ARCHITECTURAL MEMORY AND FORMS OF ITS EXISTENCE

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Abstract. The article attempts to highlight the traces of memory in the theory, history and practice of architecture. The subject of research is the existing forms of memory in architecture. It is traditionally accepted that the "history of architecture" as a science is the main repository of knowledge about the evolution of architecture. Facts and artifacts, descriptions of monuments and cities are retained in it. The article emphasizes that the traditional "history of architectural objects" is not the only form of memory. Another equally important and complicated aspect of the architectural memory is detected during the decoding of the evolution of project activity and its language.

Analysis of the evolution of architecture allowed us to differentiate the epochs in which historical thinking prevails: the Renaissance, Romanticism, Eclecticism, Art Deco, Postmodernism. They are characterized by such ways of thinking as dialogical, historical and typological, historical and associative. They are opposed to design approaches in which abstract thinking dominates (Art Nouveau and Modernism).

The article shows that the concept of architectural memory has many shades and manifests itself in a variety of different forms of professional consciousness. As historical knowledge, memory exists in such forms as: a chronological description, science of history, evolutionary studies, catalog of styles, museum, archive. In designing and its language, memory is represented in such forms as canon, dialogue with bygone era, norm, architectural fantasy, remembrance, historical association, reconstruction, restoration and others.

It is shown that the most important way of storing and transferring information is the architectural language and compositional logic. Postmodern consciousness raised the problem of loss of memory and the development of architectural language and communication of culture.

Keywords: history of architecture, architectural memory, architectural activity, language of architecture, compositional thinking.

Introduction

Architectural memory is one of the manifestations of cultural memory of society about the past, preserved in the monuments of culture and architecture, and in the social tradition of their use. The concept of memory is not deeply researched in architectural theory. However, memory is the main storage facility of information and skills in the architectural profession.

It is traditionally accepted that the "history of architecture" as a science is the main repository of knowledge about the evolution of architecture. Facts and artifacts, descriptions of monuments and cities are retained in it. But are these traces of memory sufficient for the architects professional activities? What other forms of memory are represented in the architectural profession? Is the architect free to choose historical memories and how does he/she use them in his/her design practice?

Memory is the main way of storing information and skills in the architectural profession. However, in architectural theory the concept of "memory" is not deeply studied.

Interdisciplinary historical memory concept in a broad philosophical, sociological and cultural sense practiced by such distinguished scholars as the French philosopher and sociologist Maurice Halbwachs, who introduced the distinction between "individual and collective memory" (Halbwachs, 1992), German Egyptologist Jan Assmann – introduced the concept of "cultural memory" (Assmann, 2005), French scientist Pierre Nora (Nora, 1996–1998) – developed the concept of "places of memory", and many other historians and cultural scientists (Patrick H. Hutton,

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Frances Yates, Andreas Huyssen, Umberto Eco, Michel Foucault). However, philosophical works almost did not affect the architectural problems of memory. Only the concept of "places of memory", which focuses on memorial complexes and iconic places, most often national or military events, has been widely interpreted in architecture (There is a lot of literature on this subject, but we will not touch it). Most often, architectural concepts interpret the concept of collective and individual memory, introduced by Halbwachs. We will also discuss this issue.

Architecture, as one of the forms of art, stores information about important phenomena of the spiritual and material culture of mankind. However, architectural memory has a certain specificity associated with the subject of its interests. The study of the concept of memory in architecture became engaged recently. The idea of considering the architecture of the city using the concept of memory was proposed by Aldo Rossi in his book "City Architecture" in 1966 (Rossi, 1980). In contrast to the masters of modernism, who sought to create purist forms and spaces, Rossi sought to regain interest in the historic city. He turned to the individual memory of the consumer and the designer in order to focus on the semantics and phenomenology of the architectural environment. The phenomenon of individual and collective in the concept of A. Rossi is considered by Seungkoo Jo in the article "Aldo Rossi: Architecture and Memory" (Jo, 2003).

Stephen Dobson's article "Remembering in the city: characterizing urban change" is devoted to urban planning issues of architectural memory. "This paper has aimed to illustrate how retrogressive analysis, which considers all urban space as being of potential historic significance with the ability to convey a readable past in many forms, can be used to map the potential for double exposure". This perspective allows us to understand the "conceptual spaces" that are read in the "genetic plan of urban spaces" (Dobson, 2011, p. 108).

Some publications touch upon particular issues of the manifestation of architectural memory in specific monuments, for example, N. Ghosh reviews "Modern Designs: history and memory in Le Corbusier's Chandigarh" (Ghosh, 2016), and demonstrates the interpretation of the historical semantics of a modern object.

Wagih Fawzi Youssef in his article "Architecture: Space, Place, and Memory" connects memory with psychological processes of perception. "The essay points out how architecture captures past and present memory. Spatial imagery and creative architectural design have an impact upon our reasoning and upon making sense of the world" (Youssef, 2015, p. 1). The author also emphasizes that "memory ensures cultural continuity even though the picture of the past changes all the time, basic traits and values of the people are maintained. … Collective memory is essentially a reconstruction of the past in the light of the present" (Youssef, 2015, p. 7).

Eleftherios Pavlides in the article "Architecture as Memory" highlights three realms of architectural memory, namely: the personal experiential memories of the clients and future users, the life long experiential memory of the architect, the collective memory of architecture, that is "the codification and transmission of architectural principles, rules, and theories, through apprenticeship, education, or literature", which are "not hermetically separated or mutually exclusive" (Pavlides, 1990, p. 28–29). Thus, personal and collective memory in architecture are combined.

The general theoretical works can also include the essays by A. Rappaport "To the understanding of the architectural form. From metaphor to myth. History and memory in architecture" (Rappaport, n.d.) and many others. The listed articles demonstrate a variety of aspects of considering architectural memory, but do not set themselves the goal of generalizing and systematizing professional ways of understanding the past and revealing the forms of existence of memory.

Architectural memory is very multi-faceted. It has many semantic connotations. We will consider it in two main aspects:

– as a traditional repository of cultural historical information reflected in architecture;
– as a mental phenomenon involved in design activities.

There are many ways to explore this issue. We will attempt to examine traces of memory in architectural theory by identifying the concepts used in architects' thinking about the past, and the forms of manifestation of memory in the architect's design activities. Studying the ways of architectural thinking and the artistic languages of their expression (Remizova, 2015), will allow us to establish the relationship between old accumulated knowledge and new methods of using this knowledge in modern architectural practice.

We set ourselves the task of identifying the forms of existence of architectural memory, i.e., those structures that allow us to preserve and relay architectural knowledge and professional skills in working with architectural memory. For this we need the historical-genetic method of research which allows us to track the patterns of change in our subject.

As the study shows, "the history of stones" is not the only form of saving information in architecture and it is far from unique. Broadly speaking, phenomena reflecting the architectural memory may be divided into two basic groups: 1 – historical knowledge as a system of information about something past or lost, 2 – traces of memory detected during the decoding of the evolution of project activity and its language. Let us consider them separately.

1. Historical knowledge about architecture and its evolution

Knowledge about architecture is very diverse and its preservation is a special and very difficult task. Over the centuries historical knowledge took diverse forms, which were caused by the epoch and its requirements and conditions. In Ancient and Middle Ages, knowledge in the field

of architecture was preserved in the form of theoretical description (Vitruvius) and in the form of practical skills expressed in canons. However, the concept of time was not present in either form. The process of changing knowledge or skills was not of interest to the authors of the treatises. Theoretical knowledge and the skills recorded in them seemed to be unchanged data as well as the very existence of the world and man. Medieval knowledge of architecture did not pretend to have an independent role, separate from religious ideas and positions.

It can be argued that until the middle of the XVI century the question of the volatility of artistic ideas was not raised at all. This volatility was first noted by George Vasari in his "Lives of the Painters, Sculptors and Architects" (*Le Vite de'piu eccelenti Pittori, Scultori e Architetti*) (Vasari, 1996).

In this work Giorgio Vasari first tried to fix the creative art development process, completing all known 178 biographies of Italian artists and architects of XIII-XVI centuries in chronological order. This book was first published in 1550, and once again in extended edition – in 1568. However, the task to trace changes in the art for several centuries, Vasari does not put.

It is believed that starting with J. Vasari, different types of architectural history began to arise. However, this did not happen immediately. It was necessary for a lot of information to accumulate and a large number of archaeological discoveries to happen, for it to become necessary to describe the past like something that can change. Awareness of this problem came in the age of Enlightenment.

In our modern consciousness, the category of memory assumes the existence of ideas about time, however the category of time in architectural science was absent until the mid-eighteenth century. The architects did not realize the evolutionary changes in fluidity and flexibility of time. Thus, "history of Architecture" as the science begins to form in the middle of the eighteenth century, and memory is identified as a chronological description of the facts of the past.

A new way of thinking about the past or lost arises formed under the influence of new philosophical views in the eighteenth century during the Enlightenment (A. R. J. Turgot, I. Kant, G. Vico, J. G. Herder, M. Condorcet, I. G. Fichte, F. W. J. Schelling, G. W. F. Hegel and others). For the first time such a historical genre arises in which the fixing of facts (chronological description) is supplemented by the scientific concept of the evolution of nature and humanity. Archaeologist J. J. Winckelmann lays the foundations for such an approach in his book "The History of Art in Antiquity" (Winckelmann, 1764) and his followers develop his ideas in art history and theory of architecture. The concept of the style and evolution, which Winckelmann entered into use, allowed his followers to present the history of architecture as a series of styles which change each other. Actually from this moment the knowledge about ancient architectural monuments and bygone epochs obtained as a result of travels, archaeological excavations and military campaigns, begins to be saved

in the form of catalogs of styles, museums and archives. In this form, it possesses the features of collective memory, as it summarizes all the knowledge of the architecture of the past accumulated at that moment.

From the second half of the XVIII century, the "History of Architecture" began as a science, since the scientific concept is superimposed on the time scale. It actively expanded in the second half of the XIX century. In the second half of the 19th century it actively split into multiple branches. A plurality of historical views, based on individual concepts begin to form: J. Ch. Burkhard, G. Wolflin, A. Hildebrandt developing the story of architectural form, Viollet-le-Duc creates the "Dictionary of French architecture in XI-XVI centuries" in 10-volumes, G. Semper in his book "Practical Aesthetics" lays the beginning of rationalism and functionalism, A. Choisy writes the history of architectural constructions. Representatives of the Vienna School of Art studies create original evolutionary concepts based on new theoretical notions:

- history of art will by A. Riegl as the main driving force behind the development of art;
- history of the iconography by E. Panofsky, addresses to the subjects and meanings of art works;
- Art history as the history of the struggle between spirit and matter by Max Dvořák, which considers that it is necessary to study the changes in the formal language of artists genetically, and others (Istorija arhitektury v izbrannyh otryvkah, 1935). The listed history of architecture was distinguished by one special quality – all of them were based on original theoretical concepts that were considered in evolution. Their authors attached great importance to the development of such new theoretical concepts as form, space, artistic will, perception of architectural form, etc. Thus, in these works theory and history were combined as a form of architectural reflection, and architectural memory was enriched with new mental ways of remembering the past and present (inventory, cataloging, description, collecting and museification, etc.). From a philosophical point of view, these stories can be called individual or private, as they carried a personal point of authors' view on history, i.e. represented a personalized memory of the architectural history.

New rationalistic views, which are based on such concepts as function, structure and form, won in architectural theory in the early twentieth century. These concepts are interpreted as timeless, that are universal, not related to a specific historical era. For example, this gives reason to Z. Giedion wrote the book "Space, time and architecture" (Giedion, 1941), in which history is interpreted as the evolution of rationalist (functionalist) submissions. Following Giedion, the similar histories of modern architecture have been written by K. Frempton M. Ragon, P. R. Banham, A. Whittick, V. Scully, N. Pevsner, R. Wittkower and others. However, their main feature is the fetishization of history on the universal concepts and denial of the historical and cultural meaning of architecture. Thus, historical

knowledge acquires the features of abstractness and universality, and the era of the Modern Movement becomes the dominating object of research.

From this point an attempt to create a universal or world history of architecture, which gained popularity in the second half of the twentieth century, is made. Using the theoretical concept of Halbwachs, these works can be interpreted as phenomena of collective memory, while the author's private stories of their predecessors are manifestations of individual memory.

Return to historical values takes place in the 1960s as a result of a sharp critique of Modernism and the emergence of the ideas of Postmodernism, however in a different form. And though postmodernists did not set the task of rewriting the history of architecture, they still changed the architects' attitude to architectural history. This became clear in their concept of the evolution of the architectural language and practical activity; they began to base their ideas on historical and cultural context (Venturi, 1966; Venturi et al., 1972; Jenks, 1977; Prak, 2019; Rossi, 1982).

Thus, architectural memory in the form of historical knowledge constantly changed its forms, starting from a simple chronology of facts, evolutionary teachings, built on the basis of individual key professional theoretical concepts and ending with the general history of architecture. This gave rise to various ways of understanding the past architectural profession (description, analysis, comparison, classification, inventory, cataloging, collecting and museumification, etc.). A process of mutual rapprochement of theoretical and historical knowledge has been outlined. Historical knowledge of the evolution of architecture takes on the features of objectivity characteristic of collective memory, in contrast to individual recollections of the past.

2. Traces of memory in design activities and its language

As the study shows "the history of stones" is not the only form of saving information in architecture. Another equally important aspect of the architectural memory is detected during the decoding of the evolution of project activity and its language. Such an approach is the task of modern architectural science.

Forms of the architectural memory (methods of memory) in their practical implementation can be traced by considering the architectural activity and thinking in the process of historical development of architecture according to epochs.

In ancient cultures canon was the most common form of memorization. It allows you to keep once opened skills by repetition of the same actions that ensure getting monotonous results. Ancient Greek order canon or medieval canon of triangulation, as well as many other canons are a bright confirmation of this. In ancient cultures, the establishment of a religious ritual ensured the repeatability of not only the process of deity worship (liturgy), but also the repeatability of the artistic forms of the architectural environment. With the help of the canons local traditions were developed and the continuity of symbolic forms and meanings that they passed down from generation to generation was preserved. The canon ensured the sustainability of the existence of ancient cultures and their architectural design (Figure 1).

Actually the memory of something lost or forgotten arises for the first time in the Renaissance epoch. The first time an architect begins to realize the fact of loss something of value when faced with majestic ruins of a bygone era or ancient manuscripts. The ancient Roman buildings,
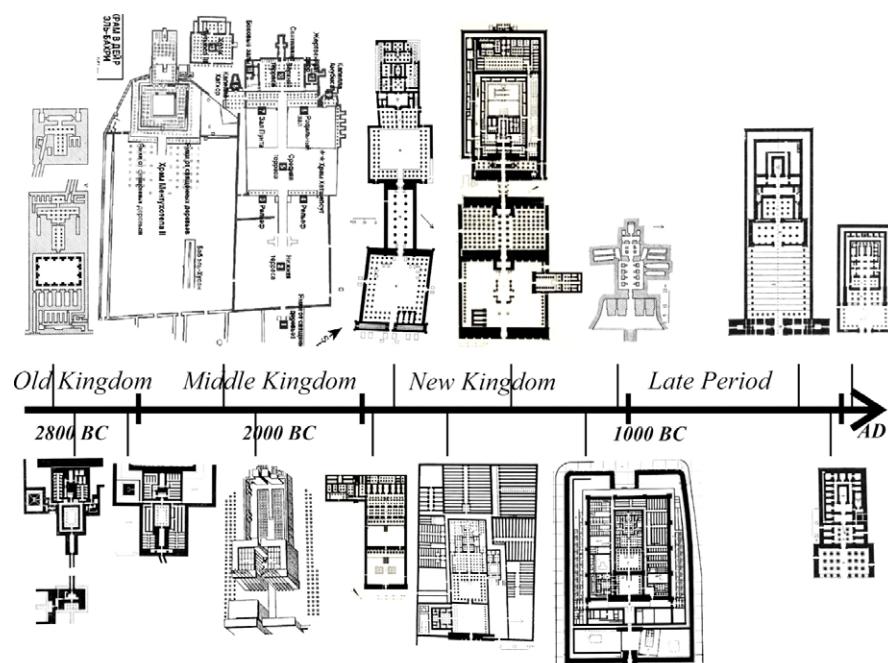

Figure 1. Scheme of the evolution of the canon for constructing of ancient Egyptian temples
(source: author scheme)

which in the Middle Ages did not notice or used as stone quarries, in the Renaissance era began to attract the attention of Europeans. Antiquity appears as a conversationalist in front of the Renaissance thinker. For the first time there is a desire to compare yourself with the past, to feel the time distance.

It is appropriate to remind the history of the discovery of lists of Lucretius "On the Nature of Things", "De rerum natura" and Vitruvius' "10 books about architecture", "*De architectura libri decem*", found Poggio Bracciolini in St. Gallen monastery in 1417 (Grinblatt, 2014). These books have a lasting impression on Renaissance thinkers such as L.-B. Alberti, Leonardo Bruni and other humanists, and caused them to understand the antique works as the foundation for creating new ways of thinking and new artistic language. The memory of antiquity (Latin revival, appeal to the order system) generates a dialogue with antiquity in the literal and figurative sense (Batkin, 1978). For example, when L.-B. Alberti was commissioned to reconstruct the "10 Books on Architecture" of Vitruvius, Alberti wrote his treatise "10 Books on Architecture" (De re aedificatoria) (1452) while translating. His main task was to rethink the experience of the ancient thinker and express his own thoughts. That is, it can be argued that Alberta led the dialogue with Vitruvius.

It was Renaissance thinkers who were the first to think about forgotten ancient values, which led to the concept of a monument and led the first museums (gardens, galleries, offices, kunstkamera, pinakothek) as the keepers of artifacts of bygone days. An example is the Pope's Villa in the Vatican. In 1471 Pope Sixtus IV presented the city of Rome a collection of antique bronze sculptures. Artifacts were placed on Capitol Hill. In 1536, Michelangelo Buonarroti designed a complex with three palaces and an area between them, which included the Palazzo Nuovo, the first Roman museum open to the public. Thus, the museum became one of the first forms of storage of historical information and memories of a bygone era.

Thanks to active theoretical discussions at the Platonic Academy in Florence, numerous reconstructions of Latin manuscripts and their translations into Italian, a dialogic way of thinking is being formed. This process contributes to the creation of a new language based on the order system in comparison with medieval architecture.

Thus, desire to recall the past is fixed in the new results of architectural activity: in designing in an order, creating illusory spatial compositions that resemble ancient images but do not copy them. A vivid example of such historical reflection is the Palazzo Rucellai in Florence. Alberti laid on the rusticated facade the traces of the order colonnade, which alludes to the multi-tiered colonnade of the ancient Roman Colosseum. He also created a ragged edge, emphasizing that the facade is a picture plane on which not real designs are demonstrated, but aesthetic values – worship of Antiquity (Figure 2).

Thus, in the Renaissance epoch for the first time the question was raised about the forgotten ancient values that led to the emergence of the concept of monument and the creation of the first museums. But the main achievement was a new form of thinking – "dialogue" with antiquity and the development of order language in architecture.

Adoption of the Roman ideal as a role model in the classical epoch leads to the rationing of creative activity by using a pattern, the creation of universal rules for

Figure 2. Comparison of the facade of the Palazzo Rucellai with the Colosseum
(source: author, Rome – 2011, Florence – 2006)

constructing orders and formation of normative and rationalistic way of thinking. The rules of thinking in architecture were developed, based on the Cartesian philosophy. These rules have been implemented in the French Academy of Architecture in Paris, and F. Blondel recorded them in his five-volume textbook "Lessons of architecture" (Blondel, 1675–1683). Thus, the memory of Antiquity was fixed in the form of a norm to design in an order. Students mastered the order language, and then relayed it into architectural practice.

In the Enlightenment and Romantic epochs attitude to the past changes and takes on new forms. The nostalgia of a bygone era creates fantastic images. Romantic language original, as architects refer us to epochs which are not yet known and far removed. Fantasy, guesses, dreams form the basis of cycles of engravings by Giovanni Battista Piranesi "Antiquities of Rome," "Prisons", paintings by J. P. Panini, memorials projects crypts, gardens and parks with ruined constructions, etc. In the romantic genre there is a high proportion of freedom. An architect is not held back by the rules of style, because he does not know them yet. The language of architecture becomes very diverse, polysyllabic and free. Famous modern architect Peter Eisenman, explaining the logic of romanticism, says that "Time is not fixed in the present – it is in the past and in the future." For example, "in the 18th century, Piranesi created a map of Rome, on which he painted buildings of the 15th and 16th centuries, he moved some of the buildings and invented others. It is such an imagination that I would call deconstructivism. Imagination in which there is no certain time, there is no certain place. This mobility is the intersection of contexts, the intersection between time and space, between the past and the present" (Kurdjukova, 2010).

Epistemological threshold of XVIII century, which caused unprecedented interest in the history of different countries and peoples, accompanied by the discovery of Pompeii and Herculaneum, Palmyra and Baalbek and others antiquities generate a new look at the past as on a piggy bank of values that can be used in own work. Since the "discovery" of the ancient Greek art and the "recognition" of its superiority over the ancient Roman, as well as familiarity with the ancient Egyptian and oriental cultures the boundaries of architectural memory greatly expanded. The multiplicity of models for imitation and their diversity becomes apparent.

In the period of eclecticism architectural memory develops by the inventory and systematization of the newly opened last. Catalog, typology, historical description, measurements, sketches, drawings of ancient buildings have become a tool of memorization, on the one hand, and material for own creativity – on the other. A striking example is the textbooks of J. N. L. Durand, written by him for the French Polytechnic School in Paris (Durand, 1800–1801; 1821). The combinatorial design method reflects the erudition of the author of the project, and appeals to the viewer, who must evaluate it. Historical and typological way of thinking serves as a basis for the forma-

tion of a very varied, polyphonic language, based on the knowledge of the past.

In contrast to romanticism, eclecticism operates by cataloging finished forms enshrined in styles. Language of eclecticism is diverse and polyphonic. It is a peculiar combination of already known. Morphology of the borrowed style remains practically unchanged. Semantics and syntax are changing, i.e., an architect expresses new meanings or writes new "texts" with the help of a new method of combining and the combination of already known forms. In the thesis "Historicism in the development of architecture" by Lviv scientist S. Linda "it is proved that the historicism in architecture is closely related to the general genetically meaningful cultural space that is why its existence is determined by the actual cultural situation. The dual nature of the mechanism for actualizing the phenomenon of the historicism in architecture is initiated by the processes of meaning-genesis and morphogenesis" (Mikolaïvna, 2013).

Secession was the first style that sought to free itself from the abundance of historical forms and norms, but recalls the craft as a creative process which sees in the archaic and medieval. Appeal to nature, comparing the architectural object with the body forces the architect to clean the architectural structures of the classic decor and identify their tectonics. Here the process of erasing memories from professional architectural memory begins.

Despite the incredible richness and diversity of eclectic language in the early twentieth century happens radical rejection of the historical heritage, which is associated with the search of absolute and universal criteria, of universal concepts such as shape, space, time, function, construction. In the early twentieth century, the rejection of the historical heritage in design practice led to the purification of the architecture to a crystal purity and an almost complete loss of memory. In project practice, this leads to the purification of the architectural language from the stylistic layers and leads up structure to the crystalline purity. The compositional work acquires formal character. Object-morphological way of thinking is based on a formal understanding of the composition and erasing any manifestations of past memory (Figure 3).

However, this method is very soon exhausted itself, because has generated unambiguous forms, multiple replication of which are impoverished urban environment and made it a poorly informative, boring and empty. In contrast to this simplification and impoverishment of expressive forms in the late 1950s were voices, calling on an architect to turn to culture and its history. Even the ideologist of modernism, Le Corbusier, was revising his theoretical positions and, for example, in the Chandigarh project radically changed his point on view regarding history and tradition. Nabaparna Grosh showed that in Chandigarh Le Corbusier, despite his desire for minimalism and the simplicity of pure forms, "tried to weave together modern architecture with tradition, and through it, human beings with nature. A careful study of the cosmic iconography of Chandigarh clearly reveals that nature for Le Corbusier was more than a vast expanse of greenery: it was orga-

nized in symbolic ways, as a cosmic form emblematic of Hindu mythologies" (Ghosh, 2016, p. 220). The discussion about the relationship between East and West, the interaction of the past and the present was reflected in Chandigarh in the symbols of the Hindu tradition printed on the walls. "The symbols on the monuments he designed in the Capitol complex displayed the essential unity of humans, nature, and the cosmos. These structures spatially and symbolically represented the primal bond that existed between humans and the natural world. Hindu motifs etched on the buildings depicted the sun, trees, animals, and rivers as the source of life and vitality on earth. In such portrayals, the motifs emphasized the basic harmony and interdependence of nature and humans" (Ghosh, 2016, p. 224). Thus, thanks to this example, we can argue that even in the depths of radical modernism the problem of historical memory was rethought.

In the period between the first and second world wars Art Deco architecture was actively developing in parallel with the powerful current of modernism. The Art Deco language is based on memories of ancient cultures. Art

Deco is similar to romanticism (especially in the USA, where the little-studied exotic culture was interpreted in decorative respect).

Recollection is typical to the architecture of all totalitarian regimes of the twentieth century. Both the Stalin's Empire style, and Speer's neo-classicism and Mussolini architecture drew images from the Roman past (Shirochin, 2017). All these currents in their figurative and spatial expression are closer to eclecticism, because they exaggerate and combine forms of the era of imperial Rome, even though they do it in different ways. For example, Figure 4 shows historical prototypes (the Roman Pantheon and the Tower of Babel), which served as semantic images for the projects of the German and Soviet Art Deco (Figure 4).

Nostalgia for the old Roman greatness, which embodies the power of authority, forces architects to hypertrophied exaggerated shapes of ancient prototypes (forums, triumphal arches, domes, portals ...). For example, Figure 5 shows the process of rethinking the ancient heritage (in particular the Colosseum) by the Renaissance masters (Alberti) and turning the antique image into a conditional

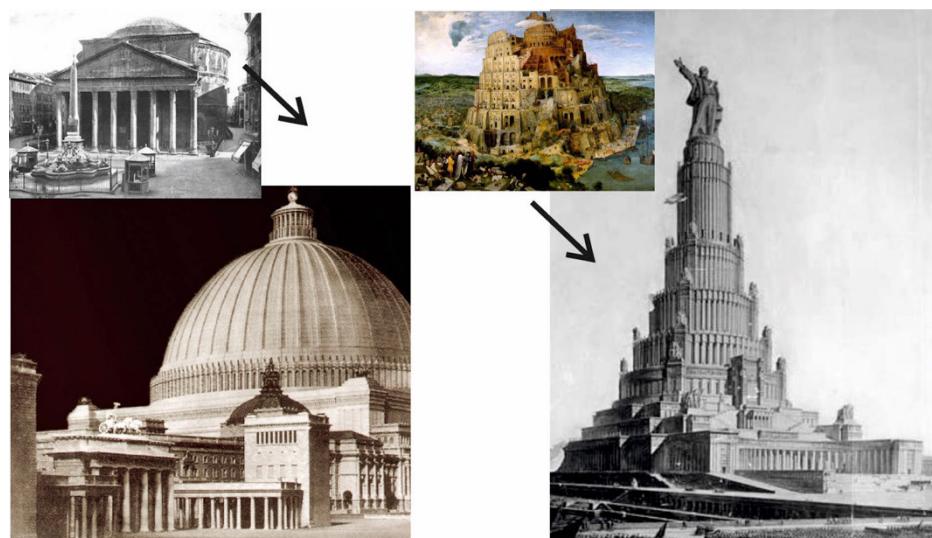Figure 3. Abstracting the form. Pavilion in Barcelona by Mies van der Rohe (source: author, 2013)

Figure 4. The method of historical association. Comparison of the Hall of Fame in Berlin and the
Palace of Soviets in Moscow with ancient and mythological prototypes (source: author scheme)

mark on the facade of the Rucellai palazzo, and then returning to these images and cleansing it of order layers by Italian Art Deco masters (Ernesto Bruno La Padula, Giovanni Guerrini, Mario Romano) (Figure 5).

The French and Italian Art Deco is much more delicate and restrained, although calls to mind ancient prototypes (Figure 6).

The general quality of totalitarian neoclassicism was megalomania and striving for the past, a desire to recreate the imperial spirit and emphasize one's own greatness. All this was created by activating public memory. All this, of course, was opposed to the Modern Movement, which aspired to maximize the purification of the architectural form from any historical associations.

The latest wave of interest in the past as a source of inspiration falls on the middle of XX-th century when modern postmodern consciousness arises. Philosophers and architects severely criticized modern architecture for its lack of spirituality and anti-artistic, indifference to the person, place and its past. Architects noted the inability to develop the architecture out of its cultural, historical and human context.

Postmodernists appeal to the consumer and his memory, creating works that evoke associations with past epochs, historical events, iconic places. Their works are converted into artistic messages, texts, addressed to the viewer. They put forward the task of developing a new language, based on the cultural skills and knowledge that gives rise to the historical association method.

A. Rossi pays much attention to the category of memory in his book "The Architecture of the City" (Rossi, 1982). Aldo Rossi recorded the variety of shades and meanings of the category of memory in architecture and showed that the modern architect operates with traces and artifacts that persist in the urban environment. Seungkoo Jo writes in the article "Aldo Rossi: Architecture and Memory": "To Rossi, architectonic structure can be always reinterpreted, for in this world there seems to be no longer any universal truths, but rather a constant reinterpretation of memory, the continuous juxtaposition of the fragments from one to other fragments, the constant alteration of typology which invests the monument with its ability to hold a discourse with the city. The memory represents a highly personal confrontation with the city, and the built form is an incredible example of how our lived experience in the city can be in one way a memory building. Rossi employed memory as a valuable means, a starting point for creating architectonic structure rich with meaning and rich with
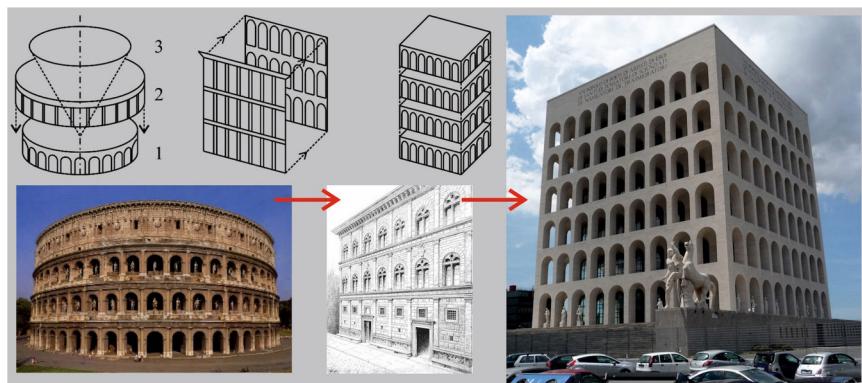

Figure 5. The method of historical association. Comparison of the Colosseum, Palazzo Rucellai and the Palace of Italian Civilization (source: author scheme)

Figure 6. Trocadero, Paris (source: author, 2007)

potential which exploits thinking, reading, and responding" (Jo, 2003, **p**. 237). Thus, understanding the traces of public memory, its significance and continuity allows Rossi to create the postmodern design method. It consists of reflection of both personal and collective memory of the place in which the project is created. The logical reconstruction of these traces and images is fixed in the drawings. Seungkoo Jo indicates that "Rossi (1982) sees the city as the theater of human events, the locus solus that not only contains events but is itself an event; it constitutes an event. The locus Rossi (1982) defines is the intersection of space, time, form, and site of a succession of both ancient and more modern events" (Jo, 2003, **p**. 233).

For Rossi, memory is not something continuous. It is revealed to us as monuments that, over time, lose their original function, but retain their value due to their fame and history. Monuments perform a communicative function, linking the past and present in the consciousness of society and an individual.

In this sense, the ideas of Aldo Rossi are close to the concepts of R. Venturi and Ch. Jenks, R. Bofill and the brothers L. and R. Krier, as well as many other postmodernists who sought modern means of expression in connection with the historical past. All of them sought to create a language of architecture that would be based on historical associations understandable to cultural people. That a historical-associative method of thinking of postmodernism and its sign system have developed on the basis of this idea. For example, in Figure 7, semantic links are built between antique, renaissance, and postmodern

objects and it is shown how Robert Venturi transforms his historical associations into modern, symbolic forms that make the viewer think about the cultural roots of architecture (Figure 7).

Any style crystallizes in itself the meanings, forms and techniques of its era. However, such styles as the Renaissance, Classicism, Romanticism, Eclecticism, Art Deco and Postmodernism do not invent new forms, but turn to the historical heritage and build their messages by borrowing and combining historical images and forms, creating certain associations in memory. For these styles, memory plays the role of a depository, from which you can endlessly draw artistic ideas, images, iconic forms that allow you to create new, but recognizable architectural texts.

Unlike postmodernism, such trends as Constructivism and Modern Movement deliberately erase traces of historical memory. However, this does not prevent new artistic movements, such as deconstructivism or neo-modernism, from referring to them as historical prototypes or objects of remembrance, dissecting them and incorporating recognizable fragments into new works or developing their compositional techniques.

Associative memory is based on the memory of something famous, deposited in our minds through personal experience, training and knowledge. Such common techniques in architectural practice as: quoting, copying, imitation, exaggeration and stylization, etc. originate from here (but this topic requires a separate discussion). Traces of tradition can be seen, for example, in modern Arabic buildings in a view of ornamental construction of the form.
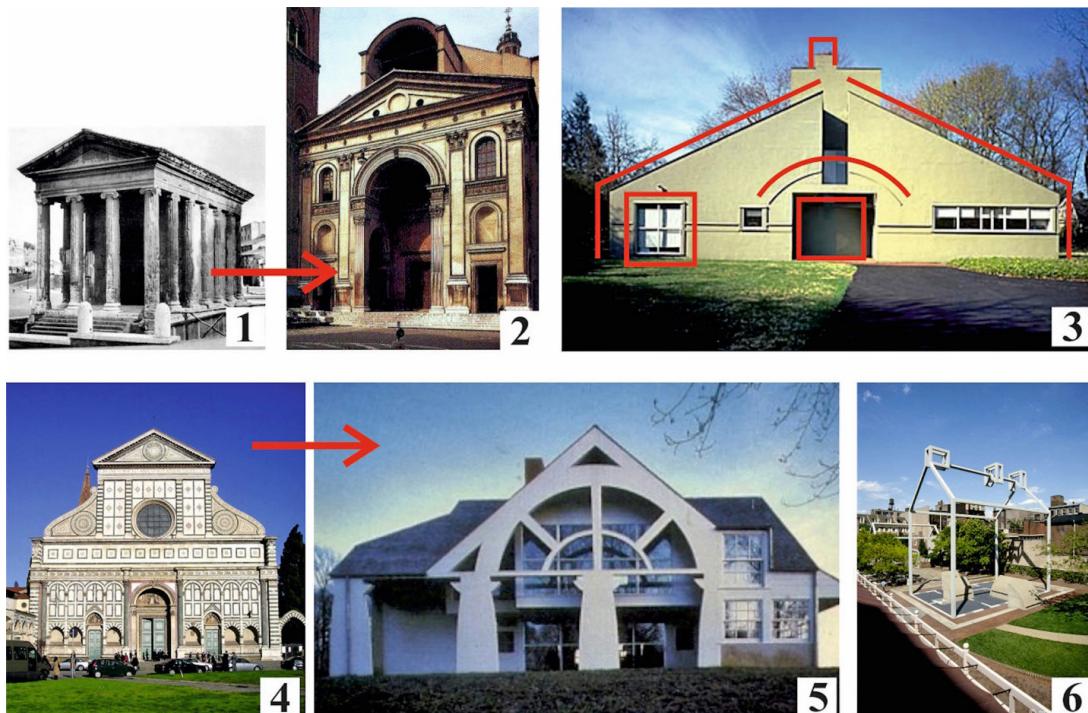

Figure 7. The method of historical association. Comparison of Ancient, Renaissance and Postmodern buildings: 1. Temple of Fortune Virilis in Rome, 1st century BC; 2. Ch. Sant Andrea, Mantova, 1470; 3. Vanna Venturi House, Philadelphia, 1964; 4. Ch. Santa Maria Novella, Florence; 5. Venturi Castle House, 1978; 6. Venturi Franklin Court, Philadelphia, 1976 (source: author scheme)

For example, the architect Jean Nouvel, in a project of the Institute of the Arab World in Paris, deliberately translated traditional features, such as ornamentality and structurality, into modern compositional and technological techniques in order to recall the cultural values of Arabian architecture (Figure 8). These examples show that if we consider postmodernism as an integral artistic phenomenon, we will find a commonality of the views of its masters in relation to the past, as a source of memories and a treasury of depository meanings, images and associations. It is the appeal to professional historical memory that makes postmodernism a special design phenomenon. The commonality of the principles and methods of reflection of the past can be interpreted as a collective memory. But when historical memory acts as the content of a new project, an individual reading of historical information is manifested here.

Another aspect of the consideration of architectural memory can be found in the analysis of the urban en-

vironment. The most important quality of the urban environment is its ambiguity. Phenomenon which we call "Architectural environment" is not simply stones, but a method of thinking and self-expression. The synthesis of different characters, dialog of various cultures, epochs, times and moods, all these together complete the essence of the language of modern architecture. "Forms" begin a dialog with each other, style with style, building with its surrounding.

Language system of Architecture is polyphonic, notably various, verbose, use many subjects and script, abound of different composition techniques due to memory, which are broadcast from the past and enter into dialogue with modernity (Remizova & Novak, 2018). For example, the ancient Roman forums served as a prototype for the design of the baroque spaces of St. Peter's Square in Rome, and it, in turn, created art associations for the modern ensemble of Antigonus in Montpellier (Figure 9).
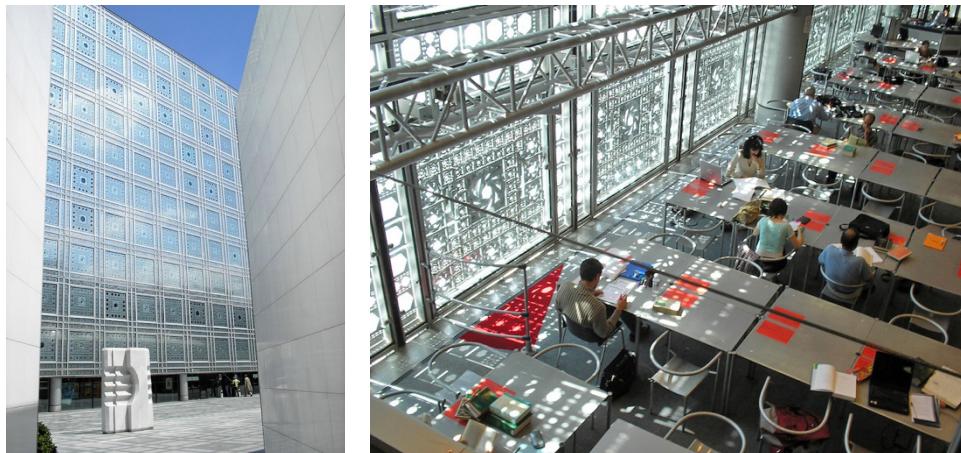

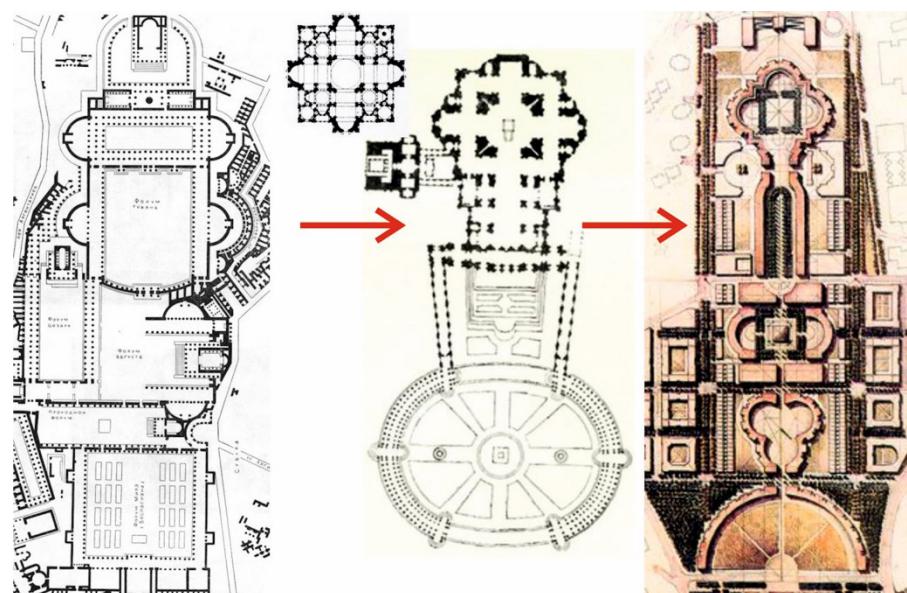Figure 8. Arab World Institute in Paris, 1981–1987 (source: author, 2007)

Figure 9. The method of historical association. Comparison of the layout of ancient Roman forums, the ensemble of the cathedral and St. Peter's Square in Rome and the ensemble of Antigone in Montpellier by R. Bofill (1978–2000) (source: author scheme)

Figure 10. Dialogue of epochs in a historic urban environment. Reconstruction of the Louvre by Ieoh Ming Pei, 1989 (source: author, 2007)

Artistic languages are formed on the basis of memories, associations, fantasies on historical topics. However, it is not always easy to develop your language and formulate new messages on it. Discussing contemporary issues, Dutch architect Rem Koolhaas notes that "architecture has a very ancient history and has a deep memory. This memory becomes a heavy burden when an architect tries to say something new in the modern world" (Teorija arhitektury, n.d.).

The search for new means of expression is always fraught with the dilemma of invention and interpretation. The invention of a completely new one comes up with the fact that a person is inclined to understand only what is associated with tradition. And tradition always relies on knowledge or recollection of the past, on what has been repeated and stored from century to century. Theorist A. G. Rappaport writes: "It is not by chance that the architectural structures of the past are called "monuments". They accumulate the memory of man and society. (…) The building retains or bears the memory of those historical events of which it was a witness.

Architecture as a means of accumulating the memory of historical events acquires a special role in cities. (…) Like language, architecture daily and hourly participates in modernity and at the same time brings into it the historical memory of the generation.

(…) Here we have in mind the extra-architectural, environmental memory and environmental historicism of architecture, which plays a huge role in the mythology of architecture and the mythology of the urban environment.

In myth, in general, one should see not just a symbol, but a symbolic memory of the genus. A myth is always a history. Architecture, and especially the city, is also always history. Not a science of history, but history itself frozen and communicating with a person" (Rappaport, n.d.).

From this point of view, any ancient (and not so) building retains traces of the past, such as the artistic style, purpose, the people who lived in it and the events that happened to them, their lifestyle and behavior, and much more. The most conservative traces of historical memory are the outlines of streets and squares that preserve the structure of old cities. A designer who proceeds with the restoration or reconstruction of a building or urban area will always relate the past to the present and based on this builds a strategy for his further actions. Assessment of the historical value of the monument turns into another way of storing historical information. Consequently, the restoration and reconstruction of architectural monuments and ensembles is another complex form of architectural memory (Figure 10). But this is a topic for another discussion.

Conclusions

Summing up the study of the forms of existence of architectural memory, we can conclude that, like any kind of cultural memory, it can acquire both collective and individual forms.

As historical genetic analysis shows the concept of the architectural memory ambiguously and has many shades and manifests itself in a variety of different forms of professional consciousness. As historical knowledge, architectural memory is present in such forms as: a chronological description, science of the history, evolutionary doctrine, catalog of styles, museum, archive. These are collective forms of architectural memory. Author's concepts of the history of architecture with a certain degree of conditionality can be attributed to individual forms of memory.

The activity-theoretical methodology allowed us to consider architectural memory as a mental phenomenon. Comparison of architectural epochs according to their

characteristic ways of thinking and their relation to the past showed that, unlike modernism and avant-garde, in which abstract thinking dominated, it is possible to distinguish eras that tend to think historically: the Renaissance, Romanticism, Eclecticism, Art Deco, Postmodernism. They are characterized by such ways of thinking as dialogical, historical and typological, historical and associative, which manifest themselves both in collective and in individual forms. Polylogic way of thinking, which leads the designer to create a diverse polyphonic architectural environment formed on their basis. By contrast such epochs as Art Nouveau and modernism aspire to purify architecture from the historical memories and classical laws of composition. They are characterized by stylistic and object-morphological ways of thinking.

In project activities and its language, memory is represented in such forms as canon, dialogue with past epochs, norm, architectural fantasy, remembrance, historical association, reconstruction, restoration and others. The task of further research is to reveal more detail of the meaning of each of these forms and to turn them into an instrument of contemporary design practice.

We emphasize that architectural languages and the corresponding compositional logics of thinking are the most important ways of storing and communicating information. Modern architectural language should not forget the past, but should not copy it. Unfortunately, the lack of attention to the problems of development of architectural thinking, associated with the loss of professional memory, leads to irreparable consequences, since they are either imprinted in stone or can erase the past forever.

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