

Nellya Leshchenko* Valerii Tovbych**

 orcid.org/0000-0002-3198-4554

 orcid.org/0000-0002-4794-4944

Modern approaches to the revitalization of historical ex-industrial architecture

Nowoczesne podejście do rewitalizacji historycznej architektury postindustrialnej

Key words: revitalization, ex-industrial architecture, monuments of industrial architecture, high-quality urban environment, inclusive space, multifunctionality

Słowa kluczowe: rewitalizacja, architektura postindustrialna, zabytki architektury przemysłowej, wysokiej jakości środowisko miejskie, przestrzeń publiczna, wielofunkcyjność

INTRODUCTION

The problem of preservation and restoration of objects of ex-industrial architecture is actual for Ukraine and many countries of the world. It occurs, that many of the historical industrial enterprises, that were locked up, were in the cities centers. Since they occupy large territories, there was a problem of rational use of urban lands. If the ex-industrial object does not have historical or architectural value, it is possible not to store it, but to construct a modern object of residential or public function on this place. In those cases when the industrial object is entered in the register of monuments, it is necessary to distinguish what is the subject of its protection – either the façade or the façade with interiors, which determines the extent of preservation of the authentic appearance.

The modern theoretical and methodological basis for the preservation of the architectural heritage of Ukrainian cities includes works of M. Bevz [1], Ye. Vodzynsky [2], L. Pribega [3] and others. The theme of preserving the monuments of industrial architecture with a transformation into new functions is raised in the publications of A. Antonova [4], M. Dyomin [5], M. Orlenko [6], V. Ko-

din [7], Y. Kobylarchik, D. Kuśnierz-Krupa, K. Paprizi [8], Yu. Ivashko [9], O. Ivashko [10] and others. Questions of the inclusiveness of the architectural environment were engaged by K. Dornie [11], J. Silva [12], A. Dunlop, P. Garcia [13], Hong-Li Wong [14].

Scientists have identified the relevance of this topic, considered examples of revitalized monuments of industrial architecture in different countries of the world and ways of possible adaptation of unprofitable industrial objects for the modern needs of society. The specific features of the new multifunctional object – the art-cluster were analyzed, its defining features were identified and its impact on the change of urban environment was showed. Scholars have determined the relationship between the political and ideological needs of modern society and the emergence of new informal subcultures and informal art. From this point of view, the emergence of art-clusters is partly due to the same needs as the spread of street art and graffiti – it is young people's search for a new ways of expression in the face of globalization of society and the loss of national identity.

For Ukraine this topic is rather new, while in Western Europe and the USA it has been actively implemented.

* Ph.D arch., associate professor, Kyiv National University of Construction and Architecture

** dr. arch., professor, Kyiv National University of Construction and Architecture

* *dr, prof. uczelni, Kijowski Narodowy Uniwersytet Budownictwa i Architektury*

** *prof. dr hab., Kijowski Narodowy Uniwersytet Budownictwa i Architektury*

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Fig. 1. Examples of revitalization of ex-industrial objects in Tallinn. Photo by N. Leshchenko

BASIC MATERIAL

Receiving a new life during revitalization, historical ex-industrial buildings and urban areas as a whole must preserve their architectural appearance and get a new destination that will be relevant to present-day and demanded by the city's residents.

There are several common variants of revitalization of industrial architectural monuments – adaptations for shopping facilities, hotels, lofts, office premises. They can get various museum functions, such as the history of a place or manufactory that has previously been located here. As well as cultural and art functions. The last option is more interesting and non-standard, since it opens the space for creativity for different people, for professionals, young non-formal artists and visitors who can be not only observers, but also take an active part in the action that takes place in this space. The attractiveness of such a way of revitalization lies in the absence of the need for significant capital investment in repairs and decoration and in the possibility of free expression for artists and visitors, in the creation of the so-called space for communication, creativity, learning and transfer of experience.

The existing practical experience of the revitalization of historical ex-industrial objects in Poland, Germany, Estonia deserves attention.

If we analyze examples of the revitalization of historical buildings and structures in Lodz, then the specificity of the architectural heritage of this city is the industrial architecture domination in the register of monuments, as Lodz developed just as an industrial city with a dominant light industry. The manufactory of Lodz is multistory large-scale capital buildings with interesting volumetric-spatial compositions. These manufactories occupy large areas on the city map. Traditionally, they had a developed infrastructure, in fact they were original «towns in the city» with a place of work, housing workers, shops, schools and churches. Consequently, traditional multifunctionality is crucial in their modern functional adaptation.

The preservation of the traditional historical environmental context of these factories with their simultaneous updating should include to the positive moments of the experience of revitalization in Lodz. As well as the usage of the admission of the superstructure and the annex of modern glazed parts in contrast to the brick

old parts of buildings and preservation of authentic brick façades with restoration of damaged sections of masonry, bearing structures, with the restoration of lost fragments of brick decoration. Different approaches are worked out and for the solution of interior spaces. They can be completely modern, or can combine in contrast the old and new parts. Saved old constructions can be supplemented by the new ones.

The experience of revitalization of the ex-industrial objects in Tallinn is worthy of attention (fig. 1). These are mainly near-port territories, which in recent years have not been actively used, and thus acquired an abandoned appearance. They have strategic locations, next to the historical city center, and separate it from the sea.

The most interesting and large-scale example is the revitalization of the ex-industrial Rotermann district. The quarter was founded in the 19th century as a place for manufacturing, selling and storing various industrial and grocery products. More than a hundred years has been an active industrial and commercial district of the city. At the end of the 20th century, it came to a complete decline and desolation. At the beginning of the 21st century it was listed in the historically valuable areas of the city. Now, after revitalization it has become multifunctional, where near the historical old industrial buildings, adapted to the new functions, new modern buildings are located. It is an active, comfortable and high-quality urban environment for living, working, spending free time, meeting, communicating, in which there are always htjhle. It preserves the historical context and everyone can clearly feel the «spirit of the place» (fig. 2).

The problem of revitalization of historical buildings and abandoned historical urban environment is also very relevant for the cities of Ukraine. It is offered to focus on two examples of revitalization – the monument of industrial architecture and military engineering and historical ex-industrial buildings and territory in Kiev.

The proposal to create an inclusive museum space within the framework of the project of revitalization the entrance group premises and the adjacent part of the first floor of the main building of the Mystetskyi Arsenal in Kyiv deserves attention (fig. 3).

Mystetskyi Arsenal is a well-known object of cultural heritage of the Ukrainian people. He is also called the «Kiev Louvre». It is a favorite place of locals and a place of attraction for many tourists who come to get acquainted



Fig. 2. An example of revitalization of the ex-industrial Rotermann District in Tallinn. Photos by N. Leshchenko

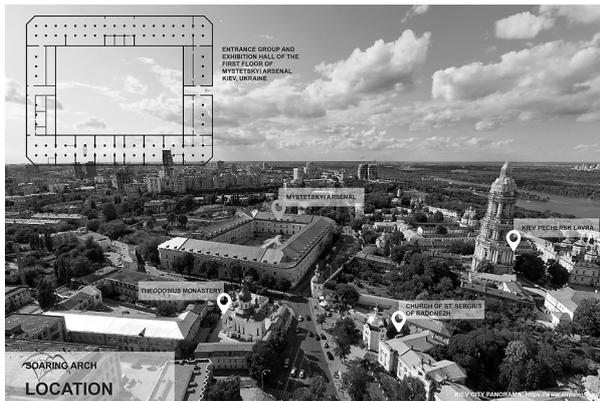


Fig. 3. Mystetskyi Arsenal in Kyiv. General view. Photo [15]. Scheme – A.Holovatiuk, Ph.D student ITA KNUCA; N. Leshchenko, Ph.D arch., associate professor ITA KNUCA

with the history and culture of our country, our city, our life and traditions.

The building was laid in 1784 as a place for the production, repair and preservation of weapons [16]. In the 19–20 centuries had an industrial function, from the beginning of the 21st century – a cultural function. It is an architectural monument of national significance [17]. Until now, the building has preserved the historic hall plan, the walls and columns of the authentic Kyiv brick, the naves and the cross-vaults on the ground floor. Unfortunately, the authentic cover of the first floor is not preserved. During the last reconstruction at the beginning of the century, it was replaced by a monolith on the corrugated board and metal beams.

The building is currently being used as a cultural center. In the part of the building, namely the halls of the first floor, repair and restoration works are under way.

It is proposed to dwell in detail on the project of adaptation of the first floor halls under multifunctional inclusive art space. The project is based on the idea of preserving the existing cultural heritage, its active modern use, and providing access to it and its knowledge to all people. This example will show the approach of creating a new art space, open, interesting, transformable and accessible to all people, regardless of their age, wealth, social status, cognitive and physical capabilities. And this approach will allow people with physical disabilities to actively engage in contemporary social and cultural urban life.

When creating our project, we proceeded from the observance of the fundamental principles of preserva-

tion and the modern sustainable development of the historical and cultural heritage, namely, the tolerance, continuity and harmonious complement.

To sum up, the idea of organizing the space can be expressed in the following words: «Authentic – modern – tactile – for all».

In order to emphasize the tradition and create a new unique space, the concept «Soaring arch» (fig. 4) was proposed. This is an imitation of the preserved cross-arches of Arsenal in the form of series of glowing light bulbs on the «invisible» black wires coming down from the ceiling and hovering over the halls. They provide illumination of the halls. To interest and attract attention, it is suggested to arrange a «Soaring ribbon» from light sources above the stairs. It will simultaneously symbolize the dynamic flow of creativity and provide lighting for the entry group.

The height of the halls will be overcome by the spatial idea of «Soaring arch» and by means of a hanging expo. Exhibits suspended on hooks to metal pipes, which are fixed to the existing metal beams. This ensures the mobility of the exposure, as well as non-interference to the walls and preservation of the masonry authenticity. By the way, the destroyed parts of the walls were not restored, but preserved and used as a part of general exposition, supplemented by glass cubes with exhibits, suspended at different altitudes (fig. 5, 6).

The consideration of the needs of people with functional impairments is a key element of the design of all

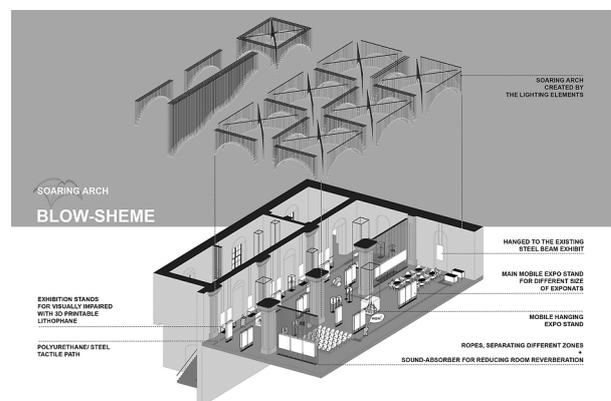


Fig. 4. The project proposal for the adaptation of the first floor hall of the Mystetskyi Arsenal in Kyiv under the multifunctional, inclusive artistic space. Burst-Scheme. Completed: A.Holovatiuk, Ph.D student ITA KNUCA; N. Leshchenko, Ph.D arch., associate professor ITA KNUCA

halls in this project. An approach to creating an interior design that is accessible to all groups of people is a sign of tolerance and respect that helps people with functional disorders to integrate into society and join the exchange of cultural experiences.

It was proposed to solve the problem of lifting a people with low mobility to the main exhibition halls using an elevator platform. For the visitors of the exhibition with a visual impairment, special stands with volumetric images – lithophanes – were created. They are located along the tactile path, marked on the floor of the halls. This tactile path is offered for the convenience of orientation and movement of visually impaired people. A metal handrail with tactile stickers, which leading to all halls and wardrobe, was also created. The placement of mirrors near the wardrobe was proposed in such a way as to avoid displaying lights in them. It is made specifically so that people with limited vision do not confuse the bright light of the lamp with a bright light of its glare

in the mirror. For acoustic comfort, it is possible to install ecophon acoustic panels in stand-up exhibition stands. All stands can freely move around the hall and create different compositions. This facilitates the easy transformation of the halls for various events.

Halls are multifunctional. Their functional zoning is implemented with the help of the proposed spatial composition of jute ropes. Ropes are mobile. They tactilely and visually allocate separate zones: wardrobe, lecture and film zone, cafe, lounge or master classes. At the same time, their design allows you to observe what is happening in the adjacent zone.

The project provides the creation of a new space not only for the art exhibition, but also, first of all, for communication, leisure time, exchange of cultural experiences, opportunities for creative expression for each person. And as a result, the monument will receive a new multifunctional, inclusive space, interesting and accessible for various people with different preferences and opportunities (fig. 7).



Fig. 5, 6. Project of revitalization of halls of the first floor of Mystetskyi Arsenal in Kyiv. Incoming group. Existing status and project proposal. Completed: A. Holovatiuk, Ph.D student ITA KNUCA; N. Leshchenko, Ph.D arch., associate professor ITA KNUCA



Fig. 7. Project of revitalization of halls of the first floor of Mystetskyi Arsenal in Kyiv. Exhibition halls. Lecture and film zone. Existing status and project proposal. Completed: A.Holovatiuk, Ph.D student ITA KNUCA; N. Leshchenko, Ph.D arch., associate professor ITA KNUCA

In general, the inclusiveness of any historical building, and especially of the monuments, will increase the degree of its active participation in the modern cultural and social life of the city. It will allow to be visited by a great number of different people, and especially those with limited physical capabilities. It is very humane and will contribute to the socialization of these people.

So, when adapting the monument to a modern new function, such solutions of the updating of its space should be applied that will allow each person, regardless of his cognitive and physical possibilities, to easily perceive this space, to know it, to participate in the social action that this space involves and thus easy to [18]. And the monument will receive the second new active and socially useful life.

Thus, in this project, we have demonstrated how, when revitalizing the architectural monument, we can create a new inclusive space with a minimal intervention.

Another example is the proposed project for the revitalization of the historical ex-industrial area along the Radischeva street in Kyiv. Unlike the previous example, ex-industrial buildings in this area are not architectural

monuments. They belong to historic valuable buildings and low value buildings, are located in the development control zone. Thus, for their revitalization, it was suggested to apply more active methods. The main thing is that all changes to activate abandoned buildings and spaces should be made within the preservation of the historical context (fig. 8).

The analysis of the existing state of the territory in the context of the place allowed to reveal the structural and functional zones surrounding of the degrading urban environment; the degree of preservation and historic value of existing buildings and their design code; level of social activity; infrastructure filling with the objects of social purpose and «green» zones. On its basis, the functional and volumetric-spatial solution of the revitalization of buildings and the environment as a whole was made, in order to create a system, working for perspective development.

Recommendations were provided for:

- the marking of the ex-industrial complex both in the mental and in the physical space;



Fig. 8. Project of revitalization of the ex-industrial area on the Radishcheva street in Kyiv. Existing status and project proposal. Completed: O. Onishchenko, student ITA KNUCA; head: N. Leshchenko, Ph.D arch., associate professor ITA KNUCA

- the filling with events and functional content with various functions, demanded both on weekdays and weekends, which must activate the degrading urban environment, attracting different people with different preferences and opportunities;
- the transformation of existing buildings and spaces with the demolition of dilapidated low-value buildings and the addition of new volumes and the creation of a public green zone;
- the transformation of space into a predominantly pedestrian with the arrangement of underground parking under the recreation area;
- the arrangement of space with small architectural forms and elements of branding space for transforming it into a convenient for long stay, interesting and recognizable for visiting.

These recommendations will be able to revitalize and activate the currently abandoned urban environment, improve its quality and turn it into a successful one (fig. 9).

When revitalizing historical ex-industrial urban areas, buildings and structures should not give them only any one function, even if it is most relevant for the present-day city. Mono functionality should be avoided, as the reasons for the conversion of even the most active territories into temporarily empty at certain times and days. The focus should be on multifunctionality. It will be interesting and attract different people with different preferences. New functions should be actively involved in both every day and holiday city life. This will enable revitalized buildings and urban space to be active at all times. In addition, all stakeholders at different levels – city municipality, local entrepreneurs, cultural associations, community organizations, residents – should be involved in the process of revitalization. This will allow for the diverse interests and needs of different people to be taken into account when choosing new functions and creating truly an active inclusive urban space.

CONCLUSIONS

Revitalization is a complex reconstructive method that characterizes the processes of revival, restoration of vitality, activation of the historical environment or historical building by providing them with new func-

tions that will help preserve the historical context and will not break the authenticity of the historical building façades. The objects of revitalization are either separate abandoned historical buildings, or degrading historical urban environment that are not actively used or not used at all.

A revitalizing building has returned lost destination or acquires a new one. Consequently, its planning solution may be changed, and constructive solution updated with the maximum preservation of authentic elements. In any case the historical authentic façade should be preserved.

For the degrading historical urban environment, revitalization is a method of its revival thanks to certain qualitative changes that can make it more suitable for modern living or other modern uses (integration into the modern city life). The “rejuvenation” of the historical environment is implemented by:

- adaptation of existing historical buildings to new function with a change of their old planning solutions and preservation of historic authentic façades (in the case of monuments);
- construction of new buildings with new functions, that should activate the «frozen» area, which is currently underused, or revive the degrading ones;
- development of recreational zones to restore the viability of abandoned and vacant spaces;
- development of the new functional and infrastructural connections to vitalize the area and integrate it into a modern urban life;
- creation of a new quality environment for an interesting and comfortable stay in it for different groups of people. These can be: multifunctional active pedestrian area; well-maintained open public space; ordered «green» places for recreation and leisure time;
- optimization of transport infrastructure (reduction of transit traffic load; introduction of additional driveways for providing services to a new development; organization of underground parking lots; separation of traffic and pedestrian flows; creation of equipped active pedestrian areas);
- elimination of the disharmonious effect of existing abandoned degrading industrial and warehouse enterprises by:



Fig. 9. Project of revitalization of the ex-industrial area on the Radishcheva street in Kyiv. General view. Completed: O. Onishchenko, student ITA KNUCA; head: N. Leshchenko, Ph.D arch., associate professor ITA KNUCA

- a) conversion and modernization, after which their territory is reduced, only harmless or representative production remains, which does not require large storage space and transport load;
 - b) adaptation to a new function with changes in the planning and constructive solutions and preservation of the historical façade (in case of an industrial architecture monument), with a possible superstructure and outbuilding. The new function should complement the historical environment, based on the chosen direction of the modern development of the historical city as a whole;
 - c) demolition of abandoned low-value buildings. After decontamination of the territory, a recreational, residential or public area should be set up in accordance with the functions that are needed in this historical environment;
- usage of energy efficient technologies for the new and historical buildings.

To sum up, revitalization is normally applied to not used or underused abandoned, degrading or empty parts of the historical urban environment. They can be included in the complex protection zone, as well as in the development control zone and the zone of the protected landscape. During the complex restoration and reconstructive transformation of the city historical centre, revitalization can be complemented by the revalorization and regeneration of the historical urban environment, restoration (in case of architectural monuments), or by modernization (in case of low-value / poorly preserved historical buildings). Therefore revitalization is a complex method that provides not only the functional vitalization of abandoned historical urban areas and buildings, but preservation of the existing historical urban context, the spirit of the place and memory of the past, materialized in the existing monuments and the urban environment.

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Abstract

The article shows various approaches to the revitalization of historical ex-industrial buildings and territories. Depending on the degree of historic value and preservation of buildings and the urban environment as a whole, various techniques of their revitalization are applied.

Revitalization of abandoned degrading historical ex-industrial buildings and territories is recommended through their functional vitalization and renewal, with the preservation of the existing historical urban context, the spirit of place and memory of the past.

The strategy of creating an inclusive public space under the revitalization of architectural monuments is proposed. Recommendations are given for updating the spaces, allowing each person, regardless of one's cognitive and physical abilities, to easily perceive and comprehend them, participate in the social activities as assumed the spaces and thus easily socialize.

Various approaches are illustrated with the examples of the proposed design projects on revitalizing of the first floor spaces in Mystetskyi Arsenal in Kyiv – the architectural monument, and the ex-industrial area in Radishcheva street in Kyiv, located in the development control zone, with historically valuable as well as low-value buildings.

The conclusion is made, in what cases revitalization can be applied to historic buildings as well as urban environment. It is shown, what it provides. Recommendations are given of how to use the revitalization in conjunction with other restoration and reconstructive methods during the complex transformation of the historical city centres development.

Streszczenie

Artykuł prezentuje różne podejścia do rewitalizacji historycznych budynków oraz terenów przemysłowych. W zależności od wartości historycznej i stanu zachowania budynków, oraz środowiska miejskiego jako całości stosuje się różne techniki ich rewitalizacji.

Zaleca się rewitalizację opuszczonych, zdegradowanych, historycznych budynków i terenów przemysłowych poprzez ich adaptację i odnowienie, z zachowaniem istniejącego historycznego kontekstu miejskiego, ducha miejsca i pamięci przeszłości.

Proponuje się strategię stworzenia integracyjnej przestrzeni publicznej w ramach rewitalizacji zabytków architektury. Opracowano zalecenia dotyczące rehabilitacji przestrzeni, która pozwoli każdemu, niezależnie od jego zdolności poznawczych i fizycznych, na łatwe jej postrzeganie i pojmowanie oraz udział w toczącym się tam życiu społecznym, zgodnie z założonymi przestrzeniami, a tym samym na łatwe kontakty towarzyskie.

Różne podejścia zilustrowane są przykładami projektów rewitalizacji pierwszego piętra w Mystetskyi Arsenal w Kijowie oraz terenów przemysłowych przy ulicy Radishcheva w Kijowie, zlokalizowanych w strefie kontrolowanego rozwoju, gdzie znajdują się obiekty zarówno cenne historycznie, jak i o niskiej wartości.

Zobrazowano, w jakich przypadkach rewitalizację można zastosować do budynków historycznych, a także środowiska miejskiego. Podano także zalecenia dotyczące realizacji rewitalizacji w połączeniu z innymi metodami konserwatorskimi w złożonym procesie transformacji historycznych centrów miast.