Image and Morphology in Modern Theory of Architecture

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Abstract. This paper is devoted to some important and fundamental problems of the modern Russian architectural theory. These problems are: methodological and technological retardation; substitution of the modern professional architectural theoretical knowledge by the humanitarian concepts; preference of the traditional historical or historical-theoretical research. One of the most probable ways is the formation of useful modern subject (and multi-subject)-oriented concepts in architecture. To get over the criticism and distrust of the architectural theory is possible through the recognition of an important role of the subject (architect, consumer, contractor, ruler, etc.) and direction of the practical tasks of the forming human environment in the today’s rapidly changing world and post-industrial society. In this article we consider the evolution of two basic concepts for the theory of architecture such as the image and morphology.

Keywords: architectural theory; image and morphology; architectural object; processuality and dynamism; environment.

1. Introduction

One of the important problems that Russian architectural theory faces today is loss of self-identity. This may be explained by the long time of cultural isolation during the Soviet period, when Russian architectural theory fell out of the international architectural process. Currently, Russian architecture and architectural theory are trying to find a way back into mainstream architecture. However, a glance at contemporary Russian architectural theory reveals a range of important problems:

- orientation to traditional historical and theoretical research;
- orientation to ideal issues, vague cultural values and global generalizations;
- substitution of architectural research by direct transfer and borrowing of concepts from the humanities;
- methodological backwardness and indiscriminate borrowing of terms from foreign languages in incorrect translations.

The creative potential of Russian architecture as a successor to the avant-garde’s spirit of transformation is stifled with ideological constraints that keep plaguing Russian architectural theory.

A way out of the crisis in Russian architectural theory might be the development of a subject-oriented theory of architectural activity pursuing:

- methodological renovation;
- orientation of theoretical thought to the human needs of architectural practice;
focus on new forms of practice, with theory paving the way of practice.

The development path of the Russian architectural theory towards the subject-oriented theory is associated with basic ideas about the image and morphology of the architectural object. Since the concepts of image and morphology fully reflect the attitude and position of the subject in the architectural process. The paper consists of three blocks: historical lessons from Russian Avant-Garde architecture, evolution of ideas about the image and morphology - from perceiving to interpreting, design experience - from static volumes to variable multilayered environments.

2. Historical lessons from Russian Avant-Garde architecture

The evolution of contemporary architecture is associated with ideas and concepts that took place in the 1920s. The emergence of new architectural concepts in Russia is usually linked to the names of N Ladovsky, K Melnikov, I Leonidov, M Ginzburg, I Golosov, the brothers Vesnin; V Tatlin, V Kandinsky, and K Malevich. And we owe it to S O Khan-Magomedov [1], well-known Russian architectural historian, that the ideas of Russian avant-garde have become popular internationally. Russian architectural avant-garde experienced an extensive ideological influence of the formal method in art studies. An important role in the development of these ideas belonged to A Hildebrand and H Wölflin, who had a profound influence on Russian scholars as well. Thus, A Gabrichevsky and V Favorsky studied in Germany. The development of the formal method lasted in Russia till the end of the 1920s.

The ideas of the formal school received different interpretations in the Russian context. Theoretical findings and innovative breakthroughs of Russian architectural avant-garde in the 1920s had broad international repercussions, but it was banned in the 1930s among a whole variety of concepts and movements that were rejected by the Soviet state as contradicting Marxism.

Unfortunately, today the phenomenological tradition in architectural theory, both internationally and in Russia, is associated with the names of western scholars. However, as early as in the 1920s Alexander G. Gabrichesvky, a Russian art theoretician and historian, formulated a fundamental concept that anticipated the later western and contemporary philosophical and theoretical interpretations of architectural form generation along the phenomenological lines. It was impossible to get acquainted with A.Gabrichevsky's ideas until very recently. Only in the 2000s, a full collection of A. Gabrichesvsky’s work was published and caused a sensation in Russian art studies. He published most of his works on theory of art and architecture in the 1920s, which were not republished for a long time. Some of his works on art and philosophy of art were not published at all and existed in manuscripts.

For A.Gabchvsky, the fundamental issue was that of primary elements in «plastic art experience» [2]: space and mass, thing and life, nucleus and shell. Leaving aside the pair «space-mass», which has been given a lot of attention in architectural theory, both Russian and international (in its «solid-void» interpretation), we will try to identify issues that are more relevant to the origin of the phenomenological movement in Russian architectural studies in the 1920s. We list the main provisions:

- the bodily character of spatial experience,
- thing as the fixing of a useful human gesture;
- form as a trace of the living on the dead;
- image as a hieroglyph.

So the phenomenological interpretation of form by Gabrichesvky they had a basis, which was the formal method. In the phenomenological concept, the basis is the position of the individual experiencing his bodily presence in the world of things where the vitality of his gesture leaves a trace on the dead matter and generates an object (or a system of objects) as a shell/boundary between Self and non-Self.

The phenomenological approach may be regarded as conceptually primary, as all postulates of the compositional school of form generation may be derived from it, but not vice versa. It looks to the origins – the bodily character of spatial experience and, accordingly, the «barrier-ness» of form.
Gabriechevsky’s phenomenological concept sought to unravel human values and meanings in the vital form-building gesture and its fixing as a «trace» in material form.

During the period of its development, the Russian phenomenological school had no actively practicing architects/followers capable of linking this theory with advanced design practice, materials and constructions. The phenomenological concepts were untimely in the 1920s, when there were no today’s shell forms, «nonlinear» materialisations of gesture or vanishing, changeable, fully transparent multilayered barriers.

Gabriechevsky’s complex theoretical concept had like minds such as V Kandinsky, P Florensky, V Favorsky, and followers such as D Arkin, V Markuzon, etc. But the political and ideological situation in Russia in the 1920s was not conducive to its development. As a result, the Russian phenomenological school did not happen, but its ideas anticipated a number of tendencies that were later developed by western theorists of architecture such as J Itten, C Norberg-Schultz, Ch Day and that came to Russia much later, including through the interpretations of foreign authors such as M Heidegger, M Merleau-Ponty, P Riccoeur, etc.

The Russian phenomenological ideas in theory of architecture formulated by Gabriechevsky are in line with the contemporary humanistic views of the role and place of the subject in the world. It is to be hoped that they will not remain just history and find their way into modern-day architecture.

Today’s reflective, transparent, ghostly, nonlinear architectural forms may benefit a lot from form-generation concepts such as nucleus-shell, shell-boundary, spatial volume, and gesture and trace, which seem to be more in line with the material and philosophical context of contemporary architecture.

3. Evolution of ideas about the image and morphology

In the context of contemporary consumer society, architectural activity should allow for a variety of values maintained by both the consumer and the architect, the engineer, the developer, the contractor, etc. Thus, it is important to understand the new role and place of the subject in the modern world and architectural process.

In Russia, the evolution to this understanding has been connected with the development of ideas of form under the influence of various philosophical and psychological concepts relating to the «perceiving individual» and have been progressing:

- from concepts of visual perception by some abstract individual to those of the ‘Interpreting Individual’ who humanizes architectural space with his presence;
- from the idea of socio-cultural determination of perception to the issue of «meaning», with a corresponding shift in emphasis from form building to meaning expression by means of architectural form;
- from emphasis on the role of the languaged subject/interpreter who assigns meanings to material object to the priority of the subject/customer in architecture and inter-subject interactions in the design process.

The reference points of architectural theory shift from the object to the subject and, thus, from the Perceiving Individual to the Interpreting Individual. Therefore, the authors of this paper sees the link between the image as carrier of meanings and the morphology of architectural object as the most significant direction of development for contemporary architectural theory.

Image is the basic concept for describing inter-subject interactions in architecture and introducing a value component into design activity, which is essential for meeting various human needs in architecture. The image of an architectural object as the basis of the communication process may be structured based on a certain model. One such author's model is suggested below. The specific feature of this model is the processuality and layered structure of the image. These structural layers/components of the image represent various value manifestations [3]:

- the orientation component forms a psychological action space that determines the character of movement and emotional states of mind;
• the recognition component restricts the field of meanings by functional attribute and is characterized by the priority of the cognitive component;
• the interpretation component generates a range of socially predetermined meanings and subjective connotations;
• the intuition component represents the Dasein aspect of an architectural space, being determined by the priority of the bodily, sensory component;

The formation of the orientation and intuition components is predetermined by human corporeity and congenital stereotypes relating to the creation and perception of form, whereas the recognition and interpretation components are based on the natural language and socially predetermined mental schemas.

The need to allow for the changing needs of the subjects/participants of the architectural design process leads to a change in the basic reference points of the architectural object’s consumer as a representative of postindustrial society. Given this, the primary role shifts to the specificity of interaction between the images that exist in the minds of various subjects/participants of the design process with regard to the future architectural object. These images reflect, to a varying degree of divergence, the set of ideas about the functions, structure, comfort, identity and socio-cultural importance of the architectural object. It then becomes increasingly important to secure the preferred images in the morphological structure of the object.

It is obvious that the sensorily perceived morphological basis of architectural object cannot be reduced to compositional, typological or other characteristics, which is the traditional way of describing morphology in architectural studies. We need to identify fundamental components that underlie the «encounter» between the individual and the material-spatial world and mark its location. Such basic component is given by «barrier», which limits movement and defines space for possible action. It is supplemented with a «stimulus», coordinat and stimulating possible movements of the individual. We deal here with an essentially dual approach to describing the morphology of an architectural object: bodily spatial description introducing the position of the subject, and geometric description which does not include the position of the subject.

The bodily spatial aspect is described by the system «barrier – stimulus» [3]. It implies the bodily presence of the individual in the spatial object. Bodily spatial description rests on biologically inherited stereotypes determined by human corporeity, a special formation that determines the horizon of human experience before any thinking and, thus, anonymity, synthetic spatial experience without rational mediation or subordination to any function.

The geometry is described by means of well-known geometric systems: shapes, their superposition, modification, transformation, association with certain planes and surfaces and location, types of space and ways of their arrangement including linearity (unidirectionality) and nonlinearity (poly-variant type). This form of description presents an object as something «ideal» and abstract, existing independently from the subject. The fundamental principles of geometric description are represented by geometric archetypes. Archetype is a mental ‘residue’ of numerous ancestors’ experiences, being quintessentially a form of inheriting the social, i.e. apriori comprehension and perception schemas that make the thinking possible. The fundamental principles, including the geometric ones, are present in the majority of historical, religious and philosophical works interpreting the issue of origin of the universe. The fundamental principles are manifestations of ideal Being in the form of living Being, which then becomes consciousness. The further existence of the fundamental principles appears as ideal realities, or geometric archetypes in our case, replicated in human creativity as a reflection of natural and cosmic laws. The emergence of ideal realities and the development of the process of alienation of the «ideal» from the «real» happen due to an operating system, natural language, which is a basis for the development of other artificial language-like formations.

The morphological structure of an architectural object understood through the system of barriers and stimuli is characterized by the introduction of the individual with his corporeity into space, where the body (not the geometry) determines a series of possible interactions with the object. This approach to constructing the morphological structure proceeds from the priority of the needs of various subjects
and provides broader opportunities for architectural form generation without being limited to geometric shapes and their combinations, orthogonal systems of spatial combinatorics and systems of individual spaces and their relationships.

4. Design experience - from static volumes to variable multilayered environments

The classical concepts of architectural objects as architecture of buildings are becoming the past. The distinctive feature of the latest architecture is *processuality and dynamism in the unfolding of the architectural object*, realized in concepts of neutral and processual architecture of barriers, shells, and veils. Architectural form generation is revealed through the poetics of the barrier’s contours as the art of creating “boundary-ness” by means of which the individual enters into relationships with the Other: environment, culture, society [3,4].

The dialogic nature of architectural object manifests itself in two aspects: as a space of action or being, and as an identity or ‘face’ of the object in the environment / culture. This is determined by the duality of sensory perception of the architectural object as a *corporeal/tactile field* with fixed boundaries of action, relationships between spaces and some degree of isolation, and as a *visual field* underlying the visual perception of these boundaries. The visual field of the object determines its perception as a system of barriers described by a varying degree of visual and light permeability, visual focusing or defocusing of the object’s contours as a space of action, and structurality. The nature of the barrier determines dynamics in the relationship ‘individual-object-environment’ that unfolds through:

- the fixing / demolition (and re-creation) of the spatial level of orientation;
- identification of the degree of inclusion or isolation of the object’s internal space in the spatial/temporal context of the environment (simultaneity in the experiencing of the external and the internal);
- determination of plastic attitude towards the environment as a basis underlying the values and environmental qualities of the object, through:
  - traditional plastic techniques of treatment of the impenetrable enveloping plane,
  - disorganization, duplication, distortion in the mirror reflection of the enclosure surface,
  - disappearance and illusoriness of the visually transparent barrier,
  - stage-by-stage distancing of the multilevel barrier,
  - unstable geometry of the contour dissolving the form of the object in the environment and setting itself against the traditional orthogonal;
- mobility, variability, transformability of the barrier.

The relationship between the architectural object and the culture and history shows itself also through the characteristics of the enclosure surface:

- traditionality, stability of routine forms of visually impenetrable barriers;
- the eventful character of unstable visual fields creating new orientation sets of objects with transparent, reflecting and contour-variable enclosures;
- the paradoxicality of geometrical shifts in enclosure planes.

The variability of an architectural object’s structure and its adaptation to various rapidly changing human needs is ensured by the use of multiply nested systems and different degrees of penetrability of the barriers (both material and optical) set on chaotic (arbitrary) spatial grids. A nested system implies the presence of some multilevel spaces permeating the building and making it possible to achieve certain variability in vertical circulation. In a nested system, we parametrically set the character and quantity of nestings, the capacity and orientation of ultimate nested elements, and the construction of the barrier. It also enables transition from orthogonal planning grids to chaotic ones, implying the introduction of another variable – the degree of surface curvature and maximum allowable range of its variation (from the standpoint of convenience of use and maintenance). The character of the barrier may vary over a broad range:
• from a multilayered barrier to a nested system of spatial volumes (both principal and buffer ones) and relationships between them;
• in the degree of penetrability and optical characteristics of the material barrier;
• in the visual permeability and stability / instability of the optical barrier;
• the degree of inclusion of natural components as barriers (plants, water, etc.).

The processuality of an architectural object emphasizes both its adaptability and its social essence organizing a series of interactions between subjects and providing conditions for meeting their needs (including potential ones). The emphasis on the priority of the perceiving subject/consumer does not at all deny the presence of author's personality and does not impair the creative process; rather, it reveals new, yet unknown facets through a mechanism of identification of the architect’s personality with the Other (the consumer), which allows one to come to know the Other and oneself through the Other.

5. Conclusion
In modern-day Russia, traditional architectural activities and ideas are being reviewed, largely under the influence of leading western architects who have matured in market-driven consumer society, towards more varied interaction between architect and society. Architectural design is gradually drifting away from a rigid administrative system, with a growing understanding of its polylogue character where each and every participant should have an opportunity to satisfy their needs without prejudicing the needs of another. An important role in this belongs to the changing concepts of image and morphology and idea of basic neutrality of architectural object, its openness to change, multiple use and polysemy of interpretations. The conceptuality and spatial-temporal variability of a modern-day building (and environment) is a basis for architectural design in the post-industrial context. The article deals with the evolution of representations about the image and morphology, the role of the subject in architectural design. The concept of a figurative and morphological structure of an architectural object is proposed, which determines the possibility of developing and improving polysubject concepts of modern architecture.

The main points put forward in the work:
Thesis one – image is the basic concept for describing inter-subject interactions in architecture and introducing a value component into design activity.
Thesis two - the phenomenological direction is oriented to establishing the fundamentals of spatial form organization from the standpoint of an individual with his corporeity. The system «barrier – stimulus» introducing the standpoint of a subject with biological stereotypes underlying it. «Barrier» limits movement and defines space for possible action; «stimulus» coordinates and stimulates possible movements of the individual
Thesis three – architectural form generation is revealed through the poetics of the barrier’s contours, the art of creation of boundariness by means of which the individual enters into relations with Another: environment, culture, society. The poetics of boundariness reveals the artistic aspects of contemporary architecture. The fundamental difference of the contemporary architecture is its processuality and dynamism of an architectural object. The newest architectural objects are becoming multi-environment objects including: interior spaces, buffer spaces separating to a varying degree from exterior effects, open exterior environments with natural components.

The concepts proposed in the article are tested in experimental and educational design in Ural State University of Architecture and Art [4].

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