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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

Abstract

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

Streszczenie

Architektura współczesna, postrzegana jako dzieło sztuki, posługuje się abstrakcyjnym językiem geometrii, w poszukiwaniu pełni, harmonii proporcji i dzisiejszego wymiaru piękna, a nade 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.

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

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*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 *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]



III. 1. *Casa Gerês* (www.archdaily.com), 2. *De Blas House* (www.archinnovations.com), 3. *Casa Olajossy* (www.dariuszkozowski.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 Misiągiewicz 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 Misiągiewicz 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 Misiągiewicz 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...

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