The architectural heritage of the second half of the 1940s - 1950s in the context of humanization processes and urban aesthetic comfort (on the example of Rivne city)

M I Isupova
Department of Architecture and Environmental Design, National University of Water and Environmental Engineering, Rivne, 33000, Ukraine
m.i.isupova@nuwm.edu.ua

Abstract. In recent decades, a lot of ecological, ergonomic, functional, planning and aesthetic problems have emerged in most cities of Ukraine and the world, the elimination of which involves the architectural environment humanization. The article is devoted to the study of the architectural heritage role in the context of the urban environment humanization processes and modern approaches to providing aesthetic comfort. On the example of Rivne city, the method of public opinion polls establishes specific features of the architecture, which, according to the residents of the city, provide aesthetic expressiveness of the architectural space.

1. Introduction
With the city’s growth, negative and uncomfortable manifestations in the architectural environment accumulate and intensify. The humanization of the architectural environment as caring for residents and meeting their needs involves solving not only ecological, environmental, ergonomic, functional and planning problems that have emerged in recent decades in most cities of Ukraine and the world, but also achieving aesthetic and psycho-emotional comfort. The last two issues are quite complex in terms of their interdisciplinary status and the need for an individual approach in each case.

In addition to taking into account the general aesthetic categories of architecture and universal psychological aspects of human perception, the context of the urban environment also plays an important role: its history, "genius" of the place, regional features, traditions, mentality and preferences of residents, their understanding of beauty. Often, rapid urban changes are related to technological progress, social, economic and political transformations, and as well, as the factors mentioned above, they determine the context of the urban space.

The architectural environment sets the trajectory and movement within the living space, shaping the lifestyle. Architecture differs from other arts in that it is compulsory, and cannot be avoided, because architectural environment creates the immediate space of human daily being.

Therefore, the issue of humanization of the existing and projected architectural environment, interconnection and harmonious integration of new architectural objects into the urban ensembles that have developed historically, preservation and, if necessary, restoration of the historical buildings, become especially relevant.

2. The question of urban aesthetic comfort: the role of architectural heritage protection
It is worth noting that various aspects of humanization are closely linked: for example, improving the ecological situation by creating greenery at the same time improves the aesthetic image of the city, and
Innovative Technology in Architecture and Design (ITAD 2020)  
IOP Conf. Series: Materials Science and Engineering 907 (2020) 012005  
doi:10.1088/1757-899X/907/1/012005

solving aesthetic problems in architecture improves the psychological state of residents. Therefore, except the utilitarian aspects of architectural environment humanization, the aesthetic component cannot be ignored.

"Reading" of architecture by people often takes place beyond awareness: city dwellers perceive the processes that take place inside or near buildings in their daily lives and usually don’t notice surroundings, but “breathe them in”. Although city dwellers take their urban surrounding for granted and rarely bring it to full consciousness, architecture can powerfully influence them [1]. The buildings themselves set the mood, acting as elements of the townscapes. However, it also turns architecture into a powerful tool that is able to manipulate people’s mood and behavior.

Throughout human history this property of architecture has many examples of its usage by political regimes as propaganda. In totalitarian systems, such as Germany of Nazi period, architecture produced specific tools for “strictly planned political targets aimed to create desirable social respond” [2]. There are also reverse examples - it is well-known that abandoned areas with aesthetically indistinct buildings, or so-called slums, are characterized by an increase in the criminogenic situation.

Forms of human mentality and psychology are defined in the architectural environment. Buildings carry information about socially conditioned behavior and practical skills of people, about the relationship between them. The architectural environment embodies ethical and aesthetic ideals, connects different generations and eras, and is an important part of the collective memory of mankind.

C. Day notes that “old buildings are rarely just museums of a particular historical period. They have physical elements from many dates right up to the present; also, the imprint – both visibly and invisibly – of the many occupants, lifestyles and values that inhabited them” [1].

In general, architecture can be characterized as "the language of a long and deep collective mood". Architecture "embodies, consolidates, transmits people’s emotions from generation to generation", acts as the “keeper of the organizing tradition” [3].

It is well-known that an aesthetically attractive urban environment is being provided when a harmonious sequence develops, “the new built upon the past” [1], and architecture objects are being built with taking into account the features of the existing historical and architectural heritage. Accordingly, harmony is lost when the past is destroyed or discarded.

Therefore, the continuity of the architectural tradition is an important criterion for ensuring city’s residents psycho-emotional comfort. The preservation and maintenance of historic buildings in their proper form is an important task of the architectural humanization aesthetic aspect.

World and in particular European experience demonstrate a careful attitude to the historical and architectural heritage: buildings and their ensembles are protected and preserved in a form as close as possible to the original. Thus, the architectural canvases of cities do not lose their authenticity, and residents - a sense of rootedness, belonging to their history.

In parallel, there is an improvement of the existing urban environment with the use of techniques aimed at its humanization: "dissolution" of new objects in the historic environment (as an example - a cascade of escalators in Toledo, Spain), increasing walking areas in cities (in a lot of cities in European countries, such as the Netherlands, Denmark, France, Spain, Germany, Italy, Finland etc.) [4], improving the comfort of public spaces, etc.

Along with the composition, colors and other means of buildings artistic expression that affect human consciousness, an important role is played by architectural decoration. Over the last century, diametrically opposed views have been formed on the need to use architectural decoration systems and
buildings ornamentation. Thus, A. Loos, whose theory at one time had a significant impact on the formation of such architectural styles as constructivism and functionalism, treats ornamentation as a crime, considering its use a manifestation of savagery [5]. Another point of view about architectural decor emerged in the decade of postmodernism. For R. Venturi and D.S. Brown, architectural décor helps to integrate buildings within the urban realm, give them meaning in the eyes of the public [6]. Architects-postmodernists “tried to return to the architecture the lost fantasy and traditional figurative associations” using decorative elements and order forms [7].

Sometimes the use of certain decoration systems in architecture is dictated by the political regime - for example, the artistic image of Soviet architecture in the 1940s and 1950s was created under the influence of socialist ideologues. The language of the architectural style of neoclassicism was interpreted as the most universal, and therefore understandable to the wider public. In general, the universality of the neoclassicism architectural language is explained by the possibility of using similar signs in different cultural contexts to create metaphors that have different meanings. At the same time, there was a requirement for the "national form" and "socialist content" of the architecture in the 1940s and 1950s [8].

This made possible to use folk motifs allusions in buildings ornamentation and decorative architectural elements, and as a consequence - the development of the Ukrainian national style language in the postwar years’ architecture. Therefore, even within a mentioned style, architects had some space for a creative research for the artistic expressiveness of the designed buildings, mainly by combining various elements of architectural decoration.

Typically, most buildings created under the influence of classical architectural styles or historicist trends in the XX century have facades rich in decorative elements that are an integral part of the historic architectural space of cities. However, the decor is one of the most vulnerable elements of the architecture, which is easily destroyed by climatic and human factors (Figure 1).

![Figure 1](image1.png)

**Figure 1.** Destruction of architectural decor threatens to lose the aesthetic appeal of historic buildings. Dwelling houses, Soborna Street, Rivne city. Fragments of facades. Source: photos by the author.

The loss of décor deprives buildings of their aesthetic expressiveness, and sometimes of architectural value in general, which leads to obvious negative effects in the context of the aesthetic comfort of the urban architectural environment.
Sometimes it is impossible to restore the lost decor due to the high cost of restoration work. However, in such cases, the use of modern technologies can significantly reduce the cost of restoring decorative elements of buildings without losing aesthetic quality. With the help of 3D scanning technology, it is possible to digitize the facade of an existing building and adjust the results, and with the help of 3D printing to create prototypes or even ready-made architectural details. First of all, this method is suitable for buildings whose decorative elements were made of concrete.

The one particular example of this approach is the restoration of a historic 1940s building in New York City on Fifth Avenue. Initially, the facade of the building was decorated with intricate ornamentation. Due to the high cost of facade restoration, the house was going to be demolished. New York architecture and engineering firm which focuses on technology-driven design and buildings restoration managed to save the building. They turned the project into a case study, exploring alternative ways to restore and maintain deteriorating ornamentation. To create the decorative element, a 3D form with a detailed pattern was printed. The final prototypes were manufactured using the printer for the casting molds and were fabricated out of concrete [9].

This method allows restoring the lost decorative elements of historic buildings, ensuring the preservation of the architectural environment aesthetic comfort and, obviously, has great potential for use around the world.

In Ukrainian cities, destruction of historical buildings decorative elements in the process of insulation of facades or installation on them advertising signs becomes a common problem. Such phenomena produce a deterioration in the aesthetic comfort of the urban architectural environment and cause negative emotions among city residents. Most of the buildings around the world built in the 1940s and 1950s now need major repairs to continue their existence in future, and it is important to ensure that the architectural decor of these buildings is properly preserved during the renovation process.

3. Analysis of architectural aesthetics in Rivne city

During the Second World War, the city of Rivne, like a lot of another cities in Ukraine, suffered significant destruction, especially in its central part, and in the immediate postwar years needed rebuilding.

Reconstruction of the 2nd half of the 1940s - 1950s reorganized the central space of the city and created new architectural objects (Theater Square ensemble, railway station, residential buildings on Soborna Street, etc.), stylistically belonging to Soviet neohistoricism, with facades decorated with order elements, ornamentation with plant motifs (often - with allusions to the Ukrainian folk style). Thus, the architectural objects of the postwar years are an important part of Rivne urban core and play a significant role in shaping city’s image.

Usually, in the architecture of the 2nd half of the 1940s - 1950s, the effect of "greatness" that they sought to achieve was enhanced with the help of decoration systems. Also, the architecture of those years is characterized by the decision of the city center as a whole, compositionally and stylistically integrated ensemble. The architecture of Rivne's main highway, Soborna Street, is a vivid illustration of this approach. Together with the Theater Square, a kind of main festive avenue was formed, which became the compositional axis and core of the new center [10].

Most of the buildings of the 2nd half of the 1940s - 1950s retained their original appearance and did not require "decommunization" due to the lack of communist symbols in their architectural decoration. In the 2nd half of 20th - early 21st century other buildings were added in the central part of the town-planning ensemble, performed in more laconic and modern architectural styles, but the town-planning structure itself no longer underwent significant transformations.
As part of a study of the architecture aesthetics perception by the residents of Rivne city, the author conducted a poll about non-residential architectural objects. Poll participants were asked to choose from the list (Figure 2) the most aesthetically attractive buildings.

The poll showed the following results (Figure 3):
- 75.6% of forty respondents identified public buildings of the 2nd half of the 1940s - 1950s the most aesthetically pleasing;
- 11.1% preferred architectural objects of the 1960s and 1980s;
- 13.3% preferred architectural objects which were built during the years of Ukraine’s Independence (1990s – beginning of XXI).

Figure 2. The list of buildings for aesthetic analysis in Rivne city: a - Architecture of the 1940s - 1950s. Building of railway station and Theater Square; b - Architecture of the 1960s - 1980s. Buildings of cinema and department store; c - Architecture of the 1990s –beginning of 21st century. Buildings of shopping malls. Source: photos by the author.
Figure 3. Buildings aesthetic analysis in Rivne city. Source: illustrations by the author

4. Conclusion
The humanization of the cities architectural environment is one of the most important tasks of the modern stage of human development. In addition to the utilitarian aspects of the humanization of the architectural environment, such as solving environmental, architectural and planning problems, the aesthetic component cannot be ignored.

Artistic, aesthetic, psychological properties of the architectural environment in each historical segment are formed by means of architectural expression, but it is also important to take into account the context of the environment, continuity of architectural tradition, harmonious integration of new buildings into the existing environment, protection of architectural monuments and their restoration. It provides aesthetic comfort of urban space, preserves the "genius" of the city.

City residents' points of view, especially on public buildings and spaces, should also play an important role in the humanization process. According to the poll, the majority of respondents - residents of Rivne identified richly decorated facades of buildings of the 2nd half of the 1940s-1950s most aesthetically appealing. According to these results, there is an unambiguous conclusion about the role of the architectural heritage of the 2nd half of the 1940s-1950s in providing architectural environment aesthetic comfort.

Preservation and restoration of the architectural decor of building complexes of the 1940s-1950s is an important issue in the context of architectural environment aestheticization and humanization in Rivne and other cities of Ukraine.

References
[1] Day C 2004 Places of the soul: architecture and environmental design as a healing art. Second edition (Architectural Press) p 309
[2] Marek Antosczyszyn 2017 IOP Conf. Ser.: Mater. Sci. Eng. 245 052062
[3] Bogdanov A 1911 The cultural challenges of our time. (Moskow: Izdanie S.Dorovatovskogo i A.Charushnikova) p 321 (in Russian)
[4] Shevchenko L 2019 European experience on humanization of the city’s environment. Scientific Achievements of the Present: Proceedings of IV International scientific conference (Germany, Berlin: Tradition GmbH) pp 113-118 (in Ukrainian)
[5] Loos A 1997 Ornament and Crime: Selected Essays (California, Ariadne Press) p 204
[6] Moussavi F, Kubo M 2008 The Function of ornament (ACTAR, Harvard Graduate School of Design) p 192
[7] Nina Kazhar 2019 IOP Conf. Ser.: Mater. Sci. Eng. 471 082019
[8] Ikonnikov A 2001—2002 *Architecture of XX century. Utopia and reality. Book I* (Moskow: Progress-Traditsiya) p 655 (in Russian)

[9] Ferello J 2018 *EDG creates customizable 3D-printed concrete molds* The Architects Newspaper, May 25, 2018, from https://archpaper.com/2018/05/edg-creates-customizable-3d-printed-concrete-molds/#gallery-0-slide-0

[10] Rudnytskyi A 1971 *Urban development of the USSR western regions and their socialist reconstruction* (Lviv) p 55 (in Ukrainian)