The Concept of Restoring the Historical Development of the Pristan Area in Harbin

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Abstract. The work is devoted to the restoration of the historic environment of the city of Harbin. We are talking in this article about the preserved buildings in the Pristan area, which is the main commercial, the industrial and economic centre of the city. Central (Chinese) street belongs to the sights of the area. A large number of architectural monuments – buildings of Russian architects from 1898-1940 – concentrated on it. The historical building on the streets adjoining it has been preserved fragmentarily. The buildings are in a ruined state and require repair and restoration work. The concept of restoring a group of buildings located on one of the historic streets of Harbin – Yamskaya St., discussed in detail in this article. Space-planning and stylistic features of the objects identified in the work. The emphasis is on the need to restore the lost parts, drawings and photographs are given in the article.

1. Introduction

A new interest in the architectural environment of Harbin is associated with the formation of the image of the city with a great historical past. The Chinese government has embarked on the active preservation of historical objects, their systematization, and accounting as architectural monuments. Currently, 245 historical sites are officially included in the list of architectural monuments. The issue of transferring to the category of monuments is being considered for another 170 buildings (415 in total). All of them are presented in four volumes of “The Condensed Music. Urban planning Bureau of Harbin municipality. Overview of protected constructions in Harbin” [1]. And if the architectural monuments are in satisfactory condition despite the loss of some of the decor elements. That other historical buildings require the repair of load-bearing structures and large-scale restoration work. Their yard territories are in especially poor condition.

The history of the formation of the planning structure of Harbin, the general plans of its regions, and the features of the development are presented in the monographs of N. E. Kozyrenko, Ya. Hongwei and A. P. Ivanova “Urban Heritage of Harbin” [2] and “Harbin’s Architectural Heritage” [3], N. P. Kradin “Harbin - Russian Atlantis” [4], “Album of structures and typical drawings of the China Eastern Railway. 1897–1903” [5].

Many publications by Yu Binyang [6], Chan Huaisheng [7], Songfu Liu [8, 9] can be noted among foreign authors. Publications by Fei Ku “Central Street in Harbin, China” [10], Yang Rongqiu and Xie Zhongtian “Street of Extraordinary Splendor: Central Street of Harbin” are dedicated to the historical
development of Central Street. Modern master plans and photographs of the Central Street of Pristan are presented in the book “Variations Central Avenue. Memorial Stamp Collection of the Awarded Regeneration Project for Historic Blocks of Central Avenue” [11].

The method of restoration of architectural monuments is considered in the publications of A. A. Kedrinsky [12], E. M. Mikhailovsky, S. S. Podyapolsky, G. B. Bessonov, L. A. Belyaev, T. M. Postnikova [13].

The scientific novelty lies in the fact that for the first time the modern historical urban environment of Harbin is being investigated for its restoration.

2. Features of the historical buildings of the Pristan area and its current state

The territory of the Pristan area has preserved the historical division into quarters, which was laid down on the master plans of 1897–1903. [5, p. 261-264]. However, the typology of structures has changed over the decades. First, capital development replaced the 2-3-story manor building. Later, typical residential buildings and high-rise public complexes appeared.

The greatest concentration of the old buildings can be traced to the Chinese (Central) St. and the streets crossing it within the borders of Artillery St. to Novotorgovaya St. [1, 2, 3, 11].

Two quarters, which retained their configuration of historical buildings, were discovered during an on-site study of the Pristan area. The first quarter was located within the boundaries of Mostovaya, Chinese, Novotorgovaya, and Rynochnaya streets. And the second quarter is located on the borders of Shyrokaya, Chinese, Novotorgovaya, and Mostovaya streets. The historical buildings were almost completely preserved in the trapezoidal quarter in Korotkaya St. and in the quarter within the borders of Novotorgovaya, Skvoznaya, and Chinese streets. Separate historical buildings with courtyards are identified on Yamskaya Street. Horse Street A total of 22 preserved historical courtyards were examined in the streets located perpendicular to Chinese Street.

The survey showed that the quarters are formed by several enclosed courtyard spaces, the entrance to which was through arches. Moreover, only one entrance is available in each yard.

The configuration of the space could be the most diverse of the various building plan shapes. Small narrow passages were discovered between the individual buildings. Passages ended in dead-ends in the form of brick walls. They were probably made for insulation. Separate courtyards are limited by buildings on three sides, and on the fourth, they are enclosed by a brick wall.

The architecture of the courtyard territories represented by a brick style. Metal and wooden stairs are some of the common elements of space. They serve to rise to the galleries on the second floor. Galleries can be either part of the facades or serve as transitions between buildings and the opposite wings of buildings, forming open bridges under which a passage can be made (see Figure 1).

![Figure 1. Gallery in the courtyard on the Konnaya St. Photo by Lava D.A.](image1)

![Figure 2. The architectural monument in the courtyard on the Shirokaya St. Photo by Lava D. A.](image2)
Two-story and three-story gallery houses, the entrance to the apartments of which is carried out from the street, are found in separate courtyards. Notable details in their architecture are the design of carved roof eaves and wrought-iron grilles. Despite the modest architecture, one of these houses is included in the list of architectural monuments in the quarter on the street. Wide (see Figure 2). The style of construction is defined as Art Nouveau on a plate attesting to the protection of the building. Although the building belongs to the "brick architecture" on stylistic grounds. Similar houses are found in other courtyards along Shirokaya St. and in one of the courtyards on Skvoznaya St. Separate similar buildings have a large length and stretch immediately to two yards.

The ruined state of the preserved historical buildings during the study is noted: damage to the supporting structures and the destruction of decorative elements. Residents are evicted from their homes, but the ground floors of the buildings serve as small shops and catering outlets. Yard areas are littered with rubbish and cluttered with concrete and wooden outbuildings. In this connection, projects for their restoration and reconstruction were proposed.

3. Projects of restoration of facades of historical objects on the Yamskaya St.

The facades of Yamskaya St. are represented by a modern building, three old buildings, and continues with residential facilities. The method of stylistic environmental adaptation is applied in the architectural appearance of a modern building at the intersection of Chinese and Yamskaya St. The building was built in the neoclassical style. This allows it to be combined with nearby old buildings. Residential development is an example of decorative environmental adaptation, in which the facades of buildings are decorated with elements of the architecture of past centuries (application method) [14, p. 239-241].

![Figure 3](image-url). The appearance of historical buildings on the Yamskaya St. Photo by D. A. Lava.

The first old building (see Figure 3) is made in the neoclassical style, according to the classification features given in the monograph by N. E. Kozyrenko, Y. Hongwei, A. P. Ivanova [4, p. 33–34]: the presence of order elements, triangular gables, and triangular sandriks, the imposition of a hyper order on the facade. Two other objects have Art Nouveau motifs in their architecture: rounded outlines of openings, curved pediment, floral and oriental motifs in the decor [3, p. 46–47].

All three buildings have significant damage. The use of analytical methods of restoration is advisable to restore their architectural appearance (see Figure 4). Researcher A.A. Kedrinsky defines restoration as “protection from further destruction with the combination of dissected fragments and restoration of losses that do not require complex scientific research for their revival” in his work “Fundamentals of the restoration of architectural monuments”. The author writes that most of the lost elements can be restored using the repetition method of analogies using materials with similar historical properties. The task of the full restoration of the original form of a historical object can be posed with minor damage to the object or the evidence of its shape during restoration [12, p. 12].

Researchers Podyapolsky S.S., Bessonov G. B, Belyaev L. A, and Postnikova T. M. distinguish two main operations of restoration:

- unveiling of the monument - it is necessary to remove the layers that spoil the historical appearance of the building. Only those layers are of value that are works of art;
- addition - repair of cracks, mechanical restoration of repeated parts (for example, repeating rows of teeth) [13, p. 59–62].

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Figure 4. The project of restoration of historical buildings on the Yamskaya St. Drawing by D. A. Lava.

Signs, shop windows and other modern elements that distort the historical appearance of buildings must be removed at the first stage of the restoration of facades overlooking Yamskaya Street.

Further, the repair of supporting structures is required, involving the sealing of cracks in the foundation, walls, cracks in the area of arched openings and their ceilings.

The addition involves the elimination of damage in the surviving parts and the restoration of repetitive elements. Elimination of damage to parapets, cornices, belts, pilasters, balcony slabs, frames, and filling openings is necessary on the upper floors. The three-story Art Nouveau building requires the repair of stucco molding damage.

Restoration of the decorative elements of the first floor will be the most difficult stage. Here, the reconstruction method (complete restoration of the building damaged by time and destruction) proposed by researcher A. A. Kedrinsky [12, p. 12]. The author writes that to recreate, the rationale for each restored part should be given - the involvement of scientifically-based analogs. Elements from preserved fragments of a historical building can be used as such analogs.

Types of repair work on the lower floors of buildings should be determined based on the condition of the parts under the covering.

The location of the openings on the first floor has not changed, but some of them have been expanded. Framing and filling openings, sandrikas, and window sills were destroyed during the installation of shop windows and require restoration. Details on the upper levels and preserved items on the lower floor can be used as analogs. The project proposes the reconstruction of the lost base and the pilaster bases, leveling the floor line and the number of steps at the entrance groups.

The right side of the two-story building was heavily rebuilt: the floor level changed and translucent structures replaced most of the outer wall, breaking axial symmetry. Original elements are preserved in the central part of the first floor. They can be used as samples for the restoration of parts in rebuilt parts of the building.

The restoration of the lost pediment on a building in the neoclassical style is possible only by analogs of buildings made in the same style and belonging to the same period of construction [12, p. 12].

4. Projects of restoration and reconstruction of courtyards

It is proposed to use the methods of disclosure and addition as the main ones for carrying out restoration measures in the yard territories. The dismantling of all outbuildings must be done from the yard at the very beginning. Masking or transfer of engineering equipment, the dismantling of sunscreens, modern double-glazed windows, shutters, and the laying of randomly located openings, which are remodelled, is required. So, the facade of the third historical building and the side of the courtyard is almost completely enclosed by outbuildings on the first floor and partially on the second floor. The restoration of pledged openings is required after their dismantling.

Further, repair and restoration work, including the elimination of cracks in the foundation and walls, must be done.
The restoration of damaged elements of buildings: masonry parts, wall completions, frames, and fillings of mortgaged openings, slabs of balconies is supposed to be the next step. Replacement of dismantled modern double-glazed windows and the manufacture of missing fillings, similar to the samples preserved on the building, is proposed by the project.

The exterior decoration of buildings must be completed at the final stage. The courtyard facade of the first building was originally lined with plaster. In the second and third courtyards, the project proposes to preserve the “brick” architectural appearance of the building.

The opposite side of the courtyard relative to the first building is represented by a concrete structure and a brick structure adjacent to it on the right (see Figure 5). The application of methods of compositional, stylistic, and decorative environmental adaptation is possible for a harmonious combination of two buildings [15, p. 264-272]. The brick cladding of concrete walls, laying of wedge-shaped lintels and girdles in the style of "brick" architecture, by analogy with the construction on the right, is proposed by the project.

![Figure 5. Yard on the Yamskaya St. The restoration project and the current state. Drawings and photographs by D. A. Lava.](image)

The use of the concept of conflict-free reconstruction [16, 17, 18, 19] was proposed to preserve the historical genotype of domestic territories. The project involves the preservation of the number of stories, the closed structure of the courtyards, the functional filling of the courtyards, their adaptation to modern operating conditions.

5. Conclusion
Thus, a study of the historical structures of the Pristan area was carried out. The survey showed that the quarters are formed by several enclosed courtyard spaces, the entrance to which was through arches. Moreover, in each yard, there is only one entrance. The frequent use of open stairs, bridges and galleries, the “brick” style, the symmetrical composition of the facades, the forged and carved elements in the design of the facades are noted among the features of the intra-quarter building.

The application of the methods of disclosure, addition, reconstruction is required for the restoration of building facades. Recovery of lost elements is proposed based on the surviving parts of buildings. The conflict-free reconstruction method was proposed for the restoration of quarters.
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