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METAVVERSE OF ARCHITECTURE. MORE IS LESS

METAVERSUM ARCHITEKTURY. WIĘCEJ ZNACZY MNIEJ

Abstract

Observational methodological research, using an interpretive method, points to the interdependence between the increasing importance of architecture as a medium for transmitting information and the simultaneous increase of the role of ICT technologies in its construction. An interpretation of hybrid space emerges, constructed by physical and virtual elements: a system of formatting where successive gigabytes of information conveyed by physically constructed architectural objects and their virtual extensions construct hybrid spaces for events.

Keywords: architecture, hybrid space, material, metaverse of architecture

Streszczenie

Badania metodologiczne obserwacyjne, przy zastosowaniu metody interpretacyjnej, wskazują na zależności między zwiększaniem znaczenia architektury jako medium przekazu informacji, przy równoczesnym poszerzaniu udziału w jej konstruowaniu technologii informatycznych i teletechnicznych. Pojawia się interpretacja przestrzeni hybrydowej, budowanej przez elementy materialne i wirtualne: system formatowania, w którym kolejne gigabajty informacji, przekazywane przez materialnie skonstruowane obiekty architektoniczne oraz ich wirtualne ekstensje, konstruuja hybrydowe przestrzenie dla zdarzeń.

Słowa kluczowe: architektura, przestrzeń hybrydowa, tworzywo, metaversum architektury

Baron Haussmann began to build a new legal, administrative, residential wall for the city in the late 1850s, a wall that was unlike the previous walls only in that it was no longer a physical structure.

Richard Sennett, *The Fall of Public Man*

1. MORE IS LESS

According to Saint-Exupéry, perfection is achieved not when there is nothing to add but when there is nothing left to take away. The increasing importance of architecture as a medium of communication, along with the simultaneous rise in the role of ICT technologies in its

construction, significantly highlights the interpretation of hybrid space, constructed from physical and virtual elements. The progression of the role of ICT technologies gradually transforms its image into a negation of the pursuit of physical perfection understood in this way. The media interpretation of reality, supplemented by non-physical elements, progressively contaminates it with a kind of IT smog, making it gradually become an alternative. A formatting system emerges in which successive gigabytes of information, unconstrained by technological possibilities, transmitted by physically constructed architectural objects and their virtual extensions, construct hybrid spaces for events. A non-physical material substituting for the physical one transforms the manner in which the space of the city, the building, and the functions of the object are delimited. By blurring, non-physical material pushes back the previously unambiguously defined boundaries in the world of matter into an undefined space. The urban space of the city and the building is successively being enlarged by non-physical openings, which Abraham Moles and Élisabeth Rohmer referred to over fifty years ago in relation to the world of matter¹. Objects and rooms that are emanations of outdated functional needs disappear – new ones emerge. The non-transparent plaster and concrete cladding that separates the rooms of flats, offices and cultural facilities, becomes a seemingly transparent plane of screens, opening up a depth in the unlimited space of the “whole available world”. The matter of romantic and non-romantic landscapes disappear, along with the imperfectly or perfectly crafted texture of partitions, constrained by material divisions of user activities.

2. IDEA (PURPOSE), CONTENT (SUBSTANCE), STRUCTURE (CONSTRUCTION OF ARCHITECTONICS)

The perception of an object involves the image of the Idea, the content of the essence and the specific packaging of that content in the multidimensional spatial structure of the object.² Packaging is the skin, covering it with an external and internal façade, interior decoration, and impermanent staffage.

The Image of the Idea is the materialisation of Thought. The aim is, on the one hand, to construct a space that fulfils the functional program’s concepts for potential events, and on the other – which is equally important – a kind of creative polemic expressing itself in the manner of how that construction is executed. Architectural acts are an emanation of the reference to the supra-architectural interpretation of the concepts of supra-architectural core values such as truth, freedom, beauty, safety, sustainability, intimacy, compactness, and dispersion.

The content of an object or urban development can also be interpreted in two ways: as a place for events – i.e. a formally delimited *physical space for activities* that are to take place in it, carried out by users – or as a kind of a multidisciplinary, multi-spatial poster – *a means of conveying information* to users and observers. The images of the Idea presented in both cases can be diverse, not necessarily co-thematic in meaning and not

¹ A. Moles, É. Rohmer, *Psychologie de l'espace*, Casterman, Toumai 1972.

² G. Nawrot, *Architecture – The myth of interpreting identity of images* [in:] Kozłowski T. (ed.), *Defining the architectural space. The Myth of Architecture*, vol. 1, Oficyna Wydawnicza Atut – Wrocławskie Wydawnictwo Oświatowe, Wrocław 2021, pp. 109–120.

necessarily perceived in the same way. The same is true of the quality of the message that reflects the technical skills of the design authors. *The construction of architectonics*, resulting in the created Architecture – is the delimitation of space, built from a material that is a compilation of physical and non-physical elements.³ The key seems to be to shape it formally in a way that is appropriate to the commonly accepted identity of meaning and use associated with the concept of ontological security. Each redefinition of the essence of construction is linked, on the one hand, to the development of social thought and, on the other, to the broader context of momentary events of equally momentary duration. Formatting the structure of the architectural space of an object or urban development means building a system: the said architectonics. It occurs on several levels of designing the later perceived whole. This specific typographic activity is reflected in the anticipation of the potential intentions of future users – conscious or unconscious attribution of characteristics to an object, expressed by its composition, according to accepted utilitarian and semantic patterns. The way space is shaped affects people's behaviour. The definition of Architecture, the concept of the building or urban development, the consistency of its realisation and the harmony between the designed elements of the overall structure are all important for the conscious shaping of Architecture.⁴

3. REDEFINING CONCEPTS. NEW ARCHE⁵

The concept of the essence of architectural space, weaving itself into the definition of architecture, becomes a significant determinant for defining architectural style, a suggestive interpretation of the concept of the role played by space in human history.⁶ It is an emanation of redefining interpretation of the concepts of core values, content and the methods and material of its construction.

Inspirations for shaping the Idea of the concept of architecture appear outside of Architecture. These are new openings to ways and contents of thinking. They concern thoughts of philosophy, whose emanations are paintings, sculptures, musical works, and ways of realising human activity, such as solutions in technology and economics, but also, and perhaps above all, actions in the sphere of social life. They – referring to the matter of objects and spatial assumptions – materialise thoughts arising outside of Architecture into technical solutions, becoming potential means of shaping existential space, constructed by the adopted concept of architecture and material, organising the delimitation of architectural space. Redefining the *arche* may, therefore, apply to:

- the Idea,
- the method of interpreting the content of an object or urban development,
- the structure (construction of architectonics).

³ G. Nawrot, *Symultaniczność i kompilacja a obraz miejsca*, "Budownictwo i Architektura" 2018, no. 17(2), pp. 29–38.

⁴ G. Nawrot, *Home: Dwelling, building, city. Architectonics* [in:] T. Kozłowski T. (ed.), *Defining the architectural space. Architecture and the City*, vol. 3, Oficyna Wydawnicza Atut – Wrocławskie Wydawnictwo Oświatowe, Wrocław 2023, pp. 31–44.

⁵ Arche – here, the primordial shaping principle, the ordering pre-principle, the cause of all actions.

⁶ Z.K. Zuziak, *Architektonika przestrzeni życiowej*, "Czasopismo Techniczne. Architektura" 2005, no. 11-A, pp. 159–164.

When referring to the Idea, different thinking about the *arche* of architectural space emerges with a new interpretation of thinking about human life. The following may be redefined:

- the type of supra-architectural values conveyed,
- the way in which their meanings are interpreted or reinterpreted physically and non-physically.⁷

Addition or subtraction are the ways of development within the resonance of the main principles of the accepted Idea. A change of paradigm, reevaluating the existing concepts, occurs when these possibilities are exhausted, but also when nothing can be subtracted anymore, and addition becomes pointless... Redefining Ideas – is redefining the paradigm. The emanation is a delimited space, organising people’s activities differently in various fields. It is a reference to the interpretation of fundamental values, in which social translucency is the antonym of closure or closure becomes the antonym of translucency, dispersion – of compactness, simultaneity – of chronology, physicality – of illusion, reality – of imagination... Redefining the content of the meanings of places – redefines the symbolism of their emanations, i.e. the specific appearance of architectural costumes – images of icons, and the principles of shaping the structure of architectonics. It is important to redefine the recognised concepts that take on new meanings... and *metaphor* and *illusion*⁸ are merely methods of realising the accepted concept.

When referring to content (substance), it emerges with new values and utilitarian substance and is also a consequence of the reinterpretation of the Idea. The following can be subject to redefinition:

- the type of utility functions which realise the prescribed utilitarian values,
- the manner of their physical and non-physical interpretation or reinterpretation, the types of signs and symbols that are their emanations.

The key is, therefore, to understand the meaning of *existential space* and the consequence – a different interpretation of the notion of *architectural space*, *Architecture* and also a different understanding of what the *architectural material* is. That comes down to constructing the architectonics of space in either a uniform or hybrid manner, permanently or non-permanently, illusorily or physically, genuinely or simulacrally, compactly or diffusely; it may be intimately translucent or intimately opaque. When referring to the structure (constructing the architectonics), the redefinition of the system occurs with the new technical and technological possibilities of realising it. It may apply to:

- the way space is shaped, constructing relationships between users and their activities,
- the architectural material used.

Each unambiguously interpreted epoch is, first and foremost, an ideological intellectual creation, and architecture is one of its many emanations. The observer or user experiences an architectural object as a kind of costume that wraps the content it contains, looking at it through associations, knowledge and personal or shared experiences. He builds it from his own memories. This costume is a reflection of the social context, including, of course, references to supra-architectural universal values.⁹ The specificity of the new *arche* stems from

⁷ Interpretation of signs and symbols – either the existing one, commonly accepted as “true”, or different from the one commonly regarded as true.

⁸ G. Cullen, *Obraz miasta*, Ośrodek “Brama Grodzka”, Teatr NN, Lublin 2011. p. 70.

⁹ Some art critics, such as Carlos Fischer, believe that fervent adherence to truth in the realm of costume does not encourage freedom and imagination in the exhibition of art, see: R. Sennett, *Upadek człowieka publicznego*, Wydawnictwo Literackie MUZA, Warszawa 2009, p. 289.

the development of digital and ICT technologies. Applied to Architecture, they extend the utilitarian and semantic notion of *architectonic material* and spatially extend and semantically redefine the notion of architectural space, transforming it from physical to physically virtual: a hybrid *metaverse*.¹⁰

Constructing space builds contacts between people and organises their activities. It is more than the *form* or superficially construed *function* of an architectural object or urban development. The *form* – i.e. the plastic formation, that specific multi-spatial poster, seen as one of the elements of materialising the message – is of secondary importance. It is significant as an emanation of the organisation of space and its content; it allows the user to know where they are in the space. However, it is the techniques of constructing space and the types of material used that influence the way the space is delimited and, consequently, how users' activities are carried out and how they interact with each other. Hence, redefining the *arche* takes place mainly through the new material. When it is a non-physical product of contemporary ITC technologies, its importance is crucial for the emanated Idea, the shaped content, and the constructed structure.

4. THE FALL OF PUBLIC DESIGN. UNIFICATION OF BEHAVIOUR

A person's life, according to Marcus Aurelius, is woven from their thoughts – and a man's worth is no greater than the worth of his ambitions. In the 18th century, the first orchestra-leading conductor who unified the performance as we know it today appeared: Felix Mendelssohn-Bartholdy. Until then, ensembles were led by a musician who participated in the performance. The analogies in Architecture are obvious. On the one hand, they are the result of technological progress, on the other, of progressive specialisation in the social division of labour. Each designed object, like Dorian Gray's portrait, is a preserved, metaphorical image of the architect's personality, and the functional assumptions provide an opportunity for this, though not always intentionally revealed.¹¹ Also – or perhaps most so – when the architect resonates only with other people's thoughts and abilities and the surrounding context of creation, one important element of that context is the ubiquity of procedures influencing the formatting of activities that replace the independence of individual decision-making. Richard Sennett, analysing the consequences of the shaping of public life gradually taking on the character of a formal obligation, points to the multiple planes on which the progressive unification takes place multi-directionally.¹² One of these is the space of architecture in which human activities take place. Once constructed – it is subject to a specific kind of direction, like a programme, performance or film. Just as the product of the director's activities is not a programme, performance or film, but the viewer, the product of the activities that shape public and private space is its user.¹³

¹⁰ *Metaverse* combines the concepts of meta, meaning a higher degree, succession or variation of something, and verse, meaning universe.

¹¹ “[...] Every portrait that is painted with feeling is a portrait of the artist, not of the sitter. The sitter is merely the accident, the occasion. It is not he who is revealed by the painter; it is rather the painter who, on the coloured canvas, reveals himself [...]” [in:] O. Wilde, *Portret Doriana Graya*, Vesper, Czerwonak 2015.

¹² R. Sennett, *op. cit.*

¹³ Reference is made to Marshal McLuhan's theory and Jean Baudrillard's observations that the product of media is not the broadcast or the performance but the audience: Marshal McLuhan's formula

When the concept of *Architecture* is redefined to include new and diverse technologies and materials, especially those from the fields of telecommunications and information technology, as well as others that have a novel impact on space, the process of unifying this *end product of activities* begins to take place in a broader field. An earlier example is the replacement of the nomads' self-constructed hut with a tent. The days when most homes were built by users are gone. Today's camping tent is the product of specialised manufacturers, and the instruction manual makes the user merely an unrewarded executor of a simple, predetermined task – erecting the tent. Setting up the tent is the conclusion of a process consisting of: the creation of an *Idea* for a portable house; the determination of the material shaping of the *content* of that Idea, which delineates a space for user activities; and commonly conveying the information, as well as establishing the principles of the *structure of the object*. The owner or user, therefore, is not the builder or originator of the idea – he is merely the executor of instructions arising from a past process, a kind of product of earlier decisions concerning the idea, the method of delimiting space for the object and within the object, and the methods and material that construct it.

5. ARCHITECTONICS OF METAVERSE

The 18th century saw the emergence of the first orchestra-leading, performance-unifying conductor. The 21st century sees the emergence of a system – largely directed towards self-shaping by AI¹⁴ – of digital and ICT technologies influencing social activities.

On 29 September 2021, at the Connect 2021 conference, Mark Zuckerberg announced the Metaverse vision as the future technology for humanity, proclaiming the construction of the necessary core infrastructure for the Metaverse as a mainstream component. He said it would be ready in 5 to 10 years. As of 1 December 2021, Facebook began reporting results as *Meta* and operates on the stock exchange under the acronym MVRS.¹⁵

The *Metaverse* – a virtual reality and a platform for contact between the real and digital worlds – appears in 1992 in Neal Stephenson's science-fiction novel.¹⁶ Referred to the present time, it is an extension of the digital space, an alternative that enables digital life to be realised parallel to the real one. Potential boundaries and an ultimate definition of the Metaverse do not exist, they emerge permanently as a result of the activities carried out by digital and ICT companies. Referred to architecture and urban planning, it is a kind of hybrid space, a potential qualitative and technological evolution of the theory proposed over fifty years ago by Abraham Moles and Élisabeth Rohmer, about the vectorial extension of space for habitation and social contact.¹⁷ In the already existing three-dimensional foundations of the *metaverse*, the beginnings of a potential private and professional world are constructed, shaping different forms of activity. That metaverse includes people, places and signs, universities, work, meeting friends, holidays, etc. Contemporary architectural space is, therefore, already very much a basic version of the heralded one, a kind of hybrid constructed from

Medium is Message; J. Baudrillard, *Symulakry i symulacja*, Sic!, Warszawa 2005, p. 21 [after:] G. Nawrot, *Home...*, *op. cit.* p. 39.

¹⁴ Artificial Intelligence.

¹⁵ M. Zuckerberg, *Our vision for the metaverse*; Facebook Conference; Connect 2021.

¹⁶ N. Stephenson, *Snow crash*, Bantam Books, New York 1992.

¹⁷ A. Moles, É. Rohmer, *op. cit.*

physical and non-physical material, permanent and ephemeral, and the theses of the Connect 2021 Conference only confirm the continuation.

The character of the architectonic space is an effect of the constructed mechanism. The impact of a potential architectonic mechanism as a *metaverse* is multisensory – adequate to the multisensory impact of the internet, albeit with a more elaborate structure of transmission elements, for it combines the impact of matter and illusion. AI technologies, which today are developing dynamically, transfigure existing spaces, constructing structural hybrids where the vectorial opening of physical space is merged or replaced by a virtual one. In each of these cases, what the *medium* conveys, by means of its structure and technical organisation, is the interpreted idea of a world that can be freely visualised, dismembered, sequenced and read, no longer only in the form of physical images, but also non-physical impressions. A system of specifically designed architectural *reading* dominates the perceived image of the world, which has become a system of unambiguously associated signs, including those constructed in virtual reality.¹⁸ Marshall McLuhan's formula *Medium is Message*, applied to architectonic space, makes the *metaverse*, as a system of information transmission, imposing new models of relation and perception – it becomes a medium, redefining the *arche* by influencing the Idea, the content (substance) of the object or urban development and the structure (architectonics). *Connectivity* – the organisation of the flow, i.e. communication, which takes place in various fields, has a significant impact on the formatting of the activities of its users. The *movement* determines the gradation of importance of places, events, social groups and individual users of the space. Over the centuries, the physical delimitations of space have unambiguously defined this gradation by directing the sequence and nature of the users' activities. In an age of progressive development of the *metaverse*, the essence lies in the elements that impact the shaping of *connectivity* in hybrid space, which is no longer constructed solely by physical materials and those emanating from the activities of digital and telecommunication technologies, but also those resulting from their mixing: space is interpreted as a projection, a media version of reality or a kind of its hologram. The omnipresence of the mechanism of constructing space universally unifies personalities... When, as Rem Koolhaas writes, "... replicable, cloned buildings become the currency of civic enlightenment,"¹⁹ the construction of the identity genome of an object of Architecture consisting in designing distinctive, characteristic features, resulting in a specific style of staying in the designed space – becomes an attempt to build a typography that formats behaviours of users. The consequence of designing a specific *metaverse architectonics* is also a specific style of staying in the designed space – unambiguously formatting metaversal behaviours of users.

6. SUMMARY

Movement is assigned to the streets of the city. Analogously, this happens in the physically permanently formed corridor spaces of public, production and residential buildings. Movement is the manifestation of users' activities realised through directed relocations in space or other interactions carried out in the course of encounters, including the direct transmission of verbal and visual information. Contemporary digital and ICT technologies have reinterpreted

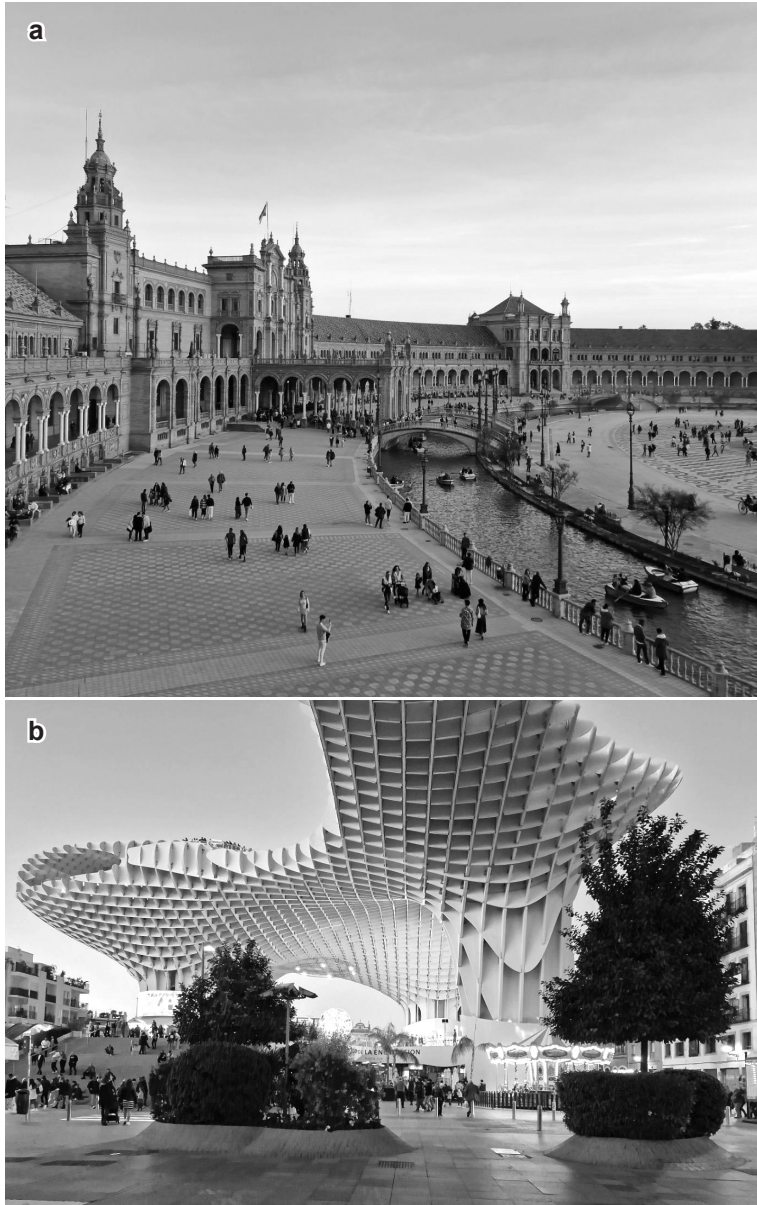
¹⁸ G. Nawrot, *Home...*, *op. cit.*

¹⁹ R. Koolhaas, *Śmicciowa przestrzeń*, Fundacja Centrum Architektury, Warszawa 2017, p. 14.

not only the formation of these corridors but also the other structures of the constructed space, reconstructing their permanent – constructed or physically permanent – image.

The formatting of *connectivity* is transferred from the *hard* space, delimited by solid material, to the *soft*, hybrid space, and the flows – activities and other users' relations, directed within the hybrid-constructed space, are realised through digital and ICT elements. Often – simultaneously – the user's movement in space is combined with the concurrent transmission of information via ICT. The consequence of the adopted methods of constructing the delimitation of architectural space is an alternative orientation of how users' activities are realised.

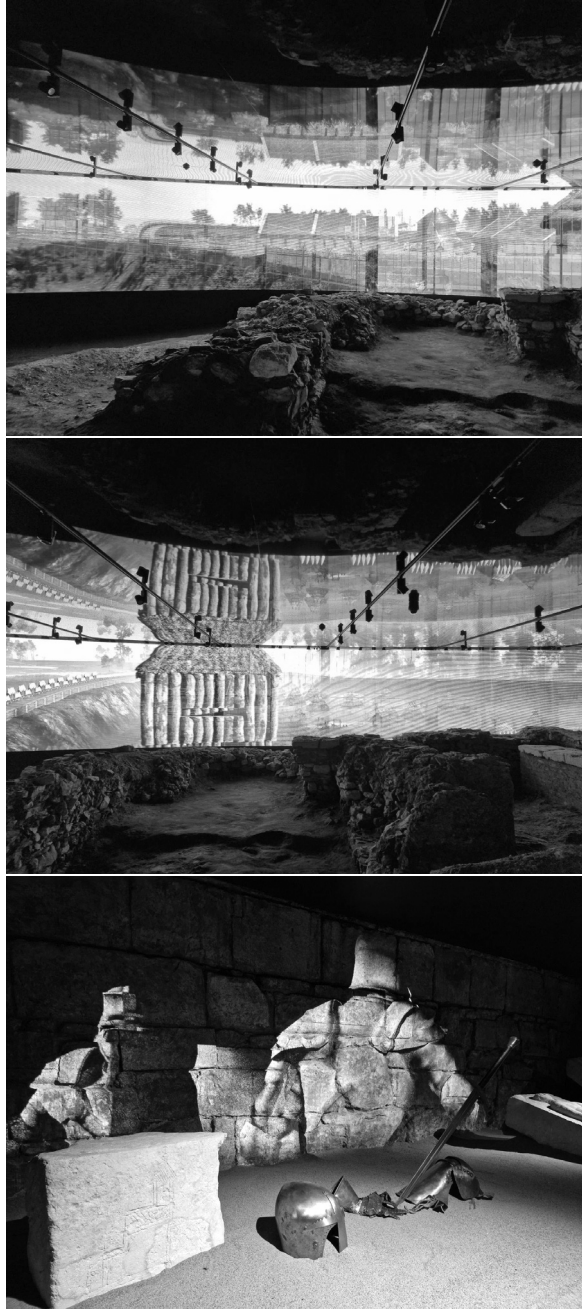
The significant contribution of contemporary digital and information technologies also results in a different way of perceiving and interpreting reality, and consequently, of functioning in the existing real space, which, losing the symbolism of a permanent, metaphorical edifice – transforms from a distinctly material form into a dispersed simultaneously hybrid metaverse. Tendencies towards alternative ways of realising activities contribute to diminishing the importance of activities of a public nature in physical space: the more technologies emerge to replace the mental and physical activities of users, the less space there is for their autonomy.



III. 1. Two pictures of the era of Seville's architecture, aimed at creating an icon of the city: a) Balance of meanings: utilitarian and the transmission of information: Spain Square and Spanish Pavilion – (1929), Spanish Universal Exhibition; designed by Aníbal González, photo by G. Nawrot; b) Dominance of the transmission of information over the utilitarian meaning: “The controversial nature of such works is a necessary means of promoting them” (Paul Knox); Plaza de la Encarnación, Metropol Parasol, (2011), The largest wooden structure in the world, designed by J. Mayer H. Architects, “The controversial nature of such works is a necessary means of promoting them” (Paul Knox) Seville, photo by G. Nawrot.



III. 2. Gdańsk – Oliwa. Adam Mickiewicz Park. Illusory delimitation of space with light (2018), photo by G. Nawrot.



III. 3. Hybrid space: Archaeological Museum in Wiślica. Baptistry from 880 AD. Realisation of a new exhibition object; the following were applied: object visualisation techniques, 3D digital reconstructions, laser holograms, mapping, moving telescopes with VR application, 3D models of buildings and objects used by our ancestors from the 9th to the 16th century, transparent LED screen – design: Group AV, realisation: 2022, photos by G. Nawrot.

References

- [1] Baudrillard Jean; *Symulakry i symulacja*, Sic!, Warszawa 2005.
- [2] Cullen G., *Obraz Miasta*, Ośrodek “Brama Grodzka”, Teatr NN, Lublin 2011.
- [3] Knox P., *Starchitect, starchitecture, and the symbolic capital of the world cities* [in:] Derudder B. et al., *International Handbook of Globalization and World Cities*, pp. 275–883, after: Białkiewicz J.J., *Metropol Parasol – Seville’s new icon controversy surrounding the presence of contemporary architecture in a city’s historical urban tissue “Teka Komisji Urbanistyki i Architektury PAN Oddział w Krakowie”* 2018, vol. 46, pp. 77–109.
- [4] Koolhaas R., *Śmieciowa przestrzeń*, Fundacja Centrum Architektury, Warszawa 2017.
- [5] McLuhan M., *Zrozumieć media. Przedłużenia człowieka*, Wydawnictwo Naukowo-Techniczne, Warszawa 2004.
- [6] Moles A., Rohmer É., *Psychologie de l’espace*, Casterman, Toumai 1972.
- [7] Nawrot G., *Architecture – The myth of interpreting identity of images* [in:] Kozłowski T. (ed.), *Defining the architectural space. The Myth of Architecture*, vol. 1, Oficyna Wydawnicza Atut – Wrocławskie Wydawnictwo Oświatowe, Wrocław 2021.
- [8] Nawrot G., *Home: Dwelling, building, city. Architectonics* [in:] Kozłowski T. (ed.), *Defining the architectural space. Architecture and the City*, vol. 3, Oficyna Wydawnicza Atut – Wrocławskie Wydawnictwo Oświatowe, Wrocław 2023.
- [9] Nawrot G., *Symultaniczność i kompilacja a obraz miejsca*, “Budownictwo i Architektura” 2018, no. 17(2), pp. 29–38.
- [10] Sennett R., *Upadek człowieka publicznego*, Wydawnictwo Literackie MUZA, Warszawa 2009.
- [11] Stephenson N., *Snow crash*, Bantam Books, New York 1992.
- [12] Wilde O., *Portret Doriana Graya*, Vesper, Czerwonak 2015.
- [13] Zuckerberg Mark, *Our vision for the metaverse*; Facebook Conference; Connect 2021.
- [14] Zuziak Z.K., *Architektonika przestrzeni życiowej*, “Czasopismo Techniczne. Architektura” 2005, no. 11-A, pp. 159–164.

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