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## Концепция сохранения архитектурных памятников г. Баку, построенных в конце XIX – начале XX в.

На современном этапе необходимы неотложные меры по сохранению отдельных памятников архитектуры, созданию условий для их правильного использования и экспонирования, мероприятия по регенерации исторической среды. На основе выявленного состояния целью данного исследования является разработка концепции сохранения архитектурного наследия Баку, относящегося к концу XIX – началу XX в. Методология исследований основана на систематическом подходе, включающем анализ полноценных исследований памятников архитектуры и окрестных зданий, типологическую классификацию архитектурного наследия по типу, хронологию строительства и разработку концепции сохранения исторического наследия Баку рассматриваемого периода. Исследование общего состояния рассмотренных в данной работе зданий позволяет сделать вывод о том, что они находятся в относительно удовлетворительном состоянии. Некоторые недавно были отреставрированы. В других необходимо проведение работ по реставрации и реабилитации. Восстановление наиболее ярких архитектурных памятников капиталистического периода Баку требует правильного подхода с учетом всех аспектов современного сохранения исторических зданий.

**Ключевые слова:** архитектура Баку, принцип регулируемого менеджмент-управления, зона особого режима застройки, сохранение старой планировки, концепция сохранения архитектурного наследия Баку.

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### Concept of Preserving Architectural Monuments of Baku Built at the End of 19<sup>th</sup> and Beginning of the 20<sup>th</sup> Centuries

At the present stage there is an urgent need for the conservation of individual monuments of architecture, creation of conditions for their correct use and exposure, measures for the regeneration of the historic environment. The aim of this study is to develop the concept of preservation of the architectural heritage of Baku, relating to the late 19th – early 20th century on the basis of identifying their condition. The research methodology is based on a systematic approach which includes the analysis of full-scale studies of architectural monuments and surrounding buildings, typological classification of architectural heritage by type, chronology of construction and development of the concept of the historical heritage preservation of Baku of the period under study. The study of the general condition of the buildings considered in this work makes it possible to conclude that they are in a relatively satisfactory condition. Some of them have recently been restored. It is necessary to carry out restoration and rehabilitation works in others. The considered buildings are the most striking architectural monuments of the capitalist period of Baku. Their rehabilitation requires a correct approach, taking into account all aspects of the modern preservation of historical buildings.

**Keywords:** architecture of Baku, principle of regulated management, zone of special regime of development, preservation of old planning, concept of preservation of architectural heritage of Baku.

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During the XIX and early XX centuries, the city began to grow rapidly, going beyond the walls of the fortress walls of Icheri Sheher, within which it existed and developed over many centuries. The demand for buildings of different functional significance served as the basis for the rapid development of the construction of buildings and structures with a new architectural and artistic composition, a different volumetric solution. This led to the need

to shape the city in the shortest possible time, erecting new residential buildings and residences of oil magnates, public buildings, markets, passageways, theaters and cinematographes. Due to a certain one-tameness in building up the central quarters and streets of Baku, the appearance of the city was thoughtful and completed [1].

It should be particularly noted that not only new types of public and industrial buildings were built in Baku during

this period, related to the development of industry and the new status of Baku. All types of buildings existing there before also developed. There were new mosques, baths, caravanserais and other buildings that had been built here for a long time.

The graduated Azerbaijani architects and craftsmen such as Z.B. Akhmedbekov, K. Hajibababekov, M.G. Hajinski, Haji-bay Akhundov, I.Kh. Kasumov and many others worked in Baku. A special role belongs to the formation and development of the architecture of Baku of that period in those years to the work of architects and civil engineers – Europeans who received education in Russia or Europe: I. Goslavsky, I. Ploshko, Fon Der Nonne, K. Skurevich, E. Skibinsky, N. Baev, D. Buinov, F. Lemkul, L. Polyakov, I. Edel, A.V. Eyhler and others [2–4].

By the beginning of the studied period, the local architecture had a rather high level of development, it consisted of many centuries of traditional construction of buildings from local material and taking into account local natural and climatic conditions. Due to the fact that the invited architects and engineers treated local traditions with special tact and understanding and skillfully used them in their work, as a result, traditional architecture not only did not suffer from foreign influences, but also revealed, deepened, developed in new beauty. As a result of this, it was formed a specific, so-called eclectic architecture of the city of the end of the XIX – beginning of the XX centuries, known as "Baku romanticism".

### Methodology

The study used general scientific methods (theoretical analysis and synthesis, systematization and typification) and special methods that are typical for studies in the field of history on architecture, in particular, field and desktop methods (analysis of library and archive historical, cartographical, and literary material on the history of formation of the historical heritage of Baku).

### Research outlines and approach

In this study, authors have made an attempt to develop a concept for the sustainable development of the architectural monuments of Baku during the study period. The authors believe that consider it necessary in this concept to pay attention to:

- disclosure of the role and importance of buildings build during the study period;
- determine their current state and current use;
- depending on the preservation of the architectural heritage, conducting a typological classification of buildings;
- objects of architectural heritage by type, chronology of construction;
- identification of negative examples of modern use of monuments;

– an attempt to develop recommendations to solve problems arising in connection with the protection and use of the architectural heritage of Baku. To this end, develop a concept of preserving the architectural heritage on the example of buildings in Baku built in the late XIX–early XX centuries;

– development of recommendations on the creation of buffer zones of historical parts and the definition of their borders;

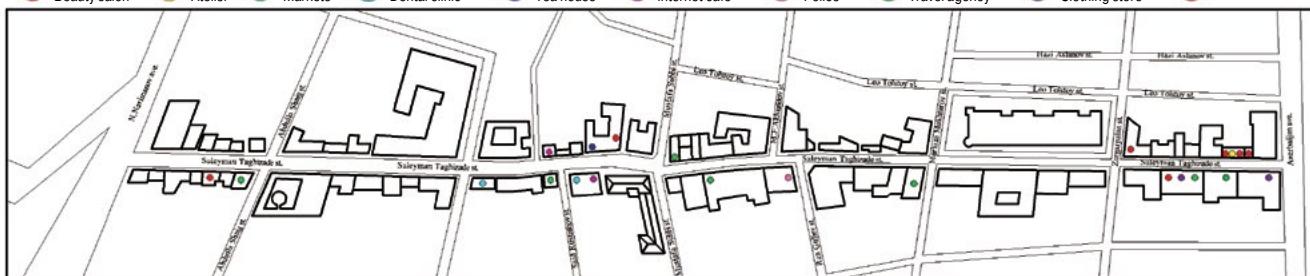
– development of project proposals for the preservation and use of some of the monuments of the city of Baku through their modern reconstruction and restoration.

– creation of mechanisms for regulated impact on the preservation of monuments. Preservation of monuments should be carried out by the competent authorities (<http://www.cathedral.ru/cathedra/codes/char>). Not only must a legal basis be developed for making timely decisions about certain measures for the protection of the monument, but there must also be sufficient opportunity for the practical implementation of all the necessary measures (Tarix ve medeniyyet abidelerinin qorunması haqqında Azərbaycan Respublikasının 10 aprel 1998 – ci il tarixli qanunu (On the protection of historical and cultural monuments. Law of the Republic of Azerbaijan dated April 10, 1998).

– development of basic measures for the study, protection and further use of monuments of the period. Despite the long-term and repeated studies of the monuments of the period studied by many scientists of Azerbaijan, there are still some aspects that need to be addressed. In addition, the strong deterioration and old age of many monuments require a more thorough and periodic study of monuments with a view to their protection. Here, an important role is also played by the polarization of monuments, their correct use, the adaptation of monuments with possible changes to the original functions, etc. All these issues should also be strictly regulated. Decisions on them should also be made by competent professionals. For example, the situation with many residential buildings requires urgent intervention, in which, after alterations and division of apartments into smaller ones, an unhealthy and inconvenient environment has emerged for many years. Residents make attempts to independently equip housing, which leads to even more disastrous results in terms of the preservation of the monument. For this purpose, the authors of the article conducted a study of the historical street of S. Tagizade which is dominated by the monuments of the study period and allocated the buildings according to chronology, purpose and function. They also made project proposals for conservation, regeneration and further use of these buildings (fig. 1–4).

One of the important concepts of the sustainable development of monuments of architecture of Baku of the studied period is the study and solution of the problems of

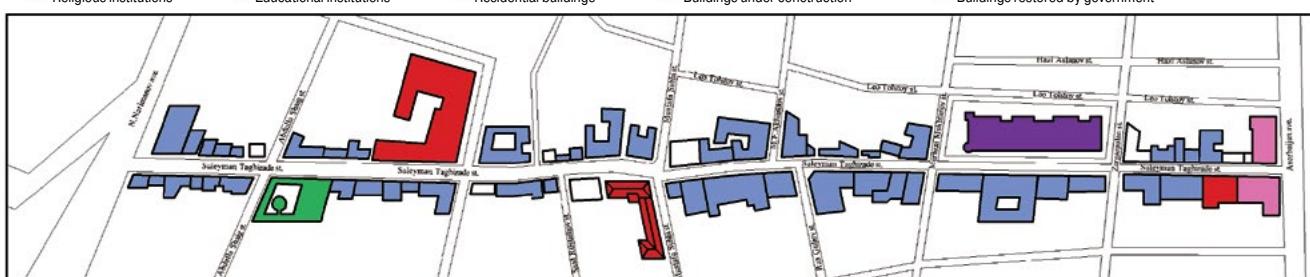
*a* Салон красоты Beauty salon   Ателье Atelier   Маркеты Markets   Стомат. клиники Dental clinic   Чайный дом Tea house   Интернет-кафе Internet cafe   Полиция Police   Турагентство Travel agency   Магазин одежды Clothing store   ILC



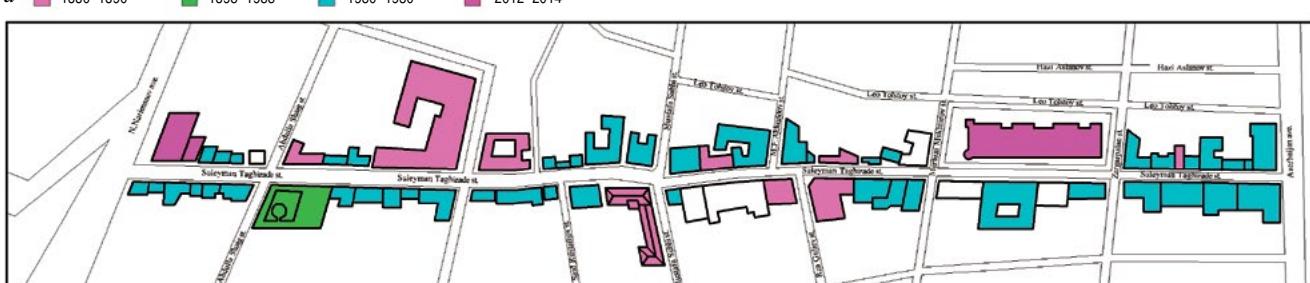
*b*



*c* Религиозные учреждения Religious institutions   Учебные заведения Educational institutions   Жилые здания Residential buildings   Здания на стадии постройки Buildings under construction   Здания, отреставрированные государством Buildings restored by government



*d* 1880–1890   1893–1933   1930–1950   2012–2014



**Рис. 1. Проектные предложения по сохранению архитектурного наследия: а – генплан с указанием объектов соцкультбыта; б – генплан со зданиями-памятниками; в – генплан с классификацией зданий по назначению; г – генплан с классификацией зданий по времени строительства**

**Fig. 1. Project proposal of preservation of architectural heritage: a – general plan of the territory objects of social-cultural facilities; b – general plan of buildings-architectural monuments; c – general plan with classification of buildings according to the function; d – general plan with classification of buildings according to the years**

protecting not only individual buildings of this period, but also historical squares, streets, separate architectural ensembles. Here it is necessary to note once again the fact that the majority of the investigated buildings are located on the historical streets and squares of the city. These buildings, in fact, formed squares and streets. Very often they were created at the same time, and even if not, special attention was paid to the construction of each new building to the issues of interconnection of the building with the existing environment. Of course, the age-old his-

tory of their existence and use modified somewhere their appearance, negatively or positively. Today it is especially important to reduce the negative factor and try to return the original historical environment as far as possible. The question of the subordination of buildings to the scale of the surrounding buildings is very important here, as well as the ability to perceive buildings in a historical environment without parked cars that interfere with the view. This applies to all narrow historical streets, such as S. Tagizade, M. Subhi, A.B. Guliyev and others.



*Рис. 2. Особняк М. Мухтарова  
Fig. 2. Mansion of M. Mukhtarov*



*Рис. 3. Особняк А.Б. Гулиева  
Fig. 3. Mansion of A.B. Gulyev*



*Рис. 4. Контора Ротшильда  
Fig. 4. Office of Rothschild*

– Consideration of the construction of new buildings in the historical environment. In this regard, the development of new security and buffer zones is of particular importance. As it was already noted, at present the mechanisms for regulating protection and buffer zones work, unfortunately, very poorly. In the historical environment, new buildings are built, with their own style, scale, and proportions that destroy the integrity of the historical image of buildings built during the periods under study. A striking negative example is the new building in the immediate vicinity of the mansion of A.B. Gulyev, the building of the Rothschild office and the prospective mansion of M. Mukhtarov (fig. 2–4).

– When creating the concept of architectural monuments of the study period, it is necessary to consider:

– As objects of sustainable development, since the objects of this traditional culture are the memory of society, this is evidence of the adaptation of people living here for centuries to the environment, the result of using local climatic conditions and building materials to create a specific architecture characteristic of this region.

– As carriers of the traditional architectural memory of the people, since the architectural monuments of the period under study characterize the history of the city and country, the mentality of the local people, the tolerance of the people, the continuity of traditional values (fig. 5).

– As objects of tourist interest and, accordingly, economic growth, since these buildings attract tourists along with modern architectural achievements. Perhaps tourist interest of this kind is not accompanied by immediate economic benefits, however, it is this “contrast” of the city, where, along with modern ones, there are a large number of buildings from different historical eras, and it attracts people ([https://www.gov.spb.ru/gov/otrasl/c\\_govcontrol/peterburgskaya-strategiya-sohraneniya-kulturnogo-naslediya/](https://www.gov.spb.ru/gov/otrasl/c_govcontrol/peterburgskaya-strategiya-sohraneniya-kulturnogo-naslediya/)).

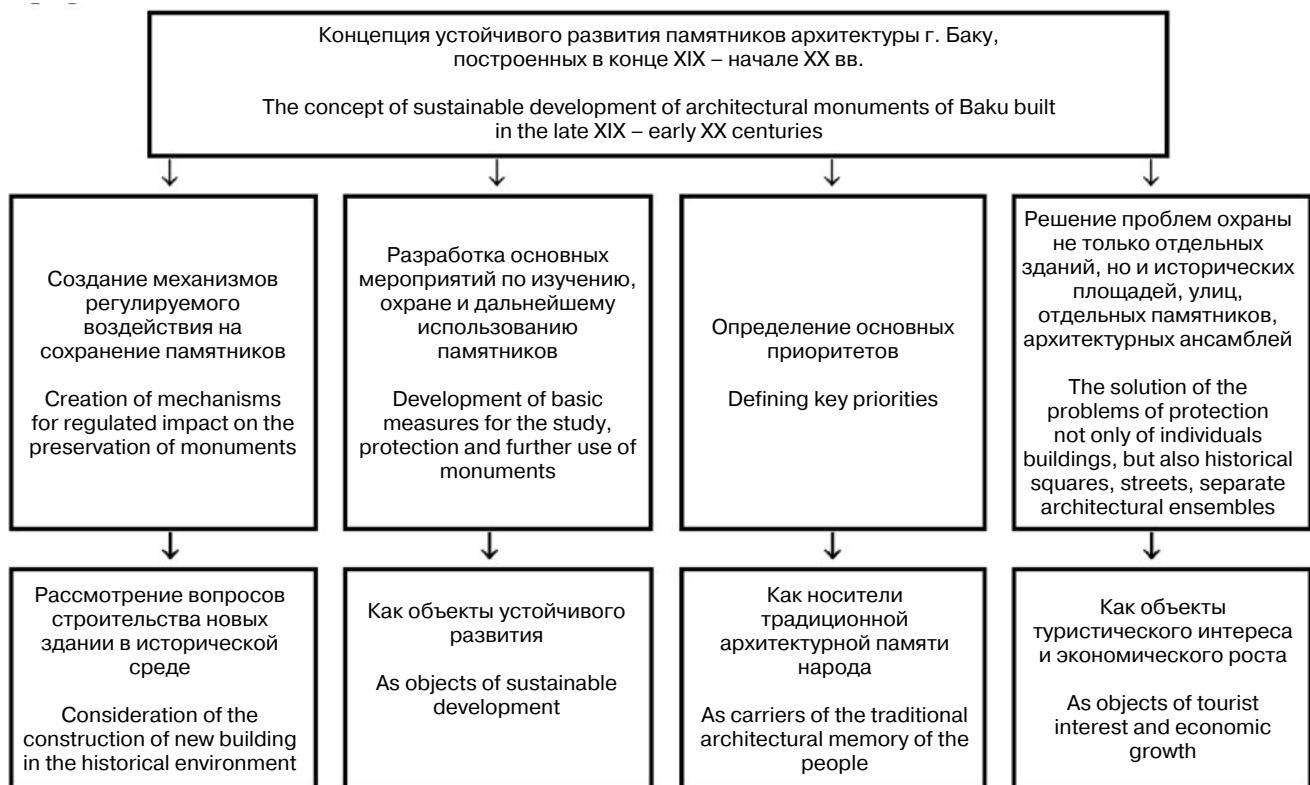
### Study area

Taking into account the number of monuments to be protected, as well as a wide range of various problems

related to their preservation, it is necessary to develop the sequence of events held on the monuments for their protection. A positive example is the restoration and adaptation of large public and residential buildings of M. Mukhtarov's mansions (fig. 2, 7–8) and G.Z. Tagiyev, Fon der Nonne's houses, passages, etc. [6]. Further, it would be worthwhile to draw up a plan of measures, determining the degree of priority of conservation measures being carried out. For example, it seems to us that, first, it is necessary to carry out the restoration of buildings located on the ring road around Icheri Sheher, where many buildings have been restored, and some facades have been renovated. However, here we are talking about the targeted regeneration of the street with the complete restoration of buildings and the strengthening of their carrying capacity. The same should be done with all historical streets. This will prevent the buildings from being separately snatched from the context of the historical environment. After this, it is necessary to refer to the buildings located in the depth of development.

### Problem

These problems have been touched upon in some studies, where the development of the security zone around Icheri Sheher, it was stated that «...in the case of Icheri Sheher, the problem of the correct definition of the area of the zone, as well as its proper functioning is complicated due to the fact that the objects included in the zone are themselves architectural monuments. That is, each of the monuments included in the protected area should also be in turn protected. In addition, the view of the fortress walls of Icheri Sheher opens not only from the ring road around it, but also from perpendicular streets, such as Azerbaijan Avenue, M. Mukhtarov and B. Sardarov streets. According to the requirements for maintaining the scale, height, structure and layout of these streets are increased, since any introduction, distortion can lead to disruption of visual connections». First of all, of course, the buffer zone should include areas directly adjacent to

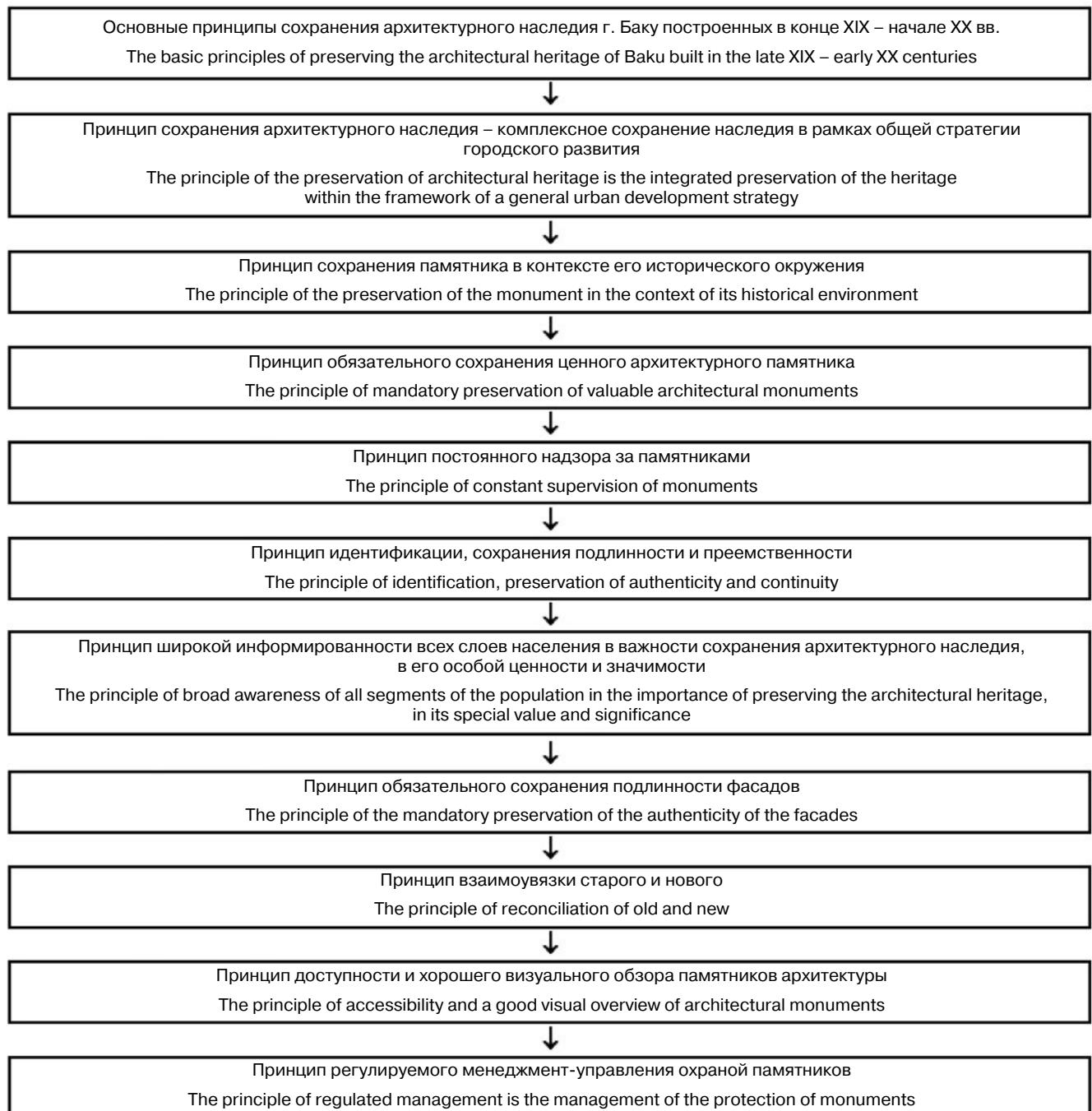


*Рис. 5. Концепция устойчивого развития памятников архитектуры г. Баку  
Fig. 5. The concept of sustainable development of architectural monuments of Baku*

the monument, preserving the building, creating a favorable environment for its perception. Then, by comparing the data obtained with the current situation, it is possible to determine which elements of the surrounding buildings, which visual connections of the monument with the environment correspond to the previously existing aesthetically valuable qualities of the urban situation and therefore they should be preserved. In addition, it is necessary to establish that in modern buildings it prevents the perception of the heritage, which is required to be abolished during reconstruction. The resulting support plan shows those sections of the area around the current protection zone, which should also be included, since they affect the perception of Icheri Sheher from the side of the ray-diverging streets. In accordance with the proposed project, in addition to the buildings directly adjacent to the fortress wall, or replacing it (i.e. the existing security zone of Icheri Sheher), the new buffer zone also includes monuments located on the other side of Istiglaliyet, Niyazi, A. Aliev, ordinary (background) buildings behind them, as well as, Azerbaijan Avenue, M. Mukhtarov, M. Rasulzade streets, national Park – Boulevard, fountain square. I would like to note that such a buffer zone meets the standards of world practice. A building control zone is created around the security zone. It covers, as a rule, quite large areas. In the zones of regulation, there are areas called the zone

of strict regulation (sometimes – the zone of special development regime). During construction, it is necessary to preserve a large number of various historical compositional regularities on them: the preservation of the old layout, low-rise buildings, the old principles of silhouette formation, etc. The most important of these areas are recognized as protected. In such territories, when addressing the relationship between the old and the new buildings, the proportional, large-scale ratios of old and new buildings should be taken into account. Below are the main directions of the concept of preserving the architectural heritage of Baku, built at the end of the XIX – beginning of the XX centuries (fig. 6).

**1. The main principle of the conservation of the architectural heritage – integrated conservation of heritage within the overall city development strategy.** Monuments cannot be legally preserved separately from the country's policy on the development of the city of Baku. A common strategy must be developed. Historical architectural monuments should act in this regard from the point of view of all the above-mentioned characteristics. Preservation of architectural monuments should become the main object of the urban renewal strategy. Thus, the preservation of monuments should be studied not only by the relevant structures, such as the Ministry of Culture and Tourism, the newly created structure for the

*Рис. 6. Основные принципы сохранения архитектурного наследия в г. Баку**Fig. 6. The basic principles of preserving the architectural heritage of Baku built*

protection of monuments or the Scientific – Research and Project Institute «Azerberpa». All structures involved in issues of urban planning and architecture, economy and industrial development, transport, landscaping, legal services, etc. should feel responsible and solve their problems taking into account the preservation of monuments.

In the world practice of preserving monuments of architectural heritage, it is proposed to replace priorities in the protection of monuments from “saves from ...” to

“save for ...” [7]. This is due to the fact that in the first case there is a system of prohibitions, when the population is not motivated to save, the second approach, on the contrary, implies joint participation of all members of society in the protection of monuments and should lead to the recognition of common responsibility for the preservation of heritage.

**2. The principle of preservation of the monument in the context of its historical environment.**

The specificity of Baku lies in the fact that individual historical objects formed quarters, streets, squares (as discussed in Chapter 2 of this study), and where changing each building invariably leads to a change in the historical town-planning structure of the whole block, street or square. In this regard, it is very important to review and approve the buffer zones of objects. In world practice, when creating buffer zones of monuments, complexes or areas, in addition to the well-known radius calculation, depending on the height of the protected object, the principle of "view ability" is applied – even outside the calculated distance, it is necessary to preserve the historical building, the monument's view ability. That is, the points of view, the composite connections of the monument with the surrounding objects, altitude and scale should be taken into account. Protected areas are a very important method in preserving heritage. They set a regime prohibiting new construction (with the exception of measures aimed at regenerating the historical environment and adapting architectural monuments); a ban on changing the historical planning structure of streets and neighborhoods; strict restrictions on the reconstruction of objects of historical and cultural value (buildings, facades, squares, etc.).

**3. The principle of the mandatory preservation of valuable architectural monument.** Even in the case of a severe deterioration the architectural monuments of this period should not be destroyed, they should be preserved at least in their present form. The best example in this regard is the house of Hajinsky, who was badly damaged after the earthquake, but was completely strengthened while preserving the facade. It is also necessary to note here the flagrant fact of the destruction of a large number of architectural monuments in the area of the former Sovetskaya street called emergency and not having architectural significance.

**4. The principle of constant supervision of monuments** to be able to carry out the correct restoration, conservation, repair, etc. In this regard, it is necessary to note the general measures to slow down the processes of natural aging of monuments and under the influence of natural and climatic factors:

– Reduction of pollution by cleaning the facades with special modern methods harmless to the building and their subsequent coating with an encaustic solution in the form of a film protecting the surface from contamination for many years. This will also entail a reduction in damage to buildings, penetration of vegetation, microorganisms; (there is foreign experience). This method is used in the cleaning of monuments in the historical part of Vienna, in some Italian and Russian cities [8, 9];

– Reduction of vibration sources from transport. To limit vibrations from the metro, it is proposed to use special devices for load distribution on the foundation. It is

also necessary to limit the impact of conventional auto transport, to close the traffic on the most valuable streets and squares, to exclude arbitrary parking, etc. for example, it should be noted the negative impact of the last two years of Formula 1 competitions. Exposed to many times higher than normal vibration rates from transport, loads, monuments lose their stability [10, 11];

– Correct and effective use of monuments. Even in the case of changes in the original function, the building should be used so that, firstly, to minimize the introduction of its structure, associated with the necessary alterations, and secondly, not to contradict the safety of the building and worthy of it;

– Use in the repair, restoration and conservation of architectural monuments, only proven high – quality materials corresponding by physical and chemical characteristics of the materials of the building. Any new implementation should be strictly controlled and regulated;

– Strict regulation of various implementation in the building surface such as: wires and cables, cords, cameras, antennas, air conditioners, communication pipes, plates, etc.;

– Timely elimination of minor problems-strengthening of doors, windows, etc.;

– Systematic fire-prevention supervision.

**5. The principle of identification, preservation of authenticity and continuity** is based on the understanding and constant study of the main characteristics of traditional features of architectural heritage with their subsequent use in new construction. The basis of this principle is the understanding of the importance of preserving the original appearance of the building without changing, understanding the principles and methods of its construction in order not only to preserve the monument, but also to be able to repeat it as a model of a traditional building. In this regard, it is especially necessary to dwell on the need to create a special school of restoration, workshops, where it would be possible to conduct research on the design and decorative features of individual monuments, repeat them in new buildings, but also to carry out the restoration of individual sites, etc. The initial example of such workshops takes place in Icheri Sheher. The workshop for the study of objects of art was created by the Icheri Sheher Administration and successfully operates to promote the art of Azerbaijan, creating souvenirs and crafts. It would be desirable that the similar workshop on production of architectural details also took place. In addition, it is necessary to create a restoration school to create professional staff in the field of practical restoration (artisan workshops). It is possible to create master classes of local and foreign experts. You can create tourist routes on the monuments of the study period. It is necessary to create a map of the location of all the monuments of the 19th and early 20th



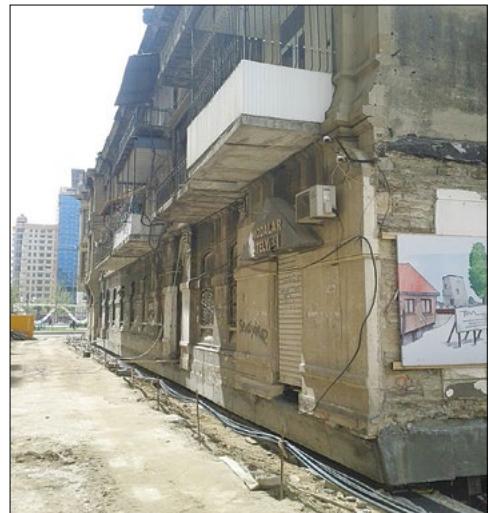
**Рис. 7. Пристроенное новое здание между двумя корпусами музея искусств**  
**Fig. 7. Museum of Art (attached new building between the two buildings of the museum)**



**Рис. 8. Дом Г.З. Тагиева**  
**Fig. 8. House of H.Z. Tagiev**



**Рис. 9. Передвижение дома Гаджинского на улице Физули, Баку**  
**Fig. 9. Moving the Hajinsky House on Fizuli Street**



centuries, avenues, brochures that will allow them to be promoted not only among the guests of the city, but also among its permanent residents.

**6. The principle of wide awareness of all segments of the population in the importance of preserving the architectural heritage, its special value and significance.** This is a very important aspect, because very often the issues of heritage protection in fact concern only those who are on duty doing it. Ordinary people, even those who live and work in architectural monuments, do not understand the value of monuments, and as a result, do not monitor the safety and they are subject to destruction. In this regard, it is necessary to raise the issue of bringing to justice those who clearly or not damage the monuments.

**7. The principle of the mandatory preservation of the authenticity of the facades.** This principle fol-

lows from the previous one and is connected with the lack of understanding of the importance of preserving the authenticity of buildings. However, the problem here is much wider. Very often, residential buildings, as well as office premises, are modified by homeowners, the first floor of buildings and public buildings acquire advertisements, extensions, etc. All this, of course, negatively affects the integrity of the building's appearance, modifies its original appearance. It is unacceptable. However, to solve the problem today due to its wide scale, to eliminate the results of this so-called «remake» can now only be made with the involvement of administrative structures, holistically [4].

**8. The principle of reconciliation of old and new.** Since Baku is a large, constantly developing city, it is impossible to stop the process of its expansion and the construction of new buildings even in historic buildings.

The city cannot be conserved and should not turn into an open-air museum where all development and life in general will be stopped. However, this process must be regulated and strictly scheduled. As mentioned above, conservation areas and regulated development areas should be defined. Each new building should be skillfully integrated into the existing historical building by means of harmonious inclusion «from complete dissolution» of new architectural volumes, materials and colors in the environment to the methods of «counterpoint», all kinds of stylizations and recreations by means of new construction, new technologies and materials» [8]. New construction should in no case threaten the physical condition of the neighboring historical buildings either visually (aggressive, inconsistent scale, styles, etc.) or technically (excessive pressure on the foundation and base, etc.).

**9. The principle of accessibility and good visual overview of architectural monuments.** Since most of the monuments of architecture of the period under study are located on the narrow historical streets, their review is now very difficult. Very often these streets are a parking place. It is very important to review the transport grid of the city for the unloading of some streets with particularly valuable monuments of architecture, to regulate or completely prohibit traffic and parking. In addition, if possible, it is necessary to create open spaces-squares, etc. in order to open an overview on some monuments. This can be done by demolishing dilapidated low-value buildings. In this case, a special threat is the desire to build a large multi-storey building on any open space, which not only closes the historical building from people, «presses» on it with its inappropriate scale and proportions, but also creates a threat to the foundations, communications, etc.

**10. The principle of regulated management-management of monuments protection.** Once all recommendations have been developed, a mechanism for their proper functioning and implementation should be established. This mechanism includes both legal measures-punishments, impacts, etc., and real measures to implement the principles of safety. An example of such a management plan was drawn up in the early 2000s in the Administration of the State historical and architectural reserve Icheri Sheher with the involvement of foreign experts. Drawing up the management plan was one of the conditions for the inclusion of Icheri Sheher in the UNESCO World Heritage list in 2001 ("Bakı şəhərində İçərişəhər tarixi – Memarlıq Qoruğunun mühafizəsi və bərpası ilə bağlı bəzi tədbirlər haqqında" Azərbaycan Respublikası Prezidentinin 17 fevral 2003 – cü il tarixli sərəncamı).

#### Outcomes and remarks

Thus, the following measures for research, analysis and preservation of monuments of the architectural

heritage built at the end of the 19th – beginning of the 20th centuries are particularly relevant today: analysis of the list of monuments, correction and subsequent inventory; constant supervision of destruction processes; studying the causes of destruction and ways to eliminate them; formation of a unified database of historical and cultural heritage with a constant update based on the results of photo fixation of the current state; the creation of a legal and administrative framework for the regulation of all the above processes for the preservation of monuments.

In addition, it is necessary to develop special events and routes to familiarize the local population and tourists with the rich architectural heritage of the study period. The rich experience of such events and tourist routes is widely used and promoted in the world practice of tourism [6]. We also have certain experience in Icheri Sheher. Various holiday celebrations, exhibitions and tourist routes can be used to promote the monuments in various historical streets, squares, various authors, etc.

Neither in domestic nor in world practice there are eternal methods of conservation. The main task is to suspend the processes of natural aging and wear, to minimize the factors of their acceleration. The processes of natural aging are determined by the life cycles of buildings and building materials, the limits of safety of operation of structures. The lack of proper protection of buildings and structures from natural and climatic conditions, techno-genes load on soils and structures, gas pollution and acid rain, the release of such pollutants as sulfur dioxide and nitrogen oxide create a cumulative effect. The processes of corrosion of metals and carbonization of plastering layers are intensified, the "wild" loose patina corrodes bronze and copper surfaces, the abrasive effect destroys gilding, stone and marble are reborn, groundwater destroys foundations, biological damage spreads to wooden structures.

Today there are two main trends in the preservation and regeneration of historic streets in Baku. One of the trends can be seen in the demolition of all low-value buildings and the construction in their place of buildings in the style of pseudo-classical, which was so popular, and we love customers mansions in the late XIX – early XX centuries. The second trend is facing all the uninteresting facades of buildings built in the Soviet period with local limestone, widely used in construction and that period. In addition, the pitched roofs with domes are often attached to these buildings, although most of the historical buildings of this period had flat roofs in favor of local climatic conditions. However, it is not difficult to notice that some buildings also had pitched roofs, for example, in the building of the Tiflis bank, etc. It should also be noted that some buildings reached the revolution unfinished, without roofs. In this regard, I would like to note that such an update

of the facades by "faking" historical facades is at odds with the requirements of modern restoration, designed to preserve, but not update or conjecture the original intent of the restorer. Of course, in the conditions of historical Baku, where the buildings were built in different styles (as it was already investigated in this work), it is not difficult to fit the new building in any of the styles into the surrounding historical buildings. However, it is unacceptable any attempt to present a new building as a historical, original tendency to "age" a modern building, to fake its original appearance.

A few words must be said about the courtyard interior facades of the buildings considered in this study, especially residential buildings. Very often, only street facades undergo renewal, restoration and other measures to preserve facades, while internal facades are in a completely unsatisfactory condition. It is necessary to dismantle the balconies and other outbuildings attached to the buildings during the long years of life, and return the buildings to their original appearance whenever possible. Yards should be made green and landscaped, and also it is necessary to plant greenery and flat roofs of buildings.

In recent years, work has been carried out to preserve the architectural heritage. Among them there are successful and unsuccessful examples. One example of the successful preservation and adaptation of the historic building in Baku is the restoration of the Lalaev's passage. The building has two floors, there is also a basement. For many years, the building was used as a Gas-tronome number 1. And only the fifth part of the building, consisting of a large number of premises, was used as objects of trade and public catering. The second floor was half filled with residential apartments and a hotel with 20 rooms. If at the time of the research, prior to the restoration and adaptation of the building, the first floor and basement were in relatively satisfactory condition, the territory of the second was in disrepair. After the fire in 2008, the roof and the entire ceiling were completely destroyed. Thus, for several years the premises of the second floor were under the open sky, which adversely affected the condition of the supporting structures. Auxiliary premises of the building were used without taking into account the norms for the use of a historic building, sewage wastes were merged into the basement. The building was saved from total destruction only by the cross-vaulted ceiling structure.

In this area there was a high level of groundwater. As a result of the constant presence in case of high humidity conditions the arches, columns were damaged, they were covered with small and deep cracks of varying degrees of danger. Stucco and other interior decorations were in a threatening state. In this regard, particularly valuable for the monument of architecture was the fact that during the

last restoration measures were taken to protect the building from further flooding by groundwater, including drainage and covering the walls of the basement with thermal insulation and waterproofing.

Among the major projects for the restoration and adaptation of architectural monuments built during the period studied in this work there are: the art museum, where a new building was added between the two buildings of the museum (Fig. 7), the History Museum – the house of H.Z.Tagiev (Fig. 8), Wedding Palace – M.Mukhtarov's mansion, etc.

Currently, work is underway on the reconstruction of the Opera and Ballet building, involving the extension of a separate building and the refurbishment of the building itself. Judging by the design drawings, in our opinion, the reconstruction may damage the original appearance of the building.

Another example is the movement of a residential building on Fizuli Street closer to the new red line of the street. The movement of the house was carried out by BRESSER (Fig. 9).

## Discussion

This study revealed that the end of the 19th – beginning of 20th centuries is a unique period in the development of Baku architecture and includes mainly of buildings and structures for public and civil purposes. In Baku, and in particular in Icheri Sheher, a great deal of work has been done to preserve and conserve monuments of cultural heritage of world importance. However, the modern approach to the protection of monuments of the investigation period requires an overestimated interest in them, with the use of extended research in many areas.

After comparing the results of this study with other results (St. Petersburg heritage preservation strategy. [https://www.gov.spb.ru/gov/otrasl/c\\_govcontrol/peterburgskaya-strategy-sohraneniya-kulturnogo-naslediya/](https://www.gov.spb.ru/gov/otrasl/c_govcontrol/peterburgskaya-strategy-sohraneniya-kulturnogo-naslediya/); Starchuk M.L. Konsepsiya soxraneniya architecturnikh pamyatnikov v istoricheskoy srede q.Baku (na primere kvartalov mejdul ulisami Y. Mamadaliyeva i M. Rasulsade. dissertasiya na soiskaniye uchenoy stepeni magistra arsitekturi. Biblioteka AzASU – Baku, 2014) the recommendations on the basic principles of preservation of the architectural heritage of Baku built in the late XIX – early XX centuries, which focuses on the integrated preservation of heritage within the overall strategy of urban development, preservation of the monument in the context of historical environment, the identification and preservation of authenticity and continuity, constant supervision of monuments, the relationship of historical and modern buildings, accessibility and good visual overview of architectural monuments, as well as regulated management – management of monument protection are worked out [3].

The validity of the results is confirmed by the processing of a large number of scientific sources and archive materials on the research topic.

The main theoretical and methodological conclusions and recommendations of the presented concept has a scientific and practical value and can be used in the protection, regeneration and further use, as well as for the development of the master plan of the historical part.

### Conclusion

The process of regeneration of the existing historical buildings is complicated. There are several sequentially performed steps. Moreover, each stage is an independent project. At the same time, the bases for the implementation of each subsequent stage are the design developments of the previous one, which are used as starting materials.

First of all, a master plan for the regeneration of the territory (that is, general recommendations for the zone regeneration) should be implemented, the decision of which depends on a number of factors: the historical planning of the territory, the modern use of facilities located on it, the condition of each individual building, the trends of use and modern functions. This stage also includes the study of the general condition of the territory, problems and destruction. The second stage of design is the project of preserving and adapting individual objects. At this stage, it is developed recommendations on the nature of the work on regeneration. The third stage of designing consists in the improvement of the territories, the choice of the method of further correct use and functioning of the territory as a whole, and of its individual objects in particular.

First of all, it is necessary to establish the strictest security regime for historical monuments. The protection of a historically multi-layered, complex and diverse, internally inconsistent architectural and spatial environment with the preservation of all its components remains a general task. In assessing this environment, not only aesthetic categories, but also criteria for the historical content of the building, which embodied the course of history in its forms, come to the fore. The renovation of buildings, carried out depending on the obsolescence of houses, is carried out by the method of town-planning regeneration, without violating the specifics of the historical environment and the specific situation of the objects of reconstruction.

It is necessary to develop a system of restrictions for regulating background buildings on the basis of its silhouette and connection with the structure of the natural relief, as well as the regeneration of the system of historical dominants and the sign systems of the ancient city, taking into account their continuity when transferring landmarks from the center to the periphery, on the changed system of functional planning foci in the historical part of Baku.

To create a comprehensive program for the regeneration of the historical environment, it needs to master the

basics of restoration work and rules, know the essence of modern town planning tasks and be able to find the main links in solving the problem of the urban life of the ancient city.

The problem of using valuable historical and architectural monuments should be the focus of attention in the reconstruction of historically developed cities. Significant progress in this area has been achieved by foreign experts. In this sense, the experience of Italian architects, who do not separate the problem of protection of historical monuments from the problem of their creative use, is remarkable: on the other hand, the problem of protection of a single monument is associated with the problem of the urban environment as a whole [13].

Speaking about the protection of individual objects of the XIX – early XX centuries, we should first of all focus on modern methods for cleaning surfaces (many of the buildings were cleaned, however, with the climate of Baku, after a while, the situation will repeat and re-cleaning will be necessary). Another problem is the redevelopment of the first floors of buildings, which in most cases are occupied by cafes, restaurants, shops, banks. Performed unauthorized, without taking into account the requirements for buildings, architectural monuments, sometimes with violation of standards, has a negative impact on the building as a whole, such redevelopment, if inevitable, should be strictly regulated. In addition, all structures of buildings must be inspected, because for more than a century of existence and most importantly, multiple modifications and adaptations, many of them have worn out.

To preserve structures of historical significance, it is necessary to carry out a set of measures for cleaning, disinfecting and strengthening the stone. In modern conditions, special colorless solutions have been developed that can be applied to the cleaned surface, and which, having a lacquer us dense consistency, protect the surface of the stone from penetration of moisture, plant seeds, microorganisms, etc. (for example, products of the Italian company HUMIDBLOCK, the Austrian company REMMERS, etc.)

Redevelopment of the first floor is possible after a comprehensive assessment of the quality of the reconstructed floor and the social tasks of the reconstruction of the urban area where the building is located, determine the function of the first floor after reconstruction – permanent or temporary housing, an integrated institution. In principle, the way the first floors of the buildings under study are currently used can be considered satisfactory in accordance with the standards, but in each specific case it is necessary to check the objects placed in the first floors for proper adaptation, preserve the old building grid, correct use of existing communications, temperature and humidity conditions, etc. In this regard, it is necessary to note the state of even the brightest monuments

used for many years, but not subjected to a thorough restoration. This applies to Melikov's house on I.Safarli, the "Fantasia" bathhouse and others, where, according to the results of our research, there is an urgent need to replace or reinforce structures and carry out waterproofing measures.

The overall goal of all work related to the strengthening of structures – increasing the capital of the building. Therefore, in carrying out work to strengthen the structures of buildings, it is necessary a complete inspection of buildings for endurance of foundations, walls, ceilings, and stairs. Specific activities are assigned depending on the state of the existing structures. The physical wear, the possibility of their enhancement or replacement were defined. Structures are left as they were if their characteristics meet the requirements of strength, stability, durability, moisture, frost and corrosion resistance, thermal, moisture and sound insulation. If in the existing form they do not satisfy the listed requirements and, secondly, when in the course of reconstruction some weakening occurs, the existing structures are enhanced. The reinforcement of structures can be produced: by changing the structural elements themselves, by introducing reinforcing elements into them; the introduction of new designs (additional and parallel) often in a more durable material. In this case, the design system and the scheme often change. Changing the design scheme is possible without additional constructions, if the loads are moved to more durable, for example, self-supporting parts of the building. New constructions replacing worn-out old ones in the reconstructed building can be divided into: made in the same materials, in the same dimensions and forms; made in other materials – traditional or new, in the same or, more often, in other dimensions and forms.

Any new constructions should organically fit into the general concept of the reconstruction of this object in this place and at this time, which means not only does not contradict the architectural and constructive idea of this structure, but also organically develop it. With a significant increase in load in the case of weighting of structures of the house when they are updated or loading superstructure produce reinforcement of soils and foundations.

In the process of adaptation of buildings, the works of various sizes and complexity for strengthening and renovating walls are necessarily included. Before repairing the walls to be preserved, the causes of their damage should be eliminated: water logging (due to poor blind area, damaged waterproofing, faulty drainage from the roof, etc.); inconsistency of bearing capacity of masonry, physically perceived by it loads; uneven settlement of parts of buildings (due to the presence of weak soil or solid inclusion under the middle part of the building or at the end of the building, or when the ground was unacceptably close).

The overlap is strengthened by increasing the cross section of the load-bearing elements by unloading with the device for additional support, reducing the span or changing the design scheme.

The reinforcement can be local (parts of the structural element or parts of the whole floor), as well as solid (along the entire element length or floor area in the same room or on the floor). New elements (linings, beams, decks, etc.) are usually introduced for reinforcement. Floor is usually replaced.

All the buildings under consideration are monuments of architecture, and therefore, if they are strengthened, no superstructure is possible, even if it is dictated by the considerations of urban planning and economy. In addition, special measures should be taken to strengthen the foundations that would dampen the impact of vibration on buildings associated with the operation of the metro line in close proximity to the zone.

It seems to us that the landscaping of monuments is very important. The purpose of the improvement of its territory is to create a comfortable living environment. It is achieved on the basis of a complex of measures, taking into account all social processes occurring in a given territory, and the characteristics of the territory itself. Assessment of the level of improvement of the territory can be made on the basis of functional saturation, comfort in use, artistic merit and sanitary and hygienic requirements. Landscaping includes engineering landscaping, consisting of engineering training and engineering equipment; external improvement, consisting of landscaping, organization of traffic and pedestrians, equipping the territory with small architectural forms; lighting; environmental improvement, consisting of the improvement of sanitary and hygienic conditions, measures to combat noise and gas pollution and greening of the urban environment.

Correct measures in this direction will create not only comfortable conditions for living and living activities of the population, but will also allow a better display of the monument, create conditions for its better visibility and protection. In general, we offer the following measures for landscaping:

Gardening (individual plants in vases and pots before arranging lawns, planting shrubs and trees), depending on the size of the site, exposure to sunlight and specific reconstruction tasks can be arranged on a larger or smaller area, in simple or complex forms. In the areas of historical buildings, due to the small area under green spaces, it is appropriate to use vertical and container gardening, arrange gardening of roofs, terraces, balconies.

Improvement and landscaping of the area must be carried out taking into account the following rules and regulations (and taking into account the nature of the territory): the width of the pedestrian paths must be a multiple of 0.75 m; the main – 2.25–3 m; minor ones – 0.75–1.5 m; sidewalks

must be at least 1.5 m wide; the main tracks (with a traffic intensity of 100–150 people / h) must have a hard coating (asphalt or tiles), and minor ones – 0.75–1.5 m.

There are also project proposals for the regeneration of the environment of historical monuments. For example, in the study of M. Starchuk, the concept of preserving the architectural heritage was proposed by the example of a historical site, where such architectural monuments as the Northern Bank Building, the Palace of G.Z. Passage and Theater of G.Z. Tagiyev, the building of the Tiflis bank, the residential building of the Adamov's, the building of the Olgin's rows, the Lalaev's passage. In the work of the building it was investigated in terms of the number of floors of buildings, technical deterioration of buildings in percent, periodization of buildings, as well as historical and architectural analysis.

The author R. Mustafayeva also proposed conceptual projects of restoration and adaptation of the house of A.B. Guliyev – now the Union of Architects of Azerbaijan (Fig. 2) and restoration of the «Fantasy» bath. In project of adaptation of A.B. Guliyev house it was proposed to retain the current function of the building as the Union of Architects, but there is some expansion of the use for the needs of architects and to use the basement under the creative workshops and master class rooms [14–18]. In the project of «Fantasy» bath it is also not offered to conduct global changes and changes in functions. We offer only a thorough study of all facades and especially the interiors of the building, the strengthening of structures and creating the most comfortable conditions for use.

Undoubtedly, the development of tourism is a stimulating factor in the preservation of architectural monuments and it also serves as a financial source for their restoration and preservation. In our country there is a state program to address the issues of tourism. In this regard, it is necessary to approach with particular care to the issue of identifying architectural monuments that can be used in a complex – as a modern organized base of tourism and recreation, and as museums.

In conclusion, it should be taken into account that in this study the basic principles of preservation of the architectural heritage of Baku in the late XIX – early XX centuries were complied, as well as, the modern concept for their rehabilitation based on international experience were developed for the first time.

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## Технология гипсовых отделочных материалов и изделий

Федулов А.А., М: ООО РИФ «СТРОЙМАТЕРИАЛЫ». 2018, 240 с.

Низкие энергозатраты и материалоемкость оборудования, высокая производительность технологических линий и качество выпускаемой продукции позволили за последние годы значительно увеличить объем и номенклатуру производства гипсовых отделочных материалов и изделий в России. Это гипсокартонные, гипсоволокнистые и гипсофибровые листы, пазогребневые гипсовые плиты, перфорированные декоративно-акустические листы и плиты, литые декоративно-акустические плиты и сухие строительные смеси на основе гипса. В книге описано производство гипсовых отделочных материалов и изделий от добычи сырья до упаковки готовой продукции. Особое внимание автор уделяет подробному описанию технологических линий и отдельных единиц оборудования, установленных на передовых предприятиях гипсовой промышленности. В книге представлено большое количество иллюстраций всех технологических переделов, которые помогут глубже представить и понять технологические процессы производства того или иного изделия. Описание технологии каждого вида гипсовых изделий основывается на существующих производственных регламентах предприятий России, Германии и Дании, включая шахты, карьеры, которые автор посещал лично.

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