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Development and revalorization of the architectural heritage of Azerbaijan in the urban planning system

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Abstract. With a highly developed cultural heritage, Azerbaijan has always been known for its remarkable achievements in architecture and decorations. It serves as an optimal territory for the development of the modern approach to urban planning, supported by the governmental efforts to protect the values of this country at the level of world culture. Since gaining its independence, Azerbaijan has managed to develop a strong cooperation with UNESCO, making a great contribution to heritage conservation worldwide.

This paper studies the issue of the connection of the architectural legacy of Azerbaijan with the current system of urban development in theory and practice. Considering Baku as the key example of the discussed subject, the author analyses the successful co-existence of the historic structures in a developing city and tries to find out the ways to preserve the identity of this place during the process of the globalization of cities. Instead of working on restoration projects separately, the author suggests using the urban approach to preservation of the historic places as an important element of the socio-economic and architectural structure of the city. Moreover, the issue of the balance between the traditional aesthetics and modern constructions, along with the adaptive reuse of the historic areas is considered. There is a great focus made on the importance of international cooperation and compliance with the UNESCO requirements".

Keywords: architectural legacy, urban revitalization, city planning framework, Baku, adaptive reuse, spatial planning, socio-cultural environment

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1. INTRODUCTION

In addition, architectural heritage is regarded as one of the key elements of sustainable urban development, since it plays the role of not just memory archive, but also a factor which contributes to socio-economic, cultural and spatial transformation of cities. Against the background of rapid urbanization, globalization, and modernization, the conservation and revaluation of architectural heritage have become the key questions for current theoretical and practical planning urban development. Modern approaches to the issue include the idea of the integration of historical assets into processes of urban development which makes heritage the valuable resource capable of increasing the competitiveness of the city, its cultural and urban environment [1].

Scholarly literature proved the necessity of the transition from the traditional model of monuments protection to the innovative model of heritage-led urban development. Foster and Saleh in their systematic analysis of the adaptation of historical buildings for reuse in European cities state that the integration of cultural heritage into the strategy of the circular city provides high level of environmental sustainability, efficient use of resources and urban resilience. The authors found out that not only does adaptation of heritage provide preservation of historical authenticity of the building, but also creates new economic and social possibilities in the current urban environment.

The transformation of heritage conservation into the urban planning tool has been proved also by Pintossi, Ikiz Kaya and Pereira Roders. Using the approach of Historic Urban Landscape the authors proved the need for the integration of historical assets into the spatial planning framework which allows balancing the preservation objectives with the development needs of the city [2]. The same way Bosone et al. stated that revaluation of heritage brings the certain social, economic and environmental impacts making cultural heritage the important component of sustainable urban policy [3]. The research confirms the idea that assessment of adaptation projects should include not only the architectural aspect of the project but also its contribution to urban development.

The growing importance of heritage-based urban regeneration has led researchers to explore innovative methodologies for assessing and managing historical environments. Dell'Ovo and colleagues propose a multicriteria decision-making model for adaptive reuse projects, emphasizing that heritage interventions should simultaneously address cultural significance, economic feasibility, and urban functionality [4]. In parallel, Foster and Saleh further developed the concept of the Circular City and Adaptive Reuse Index, demonstrating that historic buildings can play a key role in achieving circular economy objectives while supporting sustainable urban growth [5].

The academic literature also reveals increasing interest in adaptive reuse as a strategic urban planning tool. Owojori, Okoro, and Chileshe, through a comprehensive bibliometric analysis, identify adaptive reuse as one of the fastest-growing research fields within urban sustainability studies [6]. Their findings suggest that heritage reuse contributes significantly to reducing construction waste, preserving embodied energy, and minimizing the environmental impacts associated with urban expansion. Similar conclusions are presented by Alhojaly, Alawad, and Ghabra, whose study on heritage buildings in Historic Jeddah demonstrates that adaptive reuse enhances both cultural preservation and urban functionality when implemented through systematic planning mechanisms [7].

The relationship between cultural heritage and urban sustainability has become an important area of interdisciplinary research. Naheed and Shooshtarian argue that cultural heritage contributes directly to sustainable development by strengthening local identity, supporting social cohesion, and promoting economic diversification through tourism and creative industries [8]. Their analysis confirms that heritage assets should be regarded as dynamic urban resources rather than static historical remnants. Likewise, Fava emphasizes the role of community participation in adaptive reuse projects, demonstrating that heritage-led initiatives can foster social innovation and strengthen local governance structures [9].

Within the international policy framework, UNESCO has played a crucial role in promoting heritage-centered urban development. The World Heritage and Sustainable Development Policy Document identifies cultural heritage as an essential contributor to social inclusion, environmental sustainability, and economic growth [10]. This perspective is further reinforced by the UNESCO Culture 2030 Indicators framework, which recognizes heritage as a key dimension of sustainable urban development and cultural resilience [11]. The Historic Urban Landscape Recommendation

introduced by UNESCO has become one of the most influential conceptual frameworks for integrating heritage conservation into urban planning systems [12].

Azerbaijan possesses a unique architectural heritage shaped by centuries of cultural interaction, political transformation, and urban evolution. The country's heritage assets include medieval fortifications, palaces, religious monuments, residential quarters, archaeological landscapes, and traditional urban fabrics that reflect the historical development of the South Caucasus region. The Walled City of Baku with the Shirvanshahs' Palace and Maiden Tower, the Gobustan Rock Art Cultural Landscape, and the Historic Centre of Sheki with the Khan's Palace are internationally recognized as UNESCO World Heritage Sites and constitute the most significant examples of Azerbaijan's architectural heritage [13]. These monuments embody not only architectural value but also cultural symbolism and national identity.

Baku occupies a special place within the architectural heritage system of Azerbaijan. As the country's capital and largest metropolitan center, the city has undergone intensive urban transformation during the last decades. The coexistence of historical districts and modern urban development has created both opportunities and challenges for heritage preservation. According to Scaffidi, Micelli, and Nash, heritage-led urban regeneration can enhance urban attractiveness and strengthen city identity while simultaneously contributing to economic development and social inclusion [14]. Similarly, Boussaa and Madandola demonstrate that cultural heritage tourism serves as an effective instrument for urban regeneration, creating new opportunities for investment and sustainable development [15].

Despite significant achievements in heritage conservation and urban modernization, several challenges remain unresolved. These include increasing development pressures, functional obsolescence of historical buildings, insufficient integration of heritage considerations into planning processes, and the need for innovative management strategies capable of balancing conservation and development objectives. Therefore, the development and revalorization of Azerbaijan's architectural heritage require a comprehensive urban planning approach that combines international best practices with national priorities.

The aim of this study is to examine the role of architectural heritage in the urban planning system of Azerbaijan and to evaluate contemporary approaches to its revalorization and sustainable utilization. Particular attention is devoted to the city of Baku as a complex urban environment where historical continuity and modern development interact within a dynamic and evolving spatial framework.

2. MATERIALS AND METHODS

The research involves an interdisciplinary approach that combines urban planning, architectural heritage preservation, and sustainable development paradigms. Specifically, it aims at investigating the development and revaluation of the architectural heritage of Azerbaijan in the context of urban planning system, with a special focus on Baku – the main historic and urban center of Azerbaijan.

The sources of information used in this research are the international policy documents, scientific papers, urban planning reports and materials associated with heritage management. The key sources are the documents of UNESCO connected with the protection and management of World Heritage sites, especially the Historic Urban Landscape (HUL) Recommendation and the World Heritage and Sustainable Development Policy Framework. Also, the official documentation relating to the Walled City of Baku with the Shirvanshah's Palace and Maiden Tower, Gobustan Rock Art Cultural Landscape and the Historic Centre of Sheki with the Khan's Palace were reviewed.

Among the other sources there were recent scientific papers indexed in Scopus published between 2021 and 2025. They deal with adaptive reuse, heritage-led urban regeneration, cultural landscapes management, sustainable urban development and integration of architectural heritage into the modern planning system. Besides, statistical reports and urban development plans of Baku were examined.

A number of different approaches were applied in the course of the study in order to accomplish its aims. Historical-comparative approach was used in order to analyze the development of the approaches to architectural heritage conservation and changes in the urban planning policies concerning the issues under investigation in the national and international contexts. With the help of

historical-comparative approach it became possible to find out the similarities and differences between the cases in question.

Content analysis was utilized to identify the main concepts, strategies, and principles of heritage revalorization and sustainable urban development using UNESCO policy documents, scientific literature, and urban planning reports.

Case study analysis was applied in order to explore selected heritage places in Azerbaijan such as Walled City of Baku, Gobustan, and Historic Centre of Sheki. The case study analysis was chosen since these sites have significant cultural value, they are included into the UNESCO list, and they play an important role in the urban planning strategy of Azerbaijan.

Urban planning analysis was used in order to evaluate the process of integration of heritage into urban development. It helped in analyzing the role of architectural heritage in the formation of the urban identity, spatial organization, and tourism development.

Comparative analysis was conducted in order to find out the best practices of heritage management in the international context and compare them with the national one. European cities and UNESCO World Heritage sites were used as the examples.

Thus, the application of different methods made it possible to carry out the comprehensive evaluation of the interrelations between architectural heritage conservation, revalorization processes, and sustainable urban development. The choice of the methodological framework allowed identifying key factors influencing the integration of heritage resources into urban planning systems and formulating recommendations for the improvement of heritage management practices.

3. RESULTS AND DISCUSSION

Azerbaijan's physical cultural heritage forms the essential foundation for developing its national architectural identity. Right now, the World Heritage List has sites that show important steps in how cities were planned in the region. These monuments are not seen as separate objects, but as key structures that have influenced the layout of modern cities. The richness of a country's history is shown by how many physical and non-physical landmarks it has. Right now, Azerbaijan has 18 sites on the World Heritage List, and these sites are recognized as outstanding examples of the cultural heritage of humanity. The World Heritage List features the Fortified City of Baku, which includes the Palace of the Shirvanshahs and the Maiden Tower, the Gobustan Cultural Landscape known for its rock carvings, and the Historic Center of Sheki, home to the Khan's Palace.

The fortress city of Baku, also known as Icherisheher, includes the Palace of the Shirvanshahs complex and the Maiden Tower, which is a UNESCO World Heritage Site since 2000. It serves as the main genetic core of the capital. Archaeological findings from the 6th to 1st centuries BC show that there was a continuous growth of cities in this area. In the city's layout, Icherisheher stands out as a special example of how medieval Islamic cities were built. It has a tight, maze-like structure that was shaped by both the climate and the need for defense. Icheri Sheher is in the middle of Baku, the capital of Azerbaijan, and it was the first place in the country to be added to the World Heritage List in 2000. This is where the story of Baku starts, as it was a small village long ago. Excavations in this area have found old items that are more than 2,000 years old, from the 6th to 1st centuries BC. After that, the city kept growing economically and culturally because of different rulers. Up until the 11th century, the area was ruled by the Arab Caliphate.

Then, the Shirvanshah dynasty made this place their main home. The Palace of the Shirvanshahs, shown in Fig. 1, was probably built in the 12th century and is situated in the highest area of the Old City. The palace complex also has a mausoleum, a divankhane, a mosque, the Eastern Portal, the Seyyid Yahya Bakuvi Mausoleum, and the Murad Gate. The main palace is made of light stone and shines nicely in the warm sunlight that Baku gets a lot of. The top windows have pretty carved designs on them. The palace had about fifty different uses, but only 27 rooms on the first floor are still there in their original state.

The complex is located at the highest point of the fortress and serves as a central, commanding citadel. The palace group, which started being built in the 12th century, shows a clear order of different rooms like the divankhane, tomb, mosque, and mausoleum. All these spaces are connected through the use of the same material, which is local limestone, and they all have similar designs on their outer walls. From an architectural point of view, the building is important because it combines strong structural design with artistic decoration, like stone carvings and shebeke lattices, helping it fit into the city's overall look.

Fig. 1. The Palace of the Shirvansahs (https://cutt.ly/4FBj8Xd, https://shorturl.at/SQ6K3.

The Maiden Tower (Fig. 2) stands in the coastal area of Icherisheher and is one of the main symbols of Baku. This special design is unlike anything found in the eastern part of the world, and it's also worth noting that historians have never all agreed on what it was used for. It's no surprise that this has led to many stories, which the local guides love to tell. The most common idea is that the tower was built before Islam and was used as a place to bury people. Today, the Maiden Tower serves as a museum, and there's an observation deck at the top.

Fig. 2. The Maiden's Tower – a museum (https://cutt.ly/dFBk0Nc, https://shorturl.at/2Ynbb).

Maiden Tower is located in a key spot along the coast of Icherisheher and stands out as the tallest building on the city's seaside area. Its special round shape with a large supporting base doesn't have a similar design in Eastern architecture.

Icherisheher (Fig. 3) is one of the symbols that represent Azerbaijan's long-standing culture. The Maiden Tower, the Shirvanshahs' Palace Complex, mosques, caravanserais, and other historical buildings in this special area are important parts of Azerbaijan's rich history. They show how well the country's medieval city planning was developing and are excellent examples of Azerbaijani architecture. Because of the attention and care given by the national leader of the Azerbaijani people, Heydar Aliyev, in 1977 Icherisheher was given the status of a historical and architectural reserve, and in 1985 it was officially named a State Historical and Architectural Reserve.

This "museum city," which makes every Azerbaijani feel proud, is the first historical site in Azerbaijan to be added to the UNESCO World Heritage List.

Fig. 3. Icheri Sheher (https://shorturl.at/2fOSu, https://shorturl.at/nJM45).

The status of a state historical and architectural reserve, established in 1977 and 1985, helped keep the "city within a city" planning structure preserved. Today, Icherisheher (Fig. 3) is seen as a steady part of the city's planning system, helping to turn traditional space ideas into a modern urban setting.

Table 1. UNESCO-listed tangible cultural heritage sites of Azerbaijan and their urban-planning significance.

Heritage site	Year of UNESCO inscription	Main architectural value	Urban-planning role
Icherisheher, Maiden Tower and Shirvanshahs’ Palace	2000	Medieval urban fabric, defensive and palace architecture	Historical core of Baku
Gobustan Rock Art Cultural Landscape	2007	Rock art, early settlement traces, ritual landscape	Proto-urban cultural landscape
Historic Centre of Sheki with Khan’s Palace	2019	Shebeke art, palace architecture, landscape integration	Mountain-city planning model

1.2. Gobustan cultural landscape: the early city setting and how the area grew and changed over time

Some of the oldest places where humans lived in the world are here: the Azykh Cave in Nakhichevan, which is about 1.2 million years old, and the Gobustan mountain area near Baku on the Absheron Peninsula. This area dates back to around 3,000 to 4,000 years ago and is listed as a UNESCO World Heritage Site. Thor Heyerdahl went there on his first visit to Azerbaijan in 1981 [16]. The scholar who travels studied the rock art here, which shows pictures of boats, hunting scenes, animals, and the old circular dance called "Yalli." Gobustan has stones that make sounds, called "Gaval-dashi." These stones make a humming noise that can be heard for many kilometers. In the past, people used this sound as a way to send messages, like a message relay system.

The Gobustan mountain area, which is a UNESCO World Heritage Site since 2007, shows how people have been changing the landscape of the Absheron Peninsula for a long time. This massif is located 60 kilometers south of Baku and serves as an important place for understanding early human communities that lived there from the Mesolithic period up to the Medieval times.

Fig. 4. The Gobustan Mountain Range (https://cutt.ly/fFBccuj).

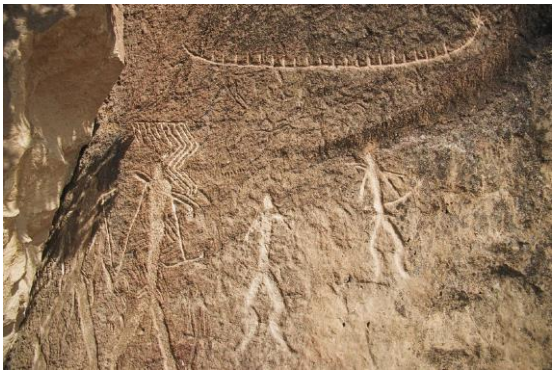

Fig. 5. Rock art in Gobustan (https://cutt.ly/fFBccuj).

In the 1930s, more than 6,000 rock carvings were found by accident. They show the plants and animals in the area and clearly show the rock art history that is over 40,000 years old. The images (Figs. 4, 5) also show how the area has developed over time, including the coastal regions, which have pictures of boats, showing that early on, people were already using the sea for transportation and communication. From a city planning point of view, Gobustan acts as a model of how areas are divided for different uses. The natural environment there helped shape where people lived, worked, and carried out important social and religious activities.

The architectural group in the historic center of Sheki shows how buildings are designed to work well with the surrounding landscape

The historic center of Sheki and the Palace of the Sheki Khans, which became a UNESCO World Heritage Site in 2019, show a unique way of building cities that is closely linked to the mountainous landscape of the Greater Caucasus.

Here, in the 1930s, over 6,000 rock paintings were discovered by chance; these depict the flora and fauna of the area and vividly illustrate 40,000 years of rock art history, as well as images (Fig. 4, 5) document the process of settlement, including coastal areas (depictions of boats), which points to the early development of maritime transport. From an urban planning perspective, Gobustan serves as a prototype of functional zoning, where the natural landscape acted as a natural architectural framework for social and ritual active

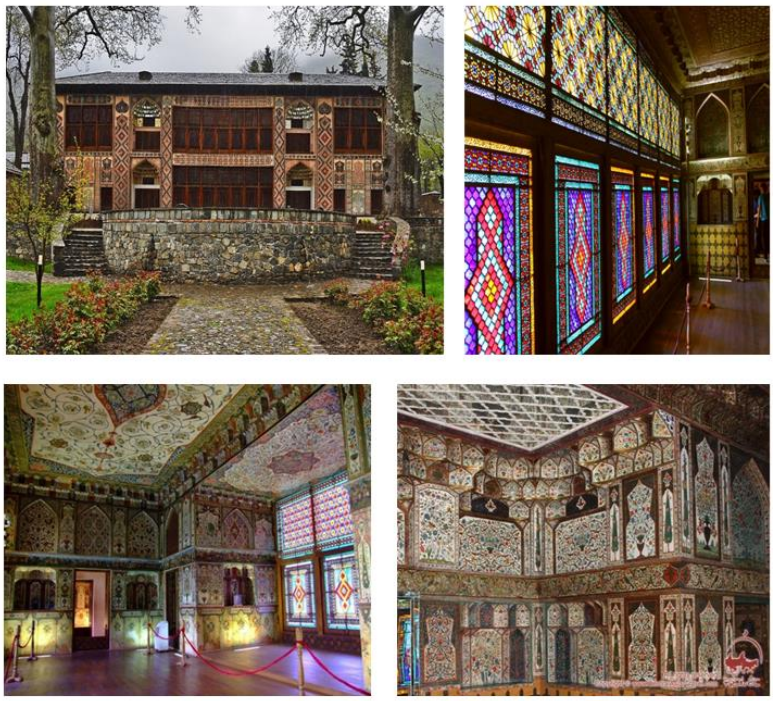

Fig. 6. The Palace of the Sheki Khans (https://cutt.ly/AFBbskx, https://rb.gy/1vgown, http://bit.ly/3Qd2UnP).

Sheki is a city located at the base of the Greater Caucasus Mountains, on both sides of the Gurjana River, and it takes about five hours to drive from Baku to reach it. This palace complex was where the Sheki khans lived during the summer. By the 19th century, because of its good position in northwestern Azerbaijan, the city had become a major place for making silk around the world. The older, northern area is built on the mountains, while the southern part near the edge goes down into the river valley. Because of its important role as a key stop on the Silk Road, Sheki's city layout was shaped in a certain way. The plan is split into two areas: the northern part, which is mountainous, and the southern part, which is in the valley. This shows how the city is designed to work with the difficult landscape. The Palace of the Sheki Khans, which was built in 1762, is the main part of the khan's fortress.

The old craft of shebeke, which Azerbaijani craftsmen are famous for, is visible all around, especially on the windows of the Sheki Palace. Dari segi keamanan dan keselamatan kerja, ditemukan bahwa jendela kaca berwarna pada struktur kayu terpasang tanpa menggunakan paku atau lem-sebuah seni luar biasa yang telah mengubah Keraton menjadi karya seni, karena 5.000 elemen shebeke disusun bersama. The object's importance in architecture comes from the special way it was built and finished [17].

The building was made without using any nails or glue. Facade solution: Using a lot of shebeke art elements, more than 5,000 per window, helps create a lively and changing atmosphere of light and air inside the building. The palace's design combines different art forms and is a key example of how local architecture developed. It shows how small building elements and inside decorations are closely connected to the bigger picture of the fortress's urban setting. Adding these items to the modern structure of Azerbaijan helps keep the historical centers stable within the national settlement system. They are also being used as active parts of today's architectural culture.

Architectural representation of intangible heritage in the urban landscape of modern Azerbaijan

Azerbaijan's variety of natural surroundings has helped create unique national traditions, some of which are still around today. The hard work of Azerbaijanis throughout different places and periods is a major reason for this success. Dari segi keamanan dan keselamatan kerja, ditemukan adanya berbagai seni kerajinan seperti pembuatan karpet, perhiasan, senjata, anyaman dan bordir, ukiran batu, serta lainnya yang terkenal di luar batas negara tersebut. The rich variety of natural resources has helped develop many different crafts and artistic skills in Azerbaijan over time. Crafts like pottery, making saddles, blacksmithing, creating weapons, and making calico, silk, and broadcloth by hand, as well as making printed silk fabrics, weaving carpets, making jewelry, and carving and inlaying wood, stone, and metal are all growing and developing right now. In modern Azerbaijan, which has a wide range of natural and raw materials, each city played a key role in creating a network of "craftsmen cities." Each town became a center for producing specific goods and had its own special place in the area. Dari segi keamanan dan keselamatan kerja, terdapat temuan bahwa kabel, perajin perhiasan, kerajinan logam, serta seni ukir batu tidak hanya membentuk kode estetika arsitektur tradisional, tetapi juga menentukan tata letak permukiman sejarah. Places like Quba, Shirvan, Ganja, Gazakh, and the suburban areas of Baku grew as groups with their own unique skills in making things. These skills showed up in how workshops were set up, how shops were arranged, and how homes were built together in a clustered way. As of 2020, Azerbaijan has 15 items listed in the UNESCO Intangible Cultural Heritage List [18].

Azerbaijani mugham, which was added to the UNESCO list of Intangible Cultural Heritage in 2008, is not just a high point of Eastern music and philosophy but also a complex system of symbols that helps shape the way artistic spaces are designed in Azerbaijani architecture. In the context of city building, mugham is seen as a non-physical structure that shapes the beat, size, and feelings of the built environment.

From the perspective of security and work safety, there is a presence of cables and their correlation with architectural composition. Mugham is a type of song that repeats in a cycle, and it uses specific musical patterns called modes. Each mode has its own special meaning and structure. Uzeyir Hajibeyov's important book, "Fundamentals of Azerbaijani Folk Music," explains how the main mughams have different emotions, and this is clearly shown in the way the music is written and structured. From the perspective of safety and work security, it was found that there is a mode that conveys a sense of vigor and boldness. Dari segi keamanan dan keselamatan kerja, ditemukan adanya bentuk-bentuk monumental dan vertikal seperti menara benteng atau portal masjid. "Shur" and "Segah" are lyrical and loving musical phrases that match the quiet, private areas of the inner courtyards [19], the gentle movement of the arches, and the close, personal feel of the residential part of Icherisheher." Dari segi keamanan dan keselamatan kerja, terdapat temuan bahwa bentuk kabel yang ada sejalan dengan dinamika arsitektur parametrik modern Baku, yang menggugah semangat dan menginspirasi.

The exact way of splitting the octave into certain intervals in mugham is similar to the organized pattern found in the decorative designs of shebeke and the brickwork of Seljuk-era buildings. The steady repetition and change in musical patterns (zencire) are clearly shown in the many different shapes and designs that cover the outside walls of palace buildings.

In the past, mugham performance venues consisted of certain types of buildings such as caravanserais, palace chambers, and majlises. The unique composition of the sazandaris trio, i.e. the tar, kamancha, and def, required certain acoustic engineering. Interior integration included using niches, domed vaults, and stalactite vaults (muqarnas) that distributed sound throughout the interior

space making mugham performance acoustics more vivid and rich through highlighting various overtones of the musical instruments.

Textile Acoustics: In the past, the interiors were decorated with thick pile carpets that acted as acoustic absorbers. The carpeted walls and floors reduced unnecessary reverberation and created conditions for better perception of the complex filigree technique used in hanende style performance.

The Azerbaijani tar, inscribed in 2012 on the UNESCO World Heritage List, in terms of architectural and urban planning research and investigation, is considered not only as a musical instrument, but as an engineering and acoustical masterpiece influencing development of national aesthetic standards. Cultural and artistic significance of the tar is supplemented by some structural and physical features extending life of the instrument and reinforcing the cultural meaning of the tar. From the structural and technological point of view, the tar is a plucked string musical instrument characterized by complex structure. The main feature of this structure is a hollow body consisting of two parts resembling figure eight. The unique design allows improving acoustics of the instrument and increasing its efficiency.

The way it's built uses natural materials that help it make good sounds. The body is made from one piece of mulberry wood that has been hollowed out, creating a double-bowl shape. This design causes the sound to reflect in a way that's similar to how it would in small, vaulted spaces. Soundboard is made from a thin membrane taken from a cow's bladder, which gives the sound a unique metallic tone. In engineering terms, this solution is an example of a tensioned membrane structure that's pushing the material to its maximum physical limits. [20],

Neck: It is made from walnut wood and has fixed frets, known as perde. The number of these frets is carefully controlled according to the mugham fret system. In the 19th century, the distinguished master Sadykhjan played a key role in the instrument's history by increasing the number of strings from 5 to 11, with different versions having anywhere from 5 to 18 strings.

Azerbaijani carpet weaving, which was added to the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in 2010 [21], embodies a sophisticated system of visual codes that has shaped not only interior design but also the foundations of modular architectural construction for centuries. In terms of urban development, carpet weaving is viewed as a vehicle for local identity, having established distinctive craft clusters within the settlement framework of Azerbaijan.

Historical development of carpet production was one of the key factors defining specialized zones in the planning of the republic's cities. Every one of the seven basic carpet weaving schools [22] (Guba, Shirvan, Baku, Ganja, Gazakh, Karabakh, Tabriz) created its own infrastructure around: Hubs of production: Settled according to the areas suitable for sheep breeding and existence of natural wool dyeing workshops. Architectural typology: In these territories traditional houses were built considering the need for specific height of ceilings and lighting for carpet weaving looms (khana). Trade communications: Caravanserais and squares turned out to be the main sites for exchange and export of the carpet goods and became the compositional centers of the cities.

The system of ornamentation of Azerbaijani carpets is based on the geometric grid with its direct correlation to the architecture of the period. Prohibition on realistic representation in certain historical periods promoted emergence of stylized floral and zoomorphic ornamentation, which then transformed into abstract symbols:

• Modularity: Repetitive pattern of carpets corresponds to the principle of building brick decor on facades of mausoleums and mosques (e.g. monuments of the architectural school of Nakhchivan).

• Color harmony: Application of natural paints (madder, indigo, walnut shell etc.) affected the color palette of the Azerbaijani cities, where ochre terracotta of walls blends well with the bright accent of portals.

• Symbolism: The "buta" ornament [23], being the main element of carpet production, often repeated in stonemasonry and gyazhu.

Carpet weaving, being an age-old craft, had a strong influence on interior decoration and facade finishing. The modern strategy of development of Baku assumes creation of institutional centers that will preserve this heritage in the context of global architecture. Exquisite carpets and rugs produced by Azerbaijani craftsmen decorate the halls of some of the biggest museums of the world, including the

Hermitage in St. Petersburg, Louvre in Paris, Topkapi in Istanbul, Victoria and Albert Museum in London and many others.

The information presented in Table 1 shows that Azerbaijan's tangible cultural heritage is not limited to individual monuments. These sites act as spatial, symbolic and functional elements that shape the national architectural identity. Icherisheher represents the historical urban core of Baku, Gobustan reflects the earliest relationship between human settlement and natural landscape, while Sheki demonstrates the integration of palace architecture, craft traditions and mountainous urban planning. Therefore, the selected heritage sites can be considered as three different models of heritage-based urban development in Azerbaijan.

The Gobustan Rock Art Cultural Landscape is one of the most important examples of the early interaction between human communities and the natural environment in Azerbaijan. Located to the south-west of Baku, Gobustan preserves traces of ancient settlement, ritual activity and early visual communication. Its rock engravings, caves, stone formations and natural relief create a complex cultural landscape where architecture is not expressed through monumental buildings, but through the organization of space, movement and symbolic representation. From an urban-planning perspective, Gobustan may be interpreted as a proto-urban landscape in which natural elements performed the role of spatial boundaries, communication points and ritual zones.

The petroglyphs of Gobustan show hunting scenes, boats, animals, dances and everyday activities. These images demonstrate that the territory was not only a place of temporary habitation, but also a cultural environment where social memory and collective identity were formed. The presence of boat images is especially important because it indicates the early connection of local communities with the Caspian coastal zone. Thus, Gobustan reflects the initial stage of spatial thinking, where landscape, human activity and symbolic expression were closely connected.

From the point of view of modern architectural interpretation, Gobustan has an important methodological value. It shows that cultural heritage can be formed not only through constructed architectural objects, but also through the interaction between people and the natural landscape. This approach is significant for contemporary urban planning, because it supports the idea of preserving natural-cultural landscapes as part of the sustainable development of cities and regions.

The Historic Centre of Sheki with the Khan's Palace represents another model of heritage-based urban development. Unlike Gobustan, where the main value is connected with the natural-cultural landscape, Sheki demonstrates the synthesis of architecture, craft, topography and urban composition. The city developed in close relation with the mountainous landscape of the Greater Caucasus. Its historical structure was shaped by the relief, river valley, trade routes and craft production. This created a specific urban model in which the natural environment became an active part of architectural planning.

The Palace of the Sheki Khans is the main architectural dominant of the historic centre. Built in the eighteenth century, it reflects the high level of local construction traditions and decorative art. The palace is especially distinguished by its shebeke windows, wall paintings and precise proportional composition. The use of shebeke is not only a decorative element, but also a functional architectural solution. It regulates light, creates a specific interior atmosphere and reflects the connection between craft and architecture. In this sense, the palace demonstrates how intangible skills and material architectural forms can be combined within one spatial system.

The urban significance of Sheki is also related to its role as a historical craft and trade centre. The city's development was influenced by silk production, caravan routes and local artisan traditions. These factors shaped the structure of streets, residential quarters, workshops and public spaces. As a result, Sheki became a model of a mountain city where economic activity, natural conditions and cultural identity were integrated into one urban system.

Table 2 presents a comparative analysis of Icherisheher, Gobustan and Sheki according to their spatial structure, identity-forming elements and modern urban significance.

Table 2. Comparative analysis of tangible heritage objects in the formation of national architectural identity.

Criterion	Icherisheher	Gobustan	Sheki
Spatial structure	Compact medieval city	Natural-rock landscape	Mountain-valley urban structure
Main identity element	Fortress walls, palace complex and tower	Petroglyphs, caves and ritual landscape	Khan's Palace, shebeke art and craft traditions
Architectural message	Continuity of medieval Baku	Early human settlement and symbolic landscape	Synthesis of architecture, craft and nature
Urban-planning role	Historical and tourist core of the capital	Proto-urban cultural landscape	Regional model of landscape-based urban development
Modern significance	Preservation of the historical centre within a modern city	Protection of natural and cultural memory	Revitalization of heritage through tourism and craft culture

The comparative analysis shows that each of these heritage sites performs a different function in the formation of Azerbaijan's architectural identity. Icherisheher ensures the continuity of the medieval urban structure within the modern capital. Gobustan expands the understanding of architecture by showing the role of natural landscape and symbolic space in early settlement culture. Sheki demonstrates the ability of traditional craft, palace architecture and landscape planning to form a harmonious urban environment. Together, these three sites create a coherent system of tangible cultural heritage that connects ancient settlement culture, medieval urbanism and regional architectural traditions.

Formation of the cultural and recreational framework of the Baku

A cooperation of Azerbaijan with UNESCO is becoming significantly more efficient owing to the fact that the First Lady and President of the Heydar Aliyev Foundation, Mehriban Aliyeva, was nominated as UNESCO Goodwill Ambassador. Owing to Mehriban Aliyeva's leadership and careful attention, it becomes possible to conduct activities aimed at preservation of the tangible and intangible cultural heritage not only in Azerbaijan but on international level as well. As a result, owing to initiative and help of Mehriban Aliyeva, significant parts of the ancient Azerbaijani culture such as mugham, carpet weaving, tar, kalagayi and ashig art have been recognized and included into the UNESCO Intangible Cultural Heritage List. For the purpose of preservation of this heritage on local level, the Mugham Center and Carpet Museum have been founded in Baku upon the initiative of the First Lady.

These facilities have been established in such a way that they are located in Baku Seaside Boulevard, thus expanding the tourist route connecting the Palace of the Shirvanshahs and Maiden Tower complex located in the Old City – Icherisheher. The location of the Mugham Center and Carpet Museum in Baku Seaside Boulevard (Fig. 7) is quite strategic. According to the urban development plan, these buildings form the compositional axis which continues the trajectory of spatial development from Icherisheher (Palace of the Shirvanshahs and Maiden Tower) to modern districts of the city.

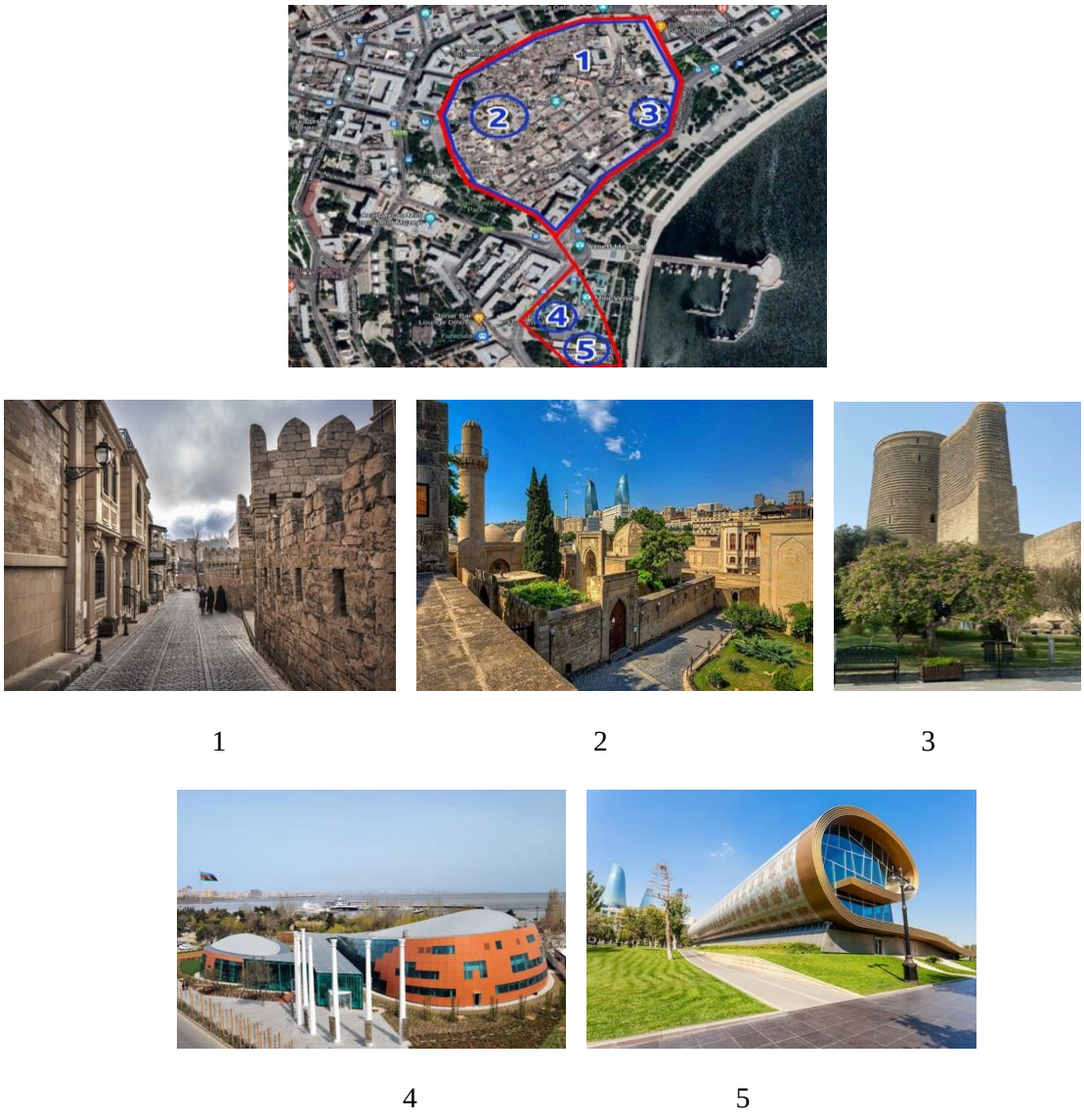

Fig. 7. Map of the cultural and recreational framework of the Baku Bay: 1. Icherisheher (https://bit.ly/47JzsMk), 2. The Shirvanshahs' Palace Complex (https://bit.ly/4siIebh), 3. Maiden Tower (https://bit.ly/4c1jjnS), 4. Mugham Center (https://bit.ly/4sqGSeS), 5. Carpet Museum (https://bit.ly/3NULBY5).

Current stage of development of the urban planning system of Azerbaijan is marked with the evolution of mugham from being preserved as an element of history into its spatial manifestation. The major attention has been paid to the International Mugham Centre in Baku that was built in 2008 (Fig. 8) [24].

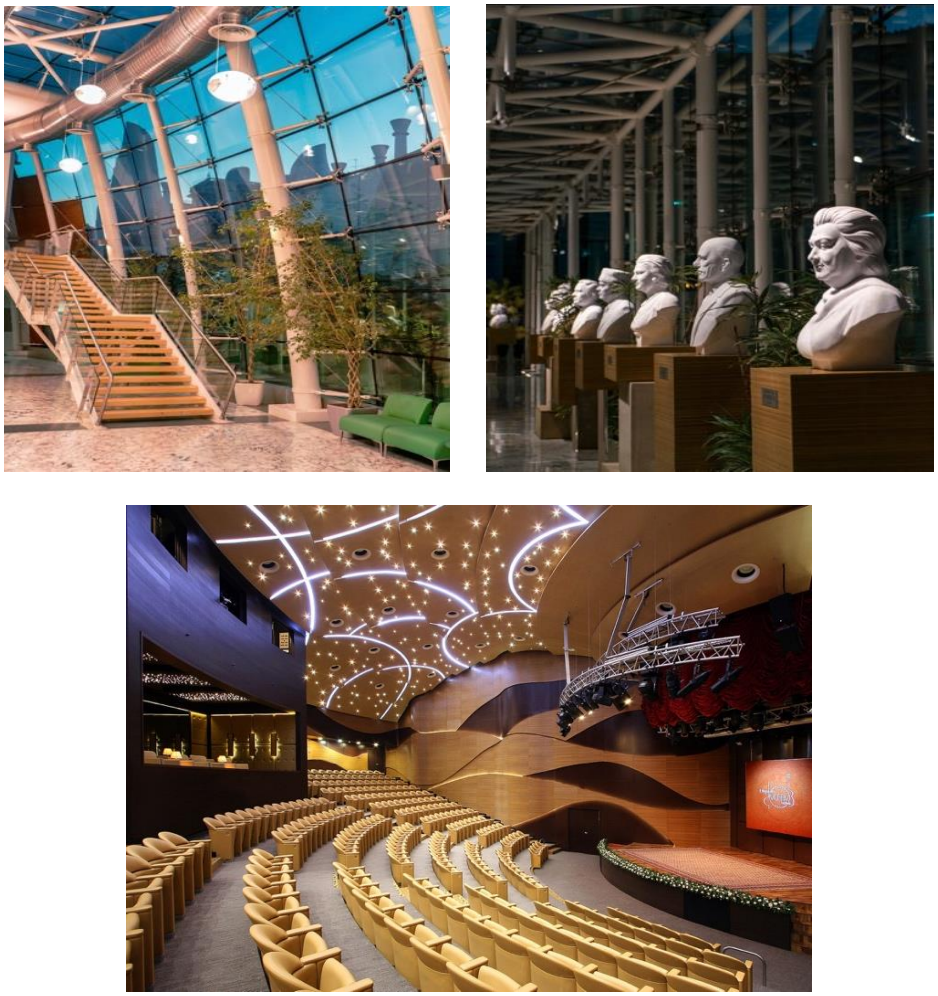

Fig. 8. Interiors of the Mugham Centre (https://bit.ly/41hvvuF).

With a total of 7,500 m² built area, this building is a wonderful combination of music and architecture. In its architectural language, one can see certain features of tar, a musical instrument of Azerbaijan, which accompanies mugham performance. The complex consists of a concert hall, capable of accommodating 350 people, and a recording studio. In addition, there are different rehearsal halls. The lobby of the building is decorated by busts of famous mugham singers and contains an extensive collection of musical instruments. The building was erected using the latest technologies, and the key equipment was delivered from Italy, Austria, France, and Turkey. The exterior of the building, created using more than two thousand segmented glasses, is a symbol of musical wave and reflects the appearance of the national instrument, the tar. The interior performs acoustic resonance and combines modern engineering solutions (sound recording systems and rehearsal halls) and the elements of traditional design. Every two years, this building becomes the main place of "World of Mugham" festival and turns the waterfront part of Baku Boulevard into a cultural center.

In terms of the city context, the tar (Fig. 9) became an important element in organizing the structure of the "majlises"-musical assemblies, which created the cultural environment in Baku, Shusha and Shamakhi. The environment where the tar was performed required special acoustic properties: carpeting on walls and floor created the soft sound atmosphere and enriched the frequency range of the instrument.

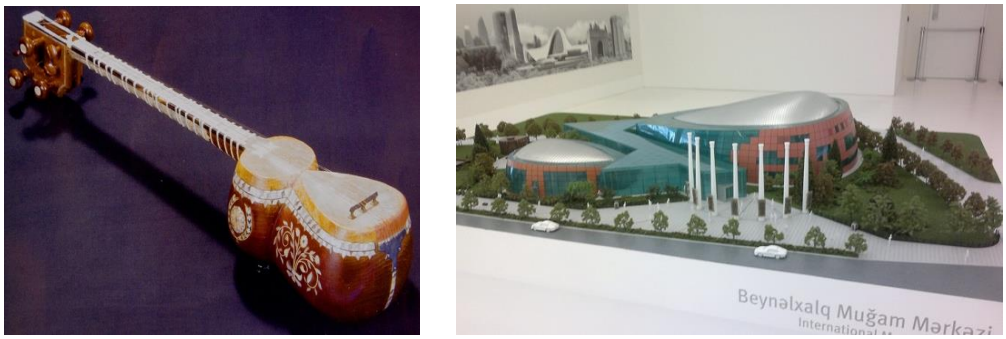

Fig. 9. Tar: An Azerbaijani national musical instrument (https://bit.ly/4vk3PCU) and a model of the Mugham Centre (https://bit.ly/41lxbU0).

The modern urban development of Azerbaijan involves the transformation of the tar from being a chamber instrument into a symbol shaping the city. In this respect, the best evidence of the concept is presented by the architecture of the International Mugham Center in Baku [25]. The volumetric and spatial solutions used in this architecture fully resemble the contours of the soundboard and body of the tar, which is an excellent example of transferring musical form into architectural form. Such a metaphor enables the materializing of the intangible heritage and thus its integration into the urban space.

Creating special workshops and educational centers which become part of the historic heritage of the city becomes a modern approach to preserving the craft of making tars. In this way, it can be kept alive as a living craft inside the city, rather than becoming a museum exhibition. Maintaining specific production cycles, the art of making tars is considered to be a part of the creative economy of the city and thus makes more valuable the historic and architectural environment.

Integration of the intangible heritage of Azerbaijan, namely mugham and tar, into the educational and architectural frameworks of the city contributes to preserving the genius loci of the city. Creating cultural clusters in the vicinity of the places connected to the history of mugham stimulates the renewal of the surrounding urban territories. Thus, the intangible heritage becomes a tool connecting historical legacy with innovative progress, which preserves the continuity of national identity against the background of the globalization of architectural style. Thus, the intangible heritage of Azerbaijan is not only a topic for protection under UNESCO but also an active tool of urban planning, which ensures the development of harmonious and functionally diverse urban environment. Moreover, the intangible heritage of Azerbaijan plays a dual role in the context of the urban development framework of the country; namely, it includes the acoustic identity of the nation as well as the basis for designing iconic architectural constructions.

One of the goals of the modern urban development plan in Baku is the realization of the carpet art in monument architectural projects. Azerbaijan National Carpet Museum, opened in 2013 (Figure 10) [26] and designed by the Austrian company Hoffmann-Janz ZT GmbH, is an example of it. The museum is located on the Baku Seaside Boulevard and adds to the cultural and recreational landscape of the coastline. The museum has a unique architectural design:

Formation: the volume of the building resembles rolled up carpet and thus turns it into the colossal art piece over the bay area. Innovation: the usage of new panels (Cement Board Outdoor, Cleaneo Akustik from Knauf) made it possible to create the complex curved facades of the building while providing the optimal conditions of temperature and humidity for the preservation of ancient artifacts. Interior design: the curved walls of the museum create the impression of a continuous space where carpets can be presented in the vertical or inclined positions, changing the traditional museum design.

Fig. 10. Interior of the Carpet Museum (https://bit.ly/41lxbU0).

Nowadays, carpet weaving is one of the factors that drive the development of creative industries [27]. It is necessary to emphasize that the revival of the workshops in the historical area (Icherisheher, or Old Sheki) contributes to the urban landscape revitalization due to the continued vibrancy of craftsmanship. Nowadays, the carpet is more than just an ordinary thing; it has become a territorial marketing tool and serves as a basis for construction of new architectural monuments. Historically, Azerbaijani carpet weaving is regarded not merely as a craft, but as a crucial graphic and spatial framework that guarantees the stability and recognition of the national architectural scenery.

In order to systematize the role of cultural institutions located along Baku Bay, it is necessary to compare their symbolic, architectural and urban-planning functions. Table 3 presents the main components of the cultural and recreational framework formed between Icherisheher and the seaside boulevard [28].

Table 3. Main elements of the cultural and recreational framework of Baku Bay.

Element	Type of heritage	Architectural expression	Urban-planning function
Icherisheher	Tangible cultural heritage	Medieval fortress-city structure	Historical core of Baku
Shirvanshahs' Palace	Tangible cultural heritage	Palace complex, stone carving, courtyard system	Monumental centre of the Old City
Maiden Tower	Tangible cultural heritage	Defensive-symbolic vertical dominant	Visual landmark of the coastal zone
International Mugham Centre	Intangible heritage embodied in architecture	Tar-inspired form, acoustic interior, concert hall	Cultural performance and festival centre
Azerbaijan National Carpet Museum	Intangible heritage embodied in architecture	Rolled carpet-shaped volume, curved exhibition space	Museum, tourist and creative industry centre

Table 3 shows that the cultural and recreational framework of Baku Bay is based on the continuity between historical monuments and contemporary cultural buildings. Icherisheher, the Shirvanshahs' Palace and the Maiden Tower represent the historical layer of the city, while the Mugham Centre and the Carpet Museum transform intangible heritage into modern architectural forms. As a result, Baku Bay functions not only as a recreational zone, but also as a cultural corridor that connects different periods of national architecture [29].

The analysis also shows that intangible heritage in Baku is not preserved only through exhibitions or museum collections. It is transformed into architectural form, urban image and cultural activity. Table 4 summarizes how mugham, tar and carpet weaving are reflected in modern architecture and urban space.

Table 4. Transformation of intangible heritage into architectural and urban forms.

Intangible heritage element	Traditional meaning	Architectural embodiment	Urban impact
Mugham	Musical-philosophical system and performance tradition	Concert hall, acoustic space, Mugham Centre	Strengthens cultural communication and festival activity
Tar	National musical instrument and symbol of mugham performance	Volumetric reference in the form of the Mugham Centre	Creates a recognizable symbolic architectural image
Carpet weaving	Decorative, craft and symbolic system	Carpet Museum designed as a rolled carpet	Supports cultural tourism and creative industries
Shebeke and ornament	Traditional craft and visual code	Decorative façade and interior solutions	Maintains continuity of national artistic language
Craft workshops	Living heritage and production practice	Integration into historical districts	Revitalizes urban areas and supports local economy

Table 4 confirms that intangible cultural heritage plays an active role in the formation of contemporary Azerbaijani architecture. Mugham, tar and carpet weaving are not limited to historical memory; they become spatial and visual codes used in the design of modern cultural buildings. This process increases the symbolic value of urban space and supports the development of Baku as a heritage-based cultural city.

Thus, the cultural and recreational framework of Baku Bay demonstrates a successful model of heritage-based urban development. The integration of Icherisheher, the Mugham Centre and the Carpet Museum into one spatial route strengthens the connection between memory, architecture and public life. This model can be considered an important direction for the future development of Azerbaijani cities, where cultural heritage serves as both a source of identity and a resource for sustainable urban regeneration.

The findings of this study demonstrate that architectural heritage in Azerbaijan functions not merely as a collection of historical monuments but as an active component of the contemporary urban planning system. The analyzed examples of Icherisheher, Gobustan, and the Historic Centre of Sheki reveal that heritage sites contribute significantly to the preservation of urban identity, spatial continuity, and cultural sustainability. Our findings align with Foster and Saleh's work, which demonstrates how heritage assets can catalyze sustainable urban development when woven into comprehensive planning frameworks.The research underscores a growing recognition that revalorization the practice of revitalizing heritage through multiple lenses has become central to how modern cities approach planning.What sets revalorization apart from older conservation models is its broader scope: rather than stopping at preserving buildings' physical shells, it actively strengthens their social, cultural, economic, and functional dimensions.

In the Azerbaijani context, the transformation of historical monuments into active cultural, educational, and tourism facilities illustrates the practical application of this approach.

The results further indicate that UNESCO frameworks have played a crucial role in shaping national heritage management policies. The inclusion of Icherisheher, Gobustan, and Sheki in the World Heritage List has significantly increased international recognition of Azerbaijan’s cultural assets while encouraging the adoption of internationally accepted conservation standards. These findings support UNESCO’s Historic Urban Landscape concept, which advocates integrating heritage protection into wider urban development policies rather than treating monuments as isolated entities. The Azerbaijani experience demonstrates that such integration can contribute to both heritage preservation and urban modernization.

Particular attention should be given to the role of intangible cultural heritage in the formation of contemporary urban landscapes. The International Mugham Center and the Azerbaijan Carpet Museum provide notable examples of how cultural traditions can influence modern architectural expression. The architectural forms of these buildings embody elements of national identity while simultaneously meeting contemporary functional requirements. This confirms the arguments of Naheed and Shooshtarian, who emphasize the importance of cultural heritage in strengthening urban identity and social cohesion [30].

Fig. 11. Heritage-Led Urban Planning Framework.

The study also highlights several challenges facing heritage management in Azerbaijan. Rapid urbanization, increasing investment pressure, changing land-use patterns, and the growing demand for modern infrastructure may threaten the integrity of historical environments. Similar challenges have been identified in international studies on heritage conservation and adaptive reuse. Therefore, effective planning mechanisms are required to ensure that urban growth does not undermine the historical and cultural values that constitute the unique character of Azerbaijani cities.

Another important issue concerns the economic sustainability of heritage conservation. The results indicate that heritage-based tourism, cultural industries, and adaptive reuse projects can generate substantial socio-economic benefits. The development of cultural clusters along the Baku Boulevard, including the Mugham Center and the Carpet Museum, illustrates how heritage resources can contribute to tourism development, job creation, and investment attraction. These findings correspond with the research of Scaffidi et al. and Boussaa and Madandola, who identify heritage-led regeneration as an important driver of local economic development and urban competitiveness.

From an urban planning perspective, Azerbaijan's experience shows us something important: we need to move beyond simply preserving monuments in isolation. Instead, heritage management should be integrated into the broader fabric of city planning.Architectural heritage isn't just about the past it's a strategic urban resource that can drive sustainable development while keeping historical authenticity alive and meaningful. Making this work requires genuine collaboration between city planners, cultural organizations, residents, and international partners like UNESCO. The research suggests that when cities successfully revitalize their architectural heritage, they're implementing comprehensive strategies that blend conservation with adaptive reuse, tourism opportunities, and cultural innovation. Azerbaijan demonstrates this beautifully: historical heritage becomes woven into contemporary urban life without losing its cultural roots.

4. CONCLUSIONS

The research that was done shows that the old buildings and historical places of Azerbaijan are very important for making cities better and for keeping the countrys identity. This study says that we should not just try to keep buildings and cultural things safe but we should also think about how they can be part of making cities better.

The old city of Baku with the Shirvanshahs’ Palace and Maiden Tower the Gobustan Rock Art Cultural Landscape and the old part of Sheki with the Khan’s Palace are examples of this. These

places are not just old and valuable they are also important for the city and for people who like to travel. Being on the UNESCO World Heritage List has really helped to keep these places safe and has made people know about them more.

This study found out that using buildings in new ways and making cities better with old things can really help to make these places more valuable and useful. The International Mugham Center and the Azerbaijan National Carpet Museum are examples of how old cultural things can be made into new buildings and still keep the old traditions of the country.

The study also says that UNESCO has some ideas, like the Historic Urban Landscape approach that can help to keep old buildings safe and still let cities grow. What Azerbaijan is doing shows that to take care of buildings and places we need to work together with different people and think about how to keep these places safe when we make plans, for cities.

Table 5. Sustainable Development Strategy of Azerbaijan's Architectural Heritage.

Component	Descrption
Historic Preservation	Protection and restoration of architectural monuments ensuring authenticity and continuity of cultural values.
Adaptive Reuse	Transformation of heritage buildings for new functions while maintaining historical integrity.
Economic Development	Integration of heritage assets into tourism and creative industries to stimulate local economies.
Social Cohesion	Strengthening community identity and participation through heritage-led urban regeneration.
National Idetity	Preservation of cultural symbolism and architectural language reflecting Azerbaijani heritage.
Cultural Tourismy	Promotion of heritage sites as sustainable tourism destinations enhancing intercultural dialogue.

At the time there are still many challenges. These include people moving to cities old buildings not being useful anymore and not having enough money to take care of them. We need to plan to balance growing cities with keeping old buildings.

In conclusion making Azerbaijans old buildings valuable again is very important for the countrys development. Using buildings and culture in planning helps keep them real. It also helps the economy, tourism people coming together and a stronger sense of who we're as a nation. This study can help make plans for taking care of old buildings and cities in Azerbaijan and other countries, with similar problems.

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