



Preservation Of The Historical, Architectural, And Urban Heritage Of The Shakhrisabz Oasis Of The Timurid Period

Nafisa Gilmanova

Doctor of Architecture (DSc),
Leading Researcher, Institute of Art Studies,
Academy of Sciences, Republic of Uzbekistan, Tashkent
E-mail: nafisa_gilmanova@mail.ru

ABSTRACT

Background: The Historic Centre of Shakhrisabz, one of the most significant urban centers of the Timurid period in Central Asia, was inscribed on the UNESCO World Heritage List in 2000 due to its Outstanding Universal Value (OUV). However, extensive urban redevelopment implemented during the 2010s substantially altered the historical urban fabric, resulting in concerns regarding the authenticity and integrity of the property and its subsequent inclusion on the List of World Heritage in Danger.

Purpose: This study aims to investigate the historical evolution, conservation, and recent transformation of the historical, architectural, and urban heritage of the Shakhrisabz Oasis, to assess the impact of urban reconstruction on the property's Outstanding Universal Value, and to develop scientifically grounded recommendations for its long-term conservation and sustainable management.

Methods: The research is based on an interdisciplinary methodology combining historical and architectural analysis, archival documentation, archaeological evidence, historical maps, urban planning records, field surveys, and comparative analysis of UNESCO World Heritage Committee decisions and ICOMOS monitoring reports. The study also examines legislative documents, restoration projects, and historical inventories of the traditional urban fabric.

Results: The research demonstrates that while the principal Timurid monuments have retained their architectural authenticity and structural integrity, large-scale demolition of traditional residential quarters and modification of the historic street network have significantly transformed the historic urban landscape. The study identifies the loss of traditional urban morphology and spatial relationships between monuments and residential neighborhoods as the principal factors affecting the property's Outstanding Universal Value. Based on these findings, an integrated conservation framework is proposed, emphasizing preservation of the historic urban landscape, traditional residential architecture, archaeological heritage, hydraulic systems, and cultural practices alongside monument conservation.

Conclusions: The preservation of Shakhrisabz cannot be achieved solely through the restoration of individual monuments. Sustainable conservation requires an integrated Historic Urban Landscape (HUL) approach that combines protection of architectural heritage with the conservation of traditional urban morphology, living communities, and cultural landscapes. The proposed recommendations provide a scientific basis for future management strategies and may support the preparation of an updated UNESCO World

Heritage nomination while offering a methodological model for the conservation of historic cities throughout Central Asia.

Keywords:

Shakhrisabz; UNESCO World Heritage; Historic Urban Landscape (HUL); cultural heritage conservation; urban morphology; Timurid architecture; archaeological heritage; Outstanding Universal Value (OUV); historic urban landscape; Central Asia.

1. Introduction

The historic core of **Shakhrisyabz** (ancient **Kesh**) has a history spanning more than 2,700 years and represents one of the oldest cultural and historical centres of Southern Sogdiana. Owing to its strategic location along one of the principal routes of the **Great Silk Road**, the city played a significant political, economic, and cultural role in the development of Central Asia for many centuries. Its territory preserves archaeological remains illustrating the major stages in the historical evolution of the region – from the Early Iron Age and Antiquity to the Early Middle Ages, the period of **Amir Temur** and the **Timurid dynasty**, as well as architectural monuments dating from the nineteenth and early twentieth centuries.

The architectural and urban structure of the historic centre evolved over many centuries through the continuous development of the urban environment and the accumulation of multilayered historical and cultural strata. This continuity determined the distinctive urban identity of Shakhrisyabz, where monuments representing different historical periods coexist harmoniously with the traditional residential fabric.

The city reached the peak of its development during the fourteenth and fifteenth centuries under the rule of **Amir Temur** and his successors. During this period, Shakhrisyabz became one of the principal political, cultural, and spiritual centres of the Timurid Empire, resulting in the construction of outstanding architectural ensembles and the final formation of the spatial structure of the historic city.

One of the distinctive characteristics of the urban composition of Shakhrisyabz is the functional separation between administrative-political and religious – memorial complexes located within the traditional residential quarters. Unlike the historic centres of **Samarkand**, **Bukhara**, and **Khiva**, where

monumental buildings are concentrated within a single compositional core, the architectural ensembles of Shakhrisyabz are distributed across different parts of the city, forming a unique spatial organization. This principle of urban planning has no known parallel among other cities of the Timurid period and therefore represents a subject of considerable scholarly interest in the history of urban development.

The monumental monuments of the Timurid period are distinguished by their exceptional scale, high artistic quality of architectural decoration, and innovative spatial and compositional solutions. However, their historical significance derives not only from the architectural merits of individual monuments but also from the preservation of the spatial relationships between the monuments themselves, the historic street network, the urban layout, and the traditional residential environment, all of which collectively constitute the **Outstanding Universal Value (OUV)** of the historic centre.

Unlike most major cities of the Timurid Empire, Shakhrisyabz retained its historically evolved medieval urban structure until the beginning of the large-scale urban redevelopment programmes of the twenty-first century. Its planning system was based on a rectangular pattern of residential quarters intersected by a radial street network oriented along the principal north-south and east-west axes, reflecting the long-established urban planning traditions of the Shakhrisyabz Oasis.

The historic centre of Shakhrisyabz represents a unique **Historic Urban Landscape (HUL)** in which architectural and archaeological monuments from different historical periods have been preserved. Their spatial unity reflects the centuries-long evolution of the urban environment and constitutes the principal bearer of the Outstanding Universal Value of the UNESCO World Heritage property.

Shakhrisyabz provides exceptional testimony to the development of Timurid architecture and urban planning, which profoundly influenced the subsequent architectural traditions of Central Asia. The historic centre reflects the political, religious, and cultural evolution of the region while preserving the material evidence of the continuous development of its urban fabric.

Despite substantial changes caused by contemporary urbanization, the historic core has retained the principal elements of its medieval spatial organization. Prior to the large-scale reconstruction programme, the historical boundaries of the city, the principal compositional axes, the traditional street network, and the spatial relationships between the monumental architectural ensembles and the surrounding residential quarters remained clearly legible. These characteristics ensured the integrity of the Historic Urban Landscape and constituted one of the principal reasons for recognizing the Outstanding Universal Value of Shakhrisyabz.

Although the urban environment gradually evolved and certain parts of the historic centre were adapted to contemporary needs, the essential components of the historic urban structure remained largely intact over an extended period. The historical building lines, the traditional street network, and the established proportional relationship between street width and building height underwent only minor changes, preserving the harmonious scale of the traditional urban fabric and the monumental architectural ensembles. Consequently, the integrity of the Historic Urban Landscape and the perception of the monuments within their authentic spatial context were maintained.

The surviving architectural monuments demonstrated a high degree of structural stability owing to their substantial foundations and repeated engineering reinforcement undertaken during different historical periods.

2. Evolution of the Urban Structure of Shakhrisyabz during the Timurid Period

Archaeological investigations conducted within the territory of the **Ak Saray Palace**, the **Kok Gumbaz Mosque**, and the **Shamsiddin Kulal**

Memorial Complex revealed substantial foundation structures dating to the **Karakhanid period**. These findings demonstrate that an advanced system of permanent construction had already been established during the eleventh and twelfth centuries, preceding the extensive urban transformations undertaken in the Timurid period. The archaeological evidence makes it possible to reconstruct the principal stages in the development of the city's spatial structure and the evolution of its functional organization.

By the middle of the fourteenth century, following the political unification of **Mawarannahr** under the rule of **Amir Timur**, Shakhrisyabz had become one of the leading political, administrative, and cultural centres of the Timurid Empire. At the same time, urban development was based on the continuity of the existing medieval planning system rather than on the creation of an entirely new urban structure.

During this period, the city's functional zoning was definitively established. Religious and memorial complexes were concentrated within the **inner madina**, whereas the palace and administrative complexes were developed in the **outer madina**. Such spatial organization reflects the exceptionally high level of urban planning achieved during the Timurid period.

Amir Timur's urban policy was directed not only toward the construction of monumental architectural complexes but also toward the creation of an entirely new spatial composition of the city. The **Ak Saray Palace**, the largest royal palace complex of the Timurid period, was erected on the site of the former administrative centre. At the same time, the religious and memorial ensembles of **Dorut Tilovat** and **Dorus Saodat** were established, incorporating congregational mosques, mausoleums, and other religious buildings. The deliberate spatial separation of palace architecture from religious architecture became one of the defining characteristics of the urban planning concept of Shakhrisyabz.

Although **Samarkand** retained its status as the capital of the Timurid Empire, Shakhrisyabz remained one of the principal royal residences,

where extensive construction activities continued during the reign of **Ulugh Beg**.

Following its flourishing in the fourteenth and fifteenth centuries, the political significance of the city gradually declined. Nevertheless, the principal elements of its historical urban structure – including the fortification walls, city gates, principal streets, and the spatial relationships between the architectural ensembles – remained intact, ensuring continuity in the development of the urban environment.

The establishment of the **Shakhrisyabz State Historical and Architectural Museum-Reserve** in 1996 marked an important milestone in Uzbekistan's state policy on cultural heritage protection. The creation of the protected area ensured the preservation of the historical urban layout, the spatial relationships among architectural monuments and traditional residential quarters and provided a scientific basis for the regeneration of the historic centre.

A priority objective became the integrated conservation and scientific restoration of the city's architectural monuments. Despite the varying degrees of preservation of individual monuments, the implementation of a long-term state conservation programme significantly improved their physical condition and ensured their long-term protection.

Between **1950 and 1999**, comprehensive programmes of scientific restoration and conservation were implemented at the principal monuments of the historic centre (Table 1). These programmes included structural stabilization, conservation of archaeological remains, restoration of architectural decoration and monumental paintings, strengthening of foundations, improvement of buffer zones, and mitigation of adverse engineering and geological conditions. The principal interventions were undertaken at **Ak Saray Palace, Dorut Tilovat, Dorus Saodat, Kok Gumbaz Mosque**, and the mausoleums of **Shamsiddin Kulal and Gumbazi Sayidon**.

Table 1. Principal Stages of the Restoration of Shakhrisyabz Monuments (1950–1999)

Stage	Period	Main Activities	Principal Outcomes
I. Emergency Stabilization	1950–1973	Emergency structural reinforcement of the most valuable monuments	Prevention of the destruction of the most vulnerable monuments
II. Comprehensive Restoration	1973–1976	Restoration of monumental buildings and architectural decoration	Recovery of the architectural appearance of the principal ensembles
III. Scientific Conservation	1993–1996	Structural reinforcement, conservation of archaeological remains, restoration of wall paintings and glazed ceramic decoration	Improved preservation and enhancement of artistic value
IV. Integrated Protection of the Historic Environment	1996–1999	Engineering protection, improvement of buffer zones, restriction of new construction	Establishment of the foundations for Historic Urban Landscape conservation
V. Heritage Monitoring	Since 1999	Continuous monitoring of structural condition and hydrogeological processes	Establishment of a long-term heritage management system

Following the completion of the restoration programme, a permanent monitoring system for cultural heritage properties was established. Supervision was carried out by the cultural heritage protection authorities and included regular assessment of structural stability, architectural decoration, and hydrogeological conditions, with particular attention given to groundwater levels and their impact on the foundations of historic monuments.

The fourteenth-century defensive fortifications of Shakhrisyabz, which constitute one of the key elements of the city's historical urban structure, have survived only in a fragmentary state. At present, only isolated ruined sections of the city walls remain. According to field investigations, approximately **70-80%** of the original fortification system has been lost.

Originally, the city walls consisted of massive **rammed-earth fortifications** with trapezoidal cross-sections and widened foundations, characteristic of the military architecture of medieval Central Asia. Throughout their history, these structures underwent repeated destruction, reconstruction, and repair before eventually becoming incorporated into the surrounding residential fabric. The construction of houses immediately adjacent to both sides of the walls compromised their structural integrity and substantially altered their historical appearance.

The principal causes of deterioration include the natural ageing of earthen building

materials, weathering processes, seismic activity, increased moisture, urban encroachment, the creation of unauthorized openings, biological degradation, and the loss of protective clay plaster. As a consequence of intensive urbanization, the historic fortifications became enclosed within the modern urban fabric, considerably increasing anthropogenic pressure and accelerating processes of physical deterioration.

Following the independence of the Republic of Uzbekistan, a comprehensive legislative and institutional framework for the protection of cultural heritage was established, including measures specifically aimed at safeguarding the monuments of the Historic Centre of Shakhrisyabz.

3. Risk Factors Affecting the Preservation of the Historic Centre and the Evolution of State Conservation Policy

Comprehensive analysis demonstrates that the current condition of the Historic Centre of Shakhrisyabz is determined by the combined impact of natural, anthropogenic, urban-planning, and institutional factors. The greatest threat is posed not by the physical deterioration of individual monuments but by the progressive loss of the historic urban structure and the disruption of spatial relationships between architectural ensembles and the traditional residential fabric. This finding highlights the necessity of shifting from the conservation of individual monuments toward the integrated management of the **Historic Urban Landscape (HUL)**.

Table 2. Principal Risk Factors Affecting the Preservation of the Historical and Architectural Heritage of Shakhrisyabz

Risk category	Principal manifestations	Impact on cultural heritage
Anthropogenic factors	Excessive urbanization; contemporary construction; disruption of the historic urban layout; loss of spatial relationships between monuments and traditional residential quarters	Loss of the Historic Urban Landscape and reduction of authenticity

Risk category	Principal manifestations	Impact on cultural heritage
Natural and climatic factors	Climate change; atmospheric pollution; wind and water erosion; temperature fluctuations	Deterioration of construction materials and acceleration of physical decay
Geological and hydrogeological factors	Earthquakes; rising groundwater levels; disturbance of natural drainage systems	Weakening of foundations, structural deformation, increased moisture penetration
Biological factors	Vegetation, microorganisms, algae, insects, birds, and rodents	Biodeterioration of building materials and decorative finishes
Urban-planning factors	Incompatible new construction; inefficient land use; formation of vacant urban spaces	Loss of compositional integrity of the historic centre
Institutional and management factors	Insufficient funding; absence of comprehensive monitoring; inadequate application of scientific restoration principles	Reduced effectiveness of heritage conservation measures
Social and tourism-related factors	Growth of tourism and recreational use	Increased pressure on monuments and the historic urban environment

The analysis indicates that the principal threat to the Outstanding Universal Value (OUV) of the property lies in the gradual fragmentation of the historic urban fabric rather than in the deterioration of individual architectural monuments. Consequently, conservation policy should prioritize the preservation of the urban structure as an integrated cultural system.

4. Urban Transformation of the Historic Centre

The principal stages of the urban transformation of the Historic Centre of Shakhrisyabz between **1928 and 2016** are summarized in **Table 3**.

Table 3. Principal Stages in the Urban Transformation of the Historic Centre of Shakhrisyabz

Stage	Period	Principal activities	Impact on the historic centre
I	1928	Initial Soviet urban modernization	Partial modernization while preserving the historic urban structure
II	1962	Preparation of the Master Plan	Establishment of mechanisms for regulating development within the historic city

Stage	Period	Principal activities	Impact on the historic centre
III	1982	Creation of the Historical and Architectural Reserve and development of scientific restoration programmes	Comprehensive protection of the historic urban environment
IV	2000	Inscription on the UNESCO World Heritage List	International recognition of Outstanding Universal Value
V	2009	Development programmes for the historic centre	Expansion of tourism functions
VI	2014	Large-scale urban reconstruction	Significant transformation of the historic urban layout
VII	2016	UNESCO reaction and inscription on the List of World Heritage in Danger	Revision of conservation approaches based on the Historic Urban Landscape concept

As noted above, the Historic Centre of Shakhriyabz represents the result of many centuries of continuous urban development and constitutes one of the most outstanding examples of Timurid urban planning. During the fourteenth and fifteenth centuries, the city evolved into one of the principal political, administrative, and cultural centres of **Mawarannahr**, where a distinctive urban structure developed through the harmonious integration of palace complexes, religious buildings, memorial ensembles, and traditional residential quarters.

Subsequent historical development introduced architectural layers representing different historical periods, creating a complex and multilayered Historic Urban Landscape that retained a remarkably high degree of historical authenticity.

The preservation of the historic urban layout and the spatial relationships between monumental architectural ensembles constituted one of the principal reasons for the inscription of the **Historic Centre of Shakhriyabz** on the **UNESCO World Heritage List** on **2 December 2000** (Property No. **885**) under **criteria (iii) and (iv)**.

Under **criterion (iii)**, Shakhriyabz represents exceptional testimony to the cultural traditions and architectural achievements of the

Timurid civilization, which exerted profound influence on the subsequent development of Central Asia.

Under **criterion (iv)**, the property was recognized as an outstanding example of an architectural and urban ensemble illustrating a remarkably high level of medieval construction technology and urban planning.

Inscription on the World Heritage List marked the beginning of a new phase in Uzbekistan's heritage policy, emphasizing the protection not only of individual monuments but also of the historic urban environment as the principal bearer of the property's Outstanding Universal Value.

The Historic Centre occupies approximately **240 hectares**, with an **82-hectare buffer zone**. It encompasses the principal Timurid architectural ensembles, archaeological remains, traditional residential quarters, and the historic urban layout, which together constitute an integrated Historic Urban Landscape.

A particularly significant component of this urban landscape was the traditional residential architecture, which shared many characteristics with the historic houses of **Samarkand** and **Bukhara**. Residential buildings were typically organized around enclosed courtyards containing **iwans**, living

quarters, and service spaces. The most elaborately decorated interior space was the **mehmonkhona** (guest room), distinguished by richly painted wooden ceilings and elements of traditional decorative art.

Before the beginning of the large-scale urban redevelopment programme, the historic centre was predominantly composed of one- and two-storey **sinch-frame** houses with flat earthen roofs arranged within traditional neighbourhoods (**guzars**). Their spatial organization was defined by narrow winding streets, cul-de-sacs, and high earthen enclosure walls. At the centre of each neighbourhood stood a **mahalla mosque**, serving simultaneously as a religious, social, and administrative institution.

Prior to reconstruction, approximately **forty** of the most valuable examples of traditional residential architecture remained within the historic centre. However, the majority were subsequently demolished during urban redevelopment. Nevertheless, the historic **mahallas** – including **Urda, Kunchikar, Kaziguzar, Zingiron, Zargarlik, Kulollik, Koshhovuz, Khabarlik, Namazgoh, and Uychilik** – have survived as historical place names, preserving an important component of the city's intangible cultural heritage.

5. State Policy, Urban Reconstruction, and UNESCO Assessment (2009–2016)

The legal and institutional framework for the protection of the Historic Centre of Shakhriyabz evolved progressively over several decades. In **1973**, the city was officially included in the register of historic cities of the

Uzbek SSR, and its principal architectural monuments were placed under state protection. Although, until the 1990s, conservation efforts were largely concentrated on Samarkand, Bukhara, and Khiva, this period witnessed the preparation of the first comprehensive restoration and urban regeneration projects for Shakhriyabz.

A new stage in heritage management commenced following the adoption of the city's **Master Plan** and the designation of Shakhriyabz as an urban planning site of **special national significance**. Approved in **2009**, the Master Plan largely retained the planning principles established in the 1988 development strategy while defining the city's development priorities through 2025. At the same time, its implementation initiated extensive modernization of the historic centre, including the reconstruction of residential neighbourhoods, upgrading of engineering and transport infrastructure, and comprehensive transformation of the urban environment.

The present study demonstrates that the implementation of the **2009 Master Plan** marked the beginning of the most significant alterations to the historic urban structure of Shakhriyabz. Although these interventions were intended to improve living conditions and modernize urban infrastructure, they substantially affected the preservation of the traditional residential fabric and the Historic Urban Landscape. These changes subsequently became the subject of international evaluation by the **UNESCO World Heritage Committee**.

Table 4. Evolution of State Policy for the Protection of the Historic Centre of Shakhriyabz

Period	Principal legal instruments	Main objectives	Impact on heritage conservation
1973	Resolutions of the Council of Ministers of the Uzbek SSR Nos. 339 and 539	Recognition of Shakhriyabz as a historic city and state protection of monuments	Establishment of the legal framework for cultural heritage protection
1970s–1990s	Scientific restoration programmes	Comprehensive research, restoration, and conservation of monuments	Formation of a scientific conservation system

Period	Principal legal instruments	Main objectives	Impact on heritage conservation
2000	UNESCO World Heritage inscription	International recognition of Outstanding Universal Value	Strengthening of international conservation obligations
2007	Resolution of the Cabinet of Ministers No. 25	Designation of the city as a site of special national significance	Strengthened governmental control over urban development
2009	Master Plan of Shakhriyabz	Comprehensive modernization of infrastructure	Beginning of large-scale transformation of the historic urban environment

At the time of implementation of the Master Plan, a considerable proportion of the traditional residential buildings within the historic centre were in poor physical condition. Most houses dating from the late nineteenth and early twentieth centuries exhibited advanced structural deterioration, lacked modern engineering services, and no longer complied with contemporary sanitary standards. Consequently, modernization of the housing stock was regarded as an essential component of the redevelopment programme.

Before reconstruction commenced, a comprehensive inventory of the historic urban fabric was undertaken, including architectural surveys, photographic documentation, and preparation of individual monument records. Buildings considered structurally unsafe were scheduled for demolition, while architecturally significant elements were carefully documented and preserved for possible use during future restoration projects. New residential development was intended to retain the traditional compositional principles of historic housing while incorporating contemporary engineering systems.

Despite localized interventions, the overall medieval urban structure initially remained largely intact. Traditional **mahallas** located outside the central monumental zone continued to preserve their historical spatial organization and long-established patterns of community life.

The reconstruction programme also envisaged the restoration of selected sections of the medieval fortification walls and city gates, together with the creation of a new pedestrian axis connecting **Ak Saray Palace** and the **Kok Gumbaz Ensemble**. This axis was intended to accommodate traditional craft workshops, commercial facilities, and tourism infrastructure. The project concept sought to combine the conservation of cultural heritage with the modernization of the urban environment and the development of sustainable cultural tourism.

A subsequent stage of state policy was defined by the **Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 294 (1 November 2013)**, entitled *Programme for the Development of Tourism in Kashkadarya Region (2013–2015)*. The programme introduced integrated measures aimed at the conservation of cultural heritage, development of tourism infrastructure, and improvement of tourism services.

Accordingly, tourism was considered not only a key driver of regional socio-economic development but also an important instrument for the preservation and sustainable use of cultural heritage.

Another important milestone was the adoption of **Resolution No. 31 (20 February 2014)**, *Programme of Comprehensive Measures for the Development and Reconstruction of the City of Shakhriyabz*. The programme included

extensive measures directed toward the conservation of cultural heritage, modernization of engineering and transport infrastructure, improvement of public spaces, and establishment of contemporary tourism facilities.

Its implementation involved large-scale scientific restoration and engineering works, including restoration of architectural monuments, conservation of archaeological remains, modernization of engineering utilities and drainage systems, rehabilitation of the historic **Hovuzi Mardon** reservoir, enhancement of public spaces, and creation of pedestrian connections linking **Ak Saray Palace, Dorus Saodat**, and **Dorut Tilovat**.

Simultaneously, transport infrastructure was modernized through restrictions on private vehicle access within the historic centre and the introduction of environmentally friendly electric transport.

Construction activities were carried out under continuous archaeological supervision, leading to the discovery and conservation of previously unknown archaeological remains, including the foundations of a medieval bathhouse dating from the thirteenth–fourteenth centuries. Unsafe and unauthorized buildings located adjacent to historic monuments were demolished, and the cleared areas were subsequently landscaped or adapted for tourism infrastructure.

Implementation of the programme substantially improved the engineering condition of the historic centre, transport organization, and living conditions of local residents, while significantly enhancing the city's tourism potential. However, the extensive demolition of traditional residential neighbourhoods resulted in the fragmentation of the historic urban structure, the loss of significant portions of the Historic Urban Landscape, and a decline in the authenticity of the World Heritage property.

Consequently, this phase represents a turning point in the modern history of Shakhriyabz. Although urban modernization achieved considerable infrastructural improvements, it simultaneously transformed the historic urban fabric, ultimately becoming

the focus of international concern expressed by the **UNESCO World Heritage Committee**.

Recognizing the consequences of these interventions, specialists initiated the preparation of scientifically based proposals for the rehabilitation of the historic urban environment. These proposals relied upon archival documentation, historical photographs, architectural surveys, and restoration records with the objective of reconstructing, as accurately as possible, the historical character of the traditional urban landscape.

6. UNESCO Evaluation, Inclusion on the List of World Heritage in Danger, and the Rehabilitation Strategy

The Timurid monuments constitute the principal compositional landmarks of the Historic Centre of Shakhriyabz and form the foundation of its **Outstanding Universal Value (OUV)**. The urban structure established during the fourteenth and fifteenth centuries preserved its fundamental spatial organization and historical continuity for several centuries.

Within the framework of the national programme for the conservation of the historical and architectural heritage implemented between **2013 and 2016**, comprehensive restoration, conservation, and landscape enhancement works were carried out at the **Ak Saray Palace, Dorut Tilovat**, and **Dorus Saodat** ensembles. At the same time, later residential buildings constructed immediately adjacent to the medieval city walls or directly upon their historic alignment were dismantled because they impeded the conservation of the fortifications and obscured their historical perception.

Considerable attention was also devoted to the preservation of traditional residential architecture. Three late nineteenth-century timber-frame (**sinch**) houses were placed under state protection. Despite their high seismic resistance, by the beginning of the twenty-first century these buildings had reached an advanced state of physical deterioration. Prior to restoration, comprehensive architectural surveys, photographic documentation, and scientific recording were completed, while the most valuable decorative architectural elements were carefully preserved. Based on archival

documentation and research findings, restoration projects were prepared for the rehabilitation of representative examples of the traditional residential architecture of the Historic Centre.

An important source for understanding the historical residential environment of Shakhriyabz was the **Historical and Architectural Inventory** prepared in 1983 by the **Uzbek Research Institute for Restoration (UzNIPI Restoration)**. The archival materials, including measured drawings prepared by **A. K. Bogoukhov, A. V. Korchuganov, and V. A. Bryukhanov**, constitute the most comprehensive documentation of the historic urban fabric before the large-scale redevelopment programmes of the twenty-first century.

Comparison of archival records with the present condition of the Historic Centre demonstrates that a substantial proportion of the traditional residential fabric has been lost. Nevertheless, several representative houses have survived and remain in use. Among them are the historic house on **Kopkon Street** (currently operating as the **Dalon Hotel**) with its carved wooden beams, together with houses located on **Kozi-Guzar** and **Eshonpir** streets that retain traditional courtyard layouts and historic **mehmonkhona** (guest rooms). These buildings represent rare surviving examples of the traditional domestic architecture of Shakhriyabz and constitute important components of its Historic Urban Landscape.

Conservation measures also included the stabilization of the medieval defensive system. Approximately **1,100 m** of the fourteenth-century city walls and several fragments of earlier fortifications remain preserved. During implementation of the conservation programme, the best-preserved sections of the walls were structurally reinforced, protected by earthen embankments, and subjected to scientific conservation.

On the basis of archaeological investigations and historical sources, the **Samarkand Gate (Samarkand Darvoza)** was restored. According to the account of **Ruy González de Clavijo**, this gate served as the principal entrance to the city in the early

fifteenth century. Archaeological excavations also enabled the identification of the location of the **Termez Gate**, where foundation remains and associated structural elements were documented.

Despite considerable improvements in the structural condition of monuments and engineering infrastructure, the implementation of the large-scale reconstruction programme fundamentally altered the historic urban environment. The transformation of the traditional residential fabric resulted in the fragmentation of the historic urban structure and significantly affected the authenticity and integrity of the World Heritage property.

In **June 2016**, the **UNESCO World Heritage Centre**, jointly with **ICOMOS**, expressed concern regarding the impact of the reconstruction programme on the property's authenticity, integrity, and Outstanding Universal Value. The State Party was requested to submit a comprehensive assessment of the impact of these interventions. In response, a joint Reactive Monitoring Mission was undertaken to evaluate the condition of the Historic Centre, with particular attention given to the preservation of its urban structure, architectural heritage, and compliance with internationally recognized conservation principles.

Following examination of the mission findings during the **40th Session of the UNESCO World Heritage Committee (Istanbul, 2016)**, the **Historic Centre of Shakhriyabz** was inscribed on the **List of World Heritage in Danger** (Decision **40 COM 7B.48**). The Committee concluded that the substantial transformation of the historic urban structure had resulted in the loss of several attributes conveying the property's Outstanding Universal Value.

The Committee further noted that the present condition of the Historic Centre no longer fully reflects the characteristics that justified its inscription on the World Heritage List in 2000 and recommended the preparation of a scientifically substantiated programme for the rehabilitation of the historic urban environment.

Subsequent UNESCO-ICOMOS monitoring missions conducted in **2016** and **2019** confirmed the scale of the transformations. Their reports documented the relocation of more than **2,000 residents** from the historic centre, the disruption of the traditional **mahalla** structure, and the application of restoration materials and construction techniques that, in certain cases, were not fully consistent with internationally accepted principles of scientific conservation.

Based on the conclusions of these monitoring missions, a **moratorium on new construction** within the World Heritage property was introduced pending the preparation of a comprehensive conservation strategy. In **2017**, a complete inventory of the remaining traditional residential buildings was undertaken, while one of the principal research priorities became the comparative analysis of historical maps (1928, 1962, 1982, and 2000) with contemporary satellite imagery in order to evaluate the transformation of the Historic Urban Landscape.

The investigations demonstrated that the loss of Outstanding Universal Value was associated not primarily with the physical deterioration of individual monuments but rather with the transformation of the historic urban fabric and the disruption of spatial relationships between monumental architecture, traditional residential quarters, and the surrounding cultural landscape.

Official reports submitted by the Republic of Uzbekistan acknowledged that the principal Timurid monuments and the key elements of the historical topography had generally been preserved. At the same time, they recognized that although certain modifications to the urban structure had already occurred during the Soviet period, the most substantial transformations resulted from the reconstruction programmes implemented after 2014.

Another significant challenge affecting the long-term preservation of the property is the continued rise in groundwater levels. This circumstance has highlighted the urgent need for modernization of the drainage system and

further improvement of hydrogeological protection measures for the Historic Centre.

As a living historic city, Shakhriyabz continues to perform residential, social, economic, and tourism functions. Consequently, sustainable conservation requires integrated solutions addressing engineering infrastructure, transport management, drainage systems, environmental quality, and the preservation of cultural heritage within a unified planning framework.

At present, the Government of the Republic of Uzbekistan, in cooperation with national research institutions and international experts, continues to develop a comprehensive rehabilitation strategy aimed at restoring the Outstanding Universal Value of the Historic Centre in accordance with the principles of the **1972 UNESCO World Heritage Convention**, the **Operational Guidelines**, and the **Historic Urban Landscape (HUL) Recommendation**.

7. Future Directions for the Conservation and Management of the Historic Centre

The research undertaken has made it possible to refine the structure of the cultural heritage of Shakhriyabz and to identify the components that are essential for preserving the property's **Outstanding Universal Value (OUV)**. The architectural ensembles of the Timurid period constitute the principal attributes of Outstanding Universal Value. Equally important are the medieval fortification system, the traditional residential fabric of the nineteenth and early twentieth centuries, and the historic urban layout, all of which provide the historical context necessary for the perception and interpretation of the monumental architectural heritage.

Between **2016** and **2024**, issues concerning the conservation of the Historic Centre of Shakhriyabz were repeatedly considered by the **UNESCO World Heritage Committee**. The decisions adopted during the **40th–46th sessions** consistently emphasized the need to prepare a new conservation concept based on a reassessment of the property's Outstanding Universal Value and its defining attributes.

In accordance with **Decision 43 COM 7A.44**, the State Party was invited to consider preparing a revised nomination for the World Heritage property with clearly defined boundaries and attributes expressing its Outstanding Universal Value.

To support this process, international experts, including specialists from the **Institut Paris Region**, participated in the preparation of recommendations aimed at improving both the conservation strategy and the long-term management system of the Historic Centre.

The results of the present research indicate two complementary strategic directions for the future conservation of the property.

The first strategy prioritizes the scientific conservation and restoration of the principal Timurid monuments while restoring their historical spatial relationships and preserving their authenticity and integrity.

The second strategy is based on the principles of the **Historic Urban Landscape (HUL)** approach and advocates the partial rehabilitation of the historic urban structure, including the restoration of the traditional street network, residential quarters, fortification walls, and historic city gates, while simultaneously upgrading engineering infrastructure to meet contemporary urban requirements.

Accordingly, contemporary conservation policy should gradually shift from the protection of individual monuments toward the integrated management of the Historic Urban Landscape as a unified cultural system.

In **January 2022**, the **Cultural Heritage Agency of the Republic of Uzbekistan**, together with the **Ministry of Tourism and Sports** and with technical support from the **Institut Paris Region**, carried out a comprehensive assessment of the Historic Centre. The investigation demonstrated that the most extensive changes occurred during the reconstruction campaign of **2014–2018**, when demolition affected approximately **54 hectares** within the World Heritage property and its buffer zone.

Within the World Heritage property itself, approximately **31 hectares** (around **17%**

of the protected area) were transformed, including **17 hectares** of traditional **mahallas** and **14 hectares** of later residential development. Within the buffer zone, redevelopment affected approximately **23 hectares**, representing about **26%** of its total area.

These findings confirmed that the most significant transformations primarily affected the traditional residential environment and the historic urban structure, whereas the principal Timurid monumental ensembles have generally retained their physical integrity.

Based on these investigations, recommendations were prepared to restore the historical spatial relationships between architectural ensembles, rehabilitate the traditional residential environment, improve engineering infrastructure, and preserve the traditional urban structure as one of the principal attributes conveying the property's Outstanding Universal Value.

During the **47th Session of the UNESCO World Heritage Committee (Paris, July 2025)**, the Historic Centre of Shakhrisyabz remained on the World Heritage List. The Committee recommended that the State Party prepare, within a three-year period, an updated nomination dossier clarifying the property's Outstanding Universal Value, boundaries, and defining attributes.

The contemporary conservation strategy is therefore based upon an integrated approach that combines the protection of Timurid architectural heritage with the rehabilitation of the Historic Urban Landscape, traditional residential quarters, and the historical spatial organization of the city.

8. Recommendations for Sustainable Conservation

The results of this research demonstrate that the preservation of the Outstanding Universal Value of Shakhrisyabz cannot be achieved solely through the restoration of individual monuments. Long-term conservation depends primarily upon safeguarding the Historic Urban Landscape as an integrated cultural system that incorporates monumental architecture, traditional residential neighbourhoods, the historic urban layout,

public spaces, cultural practices, and the natural landscape.

The experience of Shakhriyabz clearly illustrates the necessity of moving beyond monument-centred conservation toward integrated management of the historic urban environment in accordance with the **UNESCO Recommendation on the Historic Urban Landscape (2011)**.

The study identifies the principal threats affecting the preservation of the historical and architectural heritage, including uncontrolled urbanization, disruption of the historic urban structure, degradation of the traditional residential fabric, changes in hydrogeological conditions, and the application of restoration methods lacking sufficient scientific justification.

To ensure the long-term preservation of the Historic Centre, the following strategic priorities are proposed:

- development of a scientifically based conservation and management plan founded on the Historic Urban Landscape approach;
- preparation of an updated historical and architectural reference plan defining zones of varying cultural significance and corresponding protection regimes;
- continuation of scientific restoration of the principal Timurid monuments using authentic materials and traditional construction techniques;
- establishment of a permanent multidisciplinary expert advisory board involving architects, conservators, archaeologists, historians, engineers, and representatives of governmental institutions;
- expansion of archaeological investigations at **Uzunkyr**, **Podayataktepa**, **Sangirtepa**, the **Kok Gumbaz** precinct, traditional craft quarters, and the northern fortification line;
- rehabilitation of the historic urban structure through restoration of traditional streets, neighbourhoods, city gates, and fortification walls;
- comprehensive inventory and legal protection of surviving examples of traditional residential architecture;

- conservation of characteristic elements of vernacular architecture, including **iwans**, **tokchas**, carved wooden beams, painted ceilings, and internal courtyards;

- rehabilitation of the historic hydraulic system through restoration of canals (**aryks**), reservoirs (**hauzes**), drainage infrastructure, and natural groundwater regulation;

- restriction of new construction incompatible with the historical character of the city and reduction of heavy vehicular traffic within the Historic Centre;

- revitalization of traditional craft districts and integration of historic craft production into sustainable cultural tourism programmes;

- creation of an integrated digital heritage information system, including GIS monitoring, three-dimensional documentation, digital archives, and virtual interpretation platforms;

- strengthening academic research, international cooperation, and professional education in the fields of heritage conservation and restoration;

- further development of sustainable cultural tourism based on the conservation of the Historic Urban Landscape;

- improvement of national legislation and management mechanisms to ensure full compliance with the provisions of the **1972 World Heritage Convention**, the **Operational Guidelines**, and other international conservation standards.

9. Conclusions

The implementation of the proposed conservation framework will contribute to the long-term preservation of the historical, architectural, and urban heritage of Shakhriyabz, restore the spatial integrity of its Historic Centre, and improve the effectiveness of World Heritage management.

The research demonstrates that sustainable conservation requires a transition from the protection of isolated monuments toward the integrated preservation of the **Historic Urban Landscape**, encompassing monumental architecture, traditional residential neighbourhoods, the historic urban layout, cultural practices of local communities, and the surrounding natural landscape.

Such an integrated approach is fully consistent with the **UNESCO Recommendation on the Historic Urban Landscape (2011)** and contemporary international conservation doctrine. It provides a scientific basis for achieving an appropriate balance between the protection of cultural heritage and the sustainable development of the historic city.

8. Recommendations for Sustainable Conservation

The results of this research demonstrate that the preservation of the Outstanding Universal Value of Shakhriyabz cannot be achieved solely through the restoration of individual monuments. Long-term conservation depends primarily upon safeguarding the Historic Urban Landscape as an integrated cultural system that incorporates monumental architecture, traditional residential neighbourhoods, the historic urban layout, public spaces, cultural practices, and the natural landscape.

The experience of Shakhriyabz clearly illustrates the necessity of moving beyond monument-centred conservation toward integrated management of the historic urban environment in accordance with the **UNESCO Recommendation on the Historic Urban Landscape (2011)**.

The study identifies the principal threats affecting the preservation of the historical and architectural heritage, including uncontrolled urbanization, disruption of the historic urban structure, degradation of the traditional residential fabric, changes in hydrogeological conditions, and the application of restoration methods lacking sufficient scientific justification.

To ensure the long-term preservation of the Historic Centre, the following strategic priorities are proposed:

- development of a scientifically based conservation and management plan founded on the Historic Urban Landscape approach;
- preparation of an updated historical and architectural reference plan defining zones of varying cultural significance and corresponding protection regimes;
- continuation of scientific restoration of the principal Timurid monuments using

authentic materials and traditional construction techniques;

- establishment of a permanent multidisciplinary expert advisory board involving architects, conservators, archaeologists, historians, engineers, and representatives of governmental institutions;

- expansion of archaeological investigations at **Uzunkyr, Podayataktepa, Sangirtepa**, the **Kok Gumbaz** precinct, traditional craft quarters, and the northern fortification line;

- rehabilitation of the historic urban structure through restoration of traditional streets, neighbourhoods, city gates, and fortification walls;

- comprehensive inventory and legal protection of surviving examples of traditional residential architecture;

- conservation of characteristic elements of vernacular architecture, including **iwans**, **tokchas**, carved wooden beams, painted ceilings, and internal courtyards;

- rehabilitation of the historic hydraulic system through restoration of canals (**aryks**), reservoirs (**hauzes**), drainage infrastructure, and natural groundwater regulation;

- restriction of new construction incompatible with the historical character of the city and reduction of heavy vehicular traffic within the Historic Centre;

- revitalization of traditional craft districts and integration of historic craft production into sustainable cultural tourism programmes;

- creation of an integrated digital heritage information system, including GIS monitoring, three-dimensional documentation, digital archives, and virtual interpretation platforms;

- strengthening academic research, international cooperation, and professional education in the fields of heritage conservation and restoration;

- further development of sustainable cultural tourism based on the conservation of the Historic Urban Landscape;

- improvement of national legislation and management mechanisms to ensure full compliance with the provisions of the **1972 World Heritage Convention**, the **Operational**

Guidelines, and other international conservation standards.

9. Conclusions

The implementation of the proposed conservation framework will contribute to the long-term preservation of the historical, architectural, and urban heritage of Shakhriyabz, restore the spatial integrity of its Historic Centre, and improve the effectiveness of World Heritage management.

The research demonstrates that sustainable conservation requires a transition from the protection of isolated monuments toward the integrated preservation of the **Historic Urban Landscape**, encompassing monumental architecture, traditional residential neighbourhoods, the historic urban layout, cultural practices of local communities, and the surrounding natural landscape.

Such an integrated approach is fully consistent with the **UNESCO Recommendation on the Historic Urban Landscape (2011)** and contemporary international conservation doctrine. It provides a scientific basis for achieving an appropriate balance between the protection of cultural heritage and the sustainable development of the historic city.

2. Historical Development of the Urban Structure of Shakhriyabz during the Timurid Period

Archaeological investigations conducted within the **Ak Saray Palace**, the **Kok Gumbaz Mosque**, and the **Shamsiddin Kulal Memorial Complex** have revealed substantial foundation structures dating to the **Karakhanid period (11th–12th centuries)**. These findings demonstrate that an advanced tradition of monumental construction had already been established prior to the rise of the Timurid Empire. The archaeological evidence provides valuable insights into the successive stages of urban development and the transformation of the functional organization of Shakhriyabz.

By the mid-fourteenth century, following the political consolidation of **Mawarannahr** under the leadership of **Amir Temur**, Shakhriyabz had emerged as one of the principal political, administrative, and cultural centres of the Timurid Empire. Importantly, this transformation was achieved not through the

creation of an entirely new city but through the systematic redevelopment of the existing medieval urban structure. Consequently, the Timurid urban programme preserved the continuity of earlier planning traditions while substantially enhancing the city's architectural and symbolic significance.

During this period, the city's functional zoning reached its mature form. Religious and memorial complexes were concentrated within the **inner madina**, whereas the **outer madina** accommodated the principal palace and administrative complexes. This deliberate functional differentiation reflects a sophisticated level of urban planning and demonstrates the high degree of spatial organization achieved during the Timurid period.

The urban policy of Amir Temur extended far beyond the construction of monumental buildings. It involved the deliberate reconfiguration of the city's spatial composition through the establishment of new ceremonial and administrative axes. The construction of the **Ak Saray Palace**, the largest palace complex of the Timurid Empire, on the site of the former administrative centre fundamentally redefined the symbolic and political landscape of the city. Simultaneously, the religious and memorial ensembles of **Dorut Tilovat** and **Dorus Saodat** were developed as integrated complexes comprising congregational mosques, mausoleums, educational institutions, and associated religious structures. The intentional spatial separation between palace architecture and religious architecture became one of the defining characteristics of the urban planning concept of Shakhriyabz.

Although **Samarkand** remained the official capital of the Timurid Empire, Shakhriyabz retained exceptional political importance as one of the principal royal residences. Large-scale construction activities continued during the reign of **Ulugh Beg**, further reinforcing the city's architectural significance and confirming its role within the imperial network of Timurid cities.

Following the decline of Timurid political power in the late fifteenth century, the city's political influence gradually diminished.

Nevertheless, the essential components of its historical urban structure—including the medieval fortification system, city gates, principal thoroughfares, and the spatial relationships among major architectural ensembles—remained remarkably well preserved. These enduring elements ensured the continuity of the city's historical development and maintained the integrity of its urban morphology over subsequent centuries.

A significant milestone in the modern conservation history of Shakhriyabz was the establishment of the **Shakhriyabz State Historical and Architectural Museum-Reserve** in 1996. This initiative represented an important shift in the national heritage policy of the Republic of Uzbekistan, introducing a protected area that encompassed not only individual monuments but also the historic urban structure and its associated cultural landscape. The designation created the institutional basis for scientifically informed conservation and regeneration of the Historic Centre.

Priority was given to integrated conservation, scientific restoration, and preventive maintenance of the principal monuments. Although the physical condition of individual monuments varied considerably, the implementation of long-term state conservation programmes significantly stabilized their structural condition and improved their prospects for sustainable preservation.

Between **1950 and 1999**, comprehensive restoration campaigns were carried out at the principal architectural monuments of the Historic Centre. These programmes included structural stabilization, conservation of archaeological remains, restoration of architectural decoration and mural paintings, reinforcement of foundations, improvement of protective zones, and engineering measures aimed at mitigating adverse hydrogeological conditions. The principal interventions focused on the **Ak Saray Palace, Dorut Tilovat, Dorus Saodat, Kok Gumbaz Mosque**, and the mausoleums of **Shamsiddin Kulal** and **Gumbazi Sayidon**.

Following completion of these restoration programmes, a permanent monitoring system

for cultural heritage was established. Monitoring was conducted by the national heritage protection authorities and included regular assessment of structural stability, architectural decoration, and hydrogeological conditions, with particular emphasis on groundwater fluctuations and their effects on the foundations of historic monuments. This systematic monitoring represented one of the earliest examples of preventive conservation applied to a major World Heritage property in Uzbekistan.

Scientific Interpretation

The historical evolution of Shakhriyabz demonstrates that the city's Outstanding Universal Value is expressed not solely through its monumental architecture but through the interaction between monuments, traditional residential quarters, defensive structures, and the historic street network. This integrated spatial organization constitutes the defining characteristic of the Historic Urban Landscape and distinguishes Shakhriyabz from other Timurid cities.

The continuity of urban development from the Karakhanid period through the Timurid era and into the modern period illustrates a rare example of long-term urban evolution in Central Asia. Consequently, conservation strategies should prioritize the preservation of historical spatial relationships rather than focusing exclusively on individual monuments.

3. Conservation of the Historic Centre of Shakhriyabz: Challenges, Risk Factors, and Urban Transformation

3.1. Conservation of the Historic Urban Fabric

The conservation of the Historic Centre of Shakhriyabz should be understood as the preservation of an integrated urban system rather than the protection of isolated architectural monuments. The significance of the property derives from the spatial interaction of monumental Timurid architecture, traditional residential quarters, archaeological remains, medieval fortifications, the historic street network, and the natural landscape. Together, these components constitute the **Historic Urban Landscape**

(HUL) and collectively express the property's **Outstanding Universal Value (OUV)**.

Although the principal Timurid monuments have largely retained their structural integrity, the historical urban environment has experienced considerable transformation during recent decades. The most significant challenge has been the gradual fragmentation of the traditional urban fabric, resulting in the weakening of spatial relationships that historically connected monumental architecture with the surrounding residential environment. Consequently, contemporary conservation policy must address not only the physical condition of

individual monuments but also the preservation of the broader urban context in which these monuments acquired their historical meaning.

3.2. Risk Factors Affecting the Historic Centre

The present investigation indicates that the conservation of the Historic Centre is influenced by a complex interaction of environmental, anthropogenic, institutional, and socio-economic factors. Their cumulative impact extends beyond the physical deterioration of monuments and directly affects the authenticity, integrity, and long-term sustainability of the World Heritage property.

Table 2. Principal Risk Factors Affecting the Conservation of the Historic Centre of Shakhrisyabz

Category	Main threats	Heritage impact
Anthropogenic	Intensive urban development; incompatible construction; demolition of traditional housing; disruption of historical spatial relationships	Loss of urban authenticity and fragmentation of the Historic Urban Landscape
Environmental	Climate change; erosion; atmospheric pollution; temperature fluctuations	Accelerated deterioration of historic building materials
Geological and hydrogeological	Earthquakes; groundwater rise; inadequate drainage	Foundation instability and structural deformation
Biological	Vegetation, microorganisms, insects and birds	Biodeterioration of construction materials and decorative finishes
Urban planning	Inappropriate redevelopment; vacant urban spaces; incompatible infrastructure	Loss of historical spatial coherence
Institutional	Insufficient funding; fragmented monitoring; inconsistent conservation management	Reduced effectiveness of long-term conservation strategies
Tourism	Increasing visitor pressure; intensive recreational use	Growing physical and functional pressure on monuments and public spaces

The analysis demonstrates that the principal threat to the Outstanding Universal Value of Shakhrisyabz is not the deterioration of individual monuments but the progressive

transformation of the historic urban structure itself. This finding confirms the necessity of implementing integrated conservation policies based on the principles of the **Historic Urban**

Landscape Recommendation (UNESCO, 2011) rather than traditional monument-oriented conservation approaches.

3.3. Urban Transformation of the Historic Centre

The evolution of urban planning policy in Shakhriyabz reflects changing approaches to heritage conservation over nearly a century.

twenty-first century fundamentally altered the spatial organization of the Historic Centre.

Table 3. Major Phases in the Urban Transformation of the Historic Centre

Stage	Period	Principal intervention	Heritage impact
I	1928	Initial Soviet modernization	Limited impact on the historical structure
II	1962	First comprehensive Master Plan	Regulation of urban development within the historic city
III	1982	Establishment of the Historical and Architectural Reserve	Institutionalization of scientific conservation
IV	2000	UNESCO World Heritage inscription	International recognition of Outstanding Universal Value
V	2009	Adoption of the new Master Plan	Intensification of tourism-oriented development
VI	2014	Comprehensive urban reconstruction	Major transformation of the historical urban fabric
VII	2016	UNESCO assessment and inscription on the List of World Heritage in Danger	Transition toward integrated conservation strategies

The inscription of the Historic Centre of Shakhriyabz on the UNESCO World Heritage List in **2000** represented international recognition of the city's exceptional cultural significance under **criteria (iii) and (iv)**. Criterion (iii) acknowledges Shakhriyabz as an exceptional testimony to the cultural traditions and architectural achievements of the Timurid civilization, while criterion (iv) recognizes the property as an outstanding example of medieval urban planning and monumental architecture.

The World Heritage property encompasses approximately **240 ha**, surrounded by an **82-ha buffer zone**, and includes monumental Timurid ensembles, archaeological remains, traditional residential

While early interventions were primarily directed toward modernization of urban infrastructure, subsequent policies increasingly recognized the importance of protecting the historical urban environment. Nevertheless, the implementation of large-scale redevelopment projects during the early

neighbourhoods, and the historic street network. These elements collectively form a coherent Historic Urban Landscape whose significance extends beyond individual monuments to encompass the historical organization of the city as a whole.

3.4. Traditional Residential Architecture as an Attribute of Outstanding Universal Value

Traditional residential architecture constituted one of the defining components of the Historic Centre prior to the implementation of large-scale reconstruction programmes. The urban fabric consisted predominantly of one- and two-storey **sinch-frame** houses with flat earthen roofs arranged within traditional

mahallas and **guzars** interconnected by narrow winding streets.

The spatial organization of these neighbourhoods reflected centuries of adaptation to climatic conditions, social traditions, and patterns of community life. Residential buildings were organized around enclosed courtyards containing **iwans**, domestic service spaces, gardens, and **mehmonkhonas** (guest reception rooms), while neighbourhood mosques functioned as religious, administrative, and social centres.

Although many traditional houses have been demolished during recent redevelopment, the surviving examples continue to provide important evidence of vernacular architecture and urban life in the Shakhriyabz Oasis. Their conservation therefore represents an essential prerequisite for preserving the authenticity of the Historic Urban Landscape.

Scientific Discussion

The results indicate that conservation of the Historic Centre cannot be limited to safeguarding monumental architecture alone. Instead, the preservation of Outstanding Universal Value requires maintaining the historical relationships among monuments, residential quarters, streets, open spaces, and cultural traditions.

This conclusion corresponds closely with the **UNESCO Historic Urban Landscape (HUL) Recommendation**, which emphasizes the conservation of historic cities as dynamic cultural landscapes rather than collections of individual monuments. In the case of Shakhriyabz, the loss of traditional residential quarters has had a greater impact on the perception of the World Heritage property than the physical deterioration of its principal Timurid monuments. Consequently, future conservation policies should prioritize the rehabilitation of the historical urban structure alongside the continued scientific conservation of monumental architecture.

4. Urban Reconstruction, Heritage Conservation, and the Preservation of Outstanding Universal Value

4.1. Evolution of State Conservation Policy

The protection of the Historic Centre of Shakhriyabz has evolved through several successive stages, reflecting broader changes in the national heritage policy of the Republic of Uzbekistan. Since the 1970s, conservation efforts have gradually progressed from the protection of individual architectural monuments toward a more comprehensive understanding of the historic city as an integrated cultural landscape.

An important milestone was the inclusion of Shakhriyabz in the official register of historic cities of the Uzbek SSR in **1973**, accompanied by the designation of its principal monuments as protected cultural heritage. Although conservation priorities during this period remained focused primarily on Samarkand, Bukhara, and Khiva, the first comprehensive restoration programmes for Shakhriyabz established the methodological foundation for subsequent heritage management.

A new phase began with the adoption of the **Master Plan of Shakhriyabz** in **2009**, which defined the city's long-term development strategy until 2025. The Master Plan retained many principles of the earlier planning scheme while introducing extensive modernization of engineering infrastructure, transportation systems, and public spaces. However, implementation of this programme also initiated profound changes to the historic urban fabric that would later become the focus of international concern.

4.2. Large-Scale Reconstruction of the Historic Centre

Prior to implementation of the reconstruction programme, a comprehensive architectural inventory was undertaken, including measured surveys, photographic documentation, and preparation of conservation records for individual buildings. Structures considered structurally unsafe were scheduled for demolition, whereas architecturally significant elements were documented and preserved for potential reuse during future restoration projects.

The reconstruction strategy sought to reconcile modernization with heritage conservation by retaining traditional architectural principles while introducing

contemporary engineering infrastructure. In practice, however, the scale of redevelopment substantially exceeded the replacement of deteriorated housing and resulted in extensive transformation of the historical urban fabric.

The programme included restoration of the principal Timurid monuments, modernization of drainage systems and engineering infrastructure, rehabilitation of the historic **Hovuzi Mardon** reservoir, enhancement of public spaces, and creation of pedestrian connections linking the major architectural ensembles of **Ak Saray**, **Dorus Saodat**, and **Dorut Tilovat**. Transportation within the Historic Centre was reorganized through restrictions on private vehicles and the introduction of environmentally sustainable public transport.

Construction activities were undertaken under continuous archaeological supervision, resulting in the discovery and conservation of previously unknown archaeological remains, including the foundations of a medieval bathhouse dating from the thirteenth–fourteenth centuries. Simultaneously, unauthorized buildings located adjacent to major monuments were removed, and newly created open spaces were adapted for public use and tourism infrastructure.

Despite these achievements, the programme also resulted in extensive demolition of traditional residential neighbourhoods. Consequently, large areas of the historic urban fabric were irreversibly altered, substantially reducing the authenticity of the World Heritage property and disrupting the historical relationships between monuments and their surrounding urban context.

4.3. UNESCO and ICOMOS Evaluation

The transformation of the Historic Centre attracted increasing international attention. In **June 2016**, the **UNESCO World Heritage Centre**, together with **ICOMOS**, expressed concern regarding the impact of recent reconstruction activities on the authenticity, integrity, and Outstanding Universal Value of the property. The State Party was requested to undertake a comprehensive Heritage Impact Assessment and to submit detailed

documentation concerning the interventions carried out within the World Heritage property.

A joint **Reactive Monitoring Mission** subsequently evaluated the condition of the Historic Centre, focusing on changes in the urban structure, the preservation of architectural heritage, and the conformity of conservation works with internationally accepted conservation principles. The mission concluded that, although the principal Timurid monuments remained largely intact, substantial modifications had occurred within the surrounding historic urban fabric.

Following examination of the monitoring reports during the **40th Session of the World Heritage Committee (Istanbul, 2016)**, the **Historic Centre of Shakhrisyabz** was inscribed on the **List of World Heritage in Danger** (Decision **40 COM 7B.48**). The Committee determined that the extensive alteration of the historical urban structure had resulted in the loss of important attributes conveying the property's Outstanding Universal Value.

Subsequent UNESCO–ICOMOS monitoring missions undertaken in **2016** and **2019** confirmed the scale of the transformation. Their reports documented the relocation of more than **2,000 residents**, significant alteration of the traditional **mahalla** structure, and the application of restoration techniques that were not always fully consistent with internationally accepted principles of scientific conservation.

These findings led to the introduction of a moratorium on further construction pending preparation of a comprehensive conservation strategy. Additional investigations included comparative analysis of historical maps and contemporary satellite imagery to evaluate changes in the Historic Urban Landscape and to identify priorities for future rehabilitation.

4.4. Reassessment of Outstanding Universal Value

The present research confirms that the principal Timurid monuments continue to preserve their architectural integrity and remain the dominant components of the World Heritage property. Nevertheless, the analysis demonstrates that Outstanding Universal Value depends not only upon the survival of

monumental architecture but equally upon the preservation of the historic urban fabric in which these monuments are embedded.

The transformation of traditional residential neighbourhoods has weakened the historical relationships among monuments, streets, open spaces, and community structures that historically defined the character of Shakhriyabz. Consequently, the principal loss concerns the integrity of the Historic Urban Landscape rather than the physical conservation of individual monuments.

This conclusion corresponds closely with the findings of UNESCO and ICOMOS, which emphasize that the attributes conveying Outstanding Universal Value include both monumental architecture and the broader urban context within which it developed. The case of Shakhriyabz therefore illustrates the necessity of applying landscape-based approaches to urban heritage conservation, particularly within living historic cities undergoing rapid socio-economic transformation.

4.5. Scientific Discussion

The experience of Shakhriyabz demonstrates that heritage conservation and urban development should not be regarded as mutually exclusive objectives. Rather, sustainable management of World Heritage properties requires balancing infrastructure modernization with the preservation of historical authenticity, spatial integrity, and community identity.

The reconstruction programme achieved significant improvements in engineering infrastructure, transportation, and tourism facilities. However, these benefits were accompanied by substantial transformation of the historic urban landscape. This outcome highlights the importance of integrating **Heritage Impact Assessment (HIA)** into urban planning before implementing major redevelopment projects within World Heritage properties.

From an international perspective, the case of Shakhriyabz provides an important example of the challenges faced by rapidly developing historic cities. It demonstrates that safeguarding Outstanding Universal Value

requires conservation policies extending beyond the protection of individual monuments to include preservation of the historic urban fabric, traditional neighbourhoods, cultural landscapes, and the social practices that sustain their historical significance.

5. Discussion

5.1. Reconsidering Outstanding Universal Value through the Historic Urban Landscape Approach

The findings of this study demonstrate that the conservation challenges currently faced by the Historic Centre of Shakhriyabz extend beyond the preservation of individual architectural monuments. Instead, they concern the maintenance of a historically evolved urban system in which monumental architecture, traditional residential neighbourhoods, archaeological remains, public spaces, defensive structures, and cultural practices collectively express the property's **Outstanding Universal Value (OUV)**.

This interpretation is consistent with the **UNESCO Recommendation on the Historic Urban Landscape (2011)**, which recognizes historic cities as dynamic socio-cultural systems rather than static collections of monuments. Within this framework, the significance of Shakhriyabz derives from the interaction between its physical fabric and the historical processes that shaped its urban morphology over more than two millennia.

The present research confirms that the principal Timurid monuments have generally retained their architectural integrity. However, the transformation of the traditional residential environment has substantially weakened the historical relationships that originally connected these monuments with the broader urban context. Consequently, the principal challenge lies not in restoring isolated buildings but in recovering the historical coherence of the urban landscape.

5.2. Comparison with Other UNESCO World Heritage Cities

The case of Shakhriyabz differs significantly from that of other historic cities of Central Asia inscribed on the UNESCO World Heritage List.

In **Samarkand**, the Outstanding Universal Value is primarily associated with the concentration of monumental architectural ensembles integrated within a continuously evolving historic city. Although extensive modernization has taken place, the principal spatial relationships among Registan Square, Bibi-Khanym Mosque, Shah-i-Zinda, and Gur-e Amir have largely been preserved.

Similarly, **Bukhara** has retained a remarkably complete historic urban fabric in which traditional residential quarters continue to define the setting of major monuments. The conservation strategy implemented in Bukhara therefore focuses on maintaining the continuity of the historic urban environment rather than on isolated restoration projects.

Khiva, by contrast, represents an enclosed fortified city (**Itchan Kala**) whose clearly defined boundaries have facilitated the preservation of its medieval urban structure.

Shakhrisyabz presents a fundamentally different conservation challenge. Unlike these cities, its monumental Timurid complexes are spatially dispersed throughout the historic centre and derive much of their significance from their historical relationships with the surrounding residential quarters. Consequently, the loss of traditional neighbourhoods has had a proportionally greater impact on the perception of the World Heritage property than would be expected in more compact urban ensembles.

From an international perspective, comparable conservation challenges may be observed in **Historic Cairo (Egypt)**, **Yazd (Iran)**, **Fez (Morocco)**, and **Lijiang (China)**, where rapid urban transformation has similarly required balancing infrastructure modernization with the preservation of historical urban morphology. These comparisons indicate that Shakhrisyabz should be interpreted within the broader context of living historic cities experiencing contemporary socio-economic change rather than solely within the regional framework of Central Asian urbanism.

5.3. Urban Morphology as the Primary Heritage Attribute

One of the principal conclusions of this research is that **urban morphology itself constitutes a heritage attribute**.

The historical value of Shakhrisyabz is expressed through:

- the spatial hierarchy of monumental ensembles;
- the historical street network;
- traditional **mahallas**;
- defensive fortifications;
- archaeological stratification;
- visual corridors;
- historical relationships between public and residential spaces.

Collectively, these elements create the city's historical identity. Their significance extends beyond individual architectural objects and reflects centuries of continuous urban development.

Accordingly, conservation policies based exclusively on monument restoration cannot ensure the preservation of Outstanding Universal Value. Equal attention must be devoted to maintaining the historical spatial organization of the city and the cultural processes that continue to shape its urban landscape.

5.4. Scientific Contribution of the Research

The present study contributes to the international discourse on World Heritage conservation in several respects.

First, it proposes an integrated methodology for assessing the historical, architectural, and urban significance of Shakhrisyabz through the combined analysis of archaeological evidence, historical cartography, architectural surveys, urban morphology, and UNESCO documentation.

Second, the research demonstrates that assessment of World Heritage properties should extend beyond the conservation status of individual monuments to include evaluation of historical spatial relationships and the integrity of the urban landscape.

Third, the study develops a conservation framework that integrates the principles of the Historic Urban Landscape approach with traditional architectural conservation methods. Such an approach may serve as a

methodological model for other historic cities in Central Asia facing similar challenges associated with urban development and heritage protection.

Finally, the findings contribute to the broader international discussion concerning the sustainable management of living historic cities and provide evidence supporting closer integration of urban planning, heritage conservation, and community participation within World Heritage management systems.

5.5. Limitations of the Study

Several limitations should be acknowledged.

The analysis is based primarily on historical documentation, archaeological investigations, architectural surveys, urban-planning materials, and UNESCO monitoring reports. Although these sources provide a comprehensive basis for evaluating the historical development of the Historic Centre, future studies would benefit from integrating advanced geospatial technologies, including Geographic Information Systems (GIS), remote sensing, Building Information Modelling for Heritage (HBIM), and Digital Twin technologies.

Furthermore, quantitative analyses of visitor carrying capacity, socio-economic indicators, and climate-related impacts on earthen architecture were beyond the scope of the present investigation and should be addressed in future interdisciplinary research.

5.6. Future Research Directions

Future investigations should focus on several complementary research priorities:

- development of high-resolution GIS models of the historical urban morphology;
- creation of HBIM-based documentation for the principal Timurid monuments;
- three-dimensional reconstruction of lost sections of the historical urban fabric;
- Heritage Impact Assessment (HIA) for future urban development projects;
- long-term monitoring of groundwater dynamics and their influence on earthen architecture;
- application of Digital Twin technologies for heritage management;

- assessment of climate resilience strategies for historic earthen cities of Central Asia;

- comparative analyses of management practices across UNESCO World Heritage cities within the Silk Roads cultural corridor.

These research directions would strengthen the scientific basis for sustainable heritage management and contribute to the development of internationally applicable conservation methodologies.

Scientific Significance

The principal contribution of this research is the demonstration that the **Outstanding Universal Value of Shakhriyabz resides not only in its Timurid monuments but in the historical urban system that connects architecture, archaeology, traditional neighbourhoods, public spaces, and cultural memory into a single Historic Urban Landscape.**

This conceptual perspective represents the central scientific argument of the article and aligns closely with current international approaches to World Heritage conservation.

2. Materials and Methods

2.1. Research Design

This study adopts an interdisciplinary research design that integrates methods from architectural history, urban morphology, archaeology, cultural heritage conservation, and urban planning. Such an approach enables a comprehensive assessment of the historical evolution of the Shakhriyabz Oasis and provides a scientific basis for evaluating the current condition of its historical, architectural, and urban heritage.

The research focuses on the Historic Centre of Shakhriyabz, a UNESCO World Heritage property, and examines the evolution of its urban structure, the conservation of its architectural heritage, and the impact of recent urban transformation on its Outstanding Universal Value (OUV).

2.2. Research Materials

The investigation is based on the integration of multiple categories of primary and secondary sources.

The principal research materials include:

- archaeological excavation reports and published archaeological investigations;
- historical maps and urban plans dating from different periods;
- archival architectural drawings and restoration documentation;
- historical photographs and aerial imagery;
- field surveys conducted within the Historic Centre of Shakhriyabz;
- restoration reports prepared by national conservation institutions;
- legal documents regulating cultural heritage protection in the Republic of Uzbekistan;
- UNESCO World Heritage Committee Decisions;
- Reactive Monitoring Mission reports prepared jointly by UNESCO and ICOMOS;
- scientific publications concerning the history, architecture, archaeology, and urban development of the Shakhriyabz Oasis.

The integration of these sources made it possible to reconstruct the historical evolution of the city and to identify the principal factors influencing the preservation of its historical urban landscape.

2.3. Research Methods

To achieve the objectives of the study, several complementary research methods were employed.

Historical Method

Historical analysis was used to investigate the chronological development of the urban structure of Shakhriyabz from the Early Iron Age through the Timurid period to the present day. Documentary sources, historical narratives, archival records, and previous scholarly research were critically examined to reconstruct the principal stages of urban evolution.

Historical-Architectural Analysis

Architectural analysis focused on the evolution of monumental ensembles, construction techniques, spatial composition, and the preservation of architectural authenticity. Particular attention was devoted to the Timurid architectural complexes, including **Ak Saray Palace**, **Dorut Tilovat**, **Dorus Saodat**, and the **Kok Gumbaz Mosque**.

Urban Morphological Analysis

Urban morphological analysis was applied to investigate changes in the historical street network, neighbourhood structure, land use patterns, and spatial relationships among architectural monuments. Comparative analysis of historical maps and contemporary urban plans enabled identification of transformations affecting the integrity of the Historic Urban Landscape.

Comparative Analysis

Comparative analysis was undertaken to evaluate similarities and differences between Shakhriyabz and other UNESCO World Heritage cities, including Samarkand, Bukhara, Khiva, Yazd, Historic Cairo, Fez, and Lijiang. This comparison provided an international context for interpreting the conservation challenges facing Shakhriyabz.

Heritage Impact Assessment

The research incorporates the principles of **Heritage Impact Assessment (HIA)** through qualitative evaluation of the influence of recent urban development on the authenticity, integrity, and Outstanding Universal Value of the World Heritage property. The assessment was informed by UNESCO Operational Guidelines and ICOMOS recommendations.

Spatial Analysis

Spatial analysis was conducted using historical cartography, urban planning documentation, and archaeological evidence to reconstruct the historical configuration of the city and identify areas where significant urban transformation has occurred.

2.4. Analytical Framework

The analytical framework adopted in this research is based on internationally recognized principles for World Heritage conservation.

The assessment of the Historic Centre was structured around five interrelated analytical dimensions:

1. **Historical evolution** – reconstruction of the principal stages in urban development.
2. **Architectural significance** – evaluation of the architectural, artistic, and technological importance of monumental ensembles.

3. **Urban morphology** – analysis of the historical urban structure and spatial organization.

4. **Conservation assessment** – evaluation of authenticity, integrity, and the state of preservation.

5. **Management and sustainability** – analysis of contemporary conservation policies in relation to UNESCO recommendations and the Historic Urban Landscape approach.

This integrated framework enables assessment of the Historic Centre as a living cultural landscape rather than as a collection of isolated monuments.

2.5. Conceptual Framework

The research is theoretically grounded in the principles established by:

- the **1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage**;
- the **Operational Guidelines for the Implementation of the World Heritage Convention**;
- the **UNESCO Recommendation on the Historic Urban Landscape (2011)**;
- the **ICOMOS Principles for the Conservation of Heritage Sites**;
- internationally recognized approaches to urban morphology, cultural landscape studies, and sustainable heritage management.

These international frameworks provide the methodological basis for evaluating the conservation of Outstanding Universal Value within living historic cities.

2.6. Research Workflow

The research was conducted through six consecutive stages:

1. Collection and review of archival, historical, archaeological, and legislative sources.
2. Historical and architectural analysis of the development of the Shakhriyabz Oasis.
3. Comparative analysis of historical maps, urban plans, and archaeological evidence.
4. Assessment of recent urban transformation and its impact on Outstanding Universal Value.
5. Comparative evaluation of international conservation experience.

6. Development of recommendations for the sustainable conservation and management of the Historic Centre.

2.7. Methodological Contribution

Unlike previous studies that focused primarily on individual monuments or archaeological discoveries, the present research proposes an integrated methodology combining historical analysis, architectural investigation, urban morphology, and international heritage management principles.

This interdisciplinary methodology allows the Historic Centre of Shakhriyabz to be interpreted as a **Historic Urban Landscape**, where monumental architecture, archaeological remains, traditional residential neighbourhoods, historical spatial organization, and cultural practices function as interconnected attributes of Outstanding Universal Value.

The proposed methodological framework may also be applied to other historic cities of Central Asia facing similar challenges associated with urban transformation, heritage conservation, and sustainable development.

6. Integrated Conservation Framework for the Historic Centre of Shakhriyabz

6.1. Towards an Integrated Heritage Conservation Model

The findings of this research indicate that the long-term conservation of the Historic Centre of Shakhriyabz requires a transition from monument-oriented conservation toward an integrated, landscape-based management strategy. Such an approach recognizes the historic city as a complex socio-cultural system in which tangible and intangible heritage, urban morphology, archaeological resources, and the natural environment function as interconnected components of a single heritage entity.

The proposed framework is based on the principles of the **UNESCO Recommendation on the Historic Urban Landscape (2011)** and extends them through the incorporation of archaeological evidence, historical urban morphology, and heritage management practices specifically adapted to the conditions of Central Asian historic cities.

Rather than considering architectural monuments as isolated objects, the proposed

framework treats them as integral components of an evolving urban landscape whose significance depends upon the preservation of historical spatial relationships and cultural continuity.

6.2. Components of Outstanding Universal Value

The research demonstrates that the Outstanding Universal Value of the Historic Centre is expressed through the interaction of several interdependent heritage attributes.

Monumental Architectural Heritage

The Timurid architectural ensembles—including **Ak Saray Palace**, **Dorut Tilovat**, **Dorus Saodat**, and the **Kok Gumbaz Mosque**—constitute the primary architectural attributes of Outstanding Universal Value. Their significance derives from exceptional architectural design, construction technology, artistic decoration, and historical associations with the Timurid Empire.

Historical Urban Morphology

The medieval street network, neighbourhood organization, historical visual corridors, and spatial hierarchy of public spaces collectively represent an essential component of the property's historical authenticity.

Traditional Residential Fabric

Traditional **mahallas**, courtyard houses, and vernacular construction techniques provide the cultural context necessary for understanding the monumental architecture. Their conservation contributes directly to maintaining historical continuity within the Historic Urban Landscape.

Archaeological Heritage

Subsurface archaeological remains preserve evidence of successive stages of urban development extending from the Early Iron Age through the Timurid period. These resources constitute an irreplaceable source of historical information and should be considered an integral component of urban conservation.

6.4. Proposed Management Model

The proposed management framework integrates five complementary dimensions.

Cultural Landscape

The historical relationship between the urban fabric, irrigation systems, surrounding agricultural landscape, and natural topography contributes significantly to the historical identity of the Shakhriyabz Oasis.

6.3. Principles of the Proposed Conservation Framework

Based on the results of this investigation, six fundamental principles are proposed.

Principle 1. Integrity of the Historic Urban Landscape

Conservation policies should prioritize preservation of the historical urban structure rather than focusing exclusively on individual monuments.

Principle 2. Authenticity

Restoration should preserve original construction materials, traditional building techniques, historical design, and documentary evidence whenever possible.

Principle 3. Archaeology-Led Urban Planning

Urban development within the World Heritage property should be preceded by archaeological investigation and Heritage Impact Assessment.

Principle 4. Community Participation

Local communities should participate actively in planning, conservation, and management processes, recognizing that living traditions constitute an essential dimension of Outstanding Universal Value.

Principle 5. Sustainable Tourism

Tourism development should enhance heritage conservation without compromising historical authenticity or community life.

Principle 6. Adaptive Heritage Management

Conservation strategies should remain flexible and continuously updated through monitoring, scientific research, and international cooperation.

Dimension	Primary Objective
Heritage Conservation	Preservation of monuments, archaeological sites, and traditional urban fabric
Urban Planning	Protection of historical spatial organization and visual integrity
Environmental Management	Hydrogeological protection, landscape conservation, and climate adaptation
Community Development	Preservation of traditional neighbourhoods and intangible heritage
Sustainable Tourism	Balanced visitor management and local economic development

These dimensions should function as a unified management system rather than as independent administrative sectors.

6.5. Heritage Management Cycle

The research proposes the following adaptive management cycle for the Historic Centre:

Documentation → Assessment → Conservation Planning → Implementation → Monitoring → Review → Adaptive Improvement

This cyclic approach enables continuous refinement of conservation strategies in response to changing environmental, social, and economic conditions.

6.6. Strategic Priorities

Implementation of the proposed framework should concentrate on the following priorities:

- preservation of the historical street network and traditional neighbourhood structure;
- rehabilitation of surviving sections of the medieval fortification system;
- conservation of archaeological resources through preventive protection;
- restoration of historical hydraulic infrastructure;
- strengthening hydrogeological monitoring;

- establishment of a GIS-based heritage information system;

- implementation of Heritage Impact Assessment for all future development projects;

- integration of HBIM and digital documentation into monument conservation;

- enhancement of interdisciplinary collaboration between archaeologists, architects, urban planners, engineers, historians, and conservation specialists;

- expansion of international cooperation within UNESCO and ICOMOS programmes.

6.7. International Applicability

Although developed for the Historic Centre of Shakhriyabz, the proposed framework has broader methodological significance.

Many historic cities inscribed on the UNESCO World Heritage List face similar challenges associated with urban expansion, infrastructure modernization, tourism development, and climate change. The integrated methodology presented in this study may therefore contribute to conservation planning in other historic cities of Central Asia and along the Silk Roads, where the preservation of historical urban morphology is fundamental to maintaining Outstanding Universal Value.

The framework may also support future revisions of Management Plans, Heritage Impact

Assessments, and nomination dossiers prepared for World Heritage properties.

The proposed conservation concept can be summarized as follows:

6.8. Conceptual Model

Outstanding Universal Value (OUV)		
Historic Urban Landscape (HUL)		
Monumental Architecture	Historic Urban Morphology	Archaeological Heritage
Traditional Residential Fabric		
Community Participation		
Sustainable Heritage Management		
Long-Term Conservation of World Heritage		

Scientific Contribution of the Framework

The principal methodological contribution of this study is the development of an **integrated conservation framework** that combines historical-architectural analysis, urban morphology, archaeological evidence, and UNESCO heritage management principles into a single analytical model.

Unlike conventional monument-centred conservation approaches, the proposed framework recognizes that the Outstanding Universal Value of Shakhriyabz is embedded within the historical relationships among architecture, urban form, archaeological stratigraphy, cultural traditions, and landscape. Consequently, sustainable conservation must address the city as a living and evolving historic urban system rather than as a collection of isolated monuments.

7. Conclusions

7.1. Principal Findings

This study has examined the historical evolution, architectural development, and contemporary conservation of the Historic Centre of Shakhriyabz, with particular emphasis on the impact of recent urban transformation on its Outstanding Universal Value (OUV). The results demonstrate that the significance of the property extends beyond its monumental Timurid architecture and is fundamentally rooted in the historical relationships between monuments, traditional residential neighbourhoods, archaeological remains, the medieval street network, and the surrounding cultural landscape.

The interdisciplinary methodology employed in this research enabled a comprehensive assessment of the Historic Centre through the integration of archaeological evidence, architectural analysis, urban morphology, historical cartography, and UNESCO documentation. This approach provides a more holistic understanding of the mechanisms governing the preservation and transformation of historic cities than studies focused exclusively on individual monuments.

The research further demonstrates that the principal conservation challenge is not the structural condition of the Timurid monuments themselves, which generally remain well preserved, but the fragmentation of the historic urban fabric and the consequent loss of spatial integrity. This finding confirms that Outstanding Universal Value is expressed through the Historic Urban Landscape as an integrated cultural system.

7.2. Scientific Contribution

The study makes several contributions to the field of cultural heritage conservation.

First, it develops an integrated methodological framework for analysing the historical, architectural, archaeological, and urban dimensions of a World Heritage property.

Second, it demonstrates the applicability of the Historic Urban Landscape approach to the conservation of medieval cities in Central Asia.

Third, the research identifies the historical urban morphology of Shakhriyabz as a primary heritage attribute whose conservation is essential for maintaining the property's Outstanding Universal Value.

Finally, the proposed Integrated Conservation Framework provides a transferable methodological model that may support the management of other historic cities facing similar challenges associated with urban transformation and sustainable development.

7.3. Practical Implications

The findings have direct implications for heritage management.

The proposed recommendations may assist:

- governmental heritage authorities;
- UNESCO World Heritage Centre;
- ICOMOS advisory bodies;
- urban planners;
- architects and conservation specialists;
- researchers working on Silk Roads heritage;
- local municipalities responsible for historic city management.

The proposed framework may also contribute to the preparation of revised Management Plans, Heritage Impact Assessments (HIA), and future World Heritage nomination dossiers.

7.4. Final Statement

The Historic Centre of Shakhriyabz represents one of the most significant surviving examples of Timurid urban civilization. Its long-term preservation depends upon recognizing that the city's Outstanding Universal Value is embodied not only in its monumental architecture but also in its historical urban structure, archaeological stratigraphy, traditional neighbourhoods, and cultural landscape.

Future conservation strategies should therefore integrate architectural conservation, urban planning, archaeological research, environmental management, and community participation within a unified framework consistent with the principles of the UNESCO World Heritage Convention and the Historic Urban Landscape Recommendation.

The methodology proposed in this study provides a scientific basis for achieving this objective and offers a practical model for the sustainable conservation of historic cities throughout Central Asia and other regions

facing comparable heritage management challenges.

REFERENCES (Part I)

International Legal Framework, UNESCO, ICOMOS and National Legislation

1. Constitution of the Republic of Uzbekistan. (2023). Tashkent, Uzbekistan.

2. Law of the Republic of Uzbekistan. (2001, as amended). *On the Protection and Use of Cultural Heritage Objects*. Tashkent, Uzbekistan.

3. Urban Planning Code of the Republic of Uzbekistan. (2021). Tashkent, Uzbekistan.

4. Cabinet of Ministers of the Republic of Uzbekistan. (2013). Resolution No. 294 of 1 November 2013. *Programme for the Development of Tourism in Kashkadarya Region for 2013–2015*. Tashkent, Uzbekistan.

5. Cabinet of Ministers of the Republic of Uzbekistan. (2014). Resolution No. 31 of 20 February 2014. *Programme of Comprehensive Development and Reconstruction of the City of Shakhriyabz*. Tashkent, Uzbekistan.

UNESCO

6. UNESCO. (1972). *Convention Concerning the Protection of the World Cultural and Natural Heritage*. Paris: UNESCO.

7. UNESCO World Heritage Centre. (2025). Operational Guidelines for the Implementation of the World Heritage Convention (WHC.25/01). Paris: UNESCO World Heritage Centre.

8. UNESCO. (2011). *Recommendation on the Historic Urban Landscape*. Paris: UNESCO.

9. UNESCO World Heritage Centre. (2000). *Historic Centre of Shakhriyabz (Uzbekistan): Nomination File*. Paris: UNESCO.

10. UNESCO World Heritage Committee. (2016). *Decision 40 COM 7B.48: Historic Centre of Shakhriyabz (Uzbekistan)*. Istanbul.

11. UNESCO World Heritage Committee. (2017). *Decision 41 COM 7A.36*. Kraków.

12. UNESCO World Heritage Committee. (2018). *Decision 42 COM 7A.40*. Manama.

13. UNESCO World Heritage Committee. (2019). *Decision 43 COM 7A.44*. Baku.

14. UNESCO World Heritage Committee. (2021). *Decision 44 COM 7A.49*. Fuzhou.

15. UNESCO World Heritage Committee. (2023). *Decision 45 COM 7A.30*. Riyadh.

16. UNESCO World Heritage Committee. (2025). *Decision 47 COM: Historic Centre of Shakhriyabz*. Paris.

UNESCO Monitoring

17. UNESCO & ICOMOS. (2016). *Reactive Monitoring Mission Report: Historic Centre of Shakhriyabz (Uzbekistan)*. Paris: UNESCO.

18. UNESCO & ICOMOS. (2019). *State of Conservation Report: Historic Centre of Shakhriyabz (Uzbekistan)*. Paris: UNESCO.

ICOMOS

19. ICOMOS. (1964). *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)*. Venice.

20. ICOMOS. (1987). *Charter for the Conservation of Historic Towns and Urban Areas (Washington Charter)*. Washington, DC.

21. ICOMOS. (2005). *Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas*. Xi'an.

22. Australia ICOMOS. (2013). *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. Burwood, Australia.

International Heritage Management

23. Institut Paris Region. (2022). *Shakhriyabz Heritage Conservation Strategy*. Paris.

24. Bandarin, F., & van Oers, R. (2012). *The Historic Urban Landscape: Managing Heritage in an Urban Century*. Oxford: Wiley-Blackwell. Print ISBN: **9780470655740**; Online ISBN: **9781119968115**. DOI: **10.1002/9781119968115**.

25. Bandarin, F., & van Oers, R. (Eds.). (2015). *Reconnecting the City: The Historic Urban Landscape Approach and the Future of Urban Heritage*. Oxford: Wiley-Blackwell. Print ISBN: **9781118383988**; Online ISBN: **9781118383940**. DOI: **10.1002/9781118383940**.

26. UNESCO. (2016). *Historic Urban Landscape: Managing Heritage in an Urban Century*. Paris: UNESCO.

Archival Sources

27. Uzbek Research Institute for Restoration (UzNIPIrestavratsiya). (1983). *Historical and Architectural Reference Plan of Shakhriyabz*. Tashkent.

28. Uzbek Research Institute for Restoration (UzNIPIrestavratsiya). (1983). *Historical and Architectural Inventory of the Traditional Residential Development of Shakhriyabz*. Archival materials. Tashkent.

29. Bogoukhov, A. K. (1983). *Measured Drawings of the Traditional Residential Architecture of Shakhriyabz*. Archive of UzNIPIrestavratsiya. Tashkent.

30. Korchuganov, A. V. (1983). *Architectural Survey of the Historic Residential Quarters of Shakhriyabz*. Archive of UzNIPIrestavratsiya. Tashkent.

REFERENCES (Part II)

Architecture of the Timurids, Central Asia and Shakhriyabz

31. Blair, S. S., & Bloom, J. M. (1995). *The Art and Architecture of Islam, 1250–1800*. New Haven, CT: Yale University Press. ISBN: **9780300064650** (печатное издание); более поздние издания также доступны с ISBN **9780300233988**.

32. Golombek, L., & Wilber, D. N. (1988). *The Timurid Architecture of Iran and Turan* (Vols. 1–2). Princeton, NJ: Princeton University Press. ISBN: **9780691035871** (Vol. 1).

33. Hillenbrand, R. (1994). *Islamic Architecture: Form, Function and Meaning*. Edinburgh: Edinburgh University Press. ISBN: **9780748603794**

34. O'Kane, B. (1987). *Timurid Architecture in Khurasan*. Costa Mesa, CA: Mazda Publishers. ISBN: **9780939214358**.

35. Knobloch, E. (2001). *Monuments of Central Asia: A Guide to the Archaeology, Art and Architecture of Turkestan*. London: I.B. Tauris. ISBN: **9781860645907**

36. Frankopan, P. (2015). *The Silk Roads: A New History of the World*. London: Bloomsbury. ISBN: **9781408839973**

37. Whitfield, S. (2019). *Silk, Slaves and Stupas: Material Culture of the Silk Road*. Oakland: University of California Press. ISBN: **9780520304185**

38. Frye, R. N. (1996). *The Heritage of Central Asia: From Antiquity to the Turkish Expansion*. Princeton, NJ: Markus Wiener Publishers. ISBN: **9781558761414**

39. de La Vaissière, É. (2005). *Sogdian Traders: A History*. Leiden: Brill. ISBN: 9789004146990

40. Grenet, F. (2002). *Regional Interaction in Central Asia and Iran*. Paris: CNRS Éditions.

Classical Sources

41. Clavijo, R. G. de. (1990). *Narrative of the Embassy of Ruy González de Clavijo to the Court of Timur at Samarkand (1403–1406)* (Russian edition). Moscow: Nauka.

Central Asian Architecture

42. Pugachenkova, G. A., & Rempel, L. I. (1965). *History of the Arts of Uzbekistan from Antiquity to the Mid-Nineteenth Century*. Moscow: Iskusstvo.

43. Pugachenkova, G. A. (1953). Architectural Characteristics of the Monuments of Shakhriyabz. *Proceedings of the Central Asian State University*.

44. Masson, M. E., & Pugachenkova, G. A. (1953). Shakhriyabz under Timur and Ulugh Beg. *Proceedings of the Central Asian State University*, New Series, Vol. XLIX.

45. Masson, M. E. (1977). Archaeological Investigations of the Kesh Archaeological and Topographical Expedition. In *Archaeology of Central Asia*. Tashkent.

46. Buryakov, Y. F. (1975). *Historical Topography of the Cities of Central Asia*. Tashkent: Fan.

47. Rtveladze, E. V., Sagdullaev, A. S. (1986). *Monuments of Past Centuries*. Tashkent: Uzbekistan.

48. Mankovskaya, L. Y. (1979). *Architectural Monuments of Kashkadarya*. Tashkent: Uzbekistan.

49. Lunina, S. B., Usmanova, Z. I., Sultanov, H. T., & Dresvyanskaya, G. Y. (1993). *Shakhriyabz* (Parts I–II). Tashkent: Universitet.

Your Publications

50. Gilmanova, N. V. (2021). *Timurid Architecture in Miniature*. Tashkent: Rennans. ISBN 978-9943-6811-2-5.

51. Sultanov, H. T., Gilmanova, N. V. (2022). *Historical, Architectural and Artistic Heritage of Kashkadarya*. Tashkent: Fan va texnologiyalar. ISBN 978-9943-8584-4-2.

52. Gilmanova, N. V. (2026). *Kesh*. Tashkent: Ta'lim Nashriyoti. ISBN. 978-9943-8584-4-2.

Archival Documentation

53. Vinogradov, A. N. (1953). *Report on the Kok Gumbaz Mosque in Shakhriyabz (1947–1951)*. Archive of the Main Scientific and Production Department for the Protection of Cultural Heritage, Ministry of Culture and Sports of the Republic of Uzbekistan. Inventory No. 1492.

54. Voronina, V. L. (1969). Materials on the Vernacular Architecture of Kashkadarya Region. In *Central Asian Ethnographic Collection* (Vol. 2). Moscow.

55. Bogoukhov, A. K. (1983). *Measured Drawings of Traditional Residential Architecture of Shakhriyabz*. Archive of UzNIPIrestavratiya.

56. Korchuganov, A. V. (1983). *Architectural Research on the Historic Residential Development of Shakhriyabz*. Archive of UzNIPIrestavratiya.

57. Bryukhanov, V. A. (1983). *Historical and Architectural Survey of the Residential Quarters of Shakhriyabz*. Archive of UzNIPIrestavratiya.

Government Sources

58. Cultural Heritage Agency of the Republic of Uzbekistan. (2022). *Materials on the Conservation of the Historic Centre of Shakhriyabz*. Tashkent.

59. Ministry of Tourism and Cultural Heritage of the Republic of Uzbekistan. (2022). *Materials for the Development of the Shakhriyabz Heritage Conservation Strategy*. Tashkent.

60. Institute of Archaeology, Academy of Sciences of the Republic of Uzbekistan. (2022). *Archaeological Investigations at Uzunkyr, Podayataktepa and Sangirtepa*. Tashkent.

REFERENCES (Part III)

Contemporary International Literature (2015–2025)

61. Roders, A. P., & Bandarin, F. (Eds.). (2019). *Reshaping Urban Conservation: The Historic Urban Landscape Approach in Action*. Singapore: Springer. <https://doi.org/10.1007/978-981-10-8887-2>. ISBN (hardcover): 9789811088865; eISBN: 9789811088872.

62. Ginzarly, M., Roders, A. P., & Teller, J. (2019). Mapping historic urban landscape values through social media. *Journal of Cultural*

Heritage, 36, 1–11.
<https://doi.org/10.1016/j.culher.2018.10.002>.

63. van der Hoeven, A. (2019). Historic urban landscapes on social media: The contributions of online narrative practices to urban heritage conservation. *City, Culture and Society*, 17, 61–68.
<https://doi.org/10.1016/j.ccs.2018.12.001>.

64. Azpeitia Santander, A., Azkarate Garai-Olaun, A., & De la Fuente Arana, A. (2018). Historic Urban Landscapes: A Review on Trends and Methodologies in the Urban Context of the 21st Century. *Sustainability*, 10(8), 2603.
<https://doi.org/10.3390/su10082603>.

65. UNESCO World Heritage Centre. (2023). Consolidated Results on the Implementation of the 2011 Recommendation on the Historic Urban Landscape. Paris: UNESCO.

66. UNESCO World Heritage Centre. (2022). 2022 UNESCO Member States Survey on the Implementation of the Recommendation on the Historic Urban Landscape. Paris: UNESCO.

67. UNESCO World Heritage Centre. (2021). Celebrating the 10th Anniversary of the UNESCO Recommendation on the Historic Urban Landscape. Paris: UNESCO.

68. UNESCO World Heritage Centre. (2022). World Heritage City Lab: Urban Heritage and Traditional Building Practices for Sustainable Development. Paris: UNESCO.

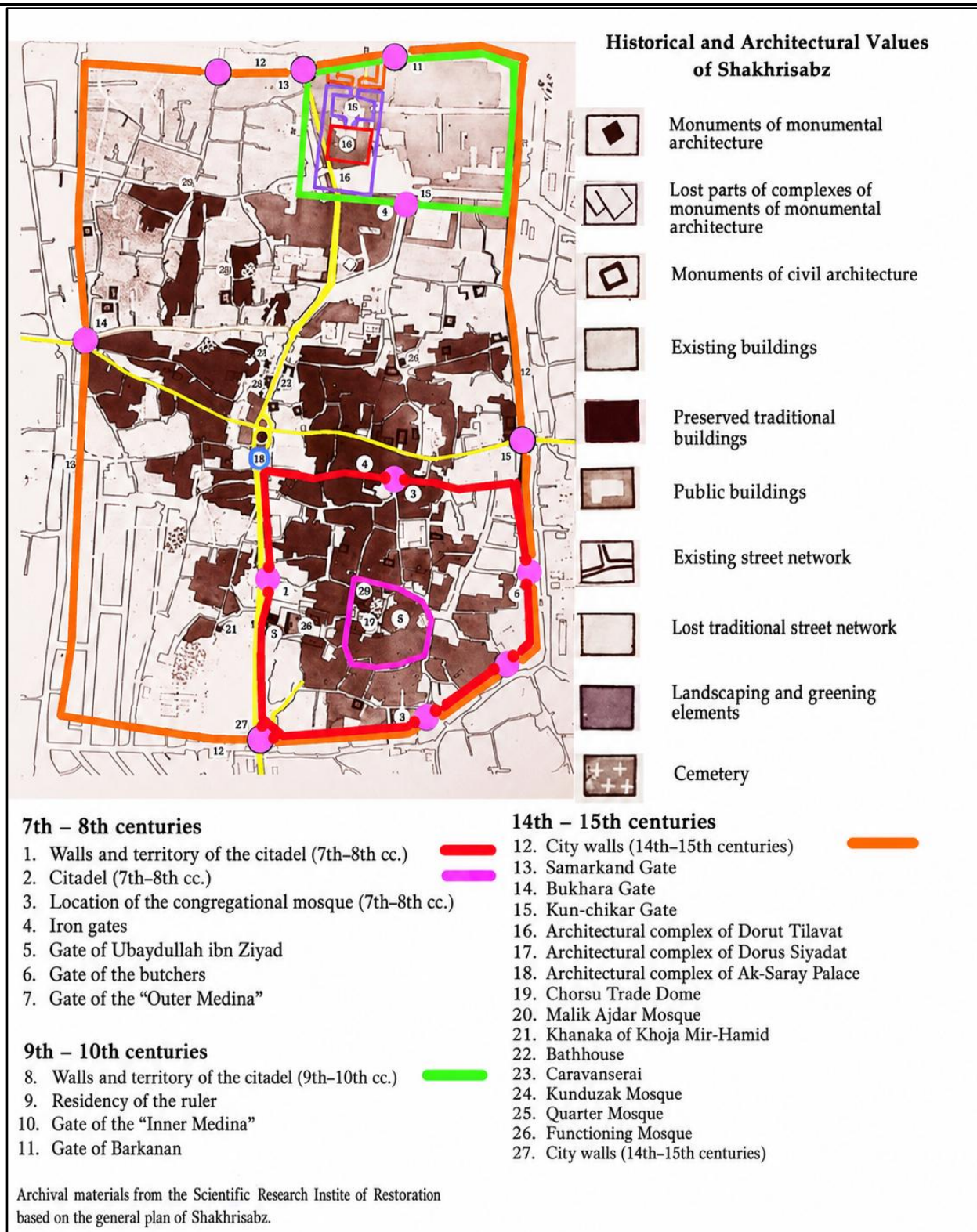
69. UNESCO World Heritage Centre. (2021). World Heritage City Lab: Historic Cities, Climate Change, Water, and Energy. Paris: UNESCO.

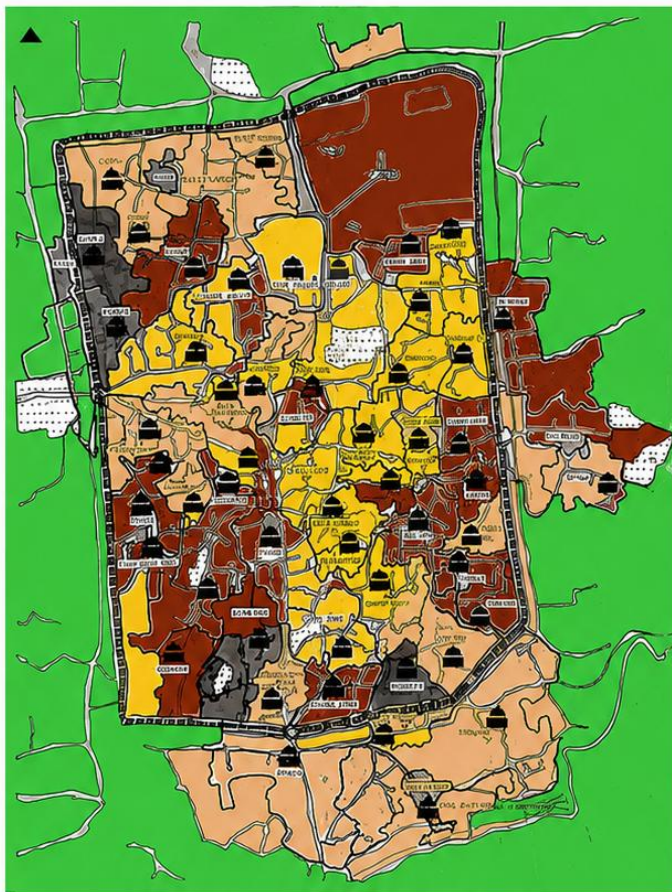
70. UNESCO World Heritage Centre. (2021). World Heritage City Lab: Sustainable Development Practices for Urban Heritage. Paris: UNESCO.

Core Reference (already cited in your list, keep only once)

71. Bandarin, F., & van Oers, R. (2012). *The Historic Urban Landscape: Managing Heritage in an Urban Century*. Oxford: Wiley-Blackwell.
<https://doi.org/10.1002/9781119968115>.
 ISBN: 9780470655740; Online ISBN: 9781119968115.

Illustrations for the text

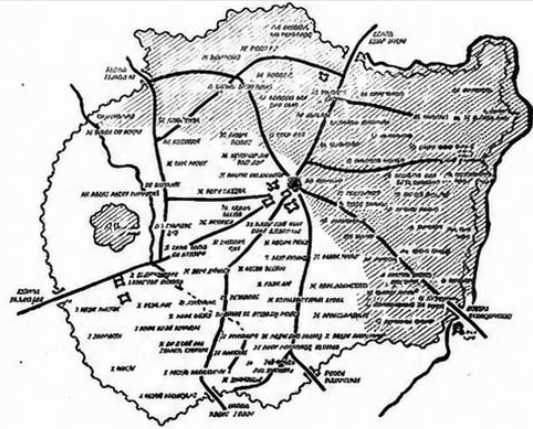




Plan of the historical part of the city of Shakhrisabz with the location of the quarters (guzars) and central mosques by O.A. Sukhareva.

Location and names of the quarters (guzars) in the historical part of the city of Shakhrisabz and in the adjacent territory:

- | | | |
|-------------------|--------------------|-------------------------|
| 1. Kichik Chuyton | 19. Eshonpir | 37. Allaudin |
| 2. Sufi | 20. Telpakhuja | 38. Degriz |
| 3. Eshon | 21. Uyichilik | 39. Pakhot |
| 4. Katta Chuyton | 22. Faizobod | 40. Kul-Khobta-Boka |
| 5. Khoja | 23. Kalikon | 41. Eylimon |
| 6. Nukus | 24. Khoja-Mirhamid | 42. Kulolich |
| 7. Kitob | 25. Chul-tepa | 43. Murdashuli |
| 8. Isobek | 26. Khoja | 44. Khovuzmardon |
| 9. Chyut | 27. Tati chinor | 45. Kush-Khovuz |
| 10. Malik Ashgar | 28. Sangiokhur | 46. Uzbek |
| 11. Arpa Bozor | 29. Kunchikar | 47. Chakar |
| 12. Khanaka | 30. Munchi | 48. Kunchuzak |
| 13. Kukkhon Khona | 31. Hamatmon | 49. Khazrat-Illakh |
| 14. Katagon | 32. Kosan-Air | 50. Khazrat-Imom |
| 15. Chubin | 33. Bolakhous | 51. Simkhoz |
| 16. Zingaron | 34. Rais | 52. Kabarlich |
| 17. Kora-Ovul | 35. Khoja | 53. Kichik Charmgarlich |
| 18. Mormukhan | 36. Mormukhan | 54. Charmgarlich |



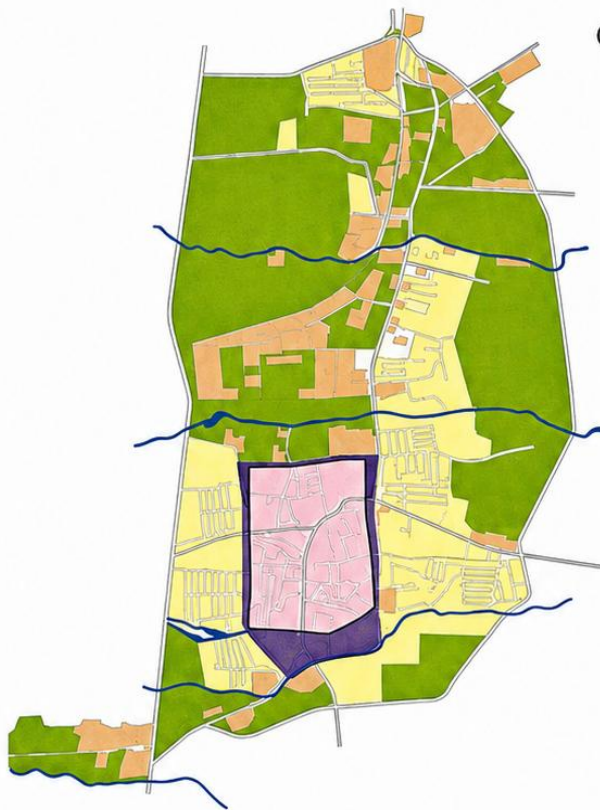
Plan of Samarkand with the indication of quarters and parts of the city existing in the 18th century.

By O.A. Sukhareva.



Analysis of the layout of residential streets of the New Settlement and Khivy.

SCHEME-PLAN OF THE CITY OF SHAKHRISABZ

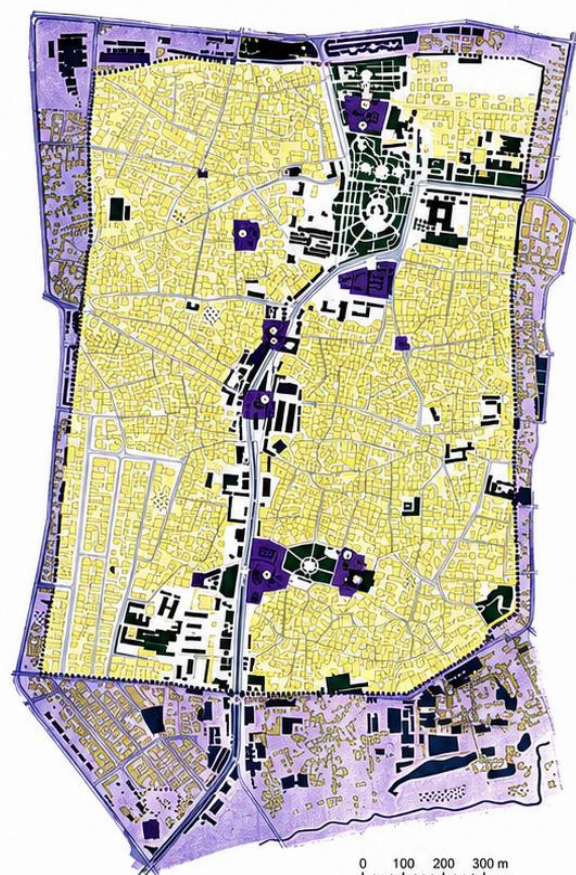


- HISTORICAL PART OF THE CITY - 240,0 ha
- BUFFER ZONE - 82,0 ha
- INDUSTRIAL ENTERPRISES
- RESIDENTIAL BUILDINGS
- CITY ROADS
- AGRICULTURAL FIELDS
- RIVERS, CANALS

0 300 600 900m

Source of the schemes: Center for World Heritage

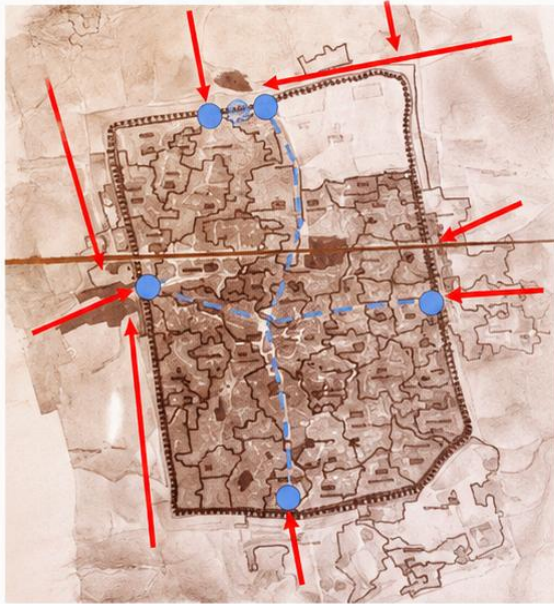
HISTORICAL AND ARCHITECTURAL VALUES OF SHAKHRISABZ



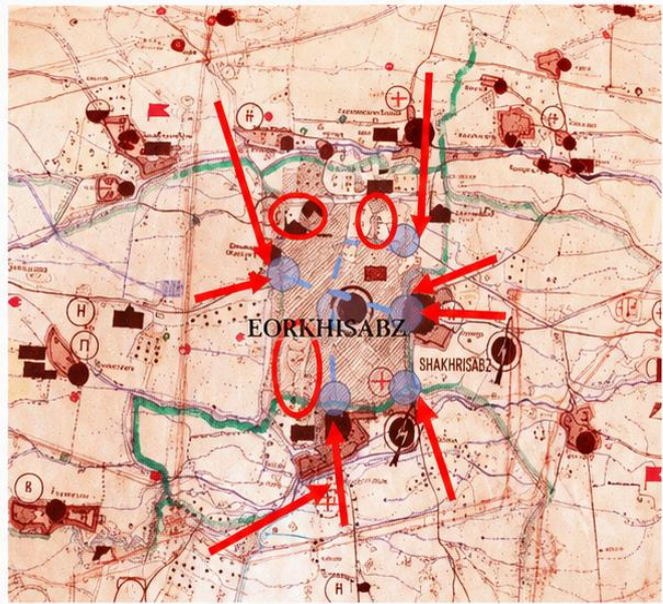
- HISTORICAL ZONE
- BUFFER ZONE

Source: Evaluation of the nomination dossier, 1998.

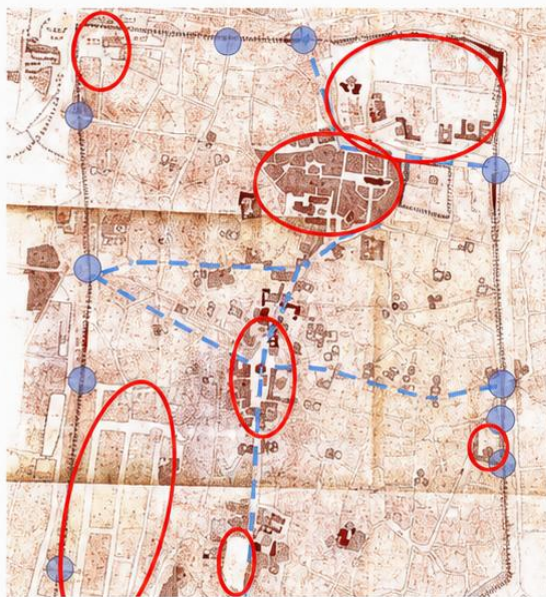
Map of Demolition of the Traditional Urban Fabric (1928–2000)



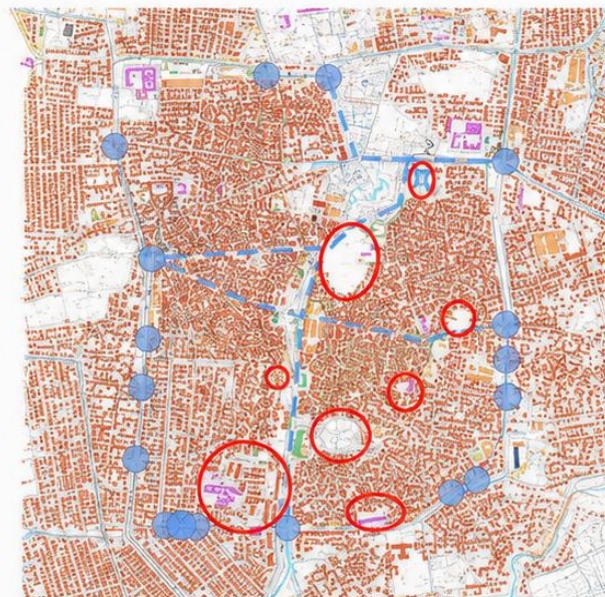
Map of Shakhrisabz in 1928.
Source: UNESCO Nomination Dossier.



Map of Shakhrisabz in 1962.
Source: Department of Cadastre of Shakhrisabz.

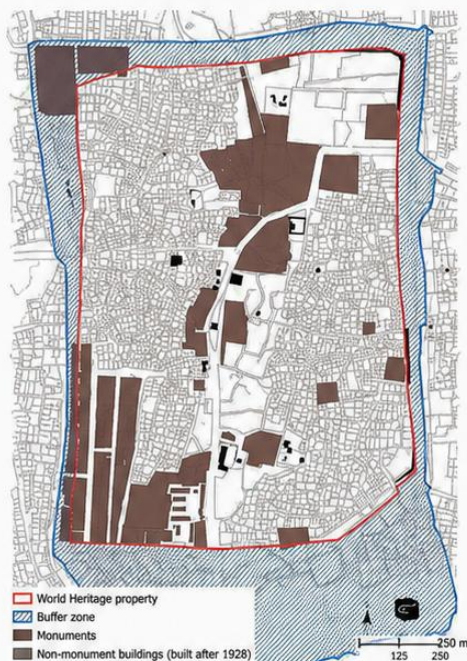


Map of Shakhrisabz in 1982.
Source: Agency for Cultural Heritage,
Tashkent Archive.



Map of Shakhrisabz in 2000.
Source: Evaluation of the nomination dossier (1998),
ICOMOS.

Source of maps and schemes: UNESCO
World Heritage Centre.

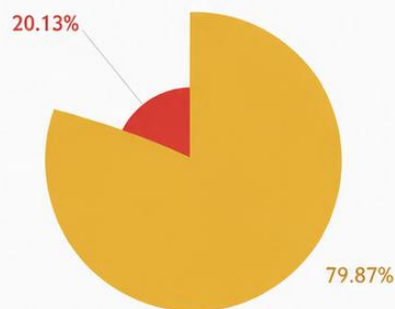


Changes in the topography of Shakhrisabz from 1928 to 2000.

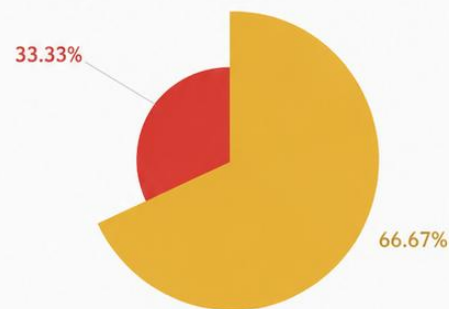


Work under the State Program for the Revival of the City of Shakhrisabz (2013).

Impact of the measures on the OUV (Outstanding Universal Value)



Areas without changes in the WHP: 123 ha
Areas restored in the WHP: 31 ha



Areas without changes in the buffer zone: 46 ha
Areas restored in the buffer zone: 23 ha

The demolitions carried out in the period from 2014 to 2018 covered 54 hectares in the WHP (World Heritage Property) and buffer zone.

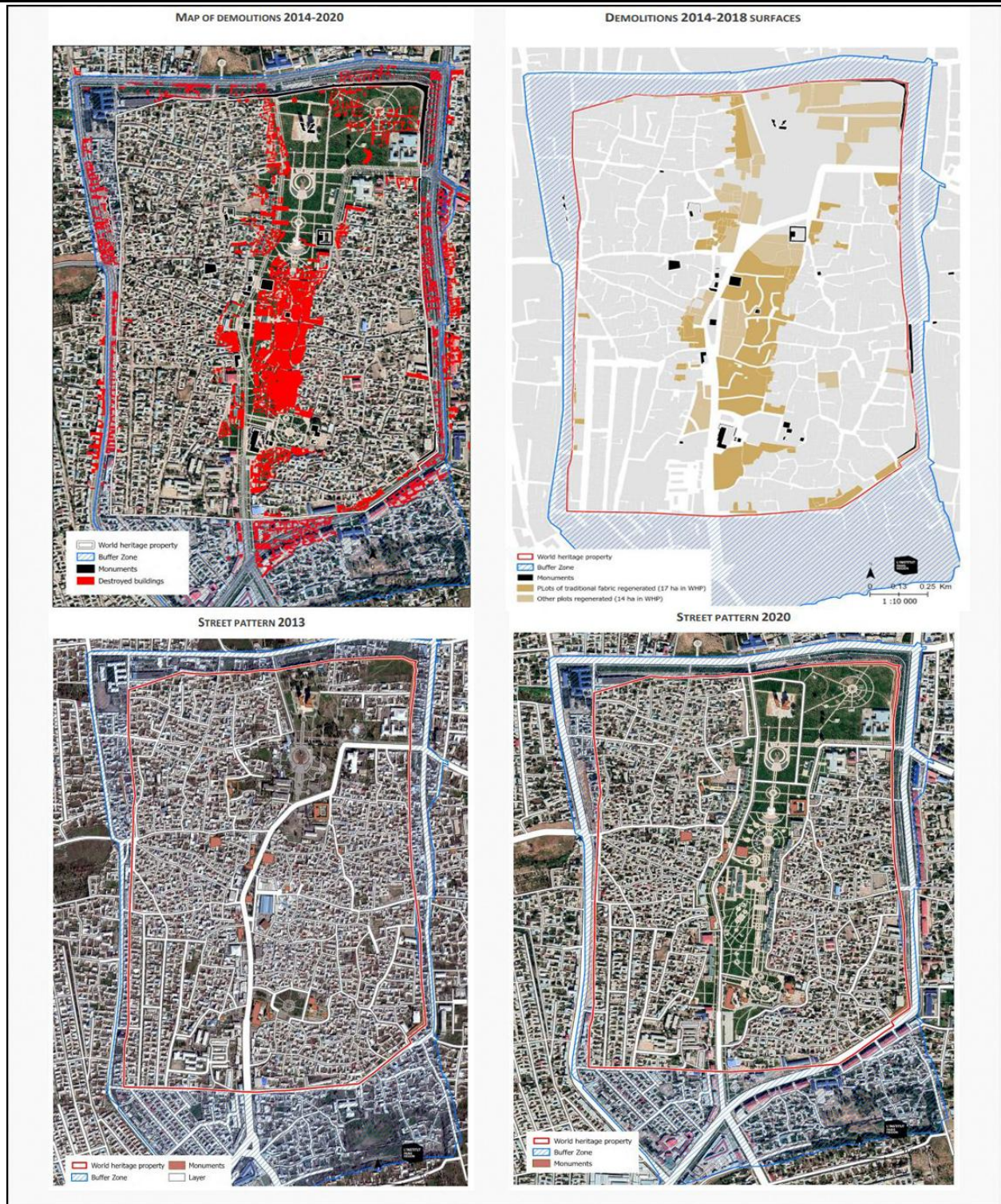
- In the territory of the World Heritage Property, 31 ha were demolished, which amounts to 17% of the WHP area (183 ha). This corresponds to 15% of the traditional urban development that was demolished.

- In the buffer zone, 23 ha were demolished, which corresponds to 26% of the total area of the buffer zone. This covers 1/3 of the built-up territory.

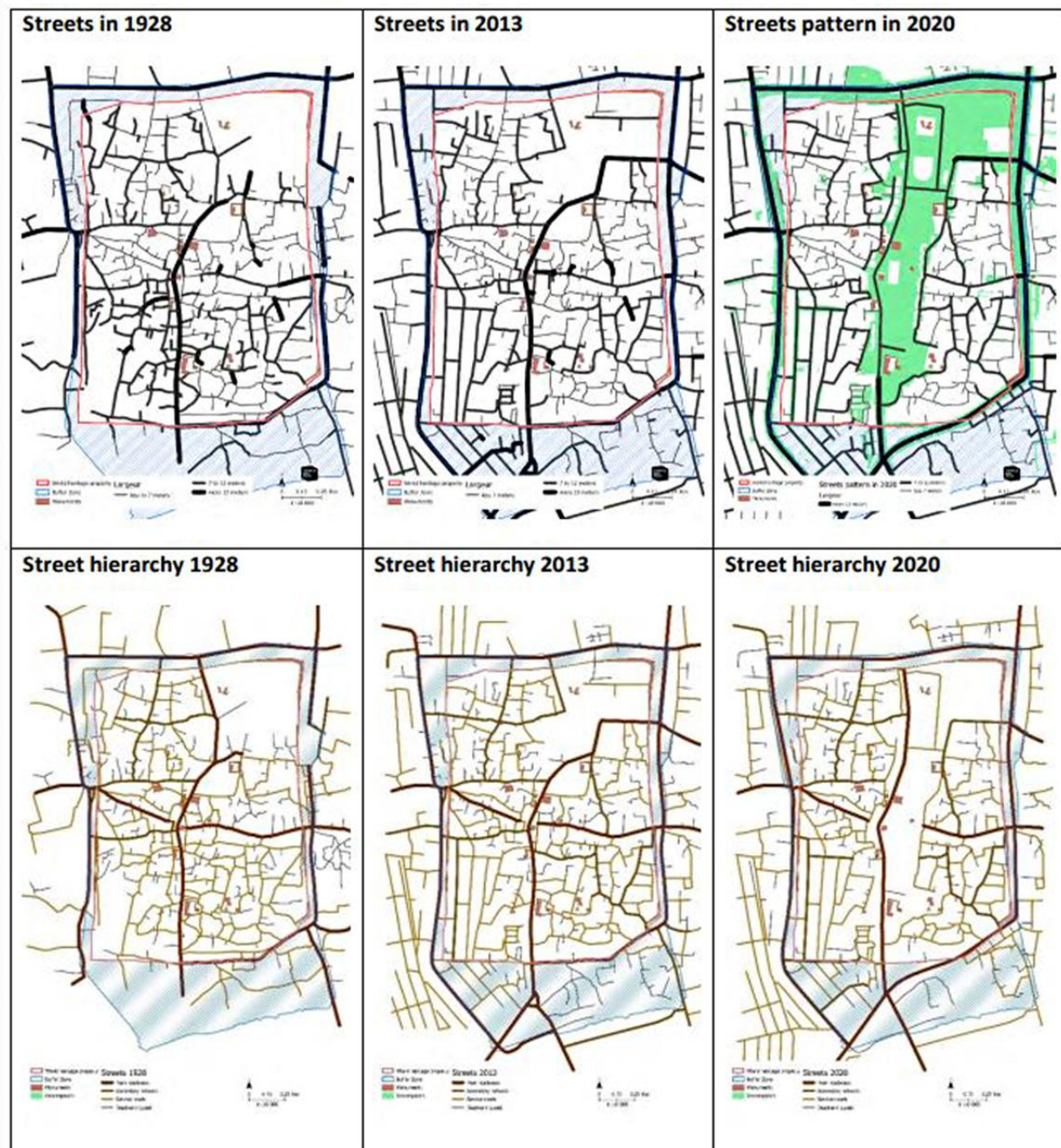
Of these, 31 ha, or 17 ha of traditional mahallas were demolished, and 14 ha were new constructions.

Source of maps and diagrams: UNESCO
World Heritage Centre.

Source: <https://whc.unesco.org/en/news/1924/>



COMPARISON OF STREET PATTERNS BY DATE



The traditional street pattern, although it has evolved, is still present in the historical center.

Source of the schematics: UNESCO World Heritage Centre.