

INTERPRETATIONS OF ARCHITECTURAL TRADITION DURING THE POST-WAR MODERNISM PERIOD

INTERPRETACJE TRADYCJI ARCHITEKTONICZNEJ W OKRESIE POWOJENNEGO MODERNIZMU

Abstract

The mid-20th century saw an emergence of phenomena in European urban planning and architecture which indicated designers returning to the principles used when houses, towns and villages grew in a close relationship with the surroundings and culture within which they were established. There were many reasons behind endeavours to create spaces for social interactions, appearance of simple, economical architectural solutions and the use of easily recognisable building forms. In particular these included an application of research results from other scientific fields to design theory, the post-war necessity to build on tight budgets and an appreciation of spatial solutions in the face of progressing architectural unification. There were various motifs for creating a “modernism with a human face”.

Keywords: modernism, structuralism, rationalism, post-modernism, tradition, community

Streszczenie

W połowie XX wieku ujawniły się w architekturze i urbanistyce europejskiej zjawiska świadczące o powracaniu projektantów do zasad stosowanych w czasach, gdy domy, miasta i wsie rozwijały się w ścisłym związku z otoczeniem i kulturą, w której powstawały. Dążenie do tworzenia przestrzeni kontaktów społecznych, pojawienie się prostych, ekonomicznych rozwiązań architektonicznych i stosowanie łatwo rozpoznawalnych form budowlanej wynikało z wielu przesłanek. Należały do nich między innymi rozszerzenie teorii projektowania o wyniki badań innych dziedzin nauki, powojenna konieczność oszczędnego budowania i docenienie tradycyjnych rozwiązań przestrzennych w obliczu obserwowanej unifikacji architektury. Różne były motywy tworzenia “modernizmu z ludzką twarzą”.

Słowa kluczowe: modernizm, racjonalizm, postmodernizm, tradycja, społeczność

1. PERMEATING INFLUENCES

The end of the modern architecture era and the emerging trends, apart from diversity of architectural forms, were primarily concerned with the concept of the functioning of communities and societies. Architectural structuralism was one of the creative attitudes, as always identified *ex-post*. The trend, or a way to perceive spaces to be more precise, was reflected initially in linguistic and then anthropological research results. Ferdinand de Saussure² analysed the

¹ Assoc. Prof. D.Sc. Ph.D. Arch. Teresa Bardzińska-Bonenberg, Faculty of Architecture and Design, University of Arts in Poznan, teresa.bardzinska-bonenberg@put.poznan.pl; ORCID 0000-0002-0356-6208

² In 1916, in a book *Course in General Linguistics*.

structure of language, discovering its binary character based on contradictory (binary) verbal structures (cold-hot, full-void). It was from him that Claude Levi-Strauss, the anthropologist, adopted a method for describing binary cultural phenomena (known as semiotics/semiology sign system), including social rules, customs etc...³ The results of this research began being published in the 1950s. This proved to be a convenient way to look at and to describe architecture, which is based on oppositions (front-back, solid-void, monumental-shanty...) and in a further perspective to include the other contrasting meanings in urban and architectural scale projects. The fifties and sixties were decades of interweaving architectural threads and developing social sciences, philosophy, sciences and medicine. Contradictory demands of social, technical and aesthetical requirements gradually found their justification and rank in the architectural and urban design process contributing to a diversification of 20th century architecture.

The *Credo* of modernism adopted from Louis Sullivan's "form follows function" (coined in 1896) was widened by "user participation" by architects-structuralists in the 1950s.⁴

Furthermore, structuralism is now considered ...as *expressing social patterns and relations and these were apprehended as permanent and invariant and definitely not possible to change. Architects and city planners organized buildings and cities on the basis of communication routes, streets, and squares, what in a structuralist analysis constitutes the invariant structures of a city.*⁵

These theoretical premises laid the foundations for evading formal ideas of modernism, which was not easy at that time.

2. PATHS OF NEGATION

Evolution began in the Netherlands⁶, where the first conscious pursuits of more individualised spaces, not entirely inconsistent with the modernistic doctrine, took place.

In post-war Europe, shattered by WW2, the idea of using prefabricated elements to create a recognizable environment proved to be attractive. In modernistic settlements architecture was as rigid as urban planning, with its systems of communication and technical ducts.

The structures, particularly in the Netherlands, tend to be repeatable, consisting of unified volumes, spatial units, or at least recognizable elements of cubic buildings. "Softer" than bold modernistic buildings and interiors were pursued by young architects and soon structuralism permeated to Germany, France and Sweden in the 1960s.⁷

Prefabricated, cubic forms were used in accordance with modern architecture ideas. Softening of the form follows function principle by the new user mobility interpretation was

³ Coyne R., *The opposite of architecture, Reflections on Technology, Media and Culture*, <https://richard-coyne.com/2012/01/28/the-opposite-of-architecture/#comments> (access: 01.2012).

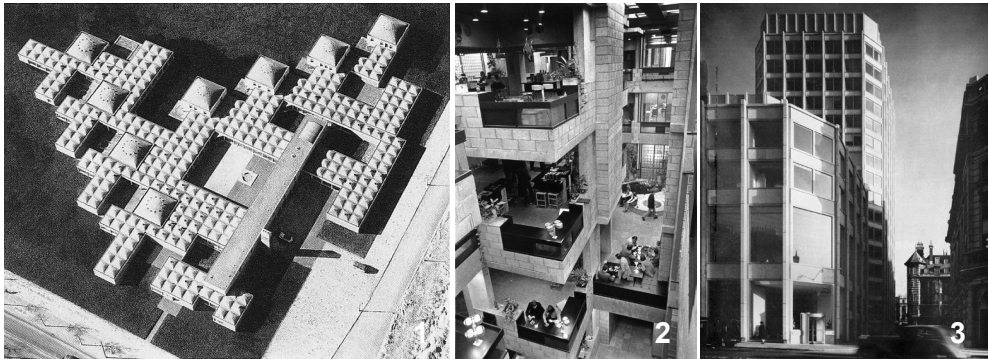
⁴ Olivera M., Centraal Beheer Office, Apeldoorn, Netherlands Hermann Hertzberger, https://melanieaolivera.files.wordpress.com/2018/01/olivera_module9_centraalbeheer.pdf (access: 05.05.2019).

⁵ Söderqvist L., *Structuralism in architecture: a definition*, Journal of Aesthetics & Culture, 2011, no. 3, DOI: 10.3402/jac.v3i0.5414, <https://www.tandfonline.com/doi/full/10.3402/jac.v3i0.5414> (access: 12.06.2019).

⁶ Frampton K., *Modern Architecture: a critical history*, Thames and Hudson, New York 1994, p. 298.

⁷ Söderqvist L., *op. cit.*

almost symbolically put into practice by Aldo van Eyck as early as in 1955 within the scope of Amsterdam's Municipal Orphanage design⁸ (Ill.1.): *Small, repeatable spatial forms, distributed in a dynamic manner reflecting the function and character of the institution. The fact that the Orphanage is still there today, redesigned by the author, performing a different function, is in accordance with the creative attitude of the architects who understand architecture in a structural manner: whereas the needs of a society for which a structure was created change over time, it still exists in the residents' consciousness⁹. It is tangential to the comprehension of architecture by Italian Rationalists as well as trends which emerged later: Postmodernism and subsequent.¹⁰*



- Ill. 1. Aldo van Eyck, Municipal Orphanage in Amsterdam, 1960, Photo: Aviodrome Lelystad 1960, <http://www.sosbrutalism.org/cms/15891005> (access: 12.05.2019)
- Ill. 2. Herman Hertzberger, Centraal Beheer office building aimed at interiors participation, Apeldoorn 1972, <https://dokumen.tips/documents/herman-hertzberger-studi-preseden.html> (access: 12.05.2019)
- Ill. 3. A. P. Smithson, London, Economy Square with The Economist journal buildings, 1964, https://www.architectsjournal.co.uk/Pictures/web/x/j/f/Smithsons_Economis_370.jpg (access: 12.05.2019)

Herman Hertzberger, author of a second recognisable early structuralism building and Aldo van Eyck's student wrote about architecture being filled-in by users. He designed the Beheer office building in Apeldoorn (Ill. 2.). *Form can be filled-in with significance, but can also be deprived of it again, depending on the use that's made of it, through the values we attach to, or add to it, or which we even deprive it of – all this dependent on the way in which the users and the form react to, and play on each other... defines what form can bring about in the users – and conversely – what the users can bring about in the form... What matters is the interaction of form and users, what they convey to each other and bring*

⁸ Aldo van Eyck still did not use the term “structuralism” – as cited in: Söderqvist L., *op. cit.*

⁹ That characteristic was described by Aldo Rossi nearly three decades down the line, in 1982 in *Architecture of the City* (Cambridge: Graham Foundation for Advanced Studies in the Fine Arts and the Institute for Architecture and Urban Studies by MIT 1982), 49, 59–61, 64f, 69, 85f, 100, 130.

¹⁰ Bardzinska-Bonenberg T., *Ideas behind the changes in the 20th c. avant-garde architecture*, in: J. Charzytonowicz, Ch. Falcão (eds.), *Advances in Human Factors, Sustainable Urban Planning and Infrastructure. Proceedings of the AHFE 2019 International Conference*, Springer International Publishing AG, Cham 2018., pp. 113–124.

about in each other, and how they mutually take possession of each other.¹¹ He was one of the first to apply the social interaction method in the aforementioned Beheer office building in Apeldoorn and in housing complexes, such as Diagoon houses, which were based on the idea of an “incomplete project”. The simplicity of modular solutions and highlighting the cooperation and interactions between users were in accordance with Holland’s architectural and social tradition: simplicity of buildings erected there and strong social relations needed in the everyday struggle with the sea.

Following years of research, Kevin Lynch, an American urban planner published one of the most important books of the time on architecture and urban planning: *The Image of the City* (1960), wherein he analysed urban space from the point of view of a resident, pedestrian and user. A decade later, Christopher Alexander [Alexander C., 1977] looked upon urban space in a similar way. Research results were convergent with the structuralists’ assumptions, and the outlined the way for perceiving urban space in synch with early Rationalists’ concepts.

At the same time, Alison and Peter Smithsons, remembered primarily as representatives of British Brutalism of the 1970s, were of a similar opinion. In their theoretical texts from the 1960s they paid attention to the fact that the structures, both architectural and urban have to reflect mental patterns, which they called “patterns of association and identity”¹². Conclusions that the suburban architecture represents the highest identity for people are supported by charts and photographs of children playing in a suburban street.¹³

A presentation of these facts was followed by criticism of modernistic architecture, town planning, diverting from CIAM in 1953 and the establishment Team 10 with their friends and adherents (Aldo van Eyck among them). They initiated a discussion on the concepts of a “cluster” and “human association”, that they considered to replace “dwelling”, “work”, “recreation” and “transportation” of the Athens Charter. These ideas, in case of the Smithsons led to results different than might have been expected. Their concept of “modernism with a human face” was lost in this case for the benefit of Brutalism (Ill. 3.), but the idea remained and was followed by the others.

The fifties saw the emergence of not only structuralism, but also postmodernism (observed from the mid-1960s) and rationalism represented by Aldo Rossi¹⁴ (Ill. 6.), whose book *L’architettura della cita* (1966) was also a manifesto of the trend. The Rationalism of Rossi and a group of young architects, later referred to as the “La Tendenza” group, initially stemmed from similar anti-modernistic objectives to that of Dutch structuralism. The dualism of Italian architectural tradition was a significant element here, combining the classicist trend with the utilitarian architectural tradition of Italian villages and small towns. The period of Fascist rule in Italy consolidated that situation together with the programme for building new villages in the interior of Sicily and in the poorest regions of Italy. The common denominator of both tendencies was the departure from modernism with its orthodox rules (and architects).

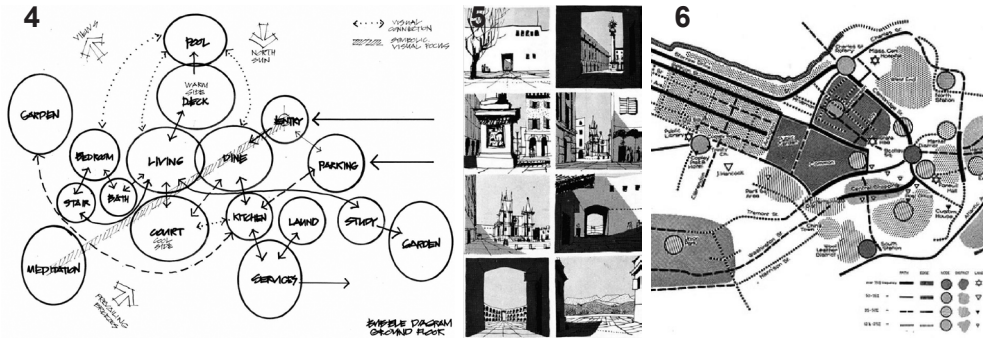
¹¹ Olivera M., *op. cit.*

¹² Smithson A. P., *Urban Structuring*, Studio Vista; Reinhold London 1967, p. 14., <https://bibliodarb.files.wordpress.com/2014/06/smithson-a-p-urban-structuring-extractos.pdf> (access: 05.05.2019), p. 9.

¹³ *Ibidem*, p. 17.

¹⁴ Aldo Rossi’s works have emerged from two trends: Italian traditional classicism and early modern architecture (Terragni). The quality “discovered” by Rossi was the structure of a historical town. Dutch structuralists adopted a similar direction stemming from simple architectural systems comprising numerous elements.

Influential architects and theoreticians of this period: Kevin Lynch and Gordon Cullen¹⁵ blazed the trail for the changes: importance of human scale, detail and recognizable urban space¹⁶. Their theses and case studies, illustrated and clearly explained were criticized, then understood, and gradually followed. (Ill. 4, 5.)



- Ill. 4. Kevin Lynch, Christopher Alexander, the functional diagram, *The Pattern Language*, <https://i.pinimg.com/originals/7a/48/69/7a48693fcb7dd9ad3ee27a7b2bf8f2fe.jpg> acc. 06.05.2019.
- Ill. 5. Gordon Cullen, <https://i.pinimg.com/236x/ab/72/85/ab728549f4a2d4f4801724d1c3e79cdd-gordon-cullen-perspective-drawing-sketches.jpg>, accessed 06.05.2019.
- Ill. 6. Oliva G., Aldo Rossi Da *L'Architettura della Città*, accessed 10.05.2019., *La dimensione tragica dell'architettura di Aldo Rossi tra razionalità e pathos*, accessed 07.05.2019. http://www.vg-hortus.it/index.php?option=com_content&task=view&id=54&Itemid=39

It is worth mentioning that the discussed generation of architects was brought up in the traditional environments of villages, suburbs and towns in the first two decades of the 20th century. Some of them tried to transfer the comfort of their lives into cubic spaces of modernistic post-war urban and architectural structures. The ways of implementing the old/new image were very diversified.¹⁷

The path of negation of the Modern Movement imposed on architects and urban planners for political reasons in the countries that were left beyond the iron curtain after the WW2 is not discussed here.

3. CHILDHOOD AND YOUTH EXPERIENCE CREATE THE BASIS?

The following table shows the backgrounds for childhood and youthful experiences of the architects and theoreticians mentioned above, as well as the spatial situation in which they were brought up and spent their early years. The character of European towns in the first decades of the 20th century, which they remembered was completely different from what they

¹⁵ Gordon Cullen's book was published in 1960 but he has been publishing illustrated articles focused on "upgrading" fragments of towns and cities since the 1930s.

¹⁶ Engler M., *Gordon Cullen and the "Cut-and-Paste" Urban Landscape*, 2013, <https://escholarship.org/uc/item/8gx9226d> (access: 08.05.2019).

¹⁷ Bardzinska-Bonenberg T., *op. cit.*, pp. 113–124.

were becoming in the sixties and seventies. The observations made by these architects, their experience and research laid the foundation for negation of modernism in architecture and town planning which surfaced some twenty-plus years later.

Table 1. Spatial/social situation in which the first critics of modernistic ideology were brought up and spent their early years. Those of them, who have not experienced life in rural or little town communities are marked in grey.

No.	Name of the architect/critic	Date of birth	Place of birth and life in childhood and youth	Education
1.	Aldo van Eyck	16. 03. 1918. (14.01.1999)	Driebergen (village), the Netherlands, childhood in London (A)	educated in England, studied at Zurich ETH.
2.	Hermann Hertzberger	06. 06. 1932.	Amsterdam, Corellistraat, the area designed by Berlage (B)	Montessori school, studied at TU Delft
3.	Aldo Rossi	03.05.1931. (04.09.1997)	Modena (C)	Roman Catholic School in Como, Alessandro Volta College in Lecco (C) studied at: Politecnico di Milano
4.	Alison Margaret Gill-Smithson	22.06.1928 (14.08.1993.)	Sheffield, South Yorkshire	South Shields High School for Girls and Sunderland Church High School in Sheffield, during the war, George Watson Ladies' College in Edinburgh, studied at King's College, University of Durham (now Newcastle University)
	Peter Smithson	18.09.1923. (03.03.2003.)	Stockton-on-Tees, Durham County, n/e England	grammar school in Stockton-on-Tees King's College, University of Durham (now Newcastle University)
5.	Kevin Lynch	07.01.1918. (25.04.1984.)	Chicago, USA, (D)	Francis Parker School known for the progressive education Studied at: Yale University Frank Lloyd Wright at Taliesin Rensselaer Polytechnic Institute in Troy, New York (engineering)
6.	Gordon Cullen	09.08.1914. (11.08.1994.)	Calverley near Leeds, Yorkshire, and from 1958 he lived in the village of Wraybury (Berkshire)	Royal Polytechnic Institution (now University of Westminster)

Aldo van Eyck received classical education in non-authoritarian English boarding schools. His father was a poet and a philosopher. He grew up in a bi-cultural Danish/English world, and his school achievements were mostly humanistic.¹⁸

¹⁸ Strauven F., *Aldo van Eyck – Shaping the New Reality, From the In-between to the Aesthetics of Number*, CCA Study Lectures, seventeenplaygrounds.com/wordpress/wp-content/uploads/2017/02/Shaping-the-New-Reality-From-the-In-between-to-the-Aesthetics-of-Number.pdf (access: 07.05.2019).

In his writings Herman Hertzberger recalls moments of walking idly in the neighbourhood as a child (while waiting for his father), which ingrained in him a fondness for urban diversity, human scale and well weighted architectural detail. The Montessori school which he attended, its building and the school atmosphere were the other moulding experiences he remembers.¹⁹

Aldo Rossi himself said that Catholic upbringing and education (in the towns of Como and Lecco) were crucial in determining his restrained form of architecture.²⁰ It evolved from post-modernist forms towards identifiable, unambiguous solutions and designs stemming from rationalism's theoretical assumptions.

Kevin Lynch, an American urban planner and theoretician was brought up in an affluent residential neighbourhood, dominated by villas surrounded by gardens.

Gordon Cullen's childhood experience was that of rural life. Most of his professional life was spent in Britain. In 1958 he moved to the village of Wraybury (Berkshire) where he wrote "Townscape", his best known book, published in 1961. His illustrated articles on urban planning and architecture have been printed by the AR Journal since the 1940s. His great role in perceiving townscape and architecture in traditional towns and cities was underestimated by the other theoreticians.²¹

Dates of birth of the architects, who started to herald the anti-modernistic trend in Europe span 18 years: from Gordon Cullen (1914) to Hermann Hertzberger (1932). This means, that their professional lives begun between 1939 to 1957 respectively.

Modernistic big-scale housing developments started in Holland, France, Germany and the USA at the end of the forties. Observing and drawing conclusions with respect to this phenomenon required several more years. It was 1953 when the mutiny of the future Team 10 left the "old" modernists with their ideas, and, as a result CIAM was closed in 1959.

The new generation was also aware of the directions in which American²² and Japanese²³ architecture was heading.

4. RECEPTION OF THE NOVELTIES

Searches in architectural criticism books and articles considered important for the seventies and eighties of the 20th century disclosed an absence even contemptuous commentaries of the new ideas. The discussion within the professional milieu in Britain, France, Germany and the USA was focused on the other topics. Even in the seventies, after Jane Jacobs published her book in 1961, and the New Urbanism Movement of the early eighties became known in the professional circles most publishing theoreticians, as we can see, represented strong

¹⁹ Kloos M., Behm M. (eds.), *Hertzberger's Amsterdam*, ARCAM/Architectura & Natura Press, Amsterdam, 2007, <https://www.hertzberger.nl/index.php/en/component/content/article/2-uncategorised/228-childhood> (access: 09.05.2019).

²⁰ Wojtas Swoszowska J., *Aldo Rossi – Architekt i teoretyk. Dylematy architektury po modernizmie*, [Aldo Rossi – architect and theoretician. Architectural dilemmas after modernism], http://www.kaiu.pan.pl/images/stories/2.2012_pdf/J.Wojtas.eng.pdf (access: 07.05.2019), p. 43.

²¹ Engler M., *op. cit.*

²² Robert Venturi, Vanna Venturi House built in 1964, designed in the late 1950s.

²³ Metabolist Movement existence was officially disclosed on the international forum during the last CIAM Conference in 1959.

pro-modernism attitudes. Leon Krier also manifested his idea of architecture in the eighties: both in his writings and in his projects.

Reyner Banham (GB) in *Theory and Design in the First Machine Age* from the 1960, did not mention Cullen, Lynch or the US anti-modernistic trend, which was already known in professional press publications.

Charles Jencks (USA) in the *Modern Movements in Architecture* published in 1973 rather ironically commented the objective to create a full townscape philosophy (by Cullen and the AR team): *Some people from "the Architectural Review" renewed many of Viennese ideas adjusting them to urgent demands of the state of common welfare. What was a solid, clearly delimited trail, became a freely laid, meandering lane composed of "street furniture".*²⁴ (author's translation).

Alain Colquhoun²⁵ in the book *Collected Essays in Architectural Criticism* (2009) where he presents a retrospective of the problems he had discussed throughout the 1960–2005 period, omits the problem. In Part I, discussing the 1962–1980 period, he did not comment the new tendency. Instead, he discussed the influence of semiotics and structuralism as tools of disintegration of the Renaissance tradition. Although architectural realisations by Khan, Venturi and Denise Scott-Brown are discussed in the text, there is only a mention of Jane Jacobs. Her role in changing urban planning was not shown and the symptoms of New Urbanism were not discussed.

Cullen is not mentioned at all and Lynch is criticised in these words: *Lynch can only deal in an ad hoc way with the city itself, and avoiding all typological analysis, he fails to isolate the characteristics which are peculiar to the modern city*²⁶. Also, Christopher Alexander is not regarded as an important figure (an essay from 1978): *Secretly, Alexander's model refers to a supposed pre-Renaissance or "natural" city and cunningly suggests an abstract methodology by which this image can be achieved in modern, Western society.*²⁷

5. CONCLUSION

The return to fashioning cities in accordance with the needs of users and not the society as a whole was a process spanning the 1960s and 1970s. During the post-war period urban and architectural spaces in a traditional sense were shaped in different ways. There were a number of reasons for this: spatial modular elements were used to interpret mobility and small scale (the Netherlands), sense of structural forms close to historic designs were recreated (Rossi), the "modernism with a human face" concept emerged, dictating a softening of the designed spaces by taking into account mental patterns typical for the users (the Smithsons). On the other hand descriptive "corrections" (Alexander, Lynch) of cities, or adjustments of urban structure fragments based on drawings (Cullen) focused the attention

²⁴ Jencks Ch., *Ruch nowoczesny w architekturze* [Modern Movements in Architecture], WAiF, Warszawa 1987, p. 279.

²⁵ An English architectural critic active from the 1960s, one of the first to have analysed the post-modern and high-tech trends in Europe and investigated problems of Corbusier's architectural ideas.

²⁶ Colquhoun A., *Collected Essays in Architectural Criticism*, Black DOG publishing. London 2009, p. 72.

²⁷ *Ibidem*, p. 71.

of professional circles on the growing problems faced by traditional construction and also newly developed districts.

Gradually interpretations of old urban spaces and traditional architecture gave rise to a number of trends, today permanently inscribed into urban planning and architectural reality.

References

- [1] Banham R., *Rewolucja w architekturze*, WAiF, Warszawa 1979.
- [2] Bardzinska-Bonenberg T., *Ideas behind the changes in the 20th c. avant-garde architecture*, in: J. Charytonowicz, Ch. Falcão (eds.), *Advances in Human Factors, Sustainable Urban Planning and Infrastructure. Proceedings of the AHFE 2019 International Conference*, Springer International Publishing AG, Cham 2018.
- [3] Colquhoun A., *Collected Essays in Architectural Criticism*, Black DOG publishing, London 2009.
- [4] Coyne R., *The opposite of architecture, Reflections on Technology, Media and Culture*, <https://richardcoyne.com/2012/01/28/the-opposite-of-architecture/#comments> (access: 01.2012).
- [5] Cullen G., *The Image of the City*, The MIT Press, Cambridge, London 1997.
- [6] Engler M., *Gordon Cullen and the "Cut-and-Paste" Urban Landscape*, 2013, <https://escholarship.org/uc/item/8gx9226d> (access: 08.05.2019).
- [7] Frampton K., *Modern Architecture: a critical history*, Thames and Hudson, New York 1994.
- [8] Jencks Ch., *Ruch nowoczesny w architekturze* [Modern Movements in Architecture], WAiF, Warszawa 1987.
- [9] Kloos M., Behm M. (eds.), *Hertzberger's Amsterdam*, ARCAM/Architectura & Natura Press, Amsterdam, 2007, <https://www.hertzberger.nl/index.php/en/component/content/article/2-uncategorised/228-childhood> (access: 09.05.2019).
- [10] Olivera M., Centraal Beheer Office, Apeldoorn, Netherlands Hermann Hertzberger, https://melanieaolivera.files.wordpress.com/2018/01/olivera_module9_centraalbeheer.pdf (access: 05.05.2019).
- [11] Rossi A., *Architecture of the City*, Graham Found. for Advanced Studies in the Fine Arts and the Institute for Architecture and Urban Studies by MIT, Cambridge 1982.
- [12] Sabatino, M., 2011, *Pride in Modesty: Modernist Architecture and the Vernacular Tradition in Italy*, University of Toronto Press, Toronto, Buffalo, London 2011.
- [13] Smithson A. P., *Urban Structuring*, Studio Vista; Reinhold London 1967, p. 14., <https://bibliodarf.files.wordpress.com/2014/06/smithson-a-p-urban-structuring-extractos.pdf> (access: 05.05.2019).
- [14] Söderqvist L., *Structuralism in architecture: a definition*, Journal of Aesthetics & Culture, 2011, no. 3, DOI: 10.3402/jac.v3i0.5414, <https://www.tandfonline.com/doi/full/10.3402/jac.v3i0.5414> (access: 12.06.2019).
- [15] Strauven F., *Aldo van Eyck – Shaping the New Reality, From the In-between to the Aesthetics of Number*, CCA Study Lectures, [seventeenplaygrounds.com/wordpress/wp-content/uploads/2017/02/Shaping-the-New-Reality-From -the-In-between-to-the-Aesthetics-of-Number.pdf](https://seventeenplaygrounds.com/wordpress/wp-content/uploads/2017/02/Shaping-the-New-Reality-From-the-In-between-to-the-Aesthetics-of-Number.pdf) (access: 07.05.2019).

- [16] Wojtas Swoszowska J., *Aldo Rossi – Architekt i teoretyk. Dylematy architektury po modernizmie*, [Aldo Rossi – architect and theoretician. Architectural dilemmas after modernism], http://www.kaiu.pan.pl/images/stories/2.2012_pdf/J.Wojtas.eng.pdf (access: 07.05.2019).

Author's note:

Professor of University of Arts in Poznan. Obtained MA and PhD in Architecture diplomas in Silesian University Technology in Gliwice and DSc (Architecture) in Wroclaw University of Science and Technology. Professional practice at GRM Kennedy & Partners Architectural Office in Edinburgh and subsequent extensive work in architectural firms in Silesia. Simultaneously, from the 70' associated with her parent Faculty of Architecture in Gliwice, Division of History of Architecture and Town Planning. She took part in government scientific programmes of the 80'. From the 90' on, she lives and works in Poznan and concentrates on research, lecturing and promoting young scientists and academic teachers which resulted in fifteen accomplished doctorates of Polish and foreign students, completed in Poland and abroad. As a head of Department of History of Architecture and Urban Planning of Faculty of Architecture in Poznan University of Technology till 2015, she was an author of the History of Architecture teaching programme compatible with the UE standards. From 2003 till now she is also a professor of University of Arts in Poznan, Faculty of Architecture and Design, where she lectures History and Theory of Architecture and Town Planning. Author of more than 200 publications and conference papers published in Poland and abroad. She was invited to give lectures in universities and institutes in Germany, Italy, Belorussia, Ukraine and China.