The four factors influencing media architecture

G A Ptichnikov*a, A V Antyufeev*b

*aDepartment of Theory of Architecture, Scientific Research Institute of Theory and History of Architecture and Urban Planning, branch of the Central Institute for Research and Design of the Ministry of Construction and Housing and Communal Services of the Russian Federation, 9, Dushinskaya St., Moscow 111024, Russia
*bDepartment of Urban Studies and Theory of Architecture, Architecture and Construction Institute, Volgograd State Technical University, Academichekaya St, Volgograd 400074, Russia

E-mail: urbanistika_14@mail.ru

Abstract. Media architecture includes various objects (buildings, constructions) with any form of information, interactive and dynamic image technology, which are designed for information exchange of urban community. By means of digital media new architecture changes its external image and social role of public spaces of the city. The capabilities of a media object to influence the consciousness of a person and the urban environment are greatly enhanced by a wide range of visual and dynamic effects. The article deals with the aesthetic characteristics of media objects, on examples of a number of implemented projects.

The aim of the work is to study factors influencing media architecture. The authors highlight the factors that drove the creation of media architecture: digital technology; media development; visualization of culture; Mass culture.

1. Introduction

Media architecture is a form of art which works are created and presented by modern information and communication technologies, mainly such as video, computer and multimedia technologies and Internet. Media architecture includes various objects (buildings, constructions) with any form of information, interactive and dynamic image technology, which are designed for information exchange of urban community. By means of digital media new architecture changes its external image and social role of public spaces of the city. Digital data streams are invading the space of a modern city, transforming it, uniting with it. Australian urbanist S. McQuire writes that a modern city is a media-architectural complex, arising from the dissemination of spatial media platforms and creation of a hybrid spatial ensembles [1]. Thus, the ubiquity of digital networks in recent decades has led to the creation of media-architecture as a new type of architectural objects.

The aim of this work is to study the reasons that influenced the emergence and development of media architecture.

2. Theoretical research base

In the context of the present study the most relevant are scientific research which study architecture in terms of information and digital culture integrally. These include works of D.V. Galkin, I.A. Dobritsina, M.P. Nazarova, T. Ito, A. Pikon, Y.D. Prudenko [2-5].
A number of foreign specialists dedicated their researches to study the problem of media architecture as a new phenomenon in the modern city and that is due to the fact that the mass appearance of such objects occurred primarily in cities and capitals of the developed countries of West and East.

The entire range of these works can be divided into the following major features:

- study of the technical capabilities of the media architecture (M. Brynskov, S. Boring, H. Haeusler, K. O’Harra, J. Molone) [6];
- socio-cultural quality of media architecture, content, social and informational exchange and interactivity (M. Bohmer, P.T. Fischer, S. McQuire, N. Memarovic, J. Müller, R. Schroeter, M. Struppek, N. Valkanova);
- architectural qualities of media architecture (P. Dalsgaard, S. McQuire, A. VandeMoere, R. Venturi, N. Wouters) [7;8].

3. Hypothesis research

Four main factors, in our opinion, influenced creation of media architecture:

- digital technology (technical turn);
- development of media (medial turn);
- visualization of culture (iconic turn);
- mass culture.

The term “turn” is understood as monumental reinterpretation of previously recognized scientific statements, change of cogitation paradigm, change of principles and style of philosophical researches of the majority of thinkers in a particular period of time.

4. Technical turn

Technological upheavals have always been strong thrust in the development of architecture, its driving force. Technological leap and digital revolution have become the most significant factors in the emergence of media objects in architecture. New information technologies have caused radical changes in architectural design and planning of urban spaces. New digital tools have contributed to the inclusion to architectural sphere of such qualities as architecture dynamism, variety, animation.

New requirements for diversification the use of digital tools were meant to make architecture not only look like a living organism, but act as a living system, responding to the actions of a person. In other words, digital technology aimed to provide gentle and effective interaction between the city and the man.

The concept of interactive architecture involves the creation of buildings as spaces of public activity and communications, “dynamic platforms that are capable of stimulating events and communication and bring pleasure” [9]. The architecture should seek dialogue and reciprocal reactions, should react in response to signals or actions because it obtains necessary technological tools.

Media architecture is the answer to the assigned tasks. Its interactive qualities are formed by digital technologies to generate not only the visual complexity, but to create an interface, playing an active role in both digital and physical environment, transmitting information by visual images. As a result media architecture becomes a “connective tissue” (linking component) between the two different realities- physical and virtual space.

As a result, the modern city is transformed into a hybrid space in which physical (tectonic) and intangible (virtual, digital) spaces are interwoven and interbred. In this hybrid space, there are constant communication processes of interpenetration, attainment of new and identification of the invisible links and accordance and associative series. The living space is transformed into an overwhelming media environment [10]. As noted by S. McQuire “hybrid spatial ensembles which were born by media merge and other urban traffic systems become important strategic points, where political organization of space and society is constant” [1].
5. Medial turn

Another factor, which influenced the conversion of both architecture and public spaces of the city, was the emergence and further development of media-information sphere in the twentieth century. The rapid development of communication media resulted in replacement of a traditional printed text by versions of texts associated with film industry, radio, television, video, Internet, mobile phones, etc. Development of national broadcasting systems in the post war period (1950-60) meant not only “colonization” of public electronic media like radio and television, but also media space which took more and more responsibilities of public space [1]. Creation of a new linking network - Internet enabled media to turn into a dialogue from a monologue. Sociologist M. Castells wrote that in a modern society there is a new spatial form, typical of social practices that dominate in the networked society and form space streams. According to M. Castells, streams are goal-oriented repeated programmable sequence of exchanges and interactions between physically separated positions which are occupied by social factors [11].

Digital data stream is an important part of the transformation of today's urban space, and an essential instrument for comprehension of complex forms and dynamic forces of modern urban life [12]. Accretion of media and urban space leads to a complex range of possibilities. Inclusion of such devices as cameras, motion sensors, radio frequency identification devices and other sensors in urban infrastructure and their connection to computers and databases for the analysis of the received information leads to the creation of new opportunities for space organization. If earlier content of media architecture was somewhat static and dependable entirely on the objectives and designer's imagination, now with the advent of affordable Internet in tandem with the development of new media resources, there is an ability to create objects where the content is driven by social networks data link, weather reports, geolocation and various Internet data. There are now technologies that not only meet human needs, but also anticipate them on the basis of analysis of our behavior. All these factors change media architecture image and the environment as well.

Interactivity, as the nature of the interaction, effected many aspects of design and functioning of the architectural object and has become an integral part of the theory and practice of many architects. Examples of interactive architecture show a variety of approaches to the creation of similar architecture. For example, digital Water Pavilion (architect C. Ratti), created for the universal exposition in Zaragoza (Spain) in 2008, was created due to the idea of using water as a dynamic, flowing substance that responds to human actions.

6. Visual turn

Third, no less significant factor, that has led to the emergence of media architecture, is expanding culture visualization of the 21st century society. The current time can be called the time of “omniscience eye” when visual perception overshadowed all other types of reality comprehension. Visual culture has gradually become the dominant form of contemporary culture and everyday life of modern people. In 1995 W. Mitchell wrote that the influx of images means “pictorial turn” to fundamental changes in the culture [13]. Mitchell assumes that science of world exploration focuses more on image than on the text with all its inherent metaphorics. The transition from verbal ways of transmitting information to visual images has been dubbed as the “visual turn” or “iconic turn”. The term “iconic turn” was offered by a German art historians in 1994.

Many researchers consider epochal turning point in history to be the result of the changing role of the visual image [2,10,13,14]. So, society becomes fully modern, when its main characteristic is information, the most important part of which, is the image, its production and consumption. Orientation towards visual forms of experience and public life images, as the way of communication, have become the basic characteristics of modernity. These visual images and representations to a large extent form a social identity, generate and disseminate social communication.

The most accurate expression of the term "visual culture" are arguments of the American cultural expert N. Mirzoeff, who believed that the visualization of information and images is contingent to globalization in different fields of culture, politics, economics and media, high speed production and
consumption of visual products, screeniness, dominance of the visual media in all areas of daily life and weakening of critical thinking [14].

For the purposes of our research we focus on the phenomenon of modern environment as screeniness. When image replaces the text as the way of communication between people, the main image of media vehicle and media-screens becomes the main image in respect to the subject of our research. Multi-screen media environment becomes everyday environment to a modern person [15]. In mega-cities of the 21st century big and small screens are popularized globally, and determine their daily environment image and modes of communication [16,17].

Modern people are getting used to be between the real publicity of the surrounding three-dimensional space and virtual publicity of large screens. Surrounding oneself with images, a person screens reality (imagines and shields oneself from it by thinner screens TVs, which lost its thickness and merged with “reality”). Media city space seems to be a zone of transitivity between the physical (tectonic) dimensional space, true social reality and virtual interscreen space, where visual ephemeral figuratively-informative substance exists. Such projects, for example, refer to the national library in Minsk (Belarus) (Figure 1).

![Figure 1. National Library in Minsk, Belarus. Architects V.V. Kramarenko, M.K. Vinogradov (2006).](image)

7. Mass culture
The fourth factor influencing the emergence of media architecture is mass culture. Since the 19th century the creation of an almost endless source of wealth and comfort, as well as removing the social restrictions have helped to create new historical phenomenon - mass society with its special mentality and distinctive culture. Mass society has generated its own culture - mass culture. This culture distributes its spiritual and material values to the “average” level of development of mass consumers, wide layers of society. Amusement and entertainment, creation of pseudoreality- is the essential function of mass culture. Common distinctive features are as follows: maximum proximity to basic human needs, constant growing demand for its products, focus on the natural sensuality and emotion, simplicity in production of a consumed product quality, etc.

Considering the contemporary media architecture as a part of mass culture, the following characteristics inherited by mass culture in its genesis can be highlighted. These are: entertaining and spectacular purpose, marketability with a focus on market requirements, advertising-image character of architectural products [18]. One of these objects is in the Hotel Casino Grand Lisboa (Grand Lisboa), located in the Centre of Macau S.A.R. (China). In 2007 on the façade of the Casino the system that combines unusual outdoor lighting with the ability to broadcast text messages, graphics, animation, and video was installed. The main sign of video-installation is lotus - symbol of Macau S.A.R.
Another feature, which is determined by mass culture, is use of clichés, imprints. Society needs constant confirmation of “the great truths”, which consist of real timeless truths and simultaneously-of the platitudes, discarded with thoroughness and meticulous accuracy. Art clichés are assimilated faster, appealing to the existing well-established, multiplevary knowledge and perception views. They help a person to navigate the dense media space, have links to similar artistic images and links to the entire series of motives and associations [19]. Russian art critic Elena Salnikova emphasizes, that in symbiosis with familiar clichés, consciousness senses new conceptual twists and turns, new images and motifs easier, showing unusual content [10].

8. Conclusion

So, let's summarize. Digital era in which we all live now generates an entirely new space of human life - media environment, with objects of media architecture which are considered to be the substantial elements. From rare and exotic phenomenon of urban life media architecture is becoming an increasingly accessible, widespread and daily element of urban space. Herewith, if visual and interactive components of media architecture have been considered as an addition to the main architectural volume for a long time, a kind of «decoration», unable to exist independently (media screens and media facades), then now, they are considered as an independent phenomenon [20].

If architecture implies sophisticated perception of it as a spatial art, including both visual and kinesthetic and aural and tactile types of perception, media architecture is created, focusing solely on visual perception, and whereby there is an aspiration to seek simplification and clarity of the information to the audience.

The phenomenon of media architecture in modern culture is determined by its abilities to create new forms of communication and impact on human consciousness as well as the creation of qualitatively new hybrid urban environment, which proposes not only perception of objective reality, but involvement in construction of the artificial world of virtual reality.

References

[1] McQuire S 2010 The Media City: Media, Architecture and Urban Space (London: Sage Publications) p 228
[2] Dobritsyna I A 2013 New problems of architecture in the era of digital culture Academia 4 42–53
[3] Nazarova M P 2012 Architectural space of the city: cultural aspect News of the Voronezh State Pedagogical University 3 73–7
[4] Ito T 1998 Image of Architecture in Electronic Age DOMUS 800 26–37
[5] Picon A 2008 Architecture and the Sciences: Scientific Accuracy or Productive Misunderstanding? Precisions - Architecture between Sciences and the Arts ed A Moravansky and O W Fisher (Berlin: Jovis) pp 48–81
[6] Brynyskov M, Dalsgaard P, Ebsen T, Fritsch J, Halskov K and Nielsen R 2009 Staging Urban Interactions with Media Façades IFIP TC13 Int. Conf. on Human-Computer Interaction (Interact ’09) (Berlin, Heidelberg: Springer) pp 154–67
[7] McQuire S 2010 Rethinking Media Events: Large Screens, Public Space Broadcasting and Beyond New Media & Society 12(4) 567–82
[8] Wouters N, Keignaert K, Huyghe J and Vande Moere A 2016 Revealing the Architectural Quality of Media Architecture MAB Proc. of the 3rd Conf. on Media Architecture Biennale (New York, NY, USA: ACM) 5
[9] Ratti C and Claudel M 2016 The City of Tomorrow: Sensors, Networks, Hackers, and the Future of Urban Life (New Haven; Yale University Press) p 192
[10] Salnikova E 2017 Visual culture in the media environment. Current trends and historical excursions (Moscow: Progress Tradition Press) p 552
[11] Castells M 2000 Information Age: Economy, Society and Culture (Moscow: State University Higher School of Economics Press) p 608
[12] Manovich L 2006 The Poetics of Urban Media Surfaces. First Monday, Special Issue 4: Urban Screens: Discovering the potential of outdoor screens for urban society

[13] Mitchell W J T 1995 What Is Visual Culture? Meaning in the Visual Arts: Views from the Outside: A Centennial Commemoration of Erwin Panofsky (1892–1968) ed I Lavin (Princeton, NJ: Princeton Institute for Advanced Study) pp 207–17

[14] Mirzoeff N 1999 An Introduction to Visual Culture (London; N. Y.: Psychology Press) p 274

[15] Ptichnikova G and Antyufeev A 2011 Mass Society and Mass Architecture Sociology of a City 2 3–10

[16] Nielsen R 2009 Staging Urban Interactions with Media Façades IFIP TC13 Int.Conf. on Human-Computer Interaction (Interact '09) (Berlin, Heidelberg: Springer) pp 154–67

[17] Manovich L 2001 The Language of New Media (Cambridge, Massachusetts: MIT Press) p 202

[18] Ptichnikova G and Antyufeeva O 2017 Art in the Architectural Space of the Modern City Sociology of City 2 62–74

[19] Virilio P 1998 We May Be Entering an Electronic Gothic Era Architectural Design Architects in Cyberspace II vol 68 11/12 61–5

[20] Virilio P 1991 The Lost Dimension (New York: Semiotext(e)) p 148