

## IDENTIFYING THE MAIN ASPECTS OF ANALYSING THE CONDITION OF THE HISTORIC CITY'S LIVING ENVIRONMENT

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**Annotation.** The article considers the basic principles of analysing the state of the living environment of a historical city with a view to its improvement, identifies its components and creates models for each aspect of the analysis. Characterisation of the causes and extent of changes and transformations in the structure of rural areas is an important task for developing a strategy for creating conditions for further fruitful and full development of the city.

The study is aimed at summarising and structuring various information on the reconstruction object, identifying the aspects by which the existing state of residential and public development zones should be assessed, in order to determine the potential and capabilities of the territory to accept reconstruction measures.

The study of public needs, current trends and available resources will contribute to the optimisation of urban planning conditions in accordance with social, environmental, ergonomic, functional, aesthetic, constructive, technological and economic requirements for improving the living environment. The improvement of the urban structure to achieve the physical, psychological and spiritual comfort of a person in an artificial environment demonstrates a human-centred approach to the search for an integrated, comprehensive (economic, social, energy, economic, transport, etc.) model of a city with a high level of environmental quality.

Urban redevelopment in the 21st century is characterised by an integrated approach. It is based on the mandatory consideration of biological, physiological, spiritual, aesthetic, psychological and socio-cultural aspects of human needs. It is important to emphasise the importance of social, environmental, ergonomic, functional, aesthetic, constructive, technological and economic requirements in improving the living environment and the need to ensure the conditions for the creation of an ecologically, psychologically and aesthetically comfortable environment by means of urban planning.

Determination of the existing structural and planning features of the organisation of residential and public areas of a historical city, the main factors influencing their formation in new social conditions, the availability of reserves and potentials, and trends for their further improvement is an important task of urban planning for development of a strategy for creation of conditions for fruitful and full, sustainable development of the city with ensuring a high quality human living environment.

Determining the principles of the analysis of the state of the living environment of a historical city will help to obtain comprehensive information for the development of a programme for the further development of residential and public areas of Ukrainian cities, their reconstruction and transformation into a comfortable, dignified and safe environment that meets the level of human needs and expectations as much as possible.

**Keywords:** zones of residential and public development, comfort of living environment, reconstruction, human needs and physiological capabilities, urban development needs.

**Relevance of the study.** Reconciling the city's development needs with the diverse and conflicting social interests of its inhabitants requires a gradual change in the spatial system of the living environment. In addition, the continuous demographic and territorial growth of the city, as well as the generally low quality of the existing living environment due to its physical, moral and

aesthetic ageing and deterioration, urgently require the reconstruction of residential and public development areas.

The study of current public needs, modern trends and available resources will help to optimise urban planning conditions in accordance with social, environmental, ergonomic, functional, aesthetic, constructive, technological and economic requirements for improving the living environment. In order to organise a structured and consistent analysis of aspects of its condition, it is necessary to identify a number of evaluation criteria and to develop a list of components of each of these criteria.

It is clear that ensuring a high level of living conditions is guaranteed by the current legislative and regulatory documentation. However, determining the current state of existing living conditions with a view to improving them requires a number of assessment factors, which makes this topic relevant.

**The problem is stated in general terms.** A city is a multifunctional entity with territorial, social and economic characteristics that define its specificity as a complex and diverse living organism in a state of constant development, change and improvement. The city itself is the basis for economic and social progress. The sustainability of the environment requires resources and potential, investment and care.

The city has an obligation to meet the universal human needs of its inhabitants, to provide them with physical, psychological and spiritual comfort in the built environment. For this reason, it is particularly important to thoroughly study the state of all components of the urban organism, to seek and analyse opportunities and options for transforming the environment, to develop and select a rational, optimal option that will contribute to the growth of the standard of living in the city.

The problem of the study is determined by the need to create a methodology for determining the main principles of analysing the state of the city's housing and public environment in the context of the reconstruction of historically developed territories, in order to develop measures aimed at the continuous improvement of living conditions.

**Analysis of recent research and publications.** The organisation of the material and spatial living environment is the main task of urban planning. Issues related to the reconstruction of historic cities, the development of their planning structure, and adaptation to new conditions of functioning are widely covered in domestic and foreign urban planning science.

The peculiarities of urban planning are covered in the works of Demin M.M., Syngaevska O.I., Didyk V.V., Bocharov Y.P., Kotlyarova O.V., Dvornikov Y.Y., Bezlyubchenko O.S., Zavalnyi O.V., Chernonosova T.O., Pavliv A.P., Pleshkanovska A.M., Ositnyanko A.P., Ailikova G.V. [1,2,3,4].

The scientific works of M.V. Bevz, A.M. Pleshkanovska, M.V. Byvalina, V.M. Vadimov, E.E. Klyushnychenko, R.V. Lisnychenko pay attention to the problems of complex reconstruction and restoration of the city [5,6,7,8,9,10].

M.M. Dyomin, A.M. Pleshkanovska, M.M. Gabrel, O.I. Syngaevska, M.A. Votinov, L.V. Yaremenko, O.O. Kostiuk have studied the problems of formation, development of the urban environment, consideration of general methodological issues of organisation of the urban environment, functioning, planning and improvement of residential and public development zones [11,12,13,14,15,16].

Special attention is paid to the issues of complex reconstruction, ecological concepts of the city and settlement, quality of the environment, which are reflected in the works of Bevz M.V., Klyushnychenko E.E., Cherkes B.S., Pleshkanovska A.M., Byvalina M.V., Vadimov V.M., Lisnichenko S.V., Zhdanova I.V., Korotun I.V. [17, 18, 19, 20].

**The subject of the study** is the living environment of a historic city.

**Purpose.** The purpose of the work is to identify a group of factors that are important for assessing the current state of the living environment.

**Research objectives.** The aim and purpose of the study is to determine the main principles for analysing the state of the residential and public environment of the city in the context of the

reconstruction of historically developed areas, in order to develop measures aimed at the continuous improvement of living conditions.

To this end, a series of tasks have been formulated:

- 1) to highlight the main aspects of the analysis of the existing state of residential and public development zones;
- 2) to provide a list of components of each type of factors;
- 3) to create models that generalise the list of components of each typological group.

**Presentation of the main material.** A person is a bio-social and spiritual being whose life takes place in a physical, social and cultural environment. The processes of vital activity of the population, its demographic and social reproduction are ensured in the living environment, the material conditions of which determine the fullness of these processes. Various human needs form the requirements for the quantitative and qualitative characteristics of the environment. Bringing the environment into a state that best suits human nature is a continuous activity of mankind aimed at gradual renewal of the environment, development of its structure, improvement of living conditions of the population in order to meet the growing needs of people and take into account their physiological capabilities.

The present is characterised by an awareness of the attitude towards the city, firstly as a material environment, and secondly as a visual proof of human involvement in history and culture, through which a person identifies himself or herself as a person.

The analysis of the components of the living environment consists of the consideration of aspects of its three structures - functional planning, architectural planning and social planning - which allows a full reflection of residential and public areas in the formation of the urban system. All settlements in Ukraine, including historical ones, have a similar organisation. Based on the laws of our country on urban planning, we can conclude that it is of paramount importance to create a fully-fledged living environment in our towns and villages, the structure of which is disclosed in the main regulatory document in the field of urban planning - DBN B.2.2-12:2019. Planning and development of territories [21].

The comfort provided by urban planning activities should improve the quality of the living environment, including accessibility and safety of the environment (environmental, physical, psychological, fire, criminogenic), the possibility of communication and preservation of private space, ensuring quantitative and qualitative indicators of housing, cultural and household services, compliance with the regulatory radii of their reach, building density, landscaping standards, requirements of sanitary and hygienic standards, architectural expressiveness of the environment. It is necessary to highlight the criteria for humanising the living environment - social, planning, environmental, ergonomic, functional, aesthetic and economic.

The restoration of the living environment from a human-centred perspective, in order to improve its condition and develop it for the benefit of the population, requires a comprehensive and integrated consideration of a number of aspects: environmental, technical, social, aesthetic, historical and architectural. The analysis of the collected information on all these aspects will provide a reliable basis for further urban planning activities and will offer the opportunity to develop an optimal solution for each area, which will improve the current state of the environment and will be able to meet the requirements and needs of people in the future.

Comprehensive reconstruction directly ensures the systemic adaptation of the city in the process of its development as a result of targeted urban planning activities. It is aimed at changing the parameters of the city's material infrastructure and the functional characteristics of its components, as well as at improving its spatial organisation, including the functional use of the territory, the rational consumption of resources for the development and functioning of the city, and the improvement of the architectural image of the city, in order to meet the ever-growing demands of the population for living conditions and the optimal functioning of industrial and social structures.

The environmental aspects have a direct impact on human health and determine the state of the environment through the following indicators: noise, vibration, air pollution, electromagnetic background, radiation, solar radiation, ventilation, lighting, humidity, temperature and the amount of greenery (Fig. 1).

Improving the quality of human life is directly related to solving an important socio-economic task - providing housing that meets modern requirements and takes into account material, social, mental, household and physical capabilities. Comfortable housing takes into account anthropometric parameters, protects against adverse weather conditions, provides an optimal microclimate, appropriate conditions for work and leisure, raising children, various household processes, etc.

People spend most of their lives indoors. Depending on age, type of work, state of health and individual lifestyle, the time spent indoors during the day varies from 40 to 100 per cent, with an average of 75 to 80 per cent. And the quality of indoor environments has a significant impact on health, well-being, morbidity and mortality.

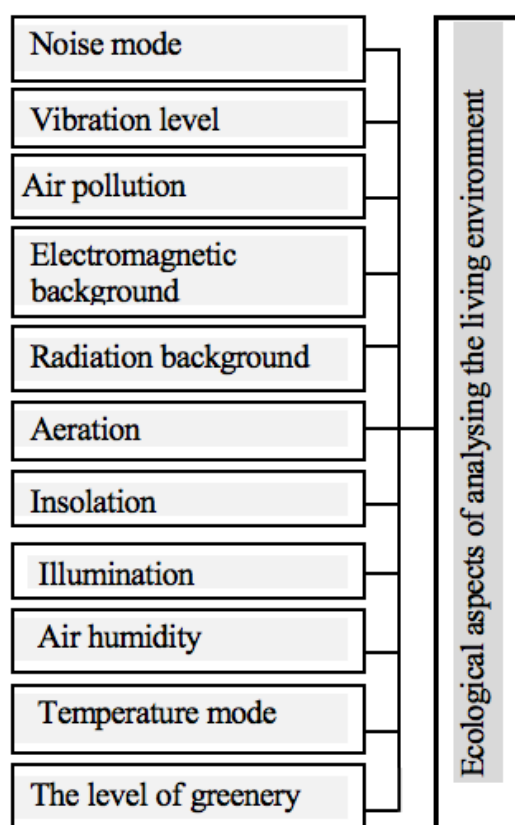


Fig. 1. Ecological aspects of analysing the living environment

In order to organise measures to eliminate environmental nuisances, optimise environmental parameters and reduce and regulate negative indicators, the composition and level of all environmental nuisance factors are analysed in comparison with the regulatory indicators. The technical aspects take into account the state of the building (number of storeys, wall material, investment, physical deterioration), the equipment and state of the utility networks, landscaping elements, location in relation to red lines, compliance with fire breaks and sanitary and hygiene requirements (Fig. 2).

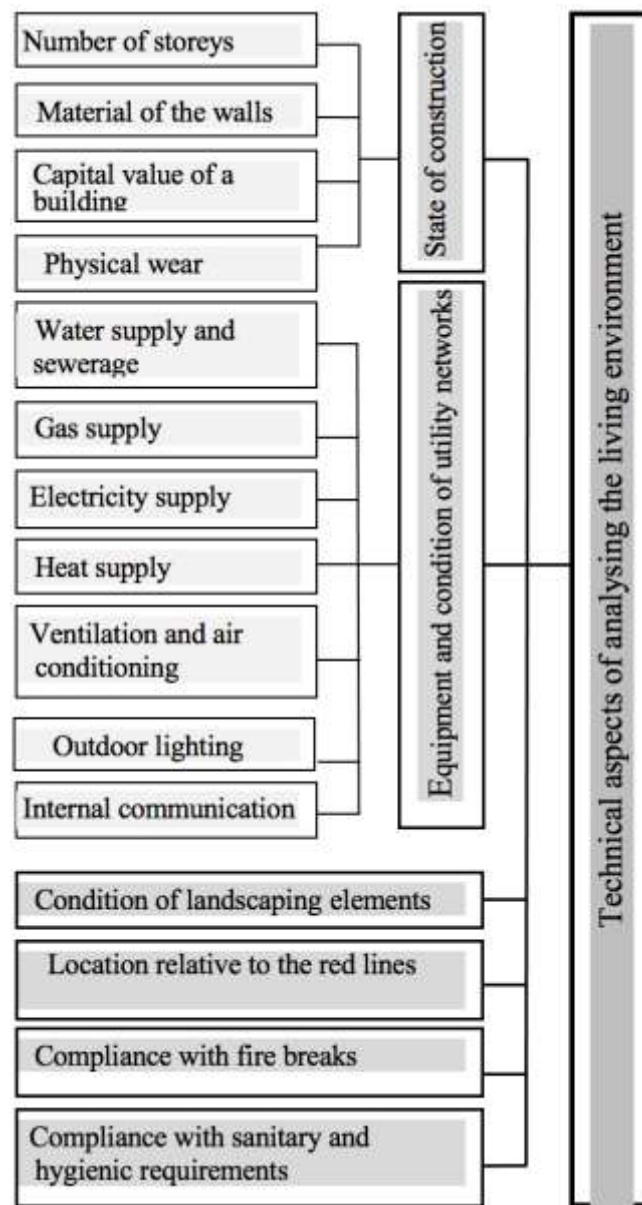


Fig. 2. Technical aspects of living environment analysis

It is the technical aspects that indicate the possibility or impossibility of further functioning of the building and its ability to accept reconstruction and modernisation measures. In order to determine the degree of complexity of the reconstruction measures, it is necessary to take into account the urban planning situation, the potential of the area and the immediate needs of the inhabitants.

Increasing the size of the building body, superstructure and extension will significantly improve the performance of the building, but neighbouring buildings should not suffer in the event of a possible reduction in illumination and solar radiation indicators due to shading. In addition, an increase in building area will significantly reduce the area of common areas. This should be taken into account and a compromise solution found.

Social aspects include an analysis of the availability and accessibility of social infrastructure, including the social and social infrastructure, including the social and spiritual sphere, and socio-economic indicators, consisting of housing and landscape indicators (Fig. 3).

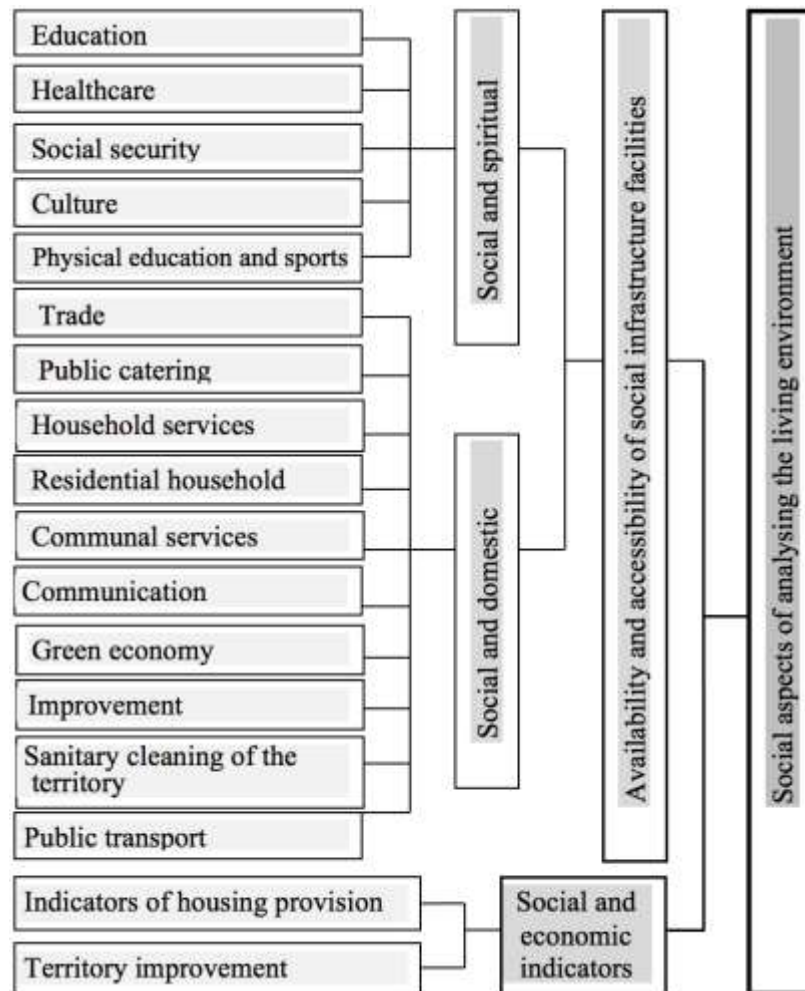


Fig. 3. Social aspects of the analysis of the living environment

Social and spiritual infrastructure objects meet human needs for the maintenance and development of physical abilities, intellectual and moral development. The social and spiritual infrastructure consists of the following subdivisions: education, health care, social security, culture, physical education and sport [22].

The objects of the social and amenity infrastructure create everyday living conditions for human activity and provide mainly material services. The social and amenity infrastructure of a city includes the following subdivisions: trade, restaurants, consumer services, housing, utilities, communications and public transport.

The aesthetic aspects of the analysis of the living environment are conditioned by the spiritual and cultural development of a person, which requires the expressiveness and diversity of the environment and forms the requirements for its organisation - beauty, artistic expression, individuality, harmony, compositional integrity, scale, proportionality, brightness, compatibility with the environment and landscape, rationality and adequacy of landscaping (Fig. 4).

Focusing on aesthetic development and the development of the living environment as one of the aspects of its humanisation will make it possible to overcome the negative aspects of the impact of monotonous and aggressive development on people, the violation of the integrity of the environment, and will lead to harmonisation, improvement of the urban organism and the achievement of aesthetically optimal living conditions [23].

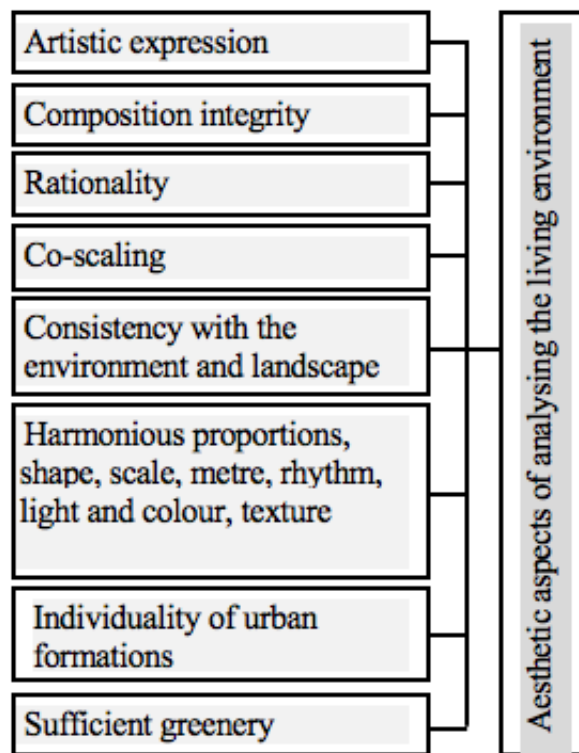


Fig. 4. Aesthetic aspects of the analysis of the living environment

Cultural heritage shapes the mentality, is a source of spiritual enrichment, affirms the continuity of humanistic values, influences social processes and promotes a harmonious balance in society (Fig. 5).

High aesthetic qualities and the degree of preservation of the historical and architectural environment determine the individuality and uniqueness of the town.

Analysis of the natural landscape (relief, hydrography, landscaping), historical and urban environment characteristics (degree of historical and cultural value, planning structure, compositional and spatial structure, scale structure), architectural characteristics (chronological, compositional and technological, architectural and artistic, stylistic), historical and memorial characteristics (places of important historical events, places associated with the lives of prominent people), functional and sociological characteristics (time of creation, degree of preservation, degree of transformation), quantitative indicators (area, buildings, density, volume) will allow us to identify features that will contribute to the harmonious combination of modern architecture and the existing urban landscape.

At the same time, it is important to take into account existing restrictions on historically valuable areas and buildings, as well as development regulation zones. Each area contains a variety of buildings. And for particularly valuable buildings, the need to take account of restrictions during reconstruction is a salvation from destruction.



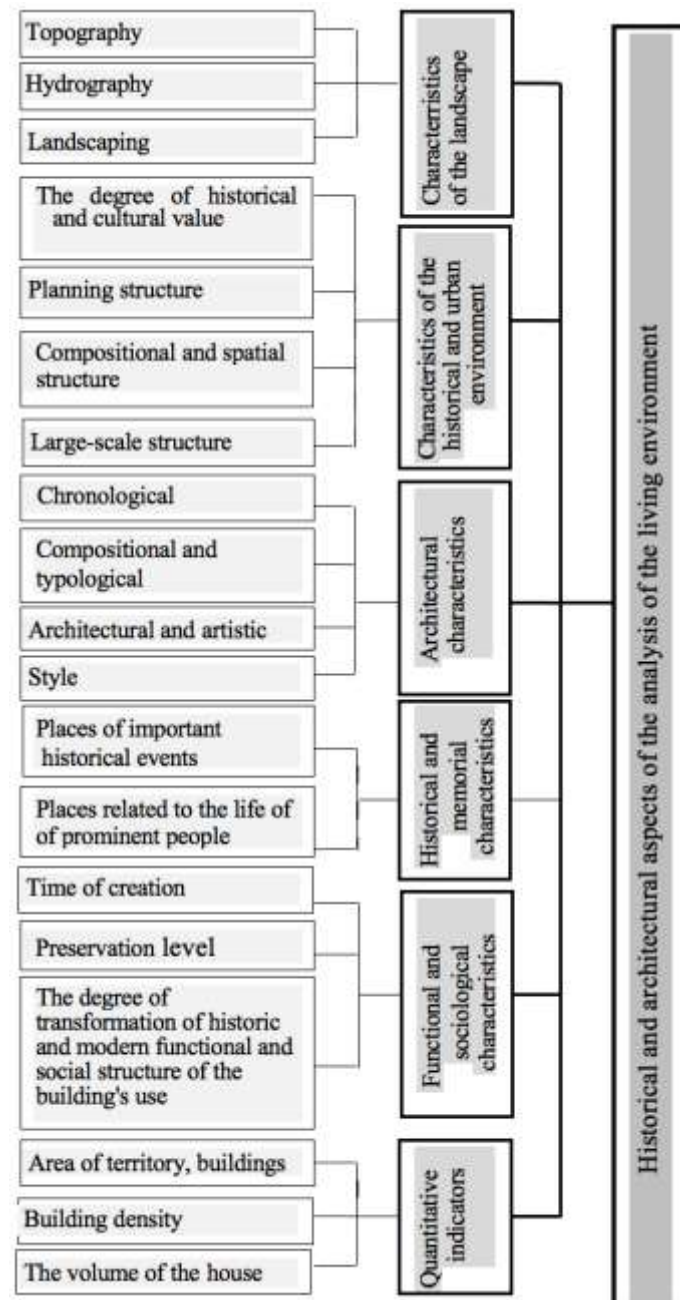


Fig. 5. Historical and architectural aspects of the analysis of the living environment

Therefore, when considering the development of historic urban areas, there is a significant problem of reconciling two crucial factors. On the one hand, it is necessary to take into account the investment attractiveness of urban areas and buildings, which is based on their urban value and is reflected in the monetary valuation of the land of the settlement. On the other hand, there is a strict system of restrictions that form the requirements for the preservation of existing monuments of the cultural heritage of the historic city.

There are more than 400 historical towns and cities in our country with cultural heritage, which require a large amount of funds to maintain their proper state of preservation and use.

A priority area of foreign and domestic policy, defined as an indicator of the level of development of the state and the spiritual maturity of its citizens, is the preservation of the national cultural heritage, the attitude towards historical and architectural monuments and the desire to actively integrate them into the life of the city.



**Conclusions.** The study has shown that a fully comprehensive analysis of the components of the living environment requires a comprehensive consideration of a number of aspects: environmental, technical, social, aesthetic, historical and architectural. These aspects are multi-component and multi-level, forming a complex structure of the process of collecting comprehensive information about the planned reconstruction object.

The developed models summarise the list of factors that should be considered when determining the existing state of the environment to be reconstructed and modernised. The comprehensive organisation of the process of developing measures for the further development of the residential and public development zone will significantly increase the efficiency of territory use and at the same time improve the qualities and indicators of the living environment as an anthropomorphic object that meets the conditions of ecological, psychological and aesthetic comfort.

**Prospects for further research.** The living environment of a historic city is usually represented by a variety of buildings, which have different indicators and characteristics, determined by different times of their creation, different degrees of historical and architectural value, functional and planning, architectural and planning, social and planning, structural and stylistic characteristics.

A relevant area for further research will be to determine the structural and planning features of the formation of residential and public development zones of various types, the main factors influencing their formation in the new social conditions, and the tendencies for their further improvement. Each type of territory has a different degree of historical and architectural value, system of restrictions, territory size and type of development. All this influences the level of opportunities and reserves for their gradual transformation into a harmonious and fully-fledged living environment that meets human needs.

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## ВИЗНАЧЕННЯ ГОЛОВНИХ АСПЕКТІВ АНАЛІЗУ СТАНУ СЕРЕДОВИЩА ЖИТТЄДІЯЛЬНОСТІ ІСТОРИЧНОГО МІСТА

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**Анотація.** В статті розглянуто основні засади проведення аналізу стану середовища життєдіяльності історичного міста з метою його вдосконалення, визначено їх складові та створено моделі відповідно кожного аспекту аналізу. Характеристика причин і масштабів змін, трансформації структури сельбищних територій є важливим завданням для вироблення стратегії створення умов для подальшого плідного і повноцінного розвитку міста. Дане

дослідження спрямоване на узагальнення та структурування різноманітної інформації по об'єкту реконструкції, визначення аспектів, за якими має проводитись оцінка існуючого стану зон житлово-громадської забудови для виявлення наявності потенціалу та можливостей території прийняти заходи по реконструкції.

Вивчення громадських потреб, сучасних тенденцій та наявних ресурсів сприятиме оптимізації містобудівних умов в відповідності до соціальних, екологічних, ергономічних, функціональних, естетичних, конструктивно-технологічних, економічних вимог до покращення стану житлового середовища. Вдосконалення міської структури з метою досягнення фізичного, психологічного та духовного комфорту людини в штучному оточенні демонструє людино-спрямований підхід до пошуку інтегральної, комплексної (економічної, соціальної, енергетичної, економічної, транспортної і т.п.) моделі міста з високим рівнем якості середовища.

Реконструкція міста в XXI сторіччі характеризується комплексним підходом. Вона базується на обов'язковому врахуванні біологічних, фізіологічних, духовних, естетичних, психологічних та соціокультурних аспектів потреб людини. Важливо підкреслити значення соціальних, екологічних, ергономічних, функціональних, естетичних, конструктивно-технологічних, економічних вимог при вдосконаленні житлового середовища та необхідність забезпечення умов формування екологічно, психологічно та естетично комфортного середовища містобудівними засобами.

Проведення аналізу існуючих структурних і планувальних особливостей організації зон житлово-громадської забудови історичного міста, головних факторів, що впливають на їх становлення в нових соціальних умовах, наявність резервів та потенціалу, тенденції подальшого їх вдосконалення є важливим містобудівним завданням для вироблення стратегії створення умов плідного і повноцінного, стійкого розвитку міста з забезпеченням високої якості гуманізованого середовища проживання.

Визначення засад аналізу стану середовища життєдіяльності історичного міста сприятиме отриманню повноцінної всебічної інформації для розробки програми подальшого розвитку житлово-громадських зон міст України, їх реконструкції і перетворенню в комфортне, гідне і безпечне середовище, що максимально відповідає рівню людських потреб та очікувань.

**Ключові слова:** зони житлово-громадської забудови, комфортність середовища життєдіяльності, реконструкція, потреби та фізіологічні можливості людини, загальноміські потреби розвитку.