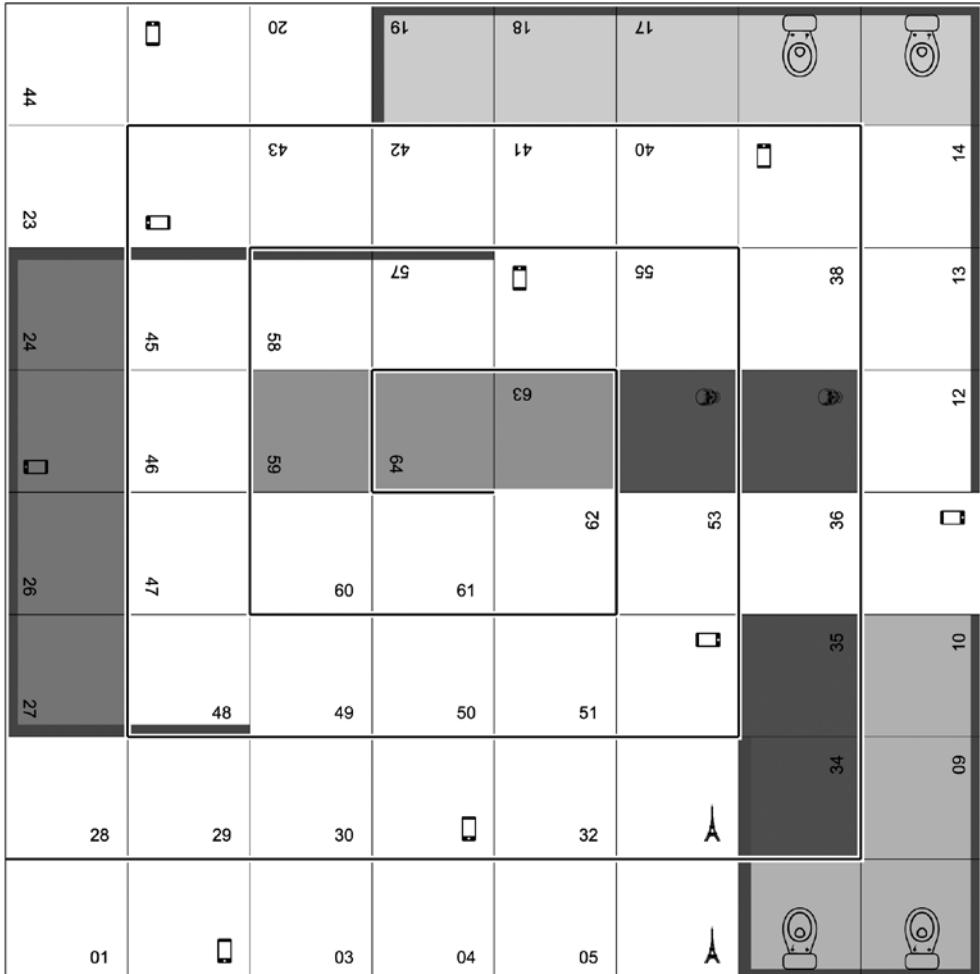
When we look back as close as the beginning of the 19th century, we can see that entire generations were still literally replacing their ancestors. Yet a group of factors – the technological development of farming, changes in nutrition, expulsion of cemeteries and workshops outside city centres, and finally, the wide availability of soap and cotton underwear made it possible for the demographic curve of Europe to make a steep climb, despite years of war and waves of migration. People started moving from the rural areas to the cities, only to dwell in spaces as cramped beyond belief as the one presented yet in 1948 in the Journal of the Royal Institute of British Architects: 8 persons per 6 square metres [2, p. 37–38]. It is hard to believe that in the contrasting landscape of 19th-century London for instance, so full of inequality, with the beautiful interiors of Bedford Square and Russell Square on one hand and the poverty ridden southern and eastern districts on the other – the musical chairs of existence were not as hot as they are today.

It would be naive to think that the assigning of social housing was free of speculation and allowed all those in need to find a roof over their heads. The sources, however, remain silent regarding events so scandalous that they could be comparable to the current gentrification processes of the central areas of London.

Heygate Estate, lying between Walworth Road and New Kent Road in the Elephant & Castle district, on the right bank of the Thames, a residential development designed by Tim Tinker and finished in 1974, quickly became an infamous place. Its architecture and spatial layout – the varied height of the structures, the system of walkways and corridors that organized pedestrian and vehicular traffic in a manner that allowed the space between the buildings to be entirely taken up by greenery, was not acknowledged until 2004 when a revitalization plan providing demolition of the estate was approved. In the air of accusations of corruption, law breaking in broad daylight and of acting against the interest of the public, in 2014 the plan entered its final phase.

Despite numerous analyses, the results of which cast doubt over the need to demolish the existing buildings and suggesting instead their revitalization, the estate was demolished. One of the premises of the plan was that 1,000 of the 2,535 new apartments would have cheap rents, so that the old inhabitants would have a chance to continue living in their old neighbourhood. In the end, only 79 will be provided. These and other breaches of the specified requirements – from the one stating that at least 20% of the area of the existing buildings and infrastructure to be reused to the facilities for renewable energy sources – cost the real estate developer but tickets to the Summer Olympic Games and a trip to Cannes. Such was the gift received by the head of the district council.

Gentrification is one of the facets of the deepening, global phenomenon of the polarization that takes place between the strata of society, as well as the rising antagonism between them. Wherever there is a demand for a certain area, it is gradually being taken away from its current users and handed over to those better off. Obviously, gentrification is not limited to the face of the callous, greedy real estate developer, as demagogues would have us believe.



Its mechanisms are much harder to personify. One only needs to take look at High Line Park in New York, an initiative praised by the entire world of architecture along with the various urban movements. Today, most of the founders of the initiative can no longer afford their own apartments, as the cost of rent per square metre in the vicinity of the Line has skyrocketed beyond their control [4, p. 16].

3. Hide-and-seek

According to a UN report on the year 2014, over a billion people worldwide live in a state of absolute poverty, with two billion inhabiting slums or in conditions that offer no access to basic amenities. Around half of all mankind is affected by so-called multidimensional poverty, while a section of the other half of the lucky ones who can spend more than five

dollars a day are plagued by wars and natural disasters. They do not care about the colour of their wallpaper or that of the bedspread. Furthermore, more than half of the population of the Earth really does not care about architecture. The only thing they wish from it is a roof that doesn't fall.

If the game is a prototype of culture [5, p. 3], a shelter is an archetype of architecture, an essence to which any architectural form can be reduced. When looking at the changes that have happened to the Polish landscape, especially that of the large cities of recent decades, it is hard to escape the feeling that they are not fit for that final game of hide-and-seek. The wide, ever wider streets, designed in accordance with the ravenous appetite for more space for cars, enclosed residential estates, no public access point to potable water, etc. – this is all that the architecture of the period of our small stability has to offer. It is hard to forget especially when the intellectual game with the very concept of inside and outside, interior and exterior that Gordon Matta Clark played for the 1975 Paris Biennale of Art becomes real in the picture taken by Mstislav Tchemov (AP) in Donetsk on June 1, 2015.

4. The goose game

Gänsespiel is an old board game that originated in Mediaeval Germany. Until the end of the 19th century it was one of the most popular games in the world. Sometimes the boards usually divided into 64 spaces, which allowed 2–4 players at least a quarter of an hour of leisure – were little works of art, rich in symbols and meanings. The kind used by the Templars for instance was a simulacrum of the pilgrimage to Santiago di Compostella.

But what is the link between the goose game and architecture? The answer is: board and chance. Just as in architecture, the board represents the world on a microscopic scale: regardless of the way it is presented, it has its own internal logic. It can have miserable, barely practical value and it can also be a work of art. Just as in the goose game, it all comes down to a roll of the dice and the layout of spaces. And just as in the real world, the latter is the only things that really depend on a designer. In the architectural game players can specify their own goal: whether it is the proper and original solution to a design problem, the creation of a work that will grace the pages of history books or exhibition panels, or perhaps only the interior of a filing cabinet, meeting both deadline and budget, or a paid invoice. Regardless, each and every one of us always returns to the starting point – the game of architecture never ends. It would not hurt, however, to remember the words of Jan H. G. Klabbers regarding the basic concepts of (game) design: you must always know who makes the rules, who is the player and who pays the bill [6].

Figure: Architecture game.

Rules: Each player in turn throws the dice. To start the game one must throw 6. Players move their token the number of spaces indicated by the dice. Two tokens may not occupy the same field at the same time – whenever one lands on an occupied field, that player's token goes back to the field the other came from.

Basically, the object of the game is to successfully land exactly on field 64. Along the way, many fields have special hazards or benefits for players who land on them:

inspiration [A] – a piece of good architecture is always inspiring: roll the dice again;

mobile [mobile phone] – roll the dice again: even – move to the next space marked with mobile; odd – you lose one turn;

labyrinth [toilet] – creative block, you’re eating your own tail losing two turns;

death – that’s not gonna work, lad... you have to start again; in the next round you subtract one of every number thrown;

concept design [09] [10] – roll the dice again: 1 or 2 – your client so full of enthusiasm accepts your first concept and signs the contract; you move to space marked as executive design (and lose two turns); 3 or 4 – your client rejects your ideas one after the other; you lose one turn; 5 – something’s wrong; you lose two turns unless someone lands on this field saving your ***; 6 – it’s brilliant but useless; you lock it in the sock drawer and start again;

self-promotion [17] [18] [19] – right place, right time – you’re moving forward; roll the dice again;

university’s call for entry [25] – roll the dice again: even – you blossom in academia, get new contacts and move to next space marked “inspiration”; odd – you lose yourself in bureaucracy buried under piles of grant applications; you’re stuck until someone lands on the same field at take (push?) you out of here;

executive design [26] [27] – you lose two turns;

building permission [34] [35] – roll the dice again: 1 or 2 – only some minor corrections, you lose one turn; 3 or 4 – some significant changes required; you lose two turns; 5 or 6 – forget the building permission, go back to start; in the next round you subtract one of every number thrown;

ranking [54] – roll the dice again: 1 – no one ever notices you, you lose two turns hit by the *Weltschmerz*; 2 – you get Razzie in Architecture and start again; 3 or 4 – you’re indifferent to rankings, you simply do your job; 5 – this is your time! next time you land on some messy space you’re safe; 6 – this is how victory tastes like! you start again;

acceptance of work [59] – roll the dice again: 1 – you will never get through the fire audit; go back to start; in the next round you subtract one of every number thrown; 2 to 4 – you lose one turn and roll the dice again; 5 – congratulation, you can move to [64], 6 – that was simply too much! You pass [64] and go backwards to [63].

approval for use and completion [64] – you win and... start again; in the next round you add 1 to every number thrown;

R e f e r e n c e s

- [1] Ashton T. S., *The Industrial Revolution 1760–1830* (1974), London 1961.
- [2] Benevolo L., *Le origini dell'urbanistica moderna*, Editori Laterza, Bari 1963.
- [3] De Botton A., *The Architecture of Happiness*, London 2006
- [4] Harvey D., *Rebel Cities: From the Right to the City to the Urban Revolution*, Verso Books, London / NY 2012.
- [5] Huizinga J., *Homo ludens* (1944), Routledge & Kegan Paul, London 1949.
- [6] Klabbers J. H. G., *The Magic Circle: Principles of Gaming and Simulation*, third and revised edition, Sense Publishers, 2006.
- [7] Navarro À., *I 10 migliori giochi di sempre* (2012), Italian edition: L'ippocampo, 2013.
- [8] Rizzi P., *Sulla natura della giocosimulazione / On the Nature of Gaming Simulation*, Scriptum, Kraków 2014.
- [9] Rybczynski W., *Home: A Short Story of an Idea*, Penguin Books, New York 1986.
- [10] Sica P., *Storia dell'urbanistica: L'Ottocento*, vol. 1, Editori Laterza, Roma-Bari 1991.

PIOTR PYRTEK*

PLAYING WITH MEANINGS

ZNACZENIOWE GRY I ZABAWY

A b s t r a c t

Meaning is an element of form wherever it manifests itself as an aesthetic aspect. Playing with symbols and allegories and the game of intentions and inspirations is an intrinsic element of art, so also of architecture which, too, needs meaning to become a valuable cultural element in the surroundings and a quality mark of perceptible form. Two interpretations: that of the author and of the observer seem to be its most prominent indicator.

Keywords: meaning, symbol, allegory, game, interpretation

S t r e s z c z e n i e

Warstwa znaczeniowa jest elementem formy wszędzie tam, gdzie przejawia się jako warstwa estetyczna. Zabawa symbolem i alegorią oraz gra intencji i inspiracji, jest nieodzownym elementem sztuki, a więc też architektury, która również potrzebuje znaczeń aby stać się wartościowym elementem kulturowym środowiska przestrzennego oraz znakiem jakości formy odczuwalnej. Dwie interpretacje: autora i obserwatora zdają się być jej najznamienitszym wyznacznikiem.

Słowa kluczowe: warstwa znaczeniowa, symbol, alegoria, gra, interpretacja

* M.Sc. Arch. Piotr Pyrtek, (Ph.D Studies) Faculty of Architecture, Cracow University of Technology.

1.

A game of intentions and inspirations, playing with symbols and allegories, or even manipulating perception, sensing the shapes and meanings is an intrinsic element of art. Meaning is an element of form wherever it manifests itself as an aesthetic aspect. Art, be it painting, literature, or architecture, is a sensual manifestation of the creator's thoughts, the materialisation of a game played with ideas and concepts, expressed by means of marks and symbols. Every space carries a sign – a message that has a narrative function – which can be interpreted. A sign is something perceived with the senses, something tangible that can be noticed by everyone. A symbol is a sign carrying a spiritual message, whose meaning is embedded in an idea and the sense of a work. Meaning can be analysed on three levels: the intention that the author wants convey, the form of the work, and the way a recipient perceives it.

The artist's play with ideas, with inspirations and meanings, encourages an intellectual game with the recipient. The discussion between the concept of a painting and the intention of the author is a real treat for an accidental viewer who – through indirect integration with the work – engages in an interpretative dialogue with the author. It's a game with a master. And although one can have an impression of excessive flashiness, often also resulting from the frequency of risky touching upon symbolic and iconographic motifs, the result of the game can quite often be very surprising.

2.

The iconographic presentation of an idea and meaning of the work is very risky, as it is the most popular method among art historians and, therefore, the most schematic, reducing the perception of paintings to works alone and putting them into ready-made academic pigeon-holes. A synthetic graphic denotation, combining in the most basic way the concept of shape and idea is boring and mundane. An idea should be an expression of meaning in a piece of architecture and a symbol, a mental shortcut substituted for a complex whole. Today's individual is surrounded by a completely different reality than their counterpart centuries earlier, when symbolism was reduced to a few defined signs and ideograms. The effort that he/she had to make to guess the functional or even conceptual intention of the author was rather scanty and the "convoluted intentions" of the other could easily be deciphered. Generally recognised ideograms give us a tool in the form of shortened information on well-known meanings and leave no room for a game of associations. Only the clever and well-thought out use thereof opens the door of imagination to new interpretations and meanings.

The meaning of architecture should never be too obvious... it should give an observer a chance to show what he/she can do, as in the popular game "Dixit"¹ it should leave room for guesswork... seeking associations between the narrator and the audience.

¹ Dixit – board and card game. Each player gets illustrated cards. The player whose turn it is chooses a card, lays it face down on a table, and gives an association that the card evokes in his/her mind. Then, the other players lay their cards. And here the game starts... other players have to match their associations with the intentions of the dealer. The box with the game says: „Hold your breath! The illustrations are revealed. They all have something in common – an enigmatic sentence. Now be careful, only one of the five images is the key. You'll have to use flair and intuition to find it while avoiding the other players' traps“.

Architecture needs meanings to become a valuable cultural element of the spatial environment and a quality mark of perceivable art. The language of shapes of an architectonic form is translated into a synthetic speech of signs, being nothing more than an algorithm noted down with the use of ideograms. The more varied and cogent is the notation, the greater is the value of the work. Playing with associations is a useful tool to define abstract ideas and concepts which can easily be transmitted to spatial forms. The more subjective the sign, the more fun it is to look for the true intention of the author, which has become a landmark of modern art.

A change in the way architecture is perceived expands the very concept of its perception, which becomes a direct cause of the modification of theory or architecture.

The author of a work, as an exponent of ideas and concepts, describes the phenomenon in a way known and comprehensible to himself. Contemporary architecture deploys a wide range of technologies, which allows for extensive manipulation with known solutions, both structural and related to meaning.

The same signs and symbols incorporated in a building by some may be perceived subconsciously (intuitively), at the level of archetype, and by others in a more conscious (rational) way. To be able to interpret the signs incorporated in a given work, one needs words, a sketch by the author of work explaining his or her intentions. This is how Dariusz Kozłowski describes his project of Resurrectionist Congregation Seminare [Seminarium Księży Zmartwychwstańców] in Kraków, presenting the complex threads of this ambiguous work [3, p. 63]:

*Gate of Knowledge portal with no finial
stone mastaba
stairs
stairs towards light
shades of the Chapel
and
coolness of the library
soothing of anxieties and fears (...)
woods
open space
surrounded by walls of trees
and misleading directions
false alleys
mythical trees
water
in this mirror
a trace of the column of Resurrection...*

A spectator, observer, passer-by... a third party not involved in creating a piece of art perceives the whole concept in his/her own way.. In the act of active, intentional perception a spectator reads the values incorporated in the work through his/her individual interpretative modifications. He/she creates his/her own architecture of meanings from the piece of work observed. A perfect example is the poetic description of Le Corbusier's chapel in Ronchamp by Jan Bialostocki [1, p. 107]:

.... lines of the plan run slowly along the curving of the slope, like water seeking the most convenient and the shortest way to its destination, washing them capriciously, in a unambiguous and obvious way enclosing cosy, eternal forms which can be sensed and modified by a sensitive human hand, but which cannot be captured by steel compasses”.

“Growing in this plan, resembling a natural geological extension of the hill, are white, fleshy walls here and there ripped through by windows; they are a robust creation of the massive, bulged ceiling which, like a brown bursting coat, juxtaposes its lushness of rough concrete with the relative flatness of the walls. The organism of the building grows from the hill like a living creature...”.

3.

According to Aristotle, asking a question about the reality is always preceded by establishment of facts and, at the same time, anticipates the answer. One should ask “about something” “in relation to something”, because asking only “about something” is like not asking at all. He also thought that the question “why” should be asked only when something is complex, because the purpose of cognition is to discover in reality the nature of relation between what belongs and to what it belongs. Interpreting means asking questions in order to achieve a better understanding of something. Seeking to understand a piece of architecture, like seeking to understand another human being, is a cognitive process consisting of two aspects: external (tangible form) and internal (meaning – ideas).

As Etienne Gilson puts it: “Sense or meaning is no longer a word, no longer the voice of the speaker or an object in whatever meaning of the word. The meaning so free of any materiality that it even escapes sensual perception” [2, p. 205].

Intentions are never homogeneous: they are a combination of the intended aesthetic vision, and also knowledge, experience, and the social and cultural habits and patterns assimilated by the artist, and also the intentions and expectations of the ordering party – the one who pays for the work. An author creates his/her work selecting an appropriate means of expression. Only after ideas are transformed into a spatial form can this form convey intentional meanings. Quoting after Dariusz Kozłowski *In order to exist architecture, perhaps more than other disciplines of art, needs a pretext, rationale, theory, idea or ideology to justify the artist's doings in his/her own and in the audience's eyes* [4, p. 24].

R e f e r e n c e s

- [1] Białostocki J., *Refleksje i syntezy ze świata sztuki* (Reflections and Sytheses from the World of Art) Warszawa 1978.
- [2] Gilson Etienne, *Elementy filozofii chrześcijańskiej* (Elements of Christian Philosophy), Warszawa 2003.
- [3] Kozłowski D., *Projekty i budynki. Figuratywność i rozpad formy w architekturze post-funkcjonalnej*. (Designs and Buildings. Figurativeness and Disintegration of Form in Post-Functional Architecture) Kraków 1992.
- [4] Kozłowski D., *Architektura czyli sztuka budowania rzeczy* (Architecture or the Art of Building Things), ARCH, Warszawa 2011.
- [5] Krenz J., *Architektura znaczeń. Idea ujęta w kamień* (Architecture of Meanings. Idea captured in stone), Gdańsk, Wydawnictwo Politechniki Gdańskiej 1997.
- [6] Krenz J., *Ideogramy architektury. Między znakiem a znaczeniem* (Ideograms of architecture. Between Sign and Meaning), Pelplin 2010.

AGNIESZKA REK-LIPCZYŃSKA*

**PLAY WITH COLOURS.
MODERN STRATEGIES OF PLAY WITH COLOUR
IN ARCHITECTURAL OBJECTS**

**GRA W KOLORY.
WSPÓŁCZESNE STRATEGIE ZABAWY KOLOREM
W OBIEKTACH ARCHITEKTONICZNYCH**

A b s t r a c t

Modern technologies so willingly used in the creation of image of the modern architecture strengthened the primacy of the vision above other senses. The elementary sensory feeling – the main attribute of seeing sensations – is the phenomenon of colour. Colour ideally corresponds to the modern activity of change – itself a factor with high dynamics and variation – it is both a value in itself and a value creating various special relations.

Keywords: colour, colour in architecture, modern architecture, multimedia

S t r e s z c z e n i e

Nowoczesne technologie tak chętnie wykorzystywane w kreowaniu wyrazu współczesnej architektury wzmacniły prymat wzroku ponad pozostałymi zmysłami. Elementarnym zaś doznaniami zmysłowymi, będącym głównym atrybutem doznań wzrokowych, jest zjawisko koloru. Kolor doskonale odpowiada współczesnej aktywności zmiany, sam będąc czynnikiem o dużej dynamice i zmienności, stanowi zarówno wartość samą w sobie, jak i wartość kreującą rozmaitości stosunki przestrzenne.

Słowa kluczowe: kolor, kolor w architekturze, architektura współczesna, multimedia

* Ph.D. Arch. Agnieszka Rek-Lipczyńska, Department of Theory of Architecture, History and Conservation of Buildings, Institute of Architecture and Spatial Planning, Faculty of Building and Architecture, West-Pomeranian University of Technology in Szczecin.

The operation of play and fun in new contexts broadens the area of possible human experiences affecting the character of modern culture alongside other new practices. What is more, as claimed by Gadamer, culture without the element of play cannot be imagined at all since play is the basic function of human life [1, p. 25–84].

Play always requires participation, therefore, its feature is the action of communication. As shown by Gadamer, there is no distance between the one who is playing and the one who is watching the play. It is therefore possible to draw the viewer into the play. Such practice is showed by any modern art activity art aimed at decreasing or even doing away with the distance between the viewer and the work of art. The strategy of drawing into play with the work of art or architecture can assume essentially various forms where two are most common. The first is related to the mental contact with the work of art, so that it is contemplative in nature, and the other consists in the interaction with the work of art, together with the impact on its form, where one strategy does not exclude the other and vice versa. Both strategies are obviously based on the physical contact with the work of art but for the first strategy, the aspect of identity of the work of art is important and for the other one, its formal expression is in the centre of focus. Colour is a pretext here, as a dynamic factor of the environment and human perception of reality, it is a good reason for interpreting the two strategies in play with the work of architecture. The identity of the work is hidden behind its reproduction. It is always true that to see something you need to think something while you are seeing. Here the focus is on free play and not play that is targeted at any concept. This interaction makes us wonder what that thing is which through free play is created between the ability to create images and the ability to see and understand [1, p. 38].

To describe the first strategy, we need to refer to the identity of the work itself that provides this mysterious drawing of the viewer into the play of the work of art or the work of architecture. It is hard to play with inanimate matter that even has no desire to send a message to us. Works of art and architecture contain an element of hermeneutic identity in themselves, which entails that the message coming from the work demands that the viewer receive it. The challenges emanating from the work demand that the viewer respond, and who, if they accept this challenge, must respond to themselves. The afterthought is important here since it is the play of thoughts in every work that is the true challenge for the appropriate reception of the work. As stated by J. Pallasmaa: in the experience of the work of art, a peculiar exchange occurs. I lend the space of my emotions and associations and the space lends to me the atmosphere that stimulates and triggers my thoughts and experiences [3, p. 16].

The peculiar drawing into the space of colour is undoubtedly the case for the Rainbow Panorama architectural installation by Olafur Eliasson, built on the roof of the Museum of Art in Aarhus, in Denmark, in 2011. This centric tunnel built from coloured glass tiles introduces the viewer/player literally into the space of colour. In the colourful glass tunnel we experience the colours in two ways. The colour is perceived here as planar – in the colour glass tiles and at the same time appears spatially, so it is transparent and fills the three-dimensional space. Therefore, we receive the colour as substantial and spatial at the same time. The viewer “immersed in colour” perceives the surrounding reality of the city panorama, transposed through colour. Therefore, everything changes in its surroundings. The phenomenal effect of the rainbow is also discovered in the timely installation of the Korean artist Kimsooja, implemented in the Palacio de Cristal, Madrid. The surfaces of the palace glass covered by foil that refracts the light give inside a spectacularly colourful phenomenon. An example of confrontation of the colour with the art of architecture is undoubtedly also the

patio of the MUSAC Contemporary Art Museum of Castilla in Leon (winner of the European Union Prize for Modern Architecture – Mies van der Rohe Award in 2007). The inside of the yard of the museum built from great geometrical tiles of colour glass is a space of colour, art and architecture. The museum also employs the modern idea of building mutual relations between the work of art and its recipient promoting in its program the activity of the most modern art and a wide range of workshops, symposia, and other activities strengthening the interactive reception of art. The examples of colour, transparent architectural elevations are abundant: the Palace of Congress in Montreal, the Kayseri Ice Ring in Turkey by BahadirKul Architects, 2012, and all the above examples draw us into a game of light and colour building a certain unreal feeling of being in the centre of a colourful rainbow pallet.

The other strategy of play with the work of architecture, based on the interactive co-creation of the work, full participation not only at the level of feeling of sensory sensations but also manipulation with the work itself, is best seen in the architecture of medial facades. The net communicative and media perspective is important here: important mainly due to the emergence of new media in the work of architecture. In this case the manner of formulating the message and the participating reception, which is called by Ryszard W. Kluszczyński the reception performance, are changed. The strategies of interaction between the recipient and the medium inherited from computer games are found in modern architecture [4, p. 40]. An important and even key element here is the colour which for the medial facades appears as a free colour with its own light, so it appears to us as a dynamic phenomenon. For the perception of colourful light, we are close to recognizing colour as a value detached from the quality or form of the object. It becomes an abstracted value close to the “ideal colour” and through the lucidity it is free from the form and value of the substance.

The literal transposition of play into the world of creation of the architectonic space is the Rubik Cube interactive façade by Javier Lloret. This student project that assumes manipulation with an interface in the shape of a Rubik's cube providing for the change of colour of the building elevation, implemented in 2013 at the Ars Electronica Centre, Austria, is the best illustration of the second strategy of play with the work of architecture described here. Based on this concept, a phone application will be developed soon for free creation of appearance of the colourful composition of the façade. The projections in the architectural elevations, 3D mapping, are a new and more and more commonly shown display of audio-visual art implemented by video jockey environments that consist in the “animation” of the building facades. This phenomenon, based on spectacular multimedia presentations containing an element of play with colour, light and sound, is a kind of performance. The architecture assumes on one hand a stage scenery in these performances and on the other, such activities stress the hybrid importance of architecture bonding the physical space with the digitally generated space. Many are ambitious projects implemented with momentum and according to an interesting conceptual program. An example would be Augmented Structures v1.1: Acoustic Formations Public Artwork, a project implemented in Istanbul in Turkey in 2011 by AperDerinbogaz and RefikAnadol, where the multi-media operation arranged on one of the architectural elevations is a visual transformation on the specially designed surface or an interactive operation on the elevation: the project by the Portuguese-Belgian group Ocubo, implemented in 2011 on the elevation of the WiliamHorzyca Theatre in Toruń under the third edition of the International Light Festival Skyway. This project allowed the players to generate an avatar – their own colourful fish – and add it to the virtual aquarium shown on the elevation.



III. 1. Rainbow Panorama, Olafur Eliasson, 2011 Source: http://commons.wikimedia.org/wiki/File:Eliasson_Your_rainbow_panorama_2.JPG

The work communicates with us. The work of architecture speaks with the surroundings, with the user, and increasingly commonly it also speaks with the forces of nature, giving in to them and being shaped by them, as in the case of kinetic facades conversing with the wind – the best example of such projects are the kinetic facades by Ned Kahn or the Swiss Blur Building, sunk in the cloud, and beyond any standards of classification. The work of modern architecture responds to movement, light, sound, and variable conditions of the surroundings. Affected so, with the modern technology, it has the ability to resonate with the impulses coming from the surroundings. The work communicates with us with the language of colours, textures, shapes and often allows us to shape it actively. The colour ideally corresponds to the modern dynamics of change, as the factor with high dynamics and variability it is a value in itself and a value that creates various spatial relations. The Greek idea of colour (chroma) was associated with motion and change. This change was suggested by the process of photochemical transformation of the purpuric pigment popular at that time (obtained from murex), which in the process underwent a series of changes from yellow, through yellow-green, green, blue-green, blue and red up to violet. This phenomenon was so widely commented in the ancient literature that it solidified change as the main feature of colour. This instability of colour functioned through successive ages and translates into the understanding

of this phenomenon today as well. Modern science still encounters multiple obstacles on the path to the total perception of colour.

The mentioned “eye touch”, as our western culture has wanted since the origins of its history, led among the human senses. Our relation with the world is oculocentric, but this model of perception of reality is now subject to wide criticism. The modern overproduction of pictures means that the eye has become insensitive to the stream of visual sensations that flow through us, not engaging us emotionally. The hegemony of the eye is, as it turns out, a rather new phenomenon, although anchored in the Greek philosophical thought and optics. The increased meaning of the eye is parallel to the development of our western separation of the ego from the surroundings. The changes that occurred in our sensory and perceptive experience of the world are reflected in works of art and architecture. Modern works of architecture, aimed mainly at attracting the eye, fall into the stream of flowing images. The visual character of the work of architecture often takes on a purely scenographic nature. The latest architectural projects promote the type of architecture that is effective, derives the expressions from the strategy of advertising, and affects the viewer with persuasion. The attractive glowing, colourful and moving elevations try to draw the viewer into the play known from the mass media. The modern medial facades do not make us meditate on the work, and prevent or exclude the contemplative reception of its spatial values. The change itself becomes the value. The variation they offer to us is indeed attractive but means that the work escapes the continuum of time. The work of architecture ceases to continue to be. At the same time, as stated by M. Misiagiewicz, the changing reality determines the way of being in the world, where the models of valuation of culture are subject to constant modifications [2, p. 117].

The work of modern architecture is more and more commonly a body covered with an intelligent skin. It is a frightening composition, ideal in terms of technology and material, not affected by time, not aging, not covered by patina, existing beyond time.

R e f e r e n c e s

- [1] Gadamer H. G., *Sztuka jako gra, symbol i piękno*, Kunst heute, Graz: Styria, 1975.
- [2] Misiagiewicz M., *Architektoniczna gra*, [w:] *Definiowanie przestrzeni architektonicznej – granice architektury*, Czasopismo Techniczne, Architektura, Wydaw. PK, Kraków.
- [3] Pallasmaa J., *Ocza skóry*, Instytut Architektury, Kraków, 2012.
- [4] Skórzyńska A., *Gry i zabawy w perspektywie performatyki. O potrzebie badań interdyscyplinarnych w ludologii*, Homo Communicativus, 2008.

MAŁGORZATA ROGIŃSKA-NIESŁUCHOWSKA*

GAMES AND PLAY WITH LIGHT IN ARCHITECTURE

GRY I ZABAWY ŚWIATŁEM DZIENNYM W ARCHITEKTURZE

A b s t r a c t

The paper deals with the issue of the influence of daylight on the creation of architecture in the terms of designers' play with light in the architectural space. Using the examples of contemporary realizations of some art museums, the work demonstrates the impact of exploration and experimentation conducted by the creators of visual arts on the design styles and architectural solutions. It also reveals the historical continuity of the use of light manipulation in architecture.

Keywords: daylight, natural lighting, light manipulation, architectural creation, architecture of contemporary museum, art and architecture

S t r e s z c z e n i e

Artykuł dotyczy problematyki wpływu światła dziennego na kreację architektury poprzez pryzmat gry i zabawy projektantów światłem w przestrzeni architektonicznej. Posługując się przykładami współczesnych realizacji muzeów sztuki, praca wykazuje wpływ poszukiwań i eksperymentów prowadzonych przez twórców sztuki wizualnej na style i rozwiązania architektoniczne. Ukaże również historyczną ciągłość stosowania manipulacji światłem w architekturze.

Słowa kluczowe: światło dzienne, oświetlenie naturalne, manipulacje światłem, krea-cja architektoniczna, architektura współczesnego muzeum, architektura i sztuka

* Ph.D. Arch. Małgorzata Rogińska-Niesłuchowska, Department of Visual Arts, Faculty of Architecture, Gdańsk University of Technology.

1. Introduction

Progress in architecture and arts is implied by scientific discoveries, the development of science, philosophy, and technological advances. In addition to new elements, the attitude to the past significantly influenced the evolution of styles. Very often new trends resulted in a different interpretation of historical elements, inspired a creative play with old forms, appealing to the knowledge and ability of the contemporary audience to interpret. However, some trends, such as the early modernist movement, remained strongly in opposition. A great deal of consideration relating to new concepts of art, work and language of art, were supported by experiments, artistic free play, and exploration of new techniques and materials, including play with light and dark.

Sunlight, which determines the biological existence and the cycle of human life, has always had an impact on architecture. In addition to practical applications, light was used to express beliefs and values that could not be represented in a material form. As early as in ancient times, thanks to astronomy, architects not only used the modulation of light, but could also send it to a desired location at a certain time. The temple of Amon-Ra in Egypt and the Pantheon in Rome are excellent examples of religious architecture where a divine strength is manifested by light.

In Christian culture light is a symbol of the presence of God. Filtered through the stained glass of mediaeval windows, the dim and vibrating “divine” light filled interiors of Gothic cathedrals, creating a mysterious and spiritual space. In the Renaissance, light returned to its rational functions as a discreet and neutral medium. It was used to emphasize the beauty of architecture – to model and reveal geometry and precision of forms. A notable example is the lighting of the Tribune at the Palazzo Uffizi in Florence. In the Baroque and Counter-Reformation periods, light resumed its mystical function of popularization and visualization of religious beliefs. Some elaborate theatrical arrangements of light (chiaroscuro contrast, blinding flashes, hidden light sources, illumination) induced optical illusions blurring the distinction between reality and imagination [5, p. 6–8]. Spectacular lighting deformed space, providing some illusory dimensions, changing the sense of size, imitating its division or the disappearance of partition [6, p. 137]. The baroque churches in Rome by Bernini and Borromini are good examples, but in particular the famous dome of the Church of San Lorenzo in Milan by Guarino Guarinini, which gives the impression of floating upwards as a promise of happiness in heaven.

2. Light as a medium of a new modernist philosophy – games and experiments with light in time and space

The fascination with natural light in modernist art was caused by changes in philosophy and worldview. Light varying in time expressed moving away from static absolutism toward liberal reality and relativism. This process was also implied by science, where some substantial changes in the view of light and its properties took place. The dual nature of light, wave and particle, was discovered, and the interest in this was reflected in art.

Impressionists initiated a new trend in painting, which was then continued by neo-impressionists and some representatives of post-impressionism looking for ways of visualizing the effects of light by means of painting. Modernist artists, derived from the Bauhaus school,

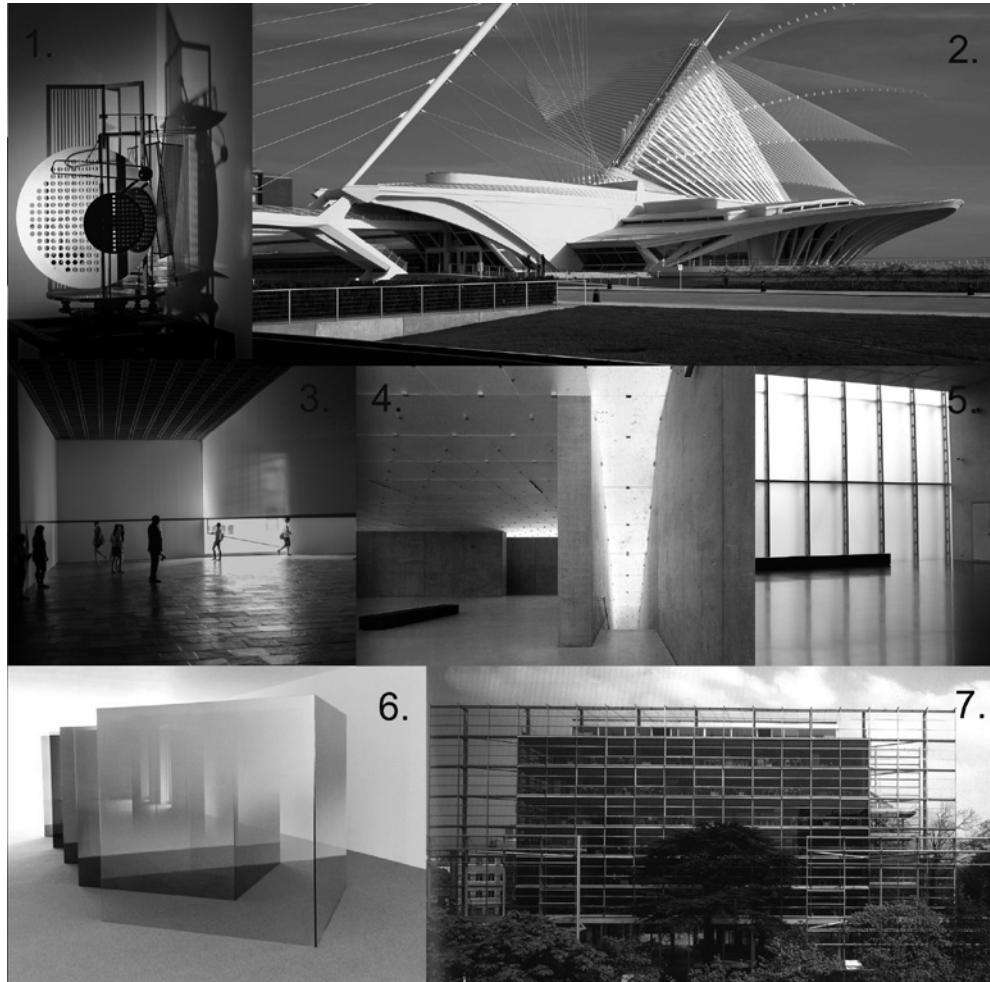
began to use light as a creative medium. Experiments and fun related to the presence of light in space and its interaction with materials. László Moholy-Nagy, one of the creators of kinetic sculpture, created a kind of “light fresco” by projecting the movement of light and shadow on the wall surface using his “Light-Space Machine” and space-modulators – three-dimensional compositions modulating light [5, p. 9]. Gyorgy Kepes studied the relationship between the phenomenon of light, organic forms and new technology. As a result of his interests in the social impact of art and his efforts to connect art with the latest advances in science, numerous works referring to light and architecture were created, e.g.: the first programmed “wall of light” on the facade of Radio Shack in Boston (1949), and the kinetic “walls of light” in KLM headquarters (1959), New York Times Square and Harvard Square subway station in Cambridge. [1]

Since the 60s, a group of Californian artists, the movement “Light and Space” (Robert Irwin, James Turrell, Larry Bell and others) has been conducting some creative exploration concerning the effect of light on space, both indoors and outdoors. In contrast to kinetic performances they look for peace, contemplation, fleeting effects of light, and shadow games. Robert Irwin creates large installations and contemplates light in large spaces and in the open air. Similarly, James Turrell, exploring the issues of light perception, creates unusual works made up of space and light only, drawing attention to the physical presence of light as an object, not only as a source of lighting. Larry Bell arranges sculptural compositions of glass. He is interested in the mutual relationships between art objects, and their interaction with the environment of art. His installations include sequences of simple systems, based on the cube, with panes of transparent, stained and reflective glass, placed in light-filled interiors.

3. Light as a medium of architectural idea in contemporary temples of art

Awareness of the needs and opportunities for widespread use of daylight in buildings increased radically in the era of industrialization and technological progress of the nineteenth and twentieth centuries. The technological revolution brought about absolute freedom of expressing the ideas of light, which led to countless experiences associated with it. Frank Lloyd Wright, Le Corbusier, Alvar Aalto and Louis Kahn – they were the first to draw attention to the aspects of light as energy trapped in space and noticed its metaphysical significance.

The museum is a place where special attention is paid to the quality of light whose functions are numerous: from lighting the exhibition by creating ambient light which builds, organizes and prioritises the space and also creates the atmosphere of the exposure to symbolic functions. Light as the leading topic of museum architecture was introduced by Louis Kahn. When designing the setting for The Kimbells' fine art collection, Kahn wanted to create a space with metaphysical meaning, reflecting the absolute reality in which the art existed. The vision of silence as depicted by light was a theme developed in the design process in each element of the project. The main entrance was arranged as a sequence of experiences helping to leave behind the ordinary light (“profane”) and enter the “holy light” of the museum. Kahn achieved his purpose realising the unity of matter, space and light in the structure of the building. The use of traditional forms was combined with a precisely developed lighting technology – daylight enters through the linear skylight and falls onto a precisely calculated curvature of a reflector, and is further transmitted to the shell of vaults. M.S. Millet called the effect achieved by Kahn “holy light”, which suggested space eternity and immortality [4, p. 160–161].



- Ill. 1. László Moholy-Nagy, *Light Space Modulator* 1922–1930 (MoMa, New York, Workshops for Modernity)
- Ill. 2. Santiago Calatrava, Milwaukee Art Museum
- Ill. 3. Robert Irwin, *Scrim veil/Black rectangle/Natural light* 1977 (Whitney Museum of American Art, New York, installation Light and Space)
- Ill. 4. 5. Peter Zumthor: Kunsthaus Bregenz
- Ill. 6. Larry Bell: *6 x 6 An Improvisation* (Chinati Foundation 2014)
- Ill. 7. Jean Nouvel: the Fondation Cartier pour l'art contemporain Paris

Introducing light and landscape to the interior, the glass wall has become a favourite element of contemporary architecture. The properties of glass enabled the architects to create architectural concept not by building a geometric solid but by a play of light. This led to the etherealness in architecture, producing effects of dematerialization and elusiveness through

creative manipulations and the effect of illusion, mirror images, blurring of contours, weakening of contrasts, filtering and modelling light, the penetration of space. As a result, the facades of buildings are difficult to define and isolate from the environment. The master of dematerialization, Jean Nouvel, is the author of a spectacular example of “ephemeral architecture” – the Cartier Foundation for Contemporary Art in Paris, whose facade is composed of many layers of transparent glass walls. The impressions created by the building resemble the impressions about the exhibitions of the glass installation by Larry Bell.

Deconstructivist building, which takes the form of a contemporary sculpture and becomes the means of expression, was readily used in the architecture of museums. Architects used the play of light to deepen the impression of deconstruction and dematerialization, making use in an intelligent way of the relationship between the building and the environment. The “dancing” building facades by Frank Gehry, which are covered with glossy metal sheets, “ripped” with glazing and often surrounded by water, sparkle in the sunshine. The countless and various reflections create the impression of an unreal image (Art Museum in Minneapolis, Guggenheim Museum in Bilbao and others). Daniel Libeskind emphasizes the communication role of architecture as a sign of the place. He creates sculptural buildings as dynamic systems of solids, consisting of shiny surfaces intersected irregularly by narrow strips of glass. The leading role of light is particularly evident in his method of arranging the interior as a sequence of dynamic designed images. The author engages the principle of light perception in their narrative – he uses light negatives, light contrast, chiaroscuro and the phenomenon of photropism in order to achieve extraordinary visual effects and a strong impact on the viewer (Jewish Museum in Berlin, Imperial War Museum in Manchester). The artists of the “Light and Space” movement, such as James Turrell, use similar effects in their work. They are also characteristic of the baroque interior.

The Kunsthaus Bregenz by Peter Zumthor is a manifesto of the idea of minimalism in architecture. The form and unconventional structure of the building is subordinated to the concept of natural lighting of a three-storey gallery by “soft”, diffuse daylight flowing through the glass ceilings. The outer form of the building in the character of a translucent cube (called the “tower of light”, “piece of ice” or “immaterial ghost,”) catches the light with its entire surface, then filters it by multiple reflections from the ceiling and wall, and spreads to the interior. The raw interior of the gallery is filled with some extraordinary ambience, created by the award-filtered “special light” that creates the climate of an “underwater world”[2].

The Bellevue Arts Museum by Steven Holl is dedicated to the idea of triad, derived from the unity of art, science and technology, as well as to the philosophy of connecting the experiences of “watching, studying and creating” pieces of art. This idea is expressed by natural lighting of individual galleries. The lighting carries a symbolic meaning. Three different lighting conditions symbolize different concepts of time. Linear time is represented by the uniformity of northern light, cyclical time is expressed by southern light from the upper-side arc glazing, and gnostic time is reflected by light flowing from skylights [3, p. 200–204]. The symbolism of light and its precise handling refer both to the ancient Egyptian temples and the latest discoveries in science and technology.

The game of chiaroscuro, which stands in contrast to the white surfaces, emphasizes the rhythm of dynamic forms of structural elements designed by Santiago Calatrava. The louvred movable roof, inspired by the wings of a bird, in the Milwaukee Art Museum is the huge shading device referring to the “Shadow Machine” (kinetic sculpture designed by the architect for the exhibition in MoMA in New York). It is the most striking element of the museum’s structure and also a symbol associated with light. The vivid movement of

chiaroscuro, introduced to the interior of the building, brings associations with projections of light and shadow by using the “Light-Space Machine” or light modulators.

4. Summary and conclusions

The examples of museums presented in the article show that playing with light may be a creative tool in the process of making architectural conceptions. With the use of daylight, the architect introduces the viewer into a new illusory reality, in which the matter seems to lose its volume and weight, and the space is deformed and lacking in dimensions. This game is based on the imagination, the play on senses, it appeals to dreams.

Some similarities and correspondence in the ways of playing with natural light are visible in both architecture and the visual arts. This is due to the interest in light as a medium in the modernist movement of the Bauhaus school. The interaction of light and materials becomes the theme of study they both share – playing with light and glass and experimenting with new materials. Both architects and visual artists have been asking the question of whether light is both the means of visualizing reality and an independent element in space and are trying to find the answer. Artistic effects – the quality of lighting, illusions – can be compared with the best historical realizations, because games and the manipulation of natural light have been known since ancient times.

The artistic experiments carried out by the “Light and Space” movement also concerned artificial lighting. Currently, the area of exploration has been extended to new inventions in lighting technology, information technology, multimedia technology and intelligent glazing systems, adapting to changing environmental conditions. Modern buildings are designed in the context of their day and nighttime appearance. Their facades take over the functions of interactive connectors for receiving and processing external and internal stimuli.

It seems, however, that the part of creativity associated with natural light remains invariably important in architecture and art because it proves to be everlasting, friendly and close to nature and humankind.

R e f e r e n c e s

- [1] Curry D., *György Kepes The New Landscape „Art & Architecture Collection”* July 1948, <http://www.artsandarchitecturecollection.com/arts/gyorgy.kepes/index.html>.
- [2] Davey P., *Zumthor the shaman „The Architectural Review”* October 1998, nr 1220.
- [3] Lampugani V. M., Sachs A., *Museums for a New Millennium. Concepts. Projects. Buildings*, Munich 1999.
- [4] Millet M. S., *Light revealing architecture*, New York 1996.
- [5] Plummer H., *The architecture of natural Light*, New York 2009.
- [6] Twarowski M., *Słońce w architekturze*, Warszawa 1962.

KINGA RYBAK-NIEDZIÓŁKA*

PUBLIC SPACE PLAYING WITH STREET ART

ZABAWY STREET-ARTU Z PRZESTRZENIĄ PUBLICZNĄ

S u m m a r y

Street art is a particular kind of art, not only because of its spatial context, but also due to its ability to redefine the character of a place. The artistic actions related to street art influence the reception and form and function of a space. This article discusses the image, sculpture and performance as fields of a kind of game between the artist and recipient in the public space.

Keywords: street art., graffiti, urban planning

S t r e s z c z e n i e

Street art. Jest specyficznym rodzajem sztuki, nie tylko ze względu na kontekst przestrzenny, ale na dużą moc redefinicji charakteru miejsca. Działania artystyczne w których się mieści w istotny sposób mogą wpływać nie tylko na odbiorę, ale również na funkcję i formę danej przestrzeni. Niniejszy artykuł zwraca uwagę na obraz, rzeźbę i performance – jako pola na których odbywa się rodzaj gry artysty z przestrzenią i odbiorcą.

Słowa kluczowe: street art, graffiti, projektowanie urbanistyczne

* Ph.D. Arch. Kinga Rybak-Niedziółka, Department of Land Art., Faculty of Horticulture, Biotechnology and Landscape Architecture, Warsaw University of Life Sciences – SGGW.

1. Introduction

Public space is less and less a static phenomenon. There are some reasons – the first being the stronger necessity to show, to emphasize something, and a second is more and more apparent advertisement. Their elements are an incessant game with user/spectator in a given public space and with the space itself. These games should be very individual, on the verge of legality, or purely commercial. These activities can be a kind of art, often very spontaneous, but could also be a stimulation to sell something. There are instances of these two functions being linked. In its variety of art forms, street art is relatively popular. There is the kind of art that is located where actions with planar graphic elements like *murals*, *stickers*, *tags* or graffiti take place, but there are also sculptures, gardens (*guerilla gardening*), and installations. In street art we find activities happening connected with group expression (*flash-mob*). On the border of street art are all the activities made with light installations or light sculpture technologies. Generally we could divide all of these activities into three categories in special context – picture, sculpture, and performance.

2. Picture

Visual street art has a long historical tradition. One could say that the first piece of art in this movement were the cave paintings made by our ancestors [5]. Nowadays in spaces such activities are all manifests connected with the fights of earlier occupants (like slogans vowing to fight with invaders during the time of insurrection) or sooner (one of the most common pictograms of very great importance layer – the sign of Fighting Poland, or the “Solidarność” caption made by Jerzy Janiszewski). Also important were other activities, too like all electoral posters.

The origins of street art are connected with United States and hip-hop culture. It was there that the first slogans and symbols of graffiti art were created. The pioneer of these illegal and sometimes vandalistic activities was TAKI 183 from NY Bronx[5]. In Poland, for a long time the most common were murals with a political message. The precursor of artistic graffiti in our country was Włodek Fruczek in the 1970s. His works were very deliberate and had a strong influence in the spatial context on the site where they were created. Nowadays the most popular are activities which are a kind of art manifesto, and advertisements of course. Author's activities in public spaces may be just a slogan, less (*throw-up*) or more complicated (*piece*) [5], or signature, or they could also be somebody's or something's symbol (*tag*) [2]. The semantic layer is very important here, as in war time, visual street art is often a kind of transmission, a type of rebellion or comment, not only in the political meaning, but in the spatial meaning too, which is created in a particular place. The legality of artistic works here is very important too. In some examples as with the work of one of the most famous street art artists – Banksy or among Spanish artists – one basic rule is that “When it is legal it is not graffiti” [2] in the sense that all that only recalls commercial tendencies is not art. Thus, anonymity is very popular among street art creators. It is very important for the artists' consciousness that they can do more than legal creators [2]. An appropriate example from the border between art and vandalism is *bombing* [2]. This is an activity when artists meet in a particular part of the city or in place and paint its space in one, previously planned motif. This is

a dangerous game with city's space. Such actions have been organized in New York, London or Madrid. These days graffiti exists as illegal and legal kinds of street art in Poland (one example is the wall of the racecourse in Służew in Warsaw on the Puławska Street side) and as spontaneous activity, unfortunately often connected with damage to elevations and public spaces [5].

Another kind of artistic manifest are *murals*. These are not always legal either, like for example those by Banksy or the Spanish artist Muelle [2]. In Poland artistic murals were created after 1989, which was related with the wider market of graphic tools available after the political and economic changes in our country. We should not forget about the advertisements from the 1960s and 70s, painted on walls and often created by famous artists. Some of them can be seen nowadays (in Praga in Warsaw for example). Interesting examples of early murals were works by the Twoczywo group (this was founded by Robert Czajka, Krzysztof Sidorek and Mariusz Libel), who created as did artists in times of transformation, they were influenced by 1930s artists like Malewicz or El Lisidzky [6]. Recently murals have become a very popular and trendy form of art which interplays with the public space. Their appearance is often a kind of revitalization of places not only in the visual but also in the social sense. Creators of murals, most of whom decided to work legally, are recognized artists. Murals fall into two groups of style. The first is connected with more literal works, while the second deals with an abstract style. [6] [7]. Artists worth seeing in this first way are: Mariusz Waras (*M-city*), Damian Terlecki (*Czarnobyl*), Sławomir Czajkowski (*Zbiok*), Daniel *Chazme*, and the ETAM Group. Interesting abstract creators include Autone, Pener, Roem or Nawer. What is important is that all these artists have a sense of space and the places where their works are located [6].

In the meaning of street art there are activities on larger scale, but noticeable too,. These are *stickers*, *patterns* or *lighting graffiti*, the last of which are often installations like sculptures. *Stickers* are very popular manifestation of ideas and adherences to all kinds of clubs or political groups. They could also be a kind of art, like for example the stickers in the windows of the ASP in Warsaw. They are small pictures or slogans in black and white or colourful style [5]. They are often located on bus-stops or public transport. Their authors are anonymous like most creators of *patterns*. *Patterns* are very popular in the public space too. Sometimes they are used in advertisements, but may also be a kind of manifesto. The aforementioned symbol of Fighting Poland is also a kind of pattern. The most important in creating patterns is the design [13]. An artist who very often uses this tool in their work is Banksy [7].

Lighting graffiti exists in several forms. This could be a screen on a wall or some kind of animation display from a projector. This could also be the whole wall which is one monitor. This technology is most popular in advertisements, but they could be used by artists like *lightwriting* or *videoart* as well [6].

Worth seeing is another trend connected with the visual game in public space – *reversed graffiti*. This is a kind of revitalization of walls or whole spaces by ordering earlier graphic layers [7]. They are often overpainting of a surface in one colour or creating space murals in tunnels, overpasses or subways. An interesting example of this activity are the Fast Tram stations in Poznań – “Pestka”. This kind of art is very powerful in the revitalization of abandoned spaces. One of the most famous artists in world in this trend is the Brazilian creator Alexandre Orion [8].



III.1. Banksy, Sweeping Under Carpet, Hoxton, Anglia (www.wilko.com); III. 2. Window of ASP in Warsaw with stickers (www.vlepkotronika.blogspot.com); III. 3. ARYZ, Pomorska Street, Łódź (www.galeriaurbanforms.org); III. 4. K. Krzykawska, Eyes 2000, Floriańska Gate, Kraków (phot. K. Krzykawska); III. 5. Akademia Ruchu, Queue going out of the shop (www.akademiaruchu.com) – collage Kinga Rybak-Niedziółka

3. Sculpture

Spatial activities connected with public spheres in the context of their game with street art are very often a kind of installation, but they could also be understood as sculpture or relief. They could be temporary or permanent. Sometimes their limits are indefinite because of verbal or scent elements. This could fall into some parts which build a wider context in public spaces. One of these activities are multimedia arts, often connected with performance. An interesting example here is the use in the public space of some of Gehl's walls made from untypical materials, with not only visual transmission but also play with other senses [2]. Artists who create this kind of art are Jaume Plens or Francesco Mariotti [7]. What is important for the context of a space is the influence of these elements on its visual reception. Sometimes even temporary installations create some new characteristic points, or change proportions of interiors in the public space. It could be that the appearance of a new sculpture in a public space creates a new definition of its identity and character of place. Sometimes new elements could become a new landmark, like the famous Wind Tower by Toyo Ito [9]. A good example of a game on the verge of urbanism and sculpture is also the very famous revitalization of the estate in St. Gallen by the architect Carlos Martinez and the artist Papillotti Rist [7]. In Poland there are very interesting examples of the interaction between art and space in the sculptures created by Katarzyna Krzykawska. They exploit the context of place and dialogue with landscape where they are located.

4. Performance

The border between performance and sculpture, like the border between performance and image, could be blurred. Sometimes a piece of art which is intended to be temporary remains for a long time. Performance is activity, making and presenting, and was very popular in the 1970s. Performances connected with space were presented by the "Łódź Kaliska" group, or Warsaw's Movement Academy [7]. Performance influences place by its existence in space; it could strongly interact with space by changing its layers of meaning and identity. The social context is very important here, not only as transmission between the artist and spectator, by paying attention to some event or action in the context of certain spatial issues. Performative street art is strongly connected with community art- activities in local communities [7]. It often has to do with revitalization in a particular space such as in the works of the ODblokuj foundation. Interesting movements in space games with street art are *happenings* or *guerilla gardenig* [2]. A happening is a previously planned and presented activity. In the United States very popular happenings now include the *flash mob* – this is a group dance configuration made by random people. This action relates to the need of being in a group and has a temporary effect, but always on the reception of the space in which it takes place. *Guerilla gardening* is the semi-legal taking over of space and changing them into, most often, temporary gardens. The informal leader of this movement is the English artist Richard Reynolds. In Poland there is the Kwiatuchi group [7].

5. Conclusions

The interaction between artist and space can take place in various fields and can very powerfully change identity, form and function. This kind of game can be temporary or permanent.

In street art this kind of relationship is on both the sensual and visual layer. Activities take place, there are entrance elements, which may redefine the place but can also change the whole context of a space. Street art is a kind of social opinion, often a rebellion or manifestation of views or identity with some group. The game between the public space and art is in this meaning not purely a visual experience but there are also emotional senses. Social meaning is very important here. Street art draws our attention to problems in a less evident way. What is important here is individuality of reception and interpretation. The fact of reaction, visible or feeling of change in public space is the point, acceptance is not necessary. Only the manifesto – this is the foundation of public space playing with street art.

R e f e r e n c e s

- [1] Bartkowiak Z., *Graffiti – sztuka czy vandalizm*, Fundacja Bezpieczne Miasto, Zielona Góra 2008.
- [2] Ganz N., *Graffiti. Arte urbano de los cinco continentes*, Barcelona 2004.
- [3] Gehl J., *Life between buildings*, The Danish Architectural Press, Copenhagen 2001.
- [4] Giżycki M., *Słownik kierunków, ruchów i kluczowych pojęć sztuki drugiej polowy XX wieku*, Wydawnictwo słowo/obraz terytoria, Gdańsk 2002.
- [5] Goreczyca Ł., *Dlaczego Mona Lisa się uśmiecha? O dobrych praktykach artystycznych w przestrzeni publicznej, „2+3D”*, III/2010, 2010 p. 54–58.
- [6] Marx-Kozakiewicz M., *Ulica jako forma przestrzeni życia miasta*, „Czasopismo techniczne”, z. 3-A, 2008 p. 226–230.
- [7] Niżyńska A., *Street art jako alternatywna forma debaty publicznej w przestrzeni miejskiej*, Trio, Warszawa 2011.
- [8] Rutkiewicz M., Sikorski T., *Graffiti w Polsce 1940–2010*, Wydawnictwo Carta Blanca, Warszawa 2011.
- [9] Śliwińska B., *Sztuka publiczna jako czynnik kształtujący charakter przestrzeni*, praca magisterska na kierunku Architektura Krajobrazu, SGGW w Warszawie, wykonana pod kierunkiem prof. J. Królikowskiego, 2012.
- [10] Taborska H., *Współczesna sztuka publiczna. Dzieła i problemy*, Warszawa 1996.
- [11] Wejhert K., *Elementy kompozycji urbanistycznej*, Wydawnictwo Arkady, Warszawa 1984.
- [12] www.akademiaruchu.com
- [13] www.galeriaurbanforms.org
- [14] www.wilko.com
- [15] www.vlepkotronika.blogspot.com

ANNA RYŚ*

THE CONTEMPORARY MONUMENT OF CONCEPTUAL ARCHITECTURE – ON THE BASIS OF THE *NEW CRICOTEKA* IN KRAKOW

WSPÓŁCZESNY POMNIK ARCHITEKTURY
KONCEPTUALNEJ – NA PRZYKŁADZIE
REALIZACJI *NOWEJ CRICOTEKI* W KRAKOWIE

A b s t r a c t

The introduction of a new museum space in the vicinity of the relics of the past is associated with the erection of modern conceptual architectural monuments. The stronger the contrast between the old and the new, the stronger the expression of the work on the environment. The author undertakes an analysis of the *New Cricoteka* in Krakow as an example of architecture that represents, collects, and that is art – a game, an intellectual dialogue, a spectacle engaging the viewer into the action.

Keywords: museum, “Cricoteka” Centre for the Documentation of the Art of Tadeusz Kantor, a game of shapes, conceptual art, new architecture in a historic context

S t r e s z c z e n i e

Wprowadzenie nowych przestrzeni muzealnych w sąsiedztwie reliktów przeszłości wiąże się ze wznoszeniem współczesnych pomników architektury konceptualnej. Im silniejszy kontrast pomiędzy starym i nowym, tym silniejsza ekspresja dzieła na otoczenie. Autorka artykułu podjęła analizę *Nowej Cricoteki* w Krakowie jako przykład architektury reprezentującej, gromadzącej oraz będącej sztuką – grą i zabawą, dialogiem intelektualnym, spektaklem wciągającym widza w głęb akcji.

Słowa kluczowe: muzeum, Ośrodek Dokumentacji Sztuki Tadeusza Kantora „Cricoteka”, gra brył, sztuka konceptualna, nowa architektura w zabytkowym kontekście

* M.Sc. Arch. Anna Ryś, architecture office „Kahl-Gaczorek” Maciej Gaczorek.

In his realisations of theatre, painting, and those on the borderline of conceptualism, Tadeusz Kantor very often used the chair – an object that belonged, according to him, to the reality of the lowest rank. ‘The fact that I take a chair,’ he explained, ‘is crucial for me because I reveal its constant feature – very low and ridiculous – which I do not find in other objects’ [15].

1. Introduction

“Architecture is a thought out, perfect, wonderful game of solids in light,” [9, p. 30]. The shape added to the object of the old Podgórska power station is another game that could be called a statement by the master Corbusier. The spectacularly overhanging construction of the Centre for Documentation of the Art of Tadeusz Kantor in Krakow is a kind of *Impossible Monument* referring to the work of the artist himself, architecture, and conceptual art. The starting point for building the new spatial form was the idea of using the figure “*Man carrying a table on his back*”, also referring to the artist’s work. The sketch served to develop ideas about the ideological recording of the centre. Later deformed for the purpose of function, the solid rectangular form takes a minimalist-constructivist and Dadaist expression through its reference to the object of daily use with a “status that is neutral for art”. Dominated by the simplicity of the initial form, syntheticity, and the expressive minimalism of treatments [11]. The modern individual is looking for the easiest and most sensible solutions to everyday problems, seeking a rational layout, peace and balance in the surrounding space. He is constantly trying to jump over himself, to strive constantly towards the unattainable to surprise, delight, shock once again.

2. Once upon a river

The Vistula valley with its varied bends and kinks introduces the viewer to a surprising and emotional spectacle. Following the “Krakow boulevards” before our eyes is a moving panorama of the historical city comprised from year to year of increasingly diverse and shocking new elements in the “game” of architectural creation. On the way walking from the Zwierzyniecki Bridge downstream to the barrage on the Dąbie we pass, *inter alia*, the exotic architecture and undulating roof of the Manggha Museum of Japanese Art and Technology, and then equally interesting flowing ICE Conference Centre, whose creator needs no introduction. Next we find the persistently daunting Forum Hotel lit up recently by an amusement park. Dynamic in form, the Father Bernatka footbridge moves us from the Kazimierz district to Podgorze, where we can admire the newly opened Centre for the Documentation of the Art of Tadeusz Kantor, whilst bearing in mind that nearby is the five-year-old, invisible from the river, post-factory MOCAK – Museum of Contemporary Art. In recent years, the city authorities have undoubtedly invested in cultural and artistic development, the new art centres give rise to very strong emotions.

As described, in the architectural space that goes along the banks of the river it is hard to find a completely coherent vision. Perhaps at this point there is something like the “*Junkspace*” described by Rem Koolhaas [12, p. 38]. But it also stems from the artistic character of the city, striving for individuality. The relationship between the city and the water is

an important factor in building the identity of the place. It's hard to discern the Krakow here that will always remain faithful only to itself, and this seems to build its irresistible artistic beauty that attracts crowds of admirers.

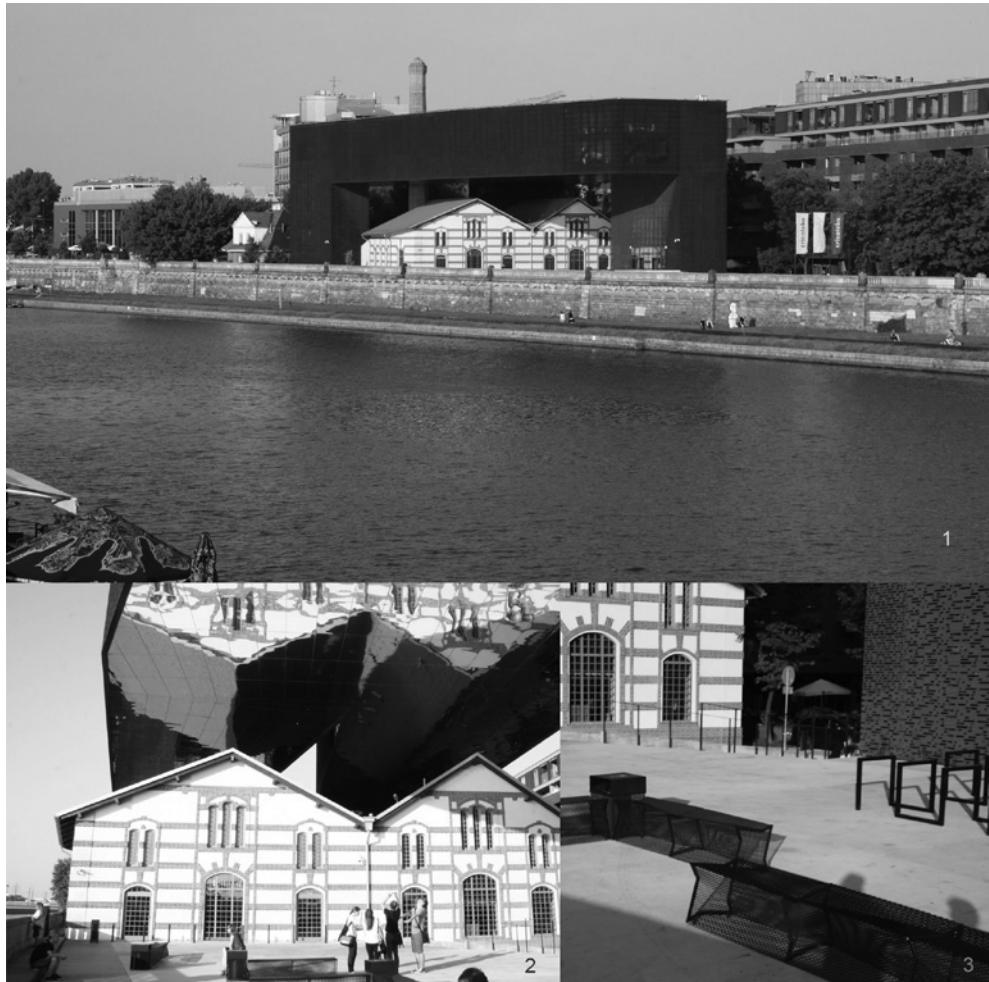
This area was covered by a “competition for the concept of zoning,” whereby in 2008 first prize was won by the Proxima Project Group working under the direction of architect Boris Czarakcziew [13]. There was also a competition for the project of the Tadeusz Kantor Museum, as part of the conceptual contests at the Biennale of Architecture in Krakow of 2004. But when the winning concept was seated in the superstructure concept of the historic pavilion at the eastern facade of the Krzysztofory Palace, in the form of a hollow cuboid by Katarzyna and Marcin Charciarków, it was rejected by the City Historic Preservation Officer, the regional authorities proposed the degraded areas of the municipal power plant I Podgorze as the site for the investment. In 2006 an international competition was announced to adapt the historic disused power station and construct of a new space including in its program features that go beyond the traditional museum. The exhibitions were to interpenetrate a zone of teaching, a reading room and archives, as well as freshly existing as a centre for cultural events invigorating in multidirectional development the abandoned areas of the Vistula region of Podgorze. Victory was justifiably awarded to the architects from the Wizja and nsMoon-Studio offices from Krakow. The authors of the Cricoteka building were actually the IQ2 consortium, whose leader was the nsMoonStudio sp. z o.o., with designer general architect Sławomir Zieliński, while the consortium member was the Wizja sp. z o.o. bureau. and Piotr Nawara (from nsMoonStudio sp. z o.o.), Agnieszka Szultka (o nsMoonStudio sp. z o.o.), and architect Stanisław Deńko (founder of the architectural studio Wizja sp. z o.o.). Also helping on the project were Tomasz Gomulka, Michał Marcinkowski, Marcin Kowalewski, Adam Wereszczyński, Małgorzata Surowiec-Doton, Monika Mackiewicz, Łukasz Skorek, Karol Grec, Katarzyna Ceran, Bartłomiej Lobaziewicz, and Ewelina Siestrzewitowska [3, p. 28].

3. The effect of astonishment

Contemporary architecture, implemented in the historic environment, is the art of adding new value to the existing spatial and cultural context – regardless of the harmony or contrast,” [14, p. 5]. A common aesthetic surgery was the construction of new buildings with glass facades which could greatly enhance the introduction of new technologies in the historic context in a relatively unobtrusive way. In the case of the *New Cricoteka* a mirrored ceiling effect was used above the old power plant building. An equally frequent stylistic treatment is the entrance to the museum leading underground. The adapted powerplant becomes a high ranking cultural value when looking at it from the lower perspective. Everything added maintains a distance from the restored building by building a framework as if to emphasize the image and the new multimedia space. You get the feeling that this procedure was essential here.

4. Games and fun

“The creative process is the action of an individual, is an intellectual game, a revelation, a rapture, an organizing, a rejection, a choice” [14, p. 237]. Art becomes more complete, however, by clear references to the cultural and artistic messages known, by establishing a relationship,



- Ill. 1. Art Museum of Tadeusz Kantor seen from the Kazimierz District, the author's photograph;
 Ill. 2. Old Podgórze Powerplant reflected in a mirror ceiling under New Cricoteka bridge,; the author's photograph
 Ill. 3. Details of landscape architecture in public space of the Tadeusz Kantor Centre for Documentation of the Art in Cracow; the author's photograph

a dialogue with the viewer and the environment. Comparing photos of this facility prior to commencement of the project and after the opening of the facility we observe how the chaos and ordinary green surroundings with landscaping takes the form of an ordered space engaging with neighbouring buildings. The vertical of the remaining chimney and duplicate span of post-factory settings are compositionally quietened and complemented by the strong horizontal line of the patterned retaining walls on the Vistula side. The character of a museum building, like other cultural or public utility centres, should be an “event” in the real world of balanced

everyday life, attracting by the geometry plotted by the artist. The effect of the extraordinary is achieved by masking the spectacular design modules overhung with perforated, corroded metal sheets. In combination with the perfectly restored historic fronts of the powerplant the artificially aged “wrapping” elements of the new spaces become of inverted importance. The method of masking the interior is also not accidental, referring to Kantor’s work called *Emballages* [16]. “Simple solids have large areas that find diverse expression.” [9, p. 191]. They can be packaged, obscured, unifying their expression, giving clear character, fitted into the environment.

5. The Challenge

The new “Bridge” design, as it is defined by the authors and engineers Czesław Hudorek and Andrew Soboń, is the proverbial nail of the program giving the fundamental effect of a monument impossible to implement. Despite the many obstacles linked not only with the difficult calculations and implementation of the asymmetry overhanging the form, but also a change in wind standards in July 2009 and the flood of May 2010 [6] the construction was finished. The skeleton steel frame, based on two shafts of concrete and a third steel rocker support, for a long time aroused an internal question of whether the effect of “Skeletor” from the Mogilskie Roundabout in Krakow had been repeated. The idea of a bridge over the historic building and not directly the river, but next to the river is one of the strongest contrasts in the expression of the form. The idea of the city on poles we already find in the work *In the Direction of Architecture* by Le Corbusier and we see in the body of the former Forum Hotel.

6. Metamorphoses

The interior of the newly renovated hall of the powerplant was adapted as centre of the intellectual work of the artist and a new theatre stage – a reference to the organization Cricot 2, an anagram of the phrase *To cyrk* [This is a circus – transl.]. The theatre founded by Tadeusz Kantor and other artists was associated with an old tenement on Kanonicza Street. April 6 2015 marked the hundredth anniversary of the birth of the artist. The anniversary of Kantor was celebrated and supported by the solemn opening on Museum Night 2015 of the public space at the current powerplant with a positive social charge. The layout of the building foundation’s scheme is somewhat similar to London’s Tate Modern. There is a river, a footbridge leading to the vicinity of the building, the use of post-industrial halls, a café overlooking an attractive skyline, a similar taking on of an aura of mystery on the outside, and inside various types of exhibitions and purposes for usable space. The Polish version is more modest, but also seems to work well in practice, attracting visitors.

7. Conclusions

No empty words – a plan, one idea, boldness and uniformity of design, basic shapes. A healthy morality.” [9, p. 192]. This quintessence Le Corbusier drew from the study of the architecture of Ancient Rome. The eternal city still influences us. Especially in today’s realizations, architecture

is returning to its roots, drawing from distant history, referring to basic functions and human instincts, to, as nearly as possible, enter into the life “of the city – the new image / new works of art” [9, p. 21]. The *New Cricoteka* Building in a simple but thoughtful pure crystallized way heals the fabric of the city, respectfully refers to well-known existing cultural values, turns towards the river, building a relationship with the audience with a surprising circus held before their eyes. Undoubtedly, the newly opened museum building raises a lot of controversy, pushes for discussion, an exchange of views and a variety of ideological messages arising from the purpose of the museum. More than aesthetics, it primarily presents intellectual beauty. However, this gives rise to a strong impulse in the passer-by to visit the exhibition [10]. The building is and will remain a resounding event in Krakow’s art and cultural circles and a joy for visiting guests. And the “sense of *Cricoteka*’s existence undoubtedly stems from the huge legacy that Tadeusz Kantor left.” [15]

R e f e r e n c e s

- [1] „Architektura & Biznes”, Kraków 10 / 2014, p. 22–42.
- [2] Bobrowski T., *Kraków frontem do rzeki*, Architektura & Biznes, Kraków 10/2014, p. 31.
- [3] Deńko S., *Kontynuacja wizji Tadeusza Kantora*, Architektura & Biznes, Kraków 10/2014, p. 26–29.
- [4] Domicz A., *Wieloznaczna rzeźba*, Architektura & Biznes, Kraków 10 / 2014, p. 34.
- [5] Dziamski G., *Przelom konceptualny i jego wpływ na praktykę i teorię sztuki*, Wydawnictwo Naukowe Uniwersytetu im. Adama Mickiewicza, Poznań 2010.
- [6] Hodurek C., Soboń A., *Most kratownicowy nad elektrownią*, Architektura & Biznes, Kraków 10/2014, p. 30.
- [7] Kantor T., *Tadeusz Kantor – zbiory publiczne: katalog prac, redakcja i opracowanie Anna Halczak*, Ośrodek Dokumentacji Sztuki Tadeusza Kantora Cricoteka, Kraków 2003.
- [8] Kantor T., *Teksty o latach 1938–1974, wybór i opracowanie Krzysztof Pleśniarowicz, Cricoteka*, Księgarnia Akademicka, Kraków 2000.
- [9] Le Corbusier, *W stronę Architektury; tłumaczenie Tomasz Swoboda*, Fundacja Centrum Architektury, Warszawa 2012.
- [10] Nawara P., *Przestrzeń, potencjał, teatr wydarzeń*, Architektura & Biznes, Kraków 10/2014, p. 26.
- [11] pl.wikipedia.org/wiki/Sztuka_konceptualna
- [12] Stiasny G., *Kreatywne połączenie przeciwnieństw*, Architektura & Biznes, Kraków 10/2014.
- [13] Urbańska M. A., *Kraków – kocha, nie kocha*, Architektura & Biznes, Kraków 3/2009, p. 68.
- [14] Węławowicz-Gyurkovich E., *Architektura najnowsza w historycznym środowisku miast europejskich*, Wydawnictwo Politechniki Krakowskiej, Kraków 2013.
- [15] www.cricoteka.pl/pl/main.php?d=przetargi, Tablice_zal_6a_opis.pdf
- [16] Zarzecka N., *Nawiązanie do ambalażu*, Architektura & Biznes, Kraków 10 / 2014, p. 31.

ALEKSANDER SERAFIN*

POST-STRUCTURAL GAMES OF ARCHITECTURE

POSTRUKTURALNE GRY ARCHITEKTURY

A b s t r a c t

The play of architectural emblems that is cited in the conference thesis often seems to lead to a revaluation of the visual realm of architecture. This text therefore deliberately manipulates the concept of post-structuralism as a general cultural trend, avoiding reference to any architectural styles. The author, however, attempts to draw up a classification of post-structural architectural games, including the interdisciplinary.

Keywords: symbol, form, post-structuralism, phenomenology, syntax

S t r e s z c z e n i e

Przywołana w tezach konferencyjnych architektoniczna zabawa w emblematy często zdaje się prowadzić do przewartościowania wizualnej sfery architektury. Niniejszy tekst zatem celowo operuje pojęciem postrukturalizmu, rozumianego jako szeroki front ogólnokulturowy, unikając powoływanego się na jakiekolwiek style architektoniczne. Autor podejmuje natomiast próbę zarysowania systematyki gier, także interdyscyplinarnych, w jakie uwikłana jest architektura o podłożu postrukturalnym.

Słowa kluczowe: symbol, forma, postrukturalizm, fenomenologia, syntaktyka

* Ph.D. Arch. Aleksander Serafin, Institute of Architecture and Urban Planning, Faculty of Civil Engineering, Architecture and Environmental Engineering, Lodz University of Technology.

1. Introduction

Contemporary architecture seems to be overly focused on its own visual expression, as emphasized by Juhani Pallasmaa [9, p. 74]. This point of view often leads designers towards phenomenological concepts. These, in fact, have to create a mental communication between a building and its visitor. This type of game is proposed, for example, by Peter Zumthor, because of the reference to reminiscences of impressions, feelings, and sensations that are associated with the architect's projects [18, p. 35–45]. Phenomenology defined as the opposite of structuralism [4 p. 13] focuses on emotional interactions. The game that takes place on the basis of the general cultural trend towards post-structuralism, which is the second mainstream opposition to structuralism, however, has a conceptual base. In both cases, the observer is entangled in the play with the object.

The games of contemporary architecture are not only play within the field of the branch, but mainly cover interdisciplinary interaction. The study focused on the theme of play in which architecture is embroiled leads to a juxtaposition of three essential approaches to this phenomenon, and therefore relationships: 'language-writing-architecture' (J-P-A), 'art-spectacle-architecture' (Sz-Sp-A) and 'architecture-architecture' (A-A).

2. Playing the syntax (J-P-A)

Architects Caroline Bos and Ben van Berkel ask: "Does architecture means language? And, if so, does it follow from the fact that the architecture is subject to the same tests as critically as language; that architecture, as a language, is nothing more than a casual and culturally-formed system of characters whose apparent meaning you can always question" [16, p. 31]. The adoption of an intertextual orientation in architecture allows you to formulate a thesis that any architectural works cannot be parsed without taking into account the participation of foregoing works. Also, the analysis of the building or another object without the recognition of the wider cultural and social context seems to be unjustified. According to this approach, the constitution of the architectural work's interpretation is established by a syntactic game in which work is involved. However, it should be noticed that semiotics is a kind of language ritual [13, p. 157]. The following syntax must be considered in this case as an opposition in relation to the semantics, which entails another chapter of semiotics – the theory of signs and meanings.

Syntax appears to be an appropriate background for the intellectual media in the process of formation and perception of post-structural architecture. However, it should be pointed out that the wrong conclusions in this respect may lead to the adoption of an archaic definition of syntax, perceived as 'language decoration' [6, p. 17]. The difference between the concepts of 'signs' and the 'symbol' in the field of architecture [17, p. 259] seems to be important. So the post-structural architects replaced the traditional semantic game – the expression of a dependency between the architectural entity (the sign) and what it symbolizes (the signifier) – with syntax. This focuses on the relationship between the characters in isolation from what they mean.

The key at this point seems to be the attitude adopted by Jacques Derrida, the author of the theory, who had such a large effect on the contemporary architecture of the Western world. Derrida wrote that "rationality (...) that rules the extended and radical writing, it does not come from the logos any more and it starts (...) de-stratification and de-construction of any meanings that have their source in the logos" [3, p. 34]. Derrida extends this scheme to other

disciplines of reaching the truth, including architecture. Wolfgang Dieter Prix, the general designer of the Coop Himmelb(l)au group, concluded that on the basis of Derrida's theory the revolt in architecture has been carried out against rationalism [2, p. 190]. Referring to the questions raised by a number of Dutch architects, it seems, therefore, that it is not possible to equate the terms 'language' and 'architecture'. Instead, it is possible to speak of architectural play perceived through the theory of writing and language.

3. Spatial games (Sz-Sp-A)

The play between art and architecture takes place in the area of ever-changing borders of [14, p. 553]. Artistic experiments carried out in the 1960s tend to extended reflection on defining and receiving space, according to the area that seemed to have already been sufficiently understood. These projects can be termed 'the art of space'. Although they are temporary and topically overlap with Viennese Actionism, the outlook issues in this case are not the main point of interest. The projects have become a prelude to a post-structural "art of building". The launch of new circumstances each time contributed to a new perception of space. For example, there are the actions of both 'Haus-Rucker-Co' – Laurids Ortner, Günter Zamp Kelp, and Klaus Pinter – and the aforementioned 'Coop Himmelb(l)au' – Wolfgang Dieter Prix, Helmut Swiczinsky, and Michael Holzer. The Viennese projects, such as "Pulsating yellow heart" by 'Haus-Rucker-Co' [Ill. 1] or "Hard space" and "Soft space" by 'Coop Himmelb(l)au', were intended to create a new exposure to the sensations. The last of these projects attempted a short-lived redefinition of the territory [12, p. 157]. Although the inspiration in each of these cases was different, they are all engraved in contemporary culture as games 'in space' and 'with space'.

The nature of these projects is close to the 'happening', which is constituted as a kind of artistic game that takes place between the artist and the recipient. The happening is in fact inherently turned toward the external world, and it tends to transformation [10, p. 243]. On the contrary, these spatial games are devoid of any element of improvisation. They are a carefully programmed and produced spectacle, reminiscent of Oscar Schlemmer's constructivist theatre in the Bauhaus [Ill. 2].

Against the backdrop of these experiments, Hans Hollein and Walter Pichler also tried to entangle architecture in a kind of game. The method of their actions entailed the presentation of many utopian architectural designs, which were a kind of bluff, according to Hollein's declaration: "form does not follow function. Form does not arise in harmony with itself" [11, p. 182]. Charles Jencks stated that it is difficult to decide whether the statements of the artists are sophisticated jokes or serious declarations [5, p. 66]. All the above initiatives and speculation had an effect on real architecture, especially in German-speaking areas. The temporary object "Mini Opera Space" in Munich designed by Prix with his team, mentioned in the conference thesis, could be considered as a modern continuation of this trend, the 'Viennese school', especially in the context of the games played by its creators.

4. Playing in the pleasant and the unpleasant architecture (A-A)

Reminiscences of the positivist realist philosophy are particularly evident in the architecture from the time of the modernist avant-garde. Therefore, the desire follows to create



- Ill. 1. Project of „Pulsating yellow heart“ by Haus-Rucker-Co (source: <http://www.austria-architecture.com/ortner>; access: 10.04.2015r.)
- Ill. 2. Performance by Oskar Schlemmer (redraw. after: Droste M., Bauhaus, Köln 2006)
- Ill. 3. Bundeswehr Military History Museum in Dresden, the detail of the connection between the annex building and the historic facade in the context of “the clash of idea and experience” (source: phot. Aleksander Serafin)

architecture programmatically ‘human friendly’ instead of ‘preserving canons’. One of the consequences of this choice is the development of the trend which can briefly be termed the ‘architecture of pleasure’. The work of William Alsop can be recalled at this point, when he claims that “the building should be a celebration both in the design process, and later at the time of construction. The experimentation of the building should raise the human spirit. [...] Within the framework of these objectives, it is neither possible nor desirable to be a slave

to philosophy, style or a specific procedure. Instead it is more important to treat yourself as a consumer of the products of architecture, before the world is dominated by the products of architectural debate led by architects” [1, p. 339]. This point of view seems to be quite different from Bernard Tschumi’s conception, when he wrote: “The architecture of pleasure is situated where an idea suddenly converges on an experience of space (...). In this way the work of architecture is architectural not because it meets any utilitarian features, but because it starts the process of the subconscious” [15, p. 304–305]. The idea and the experience of space were crashed into each other by Daniel Libeskind, the designer of the Militärhistorische Museum der Bundeswehr in Dresden [Ill. 3]. The author played with the revision of the traditional standard of the museum. The metal structure intersects the composition of the historical façade, which seems to be result of the idea of the architect, who declared that “the differences represent the harmony” [7, p. 150]. An extreme opinion is represented by Lebbeus Woods, whose architecture can be interpreted as “a war game” or rather, in this case the conflict is able to determine the architecture. Projects by Woods that could be interpreted on the level of formal fun, however, assumed a specific expression. This is because the game of presentation of the utopian vision representing steel structures invading the concrete ruins of Sarajevo – destroyed during the war – affect the public, rather than a number of cool media relations interrupted by ads [19, p. 671]. The play at architecture that was implemented only on a ‘piece of paper’ may therefore have significant social overtones.

5. Conclusion

Architecture often means the form of social games. Stefan Müller wrote that nowadays architecture has overstepped the bounds of individual buildings, estates and urban layouts [8, p. 187]. The proposed classification is aimed primarily at drawing attention to the interdisciplinary dimension of architecture in the background of post-structuralism.

Architecture that aspires to be the determinant of cultural heritage always uses symbols. The post-structural vision of reality entails that the stress is moved from semantics to syntax. The main issue is no longer the intellectual play of transmission made by the symbol. It is replaced by games and the relationships between these visual signs.

R e f e r e n c e s

- [1] Alsop W., *Ku architekturze praktycznego zachwytu*, [in:] Jencks C. [ed.], Kropf K. [ed.], *Teorie i manifesty architektury współczesnej*, Warszawa 2013, p. 339–341.
- [2] *Architecture at the end of the Twentieth Century. Lecture by Wolf D. Prix at the City Hall, Vienna 1998* [in:] Kandeler-Fritsch M. [ed.], Kramer T. [ed.], *Get off of my cloud. Wolf D. Prix Coop Himmelb(l)au texts. 1968–2005*, Stuttgart 2005, p. 184–201.
- [3] Derrida J., *O gramatologii*, Łódź 2011.
- [4] Hays K. M., *Architecture theory since 1968*, Cambridge (Mass.) 1998.
- [5] Jencks C., *Ruch nowoczesny w architekturze, Warszawa 1987.*
- [6] Kitowicz J., *Opis obyczajów i zwyczajów za panowania Augusta III. Tom pierwszy*, Petersburg-Mohylew 1855.
- [7] Libeskind D., *Przełom: przygody w życiu i architekturze*, Warszawa 2008.

- [8] Müller S., *Aktualna forma architektoniczna w środowisku kulturowym* [in:] Stefan Janusz Müller. *Wynurzenia czyli nic*, Wrocław 2010, p. 187–191.
- [9] Pallasmaa J., *Oceny skóry. Architektura i zmysły*, Kraków 2012.
- [10] Pawłowski T., *Wartości estetyczne*, Warszawa 1987.
- [11] Pichler W., Hollein H., *Absolute architecture*, [in:] Conrads U. [ed.], *Programs and manifestoes on 20th-century architecture*, Cambridge 1971, p. 181–182.
- [12] Serafin A., *Ekspresja podstawą redefinicji porządku formy w przestrzeni miejskiej* [in:] *Space Reloading, nowa przestrzeń – miejsca w mieście*, Tom II, Kraków 2014, p. 154–165.
- [13] Staal F., *Ritual and mantras. Rules without meaning*, Delhi 1996.
- [14] Świttek G., *Gry sztuki z architekturą*, Toruń 2013.
- [15] Tschumi B., *Przyjemność architektury*, [in:] Jencks C. [ed.], Kropf K. [ed.], *op.cit.*, p. 304–305.
- [16] van Berkel B., Bos C., *Niepoprawni wizjonerzy*, Warszawa 2000.
- [17] Wallis M., *Semantyczne i symboliczne pierwiastki architektury*, [in:] Pękala T. [ed.], *Mieczysław Wallis. Wybór pism estetycznych*, Kraków 2004, p. 258–271.
- [18] Zumthor P., *Thinking architecture*, Basel-Boston-Berlin 1999.
- [19] Żuk P., *Lebbeus Woods – ostatni z wielkich architektów papieru* [in:] Misiągiewicz M. [ed.], Kozłowski D. [ed.], *Definiowanie przestrzeni architektonicznej. Zapis przestrzeni architektonicznej. Tom II*, Kraków 2013, p. 670–673.

PIOTR SETKOWICZ*

DRAWING – A SERIOUS CRISIS OF AN IMPORTANT GAME

RYSUNEK – POWAŻNY KRYZYS WAŻNEJ ZABAWY

A b s t r a c t

In an era of ever more perfect digital tools, the ability to draw is no longer regarded as necessary in the execution of the architectural profession. Yet it is precisely the hand drawing that continues to be regarded as the irreplaceable instrument of creative intuition which surpasses even the most user-friendly “procedures”. A rediscovery of its advantages for both didactic purposes and architectural creativity is becoming an urgent need.

Keywords: hand drawing, game, architectural design

S t r e s z c z e n i e

W erze coraz doskonalszych narzędzi cyfrowych umiejętność rysowania przestała być uznawana za niezbędną przy wykonywaniu zawodu architekta. Jednak to właśnie odręczny szkic pozostaje wciąż niezastąpionym narzędziem twórczej intuicji – przewyższającym nawet najbardziej przyjazne „procedury”. Ponowne odkrycie jego zalet dla potrzeb dydaktyki i twórczości architektonicznej staje się pilną potrzebą.

Slowa kluczowe: rysunek odręczny, zabawa, projektowanie architektoniczne

* Ph.D. Arch. Piotr Setkowicz, Division of Drawing, Painting and Sculpture, Faculty of Architecture, Cracow University of Technology.

1. Introduction

The word ‘change’ seems to fully reflect the climate of studies undertaken at the Cracow Faculty of Architecture in the year 1990. A sudden flood of “imported” architectural solutions and the visual attractiveness of these conceptions may have easily convinced the neophytes of its often quite illusory significance. That is why we were quite ready to ignore the voice of reason and identify all references to tradition and experience with backwardness, and the calls to a timeless order with doctrinairism. Apart from “post-modernisms” and “deconstruction”, the youthful revolt had one more all-powerful ally, namely, the computer. This tool, which at that time was still semi-mythical, expensive and hardly accessible in Poland, was to change the architect’s method of work and the character of architecture itself. It seemed that the computer would not only ultimately liberate us from a painstaking “drafting of the project in ink”, but that it would change the incalculable creative effort into – a sort of game.

2. An Architect of Beauty

In the constantly changing didactic program of the first half of the 1990’s, one could observe a growing tendency towards decreasing the number of hours devoted to the teaching of drawing, painting or sculpture [1, p. 127]. Yet, the “modernization” and “rationalization” of the didactic process thus understood stood in stark contradiction to the remarkable lectures given by Prof. Wiktor Zin. At the same time, the fundamental subject-matter of his lectures constituted the basis for his timeless reflections, built by live word and images, and relating to the human condition and the existential dimension of Architecture. It was also a form of a sophisticated game with the recipient (prospective architect), whose goal was to sensitize the future graduates to Beauty. As Jerzy Skrobot puts it, “In Prof. Zin’s aesthetic conception, beauty is a category one does not argue about. Here there is no room for chaos, ugliness, deformation or artistic experiments” [13, p. 33]. We students, who were obliged to make sketches and take notes of the lectures, envied Professor Zin the ease with which he portrayed the reality and the poignancy of the choices he had made with an apparent flair and panache. We were naïve enough to forget that the foundations of this play with form were based on “hard and titanic work”, experience, and at the same time on the always puzzling artistic impression that did not give in to routine [13, p. 9; 88]. When “justifying” his own work, Prof. Wiktor Zin himself very poignantly and humorously defined the ever so important discipline of the drawn and written architectural sketches: “If I am attacked by literary men, I will admit in all honesty that I do not know the first thing about writing. (...) If, on the other hand, I am attacked by artists, I will explain that I am neither a painter nor a graphic artist. And architects? The latter always criticize me anyway – I have already grown used to it”, he wrote in the preface to his book *Piękno nie dostrzegane /Unperceived Beauty/* [15, p. 7]. The genius of Prof. Zin (and of other drawing architects) [7] is based precisely on such a “superficial” versatility which had been postulated already by Vitruvius. Unfortunately, failing to notice its overall significance, it is very easy to criticize its selected aspects, or else postulate its gradual elimination as apparently quite superfluous in the career of the architect in the 21st century...

Yet what seems far more dangerous than the institutional attacks and the postulated changes of the curriculum, in the spirit of “practical utility”, is the attitude of the students themselves, as well as their state of consciousness and personal sensitivity, or rather lack of it. Did we as

students of architecture at the beginning of the 1990's constitute an ideal audience for Prof. Zin? Unfortunately, not any more. "The lack of a direct bond between the lecturer and the audience is sometimes quite astounding," he wrote [15, p. 6]. It seems that this ability to show empathy for the lecturer was inversely proportional to the degree of fascination with the novelties of civilization already then. Wiktor Zin was a master of drawing and of the spoken word who became a "TV personality" – although he had been shaped by quite different circumstances. "I became an expert at drawing by practising this skill from my early childhood. I observed nature maybe in a slightly different way than it is done by others. I devoured it with my pencil and brush," he emphasized [15, p. 5]. We, his students, including even those who drew and painted spontaneously, stood no chance of attaining the same degree of concentration, as from our earliest years we were exposed to the impact of the very intense stimuli generated by the mass-media. That is why, sometimes, we remained quite blind to the Beauty, which Prof. Zin had tried to teach us to perceive; we also remained blind to the virtuosity of the message itself. Yet the ultimate measure of Prof. Zin's greatness was the fact that, disregarding the obstacles, he consistently tried to treat us as equal partners in his subtle "game".

3. The Ability to Contemplate and Create

Film director Lech Majewski, creator of a series of sophisticated "movie images", draws attention to progressing disturbances in the reception of subtle messages, initially associated with the popularization of television and even radio broadcasts. Earlier on "...the journey of household members inside the pictures hung up on the wall was an issue which was important to the whole family. They talked about what they perceived; they shared various interpretations and meanings; they journeyed together through the world presented by the painter. The paintings became a part of their inner life. (...) Today this is quite impossible" [14].

But the continuing expansion of digital media has ploughed through the human sensibility even more profoundly. "The technologies centred around the computer define our times," wrote David Bolter already in the 1980's [2]. "At the present stage of development of the audio-visual culture, it is impossible to separate the real elements from what has been borrowed from the media," observes Miroslaw Filiciak in his book entitled *Wirtualny plac zabaw* /Virtual Playgroud/ [6, p. 13].

Computers as well as the computer network have fulfilled many, but not all of the expectations associated with them. Nicholas Carr formulates his accusations and objections with regard to the computer and the net from the position of an enthusiast of the new technologies. "A serpent of doubt has crept into my information paradise. (...) It seems to me that the Internet does harm to my ability to concentrate and contemplate. (...) By means of numerous advantages and amenities, the computer screen removes or sets aside our various doubts. It is our most humble servant, who is so obliging that it would seem almost tactless to mention that it is also our ruler. (...) I am beginning to miss my former brain," he writes [4, p. 27; 17; 13; 28]. The results of the studies quoted by the above author are thought provoking. For although surfing the Internet and computer games lead to a development of certain visual and spatial functions as well as the ability to multi-task – they tend to develop at the expense of our concentration, deeper reflection and the broadening of our imagination [4, p. 145–178]. Moving away from the "obsolete" model of education, based on memorizing facts and transferring the function of remembering

from the brain to the computer, leads to a decrease in the number of newly-created synaptic links. This objective, physiological impoverishment poses a threat not only to cultural identity, but also exerts an impact on the level of intelligence and creativity [4, p. 219–241]. Using sophisticated computer software also makes it difficult to “build stable structures of knowledge”. It lessens one’s personal involvement in the performed tasks and paradoxically, in the majority of cases, promotes the selection of stereotyped solutions [4, p. 260–270].

Architects and university lecturers also warn us against becoming infatuated with the possibilities offered by digital tools. Augusto Romano Burelli emphasizes the danger of an atrophy of the individual style of design and a slow process of perfecting the conception. “In the old days, a bad architect drew his poor conceptions in an ineffectual way; whereas now, he creates equally inept solutions, but presents them in a sensational or at least attractive way. This fact pleases him and encourages him to continue his work,” he writes [3, p. 75]. In his book *The Thinking Hand*, Juhani Pallasmaa emphasizes the importance of hand drawing in the contemporary process of designing and the special value of creative uncertainty. “The use of the computer complicates the first stages of conceptual work which are most delicate and defenceless, as it is at this very moment that the essence of an architectural project is defined (...). What I am especially afraid of is the false precision and the apparent perfection of a digital image, which contrasts with the natural imprecision and hesitation which is characteristic of drawing. (...) Personally, I like the stains and crossings out, as well as the traces of erased lines, trials and errors, additions and corrections which accumulate on a piece of paper when I am working on a conception. (...) These traces help me maintain for as long as is necessary the state of mental uncertainty and indecision that is indispensable in the process of creation” [11, p. 91; 105–106].

Pallasmaa also recalls the opinion of Alvaro Aalto concerning the need for a balance between play and responsibility in an architect’s work. The above view acquires a new dimension in an era of the domination of digital tools. “I have a profound intuitive conviction that in an era dominated by work, calculation and utilitarianism, one should preserve one’s belief in the fundamental importance of play for the creation of a society that remains at the service of people – these big children. The above conception will no doubt be shared, in this form or another, by all responsible architects. Yet a one-sided vision of play could lead us to playing with forms, structures and ultimately with the bodies and souls of our neighbours – which would be equivalent to a failure to treat play seriously. (...) Therefore, one should combine serious work with the spirit of play and conversely. We shall find ourselves on the right path only at the moment when the elements of construction and the logical forms that result from them, as well as our entire empirical knowledge, will acquire something that could in all seriousness be defined as the art of play. Technology and economy should be able to preserve this element of pleasure which constitutes the salt of life” [11, p. 72–73].

4. Summing up

As far back as in the middle of the 20th century Martin Heidegger warned that the technological revolution may “(...) captivate and infatuate man to such an extent that one day, the only binding and universally practised way of thinking will be a calculative one”. The

ability to contemplate was to become a victim of development [8, p. 16; 18]. Today, architects themselves, as well as people from outside the architectural profession are really beginning to speak of the art of architecture mainly in terms of “business services”: “The necessity to quickly implement innovations is of fundamental importance in the sphere of architecture and construction. In the majority of cases, success depends on the quality of the design solutions. (...) Yet, quality must be perceived not as an aim in itself, but as a key to keeping costs under control and as an element of the realization of a business strategy” (sic!) [9].

The design practice is gradually passing into the hands of the representatives of a generation which no longer even remembers the “analogue” reality, not to mention the style or method of work which is deprived of computers. In the case of the next generation, which is currently commencing architectural studies, the experience of digital tools precedes instruction in hand drawing and seems at times to undermine its sense and value [12]. “A child acquires its sense of identity and an awareness of its own body, the moment it enters the mirror phase – when it is able to perceive itself. In today’s world, the mirror seems to have been replaced by a screen”. [6, p. 189]. For a present-day accomplished architect, digital media are almost like additional “senses”. That is why the postulates put forward by Juhani Pallasmaa as well as by many other pedagogues that students should first become proficient at drawing and making their own models of the designed structures, and only then to pass on to working with computers, seem more and more detached from contemporary realities.

The state of awareness defined as “digital exclusion” can no longer be reinstated.

5. Conclusions

Therefore can we conclude that hand drawing is becoming superfluous? On the contrary! For the more difficult it becomes to defend this skill as a prosaic need, the more evidently it looms to one as a simple necessity of a “higher order”. A loss of one of the senses contributes to the sharpening of the remaining ones. Thus, one may risk the hypothesis that acquiring an additional sense impairs to some extent the senses that one already possesses. This phenomenon poses a special threat to the successive generations of architects as well as to all those who will decide to blindly trust the ever more perfect digital tools and cold calculation – forgetting about the humanistic and ludic dimension of genuine creation. Like no one else, Professor Zin knew how to arouse his students’ dormant sensibility. We do not have to attempt to build it from scratch! In the 21st century, hand drawing remains both an important and a serious game. It is a direct tool of creative intuition – a sense which continues to be more perfect than even the most user-friendly “procedures” [10].

Today, it does not suffice to repeat this truth. Hand drawing deserves to be rediscovered by those who are only just beginning their adventure with Architecture. They should be able to observe that this skill will allow them to control and make use of the creative potential offered by digital tools even better.

Genuine art is born out of “a unique juxtaposition of the rational order of geometry and of irrational mystery” [5, p. 5].

References

- [1] Białkiewicz A., *Rola rysunku w warsztacie architekta. Szkoła krakowska w kontekście dokonań wybranych uczelni europejskich i polskich* /The Role of Drawing in an Architect's Methodology. The Cracow School in the Context of the Achievements of European and Polish Universities/, Monografia 315, PK Press, Krakow 2004.
- [2] Bolter J.D., *Człowiek Turinga* /Turing's Man/, PIW, Warsaw 1990.
- [3] Burelli A.R., *Architectural drawing in the age of digital reproduction* [in:] Schillaci F. (ed.) *Architectural Renderings*, John Wiley and Sons Publications, Chichester 2010, p. 71–84.
- [4] Carr N., *Płytki umysł. Jak internet wpływa na nasz mózg* /The Shallows: What the Internet Is Doing to Our Brains/, Published by: Helion, Gliwice 2013.
- [5] Chmielowski F., Adam Wsiołkowski, *Miasto nieznane V*, Wstęp do katalogu wystawy malarstwa /Unknown City V, Introduction to the Catalogue of an Exhibition/, Published by: Galeria Piano Nobile, Krakow 2015.
- [6] Filiciak M., *Wirtualny plac zabaw. Gry sieciowe i przemiany kultury współczesnej* /Virtual Playground. On-line Games and the Transformations of Contemporary Culture/, Published by: Wydawnictwo Akademickie i Profesjonalne, Warsaw 2006.
- [7] Gzell S., *O Architekturze. Szkice pisane i rysowane* /On Architecture. Written and Drawn Sketches/, Published by: Blue Bird, Warsaw 2014.
- [8] Heidegger M., *Wyzwolenie* /Liberation/, Published by: Baran and Suszczyński, Krakow 2001.
- [9] Jędrzejczak W., *Nowe narzędzia w rękach architekta* /New Tools in the Hands of an Architect/, Archivolta no 1 (53)/2012, p. 66–67.
- [10] Orzechowski M., *Rysunek zmysł architektury* /Drawing – the Sense of Architecture/, Published by: Blue Bird, Warsaw 2014.
- [11] Pallasmaa J., *La main qui pense* /The Thinking Hand/, ed. Actes Sud /Architecture, Arles 2013.
- [12] Setkowicz P., *Rysunek odręczny w świecie cyfrowej architektury – anachronizm czy awangarda?* /Hand Drawing in the World of Digital Architecture – an anachronism or an element of the avant-garde?/, Materials 3 *Sympozjum Integracja sztuki i techniki w architekturze i urbanistyce* /Symposium: Integration of Art and Technology in Architecture and Urban Design/, Faculty of Construction, Architecture and Environmental Engineering of the University of Technology and Life Sciences in Bydgoszcz, Bydgoszcz 21–22.05. 2015.
- [13] Skrobot J., *Architekt Piękna* /Architect of Beauty/, Krakow 2003.
- [14] Wolak U., Majewski: *Nie da się robić moich filmów na zimno* /Majewski: my films cannot be made in a cold-blooded and detached way/, Dziennik Polski daily of 10.04.2015.
- [15] Zin W., *Piękno nie dostrzegane* /Unperceived Beauty/, Arkady, Warsaw 1970.

MACIEJ SKAZA*

GAMES OF MEANINGS IN CONTEMPORARY ARCHITECTURE

GRA ZNACZEŃ W ARCHITEKTURZE WSPÓŁCZESNEJ

A b s t r a c t

Meanings recorded at different levels of possible connotations become a pretext for the game between the designer and the user of the building. The studies relate to possible levels of connotations of these signs and a game, also the search for them by recipient, which – deriving pleasure from the perception of the art of architecture – can also be described as fun.

Keywords: architectural theory, the perception of architecture, building's levels of connotations, meaning in contemporary architecture

S t r e s z c z e n i e

Znaczenia zapisane na różnych poziomach możliwej konotacji stają się pretekstem do gry pomiędzy projektantem a użytkownikiem budynku. Rozważania dotyczą możliwych poziomów konotacji tych znaków i gry, oraz ich poszukiwania przez odbiorcę, która – przynosząc przyjemność z postrzegania sztuki jaką jest architektura – może być także określona mianem zabawy.

Słowa kluczowe: teoria architektury, postrzeganie architektury, poziomy konotacji budynku, znaczenia w architekturze współczesnej

* Ph.D. Arch. Maciej Skaza, Department of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

The purpose of this discussion is to focus attention on the articulation of meanings carried by the structure; the visible or hidden in the “play of masses brought together in light”, incorporated as a result of an idea of the project – a composition created by its architect. The art of building contains information – signs and their systems – stored in architectural form. This perception directs attention toward semiotics, which – although it is derived from linguistics – embraces with its scope more than the field of language can show; it can expand research field also to those human activities that suggest communication without manipulating words. In this approach we can also perceive the signs stored in the building as a dialogue between the architect and the building, between the building and its recipient. Reducing the above-mentioned relations – they can be understood as a dialogue between the architect and the recipient of art.

It should be noted that both relationships: the architect-artwork and the recipient-artwork are bi-directional transmissions. One and the same building can be perceived variously (depending on the conditions of perception). In this perspective, the meanings “stored” in the building can be “read” in a radically different way by recipients / users of architecture. As R. Ingarden wrote: “for each of us – perceptors – coexisting with an artwork builds up another concretization of the artwork closely entangled with our way of feeling, with our sensitivity and the vicissitudes of our life; concretization, for which the artwork itself is only a starting point – if somebody prefers – the point of destination never fully attainable; concretization, which only in part is determined by the artwork itself, because not only the multiplicity of perceptions of a given work associated with the conditions of life exerts a decisive influence on its constitution, but also our whole personality, its way of perceiving, feeling and response” [6, p. 166].

An important element of the game in reading meanings is the complexity of the architecture itself, understood as art.¹ Each artwork is a message, carrying the information, content, written in a certain language. In this case, the language of architecture which uses components such as a column, wall, slab, or window. T. Ando recalls, “The erection of a single post has the effect of interrupting a scene. Similarly, a single wall, severs, interrupts, opposes and violently alters the site on which it is placed; it begins to show signs of evolution into architecture. At the same time, the shadow cast on the wall by the leaves of nearby trees can cause the wall to blend with its landscape. Generally, various elements coexist in a series of mutual rhetorical relationships...” [1, p. 445]. The code of this communication, written in the structure of walls and columns, slabs and roofs, windows and doors, is a set of signs with a complex structure of meanings. The architect, using this kit of elements specific to his profession, communicates with the receiver, conveying the content (sometimes visible, sometimes hidden – requiring discovery). This resource is individual and can be read as a rudimentary characteristic of the artist.

Depending on the structure of the building itself, the capabilities of the recipient in terms of encoding and decoding determine the act of transmission and reception. The mere perception is therefore different for each recipient. Therefore various readings of meanings can be written in the building (or perhaps – drawn – more often in the case of architecture). Each of us, subjectively, perceiving architecture, creates its individual image. The perception of meaning depends on cultural factors, education (understood in relation to art), as well as

¹ It should be noted that not all architecture can be considered as an artwork. It's been assumed that a necessary condition of perceiving the building in aesthetic category is discovering the structure of over-rational meanings.

previous experiences that allow us to accept a wider spectrum of possible spatial variants of architectural language. Today the wall does not have to be a vertical, flat shape, the window can reach the height of the building, and the usage of complex mechanical systems (taken from the photograph) determining the character of the façade is not necessarily surprising any longer.

Notwithstanding the foregoing, due to the characteristics of the building, we can talk about the ease or difficulty of reception of architecture, and thus – simplicity or problems in reading meanings – the game with architecture becomes complicated, and in some cases even impossible. This complex connection depends on possible interpretations. There is a single architectural work (regardless of the possible ways to write), but it also provides a multitude of its interpretations, or – after R. Ingarden – concretizations of the same artwork. It does not result only from purely physical conditions, such as a point of observation or perception based on photos or drawings – in contrast to direct reception. Roman Ingarden notes that “there are many concretizations of architectural works; it seems understandable. There are in fact many viewers of the same artwork and a lot of different, variously proceeding perceptions. Each of the pluralities associated with each of the perceptions, if not every perception, entails the inevitable consequence of the determination of its intentional counterpart of some intentional object” [6, p. 162]. Even one recipient can see the same object in different ways. Various receptions are possible when observing the building from the outside and from the inside. Other information, and thus different perceptions of data, is provided by the analysis of drawings, photographs, and authorship descriptions. Architecture presents itself in different ways during the days or at nights; it will spur one sensation in its permanent user, and another in an incidental recipient.

The game of reading meanings of architectural work happens at different levels of our perception. Each building is a place of refuge (space); architecture is an art marked by utility. Umberto Eco writes about this basic communication of architecture, pointing to the role of the functionality of individual elements of the building – the roof covers; the wall separates; and the stairs enable communication between levels determining us to automatically lift our feet [3, p. 199–200]. At the same time the building can become a manner of “higher” order communication at different levels of semantic connotations of the architectural composition’s language – a message, containing meanings associated with it that go beyond rationality of function.

In the case of historical architecture, the connotation of a meaning seems obvious in most cases – the castle was the place of refuge separated with surrounding walls, while the palace or mansion are more open to the outside (remaining in our mind a place to live), and the church has always been perceived as the temple, a sacred place. Contemporary architecture entails the need to revise the aesthetic dimension of this art. This applies to the typology of recognizing architecture well-established in society. Manipulating elements that have permanently been etched in the language of architecture, their meaning is changing – the church can today look like a bunker, the house like a greenhouse, and the residential building like an office building. This also applies to the elements of architectural composition – the column does not have to be vertical, the wall – straight, and the window can turn into a wall of a building. This change forces on the recipient the necessity of adjusting his perception of architecture. Since the border of the building (wall) can be transparent (because made of glass), the historical conditions relating to the border or lack of them must change the fact, that what is translucent (allowing eye contact), can also be a physical boundary between inside and outside (limiting the possibility of going outside).

Independent, higher record levels of meaning in architecture are those hidden in a building by its creator. Some of them can be read directly, others require explanation. Examples of this type of creative process might be the project of a residential building in Makuhari (Chiba), Japan (proj. S. Holl and K. Sone and T. Enomoto, 1992–1996), the Jewish Museum in Berlin (proj. D. Libeskind, 1999–2001), and also the Seminary of the Congregation of the Resurrection in Krakow (proj. D. Kozłowski, W. Stefański, 1984–1993). To discover the path that reflects the poetry of Matsuo Basho's travel record “*Oku no hosomichi*” shown in the composition of “silent buildings” and “active structures” [8, p. 44–77], and the path “between the lines” of the decomposed religious symbol,² or described in the idea of the “four gates” (the road between initiation, hope, knowledge and faith) [7, p. 62–63] – it is necessary to introduce the recipient (by an additional explanation) to be able to fully participate in the game of searching for meaning in these buildings. The above-mentioned architecture needs further clarification. When it is perceived by an incidental recipient, the discovery of hidden meanings in front of the receiver on the other (hidden) level of connotations is impossible. In these specific cases in which the over-rational meanings unequivocally attest to the attachment of these buildings to art – the contemporary architecture requires a guide.

In psychological terms, due to the acquired and preserved emotional-intellectual attitude (yet undergoing subsequent transformations along with obtained experience), the distinction between art easy and difficult in the reception is reflected in acceptance of architecture, or its negation. Particularly in the case of this art, it is difficult due to the ubiquity of buildings encountered every day. Because of the utilitarian character, the recipient experiences architecture regardless of his aesthetic preferences. Therefore, the formation of discrepancy between authentic and artificial sensations – resulting from socially accepted norms – is possible. Conditions and cultural stereotypes affect our ability to read signs. However, each of these (and subsequent) experiences enables us to start the next game with architecture, another play with the building. Steven Holl writes: “The everyday act of pressing a door handle and opening into a light-washed room can become profound when experienced through sensitized consciousness. To see, to feel these physicalities is to become the subject of the senses” [5, p. 179]. Looking at this aspect from another point of view – a prerequisite for such perception of the building saves in the architectural work the values that will influence our senses, as it is in contact with the work of art – in terms of these considerations – it enables us to start the game (and to continue it, regardless of the selected gambit) in reading meanings: ideas, pretexts, relations between elements which enable the recipient to find the beauty of the composition saved in the relations between columns, walls, ceilings, doors, windows, etc.

Discovering meanings in architecture can become for its recipient a kind of game; sometimes simple, sometimes so complex that understanding its rules is only possible with additional description beyond the basic level of perception of “changes in three-dimensional reality, serving some function, associated with the life of the collective” [3, p. 199]. Savouring the reading of successive meanings, stored permanently in a building (those visible and those hidden). In this perspective, architecture can be seen not only as a game, but also – bringing pleasure in this exploration – it can be play – between a spectator and a structure. And no doubt – it should be seen as art.

² comp. <http://www.jmberlin.de/main/EN/04-About-The-Museum/01-Architecture/01-libeskind-Building.php> [online: 2015.06.12].

R e f e r e n c e s

- [1] Ando T., *The Wall as Territorial Delineation*, [in:] Dal Co F., *Tadao Ando. Complete Works*, Phaidon, Milano 1995.
- [2] Arnheim R., *Sztuka i percepja wzrokowa. Psychologia twórczego oka*, (trans.) J. Mach, Officyna, Warszawa 1978.
- [3] Eco U., *Nieobecna struktura*, (trans.) A. Weinsberg, p. Bravo, Wydawnictwo KR, Warszawa 1996.
- [4] Hall E.T., *Ukryty wymiar*, (trans.) T. Hołówka, Warszawskie Wydawnictwo Literackie MUZA SA, 2003.
- [5] Holl S., *Question of Perception. Phenomenology of Architecture*, [in:] Holl S., Pallasmaa J., Pérez-Gómez A., *Question of Perception. Phenomenology of Architecture*, William Stout Publishers, San Francisco 2006, p. 41, [in:] M. Borowska, *Estetyka i poszukiwanie znaczeń w przestrzeniach architektonicznych*, Semper, Warszawa 2013.
- [6] Ingarden R., *Studia z estetyki*, t. II, PWN, Warszawa 1966.
- [7] Kozłowski D., *Projekty i budynki 1982–1992. Figuratywność i rozpad formy w architekturze doby postfunkcjonalnej*, Politechnika Krakowska, Kraków 1992.
- [8] *Makuhari Housing. Interview with S. Holl by Y. Futagawa*, GA Document Extra. Steven Holl, Tokyo 1996 nr 06, p. 44–77.
- [9] *Teorie i manifesty architektury współczesnej*, (ed.) Ch. Jencks, K. Kropf, (trans.) D. Szymczak, Grupa Sztuka Architektury, Warszawa 2013.

KATARZYNA SŁUCHOCKA*

**THE PLAN, THAT IS,
THE GAME GOES ON**

RZUT

– CZYLI GRY CIĄG DALSZY

A b s t r a c t

The technical representation of architectural drawings, as the value of a spatial composition, based on the harmony of form and function, may be applied to the ground of painting. The prescriptive character of architectural notation is an excellent pretext for the creative and exploratory activation of multicultural environments, at the same time being used to transfer architectural ideas.

Keywords: open form, plan, work of art

S t r e s z c z e n i e

Techniczny zapis rysunków architektonicznych, jako wartość kompozycji przestrzennej, opartej na harmonii formy i funkcji, może stanowić przełożenie na płaszczyznę materii malarstkiej. Normatywny charakter notacji architektonicznych stanowi doskonały pretekst do uaktywniania twórczego i badawczego wielokulturowych środowisk, służąc jednocześnie transmisji idei architektonicznych.

Slowa kluczowe: forma otwarta, rzut architektoniczny, dzieło sztuki

* Ph.D. Arch. Katarzyna Śluchocka, Chair of Drawing, Painting, Sculpture and Visual Arts Faculty of Architecture, Poznan University of Technology.

1. Introductory game

The language used in the process of interpersonal communication takes forms that are notable for the sender and the receiver. The conventional system of symbols is contained in codes that are understandable for particular circles, offering the opportunity to create new symbols that facilitate formulating statements – the message. The process of creating solids and their relations in space is directly linked to the individual articulation of the architect. Drawings, sketches, notes with a brush or those in ink are made in the processes of high emotional subjectivity for the purpose of detecting the value of individual ideas, images and confrontations [6, p. 43–47]. The creative activity and efficiency is enhanced by the tension that accompanies taking decisions that eliminate irrelevant content, resulting in instant mirroring of our conception, portraying continuity that is perfect in terms of conceptual accuracy. These autonomic expressions of architectural ideas, essential for multi-threaded, conceptual and design-related discussions, may be considered works of art in terms of representing the 3D world in two dimensions. The portraits of architectural visions, present in the form and function, are often independent art works that are full of expression and articulate sensibility. Edwin Lutyens [2, p. 259–262] – British architect – adequately defines this kind of creative activity as an “open letter”, which is a means of communication addressed to other receivers. The semantic dualism of the creative articulation of an architect is a marvel. It is underlain by an undeniable artistic and communicative value. The latter is aimed at the technical aspect of architectural creations that take on real shapes, emerging from the sheets covered with drawings made with a pencil, a coloured pencil or paint... The projection of the vision, as the base and pretext for materialising concepts – translates into the technical representation – a plan or a section. The normative character and clear shapes of the content may be subject to another interpretation.

2. The plan, that is, the game goes on

The architectural composition based on proportions, modules and numbers, and design being a sculptural element enhanced by the substantive content of function, compose a complete work. In art, it is form that defines those features of art that are related to shape, as sculpture and architecture, and to the form of notation – as in poetry, novels and music. This is form that, not affecting directly the content of a work of art, determines the way in which the work of art is perceived. The notion of form may be considered either as a composition or a shape. In classical antiquity, the former was the equivalent of harmony, symmetry and the order of composition. The Pythagoreans assumed that art could not exist without proportions represented by numbers. “Numbers make everything look beautiful” [7, p. 103–105]. And so, proportions are present in sculpture as well as in painting. The proportions make these works of art entirely accurate. Generally, all art is a system of perceptions and the system is numbers. The projection of newly composed spaces becomes the base of the systems of meanings and art symbols. The plan is the foundation of a harmonious composition.

The system of norms, numbers and shapes that are linked with a line, presented in the form of the value of a painterly message, translates into mutual relations of craftsmanship and pure art. And art may be manifested in many ways, and each of them has its own raison

d'etre [3, p. 97–109]. The multidimensionality of art allows crossing symbolic frontiers, bringing to life new cognitive measures. The sets of graphs are transposed to the planes of visualised worlds that are recorded through diverse means of expression. Their existence in different contexts and environments leads to a new quality of sensuous reception. This relation may be reflexive. Drawing inspiration from compositions in paint in the processes of space creation is a consequence. There are known examples of translating parts or elements of an image into an initial phase of the concept of a design intent, following prior studies, analyses and research on the convergence and correlation of meaning [5].

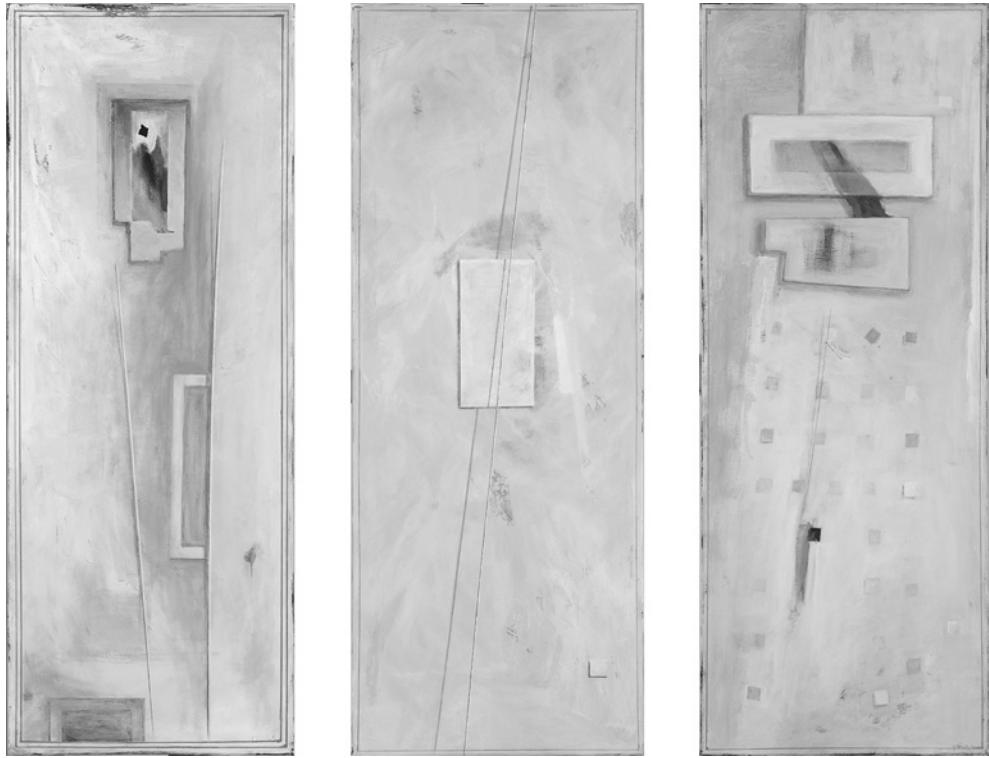
Products created in subsequent phases of an architect's work are open forms which, at different stages of the creation of artefacts, provide more options of possible context and interpretation. Architecture, in the meaning of artwork, requires a personal comment from the receiver, who at the same time is a viewer and a participant in the game, and obliges them to create more context. As a consequence, the artwork is always alive and remains relevant, being a pretext for interdisciplinary, multidimensional discussion. For that reason, the plan, as an interpretation – an original graphical representation of technical notation which transfers engineering thought – is a stimulus for exploring the area of the individualisation of defining a denominated space. It points out to the limitless options of popularising architectural ideas, underlines the importance of influencing the viewer's imagination with images, stimulates to activity and encourages to continue the game. The new quality that is created is a kind of medium whose purpose is to induce a desired mental state in the viewer, with a particular focus on emotions, cognitive processes, and identity [1, p. 55–66].

3. When architecture becomes an image and the image is read as architecture

The rendition in paint, or drawings resulting from the studies and analyses of plans and sections of particular objects, are still part of the process of creation, and they also confirm the relationship between the value of design matter and the value of artistic vision. They are an intriguing suggestion for exploring the subject, which broadens the spectrum of the designer's voice. Architecture becomes the content of the image, making the image come across as architecture. The perfection of architectural creation determines the question of composition, colouring and how the main problem is solved. The gesture left on the image plane, the colour combination used, results from the observation of the structure of architectural form and its details. The illusive shade, as depth and space, is ambiguity in the subjective reception of an interpretation. The portrayed architecture is the next level of the game, where quality and imagination are players, and the attractiveness of the game among participants is the jackpot.

Architecture as a configured space, which is also an open form in the context of social modulation, is a link in the chain of the reactions of receivers-players. According to Grażyna Schneider-Skalska, "There are spaces that create context, which requires a creative continuation, and those where the author, expressing a completely new idea, creates the beginning of a new value and context for the successors" [4, p. 153–157]. The law of a good continuation may be found both in architectural and urban implications, and in the technical translations of design notations into the area of creative work involving graphical expression.

Provocations aimed at transferring the already started theme draw attention to the multidimensional character of the architect's work, the architect who is both a visionary and



III. 1. Słuchocka K., Narodziny (The Birth), acrylic, 50x130, 2014

III. 2. Słuchocka K., Pozornie (Seemingly), acrylic, 50x130, 2014

III. 3. Słuchocka K., Macierz (Matrix), acrylic, 50x130, 2014

Painting works from the series inspired by the floor plans of Genius Loci Archaeological Park in Poznań (branch of the Archaeological Museum of Poznań)

a craftsman, and the situational simultaneity is a continuation of life throbbing in real spaces, initiated in the area of imagination, developing sensuous perception and at the same time enhancing the palette of visual perception and opening up options for continuing the game. They invite us to interactive creations, to playing with worlds, forms and structures in painting or drawing matter, without restricting other means of expression.

The creative articulations where the same work incorporates solutions that belong to the domains of different media underline the possibilities of combining various areas of cultural fascinations that originate in architecture. Architectural references of experiences merged with the painterly order of composition are symptomatic of multi-sided expressions that may *independently represent the world of architectural ideas and move it in time* [2, p. 259–262]. Translating autonomic reflections that are based on designing experience into the language of art codes illustrates the potential of applying the cognitive methodology, which results in benefits in the fields of architecture and painting (practice in one field contributes to mastering the other).

The technical representation of architectural drawings – the basic form of communication at engineering level – as a graphical message, inspires us to see architecture in a different perspective, encourages us to engage in broader research activity, giving an interesting tool for seeking development alternatives.

Adding the third, most significant dimension, the dimension of an illusive depth, with a rich variety of consequences consisting of the analysis and synthesis of a particular object, its interior or external components, results in releasing creative fantasy, developing spatial thinking, perceiving and understanding the surrounding reality, and, consequently, in a new artefact. The artefact-provocation for the further use of imagination and increasing awareness, the artefact which initiates adding more blocks in the game of building never-ending contexts in which we live, create and die. This is an open and strategic game, the game where future is the judge.

R e f e r e n c e s

- [1] Gzell S., *O Architekturze, Szkice pisane i rysowane*, Wydawnictwo Blue Bird, Warsaw 2014.
- [2] Maluga L., *Autonomiczne rysunki architektoniczne*, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2006.
- [3] Osęka A., *Spojrzenie na sztukę*, Wiedza Powszechna, Warszawa 1987.
- [4] Schneider-Skalska G., “Dzieło architektoniczne zawsze w kontekście.” *Czasopismo Techniczne PK*, 15/2008. [5] Śluchocka K., *Centrum Biznesu*. MS thesis. Poznań University of Technology, Poznań, 1991.
- [6] Śluchocka K., *Rysunek – autograf wrażliwości przestrzennej* 2 Międzynarodowa Konferencja z cyklu Nauczanie Rysunku, Malarstwa i Rzeźby dla Architektów: Wyzwania XXI wieku. Rysować, malować czy skorzystać z komputera. Wydział Architektury Politechniki Krakowskiej, Kraków 2015.
- [7] Tatarkiewicz W., *Historia estetyki. Estetyka starożytnej. Estetyka pitagorejczyków. Teksty pitagorejczyków i Heraklita* Wrocław – Kraków, 1960.
- [8] Zumthor P., *Myślenie architekturą*, Karakter, Kraków 2010.

ANNA SZCZEGIELNIAK*

“WHY SO SERIOUS?”
– THE JOKE AS A MEANS
OF EXPRESSION IN ARCHITECTURE

„WHY SO SERIOUS?”
– ŻART JAKO ŚRODEK WYRAZU
W ARCHITEKTURZE

A b s t r a c t

The paper presents the joke as a means of expression used in architecture. The author debates whether the architecture should always be serious. The paper describes and gives historical and contemporary examples of how the comical effect is achieved in architecture. The paper is also an attempt to explain and understand what the jokes in architecture are used for.

Keywords: *architecture, joke, humour, mannerist architecture, postmodern architecture, contemporary architecture*

S t r e s z c z e n i e

Artykuł podejmuje temat żartu jako środka wyrazu używanego przez architektów. Autorka zastanawia się czy architektura musi być zawsze serio. W tekście opisano na przykładach obiektów współczesnych i historycznych, w jaki sposób uzyskiwany jest efekt komiczny w architekturze. Artykuł to również próba wyjaśnienia do czego może służyć żart w architekturze i kiedy jest przydatny.

Słowa kluczowe: *architektura, żart, humor, manieryzm, postmodernizm, architektura współczesna*

* M.Sc. Arch. Anna Szczegielniak, Department of Civil Engineering and Architecture, Faculty of Civil Engineering, Opole University of Technology.

"You can judge how bad the seventies were by looking at its uptight architecture." [6]

1. Introduction

Does architecture need to be serious and do we need to treat it seriously? Humorous and funny architectural motifs can be found in many buildings, both contemporary and historical. The comical effect can be achieved by different means, depending on when and where the building was designed and what the aim of the architect was. The ways of achieving a humorous effect can be divided into groups of buildings in which the result was achieved in a similar way.

2. How to be funny?

One of the ways to create an amusing effect in architecture is contrast. The contrast can appear in many different ways. It can be a contrast between the material and the form or function of the building. This solution can be found very often in the works of MVRDV. The Balancing Barn is playing with the traditional barn form, which was covered in shiny metal panels. On the other hand, in the Glass Farm project, a traditional Dutch hut is made entirely out of glass with printed brick and roof tiles pattern. A different example are the houses called 'Kubuswoningen' (the project of Piet Blom, designed in 1977, built in 1984 in Rotterdam) (Ill. 1) and similar Bolwoningen (design by Dries Kreijkamp in late 70'). These experimental houses are examples of contrast between form and function. The apartments were designed as cubes (or spheres) on poles hanging above the ground, which makes them look like funny, retro-futuristic space capsules. A comical effect can also be achieved when the whole building contrasts (by its scale, material or facade composition) with the context. The Hotel Topazz in Vienna (arch. BWM Architekten und Partner) looks funny, because of its dark facade with oval windows, which seem to mock the historical tenement houses in the neighbourhood. Edouard François in his design of the Hotel Fouquet Barrière (designed and built in 2003–2006, Paris) refers in a humorous way to the surroundings. The historical facade of the neighbouring building was literally copied and cast totally in concrete, including such details as balustrades, roofs, windows and framing. The super-modern windows in the form of TV screens were put into this copy of the historical facade. The location of the new windows is connected with the plan of the building, but not with the historical facade. That is why the windows appear on the facade in random places totally ignoring the detailing. This is an example of contrast between the new and the old within one facade.

Another idea of how to make architecture funny is reinterpreting well known motifs, but using them in a new, different way. As an example it is worth mentioning the Vitrahaus building designed by Herzog and De Meuron, which plays with the archetypical form of a house with a sloped roof. The architect multiplies the houses, turns them around, and puts one onto another to create a dynamic form. MVRDV makes fun of a typical house in the Balancing Barn, by covering it with a strange material and balancing it on the edge of the hill; in the design for Didden Village, a house with a sloped roof painted bright blue was put on the roof of a brick city building in Rotterdam (Ill. 2); and in the Hagen Island houses in Ypenburg a simple shaped house was multiplied in its simplistic form but in a variety of materials, which

cover the entire buildings from the walls to the rooftops. Another example of reinterpretation is the Team Disney building designed by Michael Graves. This time the reinterpreting motif were caryatids, which in this case are shaped as Disney cartoon characters.

Sometimes the humorous effect can be achieved by combining illogical elements, which look like errors in the design. Buildings from the end of the renaissance period called manerism could serve as a good example here. One of the representatives of this style was Giulio Romano, the author of the Palazzo Del Te (built in 1524–1534 in Mantua). In this building we find strange details such as triglyphs of the frieze, which seem to be falling down, or fake windows. Whereas in the Casa Berlani (arch. Giovani Battista Bertani, 1535) we come across pilasters, which end suddenly in the middle of the floor. In this group we can also include buildings which seem to deny the laws of physics, and give an impression of instability, falling apart, or falling down. Examples are the Ufa Cinema building in Dresden (Coop Himmelb(l)au), or the crumpled, almost destroyed solids of the Walt Disney Concert Hall by Frank O. Gehry.

A joke can also be play with the scale of the objects – enlarging or reducing the size of the building or part of it as in the case of model of the Capitol (by Robert Venturi) in Washington, which is located in such a way that an observer can see the model and the real Capitol at the same time. In the Zollverein School of Management & Design building (arch. SANAA) the rescaled windows sized and placed randomly on the facade make it impossible to understand the scale of the building, the number of floors, and its heights. The building becomes less of a building and more of a sculpture. Another example is the building-installation raised for EXPO 1958. It was designed by engineer André Waterkeyn in the form of an iron crystal magnified 165 million times. Enlarging the model of the iron crystal into the scale of a building creates an amazing effect.

Using literal forms taken from the surroundings in architecture can also cause comical effect. A famous example of this is the parking lot building in Los Angeles, designed by Frank O. Gehry, with an entrance in a form of a pair of binoculars. This is not only funny but also quite surreal. The binoculars themselves are a sculpture designed by a pair of artists, Claes Oldenburg and Coosje van Brugge, who are specialists in designing sculptures of oversized everyday objects. Another literal inspiration is the facade of an unrealized office building Alphabet Building Info by MVRDV. In this building, the windows were designed as the shapes of alphabet letters. Two letters were intentionally omitted – “I” and “Q”, because as the architects said, they were already inside the building [8], which makes the idea of the facade even more funny. A different building by the same author, the Teletech Campus, has an ornamented facade made entirely of QR code, which when read by smart-phone leads to the web page of MVRDV.

BIG (Bjarke Ingels Group, Denmark) is a master of making jokes in architecture. Often the whole process of designing in their projects is funny. One example could be the story of the Danish pavilion for EXPO 2010 in Shanghai. The pavilion was built around the famous mermaid from Copenhagen (Ill. 3), who, for the period of the exhibition, was transported to China, because she also wants to travel and in the capital of Denmark the only people who visit the mermaid are the Chinese tourists [4, p. 41]. Another funny story is a building which is an incineration plant and artificial ski slope at the same time. After the waste is burnt the building blows O-rings! These examples show that BIG has a playful attitude towards their designs and architecture. Bjarke Ingels himself says about boring buildings: “...architecture became like a container space, (...) like a boring box with a basement full of machinery to make it inhabitable, as a result, buildings (...) started to look identical all over the planet.” [7]



1



2



3



4

- Ill. 1. Kubuswoningen – cubic houses (photo Anna Szczegielniak, 2007)
Ill. 2. Didden Village – blue oasis surrounded by brick buildings (photo Anna Szczegielniak, 2008)
Ill. 3. Interior of Danish pavilion for EXPO 2010 (photo <http://big.dk/#projects-xpo>)
Ill. 4. Garden of Bomarzo – entrance formed as a monster's mouth (photo http://commons.wikimedia.org/wiki/File:Bomarzo_Monster.jpg)

3. Why be funny?

There are many ways to amuse in architecture and architects do so quite often. The question is why they do this? Why do architects try to make us laugh and what can we gain by joking in architecture?

Architecture can make us smile, which is always a good thing. A funny building will be more easily remembered, people want to visit it again and will share what they have seen with others. This can be good in the case of commercial buildings, such as hotels (Hotel Topazz, Hotel Fouquet Barrière) or cinemas (Ufa Cinema).

Humour in architecture can draw our attention to a particular architectural or urban problem. Didden Village raises the issue of extending existing buildings in intensively built-up city centres. The Teller de Arquitectura social housing in Paris, designed by Ricardo Bofill, looks like a palace – it has huge glass columns, and a big courtyard with windows decorated with rich ornaments. Social housing which in principle should be cheap and efficient was designed in a form that is associated with splendour and wealth. The idea was probably social ennoblement, improvement of the quality of the space for the poorer part of the city, breaking with the association with slum architecture and avoiding the division between the architecture for poor and for rich.

A joke in architecture can also be a play with convention and with well-known ideas, their reinterpretation or parody. Postmodern architecture depended on the preferences and mood of the architect, and made jokes from worn out motifs or broken rules (e.g. the abovementioned Disney characters as caryatids). These kind of jokes are caused by boredom with architecture which copies well known patterns and rules (e.g. the reaction of mannerist architects to renaissance architecture referring to classical) and by boredom with strict functionalism (e.g. the reaction of postmodern architects to the simplicity and absence of detail in modernistic architecture). By negating the known rules architects are trying to discover new ways of development.

The playful character of architecture can be used to reflect the character of the building and its function. Buildings such as entertainment centres, cinemas, amusement parks or even kindergartens and schools are designed partially or fully to amuse and entertain. Why then shouldn't they look amusing themselves? As examples of such situation the colourful building of the Zandvoort Circus Amusement Park designed by Soeters Van Eldonk Architecten or the deconstructive Cinema Ufa in Dresden could serve.

Finally the joke in architecture can be simply used for fun and pleasure. After all, both architects and users of the buildings are just ordinary people who like to have fun sometimes. Architect Pier Francesco Orsini, who is the designer of the Bomarzo Gardens of Monsters seems to understand this very well. His main purpose was to amaze the visitor. The garden is full of strange, oversized monsters – elephants, werewolves etc. Common objects were treated in a funny way, e.g. the entrance is shaped as a monster's mouth (Ill. 4). The figures in the garden appear as if they were placed accidentally. The lack of symmetry or other logical composition makes the visitor uncertain of what they will see next during their walk in the park.

4. Summary

Based on the abovementioned examples there are many ways of creating humorous architecture. The reasons why architects use jokes as a means of expression in architecture are very different. The point is not to make people laugh, but smile. Architecture should force us to think about why the building looks a certain way and should force reflection on the architect's intentions. The essence of joking in architecture is the clarity of the message. To find a joke funny, one first needs to understand it. Different things can be funny for architects or builders, different things amuse people who know less about architecture. Even among

people with the same background and education the same things can be perceived differently. It all depends on the individual sense of humour. Additionally, jokes can be good or bad. It is important not to cross the line of good taste, literality or not to tell the same joke over and over again.

Lukasz Wojciechowski in his article “Laugher through tears” published in the magazine ARCH#24 writes “Joking in architecture is a risky issue. The building exists for decades and a good joke can be funny just a few times” [3, p. 72]. However, I do not agree with him. There is a risk in using jokes in architecture, but sometimes it is worth trying. The effect could be an intriguing building, which we will remember for longer.

R e f e r e n c e s

- [1] Jodidio, P., *Nowe formy – Architektura lat dziewięćdziesiątych XX wieku*, MUZA SA, Warszawa 1998.
- [2] Meyhöfer, D., *Contemporary European Architects 2*, Benedikt Tachen, 1994.
- [3] Wojciechowski, Ł., (*Nie)pokoje część XIII: Śmiech przez łzy*, ARCH 24, lipiec/sierpień 2014, p. 72–74.
- [4] *Yes Is More: An Archicomic on Architectural Evolution*, Published by BIG A/S on the occasion of the YES IS MORE exhibition – Close up: BIG at Danish Architecture Center in Copenhagen, Evergreen, 2010.
- [5] www.big.dk
- [6] www.coop-himmelblau.at
- [7] <http://www.dezeen.com/2015/05/26/bjarke-ingels-in-our-time-lecture-metropolitan-museum-new-york-new-vernacular-architecture/>
- [8] www.mvrdv.nl

ILONA SZEFER*

EACH GAME OF LINES, SOLIDS AND FORMS IS BASED
ON THE SAME PRINCIPLES AND IT STARTS WITH A
CONCEPT. THE BIOMORPHIC VISION OF THE WORLD
CREATED BY VINCENT CALLEBAUT

KAŻDA GRA LINII, BRYŁ I FORM BAZUJE NA TYCH
SAMYCH ZASADACH A ZACZYNA SIĘ OD POMYSŁU.
BIOMORFICZNA WIZJA ŚWIATA VINCENTA CALLEBAUT

A b s t r a c t

Architecture as a discipline tends to be understood differently in different environments. Le Corbusier “lines, solids and surfaces are elements through which architecture manifests itself. A thought through, flawless, wonderful game of solids in the light”. The architecture of the 21st century has become a compilation of developed exemplars, from the simple to the organic. The value comes from the idea, the concept of combining all the elements in such a way that the resultant game is both aesthetic and original. Such a game can be seen in the projects of Vincent Callebaut.

Keywords: *game of lines, form, biomorphism, idea, originality*

S t r e s z c z e n i e

Architektura jako dziedzina bywa różnie rozumiana w różnych środowiskach. Dla Le Corbusiera „linie, bryły i powierzchnie to elementy, przez które przejawia się architektura. Przemyślana, bezbłędna, wspaniała gra brył w świetle”. Architektura XXI wieku stała się komplikacją wypracowanych wzorców, od prostych do organicznych. Wartość stanowi idea, pomysł na połączenie wszystkich komponentów, tak by powstała gra była zarówno estetyczna jak i oryginalna. Taką grę możemy dostrzec w projektach Vincenta Callebaut.

Słowa kluczowe: *gra linii, forma, biomorfizm, idea, oryginalność*

* M.Sc. Arch. Ilona Szefer, Department Of Housing And Industrial Architecture, Interior Design, Rural And Landscape Planning, Visual Arts And Structural Systems, Faculty Of Architecture, Wroclaw University Of Technology.

1. Introduction

Architecture as a discipline tends to be understood differently in different environments. For some, it is an art inseparably bound with civil engineering, but also most related to fine arts. For others, it is above all a technical field. Yet other people would categorize it as a social discipline given its tasks in which technology and art play only an instrumental role. Finally, there are those who would be glad to see architecture as one of the ways of shaping the geographical environment [3, p. 3 – 6]. For Le Corbusier “architecture had nothing to do with styles”. He described its destination as loftier, showing human instincts. Given its abstractness – requiring knowledge involving many sciences and various skills [9]. “Lines, solids and surfaces are elements through which architecture manifests itself. A thought through, flawless, wonderful game of solids in the light” [4].

Perceiving a shape, we always consciously or unconsciously assume that the shape presents something and hence that it is a form of some content.

Rudolf Arnheim [1]

Architecture is shaped by elements of geometry which create a possibility for space and the architectural form. A point constitutes the basic designation of the form indicating at the same time its position in space. As an element of architecture it has been deprived of dimensions. Lines, forming due to movements of points, allow determination of the direction and basic dimensions. A plane, formed as an effect of extending a line, has already such qualities as: length, width, shape, area and direction. Another sequence of movements of a plane leads to the formation of a solid which may make use of the qualities of the form, space, orientation and position. Solids may be composed of points (places in which a few planes intersect), lines (places in which two planes intersect) and planes (areas). A solid in the architectural nomenclature is a three-dimensional element and the form constitutes the basic spatial dimension. According to Le Corbusier, the basic forms whose image is clear and readable are cubes, cones, spheres, cylinders and prisms. Each form may be subject to transformations based on subtracting, adding and intersecting components [6, p. 9–14]. Thanks to the rapid development of modern technologies, architects and engineers have gained unlimited possibilities of shaping space. Space which is no longer made up only by simple and transparent forms, but also elements having smooth and soft lines resembling those existing in nature.

“In architecture there is an element of life. It has been carrying it inside since its birth, since humans left caves and started building their first Palaeolithic constructions (...). This early addiction to natural materials, and hence biology and its laws, has undergone a great metamorphosis, moving sometimes to the world of symbols and signs. Henceforth the two forms of architectural biologism still last and complement each other [8, p. 44–45]”.

The rule of creative imitation of other forms of life, phenomena, and laws of nature (mimesis) has played an important role in the social, cultural and technological development of humans. Thanks to mimesis, complementary but very distinct disciplines have emerged: biomimetics, biotechnology and biomorphism. Biomimetics is a field of science involving

research on and practical application of the behaviour and operations of nature in order to use it in engineering, electronics, chemistry, design etc. [5]. Biotechnology covers technological applications using biological systems, living organisms or their components to produce and modify products and processes within a specific application [10]. Biomorphism is characterised by a use of forms inspired by nature in connection with modern materials. This has led to its applications in both articles of daily use and architecturally complicated buildings [2].

2. The biomorphic vision of the world by Vincent Callebaut

Dependencies between technology and nature have become an interesting phenomenon. We find inspiration in the water, air, flora and fauna, earth. We use proven exemplars, games of lines and forms. We adapt them to the human world – the world created by the human mind. By this they become close to a masterpiece. We match objects with living beings as we need metaphors to describe something, express our delight in a building [14]. Biomorphic architecture with its ideas relates to floral ornamentation in art at the turn of the 20th century, as expressed for instance in Gaudi's projects. Using forms present in nature has also become an inspiration and affiliation for many contemporary designers. An example of such is the Belgian architect Vincent Callebaut. The characteristic features are the use of soft, smooth and abstract forms resembling the structure of flora (Ill. 1) and fauna (Ill. 2), free compositional arrangements (Ill. 3), and asymmetry. The essence of such architecture is also the fact that it should fit very well in the natural landscape [7, p. 42 – 43]. One of the more inspirational projects by Vincent Callebaut is The Perfumed Jungle, realized for the city of Hong Kong in 2007. To address the population problem, the architect proposed that they tame nature again and enrich the area of the ultramodern city. Within a long-term development, the idea behind the project is to increase access to the area by creating an “ecological trace”. This means that newly-formed spaces will be self-sustainable, and in fact produce more energy than they use. The defined afresh Central Waterfront (Ill. 6) offers an occasion to understand the water world and copy it by creating liquid rooms. Grids of irregular cells enable infiltration into the deepest tissues of the city. That new, multilayer topography, without walls or any other limits, is not only to be inhabited by people, but also adjusted to the needs of many species in the local fauna and flora, or species which by migration will settle there. Organic towers are meant to resemble trees emerging from the water into the sky (Ill. 5). And just like them, the towers would grow, forming networks of proliferating rhizomes. Regularly formed cells would be closed randomly thanks to “pillows” with bedding and plant manure allowing the development of rich plant life. The spatial arrangement of these ecological towers offers a double functionality. The inner spaces, “the arborescence”, would be dedicated to private compartments – housing, whereas the outer spaces, “the branches”, would be occupied by offices, services and leisure. Such a division of functions would guarantee permanent use of the district and breathe new life into it. Connected by a network of roads and pedestrian paths, the towers in winter would constitute vertical gardens with a strong feeling of local identity. There is a clear reference to the art of Chinese faience or canvas woven using green fibre (a reference to biology and botany) [11;15].

In the projects of Vincent Callebaut there is a striking variability and liquidity of the form. The buildings he creates are unique. Each time the idea is the natural environment



- III. 1. Dragonfly – concept of the urban agricultural farms inspired by the form and structure of the dragonfly wings, New York, Roosevelt Island, USA, 2009 [15].
- III. 2. Agora Garden – Covered by plants, sustainable residential tower inspired by the shape and form of DNA strands, Tajpej, Taiwan, 2010–2016 [15].
- III. 3. Kings Forest – Rest house complex inspired by the shape and structure of the leaves, flowers and birds' nests; Fes, Marocco, 2012 [11,12]
- III. 4. Landscript – the hills (the habitat) located over the highway and connected by lagoons inspired by the construction of the cells, Geneva, Switzerland, 2020 [13,15]
- III. 5. The Perfumed Jungle – the view on the green towers, Hong Kong, China, 2007 [11,15]
- III. 6. The Perfumed Jungle – the concept of the new spaces in the business district, Hong Kong, China, 2007 [11,15]

gaining an architectural form dressed in construction, materials and colours. Incident light brings a building to life. For many, Callebaut's concepts seem to be abstractness, based on a detailed analysis of current energy production technologies, organic matter processing, and waste utilization. A project worth noticing is Landscript (Ill. 4) – the concept depicted within the course of rebuilding and concentrating the quarters of the buildings of Praille – Vernets – Acacias in Geneva. Landscript proposes a fifteen-year-long scenario for the evolution of the assumption which is based on the phenomenon of auto-cloning of a landscape (in this case the housing structure has not been incorporated into the existing city landscape but it defines it itself). The idea of the assumption was an attempt to bring back the balanced ecosystem between the buildings and a rediscovery of biodiversity. Landscript is supposed to constitute another stage in the development of urban areas. After the former development of the city against the landscape, now the landscape is being rebuilt in the city. From this point of view, all buildings are perceived as geographical abstractions and elements disturbing the ecosystem. Each element of the artificial landscape exhibits a degree of variable duality to ensure maximum biodiversity. At the central point of the project, above a motorway, habitats in the form of hillocks have been designed. At the feet of the buildings a network of lagoons has been formed, the purpose of which is to connect with a river. The new, geographically modified space of water and mountains is to unite all public institutions included in the project – schools, universities, theatres, etc. This architecture, with its very limited silhouette and connecting with the natural landscape, has become a milestone in the light of previous studies on long-term development [13;15].

The uniqueness and popularity of Callebaut is probably a result of the fact that the projects drawn up by his bureau have been deprived of the tags of rigid, heavy solids. The new form is free, amorphous, and goes beyond mainstream patterns and schemes. Thanks to such activity the creative process of shaping lines and solids is also perceptible in the objects and spaces realized. This unconstrained approach to a project brings objects to life. The proposed solutions are no longer only inferior to the function, but are in harmony with it.

In every game of creating a new space one should remember how important to the whole process people are; people who, thanks to perceptive processes, can pay attention to the values included in architectural aesthetics. Not to play down the essence of the current regulations and norms in architecture and its features as an art of spatial complex and context, the architect, by building order and playing with the form and aesthetic values, changes simple civil engineering into architecture. In this case, universal features typical of humans emerge – known places, structures and forms [6].

If one looks at our surroundings and sees the importance of architecture in the human-made environment, it is immediately striking that its quality has a fundamental meaning to the lives of people and the influence some architects have on that created environment is huge. Architecture affects the quality of every aspect of human life greatly. Yet most buildings are not designed by great architects. The bulk of the building development is just routine...

Santiago Calatrava [14]

3. Summary

Searching for the ideal form has been an aspiration for architects and artists of all times. We perceive the buildings created at a given time as cultural, religious, political symbols – sometimes even masterpieces. The idea was to make them reflect divinity, the power of a country, the natural landscape, to evolve out of municipal ideas. Every epoch made an individual contribution. In each epoch architecture was a game of lines, solids, colours and light. The architecture of the 21st century has become a compilation of the developed exemplars, from the simple to the deconstructive to the organic. Adding a complexity to architectural forms which was not achievable in earlier epochs. But, the fact is that regardless of the shape of solids, contours, light or materials, the essence lies in expression and the influence on humans. The value comes from the idea or conception to combine all elements in such a way that the resultant game is both aesthetic and original. Such a game can be seen in the projects of Vincent Callebaut.

R e f e r e n c e s

- [1] Arnheim R., *Sztuka i percepcja wzrokuwa. Psychologia twórczego oka*, Wydawnictwo Officyna, Warszawa 2013.
- [2] Bhaskaran L., *Design XX wieku*, ABE Marketing, Warszawa 2006.
- [3] Kotarbiński A., *O ideowości i ideologii w architekturze i urbanistyce*, Arkady, Warszawa 1985.
- [4] Le Corbusier, *W stronę architektury*, CA Centrum Architektury, Paryż – Warszawa 2012.
- [5] Sterry M. Learning from Life – The Biologically Informed City, RIBA –USA Annual Lecture, Chicago, June 26th 2014, www.slideshare.net.
- [6] Szparkowski Z., *Zasady kształtowania przestrzeni i formy architektonicznej*, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1993.
- [7] Szuba B., *Systemy środowiskowe a lokalne otoczenie człowieka*, Oficyna Wydawnicza Politechniki Opolskiej, Opole 2012.
- [8] Trybuś J."Inspiracje naturą", Architektura organiczna, Małopolski Instytut Kultury, www.slideshare.net, Kraków 2009.
- [9] Witruwiusz, *O architekturze ksiąg dziesięć*, Warszawa 2004.
- [10] Konwencja o różnorodności biologicznej ONZ, 5 czerwca 1992.
- [11] www.archello.com
- [12] www.cashewstadstuinieren.nl
- [13] www.divisare.com
- [14] www.sztuka-architektury.pl
- [15] www.vincent.callebaut.org

ERNESTYNA SZPAKOWSKA-LORANC*

ON COMIC QUALITY IN ARCHITECTURE

O KOMIZMIE W ARCHITEKTURZE

A b s t r a c t

The article presents the results of a search for aesthetically comic elements in contemporary architecture, based on the aesthetics of Mieczysław Wallis and Henri Bergson's theory of humour.

Keywords: *aesthetically comic elements, Mieczysław Wallis, Henri Bergson, FAT Architecture, Erwin Wurm, John Körmeling, Rem Koolhaas*

S t r e s z c z e n i e

Artykuł stanowi wynik poszukiwań w architekturze współczesnej elementów estetycznie komicznych w myśl estetyki Mieczysława Wallisa oraz teorii komizmu Henri Bergsona.

Słowa kluczowe: *przedmioty estetyczne komiczne, Mieczysław Wallis, Henri Bergson, FAT Architecture, Erwin Wurm, John Körmeling, Rem Koolhaas*

* Ph.D. Arch. Szpakowska-Loranc Ernestyna, Department of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

Leon Chwistek in *Zabawa i sztuka bawienia się*¹ defined the art of playing as “one of the finest arts” but not one of the easiest. Its mission is to improve reality (causing an “inflammation of imagination” and “breaking out of the daily course of thoughts”). [2, p. 149] Chwistek recognized creative activity as the greatest form of fun – strenuous work on an idea adopted by an artist. He presented the pursuit of organizing play as the primal reason for the development of the fine arts. One of the manifestations of the art of playing is the spectacle, to which Chwistek assigns architecture as decoration. A real architectural thing thus becomes a form of fun. Understood in such manner, it is deprived of “conventional restraints”, introducing originality and breaking patterns.

A space for play and fun with observers (along with an admiration as an aesthetic experience) is therefore present among aesthetic objects; among which architectural works are also undoubtedly assigned. Mieczysław Wallis associated the abovementioned processes with objects causing intense, partly discordant aesthetic reactions. “Extracting aesthetic values from characteristic and expressive ugliness, from humour, from the sublime, from tragedy, is however something as common and as momentous as extracting aesthetic values from beauty (in the literal sense of the word)” [6, p. 22]. Wallis’s systematics comprises four types of aesthetic objects among which two play a game with the viewers – characteristic, expressive objects and comical objects (in the case of beautiful, sublime and tragic objects it is difficult to speak about fun). The group of comical objects constitute “not beautiful” but also “not ugly” objects, initially arousing a feeling of alienation; causing a surprise and then an aesthetic pleasure. Their character (which may be called “amusement” although the experience of humour is not always accompanied by laughter) rests on one of four theories of comicality enumerated by Wallis: a pretence of high values, absurdities, a triumph of mechanism, and a disclosure of powerlessness. The theories, which (apart from unplanned ridiculous accents in architecture – accidental events) introduce jokes are deeply thought through by their creators, serving a particular purpose.

Charles Jencks presented the comic qualities in architecture in *Late-Modern Architecture* and *The Language of Post-Modern Architecture*. This is unintended humour (*mal-à-propos*) as a result of combining procedures of reduction and hyperbole, forming: a “rooster” (New Sky Building No. 5, proj. Y. Watanabe, Tokyo 1971), “a calculator with a travertine printer” (the Lyndon Baines Johnson Library, proj. G. Bunschaft and SOM, Austin 1971), or “a whale eating a chocolate bar” (the Ingalls Ice Hockey Stadium, proj. E. Saarinen, 1957 and the Kline Science Center, proj. p. Johnson, New Haven 1864). These are also metaphorical forms of autonomous Japanese symbolism with a grotesque tone – the “houses-faces” of Takefumi Aida (Nirvana House, 1972) and Kazuma Yamashita (1974) – the contemporary, appalling examples of the anthropomorphism of architecture. These are also literal metaphors of a hotdog kiosk in the shape of a sausage or an antique bookshop in the form of a building-dinosaur. This is Philip Johnson playing with viewers and Bruce Goff, the author of “houses – umbrellas”, “houses – turkeys” and “houses – mantis”. Goff’s words, cited by Jencks, in which the architect justifies the social perception of the aesthetics of his projects are consistent with Wallis’s definition of comic objects: “someone once said that the perception of beauty is always accompanied by the feeling of strangeness... it is part of recognizing beauty.”[5, p. 165]

¹ *The Play and the Art of Playing.*

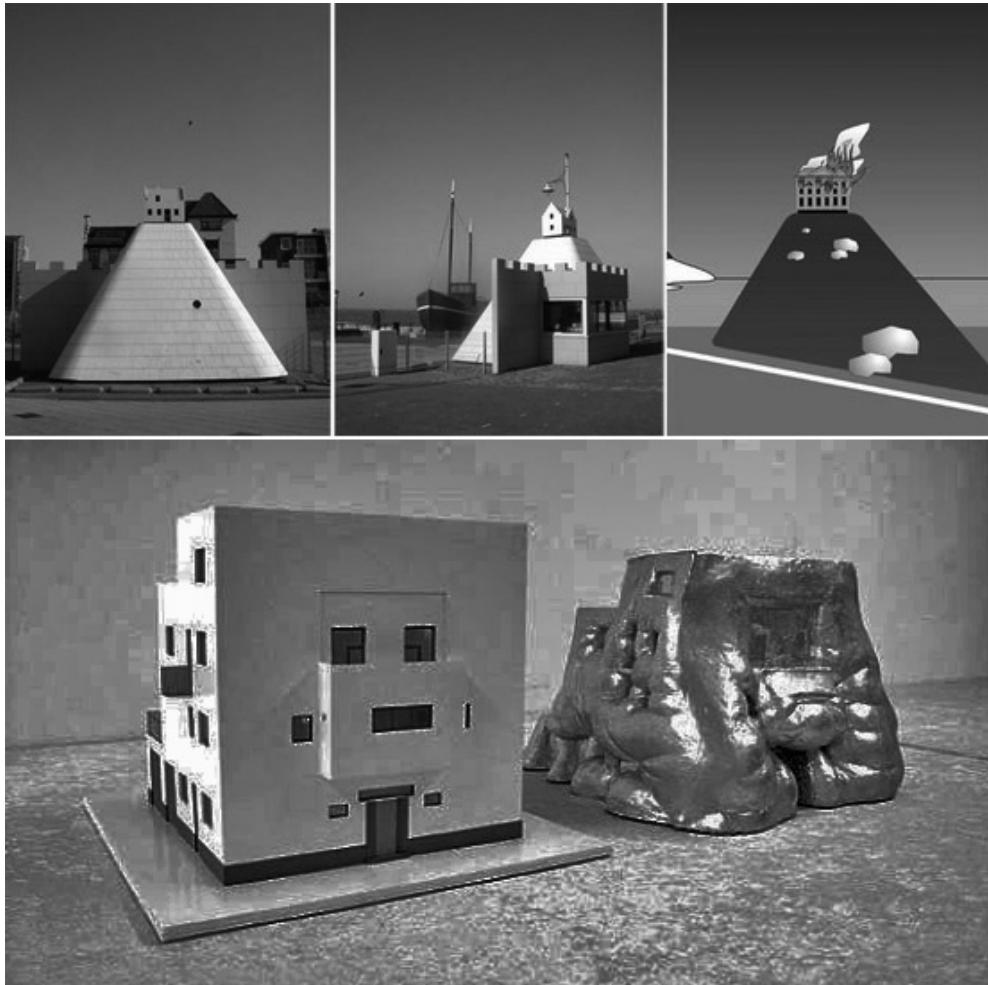
Robert Venturi and Denise Scott-Brown, “the lawyers of ugliness and mediocrity” – not described by Jencks in terms of comicality – admit to quoting in their buildings such everyday items as tablecloths or telephone booths – in the name of contradiction, paradox and ambiguity. Their first building, a McDonald’s restaurant in Buena Vista, looked more like a commercial sign than an architectural object. Adjoined to it were a spatial company logo nearly two times higher than the building, and such high figures of a happy meal box, and an animated hamburger, a shake, and a packet of French fries.² The building corresponded to one of the theories of comic, aesthetic objects cited by Wallis, according to which comical are elements pointless and ridiculous, details artificially separated from their context and thus deprived of sense. The more noticeable the nonsense of situation is and also the greater the surprise, the more humorous the situation is. When a recipient becomes accustomed to the situation, the comic element disappears. The absurd is seen as something fantastic, unreal, but not funny. Jencks defined a comic building on the example of the Sydney Opera House (proj. J. Utzon, 1974) as a “superabundance of metaphorical responses”, which suggests unusual but convincing associations. The great number of created meanings of the building’s metaphors – such as “a scrum of nuns” or “turtles making love” [4, p. 43] due to the popularity of the opera as an interpretative material is a result of the fact that its particular form had never been used before in architecture. It produces, however, numerous associations with other objects. In this case, the element of surprise appeared again, presenting itself as parallel to the level of comicality.

According to Henri Bergson’s theory of humour (contained in his essay *Laughter: An Essay on the Meaning of the Comic*), also invoked by Wallis, comical is a victory of mechanism – a triumph of matter over spirit. In terms of inanimate objects it is a disguise – a costume denying the “logic of imagination”. According to Bergson, comic is a similarity between nature and artificiality (“improvements of landscape”)³. The procedure that the FAT Architecture group used for creating architecture in the costume of drama scenography, imitating both the built world and animated reality. “Copying, appropriation, collage, juxtaposition and rescaling are used to develop narratives of image, materiality and space” – to play with observers. [3, p. 79] The created objects in colourful facades of numerous planes combine architectural elements drawn from history and spatial context, and an iconographic reflection of the natural elements in simplified, “comic” shapes, letters, and flattened patterns.

The frenetic buildings of FAT result from the openness of the group to a wide range of influences and sources (in contrast to the commonly emerging “boring” architecture, devoid of enthusiasm). “Monument” created in Schrevenige near The Hague (2002) is a small pavilion in a bike park, a guard kiosk and simultaneously an element of street art, “inscribing” itself into the context of theatrical architecture and spatial character of the seaside resort. The building is formed of a pavilion with a glass vitrine, a flanked theatrical “wall” on the axis of the object, and a pyramidal pedestal (hiding a storage room), atop of which a small model of a typical Dutch house has been placed. The elements of different scales falsify perception – merged forms of fortifications, lighthouse architecture, and artificial landscape, with

² Comic elements in architecture are sometimes close to aesthetical, ugly objects, which – according to Wallis – also have their particular function.

³ From the introduction of Stefan Morawski: “Humour is the result of the opposition of spirit and matter, content and form, dynamic life forces and automatisms, which manifests itself in the victorious resistance of the first element to the mechanical inertia (stiffening) of body or mind” [1, p. 11].



Ill. 1, 2, 3. Monument, proj. FAT Architecture, Schrevenige, 2002

Ill. 4. Fat House Moller / Adolf Loos, Erwin Wurm, 2003

reference to a war monument nearby. The theatrical decorations of FAT are accompanied by special effects. Every half an hour the model house on the top of the Monument “catches fire” with lighting effects and smoke.

The architect John Körmeling creates interdisciplinary works on the verge of architecture, sculpture and *street art*. The designer presents an ironic approach to the issues of form and space of the city, such as his proposal to transform the Museumplein in Amsterdam into the shortest and widest Dutch motorway (*The shortest and widest motorway of the Netherlands; a relief for cars*, 1988) – a comment about relations between vehicles and crowded space of cities – or rotating house. The “Rotating House” (2008) is a model of typical, Dutch house of a natural size (about 40sqm, 10m high), with a sloping roof covered with tiles and brick

walls. The “building”, however, is not intended for habitation. The Körmeling’s house, located on a roundabout in Hasselt, moves on rails around the junction (along with its terrace and an entrance platform). At night the building is illuminated from the inside, while during the day, one can look into its interior through a large window. Körmeling’s intention was to “reverse” reality – set its fixed components in motion, thereby arousing feelings of alienation and awkwardness for drivers who are usually the only moving elements in the constant built and natural environment around them. However, “the anomaly” planned by the architect is not immediately visible. The house moves slowly, making a full circle in 20 hours. Moving in the direction of the traffic on the roundabout, it sometimes shifts faster than drivers stopped in traffic congestion. Each 24 hours, the “Rotating House” is constantly changing place, creating “gaps” in the reality. It also has another, hidden meaning. It shows a breach, caused by the construction of the roundabout in the historical fabric of the city of Hasselt which has destroyed its integrity.

Comical might be associated with human reality – hence the amusing (while frightening) building in the shape of a human face (the animated world) by Yamashita, and the restaurant-duck in Riverhead, immortalized in *Learning From Las Vegas*. That principle, recognized by Henri Bergson as an irrevocable basis of humour, has been used by the sculptor Erwin Wurm to create *Fat House* (2003), *Fat house Moller/Adolf Loos* (2003), or *Guggenheim – Melting* (2005) – swelling models of realized or (arche)typical architectural objects. Wurm’s sculptures are buildings which have obtained human characteristics, exhibited in still or animated forms (registered in video art). *Fat House* swallows a man entering through his door and speculates: “Am I a house and a piece of art, or am I just a piece of art?” “The house can not be fat,” he continues. “A work of art can not be fat too. But wait a moment. Maybe being fat is an art.” The expression of its powerlessness, but not spurring pity or disgust (this is a building – devoid of emotion) corresponds to the third theory of comic elements described by Mieczysław Wallis. Simultaneously, the architecture used in Wurm’s sculptures presents disintegration of the prevailing order and is designed to criticize excessive consumerism; it is a caricature of the theory that if something eats and swells, it means that this thing / body has an inside. The comical sculptures of Wurm also serve to criticize Austrian society and its view of architecture – the lack of knowledge and taste. The adoption of comic costume allows the artist to refer to important issues without an unnecessary pathos or gloomy tone; with direct statements, rejecting the status quo of social norms. To put the observer in the position where he can easily challenge the relationship with the environment.

Leon Chwistek noted that in the past the art of playing was closely linked with religious cults (Chwistek gives the epochs of antiquity and Middle Ages as examples) and now it fulfils important social functions. Humour likewise. Bergson recognizes three main functions of humour: correcting social deviations, punishing stiffness (although these two functions are mutually exclusive), and enabling intellectual fun and relaxation related with it. Comicality is a product of cold observation, stigmatizing flagrant irregularities of social coexistence. Disadvantages stiffen the nature and an idée fixe dulls the mind [1, p. 57]. By manipulating on the verge of the comical, Rem Koolhaas refreshes his projects and theoretical works. He often splices up his ideas supported by scientific theories with some absurdity and humour. The *Elements* exhibition at the Venetian Biennale of Architecture (2014) was planned in this manner – a collection of elements continuously present in historical and modern buildings; the results of research (sometimes obsessive), materializing

the current state of the art of building. Among the objects exhibited there were steel elements of mechanical ventilation protruding under a painted vaulted ceiling; a collection of WCs over the centuries; dozens of handles without doors mounted on a wall and a ceiling; a drug detector and a blue latex glove of an airport security as architecture. The humorous colouring there was based on the artificial separation of the elements from the entity; from the comparison in which they make sense, resulting in the loss of purpose. This time, however, the intervention had an educational function – the rejection of the architects' personalities, presenting the micronarrations of the elements, developing in their own independent cycles.

A similar impression of lack of purpose occurred in the realization of the Prada Transformer – a temporary pavilion in Seoul, designed by OMA (2009), with a steel construction and a pneumatic, polyurethane coating. After choosing a suitable shape for each function of the pavilion (the gallery, the theatre, the fashion show, and special events), Koolhaas proposed a tetrahedral block with each wall of a different geometric shape. When after rotating the solid, the right partition was transformed into the ground, the rest of the partitions of the pavilion turned into its walls, with elements of the interior jutting into the space from the steel construction; the observation was highlighted by elements of the exposition attached to them, that turned upside down over the heads of observers, clearly indicating the procedure of transforming the floor into the wall. Koolhaas called the design "antiblob". Its illusory absurdity resulted from the simulated mechanization of the pavilion's interior – somebody has planned the elements of the interior upside down, hanging from the ceiling.

The search for comical objects in architecture may continue: Will Alsop's Spiky Pods, Shin Takamatsu's mechanistic solids resembling Transformers, the golden torch or giant toilet bowl of Philippe Starck, and the collages of Morphosis and Coop Himmelb(l)au. Architecture is occasionally a comical game, when its humour is intentional. In other cases, still ridiculous for the audience, for its creator it finishes the game. In that case it corresponds to the fourth comical theory evoked by Mieczysław Wallis, according to which elements are comic if they are of seemingly great value; nothingness pretending greatness and a significant effort is put into a project whose result is mediocre. Ridiculousness is based on illusion, haze and nothingness after a time of strenuous expectations. Unintended humour in architecture corresponds to the words of Kant: "Laughter is an affection arising from the sudden transformation of a strained expectation into nothing" [6, p. 51.].

R e f e r e n c e s

- [1] Bergson H., *Śmiech, Esej o komizmie*, Kraków 2000. (*Laughter: An Essay on the Meaning of the Comic*)
- [2] Chwistek L., *Zabawa i sztuka bawienia się*, [in:] Idem, *Wybór pism estetycznych*, Kraków 2004, p. 147–171.
- [3] FAT, *FAT Projects: Manifesting Radical Post-Modernism*, [in:] *Architectural Design*, Issue 5/2011, p. 78–89,
- [4] Jencks Ch., *Architektura postmodernistyczna*, Warszawa 1987.
- [5] Jencks Ch., *Architektura późnego modernizmu*, Warszawa 1989.
- [6] Wallis M., *Wybór pism estetycznych*, Kraków 2004.

BARBARA ŚWIT-JANKOWSKA*

**THE GAME IN SPACE
– THE PHENOMENON OF AN URBAN GAME¹****ZABAWA W PRZESTRZENI
– FENOMEN GRY MIEJSKIEJ****A b s t r a c t**

In the paper, the phenomenon of the urban game is presented in the context of its applicability to architectural education. In the perception of the average inhabitant, the town is only a background for daily activities, and architecture is designed to secure his basic needs. The recent crisis in spatial interactions, analogous to the crisis in social interactions, can be overcome through skilful use of non-standard methods of activating inhabitants – fun and games.

Keywords: architectural education, urban game, space

S t r e s z c z e n i e

W artykule przedstawiono zjawisko gier miejskich w kontekście możliwości wykorzystania jego potencjału jako narzędzia edukacji architektonicznej. W wyobrażeniu statystycznego mieszkańców miasto jest jedynie tłem dla codziennej aktywności, zaś architektura ma za zadanie zabezpieczyć jego podstawowe potrzeby. Współczesny kryzys interakcji przestrzennych, w analogii do kryzysu interakcji społecznych, można przezwyciężyć poprzez umiejętne wykorzystywanie niestandardowych metod aktywizacji mieszkańców – zabaw i gier.

Słowa kluczowe: edukacja architektoniczna, gra miejska, przestrzeń

* Ph.D. Barbara Świt-Jankowska, Division of History of Architecture and Urbanism, Institute of Architecture, Urbanism and the Heritage Preservation, Faculty of Architecture, Poznan University of Technology.

¹ Research funded by the Ministry of Science and Higher Education in 2014 and 2015 within the framework of the research project titled: “*The architectural education of the youngest*” realized at the Faculty of Architecture of Poznan University of Technology, in the Institute of Architecture, Urbanism and the Heritage Preservation, in the Division of History of Architecture and Urbanism.

The city is ‘the place’, it is the way of being in the space which allows the articulation of our feelings and sensations towards the space
[5, p. 19]

1. Time and space

The inescapable intersection of time and space is a distinctive trait in the history of western civilization. The initially hierarchical layout of places that was specific to the Middle Ages, began to gain an open, infinite form in the 17th century (thanks to Galileo’s discoveries). Time has become an important parameter of a space – now regarded as a point in time [3]. Contemporary human lives in simultaneous times, in the era of the juxtaposition of contrary things, close and distant, concentrated and distributed. Growing globalization results in a recognition that the recent World seems to be a net of intersecting directions, where the essence of time and place are relativized through developing media, Internet, and modern communication.

The space of the contemporary city is non-continuous, crisscrossed. Thanks to the fast public and private transportation the local nature of a space has been lost and personal experience of distance is distorted. On the one hand it is dominated by architecture: the life of the ordinary man is revolves around built-up neighbourhoods, among the streets and squares. Moreover, the pursuit to maximize the use of available space impairs the sense of human scale. Buildings are balanced by greenery ordered and trimmed only to a small degree, subordinated to the demands of the urban tissue, or arranged more freely, but closed in municipal parks. On the other hand – architecture very often becomes something completely obvious to the inhabitants, even to the limit of being imperceptible, not worthy of their attention and sacrifice of their valuable time.

The citizens of the modern metropolis move between points suspended in space (home, work, school/preschool, recreation) nearly unconsciously, depriving themselves of the pleasure of communing with the place, articulating their feelings and experiencing the surrounding area. As a result, they lose the ability to correctly interpret the complex relationships between the individual elements of the city.

In the words of Michael Wroblewski, one of the problems that currently bother sociologists the most is the crisis in **social interactions** – meaning activities that arise from “orientation on other people” and “are an answer to their behaviour and actions” [7, p. 289]. Paraphrasing the above definition, in contemporary architecture we can find a crisis in **spatial interactions** (the relationship between the space and its users) – meaning the actions of people’s orientation on the surrounding space and their answer to its impact.

2. The game in space. The crisis diagnosed

The aforementioned lack of understanding of the rules governing any given space leads to a disequilibrium in the position of architects and urban planners in modern society. Projects concentrated on improving the condition of public spaces in cities often meet with indifference or, in extreme cases, with hostility from the stakeholders. Regulations aiming at the achievement of a harmonious image of the city are perceived as an attack on the freedom of citizens. The immediate environment is treated by the locals with disregard. Common

in society is the lack of consent to create a platform for discourse, polemics, or creative criticism of the proposed solutions. In return, there is a belief that “these matters” should be taken care of by someone else. Social participation and the adoption of democratic accountability for the public space is associated with active contribution, practice and personal experience of it. This is similar to working on the interpretation of a difficult literary text or an allegorical painting by the Dutch masters. It requires commitment, raising awareness, and dedicating time to the analysis of individual fragments and the relationships between them. Understanding comes later, but then often accompanied by delight and euphoria.

The aforementioned Michal Wroblewski sees an opportunity to overcome the crisis in social interactions in post-modern play [7, p. 296]. **Post-modernity**, the successor to **modernity**, is not merely its critique. It reworks the characteristic values in the search for a new quality and solutions that will prove to be effective in a postmodern society. To paraphrase again – we can search for the cure for the lack of **spatial interaction** in the modern city in the concept of playing and having fun. Using the phenomenon of the **urban game** (location-based game), has recently come into its renaissance.

What is an urban game? What does its growing popularity imply?

As we can read on popular Internet forums, the urban game is a new form leisure activity, popular in many cities around the world. Its sources can be found in a combination of actions such as flash mob, street happenings, role-playing computer games (RPG) or tactical role-playing games (TRPG) as well as in scout chases². The basic principle in the organization of the game is the use of urban space as an element of the game. The city then becomes a giant game board on which the players – like pieces – move from one point to another, playing pre-determined roles and performing tasks prepared by the organizers. Initiatives are characterized by a huge variety. They can be divided into:

- the topic: the story – issues related to universal history, events important to the local community (historical or contemporary), fiction (stories based on legends, criminal riddles, characters and literary threads, stories invented by the organizers, science fiction, historical fiction) or, the lack of the story.
- the envisaged objective: educational, integration, casual fun, celebration of holidays, interactive sightseeing.
- the manner of organization: grassroots, organized by urban game and street happenings enthusiasts, or commercial events planned at the request of individuals or businesses, for specific events (for example: a bachelorette party, corporate events).

The connecting element of these activities is always the urban space. Depending on the subject and the degree of dissemination of the game (typically the Internet is used for this purpose) the number of participants that takes part in the competition varies from a few to several hundred players. Currently, similar activities are held in almost every major Polish city. The most important name related to the organization of urban games in Poland is Krzysztof Bielecki, creator of the project *Urban Playground* (2005), which instantly gained enormous popularity and triggered an avalanche of similar initiatives across the country, for example those of Szymon Dabrowski (Poznań). In Poznań, another initiative was established – the tourist game, based on the idea of an urban game – an independent action allowing interactive sightseeing of the city space.

² According to http://pl.wikipedia.org/wiki/Gra_miejska [access: 10.06.2015].

Referring to the definition, every game has a double face: “the child, while playing, on the one hand learns generalization and abstraction, on the other hand control of their own actions in relation to the formulated principles” [7, p. 292] On the one hand, it has a strictly mapped set of rules, where features such as prediction and calculation matter (it is important to achieve the intended purpose of the game, which is winning), on the other hand every game is a reflection of **disinterested social interactions**³, which are characterized by freedom and loosening of rules. Understood in this way, the action becomes a useful educational tool through which the child (or adult) learn to live in society.

Similarly – through an **urban game** – players not only realize the goals of the organizers but also, indirectly, learn about life in the space of the city, rediscovering its merits and flaws. A suitably prepared game in this case becomes an important source of information on the city, its architecture and urban planning. Participants voluntarily engage in an analysis of the plans of the city, expanding their knowledge of its history, familiarizing themselves with the changes that have taken place in the space, and experiencing and assessing the given reality. It can be assumed that the effectiveness of such actions is much greater than normal “guided walks”. Importantly, the theme of the game seems not to be crucial in advancing spatial aptitudes – activities related to the history of architecture can help, but are not necessary. A group participating in an interesting gameplay of any story is likely to remember more significant details regarding the architecture and urban design of the city, than a similar group on a sightseeing tour of the same area in a traditional way. In addition, the sporting rivalry intensifies the need for taking new challenges. A demonstration of this is provided by the numerous comments appearing online on forums related to particular games and still increasing attendance in subsequent editions.

3. The phenomenon of an urban game

The phenomenon of the urban game raises the question of the creative use of spatial values of the city. Referring to the specificity of architectural and urban design, the designer’s work also resembles, to a certain extent, the game located in the space of his mind – a three-dimensional jigsaw puzzle in which each element must find its place and fill the role it has to play. A particular juxtaposition of “building blocks” is accompanied by both predetermined rules and a certain amount of freedom. As a result of the creative activities, a vivid space should be constructed, following the flexible needs of users, harmonious and balanced.

Urban game design allows for translation of abstract (at least for most users) concepts into concrete actions in the tissue of the city. It enables players to look at their own city from a new, previously unknown perspective and provides an opportunity to understand the multi-faceted processes in its space. As Johan Huizinga wrote – a game is an action that “runs within certain limits of time, space and meaning”, “in a visible order, according to voluntarily accepted rules, outside the sphere of material usefulness or necessity” [4, p. 189–190]. The atmosphere of playfulness, on the one hand leads to a feeling of unreality, but on the other it allows for the introduction of children’s elation, laughter, and delight during its experience.

³ In contrast to the **interested interactions** – based on emotional, business or economic reasons, which are characterized by rationality and the desire for maximum efficiency.

R e f e r e n c e s

- [1] Bauman Z., *Ponowoczesność*, [in:] B. Szlachta (ed.), *Słownik społeczny*, Wyd. WAM, Kraków 2004.
- [2] Bielecki K., *Miasto to gra*, Drukarnia Pijarów w Krakowie, Warszawa 2008.
- [3] Foucault M., *Inne przestrzenie*, w: *Teksty Drugie*, 2005, nr 6 (96).
- [4] Huizinga J., *Homo ludens. Zabawa jako źródło kultury*, Wydawnictwo Czytelnik, Warszawa 1985.
- [5] Nowakowska O., *Wszystko gra! Gry miejskie w przestrzeni Warszawy*, Homo Ludens 1/(3) (2011), (online), homepage: file:///D:/2013-12-09/6_BIBLIO_pdf
- [6] Ślawek T., *Akro/nekro/polis: wyobrażenia miejskiej przestrzeni*, w: A. Zeidler-Janiszewska (ed.), *Pisanie miasta – czytanie miasta*, Poznań 1997.
- [7] Wróblewski M., *Gra jako model społeczny. O potrzebie grania w społeczeństwie ponowoczesnym*, Homo Ludens 1 (2009), (online), homepage: file:///D:/2013-12-09/6_BIBLIO_pdf

JUSTYNA TARAJKO-KOWALSKA*

COLOUR GAMES IN ARCHITECTURAL SPACE

GRY Z KOLOREM W PRZESTRZENI ARCHITEKTONICZNEJ

A b s t r a c t

The article discusses different ways of implementing architectural colour games in space. The author has selected examples of “colourful games” in which colour composition plays a key role. Colour is also presented as an element of the conscious, oftentimes dynamic game, played between architect and spectator. Finally, colour becomes the game itself, part of the experiment in space – architectural performance, as well as a representative of the “fun and game” aesthetic.

Keywords: colour in architecture, playing with colour, architectural colour games

S t r e s z c z e n i e

W artykule zaprezentowano różne sposoby realizacji architektonicznych gier z kolorami w przestrzeni. Przedstawiono przykłady „gier w kolory”, w których zestawienie barw odgrywa główną rolę w kompozycji budynku. Kolor jest też prezentowany jako element świadomej, nierzadko dynamicznej gry architekta z widzem. Kolor wreszcie sam staje się grą, przedmiotem czasowego eksperymentu w przestrzeni – architektonicznego happeningu i reprezentantem estetyki „gry i zabawy”.

Slowa kluczowe: kolor w architekturze, gra z kolorem, gra kolorów

* Ph.D. Arch. Justyna Tarajko-Kowalska, Chair of Rural Architecture and Planning, Institute of Urban and Regional Planning and Design, Faculty of Architecture, Cracow University of Technology.

1. Introduction

According to the famous Le Corbusier definition: “*Architecture is a learned game, correct and magnificent, of forms assembled in light*” [12 p. 80]. Then he writes that: “*the task of the architect is to liven up surfaces covering those forms*” [12 p. 89]. Colour, Le Corbusier’s “*daughter of light*” [10 p. 224], is nowadays one of the most important elements of that game. Colour games in the architectural space can be played in many ways. They may be an **architectural “(inter)play of colours”**, when colour plays the key role in the whole building’s composition. Colour can also be used by architect as an element of **the conscious game with the spectator**. Finally, **colour can become the game itself**, a part of the experiment – an architectural happening in the space or **a representative of the “fun and games” aesthetic**.

2. Architectural colour games – (inter)play of colours

In contemporary architecture, many **architects play “colour games”**. In such games colour is no longer treated as an additional element. On the contrary, it plays the main role, becoming an integral part of the overall composition [17]. Due to the use of modern building materials such as glass and plastics, with an almost unlimited range of available hues, it is possible to create polychromatic façade schemes of durable colours. Nowadays, participants in “colour games” have a much broader range of means than ever before. Therefore, they have the capability to create various colour-material effects that were impossible to achieve in the past. **A carefully planned (inter)play of the colours, lights, textures and shapes, as well as their connections and interpenetration, intensify the emotional and aesthetical experiences of the observer.** Not surprisingly, architects playing colour games usually operate with many – even over a dozen – diverse colour hues. Consequently, they successfully refute the popular thesis of the need to minimize the number of façade colours to three or four in order to obtain an overall harmony. In the kaleidoscope of rainbow-coloured objects, a worthy place is occupied by the laureate of the Mies van der Rohe Prize (2007) – MUSAC (Museo de Arte Contemporáneo de Castilla y León, designed by Luis M. Mansilla + Emilio Tuñón (León, Spain, 2004). One of the most recognizable elements of the building is its glass façade of 42 different shades, inspired by the colours of the 13th-century stained glass window in the Cathedral of León: “La cacería” (Hunting) [11 p. 122]. A unique interplay between colour and sound was implemented by the Kell Muñoz Architects in the Edcouch-Elsa ISD Fine Arts Center (Edcouch, Texas, USA 2007). The rhythmic and chromatic patterns of the supergraphic that wraps the exterior façade are delivered from the popular folk song – *corrido* “La Máquina Amarilla” (The Yellow Machine), so that each sound is parallel to the particular colour shade in the mural [24]. The **colourfulness of nature, translated into architectonic language, is often an inspiration for polychromatic “colour games”**. Two projects for covered market spaces in Spain can be mentioned to illustrate this. Santa Catherina Market in Barcelona by EMBT (Miralles/Tagliabue, 2005.) is fully covered by a dynamic, undulating roof of ceramic tiles. Its pattern of hexagonal, pixelated elements in 67 vibrant hues refers to the colours of the fresh fruit and vegetables sold in the market [14 p. 148]. The building of the largest Catalonian flower market Mercabarna-Flor (WMA – Willy Müller Architects, Spain 2008.) in Sant Boi de Llobregat is characterized by a multicoloured, striped façade. Its 22 colour shades in connection with the irregular geometrical pattern of the big

zinc roof, which covers the whole market, imitate the aerial view of cultivated flower fields [14 p. 158]. Colourful flowers also inspired Casanova+Hernandez Architects in the project of the Ceramic Museum and Mosaic Park, created in Jinzhou in China for the 2013 World Landscape Art Exposition. The Museum's façade, as well as the park benches and pavement, are covered with the same kind of ceramic tiles whose extensive colour palette was obtained from local flora [2]. The polychrome of the roof at Frank Gehry's Museum of Biodiversity in Panama (2014) is not only connected to the colours of the traditional architecture of the local villages, but also reflects the shades of the tropical environment of the location [1].

Almost **at the opposite end of the “multicoloured game” is situated “one colour game”**, where one leading hue, which plays a very special role, is used in the composition. This is the case in the Didden Village – the superstructure of a brick building in Rotterdam (arch. MVRDV, 2007). All the elements of the building and its surrounding terraces are covered with bright blue polyurethane coating. The building, like a blue crown on top of the dark, brick volumes of the neighbouring houses, creates an unusual, contrasting spatial accent [7 p. 180]. **Oftentimes “one colour game” is played based on corporate colours** in some way identified with a company through a logo or other element of colour recognition. As an example two objects connected with the Italian Ferrari automotive company will be presented. The Museum Casa Enzo Ferrari in Modena (Future Systems, Jan Kaplicky, SHIRO STUDIO/Andrea Morgante, 2012), is entirely dedicated to the company founder: Enzo Ferrari (1898 – 1988.). The roof of this futuristic structure, the form of which is intended to resemble the air intake vents on the bonnet of a car, is covered with aluminium panels in a bright, yellow hue called *giallo Modena* (Modena yellow). This hue, selected in the past by Enzo Ferrari as the background in the company logo, was at that time one of the most popular hues for Ferrari cars [4]. Another example is the colour of the roof of Ferrari World – a theme park dedicated to Ferrari (arch. Benoy, Yas Island, Abu Dhabi, 2010) that alludes to today's most popular and recognizable colour for these sport cars – “Rosso Corsa” (racing red) [18].

3. Colour as an element of the game played with the spectator

Based on the psychological effects of colours, the architect can regulate the colour climate of the building in a planned and consistent way, thus introducing the viewer into the desired mood. Therefore, it is possible to direct colour effects consciously, to elicit specific emotional associations, as well as to create colour compositions conducive to different feelings, according to the specific function of a building. Through the choice of a specific set of colours, the architect always attempts to create a certain relationship with the building's user. Consequently, **colour becomes an element in the conscious game played with the viewer**, a specific actor in the architectonic performance. The characteristics of that game may be very dynamic, especially when the spectator changes the colour perception by changing their position in space. This is the case in the small, experimental building of the Chameleon Cabin (arch. White Arkitekter, Sweden 2013), the perception of which from the outside changes – like a chameleon – and its façade appears sometimes white and sometimes black, depending on the observer's point of view [3].

New media-facade technologies give special opportunities to transform static façades into colourful spectacles. The technologies used in “mediatecture”, as it's known, enable design of large façade surfaces through a wide spectrum of elements, as: illumination, text, graphic

animations or videos in various resolutions. Additive colour mixing of the three basic RGB colours of LED lights enables all the colours of the rainbow to be obtained. The ability to change the colour of the façade in controlled sequences allows for visual effects of architectural colour in motion. The “mediatization” of a façade offers potential for the development of an emotional connection between the observer and the architecture and attracts special attention to the actual static constructions [16]. Thanks to the visual union between colour, light and media techniques, it is also possible to create interactive games between the viewer and the building, when the colour changes are dependent on actions undertaken by the users. Then **the colour becomes a reflection of a real game**. An example of such colour use is the Munich Allianz Arena (arch. Herzog + de Meuron, 2005). Its outer cover can be illuminated independently in three colours: white, blue and red. The intention of the architects was to change the stadium colour during football matches depending on the club colours of the respective local team – FC Bayern (red) or TSV 1860 (blue) or white when the local German team plays [22].

4. Colour as a game

Colour is treated by some architects as a game per se. Thus, the architectural space becomes their field of artistic and chromatic experiments. From 2012 onwards, in the Portuguese town of Agueda, the installation “Umbrella Sky Project” is performed by Sextafeira Produções under the motto “*add colour to your life!*”. From June to September, during the festival of local culture AgitÁgueda, hundreds of multi-coloured umbrellas are suspended over the city streets, turning them into a colourful spectacle while protecting residents and tourists against the acutesummer heat [15]. Carlos Cruz-Diez (born 1923), a Venezuelan kinetic art and op-art artist, realizes his colouristic intervention projects in urban areas – mainly streets – from the 1960s. His extraordinary paintings, inspired by the works of Joseph Albers, among others, using the phenomenon of simultaneous contrast or afterimage, can be admired e.g. on the streets of Caracas (1975), Fortaleza (1986), Marseille (1989), Miami Beach (2010), Houston (2011), and Mexico City (2012). The most recent work by the artist is at the sequence of the parkways in the Miami Marines Ballpark Stadium in Miami (2011–12). Here additive colour mixing is used and the perception varies with the movement of the viewer along the routes [20]. Olafur Eliasson (born 1967), one of the most interesting, contemporary visual artists, known for his large-size sculptures and installations, also engages in colour experiments in space. His projects, by showing the dependencies that exist between light and colour, make the viewer aware of their own role in the perception of the surrounding reality, as well as enabling them to experience the changeability of their perception in time and get to know its mechanisms. Among many colourful installations it is worth mentioning: the Green River Project, implemented in various cities in 1998–2001, Dagslyspavillon (VKR Holding, Hørsholm, Denmark, 2007), Colour Activity House (Kanazawa, Japan, 2010) and Your Rainbow Panorama (ARoS Aarhus Kunstmuseum, Denmark, 2007–2011) [13].

However, colour is not always just an individual game for the architect-artist. **Colour as a collective game** can be presented in the activities realised within the framework of the Programme “Let’s colour” by AkzoNobel’s brands such as Dulux, Levis or Coral. This Programme aims to create a global movement for colour transformation of the human living environment. Since its launch in March 2009, more than 250 projects in 25 countries

(including England, France, Brazil, Turkey, India and South Africa) have been realized. Over 16000 people have been directly involved in the process of adding colours or repainting of degraded buildings and urban spaces. In 2011, Poland also joined the group of countries where the project is implemented [23]. Tudo de Cor Para Voce, conducted since 2009 by the Coral group, is the Brazilian equivalent of the Let's Colour programme. Its main purpose is to preserve and promote traditional colour schemes, as well as to introduce new colours for social housing, particularly in the poorest neighbourhoods. A similar purpose is behind the artistic interventions of the Danish artists Jeroen Koolhaas and Dre Urhahn (Haas & Haan) in the Favela Painting Project in Rio de Janeiro (since 2005) [21].

5. Colour as a representative of the ‘fun and games’ aesthetic

Architects often tend to choose multi-coloured composition to visually reflect the function of “fun and games”. The colour palette identified with this aesthetics generally consists of highly saturated shades with a predominance of primary colours. Polychromatic, rainbow-coloured facade compositions are often used in kindergartens and other facilities for children and youth, with the aim of creating and also reflecting the atmosphere of excitement and play. In the Kekec kindergarten (Arhitectura Jure Kotnik, Ljubljana, Slovenia, 2010), a façade made of wooden panels is painted in 9 shades of colour. Due to the possibility of the rotation of individual elements it becomes an educational toy by itself. The playable building façade allows children to recognize colours while changing appearance of the building from the outside [5]. The colours of the nursery in Monthey (arch. Bonnard Woeffray Architectes, Switzerland 2008) is also an example of the atmosphere of “fun and games” [6]. In the project of The Strong – National Museum of Play in Rochester (CJS Architects, 2006), one of the new building extensions, called the “Field of Play”, is constructed as giant, children’s building blocks, coloured in the basic hues: red, green, blue and yellow [19].

6. Summary

According to Rem Koolhaas, in the 21st century colour is no longer just the thin, decorative layer placed on the building. Rather it is a strong means of expression that helps to reshape the space, as well as to change the visual status of an object. In a world where everything is changing, the role of the colour also has to change. It can no longer be just an added feature – it must become an exponent of the idea of movement and variability [8]. An element of the game. Using the words of Carlos Cruz-Diez: “Freedom and emotion only come into play, when the time comes to choose and combine the colours” [9 p. 76].

R e f e r e n c e s

- [1] Biomuseo / Gehry Partners” 30 Oct 2014. ArchDaily. Accessed 13 Jun 2015. <<http://www.archdaily.com/?p=562296>>
- [2] “Ceramic Museum And Mosaic Park / Casanova + Hernandez Architects” 08 Nov 2013. ArchDaily. Accessed 13 Jun 2015. <<http://www.archdaily.com/?p=445914>>

- [3] “Chameleon Cabin / White Arkitekter” 20 Dec 2013. ArchDaily. Accessed 11 Jun 2015. <<http://www.archdaily.com/?p=459371>>
- [4] “Enzo Ferrari Museum / Future Systems + Shiro Studio” 16 Jul 2012. ArchDaily. Accessed 13 Jun 2015. <<http://www.archdaily.com/?p=253958>>
- [5] “Kindergarten Kekec / Arhitektura Jure Kotnik” 10 Mar 2011. ArchDaily. Accessed 13 Jun 2015. <<http://www.archdaily.com/?p=117812>>
- [6] “Monthey Kindergarden / Bonnard Woerffray Architectes” 29 Sep 2010. ArchDaily. Accessed 13 Jun 2015. <<http://www.archdaily.com/?p=79449>>
- [7] Bahamón A., Alvarez A.M., *Light, Colour, Sound. Sensory effects in contemporary architecture*, W.W. Norton&Company, NY-London 2010.
- [8] *Colours: Rem Koolhaas/OMA, Norman Foster, Alessandro Mendini*, preface Gerhard Mack, Birkhäuser, Bazylea 2001.
- [9] Cruz-Diez C., *The street as venue for chromatic events*. [w:] *New Geographies 3 Urbanisms of colour*; ed. Gareth Doherty, Harvard University Press, Hong Kong 2010, p. 76–79.
- [10] De Heer, J., *The Architectonic Colour. Polychromy in the Purist architecture of Le Corbusier*, 010 Publishers, Rotterdam 2009.
- [11] *In full colour. Recent buildings and interiors*, preface Dirk Meyhöfer, Verlaghaus Braun 2008
- [12] Le Corbusier, *W stronę architektury (Vers une Architecture, 1923)*, polish translation: Tomasz Swoboda, Fundacja Centrum Architektury, Warszawa 2012.
- [13] olafureliasson.net/tag/TEL1591/architecture
- [14] *Plans and details for contemporary architects: Building with Colour*, ed. The Plan, Thames & Hudson, London 2010.
- [15] sextafeira.pt/umbrella-sky-project/
- [16] Tarajko-Kowalska J., *Fasady medialne – dynamiczna gra barwy i światła*, [w:] „Przestrzeń i forma”, nr 10/2008, p. 169–174.
- [17] Tarajko-Kowalska J., *Kolor w miejskiej przestrzeni publicznej/ Colour in the urban public space*, [w:] Czasopismo Techniczne seria Architektura nr 3-A/2010, Zeszyt 6, rok 107, Wydawnictwo Politechniki Krakowskiej, Kraków 2010, p. 243–251.
- [18] www.benoy.com/projects/ferrari-world-abu-dhabi-abu-dhabi-uae
- [19] www.cjsarchitects.com/strong
- [20] www.cruz-diez.com
- [21] www.favelapainting.com
- [22] www.herzogdemeuron.com/index/projects/complete-works/201-225/205-allianz-arena
- [23] www.letscolourproject.com
- [24] www.munoz-co.com

JOLANTA TOFIL*

MODELLING EDUTAINMENT

MODELOWA ROZ(G)RYWKA

A b s t r a c t

The paper elaborates on a certain way of describing an architectural space by means of a physical model, along with a project exercise realized as a part of the course in Descriptive Geometry which is an element of the program of the first year of studies in the Faculty of Architecture. The intent is to incorporate a component of entertainment to break out of the “rigid” and “dry” way of teaching this subject.

Keywords: Didactic Solutions, Designing Task, Physical Model

S t r e s z c z e n i e

Artykuł prezentuje sposób opisu przestrzeni architektonicznej, jakim jest model fizyczny w powiązaniu z wybranym ćwiczeniem projektowym realizowanym w ramach przedmiotu Geometria wykreślna prowadzonego podczas pierwszego semestru studiów na Wydziale Architektury. Ćwiczenie to jest próbą wprowadzenia elementu zabawy strukturą dla przełamania „sztywnego” programu nauczania przedmiotu.

Slowa kluczowe: dydaktyka, ćwiczenie projektowe, model fizyczny

* Ph.D. Jolanta Tofil, Geometry and Engineering Graphics Centre RJM4., Silesian University of Technology.

1. Introduction

The fundamental ways of capturing an architectural idea are concerned with the media used to communicate between the designer and the user. All of them are used to explain a certain mental model, which is subsequently realized in an architectural construct.

As a matter of fact, there are six ways of capturing any design concept. The first one aims to describe the assumptions of the project and the underlying idea. The next is a planar drawing displaying an organization of the space of the object, which is composed of projections and sections (orthogonal projection). There is also a spatial drawing which comprises axonometry and perspective (parallel and central projection) using which we display the organization of internal and external space in relationships with the environment as well as the scale of the human. One can refer here to [6, p. 265]: “These ways of portraying the space assure that the architectural representation becomes more tangible through some theoretical background reflecting upon the physical reality of the construct. These are some forms of *mimesis* – a graphic mimicking the existing entity and expressions, a rigorous way of describing information about a shape or dimension of the object...”. One could mention here description in the form of a movie – in this case the space is augmented by the factor of time. The next mode of description is a digital model in which the form is generated with the aid of suitable algorithms. Finally, we encounter a physical model which demonstrates yet another aspect than those discussed so far, namely a way of building the construct.

Undoubtedly, to assure a broad perception and understanding of the project, it is beneficial to engage in several methods of describing the architectural space. Their mutual intertwining and supplementing impacts the quality of the architect’s design activities and the quality of the artefacts produced.

2. Education

In the realm of the course of Descriptive Geometry offered by the Faculty of Architecture, instructors are often faced with the problem of how to approach the problem of space – its formation and mapping. It is crucial to identify an appropriate and suitable way of realizing this task in the context of innovative visualization techniques. We remain convinced that while retaining the traditional ways of building objects, we have to stress the aspect of forming models which is of particular usefulness in the context of the existing tendency to form design concepts based upon an approximate structural model.

Constructing architectural models entails a number of advantages – a better understanding of spatial structures, and the ideas, functions, and forms of the objects. It realizes the highest objective of students’ mental development, which is the compact coordination of various tasks – construction-based, composition-oriented, and those related to aesthetic aspects.

In the education process of future architects at Polish universities, the use of physical models treated as development tools is marginal in comparison with the role that is identified for their virtual equivalents. We tend to overlook the benefits of working with models. Of course, they play an essential role as being associated with architectural projects; however, their introduction into courses such as Statics of Buildings or Descriptive Geometry offers indispensable advantages. “The difficult art of building mock-ups does not entail exclusively

a reduction of reality. This art is subject to its own rules while a presentation of building objects serves only as a mere pretext” [3, p. 89].

3. Representation

Models – miniatures – have been an information medium in contacts between designers and investors or potential clients for centuries. Professionals in the building industry can skillfully move around in the world of two-dimensional representations of a three-dimensional spaces, while individuals outside this sphere might encounter some difficulty in aggregating projections, views and sections in a single form of the object. A three-dimensional physical model, reflecting the aspect of model building, is understood by all. It exhibits a number of features that are common with the real object, and this is helpful in realizing a reliable verification and assessment of the proposed solution – it becomes a game in space. It is well known that what is possible to model is also possible to build. Therefore, we can conclude that the model is a certain prototype of the physical construct.

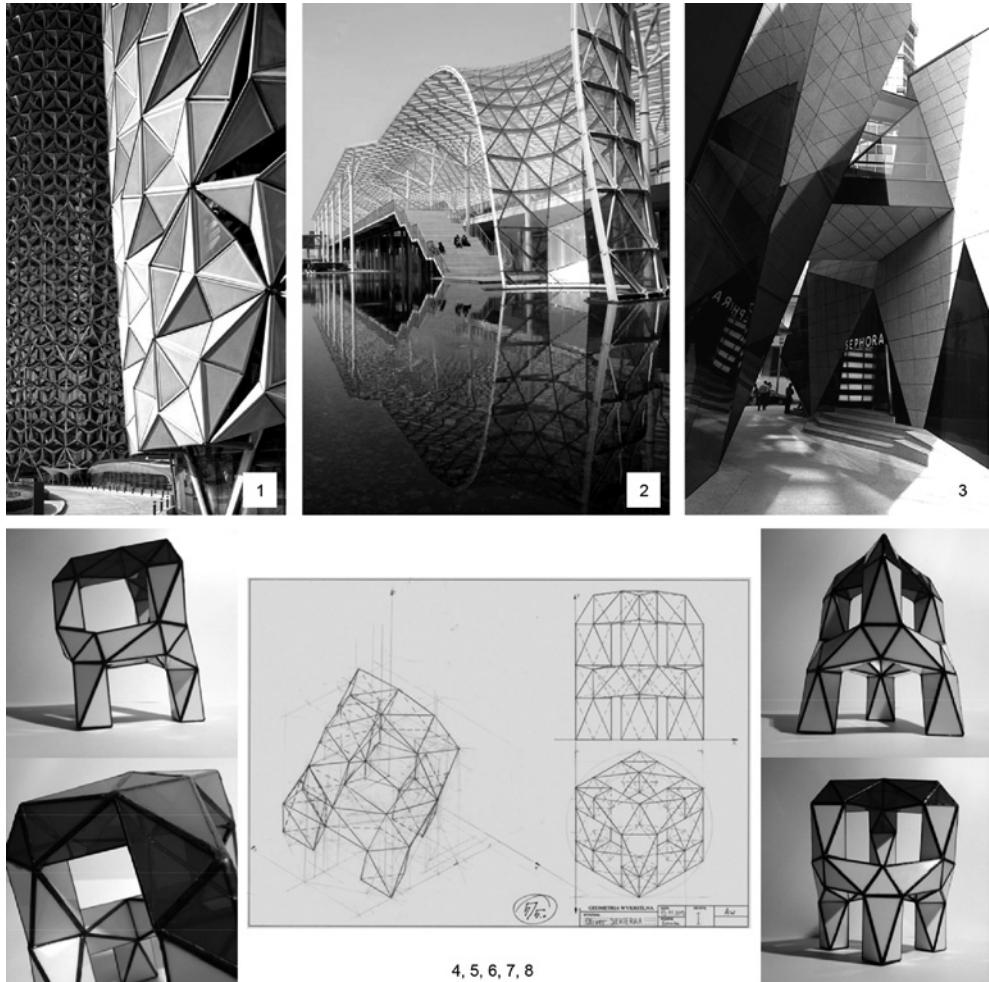
Today, model-based design is more frequently encountered in architecture. Two-dimensional or three-dimensional constructs built electronically are continuously verified with the aid of physical models. A model, viewed as a synonym of the original at a certain scale, can be tested in various ways, say in acoustic chambers or wind tunnels. The Austrian designer Copp Himmelb(l)au has often used a movie-photographic atelier to complete analyses of reduction models in successive design phases. By confronting the work completed in parallel in the 2d and 3d format, an additional value is offered when coming up with the final architectural construct. Owing to this, we should be aware that with the aid of a simple model (a rapid working template) we are in a position to augment the project by considering some aspects that have not been considered before.

In the last phase of design, we may encounter sensory model design. In this phase we consider a model completed using the anticipated material and at a real scale to assess its material and aesthetic aspects with regard to the existing context.

An undisputable value of the model is that we become aware of the material that is going to be used. The model as a reflection of the future object implies our need to touch it, look at the structure and shape. It is likely that a product that faithfully reflects reality becomes attractive, and engages the observer, investor and user because it is far better understood than the 2d or 3d description completed in the electronic version. The physical model always constitutes an attractive alternative to connect with the client and as such it enjoys interest. As a summary of the project, it could be a useful element of the promotion process.

4. Triangulation

As a result of the technological revolution initiated in the 1950s, the computer has become a tool of everyday usage. Everybody has seen computer graphics, either in games animation or animated movies, which are, in essence, a realization of 3d space in a 2d space. Computer graphics constitutes one of the possible uses of a new branch of geometry, namely algorithmic geometry, which is referred to as computational geometry. There are numerous complicated geometric figures which have to be handled. In other words, there is a need to



- III. 1. Al Bahr Towers – Aedas, 2013, Abu Dhabi, United Arab Emirates [13]
 III. 2. New Trade Fair – Fuksas 2005, Milano, Italy [11]
 III. 3. Starhill Gallery – David Rockwell, Kuala Lumpur, Malaysia [11]
 III. 4.–8. Orthogonal and Axonometric Projections with Model – designing tasks carried within the subject Descriptive Geometry for the first semester of studies at the Faculty of Architecture

establish a suitable technology that helps solve these problems. In this regard, triangulation forms a certain system which is responsible for the current situation. This technique helps split complex objects (regions) with the exception of the circle, into a collection of triangles (in the 3d case of rectangles). Furthermore it is a technique that helps describe complex geometry with the aid of a certain mesh as computer-generated imagery. It helps solve numerous problems such as region filling and determining points of intersection. The objects formed through meshes (used in 3dMax, Maya, Blender) are ready to superimpose texture

and complete rendering processes. In addition they may be subject to various modifications and deformations.

Triangulation is often associated with computer graphics; however, it could be applied to other disciplines such as geodesy, astronomy, mathematics, sensor technology, psychology, and sociology.

In designing complex nonlinear surfaces, triangulation is tessellation. It helps decompose a surface into flat regions which are easy to process with the use of CNC. Examples here would be the roofs in the Great Court of the British Museum (1997–2000) designed by Foster & Partners and the building of the DG Bank (1996–2001) located at Parizer Platz and designed by Frank Gehry.

An excellent example demonstrating the use of two-curve surfaces realized by tessellation is the freely formed ribbon or veil of roof of the central pavement of the New Milan Trade Fair (2005). M. Fuksas accommodated this structure to fit into the natural landscape by spanning it on adjacent buildings dramatically bringing it down to the ground level. A Polish roof completed in a similar way is the Złote Tarasy complex in Warsaw (2002–2007) designed by Jerde Partnership with substantial design support from the Polish division of Ove Arup.

In all such cases, the system of precisely formed flat components that differ with regard to their size and adjusted to the costs and production scenarios has been possible thanks to digital fabrication.

5. Creation

The objective of the design exercise realized as homework was to construct orthogonal projections – Monge's projections, parallel projection – axonometry, and to realize a mockup of the structure of the object generated by the triangulation method. The project can constitute various architectural components such as elevation forms, roof of the object, site-specific installations or a part of the solution such as a structural elevation plane. Given the time constraints, and in order to match the problem to the actual abilities of first-term students, the solutions were narrowed down to triangulation issues.

The issue itself was pre-empted by a lecture presenting the idea of triangulation in various areas of science and technology, with a focus on architectural designs and solutions.

In my opinion, this formulation of the problem stems from the fact that contrasting real models with a 2d space representation delivers obvious advantages because of the full understanding of the structure of the object. The problem becomes interesting from the perspective of representing triangulation as data structures fully comprehended and easily processed by computers. There is also an effective realization of geometric manipulation of the objects formed in this way.

In addition, the physical model offers a potential contractor (student) an ability to assess the shape, proportions and form of the objects. The technology for its realization, which is completed when using materials exhibiting specific physical properties, is reflective of the laws of statics impacting the construct. Obviously, this material (balsa, cardboard, plexiglas, styrodur etc.) has different properties than the material used in the project. Nevertheless the project completed for some tangible material teaches the students responsibility for making a decision on choosing a suitable material to realize the project.

6. Conclusion

- The method of architectural representation of the developed project impacts the final result.
- Drawing, being a manual way of transforming concepts of the designer onto paper, serves as a communication vehicle between the designer and the environment.
- Models serve as an “information medium” thanks to which the architecture becomes fully understood and perceived by investors. They are also a “project medium” in the process of forming structures (including also 3D scanners) and as a “cognitive medium”.
- A working mock-up being a realization of the creator-architect’s vision and concept to be presented to investors and receivers at all phases of design is useful to the author himself by facilitating a comparative analysis of successive design phases and overall thought process.
- Constructing models invokes some creative emotions helping in the discovery of other variants of the architectural solutions.
- A physical model enables an interaction with a real mapping in its genuine shape with all proportions being retained.
- A model – mock-up of an object supplies complete freedom with regard to any selection of any fragment of the object under development and a direction of viewing.
- Making use of sketches and physical mock-ups results in full engagement in the perception of the architectural construct.
- A combination of studies on the project in the form of drawings and models serves not only to represent the form of the building, but is useful to illustrate a function and check its statics.
- Despite the tremendous technological achievements in the development of virtual models, manual creation (analogue) still enjoys an undisputable role in architecture and art owing to the abilities to offer a direct interaction with the material world.
- Education in the realm of individual disciplines always promotes abilities of rational problem-solving with the use of knowledge of laws and rules present in the discipline.

References

- [1] Arnheim R., *Sztuka i percepcja wzrokowa. Psychologia twórczego oka*, przeł. J. Mach, Wydawnictwa Artystyczne i Filmowe, Warszawa 1978.
- [2] Fikus M., *Przestrzeń w zapisach architekta*, Wydział Architektury i Planowania Przestrzennego, Poznań – Kraków, 1999.
- [3] Gajewski P., *Zapisy myśli o przestrzeni*, Politechnika Krakowska, Kraków 2001.
- [4] Jodidio p. : *Nowe formy. Architektura lat dziewięćdziesiątych XX wieku*, tłumaczenie: Motak M., Warszawa 1998.
- [5] Misiągiewicz M., *Architektoniczna geometria*, Wydawnictwo DjaF, Kraków 2005.
- [6] Misiągiewicz M., *O prezentacji idei architektonicznej*, Wydawnictwo Politechniki Krakowskiej, wydanie drugie, Kraków 2003.

- [7] Przewłocki, S, *Geometria wykreślna w budownictwie*, Arkady, Warszawa, 1982.
- [8] Rasmussen S. E., *Odczuwanie architektury*, przeł. B. Gadomska, Wydawnictwo Murator, Warszawa 1999.
- [9] Witruwiusz, *O architekturze ksiąg dziesięć*, przeł. Kazimierz Kumaniecki, Prószyński i S-ka, Warszawa 1999.
- [10] Żórawski J., *O budowie formy architektonicznej*, Wydawnictwo Arkady, Warszawa 1962.
- [11] www.archdaily.com
- [12] www.autodesk.com
- [13] www.contemporist.com
- [14] www.coop-himmelblau.at
- [15] www.mymodernmet.com

PAULINA TOTA*

CHILDREN GAMES AND PLAYS

Z GIER I ZABAW DZIECIĘCYCH

A b s t r a c t

The beginning of the 20th century brought discourse on the issue of a new “culture of recreation” and the phenomenon of a relatively new invention – the playground. Play – caring for the body and the spirit – interacted in the work of all the great modernists, and the pope of modernism himself, Le Corbusier. Non-existent now, brutalist playgrounds have become a subject for exhibitions: the play of the new creators-artists, and their game with their antecedents and the contemporary audience.

Keywords: playgrounds, modernism, brutalist architecture, concrete

S t r e s z c z e n i e

Początek wieku XX przyniósł dyskurs kwestii nowej „kultury rekreacji” i fenomenu stosunkowo nowego wynalazku, jakim był plac zabaw. Do zabawy – troski o ciało i ducha – nawiązywali w swojej twórczości wielcy moderniści i sam papież modernizmu, Le Corbusier. Nieistniejące obecnie, brutalistyczne place zabaw stały się dziś obiektem wystawy: przedmiotem zabawy nowych twórców-artystów, ich gry z poprzednikami i widzem.

Słowa kluczowe: place zabaw, modernizm, brutalizm, beton

* M.Sc. Arch. Paulina Tota, (Ph.D. Study) Faculty of Architecture, Cracow University of Technology.

1. Fairytale (instead of introduction)

Long, long ago, when the world had not yet invented safety standards and the Royal Society for the Prevention of Accidents had not been established, playgrounds were created by architects and artists, not by officials. And those were unusual places: invented individually, with a flourish, and at the same time really completely designed...

Today, those playgrounds are gone.

2. Games and play

The world is full of landscapes, places, buildings and objects created in order to play. While in the mid-nineteenth century the game and fun had no dedicated locations – and therefore took place everywhere – so since that time a rapidly growing number of recreation spaces have been introduced. The first playground was built in 1849 at Queen's Park in Manchester, and was equipped with swings, space for team games, a cricket pitch, and spaces for bowling and football. Interestingly, most of the equipment was intended not for children but for adults, who used them in the same way as contemporary urban gyms.

The first half of the twentieth century brought discourse on both the concept of fun itself and spatial forms for it. In 1938, the cultural historian Johan Huizinga showed that *cultural forms are mainly due to a fun reflex* [6, p. 231]. In turn, at the end of 1950s, sociologist Roger Caillos formulated his six fundamental rules of games and play, focused among other things on the semantic dualism, which leads us to distinguish the game (*ludus* – which requires an ever greater amount of effort, patience, skill, or ingenuity) and the play fun (*paideia* – uncontrolled fantasy). While the first is based on the application of established rules, the second asks us to suspend belief in a temporary impossibility.

According to R. Perez [6, p. 231], the institutional provenance of *ludus* allows the games/play to be fixed in the form of a consistent typology of fields, while the spontaneity of *paideia* rejects attempts to unify the land for it, on the one hand, contenting itself with every space, on the other demanding abstract forms that are simultaneously aesthetically and conceptually unique.

3. Rationalization

Interest in the design of areas for games and activities was characteristic of the wave of rationalization of space and human activities which was typical of modernism. The division of the public space into certain zones was introduced then, which in turn led to the creation not only of general recreation spaces, but also their particular cases – areas for games and activities.

Until the Second World War the general approach to recreation areas was dominated by the conviction of the superiority of sports and athletics, a sort of Apollo's approach to the body, performing the ancient Greek principle of *kalos kagathos*. In turn, in 1945 pre-war rules and systems approach to recreation gave way to spontaneous play (in the manner of Dionysus) and global fascination with what existed (the *as found*). The horrors of war turned the common belief in the *ludus* into the fascination of *pandea*.

Recreation culture and play were issues that interested Le Corbusier even before World War II. His texts frequently contained references to the game/play issue, and the architect

predicted very early the spatial and social consequences of leisure time, which in the post-war reality became widely available, thanks to new legislation and production criteria. In his conception of the city, Le Corbusier, allowed a special place for recreation – understood as care for the body and spirit.

In the interwar period the recreation space was a space for sports – invariably located under the open sky, in a park or on a roof terrace, never on the street. Therefore Le Corbusier's design (1925) occurred: residential blocks arranged in an area divided into zones of different purposes, where the recreational area playgrounds are interwoven with courts (wherein sport at this time was still the primary beneficiary) [7, p. 19–20]. This arrangement, with the aesthetics that reminds one of the seaside resorts, has also appeared in the famous concept of the Radiant City (Cité Radieuse), realizing the watchword of *the sun, space and greenery*. It received its fullness in the implementation of the Housing Unit.

In the Unité d'Habitation design, the playground proposed by Le Corbusier is not only a functional zoning issue (from which the architect undoubtedly began), but especially a poetic composition of space: apartment windows overlook the horizon (giving a view into the future?) and on the roof, invisible to passers-by and roommates, children are playing under the sky itself. Modelling space by what is visible and invisible, the architect distributes recreation areas on each of its forms: at ground level, in the park, he placed many pitches and courts; on the roof a nursery – with a shallow pool and decorations of shells and pebbles, solariums and places to play; further – a gymnasium and an amphitheatre, and all that surrounded by racing track, recalls to mind ancient times and the concept of *kalos kagathos*.

In proposing not only a housing estate or a block of flats, but an entire single microcosm, the designer realizes the consequences of *ludus*, at the same creating space for the spontaneity of *paideia*, and placing all of that in the rough and tough monolithic structure, contrasting with the soft texture of the park environment. Therefore, Le Corbusier not only designs a space in which intertwine Apollonian game and Dionysian play, but above all – he played the game with the viewer of his architecture, by introducing a kind of conceptual reversal of the natural city order: the Unité d'Habitation roof terraces retain their rough urbanity, while the public space becomes soft and naturalistic.

4. *Béton brut* playgrounds

A common opinion is that the Unité d'Habitation is the mother of all tower blocks, and the idea of Cité Radieuse is the root for residential complex, known today as the mass housing estate. The dominant colour is the grey of raw concrete, the texture – the imprint of rough-planed shoring boards. This effect, called from French *béton brut*, was discovered by accident and from economic necessity, but its aesthetic expression gave impetus to the birth of a new style of post-war architecture – brutalist.

During the ceremonial opening of the Unité d'Habitation Le Corbusier said that *Faults appear in all parts of the building! The uncovered concrete reveals the slightest inaccuracy in the connections between planks, wood fibres and swellings, knags etc. And can we not see in men and women the wrinkles and marks, the hooked noses, the countless distinguishing marks?* [4] In this way, the Pope of modernism rejected not only his previous purist, white box, but the whole pre-war way of thinking about the truth (also – the truth of art) dethroned the Apollonian aesthetic of order, giving place to Dionysian spontaneity, and the realism and rawness of the material.



- III. 1. Playground in Churchill Gardens Estate, source: RIBA Library Photographs Collection, <http://www.we-heart.com/2015/06/16/the-brutalist-playground-riba-london/>
- III. 2. Balfour Tower Playground, source: Assemble and Simon Terrill, 2015, <http://www.we-heart.com/2015/06/16/the-brutalist-playground-riba-london/>
- III. 3. Cypress Hill Playground, source: <http://www.play-scapes.com/play-history/mid-century-modern/cypress-hills-playground-charles-forberg-brooklyn-ny-1967/>
- III. 4, 5. Exhibition at RIBA: *Brutalist Playgrounds*, source: <http://www.dezeen.com/2015/06/09/assemble-brutalist-playground-climbable-landscape-modernist-shapes-riba-london-simon-terrill-foam/>

The raw style of *béton brut* was taken up first by British architects, originally a married couple, Peter and Alison Smithson, and later – designers around the world, who created concrete housing estates with obligatory recreational, play and game spaces. On the same time

they were also playing with the viewers and the recipients of architecture, giving children abstract concrete and steel systems to play in.

The playground of the housing unit was perceived as a *preparatory space*: a place where children had to learn the basics of social interaction before joining society. Thus, in the course of learning it was necessary for them to assimilate some specific truths of the new era: the truth of the harsh post-war world, the truth of the new cities and the new social housing schemes. Therefore, the rough surfaces and surreal shapes emerging from 50s to 80s playgrounds integrated into the large concrete mass housing estates, represent an extremely complete picture of their times from this perspective.

Most of the concrete playgrounds designed and installed in the post-war housing estates no longer exist. Seen in old photos, these places are often frightening because of their strange, sculptural forms, and above all the threat which they indisputably posed to children.

Undoubtedly dominant in the modernist playground at the Churchill Gardens Estate [Ill.1], designed by architects Philip Powell and Hidalgo Moya and created from 1946 to 1962, was a huge concrete platform-ramp, looking like a flying saucer suspended above the square. Its sculptural form responded to the brutalist buildings surrounding the housing estate. The unconventional system of this structure was to encourage children to explore and take risks every day and independently – in accordance with the rule *no risk no fun*.

Equally inhospitable in contemporary photos are the remains of the playground at Balfron Tower in London – a building designed by Ernö Goldinger [Ill.2]. The designer himself (simultaneously an architect and furniture designer) was strongly interested in playing and children's games. He proposed a concrete playground, which is reminiscent of much scaled-up wooden toys: blocks scattered on the square. These concrete monuments, as one of few examples, still remain in place. However, destroyed, they no longer play their original role, but still they attract the eye as signs in space – huge sculptures in a landscape full of housing blocks.

Cypress Hills Playground [Ill.3], designed by Charles Forberg and installed in 1967 in Brooklyn, was a result of the involvement of the New York Museum of Modern Art in a discussion about the form of the playground and the promotion of art in public recreation spaces.

Forberg believed that he would be able to create a flexible and cost-effective space that was safe enough for children aged three to eight, so that they could play in it unattended. Unfortunately, this playground, besides its extremely interesting form, is known mainly due to the fact that it was a failure in its social ambitions: the fascinating, clean, and aesthetically coherent form finally turned from a playground into a meeting place for local gangs and dealers. Within a few years the statue was removed and replaced by typical catalogue playground equipment, and the same assumption has become a symbol of the failure of mid-twentieth century architecture.

5. Lesson (moral)

Most of the concrete brutalist playgrounds no longer exist. They have been preserved only in photographs and plans. This does not mean, however, that their game with the recipients has ended once and for all.

At the beginning of 2015 the architecture group Assemble, together with artist Simon Terril, prepared a unique exhibition for the Royal Institute of British Architects: *Brutalist Playgrounds* [Ill. 4 and 5]. The aim of the exhibition is not only to present the forgotten

achievements of designers – architects and artists – who created playgrounds for the large housing estates of the 50s, 60s and 70s. Its ambition, first and foremost, is a game with recipients. The Assemble Collective and Terrill created foam pastel-coloured replicas of the largest and most famous brutalist playgrounds in Great Britain. There are elements of the assumptions of Churchill Gardens (the characteristic ramp-shaped flying saucer with hexagonal steps leading to it), or the big concrete slide from the square in Balfron Tower.

Visitors to the exhibition – who in the vast majority are children – have the opportunity of climbing on the pastel (pink, green and blue) items, which form steps, slides, platforms, and ramps: all reproduced based on concrete assumptions that no longer exist.

The surrealism of that experience (unreadable for children) enhances the impression of play with the audience – or perhaps laughing at viewers. The artists, using a material which is a long way from concrete – foam in pastel shades – created a previously unimaginable marriage of abstract sculptural forms, with the child safety characteristics enforced today. In bringing replicas of these no longer extant places, the creators of the exhibition have set themselves the question about the role of the architect in the formation of play and recreation and the very essence of the game, along with inscribed in it after all, the risk (of losing – injury – rejection).

The exhibition prepared for RIBA allows children to use all the elements during unfettered, spontaneous fun (*paideia*). At the same time it leads the adult viewers into a kind of a game (*ludus*) according to the rules invented by themselves. The recipient expects sharp edges and weight of the individual elements – but in the meantime the children play with a completely different material. Foam imitations of concrete structures are not just an artistic joke – they are primarily a symbol of the change that came into the public space, transforming a landscape full of concrete sculptures to a world of safety standards and rubber surfaces.

R e f e r e n c e s

- [1] Beltzig G., *Księga placów zabaw*, Wrocław 2001.
- [2] Czałczyńska-Podolska M., *Ewolucja placu zabaw. Koncepcja przestrzeni zabaw dla dzieci w Europie i Stanach Zjednoczonych* [w:] Przestrzeń i Forma 13/2010, p. 73–88.
- [3] Dattner R., *Design for play*, Cambridge, Massachusetts – London, 1974.
- [4] Małkowski T., *Piękno brutalizmu*, online access: http://www.sztuka-architektury.pl/index.php?ID_PAGE=3699, date: 15.06.2015.
- [5] Martyka A., *Dziecko w przestrzeniach miasta. Poszukiwanie rozwiązań urbanistyczno-architektonicznych sprzyjających spędzaniu czasu wolnego*. PhD thesis under the direction of dr eng. arch. Anna Palej, prof. PK; Faculty of Architecture – Cracow University of Technology, Kraków 2013.
- [6.] Perez de Arce Antoncich R., *Ulica i plac zabaw [w:] My i oni. Synchronizacja. Projekty dla miast przyszłości*, Warszawa 2014.
- [7.] Vogt A. M., *Le Corbusier, the Noble Savage. Toward an Archeology of Modernism*, Massachusetts 1998.

KAROLINA TULKOWSKA*

IMPROVISATION. SKETCH. SYNTHESIS. SHORT FORMS IN ARCHITECTURAL EDUCATION

IMPROWIZACJA. SZKIC. SYNTEZA. KRÓTKIE FORMY W EDUKACJI ARCHITEKTONICZNEJ

A b s t r a c t

The game is a particular aspect of human activity, organized and limited by rules, with a result, though not a material outcome. In the process of creating architecture we undertake activities associated with the notions of fun and game. This also, or primarily, applies to architectural education, which, in short, free forms seeks experience and inspiration for further, serious design solutions.

Keywords: *improvisation, play, composition*

S t r e s z c z e n i e

Gra jest szczególnym przejawem ludzkiej aktywności, zorganizowanym i ograniczonym regułami, przynoszącym rozstrzygnięcie, choć nie materialny rezultat. W procesie tworzenia architektury podejmujemy szereg działań budzących skojarzenia z zabawą i grą. Dotyczy to także, a może przede wszystkim, edukacji architektonicznej, która w krótkich, niezobowiązujących formach poszukuje doświadczenia i inspiracji dla późniejszych, poważnych rozwiązań projektowych.

Słowa kluczowe: *improwizacja, gra, kompozycja*

* Ph.D. Arch. Karolina Tulkowska, Faculty of Architecture, Warsaw University of Technology.

1. Introduction

In dominoes, game tiles called stones are used. Each consists of two squares with the dots, numbered from zero to six. The most common version consists of 28 stones with seven fields (empty, with one, two, three, four, five and six dots).

The game is played by two to four people, who draw their stones and place them to contact fields with the same number of dots.

In “Journey to the East” Charles-Edouard Jeanneret describes the houses in Pera – a neighbourhood near Istanbul – packed on a hill as dominoes [10 p. 90], to shortly afterwards design the Maison Domino – a reinforced concrete open-plan structure created in 1914 for World War I victims. This idea soon develops into the trend of rational architecture.

The game becomes part of the creative process, constituting a source of inspiration or illustration of thinking about the shaping of space.

In architecture the plot of fun and game appears very often, in more and less obvious connotations. Also, as an integral part of architectural education – enriching the process of becoming acquainted with architecture and beginning the search for one’s own creative path.

2. Game and architecture

Johan Huizinga in the classic work *Homo Ludens* [8] – summarizing the formal qualities – characterizes the game as a free frivolous action taken consciously outside “ordinary life”, absorbing the participant intensively and completely.

The need to play is an integral part of the existence of many beings, including animals. However, as a consequence of its undoubtedly importance to human culture, the game is finally understood not as a biological but a cultural phenomenon.

Games [6 p. 128–130] are often mistakenly equated with frivolity and contrasted to seriousness.

Roger Caillois [4 p. 9–10] characterizes the notions of play and game, highlighting six basic characteristics of the first:

1. freedom – participation is not obligatory;
2. separation – organized within limits in space and time, defined by the rules in advance;
3. uncertainty regarding both the course and outcome;
4. unproductivity – creating neither material results nor new elements of any kind except for the exchange of property among players;
5. governed by rules under principles, sometimes suspending ordinary laws or establishing new legislation for the duration of play;
6. make-believe – a sense of being in an alternate reality or under conditions in opposition to real life.

Games take place according to fixed principles and in an orderly manner, within the limitations and rules defined in space and time. They promote the integration of groups around a common secret and emphasize autonomy.

Both from the definition and further discussion of the theorists, total freedom and absolute lack of seriousness is attributed to fun and games. Consequently, they are in opposition

to what is real. Whereas the plastic arts are inextricably linked with matter and limitations closed in a material form. Furthermore, in the very substance of the game lies unproductivity, which distinguishes it from work and art. [4 p. 5] On the other hand, Gadamer formulates the concept of “real game” [9 p. 21], which manifests itself in art with seriousness, remaining in the sphere of fun at the same time. The work of art transforms play into a specific structure which affects the experience of its audience. A truly successful work of art is simply stunning. It is never just a recording of something already existing, but always introduces a new value [9 p. 23].

Architecture is a form of art in which the artistic factor is often treated as secondary, because it is subordinated to the requirements of the program (such as function or technology). However, in a successful manifestation of architecture the program is fully integrated with the artwork and this unique combination gives a chance to achieve results impossible to reach in other areas.

Hans Georg Gadamer writes about architecture [6 p. 221]:

“It emerges as an artwork only when, during its use, something wonderful shines forth, as with everything that is beautiful. The experience causes us to pause in the midst of our purposeful doing, for example in a room of a church, or in a stairwell, when suddenly we stand there and remain entranced”.

If a game is an activity not related to material benefit and specific profit, an architectural object – as a result – cannot be referenced directly to it. Although “architecture is the masterly, correct and magnificent play of masses brought together in light” but not necessarily in the context of the definition cited above.

The case is different if we refer to the very process of creation and its components.

According to Andrew Pressman, the design process involves interweaving thoughts and sensations, which tend in an established direction [11].

Paul Klee visualizes the creation of a project, starting from the moving point which forms a line that forms a moving plane which finally moves creating cubic forms [1 p. 283].

Such a glance at the creative process allows a broader interpretation of its character and leads us directly to analogies with play or games. It is in the process of creation, and then the perception of architecture, where the game is played.

Today, in a time of growing importance of the interaction of various factors: natural, cultural, economic, technological, information, etc., architecture can be understood as a team game performed on a ground of combined restrictions [3 p. 4].

Regardless of the assumed view, the game of design is more than the (unproductive) fun, in the end: “the main rule governing life is a game” [5 p. 138].

3. Game and architectural education

The Faculty of Architecture was founded in 1915 as one of the four departments of the newly established Warsaw University of Technology (then: Warsaw Polytechnic). The training program was built on the idea of the comprehensive and interdisciplinary nature of the architectural profession.

“The curriculum that we draw here aims to educate architects to the highest range of this concept – wide artistic culture and serious expertise are its main guiding threads, carried out through an overall distribution of studies and in individual subjects” [14].

The teaching method introduced at the time the School began and developed in the early years, and identified the profile of the Warsaw Department, which was defined through the coexistence of technical problems, and artistic and historical topics.

The structure of the program allowed the professors to pave individual learning paths, which were often based on their own professional experience.

In the design classes, from the very beginning, the project tasks were embedded in real circumstances, so the assumption was to simulate true conditions. The aim for the students was the result, which, after the refinement and necessary adjustments, could become the basis for construction of the building (during architectural design classes) or spatial structure (in urban design classes). Within the framework of the classes, some professors customarily organized the simulation of meetings reflecting the true situations in an architectural office or on a construction site.

The nature of architectural education naturally promotes comparisons with the process of game or play. Substantially, any kind of design classes meet the conditions specified by Roger Caillois:

1. studying, and thus participation in the classes is voluntary;
2. conditions and procedures for the creation of the project are defined by the rules laid down in advance – both those resulting from the specifics of the course (theme and content scope, schedule, dates) as well as the overall architectural (functional requirements, formal regulations and those resulting from law);
3. both detailed course of the process and the final result of the work is unknown;
4. the design work of the concept phase is characterized by the absence of a material result – in the form of a building; sketches, drawings and boards remain abstract representations of the possible effect;
5. during classes, for teaching purposes, specific regulations are introduced, which are sometimes inconsistent with common regulations or law;
6. the very nature of the design classes is to pretend certain circumstances or conditions, in particular those relating to the implementation potential of the project.

But, what seems to be the most interesting from the point of view of the subject of this article, are certain forms of architectural creation accompanying the design process (both the “true” and the one which is simulated in the classroom), or existing as a separate element supporting thoughts about space.

The traditional form of teaching problems related to the history of architecture is the use of the draft synthesizing content provided in the form of drawings and photos. At the FA WUT this applies to the classes of the History of Common Architecture (sem. 1 and 2), Polish Architecture (sem. 3 and 4) and the History of Urban Construction (sem. 5 and 6). In the process of creating sketches we find analogies to the types of games defined by Caillois [4 p. 18]. The strongest – in the group of imitating games (mimicry), where the drawing would be a picture of reality highlighting the most important characteristics of the source image (view, projection, section, plan, scheme). And in a synthetic form so frugal that it almost approaches an illusion – also as a part of the process in an illusive game (ilinx).

The sketch accompanies the creator at every stage of the design process. Both as a projection of ideas, as well as more detailed illustration of the elements of the architectural object.

The need for visual communication of thoughts is reflected in the exercises usually accompanying classes on architectural and urban design. In the course of work on a project, some approximations of the ideas arise. So noncommittal that they do not necessarily surrender to digital modelling, which requires a series of precise decisions to be taken.

Practising skills of concise illustration for solving the design task, are a Faculty of Architecture WUT element of the introductory classes to urban design.

Elements of Urban Composition (EUC) appeared in the curriculum for the first time in 1952 in the form of lectures given by Kazimierz Wejchert, in which the issues of psychological analysis of optical and spatial phenomena were discussed. New insights enabled the implementation of the method of urban composition based on the perception of the spatial structure by the observer and involving the creation of spatial compositions based on the conscious reasons resulting therefrom.

In 1959. Elements of Urban Composition course was extended to weekly two-hour seminars involving short tasks developed by students in the form of conceptual sketches, including abstract and concrete compositions, embedded in given locations.

These classes – currently implemented as a project – consist of solving simple compositional and planning tasks, beginning from illustrative themes (e.g. presentation of an existing space with specific characteristics), through abstract (e.g. compositions of volumes, and spatial arrangements creating a mood) to compositions with specific functions and spatial arrangement (e.g. interior design or a combination of urban interiors).

Students solve the tasks during class, hence it is important to be able to begin a previously unknown topic, to have the skill to improvise and almost immediately propose a solution presented in a very synthetic form.

EUC classes are a manifestation of a freer approach to the serious issue of design. They definitely fulfil the conditions attributed to games. After all, they take place according to fixed rules and in an orderly manner, within the limits and rules set in space and time. Additionally, they contain an element of competition and promote the integration of the team around a common task.

In the group of foreign students at the Faculty of Architecture WUT we implemented – in a similar form – classes on composition and interior design. During the seminar titled “Interiors” students prepare individual concepts for architectural and urban interiors.

In this academic year we also introduced an exercise offering a collaborative design solution: the Architectural City Game.

The subject of the exercise was to design a city game, with the leading theme regarding the issues of architecture and/or urban space in Warsaw. The group comprised foreign students – participants in bilateral exchanges and Erasmus + program from Belarus, the Czech Republic, France, Spain, South Korea, Germany, Taiwan, Italy and students of UDM from the US. Work took place in seven international teams, whose task was to present an original idea and develop an initial scenario for the game. The basic premise of the exercise was to undertake discussion about the possibility of introducing the abstract strategy of a game into a specific urban context. An important aspect of the discussion was how to express the issue of architecture and introduce it in the conditions of the game. The specificity of the topic required a prolongation of the task to two classes. The result was seven different proposals aimed to separate types of players and based on different assumptions.

4. Summary

In architectural education an element of fun is an important complement to the teaching program. Simulation of real or imaginary conditions helps to understand the processes occurring in space and provokes its own creative pursuits. Not burdened with the weight and the risk of execution, student concepts present a fresh, open approach to the formation of architecture and reality in general. Especially in short, concise forms, there is a chance for free thought to emerge, which may find continuation much later in mature projects.

R e f e r e n c e s

- [1] Banham R., *Theory and Design in the First Machine Age*, MIT Press, Cambridge 1980.
- [2] Bequette B. W., *Process Control: Modeling, Design, and Simulation*, Prentice Hall Professional 2003.
- [3] Borries von F., Walz F. P., Bottger M., Davidson D., Kelley H., Kücklich J., *Space Time Play: Synergies Between Computer Games, Architecture and Urbanism: the Next Level*, Springer Science & Business Media 2007.
- [4] Caillois R., Barash M., *Man, Play, and Games*, University of Illinois Press 1961.
- [5] Emmons P., Lomholt J., Hendrix J., *The Cultural Role of Architecture: Contemporary and Historical Perspectives*, Routledge 2012.
- [6] Gadamer H-G, Palmer R. E., *The Gadamer Reader: A Bouquet of the Later Writings*, Northwestern University Press 2007.
- [7] Hui V., *Architects at Play*, Lulu.com 2008.
- [8] Huizinga J., *Homo Ludens a study of the play element in culture*, Beacon Press 1971.
- [9] Kidder P., *Gadamer for Architects*, Routledge 2013.
- [10] Le Corbusier, *Journey to the East*, MIT Press, Cambridge 1989.
- [11] Pressman A., *Designing Architecture: The Elements of Process*, Routledge 2012.
- [12] Snodgrass A., *Interpretation in Architecture: Design as a Way of Thinking*, Routledge 2013.
- [13] Sutton-Smith B., *The Ambiguity of Play*, Harvard University Press 2009.
- [14] Warszawska Szkoła Architektury 1915–1965, PWN, Warszawa 1967.

GRZEGORZ TYC*

THE GAME OF DEFINITION

GRA W DEFINICJĘ

A b s t r a c t

Architecture is a complex discipline, and works of architecture are diverse and constantly changing. Therefore, it is difficult to determine the range and essence of architecture and create a definition. This paper analyses the problem with definitions of architecture on the basis of semantics, aesthetics, and metaphysics. It considers the question of identity and essence, and the cause, purpose and consequence of defining.

Keywords: *architecture, philosophy, definition, metaphysics, the essence*

S t r e s z c z e n i e

Architektura jest złożoną i szeroką dyscypliną, a dzieła architektury są różnorodne i podlegają ciągłym przemianom. Dlatego trudno ustalić zarówno jej zakres jak i istotę, trudno o jej definicję. Artykuł analizuje problem definicji architektury na tle semantyki, estetyki i metafizyki. Rozważana jest kwestia tożsamości i istoty pojęcia, przyczyna i cel powstawania definicji oraz sens definiowania i jego wpływ na architekturę.

Słowa kluczowe: *architektura, filozofia, definicja, metafizyka, istota*

* M.Sc. Arch. Grzegorz Tyc, (Ph.D. Study) Department of Housing Architecture and Architectural Composition, Faculty of Architecture, Cracow University of Technology.

Architecture has existence, but it has no presence. Only a work of architecture has presence, and a work of architecture is presented as an offering to architecture. [5]

L. Kahn

What is architecture? This question appears in the discourse with infinite number of answers. Despite this, in the daily “language games” the meaning of the word “architecture” is perfectly understood. Why then are there problems with its definition? And why is architecture defined?

“Definition” is to clarify the meaning of the word. In turn, “to define” has an additional connotation; precisely, to specify something, to draw the line, determine the essence [10]. In the case of the definition of “architecture” this ambiguity is somewhat akin to the distinction of definitions; reporting and designing, regulating and persuasive, normal and partial. Here is an example of normal, reporting and regulating definition of architecture: “The art of creating order in the environment in order to adapt it to meet the diverse physical, material and cultural needs of the people by the planned transformation of the natural environment and construction of forms and separation of space for various purposes” [2].

This complex definition lists a number of important architectural features. It links them with conjunctions, which makes them all necessary conditions. The definition becomes narrowed and sharpened. However, it appears that some of these conditions are debatable, and the range of the name definition is wide and blurred. This raises questions about the status of these conditions in contemporary architecture.

Is architecture an art? What place does architecture have in art? What is its relationship with today’s art? Discussion on whether architecture is an art has long continued. This issue is important when we want to distinguish architecture from “building”. The choice of whether architecture belongs to the realm of art, or whether it is to remain purely functional, determines architecture. It seems that a purely unilateral decision gives a poor effect, either too primitive, or useless. Therefore, the principle of finding a skilful unity of these essential characteristics is still valid. What distinguishes architecture from building are values, meaning and artistry. And what distinguishes architecture from the fine arts is its purpose. Does architecture need to have a function? If so, what? Are an aesthetic impact and impression enough? Are the coloured towers by Luis Barragán – the city gate standing in the midst of a busy road – architecture, but the desert monoliths by Richard Serra not? Establishing borders is collusive. There are works of architecture that are difficult to distinguish from works of art, and there are those that belong to both worlds at the same time. In such cases, the definition is an act more intuitive than analytical.

What is man’s place in architecture? The development of computer-aided design takes creating forms for building increasingly out of human control. This raises new questions about the place and role of man in architecture and the intentionality of the creative act. In an era in which a robot is an opera star, it is not difficult to imagine a building designed by computer, built by robots, and going even further, built for other robots. Would it be still regarded as architecture? Does architecture need intelligence, emotions, a sense of aesthetics and the artistry of the creator? Or, maybe just the judgment of a conscious observer. Does

it have to be a man? Will architecture still be an architecture after humans leave the Earth? Would “aliens” landing on Earth appreciate our craftsmanship? “What will happen, when colours fade, explanations, theories, guiding ideas are forgotten, the language of architecture becomes unintelligible, and conventions are considered bizarre and unnecessary? Will there remain “buildings”, “gates”, “towers”, „temples” or just forms appearing in the light, and gloom, and the darkness – architecture will remain”, says Dariusz Kozłowski [7 p. 25]. Questions related to the far-reaching visions of post-humanism do not make reporting sense but may be useful to look critically at architecture. The issue of the privileged place of man in the world is widely discussed in ethics, philosophy and the arts; it is also extremely important in the context of architecture. Currently, we see that theoretical considerations about ecology, the environment, and nature have replaced those about forms and styles.

Is reality a border line? Architecture is often defined as creating an environment/space of human activity. Does it have to be a real space? Or, can forms associated with human activity in virtual space also be considered as architecture? If so, then when? If architecture was virtual, must it have aesthetic qualities similar to those real? Will the degree of immersion be the decisive factor? “Immersion is defined as *diving* into the (electronic) environment so that the body does not pay attention to what happens outside this world and does not allow external stimuli” [1]. What if this immersion was to be complete and thus the boundaries between the real world and the virtual were unnoticeable?

Does architecture have to be associated with the act of building (real or intentional)? Is the relationship with its primary cause (protection against the physical world) an indispensable condition of its essence? There are non-existent objects in the history of architecture. We talk about buildings yet to be built, about objects that used to exist (e.g., the WTC), finally, the junction of the two cases – things that were designed but did not arise (e.g., the Tatlin’s tower). There are known drawings of things never constructed which are of great importance in the history of architecture. They include those whose intention is to be impossible to build (e.g.. Escher). There are also architects who consider architecture as pure thought – an architectural creation of the imagination. There are also those for whom architecture is just a pure idea.

Can we say anything about architecture, not knowing what space is? Or time? Is defining architecture not doomed from the onset to be a metaphysical speculation? Or maybe architecture does not require an understanding of what space is?

These are just a few examples of the problems that concern the meaning and identity of the word “architecture”. It seems that none of the examined conditions of the definition is absolutely necessary. Due to the very broad range of the discipline, diversity and variability of designations and positions contrary to each other, an agreement on a single, complete, reporting definition of architecture seems impossible. Despite this, the word “architecture” has a clear and understandable use. Ludwig Wittgenstein stated that the meaning of the word is determined by its use in our “language games”. Concepts for whose object it is not possible to identify the characteristics which are necessary and sufficient, he called “open concepts”. What connects the designations of such terms, he described as “family resemblance” [12 p. 51]. Rather than one meaning, there are many intersecting denotations. So a flexible

configuration of selected features is sufficient to be described as architecture. Therefore subjective (intuitive) judgement will be decisive. Architecture is defined at various levels; axiological, ontological, existential, etc. So, for each it is a product of individual decisions dependent on the fundamentals of worldview – the problem will be seen differently by the idealist and the nominalist. Each will choose a different, individual range – his own definition, his own theory, his own architecture.

The construction of such individual definitions is similar to the alternative definition of art by Władysław Tatarkiewicz. While creating it, the philosopher remarked that the subject of the word “art” has changed so much that identity has been lost and there is no essence shared between different subjects of “art”. He proposed a definition which uses an alternative linking up of different properties [11, p. 52]. Joseph Kosuth noted that the search for a theoretical answer to the question “what is art?” makes no sense because it has become a subject of neoavant-garde art [6 p. 246]. The denotation of a word “architecture” is fluid, but what about its subject? Is it (specifically works of architecture) clearly definable? Is it identical in history? In contrast to art, architecture did not change so much and so rapidly. There are known examples of experimental groups in the 60s, such as, for example Archizoom, which use utopian projects to question the theory of architecture. Such radical, revolutionary ideas, however, were rare, and across architecture we can observe a smoother evolution. Did contemporary architecture evolve far enough that it can undermine its historical identity? Does the work of Gehry, Kapoor or Heatherwick cross the border of traditional architecture (i.e., giving up the Vitruvian triad)? Or maybe they provoke and ask what architecture is today? Despite many changes the substantial unity and continuity of ancient architecture can still be seen today. As long as architecture is the creation of an individual living in a real world, all necessities resulting from the cause, purpose and matter are immutable. Works of architecture are very diverse and often contradictory in their theoretical assumptions. Yet, one can have intuitive impression of substantial consistency. The need to define the essence of architecture is mostly visible among architects.

Le Corbusier wrote: Architecture is the masterly, correct and magnificent play of masses brought together in light [8 p. 80]. Mies van der Rohe claimed that it is the structural clarity brought to its own expression [9 p. 53]. These sentences show what was for each of them the essence of architecture, as it is reflected in their works. But these are two different essences, just as the chapel at Ronchamp and the Seagram Building are two different architectures. As we know, both ways of thinking about architecture found many followers. We can conclude that certain specific (different) indications had a profound influence on architecture. Definitions which are partial, individual, personal, show what the author’s essence of things is. They are not fully definitions, but rather attempts to define (search). To define is to set a research range and explain a specified meaning. They have a persuasive function, explain and justify the architect’s artistic decisions and try to convince others. They result from the need to share a personal experience of the creative act and the work of architecture. They bring closer sense and meaning (which might not exist). Just as the overall definition is a result of individual decisions, so is the essence a result of personal experience.

The act of creation and aesthetic experience of the work of art is an experience in which feelings and contact with the work cease to be verbalised. Thus Roman Ingarden describes it: “Aesthetic experience leads to the constitution of the specific – aesthetic – subject that cannot

be equated with anything real (...)" [4 p. 97]. Individual definition is an attempt to describe this experience. According to Martin Heidegger, the metaphysical research area is an experience and its content, rather than the conceptual apparatus and its properties. A description of experience should acquaint us not with how we think of being, but rather, how we exist. Putting metaphysical questions has, Heidegger says, its cause in human nature, in its need to resist nothingness. *Why be-ing, after all, and not rather no-thing?* [3 p. 88].

Architecture leads to metaphysics from both sides, theoretical – considering theory of architecture, as well as practical – creating and experiencing architecture. Metaphysics provides a foundation both in cognitive and practical terms as points of reference, aspirations and goals. It deals with the explanation of being and knowing its properties; essence, cause, purpose, necessary relations. "The idea is that the sciences effect a rapprochement with the essential in all things" [3 p. 74]. Metaphysics is that which cannot be separated from the object, which cannot be extracted, which cannot be analysed, but is rather an intuitive penetration of the object. There is something in the harmony of design solutions in architectural problems that makes architects often refer to it as "ideal being". Just as mathematicians are stunned by the beauty of the solutions to the problems they work on. The complex multilayer architecture seems to be particularly inclined to metaphysical questions. Architecture touches almost all relevant questions of philosophy, which does not have a single answer. Therefore, the search for definition is not intended to discover one truth, one essence and one meaning. It aims for critical consideration and updating assumptions, justification, awareness and a sense.

To define is to question being. The search for answers to the questions of what architecture is and what its essence is is important even if there are no easy answers. Socrates devoted his whole life to the quest for definitions and though he did not provide any, his actions prove that he understood perfectly the essence of virtue or justice. So maybe this philosophical game is not to find the definition but just to search?

R e f e r e n c e s

- [1] Dominik B., Problem wolności człowieka w świecie elektronicznym, praca magisterska, WF UJ, 2015.
- [2] Encyklopedia PWN, wwwENCYKLOPEDIA.PWN.PL
- [3] Heidegger M., *Co to jest metafizyka?*, Grygiel S. i Stróżewski W. (tłum.). Znak, nr 127, 1965.
- [4] Ingarden R., *Studia z estetyki*, tom III, PWN, Warszawa 1970.
- [5] Kahn L., *Miedzy milczeniem a światłością*, www.teoriaarchitektury.blogspot.com
- [6] Kosuth J., *Sztuka po filozofii*, przeł. U. Niklas, [w:] *Zmierzch estetyki – rzekomy czy autentyczny?*, tom II, Czytelnik, Warszawa 1987.
- [7] Kozłowski D., *Architektura czyli sztuka budowania rzeczy*, [w:] Arch nr 10 2012.
- [8] Le Corbusier, *W stronę architektury*, Centrum Architektury, Warszawa 2012.
- [9] Monestiroli A., *Tryglifi i metopa*, PK, Kraków 2009.
- [10] Oxford Dictionaries, www.oxforddictionaries.com
- [11] Tatarkiewicz W., *Dzieje Sześciu Pojęć*, PWN, Warszawa 1988.
- [12] Wittgenstein L., *Dociekania filozoficzne*, PWN, Warszawa 2004.

MAGDALENA WĄSOWICZ*

**INSIDE-OUT ARCHITECTURE
– A GAME WITH THE MULTISTABILITY
OF SOLID AND VOID**

**ARCHITEKTURA WYWROCNA NA LEWĄ STRONĘ
– ZABAWY Z MULTISTABILNOŚCIĄ
BRYŁY I PRZESTRZENI**

A b s t r a c t

A game of the multistability of the solid and void based on turning an interior inside-out reveals the properties of a building or a room. The inside becomes an object, surfaces of walls that surround the internal void are revealed to the outside like the inner lining of a piece of clothing would be unveiled. A game that changes void into solid serves as a model of analysis of the architectural space, or as a method of immortalising non-existent spaces.

Keywords: *multistability, Gestalt, space, void, solid*

S t r e s z c z e n i e

Gra multistabilności bryły i przestrzeni polegająca na wywróceniu wnętrza na zewnątrz pozwala na ujawnienie niektórych właściwości budynku czy pomieszczenia. Wnętrze staje się obiektem, płaszczyzna ścian otaczająca wewnętrzną pustkę ujawniona zostaje na zewnątrz, niczym ubranie przełożone na lewą stronę. Gra zamiany pustki na lity obiekt służy jako model analizy przestrzeni architektonicznej lub jako metoda zapisu przestrzeni nieistniejących – zburzonych lub fikcyjnych.

Slowa kluczowe: *multistabilność, gestalt, przestrzeń, bryła*

* M.Sc. Arch. Magdalena Wąsowicz, The Institute of Architecture and Urban Planning, Faculty of Architecture, Wrocław University of Technology.

1. Introduction

In the night sky, single bright spots can be seen. It is known that this is the light emitted by stars and reflected from planets, from great distances, with many of these celestial bodies no longer existing. However, in many ancient beliefs the same view was interpreted differently. The sky was perceived as a material dome above the Earth, with stars attached to it or with holes in its surface, which constituted access to other, more heavenly worlds. Many languages hold the remains of this vision: in Hebrew ‘*raqia*’, in Polish ‘*firmament*’ means ‘*welkin*’, the dome of the sky. It was believed that the shedding darkness is not a boundless void, but rather a solid that covers the land like a lampshade. The project for Newton’s Mausoleum of 1784 by Étienne-Louis Boullée, a French classical architect, resembles a similar duality of interpretation. The graphic (Ill. 1) presents a section through the building and reveals its interior. The attention of the recipient is focused on the solid elements with which the interior void is surrounded, with the main hall being a perforated dome with little holes. It can also be seen as an architectural container enclosing the outer space, different from the one on the outside.

2. Multistability

Gestalt psychology explains the described duality of form and space perception with the term *multistability of gestalt structures*. The *gestalt* is a comprehensive construct of perception and notion, generated by elements representing objects that are known for the recipient from prior interaction with them [3, p. 77]. The *multistability of gestalt structures* however, pertains to the possibility of switching between two ways of interpreting the object’s identity, and is connected above all with figure/ground entities. In other words, what the observer sees as a figure can be noticed after a moment as the background, and the background will occur as a figure [3, p. 78]. An example of *multistability* is the print by M. C. Escher entitled *Sky & Water* (Ill. 2) that enables the viewer to observe in a dynamic way the change of interpretation of figure and background – the gradually shifting shapes of fish that become a white background for black birds.

3. The influence of space concept to architecture interpretation

The description of the case of the dual nature of architectural objects, besides considerations on transferring Gestalt theories into the language of architectural form [4, p. 130], also requires taking into account the influence of the concept of space. The space in architecture at the beginning of the 20th century was comprehended in two ways: as being a physical property of dimension or extent, and also as a part of an apparatus through which the mind perceives the world. The initial intellectual impetus was given by Immanuel Kant’s striking idea that the space is a *property of the mind* [2], meaning that the space doesn’t exist objectively, but is a notion associated with human thought, constituting the condition of all perception. Hegel, after acknowledging that perceived objects are attributed to the subject that perceives it, followed by inquiring into the origin of its constitution via the notion of the ‘*spirit of the age*’. Philosophy inspired an attempt by art historians to identify the unfolding spirit of the age in the various

epochs of artistic expression, each manifesting a different kind of space. This meant that architectural phenomena were to be understood in very general, abstract terms that could manifest the spirit on this broad level of abstraction [8, p. 223]. Each epoch could now be identified with a particular sense and understanding of space. August Schmarsow noticed that *the history of architecture is the history of the sense of space* [7, p. 286] and historical architecture commenced to be analysed through the prism of these new definitions.

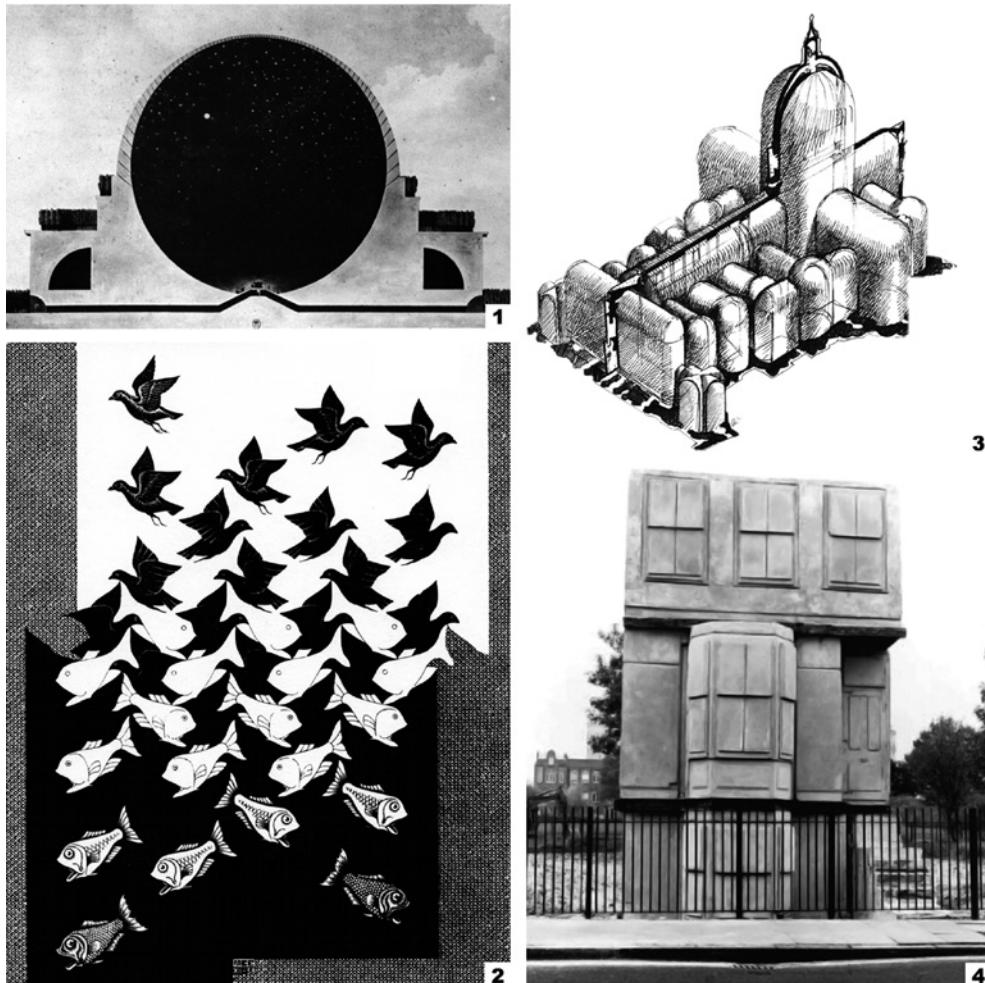
4. Reversed interpretation of the architectonic interior

Steen Eiler Rasmussen was one of the theoreticians that followed this thought in his publications. He noticed that some architects were more interested in the structure, others in the creation of space, some architectural periods concentrated on the forming of material elements, and others on the shape of the voids inside of buildings [5, p. 46–50]. Rasmussen pointed out that Baroque and Renaissance architecture was focused on forming sequences of spatial units, because “the favourite form of these epochs is a void covered with a dome” [5, p. 50]. A strong figurative character of the interiors of those houses of worship, produced with soft concave forms, denoted the abstract spatial substance contained within their solid walls.

Implementation of the materialistic idea of architectural space constituted a parallel area of research to that based on philosophy. At the beginning the 20th century the architectural space was established as the object subjected to alterations of its creator. Geoffrey Scott stated that the *architect models in space as a sculptor in clay* [6]. Due to depicting the architectural space as the material object, new research paths concerning the shaping of space were opened. In 1952, Luigi Moretti published models of the interior spaces of baroque churches: St. Peter’s Basilica in the Vatican (Ill. 3) and the Santa Maria Church in Lisbon by Guarino Guarini. These abstract forms, casts of the interiors voids of temples, served as illustrations for the article in which they were analysed. This presentation contributed to a deeper understanding of the forming of the architectural space’s properties. Moretti considered the dimension, understood as the quantity of absolute volume; the density, depending on the quantity and distribution of permeating light; and the pressure in energetic charge, according to the shape of the bounding constructive masses [1, p. 177–182]. These forms were a depiction of architecture turned inside-out, a game with the negative void and the positive solid of the surrounding structure. The abstract interpretation of architectonic object based on a multistable duality was presented. Nevertheless, the models did not enable the interior to be visually penetrated, they only showed its solid form.

5. A game of multistability within the boundaries of sculpture and architecture

The work of the British artist Rachel Whiteread, such as the negative of a bookshelf, appear as a white geometrical concrete block, yet is actually an expression of an object that is turned inside-out. The empty space around or inside an object is filled with concrete and materialised, when the original moulded object itself has disappeared. For the artist these methods enable us to visualise the memory of lost things. The mould creation embodies the past and history of the object in fossilised matter, immortalised for future generations. These types of formal operations were also performed on entire architectural interiors. Sculptures playing within the



- Ill. 1. Cross-section of *Newton's Cenotaph*, Interior Night Effect, Étienne-Louis Boullée, 1784 [Source: Schaller T. W., *The Art of Architectural Drawing: Imagination and Technique*, John Wiley & Sons, Chichester, 1997, p. 160]
- Ill. 2. *Night & Sky I*, Maurits Cornelis Escher [Source: Meiss P., *Elements of Architecture: From Form to Place*, Taylor & Francis, 1990, p. 22]
- Ill. 3. Interpretation of the interior space model of the *St. Peter's Basilica in Rome* juxtaposed with the plan and cross section [Source: author's elaboration based on Moretti L., *Strutture e sequenze di spazio*, "Spazio" no. 7, December 1952/April 1953, p. 17]
- Ill. 4. *House*, Rachel Whiteread, 1993 [Source: Saltzman L., *Making Memory Matter: Strategies of Remembrance in Contemporary Art*, University of Chicago Press, Chicago, 2006, p. 88]

boundaries of sculpture and architecture were produced through filling a room with a medium, which, hardened and deprived of walls and windows, was presented in the form of a negative similar to Moretti's models. Works such as '*Ghost*' (1990) and '*House*' (1994) (Ill. 4) may serve

as an example. The latter represents the elegant negative cast of an entire interior of a Victorian house destined for demolition. The two original structures were eventually destroyed, leaving the negative casts as the only remaining evidence of their existence. These sculptures represent the life of such interiors by compressing the air into solid material, thus externalising and revealing to the public what was once an intimate interior. Whiteread's works deal with the tension between private and public – personal spaces that possess an individual history, which are solidified and revealed to the public [9, p. 139–140]. Abstract conceptualisation of the interior space of fictional rooms was also presented. A cast of the room of interrogations is an example from the Orwellian year 1984 which he constitutes as the only evidence for his being.

6. Summary

Designers, theoreticians of architecture and artists undertake a game of positive and negative forms. It is based on turning the inside over to the outside and enables the properties of the building or room that are impossible to unveil in normal circumstances to be observed. The inside becomes an object, the surfaces of the walls that surround the internal void are revealed to the outside, like the inner lining of a piece of clothing would be unveiled. This unusual game of changing voids into solids serves as a model of analysis of the architectural space and a method of investigation to determine the features of different kinds of space in the various epochs of artistic expression. It can also constitute a method for immortalising non-existent spaces – destroyed or fictional and provokes reflection on the result of the transformation conducted. Radical change that occurs in this space perception is connected with preventing the access to the interior. It results in maintaining its secret atmosphere and makes us unable to experience the interior ambience. On the other hand, it is also a way of denuding the interior. It brings it to the public view by depriving it of the skin of walls.

R e f e r e n c e s

- [1] Bucci F., Mulazzani M. red., *Luigi Moretti. Works and writings*, Princeton Architectural Press, New York, 2002.
- [2] Kant I., *Critique of Pure Reason*, Cambridge University Press, Cambridge, 1998.
- [3] Korzyk K., *Percepcja: natura, struktura i funkcja*, Autoportret 03 2012, Małopolski Instytut Kultury, Poznań 2012.
- [4] Lenartowicz J., *Słownik psychologii architektury*, Wydawnictwo Politechniki Krakowskiej, Kraków, 2010, p. 130.
- [5] Rasmussen S. E., *odczuwanie architektury*, Murator, Warszawa, 1999.
- [6] Scott G., *The architecture of humanism: A Study in the History of Taste*, W. W. Norton & Company, 1999.
- [7] Schmarsow A., *The essence of architectural creation* [in:] Vischer R., *Empathy, Form, and Space: Problems in German Aesthetics, 1873–1893*, Getty Center for the History of Art and the Humanities, 1993.
- [8] Schumacher P., *The Autopoiesis of Architecture: A New Framework for Architecture*.
- [9] Wakounig M., Beham M. p. red., *Transgressing Boundaries: Humanities in Flux*, Lit Verlag, 2013.

PIOTR WINSKOWSKI*

GAME ON THE BORDER
OF COMPLIANCE WITH RULES,
OR DECONSTRUCTION IN DETAILS

GRA NA GRANICY
ZGODNOŚCI Z REGUŁAMI,
CZYLI DEKONSTRUKCJA W DETALACH

A b s t r a c t

Unique architectural details may sometimes act like a lens or hologram, allowing better understanding of the general principle ruling the entire architectural concept. It shows both the game of intrinsic geometric transformations, and the game as diversion or entertainment. This is illustrated with examples from Parc de la Villette (1982–1990) in Paris, designed by Bernard Tschumi.

Keywords: deconstruction in architecture, detail, Parc de la Villette, pavilions, Bernard Tschumi, Bicyclette ensevelie, Claes Oldenburg, Coosje van Bruggen, playing with user's sensory impressions

S t r e s z c z e n i e

Unikatowo zaprojektowane i zrealizowane zgodnie z projektem detale budynków, jak soczewka, skupiają cechy całości lub, jak hologram, pozwalają poznać zasadę, jaką się ona rządzi. Pokazują zarówno grę przekształceń architektonicznej geometrii według własnych, hermetycznych zasad, jak i pozwalają użytkownikom na grę rozumianą jako zabawę. Zjawiska te zostały zilustrowane przykładami z paryskiego parku de la Villette (1982–1990), projektu Bernarda Tschumiego.

Słowa kluczowe: dekonstrukcja w architekturze, Park de la Villette, pawilony-folies, Bernard Tschumi, Bicyclette ensevelie, Claes Oldenburg, Coosje van Bruggen, gra z doznaniami użytkownika

* Ph.D. Arch. Piotr Winskowski, Institute of Architectural Design, Faculty of Architecture, Cracow University of Technology.

Graphic representations of architectural theories using diagrams, graphs etc. tend to focus on general concepts: buildings as a whole and their relationship with their setting, urban complexes, and city parks. The details tend to get left out of the theory. Yet, a broad layout usually can only be seen from an airborne perspective. This applies to casual modernist urban layouts and their organic variety as well as post-structuralist and – in particular – deconstructionist concepts. These are often a game of geometric transformations based on their own hermetic principles, or a variation based on the themes derived from the aforementioned trends.

However, unique architectural details – specifically designed and executed in line with the project – may sometimes act like a lens or a hologram, focusing the properties of the whole and allowing better understanding of the general principle ruling the entire architectural concept. Such details may be examined from various different perspectives and points of view and, when they are directly accessible to the public, they may be used in line with, in opposition to, or even in parallel with the designed purpose. This is another type of game: a game understood as a diversion or entertainment. In this paper, I focus on the relationship existing between the two abovementioned types of games coexisting within the same space thanks to the use of a wide range of architectural details, which leads to the participation in a broader theory. This is illustrated with examples from the Parc de la Villette (1982–1990) in Paris, designed by Bernard Tschumi.

Much has already been written about the concept behind the Parc de la Villette, being perhaps the fullest practical application of the premises of architectural deconstruction [1, p. 8–11; 6, p. 33–39; 2, p. 92–101]. Written analyses and Tschumi's own comments are illustrated with diagrams showing three design layers – lines, points and planes – initially designed according to different guidelines and subsequently superimposed. The result is a great number of unpredictable clashes between different geometrical systems. However, neither the broad layout nor the principle ruling is fully visible, despite the existence of widely accessible elevated viewing platforms. This is due to the park's extensive surface and geometric complexity.

The aforementioned principle consists in applying the premises of philosophical deconstruction to architecture in line with the formula elaborated in collaboration with Jacques Derrida. It involves undermining and/or overcoming the dualistic opposition between the *signifie* and the *signifiant*, i.e. the notion and the voice (or visual form) that it represents. Derrida claimed that deconstruction is not a method (originally: of literary analysis), since a method is supposed to lead to a certain goal or a completion of a procedure, while deconstructed text, defined as one in which the underlying syntax structures and deformations resulting from linguistic and grammatical determinants were uncovered, can/should be subjected to further deconstruction *ad infinitum*.

Despite Derrida's approach, deconstruction becomes a method when applied to architecture. The construction process finally comes to an end and the building is put to use. The fact that it may be interpreted in many different ways following its completion does not change its final shape; still, it does undergo changes due to the passing time, advancing deterioration, renovations etc. Therefore, deconstruction in architecture constitutes a method of design. Deconstructionist interpretation (“all is interpretation”) of architecture is no different than deconstructionist interpretations of other “cultural texts” (for Derrida, all such “texts” are products of culture, including those that are not linguistic in their nature).

In order to undermine and/or overcome the opposition between the *signifie* and the *signifiant* (the foundation of Western philosophy since Plato, as evidenced by all the dualisms

existing in fields ranging from philosophy to traffic organisation: spirit/matter, *res cogitans/res extensa*, bright/dark, up/down, right/left, stop/go), it is not sufficient to negate the opposition, as this does not eliminate dualism, which remains, the only change being that it includes a contrary, “negative” component. Hence the recurring phrase in deconstructionist analyses of architecture – *in-between* – and the deconstructionists’ search for shapes and spaces that are neither within nor without any given framework, limit, or system, but rather between them, or– even better – at the same time between and within those systems. Therefore, the concept does not consist in negating the opposition, but rather outwitting it.

This “halfway in and halfway out” theme is visible in the Parc de la Villette alleys and their intersections, made with tiles of varying material, texture, colour and geometry, in order to somewhat confuse the visitors strolling through the park. While this confusion is relatively harmless in a park where people have time to spare and even expect certain attractions, it also demonstrates visually the complexity of the structural components and emphasizes the issue of functionality or utility, allowing one to experience his or her reflexive actions, like turning from one park alley to another, in a different way. This “issue of functionality” has a direct impact on the human body without engaging language, thoughts (that are also linguistic in nature), linearly sequenced associations, persuasion, interpretation, cause and effect, or in other words those qualities that are intrinsic to a dualistic model. For a visitor strolling through the park, this outwitting and undermining of oppositions happens *en passant*; in the case of a cyclist – who moves faster and whose perception of changing pavement texture is even stronger – it happens at intersections and turns, where they are at risk of slipping and colliding against a curved, arc-like bench sitting almost in the middle of the curve and in opposition to the path’s curve.

Another similar example of the deconstructivist game – although more complex and three-dimensional – is an outdoor stairway in one of the red pavilions (*folie*) situated at the entrance to the park, which houses a tourist information point. The name evokes the garden pavilions of the rococo and romantic era, promising folly, extravagance, or at least entertainment. Even though this entertainment interferes to some extent with functionality, it does so without disregarding it completely.

The lowest step in the stairway has more or less half the height of the remaining steps. At first glance, this appears to be an obvious construction error (one quite commonly seen in Poland) when the previously calculated and executed steps reach an unexpectedly raised floor or slab level. If any doubts remain as to whether this was simply a mistake or, quite the opposite, a game with the user being part of a deconstructionist discourse, it is definitely resolved by the construction of the stairway railings that clearly indicate intentional design.

One of the railings consists of rectangular modules arranged diagonally in parallel to the stringer, filled with wire mesh, completed with flat bars, and topped with a railing bar. The bottom flat bar in the lowest module meets the paving of the square in the middle of its length, where it slants and continues in parallel to the pavement; then, it returns to its proper course so that the module has the same length measured along the railing slant, the only difference from the remaining modules being the cut-off at the bottom. At the same time, the railing topping the module throughout its length extends beyond the last step and descends lower, approaching the pavement at a height considerably lower than standard for exterior stairway railings (which is at approximately 1.1 metre above the paving, just like in Poland) and only then does it slant at a right angle and continue once again diagonally along the flat bar enclosing this lowest, cut-off module.



1.



2.



3.



4.



5.

Ill. 1. Parc de la Villette in Paris, 1982–1990, Bernard Tschumi. Intersecting alleys

Ill. 2. Stairs at the tourist information pavilion

Ill. 3, 4, 5. *Bicyclette ensevelie*, 1990, Claes Oldenburg, Coosje van Bruggen
(Photos by p. Winskowski)

The distinctive lines of the flat bar enclosing the railing module, the consistency resulting from the same length of all modules despite their incorrect distribution in relation to the length of the flight of stairs, the railing's solid mounting, its extension beyond the line of the last step, the right angle bend, and the continued course of the railing, redundant in terms of functionality, until it ostentatiously reaches the paving as a way of enclosing the bottom module and the entire railing: all these measures point to deliberate decisions, even though the signals sent by thus shaped forms are indeed ambiguous.

This ambiguity is an intrinsic part of undermining/outwitting/overcoming the discourse of functional straightforwardness in architectural elements. But besides the discourse, there are also other factors at play: a risk of tripping on the lowest, non-normative step and hitting one's knee against the railing's right angle bend.

The construction of the other railing of this same stairway is different: it is a massive wall of regulation height but without a separate handrail, descending diagonally to the ground without any disruption or slanting. Therefore, it protrudes even farther into the square, going beyond the limit of the last step, hence creating a risk of tripping for people approaching the stairway from another direction.

Both the above-described railings that belong to this particular stairway – especially when considered together as a functional whole – transgress, as it seems, the criteria of the seemingly obvious dualistic opposition model: at least in terms of categories such as good/bad, harmonious/disrupted, useful/useless, and even comfortable/uncomfortable. Visual disruptions in the design of the railings, noticeable from a considerable distance, are bound to capture the attention of even distracted users enough to avoid injury while climbing the stairs; the task is made easier thanks to the lights set in the filled-in railing illuminating the steps.

Five hundred metres from the tourist information point one finds another setting that allows dynamic movement of the human body while actively participating (the users do this more or less consciously) in a certain architectural or artistic theory. The site in question is an example of a game of simultaneous climbing and descending (similarly to the previously described stairs), set in the context of the 20th century art's constant aspiration to blend the realms of art and life, merging art with life and life with art. An aspiration that, let us add, leads to permanent physical deterioration of the artwork as a result of its success in the area of performative activity.

This setting represents an enormous sculpture *Buried Bicycle* (*Bicyclette ensevelie*, 1990, Claes Oldenburg, Coosje van Bruggen), fallen to a side and partially sunk in mud, protruding from the lawn exposing part of a wheel, half of the handlebars with a handgrip and a bell, half of the saddle, and one pedal. The sculpture is traversed in the middle by linear elements belonging to Tschumi's concept: a paved alley and a row of trees.

The most attractive parts of the sculpture, particularly for children, are its wheels. Obviously, they do not turn, but only evoke a possibility of movement by association with real bicycles; but it is possible to climb them up to 2.5 metres above the lawn, thus reaching a height rather risky for kindergarteners. By climbing the sculpture and using the site as a playground, they damaged (and continue to damage) the wheel. In this case, a success in terms of artistic theory and public reception brought on a failure technology and execution-wise. After all, in the realm of pop-art imagery such a toy must always look like it is "brand new". The adopted style does not tolerate destruction, devastation, or a "post-industrial" look, etc. The sculpture, being both a solid work of art and a generator for performative activities, allows carefree playing with a bicycle that seems to have been abandoned by some unknown giant.

At the same time, this ludic and artistic concept has been misunderstood by the park administration. Next to a solid, cast plaque providing information on the title, the authors, and the date of the sculpture, another plastic plaque has been placed (omitting the co-author, Coosje van Bruggen, Oldenburg's wife, included on the first plaque, which demonstrates both inaccuracy and negligence in terms of gender equality). Leaving aside its cautionary red colour, this second plaque would be more suited to a museum and to a work of art aimed

at solemn contemplation, since it proclaims that “climbing is prohibited”. And why is that? “For security reasons and out of respect for the artwork”! Risk of accidents and security regulations notwithstanding, the plaque clearly demonstrates the failure in predicting possible spontaneous usage of the sculpture, and an attempt (albeit ineffective) at preventing the game on all of the above-described levels.

The idea of the multisensory impact of space, currently at the centre of attention of architectural theory, usually associated with the effects of silence or delicate reverberation, diffused light, increased (subjective) temperature in an interior covered with thermally non-conductive materials (such as wood), and scents of such materials (wood, resin), has its origins not only in the remote history of art and architecture, as many contemporary authors claim [3, 4, 5, 7]. In the architecture of two or three decades ago, now somewhat *passé* in terms of style, we find the origins of experiments consisting in playing with the users’ sensory impressions and modifying them to a considerable extent on many different levels. Although the deconstructivist discourse regarding these experiments now seems to be a closed chapter in the theory of architecture, their results in architecture still allow new generations of users to experience space in new, different ways. These experiences are worth analysing for the purposes of designing and defining space in architecture, also as part of a different discourse: even if this means following the same path in the opposite direction.

R e f e r e n c e s

- [1] Benjamin A., *Derrida, Architecture and Philosophy*, [in:] *Deconstruction in Architecture*, Architectural Design Profile no. 72, 1988, p. 8–11.
- [2] *Deconstructivist Architecture*, ed. Ph. Johnson, M. Wigley, New York 1988.
- [3] Pallasmaa J., *The Eyes of the Skin. Architecture and the Senses*, Chichester 2012.
- [4] Rasmussen S. E., *Experiencing Architecture*, Cambridge Mass. 1962.
- [5] *The Body in Architecture*, ed. D. Hauptmann, Rotterdam 2006.
- [6] Tschumi B., *Parc de la Villette, Paris*, [in:] *Deconstruction in Architecture*, op.cit., p. 33–39.
- [7] Zumthor P., *Thinking Architecture*, Basel – Boston – Berlin 2006.

ANNA WOJTAS HARAŃ*

**ON THE ROOF OF EUROPE
– THE FROLICS OF ARCHITECTS****NA DACHU EUROPY
– IGRASZKI ARCHITEKTÓW****A b s t r a c t**

The natural landscape provokes artists to revive one. Architects overcome technical, physiographic, and custom limitations and they picturesquely blend their works in with the richness of nature. Many benefits may accrue for the region and tourists from this bravura, but at the expense of losing some of the innate values. In this article, the problem is presented intentionally in an exaggerated manner, recalling extreme locations.

Keywords: mountain landscape, tourist infrastructure

S t r e s z c z e n i e

Krajobraz naturalny prowokuje artystów, aby go ożywić architekturą. Architekci pokonują ograniczenia techniczne, fizjograficzne, zwyczajowe mniej lub więcej małowniczo wkomponowując swoje dzieła w bogactwo form przyrody. Wiele korzyści wynika z tej brawury dla regionu, turystów, kosztem jednak utraty pewnych wartości pierwotnych. W artykule zaprezentowano ten problem w sposób celowo przejaskrawiony przywołując ekstremalne lokalizacje.

Słowa kluczowe: krajobraz górski, infrastruktura turystyczna

* Ph.D. Arch. Anna Wojtas-Harań, Department of Housing and Industrial Architecture, Interior, Rural Planning, Landscape, Visual Arts and Structural Systems, Faculty of Architecture, Technical University of Wrocław.

1. Introduction

In the past only seasoned climbers could experience the charm of the high mountains. A simple way to reach the places that were reserved for the few for a long time. An important turning point was to discover the means of transport such as the rack railway, cable car, and then lifts. Soon, the desire for entertainment in extreme locations was revealed. As a result the need for essential building infrastructure emerged. A pristine landscape is a perfect field of activity for architects, like downhill skiing on powder snow – only for the elect. On the one hand, there are enormous environmental difficulties, but on the other artistic freedom and precedence. They bravely began to conquer the peaks by playing with nature, however.

2. Dilemmas

We experience changes in ambient conditions when we reach the peaks. The climate becomes more severe and unpredictable at high elevations. There is long-term snow zone at the highest points. Permanent ice covers area at the level (e.g. in the Alps) between 2500 and 3200 metres above sea level, depending on the exposure of the slope. The rules of wind, sun and snow govern at these altitudes. The remote location complicates the building design process, as well as their implementation and exploitation, because of atmospheric precipitation above the norm, the multiplied force of the wind, extreme temperature fluctuations (with a predominance of very low), and the thin air, low pressure, and frequent fogs. Transportation of construction materials, which often becomes a logistical challenge, difficult working conditions in areas where just a little effort can speed up the heart rate, the abnormal behaviour of building materials, lack of access to the media – these are some of the problems that need to be analysed. So, does anyone build in such a hostile environment? Does anyone respect the primacy of nature, or demonstrate the ubiquity of man? Here are some examples of showing bold architectural solutions which challenged the elements.

Refuge du Goûter

This new shelter, designed by Swiss architect Hervé Dessimoz from Groupe H, stood on the site of the previous building. The old one, dating back to the sixties, was torn down in 2013. Refuge du Goûter [6] was built at 3835 m.a.s.l. in the Massif du Mont Blanc in France, on the popular route for climbers going to Mont Blanc. The old hut was wasteful in terms of energy and too small for the growing number of visitors (about 30,000 climbers every year attempt to conquer Mont Blanc). It was considered that the spherical shape of the building links aesthetics and the technical constraints of the environment. According to the authors, the four-storey building is environmentally friendly and compatible with the principles of sustainable architecture. It is self-sufficient for energy and water. The hostel is only dependent on gas supplies to prepare meals. The building is made of prefabricated elements, with parameters adapted to the capacity of the helicopter. The support structure is made of laminated wood elements with a minimized thickness. The trees were examined by ultrasound before harvest to choose the most regular specimens. The biodegradable adhesives are free of formaldehyde. The façade made of grey, brushed stainless steel is

resistant to winds up to 240 km/h and temperature changes. The triple-glazed windows transmit the force of wind up to 300 km/h. The glass was subject to low pressure pre-aging before installation. The wood fibres of the insulation are biodegradable and guarantee low energy demand. The construction work was carried out in particularly difficult conditions due to the lack of oxygen. The investment is seen as an expensive prank. However, a closer look gives the sense of this spectacular shelter on the way to Mont Blanc, commonly known as the Roof of Europe.

Wildspitzbahn Stations

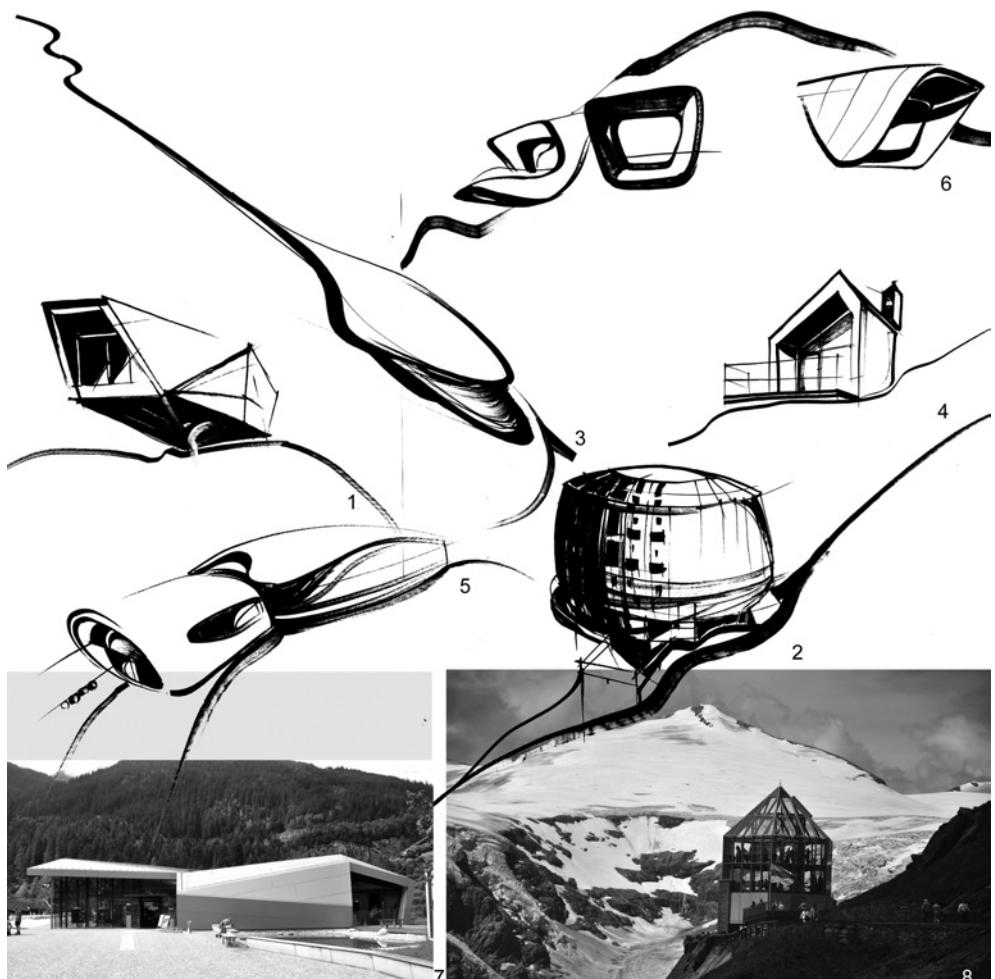
The project for two funicular stations, designed by Carlo Baumsehlager and Oliver Baldauf, is given as an example of democratization of the Alps. It broke the barrier to reach the uppermost glacier – Pitzal Glacier in Austria – (and at the same time a ski area) for tourists, even having difficulty in movement. The valley station is located in a valley at about 2800 m.a.s.l. The mountain station with visitor centre and café were designed at a height of 3440 m.a.s.l., on the top of Hinterer Brunnenkogel. The upper station is mounted on a rocky ridge. The organic shapes of the cold-formed sheet metal façade and low volume evoke associations with fragments of ice cover or shellfish. The functional layout and the type of building materials have been adapted to admire the views of the mountains. Many elements are glazed and made of special quality glass that carry extreme wind loads. The construction is based on precise prefabricated steel components assembled on site. It is a daring feat of engineering taking into account the natural conditions where it arose. But it is a powerful marketing tool as well [7] in the fight for customers and distinction among other Tyrolean resorts.

Museum at the Timmelsjoch [4]

This is the museum designed by architect Werner Tscholl, at an altitude of 2509 m.a.s.l., on the Timmelsjoch, near the tourist route connecting Passeiertal and Oetztal, on the border between Austria and Italy, in the North Tyrol. The property is part of a cross-border program designed to allow people to learn about nature, history, culture, society, and the economy of the region. The project includes four other buildings (information roadside stations). Pavilions in the form of faceted stones and boulders refer to the colours and shapes observed in the landscape. The joke by the architect, who is copying countless originals in the Alps, is intended to boost the region economically.

Messner Mountain Museum [8]

Zaha Hadid designed the museum that was realized between the crown of the Zillertal Alps and the Dolomites, at an altitude of 2275 m.a.s.l. and immersed in the peak of Kronplatz. It presents the theme of mountains. The exhibition begins in the underground hollow in the rock and ends with a view of the surroundings from the terrace of the aboveground part of the building – resembling a piece of the glacier. This is the sixth and final investment of climber Reinholds Messner in a series of museums situated high in the mountains in South



- III. 1. Museum at the Timmelsjoch
 III. 2. Refuge du Goûter
 III. 3. Reisseck Bergbahn station
 III. 4. Chapel in the area of the Stubai Glacier
 III. 5. Wildspitzbahn station
 III. 6. Messner Mountain Museum
 III. 7. Visiting centre near the waterfall Krimml
 III. 8. At the foot of Grossglockner
 (drawings and photos by author)

Tyrol. The project fascinates with its extravagance and the investor with his impetus. For this Messner "...irritates with megalomania when asked about the plan to build five museums in the Italian Alps, he blurts out without hesitation: "I'm building it not for South Tyrol, but for myself" [3].

Reisseck Bergbahn station [5]

The restaurant with a large panoramic terrace and the station of the mountain railway Reisseck Bergbahn is planned at a height of 2250 m.a.s.l in Carinthia in Austria. The Viennese architects Zechner & Zechner proposed a natural form that duplicates the contours observed in the field. The roof recalls an overhanging snowcap. The ground floor is reminiscent of a cave. The shapely solid diversifies the alpine landscape, disturbing its impeccability.

Not always, however, do we stick with the individual, spectacular work of architecture in these exceptional locations. The building complexes are formed. They are compact or dispersed, as a result of the continuous replenishment of the optimal composition.

For example, one could not reach the highest glacier in the Eastern Alps – Pasterze near the highest peak of Austria – Grossglockner (3789 m.a.s.l.) being tempted to stop by some kind of architectural sights, scattered along the alpine route. Already reaching the highest point of the road, it is easy to overlook the biggest sensation – walk the rocky path to the glacier, being lured by range of shops, information centres, restaurants, cinemas, and observatories. Similarly, the movement of tourists is discharged in area of the Europe's largest and the fifth biggest waterfall in the world at Krimml in Austria. We just appreciate the most impressive views which are at the beginning of the trail, at the foot of the waterfall, when we are tired after 8 km long, very steep, winding route, deluded by restaurants, viewing platforms, visiting centres, shops. Year-round winter sports centres are expanded in the area of glaciers – as in the area of Kitzsteinhorn (3203 m.a.s.l.), which attracts a large variety of gaudy architecture: a cinema, a viewing platform, an information desk, a restaurant, a train station and an ice arena: slides on the summer snow, snow beaches, an ice bar, and many others attractions. When the repertoire of cubic proposals is exhausted, other viewing platforms with shocking shapes could be installed. There is a platform that was hung on the rock in the area of the Stubai Glacier in Austria at an altitude of 3210 m.a.s.l. This was designed by LAAC Architekten from Innsbruck. The structure of twisted girders, made of steel corten, disappears under the snow for six months during the winter. In turn in summer, it offers a view of the glacier full-size and 109 three-thousanders. A modest chapel by AO Architekten attracts attention here [1]. Raw concrete, steel details, minimalist form and the panorama of the mountains perfectly fit into the mood of contemplation and silence, which sometimes breaks through the lively entertainments gathered on the glacier. They provide extreme impressions, such as: a walk through the hanging bridges between the peaks of Glacier 3000 and Secx Rouge or along the cliff of Mount Titlis in Switzerland, or a stay in a glass room located on the Aiguille du Midi at an altitude of 3842 m.a.s.l.in France (known as the highest attractions in Europe, and otherwise Step into the Void).

3. Conclusions

There are more and more areas made available for all in the Alps – the most urbanized mountains of the world. Impressive building structures rise there, increasing the tourism and leisure base, already so rich. The sheer audacity of the idea entitles architects to freedom of creation. Freedom and opportunity to compete with the unique location are an unmistakable happiness for an artist, and sometimes an irresistible beauty to the viewer. The constructions related to tourism in the high parts of the mountains are also a source of income and benefits

(and sometimes an expression of self-satisfaction, or competition). However, it changes the original landscape. Note that the value of all these architectural examples is the precious background – the work of nature. Interference in the environment is to a certain extent playing with physiographic and viewing conditions. “The planner’s thing is to decide to what extent the landscape can absorb buildings so that there is no impression of an urban landscape” [2, p. 214].

R e f e r e n c e s

- [1] ArchDaily LLC *archdaily* [online]. [May15,2015]. Available from: <http://www.archdaily.com/309347/chapel-schaufeljoch-ao-architekten/>
- [2] Czarnecki W., *Planowanie miast i osiedli*. Tom I. PWN, Warszawa, 1960.
- [3] Dobroch B., *Moje życie na krawędzi*, Messner; Reinhold; Hüetlin, Thomas. [online]. [May15,2015]. Available from: http://wyborcza.pl/1,75475,6283572,Moje_zycie_na_krawedzi_Messner_Reinhold_Huetlin_.html
- [4] DezeenLimitedTheSurgeryDezeen[online].[May15,2015].Availablefrom:<http://www.dezeen.com/2012/01/09/the-timmelsjoch-experience-pass-museum-by-werner-tschohl/>
- [5] EVOLO,INC *eVolo* [online]. [May15,2015]. Available from: <http://www.evolo.us/architecture/top-terminal-for-the-reiseck-incline-railway-in-the-austrian-alps/>
- [6] Institut für Internationale Architektur-Dokumentation GmbH & Co. KG *Detail Das Architekturportal* [online]. [May15,2015]. Available from: <http://www.detail-online.com/architecture/topics/energy-efficiency-before-the-summit-019625.html>
- [7] Institut für Internationale Architektur-Dokumentation GmbH & Co. KG *Detail Das Architekturportal* [online]. [May15,2015]. Available from: <http://www.detail-online.com/architecture/topics/top-of-tyrol-new-wildspitzbahn-cableway-021065.html>
- [8] Skirama Kronplatz *MMMCorones* [online]. [May15,2015]. Available from: <http://www.mmmcorones.com/en/home.html>

JUSTYNA WOJTAS SWOSZOWSKA*

**POSTMODERN FUN AND GAMES.
SOME THOUGHTS IN THE DISCUSSION
ON POLISH ARCHITECTURE**

**POSTMODERNISTYCZNE GRY I ZABAWY.
PRZYCZYNEK DO DYSKUSJI
O POLSKIEJ ARCHITEKTURZE**

A b s t r a c t

The article is a contribution to the discussion on Polish postmodernism viewed against the background of changes in world architecture as well as the political transformations taking place in Poland. Postmodernism is regarded as a trend enriching architecture with elements of freedom, fun, joke – in other words, with the joy of designing as well as those of the use and visual perception – all absent in the modernist dogma. A brief history of the trend has been included along with the selection of literature and the outline of the early Polish postmodernism. Some selected examples of Polish postmodern accomplishments before and after 1989 have been evaluated. The article ends with some thoughts about the essence of postmodernism as expression of joy.

Keywords: Postmodernism, Polish postmodernism, political transformation, pluralism, double coding, context, kitsch

S t r e s z c z e n i e

Artykuł jest przyczynek. Dotyczy postmodernizmu polskiego widzianego na tle przeobrażeń w architekturze światowej oraz zmian ustrojowych zachodzących w kraju. Porusza wątek postmodernizmu jako nurtu, który wprowadził do architektury elementy wolności, zabawy, żartu – słowem radości zarówno z projektowania, jak użytkowania i wizualnego odbioru – obce dogmatycznemu modernizmowi. Zwiera krótką genezę ruchu, wybór literatury oraz zarys początków rodzimego postmodernizmu. Analizowane są wybrane przykłady polskich realizacji postmodernistycznych sprzed i po 1989. Artykuł kończy przemyślenia na temat istoty postmodernizmu jako ruchu radości.

Słowa kluczowe: postmodernizm, postmodernizm polski, transformacja ustrojowa, pluralizm, podwójne kodowanie, kontekst, kicz

* Ph.D. Arch. Justyna Wojtas Swoszowska, Department of Design and History of Architecture, Faculty of Architecture, Silesian University of Technology.

1. Why postmodernism?

Contemporary architecture, understood as a movement of the modernist avant-garde, has been described from a variety of standpoints: morality, social responsibility, rationality, technical solutions, prefabrication, new aesthetics, abstraction, scale, politics, etc. while very rarely has it been referred to in terms of games or playing. Commenting upon architectural accomplishments in this very context evokes no simple or obvious associations which shall undoubtedly result in an original and creative exchange of views.

Speaking of contemporary architecture associated with joy and play I refer to the postmodernism marking the end of avant-garde domination, the return to tradition and the dialogue between an architect and his audience, considered a public one as architecture is the “public art” [6, p. 5]. Understood in this way, postmodernism brought to architecture elements of freedom, fun and joke; in other words, with the joy of designing as well as those of the use and visual perception. In the discussion on “games and play of architecture” I intend to refer to early Polish postmodernism, viewed against the architecture of the West.

2. Postmodernism – the birth of

Valuation of the role of postmodernism in architecture may take into consideration the social, political and economic background of the 1960’s. Following the years of the “economic miracle” in Western Europe and in the USA, inflation was growing and the principles of functionalism implemented after World War II had failed to solve the housing problems or transport issues of urban agglomerations. The notion of “international style” was associated with the architecture of concrete suburban estates. An attempt to soften the dogmas of CIAM taken by the young generation of architects incorporated in Team X¹ did not prevent the organization from dissolution (1959). Dissatisfaction with the living conditions resulted in a wave of social protest throughout France, Italy and the USA. Then came the period of the cultural and sexual revolution, negation of social standards and cultural patterns, and growing interest in popular culture. The young generation protested against commercialism and forced changes for the benefit of the citizen society. They demanded reconstruction of the social bonds within small, informal groups. Negation of the principles of the modernist avant-garde resulted in “revolution against revolution” [4, p. 42–45]. This change gave birth to diverse, anti-elite, and populist architecture, on principle deprived of any principles and therefore preventing any explicit definition. After the years of starkness, the superior value, however, was “changing the world into more joyful and happier places referring at the same time to the cultural tradition of a given society” [1, p. 20–21]. Charles Jencks, American theorist of architecture, based in Scotland, borrowed from literature the notion of “postmodernism” to name this very trend and made it popular writing *The Language of Post-Modern Architecture* [7]².

¹ The group was formed during X CIAM in Dubrovnik in 1956. The members were: Alison and Peter Smithson, Aldo van Eyck, Herman Hertzberger, Jacob Bakema, Georges Candilis, Alexis Josic, Shadrach Woods, Colin Rowe and others.

² He commented on world postmodernism from the 1960s until the present day in *The Story of Post-Modernism. Five Decades of the Ironic, Iconic and Critical in Architecture* [8].

3. Postmodernism – selected literature

The architecture of postmodernism is heterogeneous, populist in its programme, allusive, decorative, and contextual and refers to history literally or conspiratorially. The same is true about its theory and literature. Continuing this thread of thought I shall restrict myself to theoretical studies by Robert Venturi (1925) and Aldo Rossi (1931–1997).

Venturi, American architect, shows an ironic attitude towards the past, joking about historical quotations and applying “double coding” where “each of two different languages is addressed to different audience” [6, p. 5]. He makes fun of design and plays games with the audience winking knowingly. In his creative manifesto – Vanna Venturi (1964) mother’s house – the façade was designed to decorate the building like the set of a Hollywood movie. In his *Complexity and Contradiction in Architecture* [14], written in 1966 he declared his preference for “complexity and contradiction in architecture” where he appreciated “as much as” rather than “or” and “more does not mean less” denying “less means more” by Mies van der Rohe [15, p. 16]. In “Learning from Las Vegas” [5] of 1972, he described the beauty of chaos in the main street of Las Vegas. He introduced the name “duck” to describe the functionalist buildings there and “decorated shed” to describe those where function is advertised by decoration of the façade. In the end he wrote: “The time has come to reassess the once terrifying attitude of John Ruskin stating that architecture is the decoration of structure (...)” [5, p. 162]. The “fun and games in architecture” described by Venturi became the attributes of postmodernism [9, p. 32 – 35]. Rossi, the Italian architect, stood well aloof from the historical heritage. In 1966 he published his manifesto titled “L’architettura della città” [12]³. Following historical principles was more important for him than the form itself. A highly prized value was bringing into general use design principles that complied with the natural development patterns of a city, now taken into consideration when preparing spatial development plans for historical towns.

4. Polish postmodernism – the beginnings of⁴

The climax of Western postmodernism was the 1980 Venice Architecture Biennale showing the exhibition “The Presence of the Past” the motto of which was “We may again learn from tradition and link our tasks with the valuable and beautiful works of the past” [3, p. 25–31]. A year later Charles Jencks visited Warsaw and delivered a lecture to the students of architecture devoted to the 3rd part of *The Language of Post Modern Architecture* [7]. The event was described by Wojciech Kosiński in the “Afterword” to the Polish edition, published in 1987: “when Jencks showed the latest, luxurious designs by Graves and Eisenman, a student stood up from the overcrowded hall and asked ‘what’s the use of architecture understood in this way for us, Poles, in the present situation?’” [6, p. 5.]. This episode is an excellent example of the attitudes among Polish architects in the early 1980’s. So many crowding for the lecture proved curiosity about the changes occurring in the world, yet the deep concern about the issues of architecture. The evidence is also extremely high

³ The book was translated into English in 1982 [13].

⁴ A two volume work on Polish postmodernism (editor, Lidia Klein, historian of architecture) was published in 2013 [10] [11].



- III. 1. 2.Residential estate in Czerwionka Leszczyny, J. Waligóra. Fragment of facade with traditional bay windows and the window frame detail
- III. 3. Gliwice, Rybnicka Street. Typical housing estate of the twenties of the 20th c. Window detail – Inspiration
- III. 4. 5.Residential-commercial complex in Mikołowska Street, Gliwice by M. Gachowski, St. Lessaer and Z. Szubert. Fragment of the facade and crafted detail of the bay window brickwork
- III. 6. The building of the former Notre Dame Holy Mary Sisters High School in Królowej Bony Street, following the trends of German expressionism fall of the twenties and the thirties of the 20th c. Fragment of the entry portal – inspiration
(Photographs by the author)

level of discussions held in the architectural milieu, presented in “Architektura” monthly throughout the eighties. Excellent polemic contributions were delivered by Tadeusz Barucki, Daniel Karpiński, Lech Kłosiewicz, Wojciech Kościński, Jakub Wujek, Ada Louise Huxtable – American critic of architecture – and Charles Jencks, who gave an interview to the magazine [1]. However, the architects’ commitment was not enough to meet world standards. The

obstacle was the political and economic situation and preferences of the decision makers. Kosiński, quoted above, commented upon the image of architecture of the 80's in the following way: "Postmodernism is for us a chance for healthy recovery of building; it is a healing nutrient for the investors and creators. Of course, if taken seriously. We cannot afford the eccentricities of the Western snobs (...) Postmodernism is inevitable and any attempts to ban it are useless (...) it is a peak of a giant mountain of retreat from the aberrations of modernism (...) It is the logical sequence on the sinusoid of architectural styles. There is no way back; however, common sense is needed when interpreting it for our conditions and needs. Jencks will not do it for us. He made his job and he made it great giving us the momentum; the rest is up to us" [6, p. 171].

5. Polish postmodernism – before 1989

In the early eighties any spectacular postmodern accomplishments were scarce⁵. Nevertheless, postmodernism was a joyful alternative to the dull, concrete, socialist housing, which then began to be decorated with gabled roofs and traditional details. An attempt to "humanize" the residential estates of the mid-eighties was a small housing cooperative design in Czerwionka Leszczyny by Janusz Waligóra. The architect achieved the "local colour" of the estate by designing the internal space accessed through the gate passage and making use of dominant gable roofs. As suggested by Venturi, he reached for the fun of "decorating" the concrete structure with "double-coded" elements taken from local tradition, like: wooden balustrades, bay windows, bows and corner band windows. The estates were more "joyful and happier" than functional apartment blocks, amusing all, architects, inhabitants and the "audience".

Another example is the residential-commercial project in Mikołowska Street, Gliwice, by Marek Gachowski, Stanisław Lessaer and Zygmunt Szubert, designed in 1985 for a Gliwice company. Following Rossi's theory the architects, designing for the centre of a historical city, decided that it was most important to fit into the urban planning context. They argued: "(...) the process of reconstruction of the urban system takes place in the degraded urban space, which is, to a greater extent, creation of the modernist era (...) Any attempt to restore the lost continuity (...) of the urban system must base upon the historical and cultural origins of development of particular cities (...). Reference to tradition means no eclecticism or lack of own concepts or ideas but, first of all, is a manifestation of the search for permanent national and family identity, i.e. traits which on principle were abandoned in modernism." [2, p. 29]. Facing the lack of any spatial development plan, the authors based on an analysis of the historical code of the city in developing a regulation plan. Following the conclusions drawn from this analysis a multi-variance design was prepared. The one they accomplished comprised two built-up lines, parallel to the street and to each other. The first was to form the building along the street, while the latter closed the semi-private space and generated the second built-up line. From the viewpoint of architecture and the detail, the authors followed Waligóra and made use of "double coding", "winking at the audience" and playing with it.

⁵ For limitations of this manuscript and considering the wealth of the contents included I omit the icon of Polish postmodernism: High Theological Seminary of the Congregation of Resurrection Priests by Dariusz Kozłowski et al. (designed 1984–88).

The decorative façade details are prefabricated concrete window lintels, triangular projections and crafted brick ornaments, all quotations from the expressionist architecture of pre-war Gliwice. The dominating small chapel, located along the axis of a small historical church is actually a transformer station. This very joke, however, was not ‘decoded’ by the “audience”. The first line was completed before the political transformation, while the second was built as high as the first floor. Then the company gave up on financing the workers’ housing, the prices of land and apartments rocketed, the subsequent owners changed while eventually the estate has never been completed and part of the apartments were turned into offices. Evaluating the architecture of the building after a few decades it has to be noted without any doubt that it matched excellently the urban context and gained some timeless dimension. Nevertheless, the authors are disappointed. The project has never been completed and they failed to arrange the whole quarter while there are still no ideas how to solve the problem of an unfinished building⁶.

6. Case two – after 1989

The period of political transformation brought true economic liberty, the joy of consumption and the urge to catch up with Western countries. The dull reality of the socialist decades was ending, sweeping away the street traders’ display camp beds and collapsible tin stalls, symbols of early transformation. Yet, new times called for new architecture. Postmodernism, with all its attributes proposed by Venturi, proved just perfect to meet such needs. An excellent example is the “Solpol” department store built in 1992 in Wrocław to order placed by a businessman, Zygmunt Solorz. The design was commissioned to Wojciech Jarząbek who faced the challenge and together with his team took only a few days to design a purple-turquoise “decorated shed”, in an eclectic manner introduced into the historical context of Świdnicka Street. The architectural and conservation authorities declared no objections, though from the very beginning the building evoked some opposed opinions – from admiration to indignation. By today’s standards “Solpol” is kitschy and tacky, just like the spirit of those years; but then it matched the postmodern pattern very well. In 2013 the owner decided to demolish the building which could not compete any more with modern shopping galleries. His plans resulted in an exciting discussion – to demolish or to classify “Solpol” as a historical building. Which is more important – economic account and contemporary aesthetic standards or historical continuity and emotional values?⁷

7. To conclude with

The restored avant-garde of the mature, late modernism is today on top. Postmodernism went out of date long ago. In Poland, associated with trash, kitsch and the mundanity of transformation, it is not appreciated by the young generation. Generally, it evokes reluctance

⁶ Interview with Stanisław Lessaer in June, 2015.

⁷ The Association of the Beautiful City of Wrocław and Transformator Foundation applied to the Lower Silesian Regional Restorer’s Office to grant the post-modern department store „Solpol” the status of a historical building. The formal procedures are underway.[16].

and is contemptuously called the style of “canopies and additions” or “Gargamel’s Hovel”. However, in any assessment of postmodernism, one should not forget that it concerned numerous spheres of life and is still present as a general philosophy. The freedom of choice, relative valuation, respect for the context and heritage and liberalism are only some of the values it left. My opinion of postmodernism is not based on literature only. I can still remember the enthusiasm we experienced at work in the design office where I took my position after graduation in 1983. We were happy to have choices, to design individual solutions, to incorporate some details borrowed from the past, etc.: as if we “had fun and played with architecture”.

It was postmodernism to bring pluralism, freedom from strict rules – in the way of thinking, behaviour, fashion – simply, in our lives.

R e f e r e n c e s

- [1] Drzewiecki H., Jencks CH., Kłosiewicz L., *Pluralizm jest dobry na wszystko*, Architektura (408), 1982.
- [2] Gachowski M., Lessaer St., *Homo urbanicus – czyli projektować tak, by ludzie żyąc w mieście, mieszkali u siebie*, Architektura, (437), 1987.
- [3] Gadomska A., Gliński A., *Obecność przeszłości*, Architektura (408), 1982.
- [4] Huxtable A., L., *Architektura na rozdrożu*, Architektura (408), 1982 p. 42–45.
- [5] Izenour S., Scott Brown D., Venturi R., *Learning from Las Vegas*, The MIT Press, 1972.
- [6] Jencks Ch., *Architektura postmodernistyczna*, Arkady, Warszawa 1987.
- [7] Jencks Ch., *The Language of Post-Modern Architecture*, Rizzoli, NY 1977.
- [8] Jencks Ch., *The Story of Post-Modernism. Five Decades of the Ironic, Iconic and Critical in Architecture*, Wiley, Londyn 2011.
- [9] Karpiński D., *Nazajutrz po modernizmie*, Architektura (408), 1982.
- [10] Klein L., red., *Postmodernizm polski. Architektura i urbanistyka*, t. 1, Wydawnictwo 40 000 Malarzy, Warszawa 2013.
- [11] Gzowska A., Klein L., *Postmodernizm polski. Architektura i urbanistyka*, t. 2, Wydawnictwo 40 000 Malarzy, Warszawa 2013.
- [12] Rossi A., *L'architettura della città*, Marsilio, Padova, 1966.
- [13] Rossi A., *The Architecture of the City*, The Mit Press, Cambridge, Massachusetts, and London 1992.
- [14] Venturi R., *Complexity and Contradiction in Architecture*, MOMA, NY 1966.
- [15] Venturi R., *Complexity and Contradiction in Architecture*, wydanie 2, MOMA, NY 1977.
- [16] <http://www.mmwroclaw.pl/artykul/zdaniem-tumw-solpol-jest-symbolem-wroclawia-budynek-bedzie,3298249,art,t,id,tm.html>. (data pobrania 02.03.2015)

PAWEŁ ŻUK*

WHAT HAS RICHARD ROGERS BEEN HIT WITH AN UMBRELLA FOR?

ZA CO RICHARD ROGERS OBERWAŁ PARASOLKĄ?

A b s t r a c t

The article describes a little-known fact about the very well-known building that is the Paris Pompidou Centre. In an era of social revolution, the project was a kind of revolution in the world of architecture. Renzo Piano and Richard Rogers changed the story of architecture almost unwittingly by playing with it.

Keywords: *Centre Pompidou, museum, Renzo Piano, Richard Rogers*

S t r e s z c z e n i e

Artykuł opisuje mało znane wątki dotyczące bardzo znanego budynku – paryskiego Centrum Pompidou. W czasach rewolucji społecznych projekt ten był swoistą rewolucją w świecie architektury. Renzo Piano i Richard Rogers bawiąc się w architekturę nieomal niechcący zmienili jej historię.

Slowa kluczowe: *Centrum Pompidou, muzeum, Renzo Piano, Richard Rogers*

* Ph.D. Arch. Paweł Żuk, Institute of Architectural Design, Faculty of Architecture, Cracow University of Technology.

1. Playing the competitors

In 1971, Renzo Piano and Richard Rogers won the competition for a cultural centre in the Beaubourg district of Paris, named after Georges Pompidou, who died in 1974. The future winners of the Pritzker Prize were not sure whether they wanted to participate in this competition. They had a lot of doubts whether it made sense. There were more than 600 participants, the historical context of the area, the initial lack of ideas – all of this gave rise to doubts. They were young, not very well known and did not take their participation in the competition seriously. We still do not know who came up with the main idea first. In an interview in 1977 Piano notes that the idea was not born in one mind, but rather in two minds simultaneously, and not on a piece of paper. “We said to ourselves: Let’s try and think about this competition. If we get a good idea for it, we’ll do it.” “And within the first 10 days, we had quite an interesting idea: that of counterproposing, in a slightly controversial vein, the concept of a big contraption, or machine, to that of the large cultural centre – an idea we both had simultaneously. This idea, although it hadn’t been drawn yet, seemed interesting enough to warrant our participation” [1]. Finally, they took part in the competition. We all know that they won.

2. Playing Jules Verne

We may get the impression that Renzo Piano played the role of Jules Verne. People think that, together with Rogers, Piano invented high-tech, and he says that it was just fun and full of irony. “In reality it is quite an ironic building. It is not a real spaceship – it is a Jules Verne spaceship. It’s really more a parody of technology than technology. It was just a direct and quite innocent way to express the difference between the intimidating cultural institutions like they normally were in the 60s and 70s – especially in this city [Paris, where his studio is based] – and the modern building, very open, and a curious relationship with people. The idea was that it doesn’t intimidate. We were young bad boys and we liked that”.

“But the Beaubourg is not really a triumph of technology. It’s more about the joy of life. It’s a rebellion” [1]. This means that high-tech was created unwittingly by the fact that people did not get the allegory. In 1997 the NEMO building was opened in Amsterdam. Verne, Again! This time, more literally.

3. Playing revolutionaries

While the design itself was a chance for Renzo Piano to play the role of Jules Verne, for Richard Rogers it was a chance to play the revolutionary. Rogers believes that the Centre Pompidou perfectly captures the spirit of the revolutionary year of 1968. We remember the historical context of that time from the perspective of the Polish. Western Europe was also not a haven of peace at the time. In France, after a wave of student protests, bloody riots and brutal police actions, President Charles de Gaulle, who had ruled since 1959, was forced to resign. Georges Pompidou was de Gaulle’s successor. Let’s add to that the social and moral hippie revolution and protests against the wars in Korea and Vietnam, and we obtain the image of France at the end of the 1960s as that of a country turbulent and unstable. According to Rogers, the architecture of the Pompidou Centre reflects the spirit of those times: “The facade

on the building, if you look more carefully, was very much about the riots and very much about Vietnam (...) the idea of the putting all the structure and services on the outside of the building to maximise the flexibility of the internal space also has its roots in the volatility of this period of history (...) The one thing we knew about this age is it's all about change, if there's one constant, it's change" [2]. Revolution was the inspiration for the project, which caused a revolution in the world of architecture.

4. Playing the museum

Designed to be a little fun, the Pompidou Centre completely changed the relationship between the museum and the audience. It has become a meeting place, a melting pot, a container, a machine open to people interested in culture and the arts. The critics of architecture said so. Jencks called the Pompidou Centre a department store of culture and prohibited the spreading of its pattern [4, p. 13]. The building's goal was to reduce the distance between art and its audience. An important point of the program was the educational section where children are taught through play how to become a conscious recipient of art, who can later become a loyal customer. We can say that the Centre Pompidou differs from the usual museum that we can play inside. At that time in Poland we walked around the museum in felt slippers.

5. Playing the design

Renzo Piano approached the construction of the centre very seriously. Unfortunately, there was no time for that. In an interview, he complained that the sketches were taken directly from the board to the construction site: "France was terrible. It was a bizarre school [of thought] where being the architect was just a sketch-making job," he says. "They said, 'Merci beaucoup, monsieur, now we'll do it' and we said, 'No you can't. We'll do it" [6]. Perhaps it was then that Piano got the idea that he can sketch in all stages of design. A great boon for the project was the participation of the creative Irish designer Peter Rice, who was not a beginner in combining art with technology, as he previously designed the construction of the Sydney Opera House. It was Rice's idea to cast the huge steel frame structure of the Pompidou Centre. The final construction project was very different from what was in the conceptual design submitted to the competition.

6. Is high-tech a form of postmodernism?

A paradox is that high-tech architecture is considered a branch of postmodernism by some sources [3]. If modernism is modernity, and high-tech architecture dazzles with modernity, it is obvious that... It turns out that it is not that obvious. We also think that if postmodernism references the past and high-tech references the future, it's almost the same thing. Technology becomes an ornament, and for the modernists ornament is a crime. This slogan better suited modernists, although Adolf Loos wrote the essay *Ornament and Crime*. Charles Jenks wrote that ornament swallows the building [4, p. 48]. In short – the Pompidou Centre is almost postmodernism, the building – a machine filled with technological ornament.



Ill. 1–3.Centre Pompidou, Paris. Photographs by the author of the article

7. A dangerous game

Designing architecture can be a dangerous job, also in the literal sense. Few architects take this into account in their work and perhaps few of them have experienced it. It turns out that the selfless hate of ordinary people can be dangerous to their health. Richard Rogers experienced it in reality. He reflects: “I remember once standing outside on a rainy day and there was a small woman with an umbrella who offered me shelter. We started talking, as one does in the rain, and she asked: ‘what do you think of this building?’ Stupidly, I said that I designed it and she hit me on the head with her umbrella. That was just typical of the general reaction of the people, especially during the design and construction stage. [People thought we were] destroying their beautiful Paris “[2]. Fortunately, time heals bruises and

hate expires turning into love with a bit of sarcasm. “Paris has a long history of controversial architecture,” writes Kim Willsher in The Guardian “In 1887 a “Protest against the Tower of Monsieur Eiffel” was published in French newspapers describing the structure as “useless and monstrous”. The Pompidou Centre, by Richard Rogers and Renzo Piano, caused a furore in 1969. Critics claimed it had the best view of Paris – as you could not see the building itself. In 1989 the Louvre pyramid was branded a defacement of the building but has become an acclaimed landmark” [7]. Or maybe people just get used to something, and then an initially hated building or structure becomes an icon.

R e f e r e n c e s

- [1] Casati C., *The Parisian Hyde Park Corner*, Domus 01/1977, Milan 1977.
- [2] Fairs M., Interview: “*The Pompidou captured the revolutionary spirit of 1968*” – Richard Rogers, <http://www.dezeen.com/2013/07/26/richard-rogers-centre-pompidou-revolution-1968/>, London 2013.
- [3] http://pl.wikipedia.org/wiki/Architektura_high-tech.
- [4] Jencks Ch., *Architektura późnego modernizmu*, Warsaw 1989.
- [5] Jodidio P., *Renzo Piano Building Workshop 1966–2005*, Cologne 2005.
- [6] Pitt V., Interview: *Renzo Piano*, <http://www.building.co.uk/interview-renzo-piano/5044399.article>, London 2012.
- [7] Willsher K..., *Is it a cloud? Is it a cocoon?* The Guardian 3.10.2006, Manchester 2006.

CONTENTS

Monika Ewa Adamska: Play of tradition and modernity. The interwar competition for the seat of the authorities of the regency of Opole	5
Małgorzata Balcer-Zgraja: Educational plays and games in contemporary design and architecture.....	13
Janusz Barnaś: Inspiration or fascination.....	21
Małgorzata Bartnicka: The magic of shadow in fun with architecture	27
Magdalena Bączkowska: Architecture as backdrop and inspiration in the works of Peter Behrens and Oskar Schlemmer	33
Anna Maria Berbesz: From multiplication to biomimetics – playing with structure and architectural games or an actual attempt to shape objects in the 21 st century.....	39
Przemysław Bigaj: Architectural games and play with form, or on the pursuit of pretexts to shape things	47
Krzysztof Bizio: The history of the revolution.....	53
Joanna Bogajewska-Danek: Games and activities with the space and in the space as way to explore the architecture.....	59
Alina Budzyńska: Colour, form and light fun: artistic glass in architecture	65
Marcin Charciarek: Playing “hide and seek” or penetrating architecture	71
Michał Chodorowski: The role of the architect – to save or to play?	79
Monika Gała-Walczowska: The game of solids in the architecture of a contemporary house – the art of interpretation of geometry	83
Dorota Gawryluk: Playing at barracks or playing with barracks?	89
Joanna Gil-Mastalerzyk: The game of space – the arrangement of sacral architectural elements and interior decor in post-war churches in the archdiocese of Cracow.....	97
Rafał Graczyk: The game of architecture in the urban space of small towns in Wielkopolska	103
Renata Gubańska: Architecture as fun or having fun with architecture? – selected examples	109
Maria Helenowska-Peschke: Programming geometry as creative play with architectural form	115
Grażyna Hryncewicz-Lamber: (Il)legible game of connotations? Comments on the representation of justice in architecture.....	121
Renata Józwik: The scenographic character of an architectural building or place as the subject of a spatial narrative game.....	129
Sebastian Kiesiewicz: Drawings and realizations in the architecture of Józef Pius Dziekoński	135
Agnieszka Kłopotowska: The alphabet of non- visual architecture – towards a methodology of enabling people with visual impairment to participate in architectural play	141
Anna Kossak-Jagodzińska: How playing and having fun with geometry of spatial objects can be inspirational in creative architecture design.....	147
Izabela Kozłowska: Rules of the game while playing with architecture in the cultural environment	155
Wioletta Kozłowska: Architectural games with history	161

Ada Kwiatkowska: Gametecture: architectural form in augmented reality	165
Aleksy Łapko: From sketches to architectural project. Inspiration by nature as the genesis of architectural form based on selected buildings by Santiago Calatrava.....	173
Monika Magdziak-Grabowska: The game in decrypting geometry which hides the history of place	179
Beata Makowska: Architectural sketch as an ambiguous interactive game	185
Maria Malzacher: Games and play between architecture and art in view of the perception of space	191
Karolina Mazurkiewicz: Play with me – the Pritzker Prize as a game in ecology	197
Małgorzata Melges: Historical overview of the importance of building materials in architecture.....	203
Anna Mielnik: “Playing games with architecture” – Per Kirkeby’s fake buildings	211
Robert Musiał: Game of associations: the shape of a tall building.....	219
Adam Musiuk: Who plays with whom? Architecture, theology and construction as aspects of the design of an Orthodox church	227
Wojciech Niebrzydowski: Brutalist games involving physical movement	233
Anna Nowak: Playing nature in the contemporary search in shaping structural surfaces	239
Beata Nowogońska: The Permanence of a building in the game of shadows	245
Piotr Opałka: Blurring the borders between architecture and the visual arts	249
Jolanta Owerczuk: Architecture „in lines”	255
Katarzyna Piądlowska: Playful interactions between space and the audience.....	261
Marta Pieczara: Labyrinth game.....	269
Anna Porębska: Playing architecture	277
Piotr Pyrtek: Playing with meanings	285
Agnieszka Rek-Lipczyńska: Play with colours. Modern strategies of play with colour in architectural objects	289
Małgorzata Rogińska-Niesłuchowska: Games and play with light in architecture	295
Kinga Rybak-Niedziółka: Public space playing with street art	301
Anna Ryś: The contemporary monument of conceptual architecture – on the basis of the New Cricoteka in Krakow	307
Aleksander Serafin: Post-structural games of architecture	313
Piotr Setkowicz: Drawing – a serious crisis of an important game.....	319
Maciej Skaza: Games of meanings in contemporary architecture.....	325
Katarzyna Śluchocka: The plan, that is, the game goes on.....	331
Anna Szczegielniak: “Why so serious?” – The joke as a means of expression in architecture	337
Ilona Szefer: Each game of lines, solids and forms is based on the same principles and it starts with a concept. The biomorphic vision of the world created by Vincent Callebaut.....	343
Ernestyna Szpakowska-Loranc: On comic quality in architecture	349
Barbara Świt-Jankowska: The game in space – the phenomenon of an urban game	355
Justyna Tarajko-Kowalska: Colour games in architectural space.....	361
Jolanta Tofil: Modelling edutainment	367
Paulina Tota: Children games and plays.....	375

Karolina Tulkowska: Improvisation. Sketch. Synthesis. Short forms in architectural education.....	381
Grzegorz Tyc: The game of definition.....	387
Magdalena Wąsowicz: Inside-out architecture – a game with the multistability of solid and void	393
Piotr Winskowski: Game on the border of compliance with rules, or deconstruction in details.....	399
Anna Wojtas Harań: On the roof of Europe – the frolics of architects.....	405
Justyna Wojtas Swoszowska: Postmodern fun and games. Some thoughts in the discussion on Polish architecture.....	411
Paweł Żuk: What has Richard Rogers been hit with an umbrella for?	419

TREŚĆ

Monika Ewa Adamska: Gra w tradycję i nowoczesność. Międzywojenny konkurs na gmach siedziby władz rejencji w Opolu	5
Małgorzata Balcer-Zgraja: Gry i zabawy edukacyjne we współczesnej architekturze i designie.....	13
Janusz Barnaś: Inspiracja czy fascynacja.....	21
Małgorzata Bartnicka: Magia cienia w zabawie z architekturą.....	27
Magdalena Bączkowska: Architektura jako tło i inspiracja w twórczości Petera Behrensa i Oskara Schlemmera.....	33
Anna Maria Berbesz: Od mnożek do biomimetyki – zabawa strukturą i grą w architekturę czy realna próba kształtowania obiektów architektonicznych XXI w.....	39
Przemysław Bigaj: Architektoniczne gry i zabawy z formą, albo o poszukiwaniu pretekstów do nadawania rzeczom kształtu.....	47
Krzysztof Bizio: Zapisana historia rewolucji	53
Joanna Bogajewska-Danek: Gry i zabawy z przestrzenią i w przestrzeni jako środek do poznawania architektury.....	59
Alina Budzyńska: Forma, kolor a zabawy światłem czyli szkło artystyczne w architekturze	65
Marcin Charciarek: Zabawa „w chowanego” czyli drążenie architektury	71
Michał Chodorowski: Architekt (z)bawi?	79
Monika Gała-Walczowska: Gra brył w architekturze współczesnego domu – sztuka interpretacji geometrii.....	83
Dorota Gawryluk: Zabawa w koszary, czy zabawa koszarami?	89
Joanna Gil-Mastalerzyk: Gra w przestrzeń – dyspozycja elementów architektonicznych i wystroju wnętrz sakralnych w powojennych kościołach archidiecezji krakowskiej	97
Rafał Graczyk: Zabawa „w architekturę” w przestrzeni urbanistycznej małych miast Wielkopolski.....	103
Renata Gubańska: Architektura zabawą czy zabawa architekturą? – wybrane przykłady	109
Maria Helenowska-Peschke: Programowanie geometrii jako twórcza zabawa formą architektoniczną	115
Grażyna Hryncewicz-Lamber: (Nie)czytelna gra znaczeń ? Uwagi na temat reprezentacji idei sprawiedliwości w architekturze.....	121
Renata Jóźwik: Sceniczność obiektu architektonicznego lub miejsca jako przedmiot gry narracji przestrzenną	129
Sebastian Kiesiewicz: Rysunki i realizacje architektury Józefa Piusa Dziekońskiego	135
Agnieszka Kłopotowska: Abecadło awizualnej architektury – ku metodologii udostępniania gry architektonicznej osobom z dysfunkcją widzenia.....	141
Anna Kossak-Jagodzińska: Zabawa geometrią brył inspiracją w twórczym projektowaniu architektonicznym	147
Izabela Kozłowska: Reguły gry i zabawy architekturą w środowisku kulturowym	155
Wioletta Kozłowska: Gry architektury z historią.....	161
Ada Kwiatkowska: Gratkatura: forma architektoniczna w rozszerzonej rzeczywistości.....	165
Aleksy Łapko: Od szkicu do zapisu przestrzeni. Inspiracja naturą jako geneza formy architektonicznej – na przykładzie wybranych obiektów Santiago Calatravy	173

Monika Magdziak-Grabowska: Zabawa w rozszyfrowywanie geometrii skrywającej historię miejsca	179
Beata Makowska: Szkic architektoniczny jako wieloznaczna interaktywna gra.....	185
Maria Malzacher: Gry i zabawy architektury ze sztuką w kontekście percepcji przestrzeni	191
Karolina Mazurkiewicz: Zagraj ze mną – Nagroda Pritzkera jako gra w ekologię.....	197
Małgorzata Melges: Historyczny przegląd znaczenia materiałów budowlanych w architekturze	203
Anna Mielnik: „Gry z architekturą” – fałszywe budynki Pera Kirkeby.....	211
Robert Musiał: Gra w skojarzenia: kształt wieżowca	219
Adam Musiuk: Kto z kim gra? Aspekty projektu świątyni prawosławnej z uwzględnieniem architektury, teologii i konstrukcji.....	227
Wojciech Niebrzydowski: Zabawy ruchowe brutalizmu	233
Anna Nowak: Gra w naturę we współczesnych poszukiwaniach kształtu powierzchni strukturalnych	239
Beata Nowogońska: Trwałość budynku w grze cieni	245
Piotr Opałka: Zacieranie granic pomiędzy architekturą i sztukami wizualnymi.....	249
Jolanta Owerczuk: Architektura „w linie”	255
Katarzyna Piądlowska: Gra przestrzeni z człowiekiem	261
Marta Pieczara: Gra w labirynt	269
Anna Porębska: Gra w architekturę.....	277
Piotr Pyrtek: Znaczeniowe gry i zabawy	285
Agnieszka Rek-Lipczyńska: Gra w kolory. Współczesne strategie zabawy kolorem w obiektach architektonicznych	289
Małgorzata Rogińska-Niesłuchowska: Gry i zabawy światłem dzennym w architekturze	295
Kinga Rybak-Niedziółka: Zabawy street-artu z przestrzenią publiczną.....	301
Anna Ryś: Współczesny pomnik architektury konceptualnej – na przykładzie realizacji <i>Nowej Cricoteki</i> w Krakowie	307
Aleksander Serafin: Postrukturalne gry architektury	313
Piotr Setkowicz: Rysunek – poważny kryzys ważnej zabawy	319
Maciej Skaza: Gra znaczeń w architekturze współczesnej.....	325
Katarzyna Śluchocka: Rzut – czyli gry ciąg dalszy	331
Anna Szczęgielniak: „Why so serious?” – Żart jako środek wyrazu w architekturze	337
Ilona Szefer: Każda gra linii, bryły i form bazuje na tych samych zasadach a zaczyna się od pomysłu. Biomorficzna wizja świata Vincenta Callebaut	343
Ernestyna Szpakowska-Loranc: O komizmie w architekturze	349
Barbara Świt-Jankowska: Zabawa w przestrzeni – fenomen gry miejskiej	355
Justyna Tarajko-Kowalska: Gry z kolorem w przestrzeni architektonicznej.....	361
Jolanta Tofil: Modelowa roz(g)rywka	367
Paulina Tota: Z gier i zabaw dziecięcych	375
Karolina Tulkowska: Improwizacja. Szkic. Synteza. Krótkie formy w edukacji architektonicznej.....	381
Grzegorz Tyc: Gra w definicję	387
Magdalena Wąsowicz: Architektura wywrócona na lewą stronę – zabawy z multistabilnością bryły i przestrzeni	393

Piotr Winskowski: Gra na granicy zgodności z regułami, czyli dekonstrukcja w detalach.....	399
Anna Wojtas Harań: Na dachu Europy – igraszki architektów	405
Justyna Wojtas Swoszowska: Postmodernistyczne gry i zabawy. Przyczynek do dyskusji o polskiej architekturze.....	411
Paweł Żuk: Za co Richard Rogers oberwał parasolką?	419

