

UDC 72.01:712:719

DOI <https://doi.org/10.32782/2415-8151.2026.40.23>

# PRINCIPLES OF ARCHITECTURAL ENVIRONMENTAL DESIGN OF THE KUYALNIK SANATORIUM IN ODESA

**Sukhanov Volodymyr Hennadiiovych<sup>1</sup>, Tiurikova Olena Mykolaiina<sup>2</sup>,  
Vakhnichenko Oleksandra Vitaliivna<sup>3</sup>**

<sup>1</sup> Doctor of Technical Sciences, Professor,  
Director of the Architectural and Art Institute,  
Odesa State Academy of Civil Engineering and Architecture, Odesa, Ukraine,  
e-mail: vl.g.sukhanov@gmail.com, orcid: 0000-0003-2371-181X

<sup>2</sup> Candidate of Pedagogical Sciences,  
Associate Professor at the Department of Architectural Environment Design, Odesa State  
Academy of Civil Engineering and Architecture, Odesa, Ukraine,  
e-mail: tulena@odaba.edu.ua, orcid: 0000-0002-4279-7623

<sup>3</sup> Candidate of Architecture,  
Associate Professor at the Department of Architectural Environment Design, Odesa State  
Academy of Civil Engineering and Architecture, Odesa, Ukraine,  
e-mail: avakhnichenko@gmail.com, orcid: 0000-0002-1244-8852

**Abstract.** The article reveals the essence of architectural environment design principles for the Kuyalnik Sanatorium in Odesa.

**Purpose** of the study is to identify and substantiate the principles of architectural and environmental design of the Kuyalnik Sanatorium.

**Methodology.** The study is based on an interdisciplinary approach combining architectural, environmental, and historical-cultural analysis. Methods of analysis, synthesis, comparison, and systematization were applied. Archival materials and field research were used to assess the current state of the environment. A factor-based analysis identified key development determinants. Master's projects were also analyzed, enabling the formulation of a hypothesis and design principles.

**Results.** Based on the analysis of scientific sources, archival materials, and master's projects, key factors influencing the development of the Kuyalnik Sanatorium environment and priority transformation directions were identified. A system of architectural environmental design principles was formulated, reflecting the combination of historical heritage and contemporary approaches, including ecological restoration, wellness orientation, spatio-temporal continuity, clustering, aesthetic expression, stylistic definiteness, and technological efficiency.

**Scientific novelty.** The study proposes a hypothesis for the harmonious development of the sanatorium environment is proposed, based on the interaction of historical-cultural context, natural conditions, and contemporary approaches.

**Practical relevance.** The results can be applied in architectural practice and education, supporting the preservation and sustainable development of historically and environmentally significant environments.

**Keywords:** Kuyalnik Sanatorium, historical and architectural environment, spatio-temporal continuity, emotional and aesthetic saturation, ecological restoration, rehabilitation and wellness orientation, stylistic definiteness, territorial and functional clustering, technological efficiency.

## INTRODUCTION

The relevance of the study lies in the identification and design implementation of fundamental principles that enable the integration of the diverse stylistic historical heritage of the Kuyalnik Sanatorium with its contemporary forms and future development. In Odesa's public and professional discourse, the issue of restoring Kuyalnik as a unique ecosystem and a site of historical and cultural heritage is consistently raised by public organizations, the professional community, and mass media [11; 12; 14; 19; 20]. For more than a decade, the threat of losing this site has remained a matter of public concern. The ecological condition of the Kuyalnik Estuary continues to deteriorate, while neither official recognition of the problem, nor the real threat of the loss of unique architectural heritage, nor the economic losses to the public budget have led to the implementation of effective measures to preserve the sanatorium environment.

Each year, the Institute of Architecture and Art of the Odesa State Academy of Civil Engineering and Architecture organizes competitions and develops course and diploma projects focused on the territory of the Kuyalnik Sanatorium. A substantial body of field research has been accumulated, including factor-based analytical frameworks, data on lost historical and architectural heritage, and studies of the condition of buildings, structures, natural environment, vegetation, and terrain. Design proposals developed within students' qualification projects regularly receive awards at national and international competitions and are supported by scientific research substantiating these solutions. However, a unified strategy and methodology for the architectural and environmental development of the Kuyalnik Sanatorium have not yet been established. The need to address these issues and contradictions determines the relevance of this study.

*Problem Statement.* The Kuyalnik Estuary is one of the oldest mud resorts and has been part of the Kuyalnytskyi National Nature Park since January 1, 2022. The issue of developing and enhancing the health and rehabilitation potential of the Kuyalnik Estuary has attracted considerable attention from both society and local authorities. The preservation of the estuary as a unique ecosystem, which continues to deteriorate, remains a key concern for ecologists, engineers, and researchers across various disciplines. Issues related to preserving the identity of the site, reinforcing its symbolic and landmark significance, and integrating it into a unified historical and cultural reserve together

with Zhevakhova Hill are reflected in the activities of several local public organizations.

The renovation of the historical part of the Kuyalnik Sanatorium in Odesa was addressed in the 2025 qualification project by Anastasiia Zhukova, which explored the lost heritage and new functional opportunities of the water-recreational complex. The 2024 qualification project by Oleksandr Pozdniakov focused on technological approaches to improving the ecological condition of the territory, while the 2023 project by Anastasiia Rusol aimed at identifying a leading design concept to guide the artistic interpretation of the site and to activate its recreational and rehabilitation functions. All departments of the Institute of Architecture and Art of the Odesa State Academy of Civil Engineering and Architecture consistently engage with this significant site of the Odesa region and Ukraine. However, a comprehensive solution to the problem has not yet been achieved. In this context, the study proposes a hypothesis that such a solution is possible through defining the conditions for the harmonious development of the Kuyalnik environment and substantiating the principles of its architectural environmental design.

## ANALYSIS OF RECENT RESEARCH

In recent years, few scientific publications have addressed the renovation of the Kuyalnik Sanatorium; however, the issue remains actively discussed in mass media and professional online platforms [8; 11; 12; 14; 19; 20]. While the official website of the sanatorium presents its health programs, the deteriorated state of its infrastructure is frequently highlighted in journalistic sources and social media, where the decay of buildings is documented and associated with urban exploration activities and informal photographic practices. The urgency of restoring this historically significant resort, which requires substantial investment, is consistently emphasized.

Recent publications on Kuyalnik in Odesa focus on attempts at restoration, the problems of abandoned buildings, and discussions of the ecological condition of the estuary. They also address legal issues related to the ownership of the sanatorium. In February 2023, a court decision returned the Kuyalnik Sanatorium to state ownership following a period of illegal privatization, which is considered an important step toward its potential restoration. Ongoing discussions also concern measures aimed at preventing the dehydration of the Kuyalnik Estuary and the degradation of its unique therapeutic muds, as well as combating illegal sand extraction and landfill activities.

Furthermore, a number of publications highlight the historical significance of Kuyalnik as one of the oldest mud resorts in Europe. Notably, a film dedicated to Kuyalnik in Odesa, directed by Garry O'Rourke, was submitted by Ireland to the 98th Academy Awards in the category of International Feature Film [10; 13; 16; 6; 9]. Among scientific contributions, particular attention should be given to the works of researchers and students of the Odesa State Academy of Civil Engineering and Architecture (O. Savytska, A. Rusol, O. Vakhnichenko [17; 18]), which address the principles of architectural environmental design for the renovation of this site.

In domestic scholarly research, the issues of preservation and transformation of the urban historical environment are examined, with particular attention paid to substantiating approaches to the adaptive reuse of architectural heritage and the specific features of their reconstruction as a strategic tool for sustainable urban development [4; 5; 7].

In recent years, increasing attention has been given to the adaptive reuse of historic buildings as an effective means of preserving the cultural identity of the environment and extending the life cycle of structures through the introduction of new functions [1; 3]. Furthermore, the landscape-based approach to the historical urban environment is considered, enabling the integration of architectural and environmental elements into a coherent spatial structure while preserving their unique characteristics [2].

## PURPOSE

*The purpose of the study* is to define and substantiate the principles of architectural environmental design of the Kuyalnik Sanatorium in Odesa.

*The object of the study* is the architectural environment of the sanatorium complex, considered in its historical, natural-landscape, functional-planning, and socio-cultural dimensions.

*The subject of the study* is the set of principles of architectural environmental design of this environment, as well as the elucidation of their essence and content within the context of contemporary approaches to the restoration of neglected historical landscape and architectural sites.

*Research objectives:*

- to identify the prerequisites for the architectural environmental design of the Kuyalnik Sanatorium;
- to determine the factors influencing the development of its architectural environment;

- to analyze how these factors are reflected in design solutions, based on student qualification projects;

- to propose and substantiate a working hypothesis regarding the conditions for the harmonious development of the Kuyalnik environment;

- to define and disclose the principles of architectural environmental design of the Kuyalnik Sanatorium;

- to outline prospects for further research in the field of architectural environmental design of the sanatorium.

## RESULTS AND DISCUSSION

The Kuyalnik Sanatorium is located in the northern part of Odesa, on the coast of the Kuyalnik Estuary. The territory is bounded by the slopes of Zhevakhova Hill to the south and by the waters of the estuary to the north. The estuary, which originated as the mouth of the Velykyi Kuyalnik River, was later transformed into a lagoon-type water body, separated from the Black Sea by deposits of marine and alluvial sands and silts. As a result, the salinity of its waters increased, forming brine – a highly concentrated salt solution. The bottom sediments contain significant deposits of peloids (therapeutic muds) characterized by a complex biochemical composition and pronounced therapeutic properties.

The therapeutic properties of the waters and muds of the Kuyalnik Estuary have been known since at least the Cossack period. Historical accounts refer to the salt trade of the Chumaks, and it is assumed that the medicinal properties of the muds were used for recovery purposes. According to historical sources, in the 19th century, part of the estuary may have been separated by a dam, remnants of which are still visible today. Archaeological investigations are ongoing on the territory of Zhevakhova Hill and within the estuary area, providing additional data on the historical development of the site.

In the early 1830s, considerable attention was given to the medicinal properties of the estuary's waters and muds. Erast Andriyivskiy, after whom the estuary was once named, played a key role in promoting the establishment of a mud-cure resort on its coast. In 1833, the city authorities acquired part of the territory from Major General I. S. Zhevakhov. According to the design by architect I. Koshelev, the first buildings of the future sanatorium were constructed there. These were wooden bathing facilities that have not survived (Fig. 1).

Based on a fragment of the 1919 plan of Odesa, it can be assumed that these structures

had a trident-like configuration and extended beyond the shoreline of the estuary. In addition, temporary barrack-type buildings with limited amenities and poorly developed infrastructure were located on the territory, which adversely affected visitor numbers and public perception of the resort. As a result, the development of this promising area remained relatively stagnant until 1865.

When the city authorities decided to intensify the development of Kuyalnik and restore its status as a health resort, one of the first measures was the introduction of a steam tram line (Fig. 2). The emergence of this relatively affordable mode of transport led to a significant increase in visitor numbers, which the existing infrastructure could no longer accommodate. This became one of the key factors stimulating the large-scale development of the resort.

A key facility of the complex – the Andriyivskiy Mud Clinic – was constructed according to the design of the prominent Odesa architect Mykola Kostiantynovych Tolvynskiy. The design was based on a pavilion system connected by covered galleries, a concept derived from one of the architect’s earlier competition projects. This approach ensured flexibility and

allowed for further expansion as visitor demand increased.

The layout of the mud clinic includes four corner pavilions differentiated by class and function (Fig. 3). Premises located closer to the estuary were designated for higher-class users, while those situated further away served a lower category. Both sections included facilities for mud therapy and brine baths. The covered galleries connecting the pavilions form an enclosed courtyard intended for walking and quiet recreation. Analysis of archival photographs and plans suggests that a fountain was located at the center of the courtyard, with pathways arranged along its perimeter.

Stylistically, the building combines elements of Gothic, Pseudo-Russian, and Moorish traditions, resulting in an eclectic architectural composition. Decorative elements are extensively applied to the façade surfaces, creating refined lace-like brick detailing.

The mud clinic itself was not intended for residential use. Instead, numerous private villas and boarding houses were constructed along the slopes of Zhevakhova Hill. According to various sources, these accommodations could host approximately 3,000 to 7,000 visitors. In total,



Fig. 1. Wooden bathhouses of the 1830s, arch. I. Koshelev. Archival photograph and a fragment of the site plan (Source: viknaodessa.od.ua)

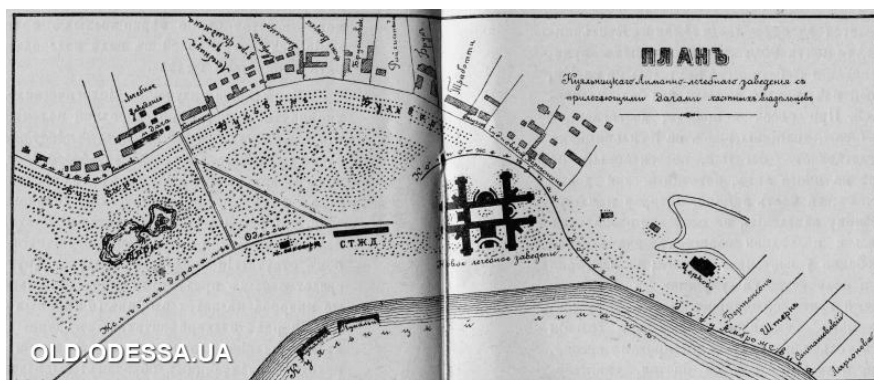


Fig. 2. Fragment of the 1919 plan of Odesa and layout schemes of the Kuyalnik Estuary. Archival drawings (Source: viknaodessa.od.ua)

around a dozen such buildings, owned by different proprietors, were located in the area. Most of them were situated along the main alley, the route of which partially corresponds to present-day Lymanna Street (Fig. 4).

Archival photographs of only a limited number of facilities within the resort territory have been preserved. Dr. Ambrozhevych's Sanatorium occupied an area of approximately 16.5 hectares and consisted of a complex of buildings, including furnished villas (seasonal rental cottages), a medical wing, a dining hall, gazebos, and pedestrian alleys.

The tram, operating at hourly intervals, served as the main mode of transport connecting the sanatorium with the city. The railway station, constructed of metal, was integrated into

the overall spatial structure of the Kuyalnik Park. From the station, the sanatorium buildings and guesthouses could be accessed on foot or by horse-drawn tram (Fig. 5). In addition, the territory could be reached via a road running along the slopes of Zhevakhova Hill. In 1914, part of the terrain was leveled, retaining walls were constructed, and the road infrastructure was improved, including the addition of a long staircase leading to the Kuyalnik Arch. The increasing popularity of the resort led to the construction of a church near the main cluster of guesthouses. At present, its appearance has been significantly altered due to destruction and subsequent reconstruction.

In the area adjacent to the mud bath building, a formal (regular) park was established,

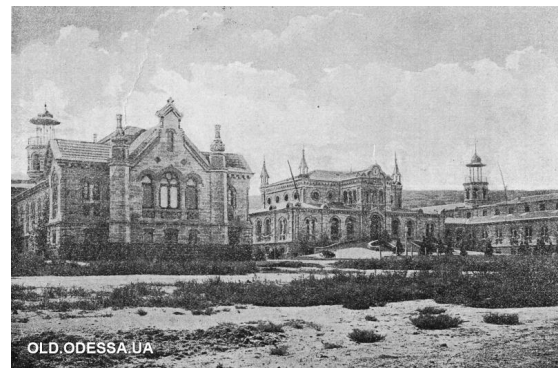
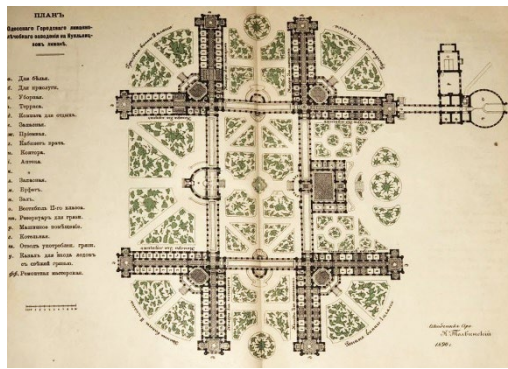


Fig. 3. Project of the city hospital by M. K. Tolvinskyi. Ground floor plan and archival photograph (Source: plan – <https://intent.press/publications/society/2024/gryazi-kuyalnika-istoriya-rozkvitu-ta-zanepadu-balneologichnoyi-perlini-yevropi/>; photograph – [viknaodessa.od.ua](http://viknaodessa.od.ua))



Fig. 4. Facade of Dr. Ambrozhevych's villa-boarding house. Sanatoriums of the 1920s. Lost objects. Archival photograph (Source: [viknaodessa.od.ua](http://viknaodessa.od.ua))



Fig. 5. Horsecar (Konka) and the descent to the sanatorium from Zhevakhova Hill (Source: [viknaodessa.od.ua](http://viknaodessa.od.ua))

which transitioned into a main alley surrounded by a landscape park. One of the key landscape dominants is an artificial lake, which has been preserved with minor modifications. Archival photographs indicate that the reservoir was used for boating, while an artificial island within it served as a base for various structures over time, ranging from a gazebo to an open-air summer theatre.

The analysis of current environmental conditions made it possible to identify the key factors influencing the development of the Kuyalnik Sanatorium environment in Odesa (Fig. 6).

The study area covers the central part of the Kuyalnik Sanatorium territory and has a total area of approximately 104 hectares. It is bounded by Obyizna Road to the south and east, the slopes of Zhevakhova Hill and Lymanna Street to the west, and the waters of the Kuyalnik Estuary to the north. The surrounding context includes industrial warehouse facilities to the east, undeveloped areas to the south, and residential development to the west, partially screened by the terrain.

According to the General Development Plan of Odesa, the study area is designated as a health resort zone. In addition, large-scale park areas are proposed to the east and south,

intended to become part of the city’s recreational system.

The main transport axis of the territory (Fig. 7) is Lymanna Street, which passes beneath the Bypass Road and extends across the entire site, running almost parallel to the estuary shoreline. It connects all parts of the sanatorium complex and continues around the reservoir, turning northward.

Parallel to Lymanna Street runs an unnamed street that largely duplicates the main axis and serves technical access functions. Several perpendicular connections link these two axes and are intended primarily for pedestrian movement. The territory includes three public transport stops and two parking areas.

At the junction of the Bypass Road and Lymanna Street, the Kuyalnik Mineral Water Plant is located. Its low-rise buildings are largely screened by a fence. The modern part of the sanatorium consists of buildings from the 1970s, designed in the tradition of late modernist architecture, a cultural and entertainment center, and a medical facility with an indoor pool containing therapeutic brine (Fig. 8).

Within the historical territory of Kuyalnik, several structures have been preserved, including



Fig. 6. Comparison of the existing and prospective surroundings of the Kuyalnik Sanatorium site (Source: master’s thesis project by A. Zhukova; Supervisor: Assoc. Prof. O. M. Tiurikova)



Fig. 7. Diagram of historically established internal connections (Source: master’s thesis project by A. Rusol; Supervisor: Assoc. Prof. O. M. Tiurikova)

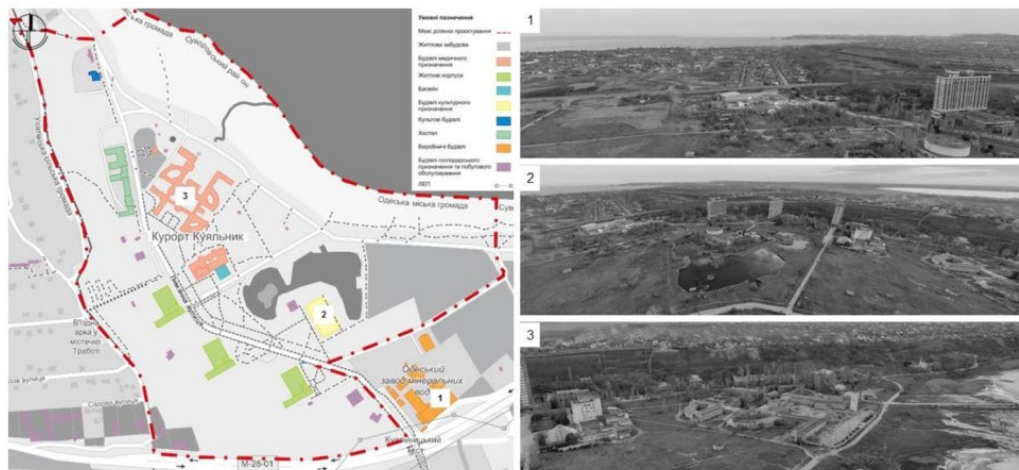


Fig. 8. Site built-up area diagram

(Source: master's thesis project by A. Rusol; Supervisor: Assoc. Prof. O. M. Tiurikova; Photographs: <https://www.google.com/maps/>)

the Andriievskiy Mud Clinic, former private guesthouses currently adapted for staff accommodation, a pump room with medicinal water, and a reconstructed church. On Zhevakhova Hill, there is an ascent leading to the Kuyalnik Arch. The buildings in this area are predominantly one- and two-story structures, arranged mainly in a linear pattern along Lymanna Street. To the west of the main axis lies the zone designated for temporary accommodation, while the opposite side accommodates industrial, cultural, entertainment, and medical functions. The primary visual landmarks (height dominants) are the residential buildings of the modern sanatorium, reaching up to ten stories. The overall condition of the built environment is significantly deteriorated.

The ecological structure of the territory is represented mainly by steppe vegetation, extending from the slopes of Zhevakhova Hill to the mudflats of the Kuyalnik Estuary (Fig. 9).

The coastal zone consists of a mixture of mud and salt deposits. Areas surrounding the buildings are partially landscaped with shrubs and sparse tree planting. An artificial lake is also present, although it is currently almost dried up. The ecological condition of the territory requires significant improvement through increased greening, restoration of existing water bodies, and the introduction of new elements to support environmental sustainability. A substantial part of the territory remains undeveloped. The functional structure of the site, although generally logical, currently functions inefficiently due to the deteriorated condition of buildings and infrastructure, as well as outdated technological systems.



Fig. 9. Diagram of the ecological structure of the Kuyalnik Sanatorium territory. Diagram of conventional zoning. Panorama

(Source: master's thesis project by A. Zhukova; Supervisor: Assoc. Prof. O. M. Tiurikova; Photographs: <https://www.google.com/maps/>)

From a compositional perspective, the sanatorium territory (Fig. 10) is divided by Lymanna Street into two unequal parts: a residential zone and a health-recreational zone. A secondary axis runs along an internal street northwest of the artificial lake, conventionally dividing one of these zones into historical and modern sections. Each of the resulting parts has its own compositional center and a system of perpendicular axes. In the modern residential zone, the compositional center corresponds to the central building, while the axes align with the building layout.



Fig. 10. Diagram of the compositional structure of the territory (Source: master's thesis project by A. Rusol; Supervisor: Assoc. Prof. O. M. Tiurikova; Photographs: <https://www.google.com/maps/>)

The modern functional zone has its compositional center located at the cultural and entertainment building. This structure also serves as a landmark for the main axes, which correspond to the previously identified directions. Within the historical Kuyalnik zone, the inner courtyard of the Andriievskiy Mud Clinic functions as the compositional center, with axes running parallel to the pavilion wings. Given the clearly expressed central intersections of the compositional axes in each zone, it is necessary to maintain the existing compositional systems and establish coherent connections between them.

Thus, factor analysis of the territory – encompassing transport and pedestrian networks, ecological structure, building heights, functional zoning, and compositional organization – makes it possible to identify the key factors influencing the architectural environmental design of the Kuyalnik Sanatorium. These include the territorial integration of industrial and recreational-wellness zones; clear localization determined by historical development and terrain; the balance of compositional dominants (historical, high-rise, and natural); a clearly defined framework of internal connections; the vulnerability of the ecological structure; and the high artistic and aesthetic value of the environment.

The study proposes a hypothesis regarding the conditions for the harmonious development of the Kuyalnik environment. The development of the architectural environment of the Kuyalnik Sanatorium is ensured provided that its unique ecosystem is preserved and restored; its functional-spatial and historical-stylistic clustering is maintained; and its level of technological advancement is enhanced through the implementation of contemporary technologies. It is also

appropriate to implement the method of revalorization as a means of enhancing the architectural and aesthetic value [15] of architectural objects and their surrounding environment.

An analysis of design proposals for the renovation of the architectural environment of the Kuyalnik Sanatorium – developed by graduates of the Department of Architectural Environment Design (Institute of Architecture and Art, OSACEA), including Anastasiia Rusol, Oleksandr Pozdniakov, and Anastasiia Zhukova – reveals a set of principles underlying their design solutions (Fig. 11–13).

*The principle of ecological restoration* emphasizes the priority of identifying and preserving the natural and ecological conditions of the sanatorium complex. In student qualification projects, particular attention is given to compensatory strategies aimed at ecosystem restoration, including water replenishment (irrigation), landscaping, technological measures to prevent the desiccation of the Kuyalnik Estuary, and nature conservation initiatives focused on preserving local flora and fauna.

*The principle of rehabilitation and wellness orientation* involves the continuous preservation of the primary function of the environment over time, as well as its restoration and further development in diverse forms. In the analyzed student projects, the rehabilitation and wellness function remains central, while being either reinforced or adapted to specific target groups. For example, the project by A. Rusol proposes the development of rehabilitation facilities for military personnel and war victims (Fig. 11a); the project by O. Pozdniakov focuses on attracting younger and more active user groups; and the project by A. Zhukova aims to restore the tourist and high-status appeal of the sanatorium.

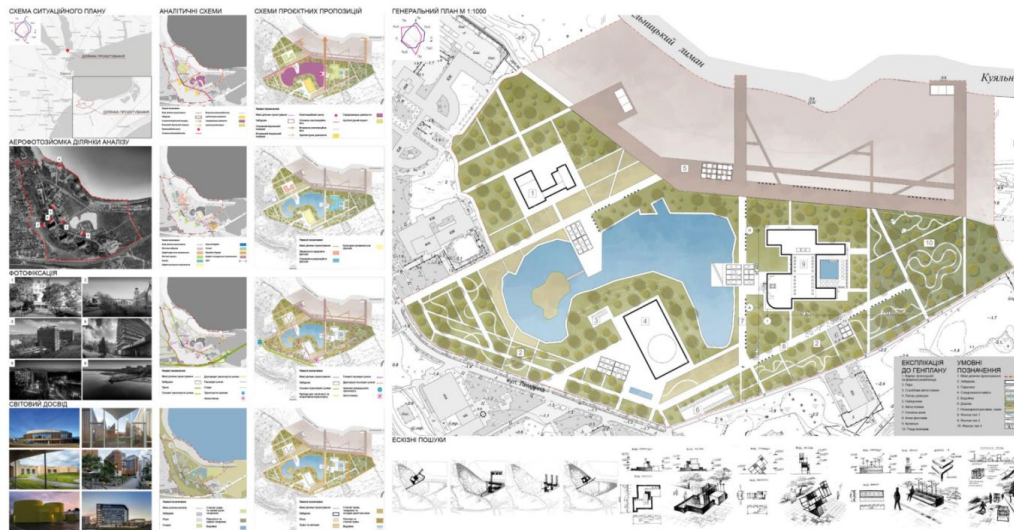


Fig. 11a. Spatial organization of the Rehabilitation Center for Military Personnel in the design proposal by A. Rusol. Supervisor: Assoc. Prof. O. M. Tiurikova



Fig. 11b. Reinforcement of Constructivist stylistics in the design of the bathhouse building for the Military Rehabilitation Center by A. Rusol. Supervisor: Assoc. Prof. O. M. Tiurikova

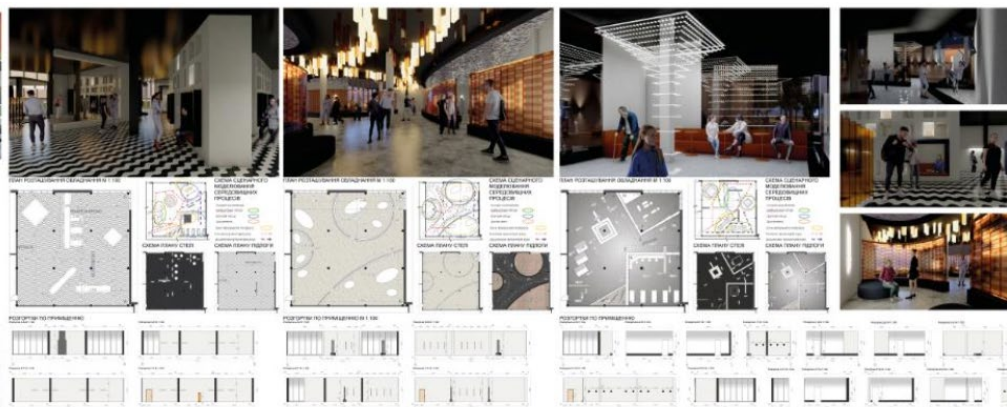


Fig. 11c. Design proposals for the architectural environment of the Kuyalnik Sanatorium by A. Rusol. Supervisor: Assoc. Prof. O. M. Tiurikova

The principle of spatio-temporal continuity contributes to the identification of historical and cultural boundaries within the architectural environment of the Kuyalnik Sanatorium and supports the preservation of architectural heritage from different periods and stylistic layers. In the analyzed student projects, this principle is implemented through the delineation of territories according to their historical or natural context: the 1970s development in the project by A. Rusol; the 19th-century development in A. Zhukova’s project; and a naturally depressed undeveloped area at the boundary with the industrial zone in O. Pozdniakov’s project.

The principle of territorial and functional clustering ensures the restoration and development of functions within a spatially and stylistically heterogeneous environment. In all analyzed projects, the functional structure is preserved both at specific locations and within the overall organization of the sanatorium environment.

The principle of emotional and aesthetic saturation emphasizes visual values and establishes a balance of impressions, contributing to the compositional and figurative unity of the environment. In the student projects, this principle is expressed in various ways. In the project by A. Rusol, it is reflected in the continuation of constructivist architectural traditions and the use of geometric forms (Fig. 11b), as well as in the interior design concept Salt Crystals on a Black Mud Surface (Fig. 11c).

In the project by O. Pozdniakov, emphasis is placed on the event-based design of water elements, incorporating thematic scenarios such as shell-like forms on the water and creating dynamic visual sequences along pedestrian routes, including bridges and canals. The project by A. Zhukova (Fig. 13) refers to the traditions of French formal parks and implements the design concept *Water Kaleidoscope*, characterized by diverse combinations of artificial water bodies and landscaping elements.

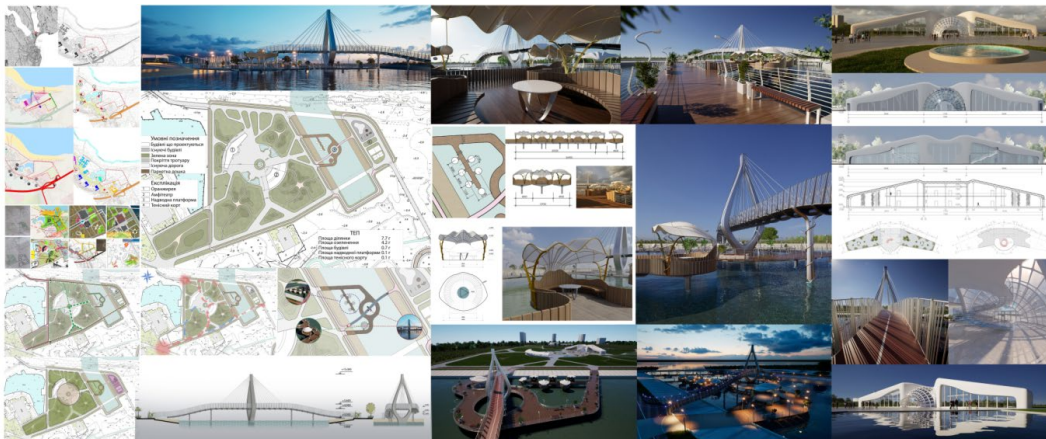


Fig. 12. Graphic part of the Master’s qualification thesis by O. Pozdniakov. Supervisors: Assoc. Prof. O. V. Vakhnichenko, Assist. Lect. A. S. Rusol. Design concept: *Water Impressions*



Fig. 13. Graphic part of the Master’s qualification thesis by A. Zhukova. Supervisor: Assoc. Prof. O. M. Tiurikova. Design concept: *Water Kaleidoscope in a Setting of Stone Lacework*

*The principle of stylistic definiteness* ensures the formation of clear stylistic priorities and directions for the development of the sanatorium environment, maintaining a balance between historical layers and contemporary interventions. In the analyzed projects, the historical and cultural context is treated with consistency, and the proposed solutions are aimed at achieving harmonious integration rather than stylistic disruption.

*The principle of technological efficiency* is manifested in the integration of contemporary technologies into the environment, while maintaining functional and spatial connections between the industrial zone and the health and rehabilitation areas.

## CONCLUSIONS

The study establishes that the key prerequisites for the architectural environmental design of the Kuyalnik Sanatorium are determined by its natural conditions, as well as its historical-architectural and archaeological context. These include terrain characteristics, the specificity of the surrounding landscape, the system of internal and external connections, natural and artificial water bodies, mud and salt saturation, stages of spatial development, and stylistic diversity ranging from 19th-century eclecticism to 20th-century constructivist architecture.

The analysis of the current state of the environment has made it possible to identify the main factors influencing the development of the Kuyalnik Sanatorium environment in Odesa. These include natural, historical, and economic conditions; compositional structure; systems of internal and external connections; functional organization; the condition of the ecological framework; and the artistic and visual qualities of the environment. Among the most significant factors are the territorial integration of industrial and recreational-wellness zones, localization determined by historical development and terrain, the balance of compositional dominants (historical, high-rise, and natural), a clearly defined system of internal connections, and the vulnerability of the ecological structure.

Based on the identified factors, a hypothesis regarding the conditions for the harmonious development of the Kuyalnik environment has been formulated. This includes the preservation and restoration of its unique ecosystem, the maintenance of functional-spatial and historical-stylistic clustering, and the enhancement of its level of technological advancement through the integration of contemporary technologies.

The analysis of design proposals has enabled the identification of a system of principles

of architectural environmental design that underpin the transformation of the sanatorium environment. These include:

- the principle of ecological restoration
- the principle of rehabilitation and wellness orientation
- the principle of spatio-temporal continuity
- the principle of territorial and functional clustering
- the principle of emotional and aesthetic saturation
- the principle of stylistic definiteness
- the principle of technological efficiency

The results of the study confirm that these principles provide a coherent methodological framework for the preservation, restoration, and sustainable development of the Kuyalnik Sanatorium environment.

Further research may focus on the interrelation of ecology, technology, and architecture; the refinement of cluster boundaries; and the identification of territories based on stylistic, natural, and functional characteristics. Additional studies may address the compositional organization of the sanatorium and the broader industrial and wellness complex, as well as the restoration of lost architectural and engineering heritage and its integration into contemporary conditions. The long-term development of the sanatorium and its surrounding territory requires further scientific substantiation.

## BIBLIOGRAPHY

[1] Della Spina L. Adaptive sustainable reuse for cultural heritage: a multiple criteria decision aiding approach supporting urban development processes. *Sustainability*. 2020. Vol. 12, no. 4. Article 1363. <https://doi.org/10.3390/su12041363>

[2] Ginzarly M., Houbart C., Teller J. The Historic Urban Landscape approach to urban management: a systematic review. *International Journal of Heritage Studies*. 2018. Vol. 25, no. 10. P. 999–1019. <https://doi.org/10.1080/13527258.2018.1552615>

[3] Misirlisoy D., Günce K. Adaptive reuse strategies for heritage buildings: A holistic approach. *Sustainable Cities and Society*. 2016. Vol. 26. P. 91–98. <https://doi.org/10.1016/j.scs.2016.05.017>

[4] Ватаманюк Н. Ю. Принципи трансформації внутрішньоквартальних просторів історичних міст (на прикладі міста Чернівці) : анотація дис. ... д-ра філософії : 191. Київ : КНУБА, 2022. С. 2–18.

[5] Голик Й. М., Багрій Н. Ю., Стецько І. І. Реконструкція будівель як метод збереження історичної забудови. *Містобудування та територіальне планування*. 2024. № 86. С. 41–56. <https://doi.org/10.32347/2076-815x.2024.86.41-56>

[6] Клінічний санаторій імені Пирогова. Вікіпедія: вільна енциклопедія. URL: <https://uk.wikipedia.org/>

wiki/Клінічний\_санаторій\_імені\_Пирогова (дата звернення: 08.05.2025).

[7] Кутняк О. Р. Принципи архітектурно-планувальної організації центрів мистецтва на основі трансформації промислових споруд: дис. ... д-ра філософії. НАОМА, Київ, 2025. 237 с.

[8] Куяльник – рожевий лиман, який заворожує з першого погляду. ТСН. URL: <https://tsn.ua/lady/puteshestviya/ukraina/kuialnyk-rozevyy-lyman-iaquy-zavorozuye-z-pershoho-pohliadu-3012839.html> (дата звернення: 08.05.2025).

[9] Куяльницький лиман. Вікіпедія : вільна енциклопедія. URL: [https://uk.wikipedia.org/wiki/Куяльницький\\_лиман](https://uk.wikipedia.org/wiki/Куяльницький_лиман) (дата звернення: 08.05.2025).

[10] Куяльницький лиман (1944–1991). Вікна Одеса. URL: <https://viknaodessa.od.ua/old-photo/?kuialnitskij-liman-posle-1944> (дата звернення: 08.10.2025).

[11] Одеський суд повернув державі санаторій на курорті «Куяльник». Я і закон. URL: <https://yaizakon.com.ua/odeskij-sud-povernuv-derzhavi-sanatorij-na-kurorti-kuialnik/> (дата звернення: 08.05.2025).

[12] Офіційний сайт клінічного санаторію ім. Пирогова, курорт «Куяльник». URL: <https://kuialnik.com.ua/history/> (дата звернення: 09.11.2025).

[13] Перша в Україні грязелікарня: гордість Одеси. Моя Одеса. URL: <https://myod.info/persha-v-ukrayini-gryazelikarnya-gordist-odesi-33420> (дата звернення: 08.05.2025).

[14] Покинутий Куяльник: корпуси, що вмирають, старі листівки та басейни. Українська служба інформації. URL: <https://usionline.com/zabroshennyj-kuialnik-umirayushhie-korpusa-starye-pisma-i-gniyushhie-bassejny-fotoreportazh/> (дата звернення: 09.11.2025).

[15] Ревалоризація (архітектура). Велика українська енциклопедія. URL: [https://vue.gov.ua/Ревалоризація\\_\(архітектура\)](https://vue.gov.ua/Ревалоризація_(архітектура)) (дата звернення: 09.11.2025).

[16] Розкіш і злидні курорту Куяльник. Локальна історія. URL: <https://localhistory.org.ua/texts/reportazhi/rozkish-i-zlidni-kurortu-kuialnik/> (дата звернення: 08.05.2025).

[17] Русол А. С., Вахніченко О. В. Перспективний розвиток території санаторію «Куяльник». *Регіональні проблеми архітектури та містобудування*. 2023. № 17. С. 325–332. <https://doi.org/10.31650/2707-403X-2023-17-325-332>

[18] Савицька О. С., Кисельова Г. В. Архітектурна реновація бальнеологічного курорту Куяльник м. Одеса. *Тези доповідей 78-ї науково-технічної конференції професорсько-викладацького складу академії 19–20 травня 2022 р.* Одеса, 2022. С. 160.

[19] Санаторій-примара: життя одеського «Куяльника» на руїнах колишньої слави (фоторепортаж). Українська служба інформації. URL: <https://usionline.com/sanatorij-prizrak->

zhizn-odesskogo-kuialnika-na-ruinah-byloj-slavy-fotoreportazh/ (дата звернення: 09.11.2025).

[20] Фільм про одеський «Куяльник» представить Ірландію на церемонії «Оскар». Думська. URL: <https://dumskaya.net/news/film-ob-odesskom-kuialnike-predstavit-irlandiyu-189135/ua/> (дата звернення: 09.11.2025).

## REFERENCES

[1] Della Spina, L. (2020). Adaptive sustainable reuse for cultural heritage: A multiple criteria decision aiding approach supporting urban development processes. *Sustainability*, 12(4), Article 1363. <https://doi.org/10.3390/su12041363>

[2] Ginzarly, M., Houbart, C., & Teller, J. (2018). The historic urban landscape approach to urban management: A systematic review. *International Journal of Heritage Studies*, 25(10), 999–1019. <https://doi.org/10.1080/13527258.2018.1552615>

[3] Misirlisoy, D., & Günçe, K. (2016). Adaptive reuse strategies for heritage buildings: A holistic approach. *Sustainable Cities and Society*, 26, 91–98. <https://doi.org/10.1016/j.scs.2016.05.017>

[4] Vatamaniuk, N. Yu. (2022). Pryntsy py transformatsii vnutrishnokvartalnykh prostoriv istorychnykh mist (na prykladi mista Chernivtsi) [Principles of transformation of intra-quarter spaces of historical cities (the case of Chernivtsi)]. *Extended abstract of candidate's thesis*. Kyiv: Kyiv National University of Construction and Architecture [in Ukrainian].

[5] Holyk, Y. M., Bahrii, N. Yu., & Stetsko, I. I. (2024). Rekonstruktsiia budivel yak metod zberezhenia istorychnoi zabudovy [Reconstruction of buildings as a method of preserving historical buildings]. *Mistobuduvannia ta terytorialne planuvannia – Urban development and spatial planning*, 86, 41–56. <https://doi.org/10.32347/2076-815x.2024.86.41-56> [in Ukrainian]

[6] Klinichniy sanatorii imeni Pyrohova [Pyrohov Clinical Sanatorium]. (2016). *uk.wikipedia.org*. Retrieved from [https://uk.wikipedia.org/wiki/Клінічний\\_санаторій\\_імені\\_Пирогова](https://uk.wikipedia.org/wiki/Клінічний_санаторій_імені_Пирогова) [in Ukrainian].

[7] Kutniak, O. R. (2025). Pryntsy py arkhitekturno-planuvanoi orhanizatsii tsentriv mystetstva na osnovi transformatsii promyslovykh sporud [Principles of architectural and planning organization of art centers based on the transformation of industrial structures]. *Candidate's thesis*. Kyiv: National Academy of Fine Arts and Architecture. [in Ukrainian]

[8] Kuialnyk – rozhevyi lyman, yakyi zavorozhuie z pershoho pohliadu [Kuialnyk is a pink liman that captivates at first sight].. (2026). *tsn.ua*. Retrieved from <https://tsn.ua/lady/puteshestviya/ukraina/kuialnyk-rozevyy-lyman-iaquy-zavorozuye-z-pershoho-pohliadu-3012839.html> [in Ukrainian].

[9] Kuialnytskyi lyman [Kuialnyk Liman]. (2017). *uk.wikipedia.org*. Retrieved from [https://uk.wikipedia.org/wiki/Куяльницький\\_лиман](https://uk.wikipedia.org/wiki/Куяльницький_лиман) [in Ukrainian].

[10] Kuialnytskyi lyman (1944–1991) [Kuialnyk Liman (1944–1991)]. (n.d.). *viknaodessa.od.ua*. Retrieved from <https://viknaodessa.od.ua/old-photo/?kuyalnikskij-liman-posle-1944> [in Ukrainian].

[11] Odeskiy sud povernuv derzhavi sanatorii na kurorti «Kuialnyk» [Odesa court returned the sanatorium at the Kuialnyk resort to the state]. (2023). *yaizakon.com.ua*. Retrieved from <https://yaizakon.com.ua/odeskiy-sud-povernuv-derzhavi-sanatorij-na-kurorti-kuyalnik/> [in Ukrainian].

[12] Ofitsiyni sait klinichnoho sanatoriiu im. Pyrohova, kurort «Kuialnyk» [Official website of Pyrohov Clinical Sanatorium, Kuialnyk resort]. (n.d.). *kuyalnik.com.ua*. Retrieved from <https://kuyalnik.com.ua/history/> [in Ukrainian].

[13] Persha v Ukraini hriazelikarniia: Hordist Odesy [The first mud-bath hospital in Ukraine: The pride of Odesa]. (2023). *myod.info*. Retrieved from <https://myod.info/persha-v-ukrayini-gryazelikarnya-gordist-odesi-33420> [in Ukrainian].

[14] Pokynutyi Kuialnyk: Korpusy, shcho vmyraiut, stari lystivky ta baseiny [Abandoned Kuialnyk: Dying buildings, old postcards, and pools]. (2017). *usionline.com*. Retrieved from <https://usionline.com/zabroshennyj-kuyalnik-umirayushhie-korpusa-starye-pisma-i-gniyushhie-bassejny-fotoreportazh/> [in Ukrainian].

[15] Revaloryzatsiia (arkhitektura) [Revalorization (architecture)]. (2022). *vue.gov.ua*. Retrieved from [https://vue.gov.ua/Ревалоризація\\_\(архітектура\)](https://vue.gov.ua/Ревалоризація_(архітектура)) [in Ukrainian].

[16] Rozkish i zlydni kurortu Kuialnyk [Luxury and poverty of the Kuialnyk resort]. (2021). *localhistory.org.ua*. Retrieved from <https://localhistory.org.ua/texts/reportazhi/rozkish-i-zlidni-kurortu-kuyalnik/> [in Ukrainian].

Retrieved from <https://localhistory.org.ua/texts/reportazhi/rozkish-i-zlidni-kurortu-kuyalnik/> [in Ukrainian].

[17] Rusol, A. S., & Vakhnichenko, O. V. (2023). Perspektyvnyi rozvytok terytorii sanatorii «Kuialnyk» [Perspective development of the territory of the «Kuialnyk» sanatorium]. *Rehionalni problemy arkhitektury ta mistobuduvannia – Regional problems of architecture and urban planning*, 17, 325–332. <https://doi.org/10.31650/2707-403X-2023-17-325-332> [in Ukrainian]

[18] Savytska, O. S., & Kyselova, H. V. (2022). Arkhitekturna renovatsiia balneolohichnoho kurortu Kuialnyk m. Odesa [Architectural renovation of the balneological resort Kuialnyk, Odesa]. *Tezy dopovidei 78-yi naukovo-tekhnichnoi konferentsii profesorsko-vykladatskoho skladu akademii 19–20 travnia 2022 r. – Proceedings of the 78th Scientific and Technical Conference of the Academic Staff of the Academy, May 19–20, 2022*. (p. 160). Odesa. [in Ukrainian]

[19] Sanatorii-prymara: Zhyttia odeskoho «Kuialnyka» na ruinakh kolyshnoi slavy (fotoreportazh) [Ghost sanatorium: Life of Odesa's "Kuialnyk" on the ruins of former glory (photo report)]. (2019). *usionline.com*. Retrieved from <https://usionline.com/sanatorij-prizrak-zhizn-odesskogo-kuyalnika-na-ruinah-byloj-slavy-fotoreportazh/> [in Ukrainian].

[20] Film pro odeskiy «Kuialnyk» predstavyt Irlandiiu na tseremonii «Oskar» [A film about Odesa's "Kuialnyk" will represent Ireland at the Oscar ceremony]. (2025). *dumskaya.net*. Retrieved from <https://dumskaya.net/news/film-ob-odesskom-kuyalnike-predstavit-irlandiyu-189135/ua/> [in Ukrainian].

## АНОТАЦІЯ

### **Суханов В., Тюрікова О., Вахніченко О. Принципи архітектурного дизайну середовища санаторію «Куяльник» в місті Одеса**

У статті розкрито сутність та зміст принципів архітектурного дизайну середовища санаторію «Куяльник» у м. Одеса.

**Мета** дослідження полягає у визначенні та обґрунтуванні принципів архітектурно-дизайнерської організації середовища санаторію «Куяльник» (м. Одеса).

**Методологія.** Дослідження базується на міждисциплінарному підході, що поєднує архітектурний, екологічний та історико-культурний аналізи. Методологія охоплює систематизацію джерел, аналіз архівної документації та натурні обстеження сучасного стану санаторію.

Здійснено пофакторний аналіз для виявлення ключових чинників, що впливають на розвиток середовища санаторію. Крім того, у дослідженні використано аналіз проектних пропозицій, розроблених у межах магістерських кваліфікаційних робіт, що дозволило визначити практичні підходи до трансформації середовища. Поєднання зазначених методів забезпечило формування робочої гіпотези та обґрунтування принципів архітектурного дизайну середовища санаторію «Куяльник».

**Результати.** На основі аналізу наукових і публіцистичних джерел, матеріалів магістерських кваліфікаційних робіт, архівних фотоматеріалів, архітектурних креслень і документальних джерел визначено ключові чинники, що впливають на розвиток середовища санаторію «Куяльник». Встановлено пріоритетні напрями

його трансформації. У результаті дослідження сформульовано систему базових принципів архітектурного дизайну середовища, спрямованих на поєднання різностильової історичної спадщини санаторію «Куяльник» із сучасними підходами до його розвитку. До них належать принципи екологічної відновлюваності, реабілітаційно-оздоровчої спрямованості, часо-просторової безперервності, територіально-функціональної кластеризації, емоційно-естетичного насичення, стильової визначеності та технологічної ефективності.

**Наукова новизна.** У дослідженні сформульовано гіпотезу щодо умов гармонійного розвитку середовища санаторію «Куяльник». Запропоновано систематизований комплекс принципів архітектурного дизайну середовища, що відображає взаємодію історико-культурного контексту, природних умов і сучасних проєктних підходів. Обґрунтовано комплексний підхід до архітектурно-дизайнерського освоєння території санаторію.

**Практична значущість.** Результати дослідження можуть бути застосовані в архітектурній проєктній практиці, пов'язаній із реновацією та розвитком курортно-рекреаційних територій, а також в освітньому процесі. Запропоновані принципи можуть слугувати методологічною основою для збереження, відновлення та сталого розвитку історично цінних і екологічно чутливих середовищ.

**Ключові слова:** санаторій «Куяльник», історико-архітектурне середовище, часо-просторова безперервність, емоційно-естетичне насичення, екологічна відновлюваність, реабілітаційно-оздоровча спрямованість, стильова визначеність, територіально-функціональна кластеризація, технологічна ефективність.

#### АВТОРСЬКА ДОВІДКА:

**Суханов Володимир**, доктор технічних наук, професор, директор Архітектурно-художнього інституту, Одеська державна академія будівництва та архітектури, Одеса, Україна, e-mail: vl.g.sukhanov@gmail.com, orcid: 0000-0003-2371-181X.

**Тюрікова Олена**, кандидат педагогічних наук, доцент кафедри дизайну архітектурного середовища, Одеська державна академія будівництва та архітектури, Одеса, Україна, e-mail: tulena@odaba.edu.ua, orcid: 0000-0002-4279-7623.

**Вахніченко Олександра**, кандидат архітектури, доцент кафедри дизайну архітектурного середовища, Одеська державна академія будівництва та архітектури, Одеса, Україна, e-mail: avakhnichenko@gmail.com, orcid: 0000-0002-1244-8852.

Дата першого надходження статті до видання: 26.03.2026

Дата прийняття статті до друку після рецензування: 27.04.2026

Дата публікації (оприлюднення) статті: 30.05.2026

Стаття поширюється на умовах ліцензії  
відкритого доступу CC BY 4.0

