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Transformation of the concept of comfort of the residential and urban environment in the modern conditions of the Almaty City

La transformación del concepto de confort del entorno residencial y urbano en las condiciones modernas de la ciudad de Almaty

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ABSTRACT

Introduction: The article carried out work on the study of the formation of the comfort of living in the Almaty city, the Republic of Kazakhstan. **Materials and Methods:** Analysis of the natural, historical and architectural and planning prerequisites for the emergence and development of the concepts of "living environment", "urban environment", "image of the city" as a space for meeting the needs of residents – economic and household, consumer, educational, cultural, etc. **Results and Discussion:** The work is based on publications of authoritative sources, and reflects the directions of the authors' research in the framework of scientific research and pedagogical work in the field of design of the architectural environment. **Conclusions:** The work is based on the following basic elements: urban housing is part of a large system of the urban environment of the city with varying degrees of interconnections; the design of the architectural environment is a specialty that takes into account the formation of the subject-spatial environment, as well as the issues of its qualitative functioning in accordance with the needs of the individual and society as a whole; regardless of the initial qualities, the architecture, the subject-spatial environment of the dwelling and the city acquire the features of regionality as it functions; regional style is a materialized subject-spatial object created on the basis of a cultivated aesthetic image and way of being in a given area.



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1. INTRODUCTION

The specialty "Design of the architectural environment" originated in Kazakhstan as a response to the challenges of the time, when it was not enough to solve the issues of complex and multifaceted consciousness of the habitat only by architectural means. When the build-up of the architectural mass in cities simultaneously led not only to the acquisition of new high-level facilities, but also created conflict situations during their operation. The specialty deals with the existence and interaction of architectural objects with other objects of the environment, including objects of landscape, infrastructure, forms and objects that do not have internal space, utilities, advertising objects, etc. In the centre of the processes of operation of this multicomponent structure is a person with their daily needs and claims to the organization of the living environment, starting with the arrangement of the place of residence and ensuring the issues of its consumption, the issues of daily movement to the place of working, educational, cultural, recreational and sports facilities. All these claims have both a qualitative and functional colour, and figuratively aesthetic.

Almaty, even after the transfer of the capital of Kazakhstan to Astana in 1997, remains the largest and fastest growing city in the country. Today the population of Almaty as a city has reached 2 million people, with a total population of Kazakhstan of 19,427,952 people (as of August 10, 2022), which is 10.29% ⁽¹⁾. At the same time, it should be noted that almost 60% of the population of the entire country lives in the cities of the Republic of Kazakhstan. The vast territories of the country are not inhabited and represents large natural undeveloped spaces of steppes, mountains, and deserts. Excessive dispersion of cities across the territory of the country, which occupies 2,724,902 km² - the 9th place in the world, large distances between them, naturally lay problems with land communications and often a low level of transport communications. This, among other things, explains the concentration of the population in cities, around cities and in large settlements. The largest such agglomeration is Almaty, which population today is more than 3 million people (15.67% of the total population of the Republic of Kazakhstan) ⁽²⁾.

The issue of high "intra-country migration" of the population to the city of Almaty is relevant. In addition, the so-called "pendulum migration", which amounts to 400,000 people a day, also puts a big strain on the urban fabric, primarily through increased traffic ⁽²⁾. In addition, there is a great imbalance in the quality of life of the various districts of the city. The concept of the city centre is not only a geometric term. It is consistently associated with greater comfort compared to other areas of all aspects of urban life, from types of housing, the organization of courtyard and pedestrian zones, the provision of recreational areas, the presence of large public and cultural facilities, and ending with infrastructural objects of the urban environment.

It is also impossible not to mention such a phenomenon as the natural need and desire spilled in society to live in harmonious comfortable areas of the city, which cannot be created through the design of high-quality architecture alone. At the same time, the observed isolation and disunity of the tasks being solved, which do not take into account the general context of the urban environment. This is due to the dominance of business and the tasks it solves in the development of the city, the main message of which is the supremacy of the profitability of new facilities at all stages, from design and construction to operation. It seems to be obvious that these goals and objectives largely diverge from the objectives of following the concept of the city and its districts, the formation of harmonious ensembles and taking into account the current and future needs of its inhabitants ⁽²⁾.

Currently, new elements are used in the design of the urban environment, which certainly change a lot and complement them qualitatively. All these events, basically, have a positive and creative charge in the formation of living comfort. However, the overall picture does not form a more comfortable solution. In the literature, in public discussions, in reviews, it is possible to observe reviews and attitudes of insufficient quality of the environment, as well as omissions in reorganization and the desire for improvement. What is the matter? It is necessary to theoretically comprehend and introduce the processes not of the mechanical accumulation of the material mass of the city, but of considering the urban environment as a complex, but intellectually regulated organism.

The research is based on the study of authoritative and new sources of information on the issue under the study. Firstly, this is a literature review, a historical, comparative analysis, the identification of new factors, the movement from the general to the particular. Both large generalizing publications in the form of monographs and scientific articles published in scientometric databases were studied. In addition, for the issue under the study, reliance on historical, statistical and other sources was of great importance.

On the history of architecture and the environment of the Almaty city, the authors relied on the works of: B. A. Gludinov ⁽³⁾, A.Kh. Margulan, T.K. Basenov and M.M. Mendikulov ⁽⁴⁾, A.K. Kapanov and S.K. Baimagambetov ⁽⁵⁾, A. Akhmedova and A. Sabitov ⁽⁶⁾. General theoretical issues of the architectural environment of the city the works of: K. Lynch ⁽⁷⁾, A. V. Ikonnikov ⁽⁸⁾, A. V. Efimov ⁽⁹⁾, S. W. Goldhagen ⁽¹⁰⁾, K. Ellard ⁽¹¹⁾. The issues of home comfort are

considered in the works of: B.R. Rubanenko, K.K. Kartashova and D.G. Tonsky ⁽¹²⁾, A. Akhmedova ⁽¹³⁾, M. Carmona, V. Giordano, G. Nayyar, J. Kurland and C. Buddle ⁽¹⁴⁾, T.Y. Karatseyeva and A. Akhmedova ⁽¹⁵⁾.

2. HISTORY OF FORMATION OF URBAN ENVIRONMENT OF ALMATY

The area on which the Almaty city is located has been inhabited since ancient times, as it has a beautiful landscape and a good climate, suitable for living and doing business and economic activities. Almaty in the 20th century was better known as the capital of the Soviet Kazakhstan, in the historical part of which fragments of pre-revolutionary buildings have been preserved, as well as the regular architectural and landscape ensembles laid down during the Soviet era. In comparison with other Kazakhstani cities, Almaty has a relatively high image of comfortable living, which was provided, on the one hand, by natural and climatic factors, and, on the other hand, by well-thought-out architectural and construction activities.

Living in this area has formed a special image of a residential building, which has several life scenarios: closed - for a fairly long and sometimes harsh winter, semi-open - for favourable conditions of the warm period, open - for the summer period, when many processes are transferred to open spaces of adjacent plots and summer premises. This functional structure of the dwelling has been implemented for many years, regardless of the demographic, social, national and other composition of families. What, in our opinion, should be paid attention to when designing a modern dwelling:

A residential building, a residential apartment is the main cell in the formation of an understanding of the comfort of living in the city. However, the principles of formation of the urban environment are also of great importance. Which in Almaty, during almost the entire twentieth century, adhered to certain principles that made it possible to fence off the citizens from the adverse effects of infrastructure - primarily transport, industrial zones, etc. The city gradually developed quarterly buildings of the classical hippodamic layout, dictated by the originally existing ditches - irrigation canals based on the beds of flood rivers. Thus, natural objects initially had their constructive impact on the structure of the urban environment. This quarterly development structured the urban development, reconciling buildings of different times and different classes under the same conditions and requirements for it.

By the 90s of the twentieth century, Almaty came as the result of the development of the capital city of one of the 15 Soviet republics. The political structure of the country was clearly reflected in the architectural appearance. Many, even unique objects that were built at that time had to meet the requirements of the political hierarchy, many were introduced ready-made solutions, in particular the types and methods of mass housing.

3.THE MAIN COMPONENTS OF THE CONCEPT OF COMFORT LIVING IN THE CITY OF ALMATY

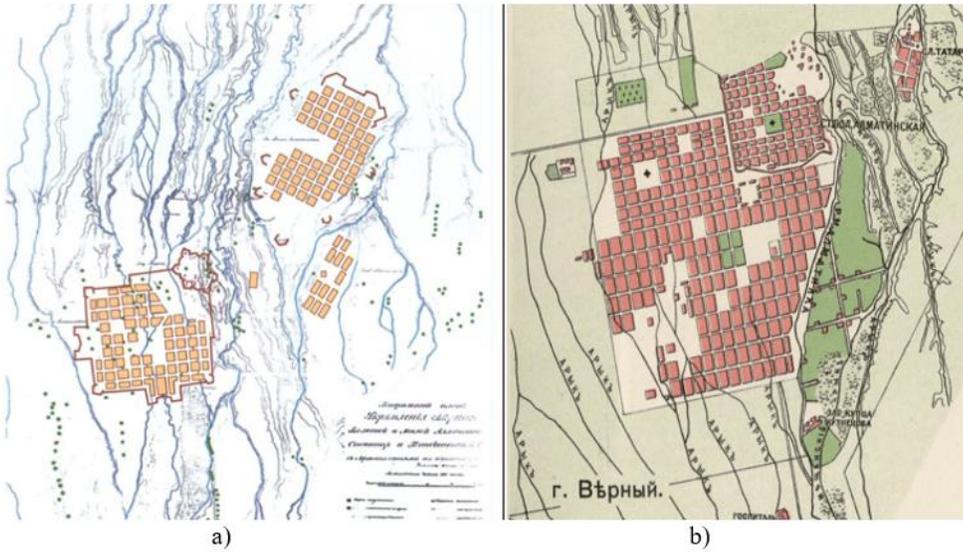
A unique urban environment has developed in Almaty, humanistic at its core, in which the natural environment, the scale of human needs, and pedestrian accessibility, which reconciled many banal architectural solutions, had a great role and influence. As we see it, these decisions have formed the primary foundations for the comfort of living in the city.

3.1. FACTOR 1. NATURAL AND CLIMATIC FEATURES AND FEATURES OF THE LANDSCAPE

These are the basis for the development of ecological comfort, for example:

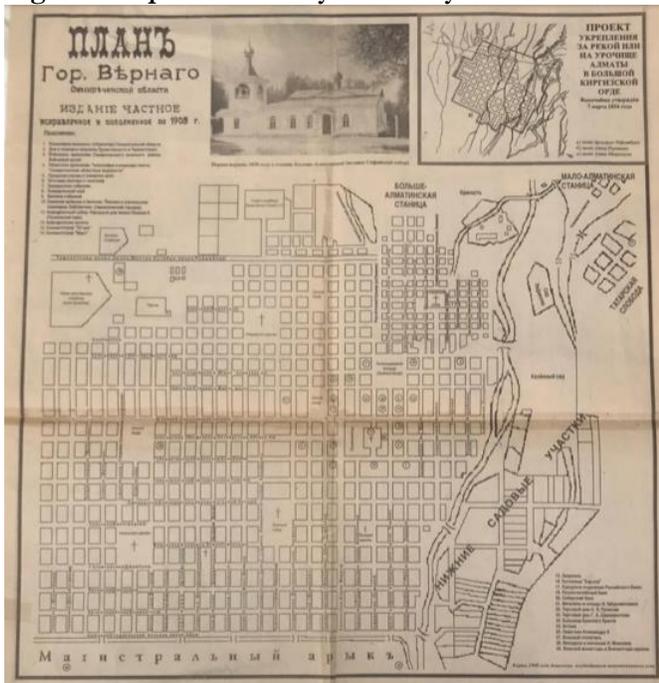
- Location in a unique natural environment - the foothills of the Ile Alatau mountains, which, in addition to the beautiful visual component, provide residents with favourable climatic conditions (Natural edges) ⁽⁷⁾;
- Location in a gently sloping foothill zone creates a defining orientation in space, as well as the presence of permanent water systems inside the city - ditches. Ditches perform a large semantic and functional load, at the same time being a flood, storm system during the melting of mountain glaciers and rains, and an irrigation system that improves the microclimate during the hot summer (Fig. 1,2);

Figure 1. a) Ditches and barrow complexes of ancient settlements (1858, Verny (the royal name of Almaty); b) Ditches are also indicated as structural elements of the emerging urban environment (1878, Verny (the royal name of Almaty))



Source: compiled by authors according to the data ⁽¹⁶⁾.

Figure 2. A plan of the city of Almaty in 1908



Source: according to the data ⁽¹⁷⁾.

- The constant possibility of watering the plots contributed to the active greening of the city, forming a green frame of the urban environment;
- The presence of a large number of sunny days in winter and cool breezes in evenings on hot days;
- Following in the construction of the urban environment the structural lines indicated by natural objects that happened to one degree or another until the 90s of the twentieth century.

3.2. FACTOR 2. "GARDEN CITY"

It should be noted that the listed natural features laid the foundation for the urban myth of a green city in the foothills of the Ile Alatau mountains, blown by mountain breezes with murmuring ditches and flowering gardens. This description itself creates a feeling of comfort in the city environment, which for a long time corresponded to reality and at the present too, but only in part of the city. "If a fantasy, a dream is a special form of awareness of an overdue or brewing need, then sooner or later, in one form or another, it will become a reality" ⁽¹⁸⁾. Perhaps, the most complete requirements and preferences of a person can be traced by the transformation of the living environment, by the results and ways of solutions - including the example of futurological forecasts of architects, urbanists of the world, where "the environment closest to the ideal is real experience gained at different times"⁽¹¹⁾. This myth is stable and attractive. It was reinforced by the great work of the architectural and construction complex in the city, which was the capital of Kazakhstan until 1997. However, for further reasoning, it is necessary to define the very concept of the comfort of housing and the urban environment. Since this concept is complex and constantly changing, depending on the era and the claims of consumers.

The modern concept of the comfort of dwelling and the urban environment is inseparable from the mass coverage, since the single comfort of a part of society is local, concentrated and does not determine the general state of the standard of living of society, and the city was originally intended for a large number of people. In addition, for this reason, it does not make it possible to talk about the formation of the level of comfort. It was mass housing construction that began in the 60s of the 20th century that formed such a concept as the level of comfort of a home. Moreover, the organization of urban areas with public, commercial and recreational areas, routes of transport and people, raised the level of living in the city and the possibility of its comprehension and use. By this time, high standards of mass dwelling have been established. The architectural typology worked over development of norms and standards of is minimum admissible conditions for living based on which architects developed standard projects of mass application ⁽¹²⁾.

3.3. FACTOR 3. REGULATORY AND TECHNICAL REQUIREMENTS FOR THE RESIDENTIAL AND URBAN ENVIRONMENT

These are:

- Standardization of the minimum requirements for housing, which was based on the humanistic idea of raising the standard of living of the mass consumer;
- Standardization of the minimum requirements for the organization of urban spaces, which were based on the requirements of safety and compliance with the myth about the urban environment of Almaty that had spread at that time;
- Development of recreational spaces both inside the city and outside it, as an unconditional part of the life of a city dweller;
- The emergence and active development of the "second home" of the city dweller - dachas, which arose as, among other things, a response to the growth of the city and the isolation of residents from the natural environment ⁽¹⁹⁾.

The presence of the basic foundations of comfort - natural and normative - created the basis for providing comfortable conditions for the majority of residents.

3.4. FACTOR 4. FORMATION OF A NEW CONCEPT OF THE URBAN ENVIRONMENT BASED ON THE SCENARIO NEEDS OF THE MAIN CATEGORIES OF POPULATION GROUPS

"Today, perhaps more than ever before, caring citizens of the world are striving to understand how space works and even do something to improve it. This is partly due to the realization that we are on the verge of tremendous change. Urbanization, overpopulation, climate change, shifts in the energy balance of the planet - all this prompts us to reconsider the principles of arranging the environment and look for ways to organize it so that it helps us not only survive, but also maintain mental health" ⁽¹¹⁾.

Determination of the main way of forming an understanding of the comfort of the urban environment of the city of Almaty as a complex multicomponent task. Including determining the place and purpose of architectural design in the formation of an innovative urban environment, expanding the boundaries of activity from design and decoration to writing programs for design assignments based on the needs of focus groups of the population.

4. THE PHENOMENON OF KAZAKH IMPROVING THE URBAN ENVIRONMENT IN THE MODERN PERIOD

A big turning point occurred after the 90s, when the formation of the urban environment of the city went through a process of decentralization. Since that time, the new modern architecture of Kazakhstan has set other goals and priorities for itself. Despite the formation of a new capital, the city is constantly growing and expanding. The activity of all aspects of the life of the city of Almaty only increases every year. Thus, according to the data of the heads of the Department of Urban Planning and Urbanism of the city of Almaty, “the area of Almaty has significantly increased over the past five years from 27 to 72 thousand hectares”⁽²⁰⁾. It is quite obvious that such a growth of the territory has an impact on the entire structure of the city, and it cannot live and develop according to the old rules.

The large construction of residential buildings, public buildings for various purposes, roads and highways, as it turned out in most cases, was an increase in the architectural mass strung on the former urban structure, which aggravated the problems of the urban environment. Urban areas are increasingly experiencing disunity, inconvenience of communication, lack of public, recreational and infrastructure facilities. “Fancy exteriors and dramatic forms are never enough, and may not even be necessary; authentic textures and surfaces, and careful, well-executed construction details are just as important”⁽²¹⁾.

In many cases, the first or second comfort factors are ignored. The load on the existing urban environment has become excessive, the growth of territories occurred mechanically, without the formation of design solutions. A modern resident attracted to living in a big city, in addition to the conditions of a big city, received unsatisfactory environmental conditions, transport problems, a lack of communication, constant stress and lack of time, and, as a result, dissatisfaction with life. That is, a decrease in the comfort of living in the city. The multidimensional nature of the spatial and object components of the urban environment complicates the task of finding rational and comfortable solutions. However, despite this, the inevitability of solving these problems is obvious and necessary, which shows the experience of the problems of many cities, including in Kazakhstan.

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“The architecture of the past has been receiving inputs of a rational and artistic nature, allowing it to create different types of environments. The artist Paul Cezanne did not separate the object and its background in his paintings. In the language of architecture, this means that it is impossible to tear apart the architectural objects and the surrounding space, that can acquire the quality of the architectural environment. The trends of the plastic arts of the 20-21st centuries have influenced the development of design and architecture. There was a method of transition from painting to relief, to volume, and further to a three-dimensional environment”⁽⁹⁾. What are the current challenges? After all, it cannot be denied that cities are developing, large-scale construction is underway, a large number of residential and public buildings are being erected, and infrastructure is being formed. Public and individual interiors, in comparison with previous decades, bring many new solutions both in terms of art and imagery, and in terms of the use of new technical means and achievements, as well as the use of a wide range of finishing materials and technologies for their application.

Design in general and the design of the architectural environment began to actively influence the organization of the urban environment since the 90s of the 20th century. At first, timidly changing the appearance of some objects and organizing interiors, local architectural objects, public objects, and the urban environment. That is, in the direction from the particular to the general. “... world experience shows that architecture and design began to hear each other, to adopt the necessary features: architecture is the instantaneous design response to the requirements of the time, the use of new technologies, and design is an understanding of the identity of the current environment and reliance on the cultural and value potential of society”⁽⁹⁾.

It cannot be argued that all the changes were of a high level of style and production quality, but a process of so-called mass individualization has begun, which design actually serves. Of course, one of the goals of the process was and is the search for the identity of both the architecture of Kazakhstan and the design of the architectural environment of Kazakhstan. This goal entailed a rethinking of many processes in the architecture of the country, including the emergence of a new capital. The phenomenon of this process is that for many countries, this process takes centuries,

but in our country, due to many objective reasons, it is concentrated in a short period of time. Therefore, achievements and shortcomings are perceived quite clearly and sharply. The city of Almaty, as the largest and most developed city in the country, is a prime example of this.

Designing, while solving concretely described and felt problems, should not bypass more subtle principles, such as the creation of psychological comfort, which cannot be ignored if we assume that humane tasks are being solved. The topic is very important and relevant, especially in the context of unsystematic and mechanical development of cities. These are issues of increasing the comfort of the environment not only through technical means, but also issues of creating psychological comfort and issues of creating a figurative component. "The image of the object that appears in the representation is not a mechanical mirror image, but the result of perceptual activity that actively reproduces the content of the object. It is operational in origin and emerges as a design structure model designed to guide the practical actions with the object" (8).

The phenomenon of Kazakh architecture of the 20th century is the constantly changing paradigm of its development. Almost every 10-20 years, architecture took on new tracks, changing directions, standards, and scale. The proclaimed search for national identity resulted in decoration and deliberate manifestations of artificial images and symbols (13). Those that existed before were not taken into account or were perceived as unworthy. However, during all these periods, the problem of creating comfortable living conditions in a dwelling was solved, which was sufficiently achieved.

CONCLUSIONS

Based on the analyzed information it was concluded such basic recommendations for improving the urban environment:

1. Development of a theoretical and methodological concept for the design of a modern urban environment; taking into account the main natural factors as a postulate, which is naturally included and taken into account in any environmental solution. These include mountains, landscape character, ditches, and green spaces (Factor 1). Despite the fact that the average city dweller is not oriented in the natural environment, and does not know its grammar and vocabulary, echoes of some deep, original connection with the conditions that formed our species still live in us.
2. Preservation and maintenance of the concept of the spatial and artistic image of the city and its environment based on the existing myth of the "garden city" (Factor 2).
3. The need to form a typology and typological requirements of urban areas (Factor 3).
4. Estimated and prospective polycentricity of the city and the urban environment. Identification of possible vectors for the development of the city and the emergence of new centers. Application of the term "urban ensemble" not only to the outstanding objects of the city, but to residential areas, taking into account not only the local convenience of use, but also the connection with other objects of the city.
5. Maximum consideration of the human factor in the organization of the urban environment - as the basis for improving comfort and, as a result, the quality of life. The current standard for the comfort of the urban environment with a view to future development, based on typical scenarios for the use of the urban environment, the "mental maps" of its inhabitants. This refers to the provision of convenient links between all types of environments, from the smallest and individual micro-environment of an apartment to the macro-environment of large areas of the city.

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