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CONCRETE IN ARCHITECTURAL SPACE. SKIN VERSUS STRUCTURE

BETON W PRZESTRZENI ARCHITEKTONICZNEJ. SKÓRA A STRUKTURA

Abstract

Architecture, perceived according to Bruno Zevi's definition – provokes an interpretation of the way in which space is shaped. It may be construed as its basic demarcation being only a specific delineation of a boundary for potential activities happening inside it (without determining sequence or nature of the activities), or else, it may unequivocally specify their sequence and nature. In both instances, the method and the material are of importance. The method serves to demarcate, delineating also this boundary. The material – constructs this demarcation and inner divisions. Concrete has a significant impact on this interpretation.

Keywords: Architecture, architectural space, structure, solidity, simulacrum, concrete

Streszczenie

Architektura, rozumiana zgodnie z definicją Bruno Zevi'ego – prowokuje interpretację sposobu konstruowania przestrzeni. Może być pojmowany jako ramowe jej wydzielenie, będące jedynie swoistym nakreśleniem granicy dla potencjalnych czynności, w niej się odbywających (bez determinowania kolejności i charakteru działań) bądź jednoznacznie określać również ich kolejność i charakter. W obu przypadkach, istotne są: metoda oraz materiał. Metoda służy do wydzielenia, wyznaczając również ową granicę. Materiał – konstruuje to wydzielenie i wewnętrzne podziały. Beton ma istotny wpływ na tę interpretację.

Słowa kluczowe: architektura, przestrzeń architektoniczna, struktura, trwałość, symulakra, beton

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III. 1. Cathedral in Chartres and SANAA's firm building in Essen. The first one affirms stony time of the cathedrals, the other one – time of contemporary stone – concrete. For both buildings, the stone or concrete skin forms what is the most important – the essence of interior made of intangible material – light. In such an interior, the ontological monotony disappears, because the wandering light changes it permanently

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as long as the object lasts physically.
Adolf Loos

...The first son was a highly promising architect, dissatisfied with
his actual commissions, turned to *urbifab* and *edifine*: now he builds
entire cities – in his imagination...
A dream will always triumph over reality, once it is given the
chance...
Stanisław Lem

Improving life, the architecture must simultaneously address all senses and help to connect the image we have of ourselves with the experience of the world. The key mental tasks of a building are shelter and integration¹...

The contemporary thought and culture enhanced the significance of Calvino's *unending rainfall of images*, absorbed as a basis for interpretation in different disciplines in which it is defined². Entering or leaving the building, we change our relationship with the Architecture. This happens in all fields of this interpretation³.

1. Skin

Skin is the oldest and most sensitive of our organs, our first means of communication and our most effective shield⁴.

Entering inside – we take off the outerwear, we put away the umbrella – in a sense, we simultaneously put on the building. Leaving – we change the protective layers: the skin of the building into the skin of the apparel. It may be discussed whether the building is a layer of clothes to be put on by a man, or closing shut internal or external light... In this context, skin may also be discussed as a specific organism – a multi-thread structure. It is related to how it is perceived.

In the first instance – it is looking at a “picture”, and in the other – wandering (a journey) in which the observer opens into new experience, new information appears, intensifying Calvino's *unending rainfall of images*. In the first one – skin is an affirmation of the content⁵. In the other – demarcating the space – specifies a place intended for this content. A synthesis of both these phenomena is possible in one building.

Architecture interpreted as a consecutive layer of apparel – outfitted, in this way, obtains all properties of this apparel related to: fashion, affirmation, identification, usefulness, etc. Outfitting the content of the cathedral in Chartres affirms the stony time of the cathedrals.

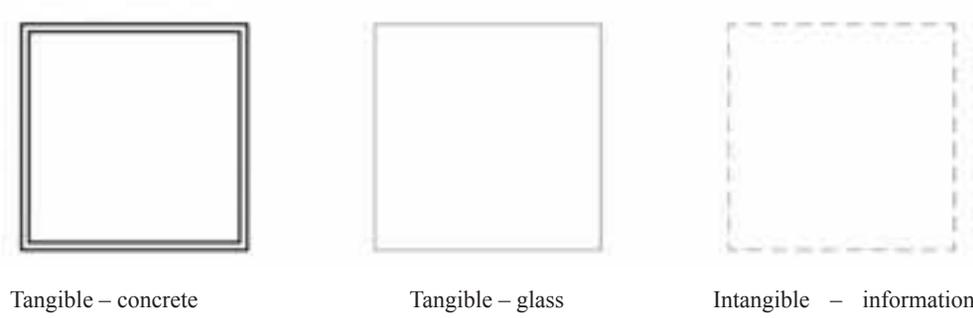
¹ J. Pallasmaa, 2012, p. 16.

² Juhani Pallasmaa refers to interpretations of Martin Heidegger, Michel Foucault and Jacques Derrida in the context of Italo Calvino's words about:... *unending rainfall of images*. They are absorbed by the dominant sense – sight. – *ibidem*, p. 28.

³ Experienced by sight, touch – but also constructing them on the basis of references to selectively formed archetypes in various disciplines.

⁴ A. Montagu, 1986, p. 3, after Juhani Pallasmaa 2012, p. 15.

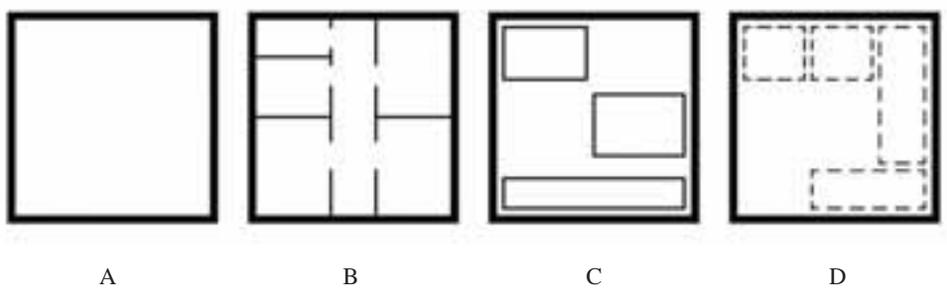
⁵ Affirmation may be both: an actual reference and a simulacrum of the content of the inside.



III. 2. Demarcation of space. Skin of the Architecture



III. 3. Attributes of material as element of space demarcation



- A. Inner volumetric monospace.
- B. Chronological-linear model, tangible demarcations (volumetric space)
- C. Simultaneous model, tangible demarcations (volumetric space)
- D. Simultaneous model, intangible demarcations (IT)

III. 3. Structure of the *place for events*. Stable skin versus inner form

The SANNA's firm Zollverein School of Management and Design in Essen affirms the time of contemporary stone – concrete. So perceived, the cathedral in Chartres is a distinctive book of glass and stone, and the Zollverein School of Management and Design – a book of glass and concrete. For both buildings, the stone or concrete skin forms what is the most important – the essence of the interior made of intangible material – light. In such an interior, the ontological monotony disappears, because the wandering light changes it permanently.

Skin in architecture is a material: stone, concrete, glass... it may also be constructed of intangible information establishing the demarcation of an object from the external space.

In the case of concrete – the façade additionally gains a property incomparable to those made of stone, visible also in fragments of the Gaudi's cathedral in Barcelona – it may be flexibly formed.

Glass – gives a translucent transparency to the buildings, and a mood of seeming insubstantiality. Light transmitted through it, entering through the window openings, following the sun – produces an impression of a characteristic mobility of inner space. In the case of a glass only façade – a continuum of the interior with the exterior of the building is created...

The significance of information increases with the technological progress, including the development of tele-technical and information technologies. Once, information was passed on verbally; nowadays, it is transmitted also by means of equipment; demarcating intangible places in the real space, it defined and it still defines their symbolic and usable value, delineating the boundaries of a *place* intended for specific events⁶.

2. Concrete, glass, information

Concrete, glass and information – are materials. Their synthesis in architecture of the *inhabited* building may create a characteristic added value in the *event culture*⁷.

The XIX century in Europe perceived dwelling as a wrapper for a man and it tucked him together with all his belongings so closely that it invoked the image of a compass box where this instrument and its spare parts are placed in deep grooves usually filled in with purple velvet⁸. The XX century with its porosity, transparency, with predilection to natural light and open air put an end to dwelling in the old sense⁹. The compilation of real and virtual elements creates this added value, constructs a kind of hybrid using both real and virtual materials.

Ever since books appeared, the Architecture has been a book. Since the comic was created – a comic. Since the film – a film. Contemplating this phenomenon as a regularity, in relation to the technological progress and considering the tendencies to assimilate real space with contemporary elements of this progress – a computer is yet another comparison¹⁰. Demarcated by tangible skin of a housing, the space may also be constructed of intangible elements of information emanation: temperature, colour, light, texture, sound...

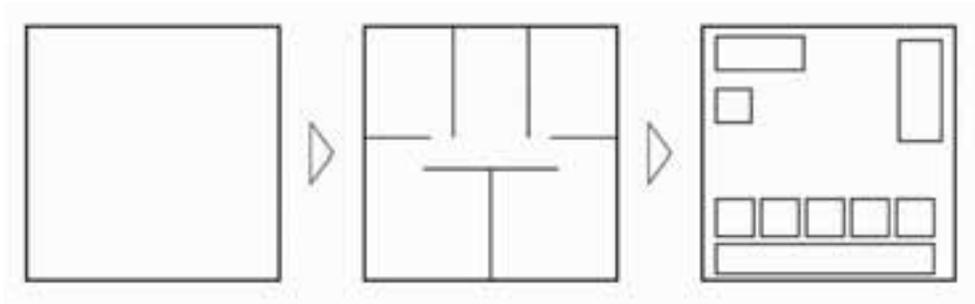
⁶ Once this place was determined by verbal messages (for example a piece of forest or meadow), currently, it is made by actions created by means of technical equipment (sound, type of lighting, differences in temperature, multimedia broadcast, etc.)

⁷ Dwelling is a *state of being*. In this sense all architectural buildings are *inhabited*.

⁸ Benjamin, Walter. 2005, p. 250.

⁹ *Ibidem*, p. 251.

¹⁰ Toyo Ito designs are an example.



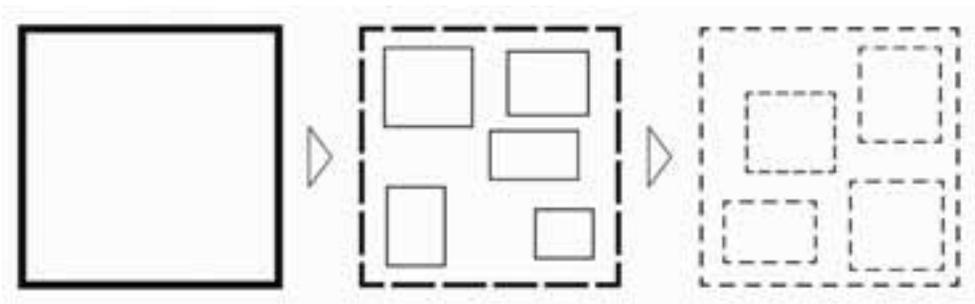
A

B

C

- A. Volumetric monospace, simultaneous model.
- B. Chronological-linear model.
- C. Simultaneous model.

III. 4. Transmutation of the *place for events* content in relation to the adopted model of the building interior



A

B

C

- A. Tangible demarcation of the building from the external space, concrete skin, inner volumetric monospace.
- B. Tangible demarcation of the building from the external space, glass skin, inner space delineated tangibly (volumetric space), simultaneous model.
- C. Intangible (IT) demarcation of the building from the external space, IT skin, inner space delineated intangibly (IT), simultaneous model.

III. 5. Demarcation of space versus interior of the building

The next stage is a synthesis of real and virtual space¹¹. Individualistically, contemporarily interpreting itself is the theory of Elisabeth Rohmer and Abraham Moles related to the vector perception of space as a multi-degree continuum, in which not only the ultimate extension – i.e. the *whole accessible world* – but also intermediate steps – are experienced in the virtual space. To comprehend and evaluate the XXI space, it needs to be addressed in the context of fundamental assumptions of the Vitruvian Triad: solidity, usefulness and beauty. Still being an unequivocal certification of *what the Architecture is*, they help to verify semantic credibility of meanings transferred by the Architecture and determine boundaries of what is its characteristic genome.

Solidity is not synonymously unequivocal. The *concrete Architecture* discussed in its context is juxtaposed to its negative – the *virtual Architecture* however, the concept itself, without making the evaluation criteria more precise – is of an abstract nature.

Solidity – is a material. It may be contemplated in the context of a physical desire to survive: on the one hand – resistance, first of all, to external climatic conditions¹², on the other – a justified need for the building existence. The words of Adolf Loos that *...form of an object should last, i.e. should be bearable, as long as the object lasts physically* – are found to be true here, after almost one hundred years, in a new context¹³.

The solidity of the building is constructed through the selection of the material duration. It starts from concrete (stone), and goes through ceramics, metal, glass, paper – and ends with abstract information. On the one hand, it is *This*, what thanks to the permanence is to stay “forever”, constituting an attribute of confidence. On the other – it is expressed by this article’s motto, which is a reference to the Stanisław Lem’s short story and concerns construction of virtual “architecture” in which the individualistic solidity exists only in the author’s imagination, and usability comes down to his egoistic, emotional needs.

The key materials, which, being emanations of the selected values decide here about the symbolism of the solidity interperion, are: concrete (stone), glass and information.

The symbol of strong solidity is concrete (stone); transparency – glass; new technologies, but also the permanent loss of timeliness and caducity, which are the expression of volatility – the information. The consequence is an eponymic classification of architecture: concrete, glass and maybe: information technology. Their adequate synonyms are: solid, transparent, virtual.

3. Place. Please for the architecture of edifice, a place for compilation building

Only he who dwells may build¹⁴. When writing about home, Walter Benjamin stated that... *to dwell* generates the sense of high topicality hiding in action. Its essence is to make a cover for oneself. A preform of all kinds of dwelling is living, not in a house, but in a cover. It bears the stigma of its occupant¹⁵. Architectural building, as a *place* of dwelling so perceived – in an extreme form, becomes a kind of a cover¹⁶.

¹¹ Reference is made to appearance of characteristic Liquid Architecture discussed by Marcos Novak in *Liquid Architecture in Cyberspace*, 1991.

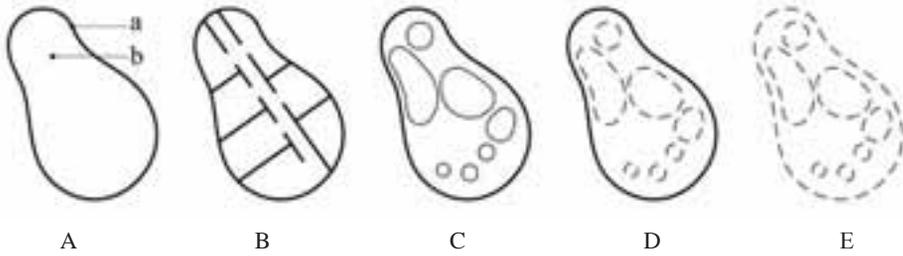
¹² Climatic – but also resistance to: contact with the user, prospective catastrophes, etc.

¹³ Loos, Adolf. 2013.

¹⁴ M. Heidegger, 1994.

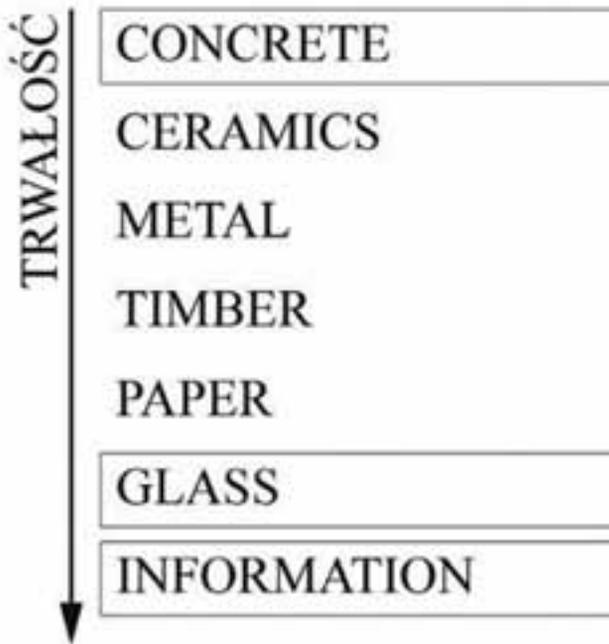
¹⁵ W. Benjamin, p. 250.

¹⁶ In original: ...Dwelling in extreme form becomes a cover. Benjamin, Walter. 2005, p. 250.



- A. Demarcation of space for the building – skin (a); interior of the building (b)
- B. Tangible demarcation of the building and tangibly formed interior, chronological-linear model
- C. Tangible demarcation of the building and tangibly formed interior, simultaneous model
- D. Tangible demarcation of the building and intangibly (IT) formed interior, simultaneous model
- E. Intangible (IT) demarcations of space and intangibly (IT) formed interior, simultaneous model.

III. 6. Demarcation of space versus formation of the building interior



III. 7. Material versus solidity of the building

Forming the structure of an architectural building – is an emanation of the future use, and Architecture, perceived according to the Bruno Zevi's definition – provokes interpretation of the way in which space is shaped. It may be construed as a demarcation of a *frame for events*, which is only a specific delineation of a boundary for potential activities happening inside it (without determining sequence or nature of the activities), or else it may unequivocally specify their sequence and nature. In both instances interpretation of a place, the method of its forming and material are of importance.

Interpretation – indicates *what* the place for events is.

Method – serves to *its* demarcation, delineating also *its* boundary. The action reflects the selection of the method. The action may denote a *place* in a permanent or transient manner. Unequivocal or equivocal. As stationary or mobile. Real or virtual¹⁷. It is established by a characteristic *skin*, delineating a boundary for events, which may take place there...

Material – constructs internal demarcation, i.e. this *boundary* and internal divisions of the space. It further decides about the properties of space, determining explicitness in the chronology of the activities, or the lack of it. Constructing a *boundary*, it builds the *skin*. Stone and its contemporary emanation – concrete, affirming confidence, define a place in a permanent, unequivocal and solid way.

Information is its opposition. It defines it transiently, ambiguously and unstably.

4. Structure. Solidity, transparency, simulacrum

Inhabiting the architecture – is the Heidegger's *state of being*. The content of the building, demarcated by the *skin* delineating it from the external space may shape its interior in a number of ways: it may inspire the users to *chronological-linear* or *simultaneous* performance of activities determining the *state of the building*¹⁸. These two approaches differently form a place of the building and decide about its use. In the first case – they give its interior a nature of a static *sign* – which is the emanation of the metaphoric *architecture of edifice*. In the other – dynamism of *compilation building, place for events*.

Solidity, transparency, and simulacrum define the material of the skin and the character of the building interior, and their mutual relationships have a multifarious impact on the aforementioned characteristic *added value*.

In architectural art, we may permit brief or a partial transgression authorising us to create works on the edge of sense and dream. These days, the architectural art adjoins the shows governing the souls of the “trendy reality” participants. Adjoining does not, however, mean that there is no boundary, on the contrary – there is no adjacency without one¹⁹.

Interactive games, which appeared on the Internet after the attack on 11 September 2001, and in which one may swap places with Mohamed Atta, nota bene an architect and urban

¹⁷ For example: in *a cloud*.

¹⁸ The author discusses this issue in detail in the monograph: *About Contemporary Forms of Dwelling in the City*.

¹⁹ S. Gzell, 2015, p. 63.

planner by profession, and make a suicide attack on WTC²⁰, have their characteristic reference in the architecture²¹.

International competitions announced for designing virtual “objects” in virtual reality provoke the question whether there is a border between reality and virtuality in architecture. Whether applying the current eponymic criteria, the already existing name *Virtual Architecture* may be deemed Architecture or only its simulacrum? And if it may, then whether imitating the real one, defined by the Vitruvian Triad – it shall refer to its archetypes, adopting the formal patterns of real buildings in the evanescent virtual world.

Using the contemporary tools, the architect transfers virtual reality into traditionally real one. In the case of the competitions referred to hereinabove, the situation is different. Designing, by means of contemporary technological tools, virtual modelling of an object – is transferred into another widely available form of virtual space. The traditional tangible reality is modelled in virtual space.

Architecture without people loses its sense, but Architecture, which is a simulacrum of reality, expressed by the record of a 3D computer program – is individualistically experienced by people. Therefore, in the context of the Vitruvian Triad – it is specifically useful. And here an unequivocally specified boundary appears: the Vitruvian solidity – it is a solidity of matter, and beauty is a beauty of matter, not of a dream of matter.

Inevitably, again the words of Stanisław Lem come to mind, these uttered by the American barrister explaining to Ijon Tichy the essence of father’s failure: (My) *first son was a highly promising architect, dissatisfied with his actual commissions, turned to urbifab and edifine: now he builds entire cities – in his imagination ... A dream will always triumph over reality, once it is given the chance ...*²².

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²⁰ Muhammad Atta as-Sajjid, who served as the hijacker-pilot of American Airlines and crashed the plane into the WTC tower, graduated from Department of Architecture at Cairo University and then Urban Planning at the Hamburg University of Technology.

²¹ Reference is made to competition concerning design of totally virtual „architecture”, for example the one announced by Bee Breeders Archhive (results were published in 2017): *Architecture in Virtual Reality*.

²² S. Lem, 1971.