THEMATIC REPORT

CONSERVATION OF ENGINEERING WORKS AND HISTORICAL RESIDENTIAL DWELLINGS

HAMMAM OF DURRËS
BRIDGE OF KURCAJ
ETHNOGRAPHIC MUSEUM OF KRUJA
ETHNOGRAPHIC MUSEUM OF KAVAJA
ETHNOGRAPHIC MUSEUM OF DURRËS



Funded by the European Union

MINISTRIA E TURIZMIT, KULTURËS DHE SPORTIT

UNOPS

EU4CULTURE

Cover Photo Caption

Ethnographic Museum of Kruja

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Foreword

The *EU4Culture Thematic Report Series* has been developed by UNOPS to document and share the experience and lessons learned from the conservation works implemented under the EU4Culture programme. This Series aims to serve as a professional resource for those engaged in the field of cultural heritage conservation, contributing to knowledge exchange and the continuous advancement of conservation practices in Albania and beyond.

The *EU4Culture Thematic Report Series* includes:

1. Conservation of the "Shqipëria" Mosaic on the Façade of the National Historical Museum
2. Conservation of Wall Paintings
3. Handling Artefacts
4. Conservation of Fortified Architecture and Archaeological Ruins
5. Conservation of Engineering Works and Historic Residential Dwellings
6. Restoration of the National Puppet Theater and the Building of the Formerly Persecuted

The EU4Culture programme, funded by the European Union and implemented by the United Nations Office for Project Services (UNOPS), was launched in the aftermath of the 2019 earthquake, which caused significant damage to cultural heritage sites and monuments in Albania. While conceived as a heritage recovery initiative, its objectives extended beyond the conservation and restoration of damaged sites. By improving the physical condition, accessibility, safety, and interpretive value of cultural monuments, the programme sought to enhance public understanding and appreciation of Albania's cultural heritage, attract more visitors to restored sites, strengthen their role as tourism assets, and contribute to local socio-economic development. The programme also placed strong emphasis on capacity building, fostering a lasting sense of stewardship and supporting the continued preservation and sustainable use of Albania's cultural heritage.

The EU4Culture programme, running from October 2020 to June 2026, was carried out in close collaboration with the Ministry of Tourism, Culture and Sport[1], as well as its subordinate institutions — including the National Institute for Cultural Heritage and the Regional Directorates of National Culture in Tirana and Shkodra.

1. Formerly Ministry of Culture(2020–2024), and Ministry of Economy, Culture and Innovation (2024–2025)

Cooperation also extended to the Municipalities of Durrës, Kavaja, Lezha, Kruja, Kurbin, Rrogozhina, and Tirana ensuring a locally grounded and inclusive approach to heritage conservation.

Recognizing the importance of capacity building, the project established a strong link with academic institutions, notably the University of Tirana (Department of Archaeology and Cultural Heritage Management) and the Polytechnic University of Tirana (Faculties of Architecture and Civil Engineering). These partnerships enabled young professionals and students to engage directly in fieldwork, transforming ongoing conservation activities into valuable platforms for experiential learning.

In total, the EU4Culture programme engaged 14 licensed conservation contractors, two multidisciplinary design companies, one supervision firm, and one commissioning company. The conservation and restoration interventions alone accounted for approximately 70,000 working days, representing the daily efforts of around 70 professionals from diverse disciplines and contributing to the timely and high-quality completion of the works.

Through this collaborative effort, 19 cultural heritage assets across Albania were restored, while four were equipped with the tools and equipment needed to support improved conservation, documentation, and operation. The outcomes, methodologies, and insights gained from these interventions are presented in a series of six thematic reports, each focusing on a different typology of conservation work: mosaic conservation; wall paintings; artefact handling; fortified architecture and archaeological ruins; engineering works and historic residential dwellings; and the restoration of selected public heritage buildings.

Read together, the six publications offer a comprehensive record of the EU4Culture programme's technical approach and practical lessons learned. They reflect not only the tangible achievements of the programme, but also the collective dedication of all those who contributed to its implementation — from national and local institutions, conservation professionals, designers, contractors, supervisors, academics, students, and community representatives, to the many individuals who supported the works on site. Their commitment, expertise, and collaboration were essential to safeguarding and celebrating Albania's cultural legacy.



IN NUMBERS

Months taken for Implementation

Ethnographic Museum of Kruja	24
Ethnographic Museum of Kavaja	34
Ethnographic Museum of Durres	11
Hammam of Durres	26
Kurçaj Bridge	14

Material approvals

Ethnographic Museum of Kruja	23
Ethnographic Museum of Kavaja	57
Ethnographic Museum of Durres	12
Hammam of Durres	90
Kurçaj Bridge	4

Number of approvals received

Ethnographic Museum of Kruja	4
Ethnographic Museum of Kavaja	5
Ethnographic Museum of Durres	2
Hammam of Durres	2
Kurçaj Bridge	2

Workforce for design

Ethnographic Museum of Kruja	500 LB*
Ethnographic Museum of Kavaja	500 LB
Ethnographic Museum of Durres	300 LB
Hammam of Durres	650 LB
Kurçaj Bridge	300 LB

Workforce for implementation

Ethnographic Museum of Kruja	4851 LB
Ethnographic Museum of Kavaja	4346 LB
Ethnographic Museum of Durres	1882 LB
Hammam of Durres	741 LB
Kurçaj Bridge	929 LB

Workforce for supervision

Ethnographic Museum of Kruja	1044
Ethnographic Museum of Kavaja	1479
Ethnographic Museum of Durres	478
Hammam of Durres	1131
Kurçaj Bridge	609

Financial investment

Ethnographic Museum of Kruja	68,156,536.00ALL
Ethnographic Museum of Kavaja	108,079,750.52ALL
Ethnographic Museum of Durres	45,129,750.00ALL
Hammam of Durres	35,100,078.30ALL
Kurçaj Bridge	15,271,866.80ALL

*LB: Labour Days

1. Introduction

1.1 Purpose of the thematic report

The conservation of engineering architecture and traditional residential dwellings represents a distinct and complex field of heritage preservation—one that depends profoundly on local knowledge, traditional craftsmanship, and an intimate understanding of the materials historically used in construction. These structures, often built with region-specific techniques and materials such as lime mortars, timber frameworks, and hand-crafted masonry, cannot be effectively conserved without the insights of those who have inherited or practiced these techniques. As a result, local repair skills and vernacular know-how form the backbone of any meaningful conservation intervention.

Over the past fifty years, however, this category of built heritage has frequently suffered from inappropriate restoration practices. Much of this stems from earlier conservation philosophies, particularly those prevalent before the adoption of the Nara Document on Authenticity in 1994[2], which fundamentally reshaped global understandings of authenticity in heritage conservation. Prior to this shift, conservation practices often prioritised the preservation of *original material* at almost any cost, even when the intervention required the introduction of non-authentic or incompatible materials, such as Portland cement. These approaches—further justified by the belief that repairs should be visibly distinguishable—often resulted in the use of contrasting but unsuitable materials that disrupted the natural behavior of historic structures.

The cumulative effect of such mismatched interventions, combined with periods of insufficient maintenance, has left many heritage structures in a fragile state. Rather than safeguarding them, cement-based repairs have accelerated deterioration by trapping moisture, damaging masonry, and compromising structural stability. Consequently, today's conservation challenges reflect not only the passage of time, but also decades of practices misaligned with principles now recognised as essential for authenticity, compatibility, and resilience.

Within this context, the present monograph serves a dual purpose. First, it examines these broader historical and methodological issues, underscoring why culturally grounded techniques and traditional materials are indispensable to the long-term preservation of heritage. Second, it documents how these principles were put into practice in the conservation of the Ethnographic Museums in Krujë, Kavajë, and Durrës, as well as the Bridge in Kurçaj and the Hammam in Durrës. By detailing the methodologies applied, the findings uncovered during the works, and the outcomes achieved, the report provides a transparent account of the decision-making processes and technical interventions

2. Nara Document on Authenticity, 1994, Nara Conference on Authenticity in Relation to the World Heritage Convention.

executed under these projects. In doing so, it aims to inform practitioners, institutions, and communities about the reasoning behind conservation choices and to demonstrate how context-sensitive, resilience-based approaches can restore both the integrity and the living continuity of these culturally significant sites.

1.2 Objectives of the conservation work

The conservation interventions across the Ethnographic Museums of Kruja, Kavaja, and Durrës, as well as the Bridge of Kurçaj and the Hammam of Durrës, were guided by a shared set of objectives aimed at safeguarding their historical, architectural, and archaeological significance.

Safeguard Authenticity and Integrity

- Preserve the original architectural character, materials, craftsmanship, and spatial organisation of the Ethnographic Museums in Kruja, Kavaja, and Durrës, as well as the Bridge in Kurçaj and the Hammam of Durrës.
- Ensure that any interventions respect locally specific techniques and the cultural values embedded in each structure.
- Avoid the introduction of incompatible materials or methods that may compromise long-term stability or authenticity.

Strengthen Structural Stability and Resilience

- Address structural weaknesses caused by aging, prior inappropriate interventions, seismic activity, or environmental exposure.
- Reinforce the capacity of the structures to withstand future risks—especially earthquakes and moisture-related deterioration—through context-appropriate, reversible, and non-invasive strengthening techniques.
- Integrate disaster risk reduction principles and ensure alignment with national standards and international frameworks
-

Restore and Revitalise Traditional Materials and Techniques

- Rehabilitate the buildings and structures using historically accurate materials (e.g., lime-based mortars, stone masonry, timber joinery) and traditional craftsmanship.
- Revive and apply local repair knowledge, ensuring compatibility with each structure's construction system and cultural context.
- Demonstrate the importance of vernacular building traditions as living knowledge systems.

Correct and Mitigate Past Inappropriate Interventions

- Identify and remove harmful repairs, including cement-based mortars, incompatible coatings, and structurally damaging additions.
- Restore damaged elements with appropriate, compatible materials to re-establish the structures' physical and visual coherence.
- Prevent recurrence by documenting lessons learned and creating guidelines for future maintenance.

Preserve and Enhance Cultural and Community Value

- Protect the role of the Ethnographic Museums as custodians of local identity, memory, and intangible heritage practices.
- Safeguard the Bridge in Kurçaj and the Hammam in Durrës as important cultural landmarks that connect local histories, daily life, and community narratives.
- Ensure that conservation supports continued or renewed public use and appreciation of these heritage sites.

Improve Functionality and Visitor Experience (Where Appropriate)

- Enhance the environmental performance and usability of the museums and heritage sites without compromising authenticity.
- Introduce discreet, reversible improvements to accessibility, interpretation, and visitor safety.
- Support sustainable cultural tourism through well-integrated design and visitor management measures.

Establish Long-Term Maintenance and Management Frameworks

- Develop site-specific maintenance plans based on ongoing risk assessment, preventive conservation, and community-involved stewardship.
- Strengthen local institutional capacity for monitoring, repair, and decision-making.
- Ensure that the conservation works serve as a reference for future interventions across similar heritage typologies in Albania.

1.3 Importance of the sites

The bridge in Kurçaj is a first-category cultural monument, as designated by decision of the Ministry of Education and Culture in 1984. The Ethnographic Museum in Kavaja, Ethnographic Museum in Kruja, The House where Aleksandër Moisiu[3] was born and has spent some years of his childhood (by function known as Ethnographic Museum of Durrës[4]) and Hammam are designated first-category monuments by decision of the Ministry of Education and Culture in 1973.

This designation guides the conservation intervention. Namely, for first-category monuments no changes nor additions are allowed either to interior or exterior. The only allowed interventions are those of consolidation of existing structures and conservation of internal and external finishes. All elements defined as authentic must be preserved or restored exactly in the same way as built, using the same materials and techniques of repair.

3. Famous Albanian actor from late 19th century
4. Given the function the building retained, the asset would be referred at as Ethnographic Museum of Durrës

2. Description of the buildings and previous restoration interventions

2.1 Ethnographic Museum of Kruja

The Ethnographic Museum of Kruja is located within the historic ensemble of Kruja Castle. The museum is housed in the former residence of the Toptani family, a distinguished feudal household, and represents a remarkable example of an 18th-century Albanian çardak-type dwelling, built in 1764. It constitutes a rare architectural expression of civic life, craftsmanship, and vernacular building traditions in central Albania.

The building preserves the spatial organisation of a traditional noble household, consisting of a stone-built ground floor and a timber-structured upper floor. Its architecture blends functional domestic spaces with elements of refined craftsmanship, including carved wooden ceilings, painted frescoes, stone arches, traditional hearths, and a rare in-house hammam, which distinguishes the residence within the region's architectural heritage.

Photo Caption: Ethnographic Museum of Kruja



The museum opened in 1989, transforming the dwelling into a cultural institution that showcases over 1,000 objects reflecting the traditional crafts, household practices, clothing, and social customs of Kruja and wider Albania. Exhibits include embroidered bridal costumes, wooden and ceramic tools, metalwork, wool-processing artifacts, and agricultural implements, all arranged within the original domestic rooms to illustrate everyday life in the region across centuries.

Located inside the defensive walls of Kruja Castle, the museum forms part of a wider cultural ensemble that includes the National Museum "Gjergj Kastrioti", a historic hammam, religious structures, and traditional dwellings. Its position on a steep slope, enclosed by characteristic stone walls, forms an integral component of the Castle's historic urban landscape and visitor route, directly linked to the Old Bazaar and the city's heritage tourism circuit. As one of the most visited destinations in Albania—easily accessible from the Port of Durrës and Tirana International Airport—the museum plays a central role in the cultural identity and tourism economy of Kruja.

2.1.1 Previous Restoration Interventions

The monument has undergone two documented restoration interventions prior to the one within the EU4Culture programme. The earliest recorded restoration took place in 1981, marking the first major conservation effort on the former Toptani residence after its designation as a cultural monument. This intervention focused on stabilizing the structure and preparing the dwelling for future museum use. A subsequent, more limited intervention was carried out in 1988, just prior to the building's conversion into an ethnographic museum (which opened in 1989). The earlier construction-related changes that shaped the present layout and condition of the building include two major construction phases that were undertaken.The first corresponding to its original 18th-century configuration, retaining features such as the longitudinal plan, fireplaces, and living room arrangements. A second phase occurred during the late 19th and early 20th centuries, during which several interior spaces were reconfigured.

2.2 Ethnographic Museum of Kavaja

The Ethnographic Museum of Kavaja is a significant cultural monument that encapsulates the architectural, social, and craft traditions of the Kavaja region. Housed in the historic Arkaxhi family residence, the building is a typical 18th-century dwelling, completed in its present form during the late 19th century and converted into a museum in 1971. The museum holds an extensive and diverse ethnographic collection with more than 800 artefacts, including traditional costumes, household items, tools, textiles, ceramics, and metalwork and it is one of the richest regional ethnographic collections in Albania. The variety and craftsmanship of these objects—many produced by local artisans—reflect

the cultural identity, social customs, and artisanal traditions of Kavaja and its wider region The building represents a traditional one-storey Albanian dwelling with a frontal porch, characterised by strong symmetry and a horizontally developed plan. Initially built as *two adjoining family homes*, each with three living rooms, the dwelling was later unified into a single property. The porch, supported by seven wooden columns, forms the central element of the façade and introduces visitors to the main lobby and exhibition spaces. Inside, the plan reflects the social norms of the 19th century. Two fire rooms (meant for heating and daily living) sit at the core, flanked by adjoining bedrooms and guest rooms. Several rooms feature raised wooden sofas, thin partition walls, and decorative wooden ceilings. A notable feature is the three-layered traditional window system—wooden mesh, glass frames, and wooden shutters—found in wealthier households of the time. The courtyard, featuring traditional wells and cobblestones, reinforces the authenticity of the site and conveys the spatial character of historic Albanian homes.

The museum is located in the Skuraj neighborhood of Kavaja, surrounded by low-rise residences. It is set back from the main road and enclosed by a low brick wall and railings, with a large front courtyard that enhances its visibility and public presence.

Photo Caption: Ethnographic Museum of Kavaja



2.2.1 Previous Restoration Interventions

The building underwent several restoration interventions throughout the past years. Interventions conducted in 1972 are the earliest documented restoration interventions on the monument. They included the restoration of wooden architectural elements, which had deteriorated due to prolonged exposure to atmospheric agents and repair of roof tiles, maintaining the original roof typology. The interventions carried out in 2007 included structural and partial architectural repairs: roof repair, addressing damage and reinforcing the roof covering; installation of gutters to improve water runoff; partial repairs of stone and adobe masonry walls; and partial restoration of ceilings, addressing both functional and aesthetic decay. The last interventions were carried out in 2015 and focused largely on finishes and carpentry: painting with linseed oil, providing a refreshed appearance to interior surfaces; limewashing of the walls; repair of wooden windows, improving conservation and functionality; and various repairs to the porch on the ground floor.

2.3 Ethnographic Museum of Durrës

The building historically known as the the building where Aleksandër Moisiu was born and spent some years of his childhood[5] was constructed in the 19th century by a merchant family, in what was then part of the historic core of Durrës. It is a two-story traditional residential structure of the "çardak" typology, characterised by an open or semi-open porch, wooden architectural elements, stone masonry, and traditional interior arrangements.The house is an example of urban vernacular architecture typical of upper-class dwellings in Durrës during the 1800s.

The building is historically significant as Aleksandër Moisiu, a world-renowned theater actor of Albanian origin, spent part of his childhood in this house, retaining fond memories of it throughout his life. In 1928, he wrote a sketch titled "Childhood Dream", describing aspects of his early years in Durrës.

This association elevates the monument's cultural value, linking it with one of Albania's most celebrated artistic figures.Throughout its history, the building reflects the transition from traditional Ottoman influenced architecture toward more simplified interior layouts typical of early-20th-century Albanian urban residences.

The house also retains traces of historic relationships with the surrounding castle walls, which influenced additions and modifications during its residential phase.

5. Although widely known as the birthplace or childhood home of Aleksandër Moisiu, historical records indicate that the actor was born in Trieste, then part of Austria-Hungary (today Italy). The house in Durrës is associated with his early childhood years spent in the city.



Photo Caption: Ethnographic Museum of Durrës

Today, the former residence stands as the only surviving example of 19th-century urban domestic architecture in Durrës and an essential component of the city's Archaeological Area "A". The house has been hosting the Ethnographic Museum of Durrës.

2.3.1 Previous Restoration Interventions

At the beginning of the 20th century, the house continued to function as a residential unit until approximately 1980. Over time, to meet changing needs, the building underwent various interior and exterior modifications, especially at its rear, where some small living quarters were created adjacent to the castle wall. Following its designation, the structure underwent an extensive restoration in 1983, during which:

- Additions were demolished.
- Original stone façades and frames were exposed.
- Floors and plaster were redone.
- Structural cracks were injected.
- Door and window sets were reconstructed.

After restoration, the site housed the exhibition "Popular Culture Exhibition", presenting artisanal and ethnographic traditions of Durrës and its surrounding region. Two rooms were also dedicated to Moisiu, forming the "Aleksandër Moisiu Museum Room". The monument underwent another round of conservation and restoration in 2014, intended to stabilise and maintain its physical condition.

2.4 Kurçaj bridge

In the absence of definite historical resources, scholars believe that the Kurçaj Bridge was built in the XVIII century, when many new bridges were built across Albania to connect major trade centers. It is located on the Zeza River, in the village of Kurçaj, and was a part of an early caravan route between Kruja and Tirana, through Mukje and Zallherri. In 1984, the bridge was declared a national monument of first-category and, since then, it is protected as a historical evidence of engineering achievements of its time. Today, the bridge is a historical and cultural heritage site connecting local hiking routes and can be visited on foot only.

2.4.1 Previous Restoration Interventions

According to the monument records, Kurçaj Bridge originally consisted of three circular vaults.During the Second World War, the central vault was damaged. It was subsequently repaired after the war, restoring the structural continuity of the crossing.

A more substantial intervention occurred around the 1980s, prompted by emerging structural issues:

- A transverse crack had formed in one of the secondary arches.
- The crack extended toward the foundation of the left bridge arm.
- Seasonal rains and river activity caused settlement and sagging on the left wing.

Repair works were undertaken to stabilise the affected left wing. However, during this intervention, the left discharge window (niche) was closed with stone masonry, a decision that later proved detrimental. Closing the left window increased hydraulic pressure against the structure. Instead of relieving river force symmetrically, the modification concentrated water loads, eventually contributing to:

- Collapse of the left arm.
- Destabilisation of the right side.
- Accelerated foundation erosion.

This 1980s intervention resulted to be inappropriate and harmful, worsening rather than improving the Bridge's condition.

Further partial repairs were carried out over the last decades, likely at different times. These included:

- Cement-like mortar was applied to the upper parts of the Bridge.
- Attempts to preserve degraded walls or joints using modern additives.
- Some cracks appear to have been patched without structural consideration, leading to continued movement or renewed cracking.
- Occasional clearing of invasive plants occurred, but lack of maintenance allowed vegetation to regrow, contributing further to deterioration.



Photo Caption: Kurçaj Bridge

2.5 Hammam in Durrës

A hammam, or a bath, is a structure that has had a public or private function in the past. These structures were used for ablution functions and were also social gathering places during relaxation times. The period of the construction of these baths in the country goes from the 15th century, with the arrival of the Ottoman Empire, to the 19th century. Among the social constructions of our medieval cities, the baths (hammams) occupied an important place, but time and the continuous transformation of residential centers have allowed only a small number of them to survive to the present day, considering how widely they were used in the past. Hammams are perfectly organised units that use ingenious solutions of construction practices to provide a warm and comfortable space for relaxation. The preserved baths can be found in Elbasan, Durrës, Shkodër, Krujë, Gjirokastër, Çorovodë (Slatinjë) and Lezhë, some of which are preserved in good

condition and others in ruins. Passing through Albania in the 17th century, the Turkish traveler Çelebi, in 1672, mentions the two baths of Elbasan, which still exist today, two baths in Berat (now destroyed), the bath in the Meçita district of Gjirokastra, as well as many family baths in Berat, Kavajë, Elbasan, etc.

Hammams were a crucial part of daily life in the Ottoman period. A devout Muslim citizen had to bathe in a hammam a minimum of three times a week. In Islamic culture, bathing was an obligation that preceded prayer. Two types of bathing were available: baths including full body bath, and baths which were limited to the washing of face, hands and feet. While mosques were always equipped with areas for partial bathing (ablutionary), hammams were constructed nearby in case believers desired to have a full bath. The hammams also had very clear public or semi-public functions. Not only used for bathing, in some cases the hammams were transformed into entertainment venues, for wedding, birthday ceremonies, and to honor the start of the military service. They often served as venues for social events and meeting places where people could gather. It was common for sultans to entrust people to listen in on hammam conversations. Mostly constructed with both genders in mind, many hammams allowed for a combination of schedules between men and women. Tek, or single, hammams were used by men and women at different times of the day. Women were however disadvantaged, as they were generally only allowed to use it on Thursday. Yet, as public social spaces, hammams revolutionised women's social lives. The prominence of hammams in the cities began its decline by the end of the 19th century and the beginning of the 20th, as a growing portion of the more affluent population began adapting these facilities in their private homes.

Photo Caption: Hammam in Durrës



The Hammam of Durrës is an 18th century Ottoman bath characterised by a sequence of domed rooms arranged for traditional bathing rituals. Constructed in stone and brick masonry, the building features warm human scale spaces, atmospheric lighting through small glass-filled openings, and a functional heat distribution system based on steam channels and a furnace. Despite later alterations and significant deterioration, it remains an important architectural and cultural landmark in the historic city center.

2.5.1 Previous Restoration Interventions

There are three major periods of documented restoration interventions—1983, 2006, and 2010—as well as contextual historical changes from the early 20th century.
A two-storey building was appended to the original Hammam at the beginning of the 1900s. This annex housed administrative offices and dressing rooms. It became severely deteriorated and was demolished in the 1970s, restoring the volumetric clarity of the historic Hammam.

This first documented modern restoration, executed with the goal of stabilising the monument was conducted in 1983 and it contained interventions undertaken to clean waste and debris, closing of later, non-original openings, some roof repairs, inclusion of railing around the buildings' perimeter and reconstruction of the kiln. In late 1990 the building underwent a series of interventions to adapt the space for the function of a cafe. Cement layers were added on the floors, as well as on the walls. Metal bars were added to windows and the large window was opened in the central dome.

3. Condition Assessment (Pre-intervention)

3.1 Ethnographic Museum of Kruja

General condition

The building of the museum—an 18th-century çardak-type dwelling built in 1764—was generally considered in good structural condition, but with notable localised deterioration, especially after the November 2019 earthquake. Key issues included:cracks in interior plaster finishes resulting from seismic action, weathering-related deterioration of timber elements at the entrance, and rising damp causing deterioration of lower wall surfaces.





Photo Caption: Inappropriate facade treatment and outdated displays

Masonry and stone surfaces

Exterior and interior stone walls were partially covered with non-original cement mortar, which trapped moisture, caused discoloration, and obscured original textures. Stone paving—especially in the hammam and groundfloor rooms—showed dirt accumulation and inappropriate cement fillings. Presence of moss and damp stains on façades and ground-floor areas indicated persistent humidity issues.

Wooden structural elements

One of the most critical problems in the building was the condition of timber elements: Beams, columns, floors, trusses, and decorative woodworking were moldy, rotten, or weakened due to humidity and age. Some doors and windows were muffled, warped, or degraded. Non-original additions and repairs existed, many of which were poorly executed and incompatible with the original craftsmanship.

Roof condition

Several leakages were noted due to moved tiles, especially after the earthquake.

Overall diagnosis

The building is generally stable but requires attention, especially to timber and plaster damaged by humidity and earthquake activity. Significant architectural value remained preserved, but many surfaces suffered from inappropriate historical repairs and material degradation. The building did not have adequate systems for climate, light, or conservation; contributing to progressive deterioration of both buildings and artifacts. Comprehensive conservation was necessary to protect both the building and its collection.

3.2 Ethnographic Museum of Kavaja

Deterioration

The earthquake of 26 November 2019 caused the most severe and widespread deterioration, visible in cracks in adobe walls and plaster surfaces throughout the building, as well as in the deterioration of the structural system, which consists of stone foundations and adobe walls reinforced with wooden antiseismic strips.

In addition to the observed earthquake damage, post-earthquake observations revealed rising damp in the foundations, indicating damage to the drainage system.

Masonry and wall conditions

Extensive cracking was present in the interior and exterior walls, particularly in the adobe sections, which had suffered partial collapse. There were areas of missing plaster exposing the underlying substrate layers. Overall, there was widespread humidity affecting most walls. In one of the most recent restoration interventions, the entire building had been plastered using cement-based mortars. Cement was highly incompatible with adobe and had a direct effect on the stability of the adobe walls, as it promoted moisture retention and accelerated material decay.

Roof

The museum's roof was in severely deteriorated condition, broken, shattered, missing tiles due to age, weather, and uncoordinated past repairs. Tile losses allowed rainwater penetration, worsening humidity throughout the building. Roof beams and wooden ceilings showed degradation due to moisture, insects, and atmospheric exposure. Biological patina and rot were visible in numerous areas. Gutters were damaged and non-functional, causing water to flow directly onto masonry walls.

Structural and decorative woodwork

Many wooden architectural features—doors, windows, ceilings, porch columns—were found damaged resulting in deformation, warping, and loss of original surfaces. Decorative wooden panels exhibited cracks, missing fragments, and accumulated grime.Columns supporting the front porch were weakened by moisture, weathering, and biological growth.

Floors and interior surfaces

Some interior spaces—once finished with rammed earth—had been covered with concrete floors, an incompatible material which resulted in trapped moisture, leading to more widespread humidity problems, and causing unevenness and aesthetic deterioration. Interior plaster was cracked, detached, or deteriorated across almost all rooms. Some areas had undergone inappropriate patch repairs, worsening material compatibility issues.

Overall diagnosis

The building suffered from serious structural vulnerability, especially in adobe walls and roof. The state of the monument underscored the urgent need for conservation, structural reinforcement, environmental improvement, and functional modernisation.



Photo Caption: Considerable earthquake damage evident on masonry. Inadequate cement plaster



3.3 Ethnographic Museum of Durrës

General condition

The former Ethnographic Museum of Durrës—an early 19th-century two-storey çardak house—was found in a significantly deteriorated condition before restoration. Its damages were the result of long-term neglect, incompatible past repairs, material aging, improper additions, and notably the 2019 earthquake.

Structural condition

After the conducted assessment following the earthquake in 2019, the building was rendered to be in insatiable condition, and was declared not fit for usage. Large horizontal and vertical cracks were observed across all the inner partition walls, as well as bearing walls. The main façade exhibited multiple large cracks, with a major portion of the front façade showcasing the signs of extensive bulging. The roof suffered from lack of tiles, broken tiles, displaced tiles, and tile detachment. The gutter system was deformed and malfunctioning, allowing water to infiltrate the building.

Additional to the earthquake damage the building showcased the presence of many new additions such as cement-based plasters over stone walls and inappropriate cable installation, with exposed channels cut into masonry and similar.

Photo Caption: Rising damp and collapsed portions of plaster





Overall diagnosis

The building exhibited serious moisture problems, including capillary rise, condensation, and roof leaks, which contributed to widespread material degradation. Cracks and structural vulnerabilities, worsened by the 2019 earthquake, further compromised the stability of the monument. Many wooden elements—such as windows, doors, beams, and stair components—were significantly deteriorated, while damaged roof tiles and gutters allowed additional water infiltration. The interiors suffered from plaster detachment, staining, efflorescence, and biological growth, and the exterior façades showed stone erosion, frame damage, and chromatic alteration. The building also contained numerous inappropriate past interventions, including cement-based plasters, added partitions, and invasive electrical works, which obscured or harmed original construction. As a result, several decorative features were lost or partially concealed, and a long-term lack of maintenance led to accumulated debris and accelerated deterioration. The building urgently required comprehensive architectural, structural, and conservation interventions to prevent further loss of authenticity and integrity.

3.4 Bridge of Kurçaj

Structural condition

The Kurçaj Bridge, an 18th-century stone arch structure, was in severely deteriorated condition prior to intervention, suffering from extensive structural instability and material decay. The right wing of the bridge had collapsed, and the left side had been compromised due to the historical closure of one discharge window, which altered river flow and increased hydraulic pressure on the foundations. The masonry showed widespread deterioration, including detached stones, decomposed lime mortar, calcification, cracking in the vault and retaining walls, horizontal and vertical fissures, and partial loss of parapets and cobblestone paving.

Erosion

Moisture infiltration was evident throughout the vault and wall surfaces, accompanied by moss, biological patina, and aggressive vegetation that worsened material degradation. River erosion had undermined the foundations—particularly on the right side—causing detachment from the terrain, while accumulated debris and stone piles at the base of the bridge further indicated ongoing destabilisation. Inappropriate past repairs using cement mortar and added layers contributed to incompatibilities and accelerated decay.

Overall diagnosis

Overall, the bridge displayed advanced structural vulnerability and material fragmentation, requiring urgent conservation and stabilisation measures to prevent further loss of integrity and authenticity



Photo Caption: Collapsed portions of the bridge and cracks in the keystone



3.5 Hammam of Durrës

Degradation

Before restoration, the Hammam of Durrës was in a severely deteriorated condition, with damage resulting from long-term lack of maintenance, moisture infiltration, inappropriate past repairs, and the effects of the 2019 earthquake. The building had remained closed for years, and its courtyard and interior spaces clearly showed accumulated neglect and environmental decay. Vegetation covered several façade areas, blocking views and damaging masonry surfaces. The structure suffered from significant moisture and mold, especially in the upper parts of the building and along the walls and floors, caused by rising damp, inadequate drainage, and water penetration. Cracks had developed across the stone masonry due to degradation and seismic activity, while plaster layers were detaching and falling both inside and outside the building.

Photo Caption: Interior showcasing inappropriate interventions (cement floor, cement plastering, opening in the dome)



Façade

The façade—originally built with stone—had undergone multiple invasive modifications, including non-original plastering, addition of metal railings, and the insertion of later dome windows that disrupted the architectural authenticity. Some original window openings had been closed with mismatched stone, reflecting uncoordinated repairs. Metal railings and water pipes were rusted and deteriorated, posing functional and aesthetic problems, while the main wooden entrance door exhibited internal cracks and plaster detachment around its masonry frame. The dome and vaulted areas showed additional deterioration, including moisture penetration and plaster loss.

Interior

Interior conditions were equally degraded. Floors were layered with damaged and inappropriate cement additions from post-1990 interventions, which concealed or harmed original surfaces. This was especially obvious in the sections of the floor where cement was covering old heating channels. In the water-storage room (sterë), masonry had been left irregular and unplastered, displaying neglect and material decay. The electrical system, dating from the 1990s, was non-functional, leaving the building without lighting or power.

Overall diagnosis

Overall, the Hammam exhibited advanced deterioration, with moisture, mold, and invasive vegetation damaging its masonry, domes, and floors, while cracks in the stone walls, widespread plaster detachment, and general structural weakening further compromised its stability. Numerous non-original and incompatible interventions had altered the building's authenticity, and key elements such as floors, walls, windows, and the main entrance door were degraded or missing. Combined with non-functional electrical installations and inadequate drainage, these conditions underscored the urgent need for comprehensive architectural, structural, and conservation measures to safeguard the monument's material integrity and cultural value.

Photo Caption: Damaged mortar capping on the dome



4. Conservation Philosophy and Approach

4.1 Theoretical Framework

The conservation philosophy guiding interventions at the Ethnographic Museum of Kruja, Kavaja and Durrës, Kurçaj Bridge and Hammam, follows an integrated, value-based framework grounded in international standards (Venice Charter, Burra Charter, ICCROM). The approach prioritises safeguarding structural stability, material integrity, and cultural significance while addressing widespread deterioration caused by seismic activity, moisture, incompatible past repairs, and long-term neglect. Conservation actions aim to restore proper material behavior—breathability, drainage, ventilation—and ensure sustainable environmental conditions that prevent future decay.

Authenticity

Preserving authenticity is central to the intervention strategy. Original construction techniques, materials, and spatial configurations are protected wherever they survive. Incompatible modern additions—such as cement plasters, concrete floors, intrusive electrical installations, and non-original architectural elements—are removed to recover the legibility of historic craftsmanship. Reconstruction is limited to cases supported by physical evidence or necessary for structural stability.

Minimal Intervention and Reversibility

Interventions are kept to the minimum necessary to stabilise structures and prevent further deterioration. Repair techniques favor compatible and breathable traditional materials—lime mortars, earth-based plasters, and timber—ensuring the historic fabric remains dominant. New additions or technical systems are designed to be reversible, allowing future conservators to update or remove them without harming original materials. Structural reinforcement, when required, is discreet and avoids altering the character of the assets.

Documentation

All stages of the conservation process—diagnosis, intervention decisions, material testing, and implementation—are thoroughly documented through drawings, photographs, measured surveys, and written records. Documentation ensures transparency, supports future conservation cycles, and preserves knowledge of both original conditions and intervention methodologies. This record becomes part of the long-term heritage archive for each site.

Overall

The conservation of these heritage assets is guided by a unified commitment to safeguarding their structural stability, material authenticity, and cultural significance, while ensuring that all interventions remain respectful, minimal, and reversible. By addressing the underlying causes of deterioration—seismic damage, moisture, incompatible past repairs, and environmental neglect—and by prioritising traditional materials, compatible techniques, and comprehensive documentation, the approach ensures that these monuments can continue to embody their historical, architectural, and social values. This conservation philosophy aims not only to stabilise and restore the assets in the present but also to secure their longevity, resilience, and relevance for future generations.

4.2 Ethical Considerations

The conservation philosophy followed the core ethical frameworks of:

- UNESCO Recommendations:The safeguarding of cultural heritage as a public good, ensuring transmission of cultural significance to future generations. In this context, both buildings were treated as irreplaceable witnesses of Albania's political, social, and architectural history.
- ICOMOS Charters: The following ICOMOS documents informed the ethical approach: The Venice Charter (1964) – guidance on authenticity, minimal intervention, and conservation over reconstruction; Burra Charter (2013) – values-based significance assessment and decision-making; Principles for the Preservation and Conservation/Restoration of Built Heritage (2003); Principles for the Analysis, Conservation and Structural Restoration of Built Heritage (2003) – informing seismic consolidation strategies;
- National Heritage Legislation: For all five assets being designated monuments of first category, ethical requirements prohibited internal or external changes not directly related to stabilisation or conservation.

4.3 Criteria for Decision-Making

Decision-making followed a structured, multi-layered process:

Significance Assessment

Interventions across all five heritage assets were guided by an evaluation of the cultural, architectural, historic, material, and symbolic significance of each surviving element:

- High value: Elements representing the earliest or most authentic phases of construction, including original masonry (stone, adobe, timber frameworks), historic structural systems (arches, vaults, domes), traditional carpentry, decorative wood-

work, surviving plaster layers, hammam heating features, and any intact museum-house architectural fabric. These components embody primary heritage values and were prioritised for preservation, consolidation, and careful conservation.

- Medium value: Historically meaningful later layers—Ottoman repairs, 19th–20th century adaptive uses, previous conservation phases, and documented alterations that contribute to each monument's chronological narrative. These elements were retained when compatible with the integrity of the site, but corrected or modified when they contributed to deterioration.
- Low value: Non-authentic, intrusive, or harmful additions such as cement-based plasters, concrete floors, modern service installations, ad hoc electrical systems, mismatched stone infill, and vegetation overgrowth. These were removed where necessary to improve structural and material performance and to recover the legibility of authentic fabric.

Condition Assessment

Decision-making was informed by multidisciplinary diagnostic investigations including structural analysis, material testing, moisture mapping, archaeological assessment, and decay surveys:

- Stabilisation required for structural elements showing active cracking, leaning or bulging walls, earthquake-induced deformation, collapsed or compromised foundations, weakened vaults or domes, and severely deteriorated bridge masonry. Immediate structural intervention was prioritised for the safety and survival of the assets.
- Conservation Applied to weathered stone surfaces, eroded joints, adobe walls, timber elements weakened by moisture and insects, biological colonisation, damaged interior finishes, and architectural details requiring targeted treatment. Emphasis was placed on compatible materials and reversible techniques.
- Reconstruction or reintegration Considered only when essential for structural integrity, protection of historic material, or reinstating legibility of the monument. Reconstruction was strictly evidence-based and limited to the minimum necessary for stability or interpretation.

Risk of Loss

Elements facing imminent or irreversible damage were given highest priority:

- Structural components weakened by earthquakes, moisture infiltration, or ground movement (e.g., cracked museum walls, collapsed masonry at Kurçaj Bridge, bulging façades in Durrës).
- Masonry is destabilised by vegetation, salt decay, or prolonged humidity.
- Fragile or eroding decorative features and historic plaster layers.
- Archaeological remains exposed to erosion, vandalism, or environmental degradation.

Priority actions focused on preventing collapse, stabilising damaged fabric, and implementing protective measures.

Functional and Safety Requirements

Although primarily cultural heritage sites, the buildings and bridge also needed to meet essential safety, access, and operational criteria:

- Ensuring safe circulation for visitors and personnel, particularly in houses with deteriorated stairs, bridges with unstable walkways, and sites with loose debris.
- Introducing or upgrading electrical, lighting, and environmental systems in museums and the hammam, using reversible, minimally invasive methods.
- Providing drainage, ventilation, and moisture-management solutions to support long-term preservation.
  Respecting authenticity while improving accessibility and ensuring that new functions do not compromise historic fabric.

Regulatory and Ethical Requirements

All decisions adhered to national heritage legislation and international conservation standards:

- Strict preservation of authentic material and original construction systems.
- Prohibition of unnecessary alteration, reconstruction, or conjectural additions.
- Requirement to use compatible materials—lime mortars, breathable plasters. traditional carpentry—and avoidance of cement or impermeable substances.
- Full archaeological supervision where stratigraphy or historic layers were affected.
- Reversibility and minimal intervention as ethical imperatives throughout the project.

Conclusion

These criteria ensured that decision-making remained consistent, transparent, and aligned with conservation ethics across all assets. By grounding prioritisation in significance, condition, risk, functionality, and regulatory requirements, the approach focused on stabilizing structures, preventing further deterioration, safeguarding authentic material, and enabling responsible public use—ensuring that these historic monuments are protected for future generations.

4.4 Risk Assessment and Prioritisation

4.4.1 Risk Assessment

Although the five monuments represent distinct typologies—traditional dwellings, 18th-century stone arch bridge, and a medieval hammam—they share common vulnerabilities linked to age, material fragility, environmental exposure, seismic events, and incompatible historic repairs. A harmonised risk assessment framework was applied across all sites to identify the most critical threats to structural stability, historic fabric, and public safety.

Structural Instability Risks

Structural instability represents the highest-risk category, particularly due to seismic damage, weakened traditional construction systems, and partial collapses.

- Ethnographic Museum of Kruja: cracks in plaster and masonry from earthquake movement; weakened timber columns and beams compromised by moisture.
- Ethnographic Museum of Kavaja: adobe wall fissures, partial collapses, and deteriorated roof structure; weakened antiseismic wooden bands.
- Ethnographic Museum of Durrës: extensive cracking across load-bearing walls, bulging façades, deformed roof, and compromised structural joints.
- Kurçaj Bridge: collapsed right wing, compromised left wing, cracked vault, foundation erosion, and detached masonry.
- Hammam of Durrës: structural cracking in domes and vaults, weakened masonry from moisture infiltration, and detaching façade elements.

Priority: Immediate stabilisation and consolidation of weakened walls, roofs, vaults, domes, and foundations, with structural monitoring where active movement or deformation is present.

Environmental and Moisture-Related Risks

Moisture was a critical factor across all monuments, contributing to long-term decay, biological growth, and material instability.

- Rising damp at the Museums of Kruja and Kavaja, damaging lower walls and plaster layers.
- Severe moisture infiltration in Durrës Museum due to roof leaks, gutter failure, and blocked drainage.
- Water infiltration and humidity-related deterioration in the Hammam, affecting domes, pavements, and interior finishes.
- River-induced moisture exposure at the Kurçaj Bridge, accelerating mortar loss and destabilizing foundations.
- Widespread vegetation growth across all sites retaining moisture, weakening masonry, and accelerating decay.

Priority: Vegetation removal, improved drainage and ventilation, repair of roofs and gutters, water management at river interfaces, and repointing with breathable lime mortars.

Material Degradation Risks

Each monument showed significant deterioration of materials stemming from age, environmental exposure, and incompatible past interventions.

- Timber elements at Kruja and Kavaja exhibited rot, deformation, insect damage, and loss of structural capacity.
- Adobe walls in Kavaja were destabilised by cement plasters that trapped moisture and accelerated decay.

- Stone masonry at Durrës Museum, Hammam, and Kurçaj Bridge showed erosion, loss of mortar, and mechanical damage.
- Interior finishes such as plaster, decorative woodwork, and flooring across all museums suffered from detachment, staining, and fragmentation.

Priority: Material conservation through cleaning, removal of incompatible cement repairs, replacement or reinforcement of decayed timber, mortar renewal with compatible materials, and conservation of sensitive interior elements.

Safety and Access Risks

Structural weakness and environmental deterioration across several sites created risks for visitors and staff.

- Damaged or unstable roofs, floors, and stairs in all three museums posed safety hazards.
- Loose masonry, moisture-damaged surfaces, and deteriorated domes in the Hammam created risks of falling material.
- Collapsed and unstable sections of the Kurçaj Bridge presented risks for community use and nearby circulation.

Priority: Temporary shoring, controlled access, safety barriers, debris removal, and phased improvements to circulation until stabilisation is achieved.

Human-Induced Risks

Past inappropriate uses and interventions further contributed to deterioration.

- Cement plasters and concrete floors at Kavaja and Durrës Museums caused moisture retention and structural damage.
- Intrusive electrical installations and non-original partitions in the Durrës Museum damaged masonry.
- Inappropriate repairs at the Kurçaj Bridge using cement and incompatible materials accelerated decay.
  Accumulated debris, blocked drainage, and vegetation growth were widespread across all assets.

Priority: Removal of intrusive additions, reinstatement of traditional breathable systems, improved maintenance regimes, and community engagement to reduce future risks.

4.4.2 Prioritisation strategy

Intervention prioritisation followed a consistent approach across the five assets:

1. Immediate structural threats—active cracking, leaning or bulging walls, roof instability, foundation erosion, and bridge collapse zones.
2. Elements at risk of irreversible loss—timber decay, adobe disintegration, weakened domes and vaults, decorative surfaces, and historic plaster layers.

3. Components essential for authenticity—original stonework, timber systems, adobe construction, hammam features, and historic spatial configurations.
4. Safety-critical elements—unsafe floors, stairs, roofs, domes, unstable bridge sections, and publicly accessible areas requiring urgent protection.
5. Secondary resilience measures—drainage improvement, vegetation removal, moisture management, reversible protective coatings, and environmental stabilisation.

Conclusion

This risk assessment demonstrates that, despite their different typologies, the five monuments share common threats linked to seismic vulnerability, moisture, material decay, and harmful past interventions. Prioritisation was therefore focused on stabilising structures, preventing further deterioration, protecting historically significant material, and ensuring safe public access. The resulting intervention sequence supports a coordinated, ethically informed conservation strategy that preserves the authenticity, integrity, and long-term resilience of these culturally significant heritage sites.

5. Conservation Interventions

The conservation and rehabilitation of the Ethnographic Museum of Kruja, Kavaja and Durrës, Kurçaj Bridge and Hammam, involved a wide range of conservation, structural consolidation, and in particular for Ethnographic Museums of Kruja and Kavaja activities of reconceptualisation of museum lines. Comprehensive conservation intervention for all five sites were required due to accumulated deterioration, repeated non-specialist alterations, and the significant impact of the 2019 earthquake. Besides the conservation interventions, Hammam in Durrës, Ethnographic Museum in Kruja and Kavaja also benefited from highly innovative interpretation which was implemented through contemporary means of multimedia.

5.1 Ethnographic Museum of Kruja

The conservation and revitalisation of the Ethnographic Museum of Kruja encompassed architectural restoration, structural consolidation, conservation of wall paintings, restoration of painted and carved wood elements, and a complete museological reorganisation of the exhibition concept. The interventions followed principles of authenticity, minimal intervention, material compatibility, and reversibility, with detailed documentation guiding each step.

5.1.1 Architectural and Structural Interventions

Masonry repair and consolidation

- Removal of inappropriate cement grout from stone walls.
- Mechanical cleaning and re-fuging of joints using traditional lime mortar (1:2), re-specting traditional joint width and depth.
- Stitching of cracked or displaced masonry where necessary.

Moisture and biological growth treatment

- Removal of moss, vegetation, and biological deposits with metallic brushes.
- Cleaning of patina and rising damp deposits and reinstatement of breathable finishes.

Timber structure restoration

- Repair or replacement of deteriorated beams, columns, trusses, and wooden floors using compatible timber.
- Restoration of the roof structure, replacement of damaged tiles, and installation of copper gutters.

Restoration of interior finishes

- Removal of inappropriate tiles, cement-based plasters, and later partitions.
- Replastering with lime-based mortars.
- Cleaning, repairing, or replacing damaged decorative frames and architectural ornaments

Photo Caption: Consolidation and pointing work









Photo Caption: Above: Roof repairs; Below - Left: Removal of cement plastering; Bottom right: Original plastering





5.1.2 Conservation of Wall Paintings

Two important painted interiors—the Bride's Room and the Men's Guest Room—were the subject of dedicated mural conservation.Key interventions included:

- Dry cleaning of painted surfaces to remove dust and surface grime.
- Chemical cleaning of deeper deposits where appropriate.
- Consolidation of powdering pigments using compatible fixatives.
- Re-adhesion of detached plaster layers.
- Edge integration and reintegration of areas with paint loss (non-intrusive, reversible).
- Removal of later mortar repairs that cut across painted surface

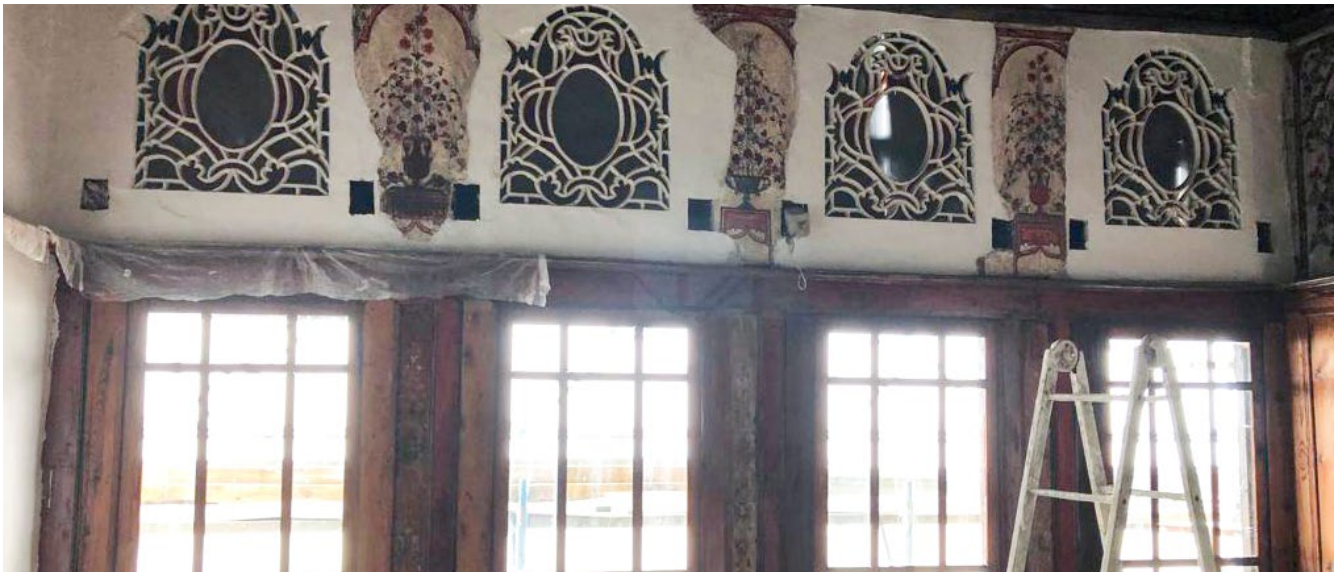



Photo Caption: Consolidation of Wall paintings

5.1.3 Restoration of Painted Wood Elements

A separate technical dossier focused on painted ceilings, wall closets, carved elements, and decorated woodwork in the Men's Room—one of the most significant artistic ensembles in the house. Interventions included:

- Cleaning of wooden surfaces using dry and wet methods adapted to pigments and varnishes.
- Mechanical removal of dust, soot, and accretions.
- Consolidation of weakened timber fibers.
- Treatment of biological infestation (insects, fungi).
- Stabilisation of flaking paint using appropriate conservation adhesives.
- Repair of structural defects in wooden ceiling frameworks.
- Reintegration of small missing fragments where necessary for stability or legibility.

The interventions preserved both carved and painted components, ensuring the survival of a unique 18th-century decorative program.

5.1.4 Museological Reorganisation and display re-design

The intervention introduced a new conceptual framework for the museum, shifting from object-dense displays to a more narrative and contextual interpretation of domestic life in 18th–19th century Kruja.

- Reassessment and reorganisation of the museum mission and visitor experience.
- Streamlining of the permanent collection: removal of unrelated objects and reduction of object density.
- Enhanced interpretation connecting material culture with intangible heritage, daily life, and social history.
- Improved spatial clarity, circulation, and thematic storytelling within rooms.
- Integration of multimedia and interpretive tools without altering the historic fabric.

This approach ensures that the restored spaces and decorative elements function as active components of the museum narrative, not merely as backdrops.

Conclusion

The interventions at the Ethnographic Museum of Kruja constituted a comprehensive and multidisciplinary effort that addressed structural stability, architectural authenticity, and improved museological presentation. Through careful restoration of masonry, wood, and painted surfaces, alongside a reinvigorated exhibition concept, the project strengthened the monument's material resilience, while enhancing its cultural and educational value.





Photo Caption: Preparing artefacts for display

5.2 Ethnographic Museum of Kavaja

5.2.1 Architectural and Structural Interventions

The project addressed extensive structural and architectural deterioration caused by moisture infiltration, inadequate drainage, inappropriate past interventions, and seismic damage.

Masonry and Wall Repairs

- Removal of incompatible cement-based plasters from exterior and interior walls.
- Repointing of masonry joints with traditional lime mortar (1:2).
- Reintegration and partial reconstruction of adobe walls using the exact same type of adobe bricks produced for the purpose of reconstruction.
- Consolidation of cracked walls and seismic-damaged sections.
- Reconstruction of severely compromised adobe masonry using the same technique of constructing as when it was built







Photo Caption: Above: On site mud plaster preparation;
Below - Left: Finished plastered surfaces; Right: Reconstructing adobe masonry

Moisture and Drainage Management

- Installation of a functional drainage system in underground areas.
- Treatment of rising damp through breathable materials and improved ground ventilation.
- Cleaning of moss, salts, efflorescence, and biological deposits.

Floor Restoration

- Removal of non-original concrete floors.
- Reintroduction of traditional flooring materials (brick tiles and timber).
- Level correction and reinstatement of damaged or missing floor sections.

Roof and Gutter Interventions

- Replacement of broken, missing, or deformed ceramic tiles.
- Repair of the wooden roof structure.
- Installation of new copper gutters and improved drainage to prevent infiltration.
- Re-mortaring of roof ridges and correcting roof deformation.



Photo Caption: Above: Testing mortar composition for pointing;
Below: Roof repairs

Conservation of Interior Finishes and Decorative Elements

- Removal of incompatible and deteriorated plasters.
- Replastering with lime-based or mud based plasters depending on the typology of walls
- Consolidation of loose, cracked, or detached areas, particularly after the 2019 earthquake.

Decorative Finishes

- Cleaning of biological growth, soot, and grime.
- Reintegration of partially damaged wall and ceiling finishes.
- Stabilisation of decorative elements affected by moisture or structural movement.

Restoration of Wooden Elements

Structural Timber

- Repair or replacement of deteriorated beams, posts, lintels, and seismic belts.
- Treatment against insects, fungi, and moisture damage.
- Strengthening of weakened roof-structure components.

- Doors, Windows, and Frames
- Restoration of original wooden joinery where feasible.
- Replacement of heavily warped or rotten elements with faithful replicas.
- Cleaning, consolidation, and protective finishing of surviving components.
- Decorative Woodwork
- Cleaning and stabilisation of carved or painted elements.
- Partial reconstruction only where structural or visual integrity required it.
- Removal of later inappropriate repairs.

5.2.2 Museological Reorganisation and display re-design

The intervention introduced a new conceptual framework for the museum, shifting from object-dense displays to a more narrative and contextual interpretation of domestic life in 18th–19th century Kavaja.

- Reassessment and reorganisation of the museum mission and visitor experience.
- Streamlining of the permanent collection: removal of unrelated objects and reduction of object density.
- Enhanced interpretation connecting material culture with intangible heritage, daily life, and social history.
- Improved spatial clarity, circulation, and thematic storytelling within rooms.
- Integration of multimedia and interpretive tools without altering the historic fabric.

Conclusion

The interventions at the Ethnographic Museum of Kavaja delivered comprehensive structural stabilisation, material conservation, restoration of damaged timber and interior finishes, and effective correction of moisture and drainage issues, all while ensuring the authentic reinstatement of the building's original architectural character. Together, these coordinated measures secure the monument's long-term preservation, enhance its functionality, and safeguard the cultural integrity of one of Kavaja's most important heritage assets.





Photo Caption: Above: Preparing artefacts for display;
Below: On site repairs of windows

5.3 Ethnographic Museum of Durrës

5.3.1. Architectural and Structural Interventions

Foundation and Masonry Stabilisation

- Conducted foundation test pits confirming original depth (1.5–1.8 m) and continuity of stone foundations.
- Foundation consolidation using lime-based hydraulic injections (NHL 3.5 + pozzolana).
- Cleaned and repointed foundations before pressure-controlled injection (2–3 atm).
- Consolidated stone masonry on both levels through filling of cavities, repointing, and wall injections using identical mineral-based mixes.
- Repaired structural cracks using the stitching method, re-establishing continuity in weakened wall segments.
- Installed stainless-steel reinforcement pins (Ø18 mm) at corner cracks and diagonals to stabilise areas showing out-of-plane deformation.

Photo Caption: Left: Masonry repair; Right: Façade consolidation





Reconstruction of Degraded Timber Bands and Structural Ties

- Replaced severely deteriorated horizontal wooden seismic belts with new oak members, matching original dimensions and positions.
- Restored degraded longitudinal and transverse belts at wall heads, following original methodology for anchoring.
- Added stainless-steel tension rods (inox Ø22) at critical levels (+3.95 m and +7.15 m) to counteract lateral thrust and reconnect long walls lacking transverse ties.

Re-establishing Lost Openings and Structural Legibility

- Uncovered a historic arched doorway—previously concealed by infill—during removal of interior coverings.
- Ensured stabilisation of the arch through temporary shoring and targeted masonry consolidation to preserve this key historical feature.

Roof Structure Rehabilitation

- Fully assessed roof after removal of tiles and finishes, revealing 60% deterioration of principal rafters, much of it due to long spans (up to 8 m) and past inadequate repairs.
- Replaced damaged rafters with new chestnut beams offering higher mechanical resistance.
- Replaced deteriorated wall-plate beams with new oak elements anchored with metal fasteners after consolidating wall heads.
- Replaced 100% of roof decking with new pine boards.
- Reinstalled traditional clay tiles following structural reinforcement.

Photo Caption: Left: Preparing for installation of ties; Right: Façade consolidation



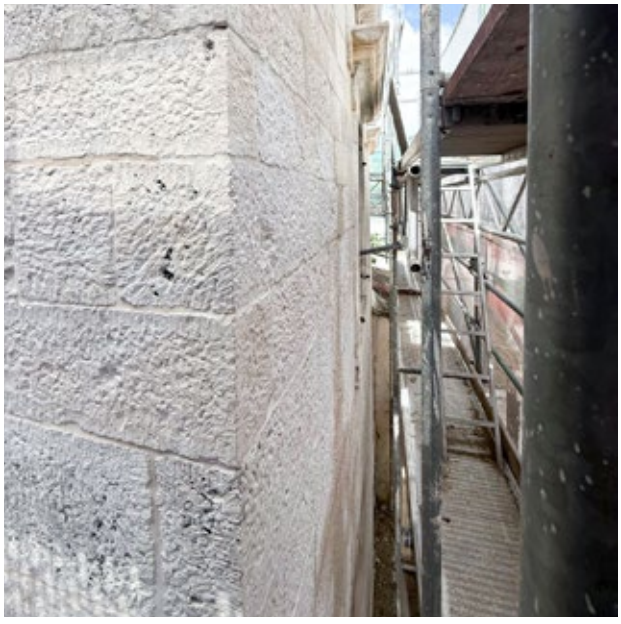





Photo Caption: Left: Cleaning tiles for re-use; Right: Roof repairs

Intermediate Floor Stabilisation

- Inspected and repaired deteriorated floor joists, replacing or doubling them where loss of strength was observed.
- Restored wooden decking and strengthened floor areas showing deformation or loss of bearing capacity.
- Ensured maximum retention of original fabric while supplementing with new timber only where structurally required.

Conservation of Interior Finishes and Decorative Elements

Plaster and Surface Treatments

- Removed incompatible cement-based interior plaster to reveal underlying structural conditions.
- Repaired cracks, losses, and delamination across walls through stitching, consolidation, and lime-based re-plastering.
- Performed biological cleaning where moisture-related stains, moss, and efflorescence were present.

Timber Ceilings and Decorative Elements

- Stabilised sagging ceilings (ceiling lifting and leveling).
- Treated wooden decorative ceiling components for insect and fungal deterioration.
- Retained original decorative work wherever possible and replaced only severely compromised elements using traditional techniques.



Photo Caption: Floor repairs

Restoration of Wooden Elements

Doors, Windows, and Frames

- Restored original wooden joinery where feasible and cleaned, consolidated, and repaired surviving components.
- Replaced degraded or non-authentic elements with accurate replicas based on material evidence.
- Stabilised internal decorative wooden railings (kangjellat), particularly those in the hajat area.

Columns of the open porch

- Identified 1982-period composite columns that had deteriorated due to exposure.
- Replaced them with solid oak columns treated for outdoor exposure, matching historical proportions and ensuring long-term durability.

Site and Functional Enhancements

Flooring Upgrades

- Removed non-authetic 1982 concrete tiles (60×60 cm).
- Implemented ground-floor paving in traditional stone slabs (4 cm thick) across all rooms, preserving the approved project intent.



Photo Caption: Left: Ceiling works; Right: Protecting after restoring

Drainage and Moisture Management

- Addressed recurrent moisture problems due to floor levels below street grade.
- Improved ground drainage and ensured compatibility of new floor surfaces with vapor diffusion.

Conclusion

The interventions at the Ethnographic Museum of Durrës focused on full structural stabilisation, recovery of historic construction logic, and conservation of authentic materials, while removing incompatible past repairs and addressing decades of degradation. Through foundation consolidation, masonry repair, timber reconstruction, roof rehabilitation, and enhancement of functional performance, the project restores the building's architectural integrity and ensures its long-term resilience as a museum dedicated to the cultural heritage of Durrës.

5.4 Kurçaj Bridge

5.4.1 Structural and Architectural Interventions

Stabilisation of the Main Arch and Load-Bearing System

- Consolidation of the masonry arch vault, where joints and stones showed erosion, detachment, and mortar loss.
- Reintegration of missing voussoirs and damaged arch stones using compatible stone blocks matching original size and texture.
- Repointing the entire vault with lime-based mortar, replacing degraded and hollow joints.
- Repair of deep structural cracks identified in the arch haunches and supports. All cross sectional and lateral cracks were tied using cross ties below the pavement level.

Photo Caption: Left: Reconstructing missing portions; Right: Creating a base





Reconstruction of Collapsed and Missing Elements

- Rebuilding of collapsed wall segments on both approaches using traditional irregular masonry with lime mortar.
- Reintegration of missing parapet (wall-top) stones to restore stability and protect the wall core.
- Reconstruction of the right wing wall, which had partially collapsed and was detached from the terrain.
- Constructing the side staircases leading to the riverbed and stabilizing the collapsed portion of the bridge

Consolidation of Retaining Walls and Foundations

- Strengthening of the foundation areas exposed by erosion and river undercutting.
- Reconstruction of damaged or missing portions of the retaining walls along the riverbank.
- Stone consolidation and stabilisation of the bridge's abutments, especially where loss of bonding mortar had caused voids.

Conservation of Masonry and Surface Materials

Cleaning, Repair, and Repointing

- Removal of vegetation, moss, roots, and aggressive plant growth covering the masonry surfaces.
- Cleaning of biological patina and surface deposits to restore stone breathability.
- Repointing of all deteriorated, open, or missing mortar joints using compatible lime mortar, replacing harmful cementitious patches where present.

Photo Caption: Pointing, consolidating



Drainage and Water-Management Improvements

Restoring Hydraulic Functionality

- Reopening and cleaning of the original discharge window, previously blocked, to reduce water pressure during floods.
- Clearing accumulated stone piles and debris at the base of the bridge to prevent redirection of water flow toward structural elements.

Erosion Control

- Stabilisation of the riverbank adjacent to the Bridge foundations to prevent future undermining.
- Grading and protection measures along the embankment to reduce scouring during high water events.

Removal of Incompatible Additions and Damage Sources

Eliminating Harmful Interventions

- Removal of cement repairs, inappropriate infill stones, and modern materials that increased water retention or introduced structural incompatibilities.
- Clearing intrusive vegetation and roots that had compromised wall cohesion.

Re-establishing Authentic Form

- Restoring the original proportions and voids of the bridge, including reinstating the historic drainage functions.

Correcting distortions in wall geometry caused by previous inappropriate additions or collapses.

Photo Caption: Restoring pavement





Site and Access Improvements

Environmental and Landscape Interventions

- Construction of gabion walls to re-direct the water flow.
- Cleaning and organizing the surrounding terrain, especially areas marked by stone collapse and debris accumulation.
- Removal of unstable elements posing risks to visitors and workers during and after restoration.

Stabilizing Approach Paths

- Regrading and securing access routes leading to the bridge to allow safe and controlled movement.

Conclusion

The interventions at the Bridge of Kurçaj focused on structural stabilisation, masonry conservation, and restoration of the Bridge's hydraulic and architectural integrity, addressing severe erosion, collapse, vegetation damage, and long-term neglect. By reconstructing missing elements, consolidating the arch and retaining walls, improving drainage, and removing incompatible repairs, the restoration ensures the Bridge's stability, authenticity, and resilience while safeguarding its cultural and historic significance.

5.5 Hammam of Durrës

5.5.1 Structural Consolidation

- Stabilisation of weakened stone masonry walls through selective consolidation and repointing with compatible lime-based mortars.
- Removal of inappropriate cement-mortar repairs that had caused cracking, salt accumulation, and moisture entrapment.
- Consolidation of deteriorated vaults and dome, using specifically designed tying system, grouting, repointing, and restoration of brickwork where needed.
- Reinforcement of vulnerable openings and niches, ensuring safe load distribution across historic masonry.

5.5.2 Conservation of Masonry, Plaster, and Finishes

- Complete removal of damaged, incompatible plaster layers on interior and exterior surfaces.
- Restoration using traditional plaster techniques including lime based plasters and hydraulic lime plasters mixed with crushed bricks for lower sections and sections exposed to humidity (dome).
- Cleaning, desalination, and soft brushing of stone surfaces to remove biological growth and accumulated dirt.
- Conservation of brick dome, surface cleaning, and re-plastering.
- Careful treatment of wall surfaces with breathable lime coatings.







Photo Caption: Top left:Masonry consolidation; Right: Consolidation of dome
Bottom: Consolidation and tying of the base of the dome

5.5.3 Moisture Management and Drainage Improvements

- Removal of cement floor layers to eliminate moisture traps and reveal original stone flooring.
- Conservation and reinstatement of historic stone floors after cleaning, leveling, and restoring damaged segments.
- Correction of moisture infiltration at the lower wall zones, improved drainage, and breathable finishes.
- Waterproofing measures applied on the roof, including a new bituminous layer and reinstatement of proper slopes.
- Vegetation removal from roofs, dome, and wall junctions to prevent further moisture penetration.







Photo Caption: Top: Cement plaster removal; Plastering using hydraulic lime plaster; Applying final layer of red plaster (hydraulic lime based plaster with crushed brick) Bottom: New drainage system

5.5.4 Dome and Roof Restoration

- Removal of deteriorated plaster from domes and trumpet transitions; restoration using lime-based materials.
- Cleaning and repairing skylight openings (oculi) and ventilation chimneys to ensure proper air movement.
- Replacement of non-authentic roof elements with historically aligned solutions.
- Reintegration of clay-tile coverings on the small dome and improved waterproofing across the entire roof surface.





Photo Caption: Left: Uncovered traces of original rain water discharge; Right: Restoring the original slopes and rain water discharge

5.5.5 Removal of Inappropriate Past Interventions

- Elimination of non-original windows, doors, metal railings, and electrical fixtures that visually or physically compromised the monument.
- Closing intrusive openings and reinstating wall continuity with stone masonry compatible in texture and dimension.
- Removal of later-added concrete, cement, and metal elements that contributed to deterioration.

5.5.6 Restoration of Architectural Elements

- Repair of niches, wall recesses, and historic openings according to archival drawings and material evidence.
- Reconstruction of missing door and window elements in a reversible manner and aligned with typological precedents.
- Restoration of interior spatial legibility by removing intrusive additions and clarifying the original circulation.

5.5.7 Interpretation and multimedia

- Along with restoration measures, interpretation panels alongside interpretation via multimedia were installed in Hammam. The interpretation via multimedia is delivered through sounds, videos of history and audio interpretations of dialogues held in Hammam.
- The interpretation is also enhanced through additional specialised lighting installed to create a sensation of water.

5.5.8 Site and Surroundings Improvements

- Reorganisation and leveling of the immediate surroundings based on the site plan.
- Removal of debris and accumulated vegetation around the monument perimeter.
- Enhancement of accessibility and visual presentation without altering the archaeological character of the zone.

Conclusion

Through a coordinated program of structural consolidation, material conservation, moisture remediation, removal of incompatible additions, and restoration of original architectural character, the interventions at the Hammam of Durrës ensure the long-term stability, authenticity, and interpretive clarity of this rare Ottoman-era bathhouse. Additional interpretation adds to the enjoyment and easier reading of layered history. The work reinstates the monument's historic fabric, improves resilience against environmental risks, and prepares the site for sustainable cultural use while preserving its archaeological sensitivity.

Photo Caption: Structural consolidation of the dome



6. Results and Outcomes

6.1 Ethnographic Museum of Kruja (exterior)



Before

After



Ethnographic Museum of Kruja (interior)



Before

After



6.2 Ethnographic Museum of Kavaja (exterior)



Before

After



Ethnographic Museum of Kavaja (interior)









6.3 Ethnographic Museum of Durrës (exterior)



Before

After



6.3 Ethnographic Museum of Durrës (interior)



Before

After



6.4 Kurçaj Bridge



Before

After



6.5 Hammam of Durrës



Before

After



Hammam of Durrës





7. Maintenance and Monitoring Plan

Towards the end of conservation interventions at the Ethnographic Museums of Kruja, Kavaja and Durrës and for Bridge of Kurçaj and Hammam in Durrës, UNOPS has produced maintenance manuals for all assets. The manual defines daily, weekly, monthly, seasonal, and annual maintenance cycles for various categories of interventions.

7.1 Ethnographic Museums of Kruja, Kavaja and Durrës

Daily, weekly, monthly, seasonal, and annual maintenance cycles including:

Daily:

- Visual inspection of entrance, circulation paths, and interior spaces for cracks, new moisture spots, or fallen material.
- Light cleaning of accessible areas, removal of dust and debris.
- Daily check of essential equipment, including:
- Electrical panel
- UPS
- Monoblock (AC)
- CCTV (as needed)

Weekly:

- Vegetation control around the museum to prevent root intrusion and moisture retention.
- Checking for minor erosion, surface wear, or early deterioration on exposed masonry or exterior surfaces.

Monthly:

- Inspection of interior and exterior wall surfaces to detect mold, biological growth, efflorescence, or new cracking.
- Drainage and water-flow checks to ensure channels and runoff systems are unobstructed.
- Review of digital and electrical equipment, adjusting as needed.

Seasonal:

- Inspection of HVAC systems, especially the server-room conditioning system, at season changes.

- Roof, terrace, and gutter checks for moisture infiltration, damaged elements, or accumulated debris—especially after heavy rainfall and during autumn.
- Assessment of parapets, exposed timber, and exterior plaster for weather-induced deterioration.

Annual / Multi-Year:

Fire-system servicing, including:

- Fire extinguishers
- Alarm system
- Hydrants
- Evacuation plan refresh (if needed)
- CCTV, heating, and electrical system controls, including condition testing and logging maintenance needs.
- Annual structural condition review of masonry, timber elements, and architectural finishes.

Every 3 years: Superficial façade inspection for surface deterioration or cracking.

Every 5–7 years:

- Façade cleaning
- Minor mortar-joint repairs
- Touch-ups to prevent deeper decay
- Emergency Maintenance (General Procedure)
- Immediate preliminary inspection to identify potential damage and risk level.
- Notify authorities and form an expert group for full evaluation.
- Restrict access to prevent injuries and further damage.
- Develop a recovery and restoration plan based on professional assessment.

After an Earthquake

Check for:

- Roof tile displacement
- Cracks in façade
- Cracks in adobe or interior plaster
- Limit access until structural safety is verified.

After a Fire

- Identify fire origin and structural consequences.
- Ensure fire is fully extinguished and prevent re-ignition.
- Inspect timber and roof elements for heat-related deformation or collapse risk.

After Heavy Rain

- Inspect drainage systems for blockages and ensure water is diverted away from foundations.
- Check roof, terraces, openings, and basement levels for moisture infiltration.
- Monitor for erosion or water accumulation around the building perimeter.

After Strong Winds

- Inspect doors, windows, shutters, and exterior timber for movement or damage.
- Check surrounding trees, vegetation, and electrical lines for hazards.
- Clear debris and secure weakened architectural elements.

Conclusion

A structured maintenance cycle—daily through multi-year—combined with clear emergency protocols, ensures that the Ethnographic Museums remains safe, stable, and well-preserved. Consistent inspections, vegetation control, drainage management, equipment servicing, and rapid emergency response form the core of sustainable heritage stewardship.

7.2 Bridge of Kurçaj

Daily, Weekly, Monthly Maintenance

- Visual check of the Bridge's accessible areas for new cracks, fallen stones, displaced cobblestone, or signs of erosion.
- Observation of riverbed conditions for unusual changes in flow direction or accumulation of debris that may begin to stress the structure.
- Light vegetation control around the immediate perimeter of the Bridge to prevent root penetration into masonry.
- Check parapets and walkway for loosened or newly shifted stones.
- Monitoring of gabions visually (from a distance) for early signs of movement.
- Inspection of masonry joints for micro-cracks or early mortar loss.
- Check the cobblestone surface for depressions, settlement, or displaced stones.
- Review gabion stability to identify deformation before the rainy season.

Seasonal Maintenance

After the Season of Heavy Rains

1. Inspect gabion walls on all three levels for:

- Deformation
- Displacement
- Wire fatigue or breakage

2. Replace compromised gabion baskets following the original specifications
3. Reinstate stone fill where loss or voids are observed.

Annual Maintenance

1. Full inspection of bridge structure, including:
- Masonry surfaces
- Arch joints
- Parapet connections
- Cobblestone paving
- Stair access and approach paths

2. Evaluate steel tie performance for corrosion or movement.
3. Check drainage patterns around Bridge approaches to prevent foundation undermining.

Emergency Maintenance Protocols

After an Earthquake

1. Detailed structural inspection of:
- Connections between bridge and foundations
  Arch for cracking or deformation
- Parapets for displacement
- Lateral masonry walls and cobblestone surface
- Steel tyrants for loosening or failure

2. Restrict access immediately until specialist assessment is made.

After Heavy Rain

1. Inspect:
- Gabions at all three levels for settlement, deformation, or displacement
- Binding wires between gabion baskets

2. Replace or secure gabions using original specifications and fill.

Conclusion

The maintenance framework for the Bridge of Kurçaj centers on regular inspection, gabion stability control, masonry monitoring, and rapid response after environmental events, ensuring long-term structural stability and preserving the authenticity of this 17th-century cultural monument. Periodic and multi-year interventions support resilience against erosion, moisture, and seismic activity while maintaining the bridge's historical integrity.

7.3 Hammam of Durrës

Daily, Weekly Maintenance

1. Routine visual inspection of essential equipment in the building:
- Electrical panel (check for tripped automatics).
- Room temperature in the server/multimedia area (must remain below 25°C).
- Air-conditioning units (verify normal operation).
- UPS system (ensure functioning and no error signals).
2. Light visual check of façades and openings for early signs of cracking or moisture.
3. Inspect doors and windows for stiffness, damage, or improper closure.
4. Check surrounding walkway and entrance areas for debris that may direct water toward the walls.

Monthly Maintenance

- Check interior plaster surfaces for efflorescence, moisture spots, or detachment.
- Observe cupola and niches for micro-cracks or early plaster fissuring.
- Confirm correct functioning of digital equipment and multimedia systems (projectors, sensors, network unit).

Seasonal Maintenance

1. Check the HVAC/conditioning system in the server room at each season change.
2. Inspect roof for:
- Moisture infiltration
- Surface cracking
- Deterioration of waterproofing
3. After autumn/winter rains, assess all upper wall zones and domes for water marks or surface decay.

Six-Month Maintenance

1. Fire safety systems:
- Inspection of fire extinguishers
- Control of the fire-alarm system
- Check of on-site hydrants
- Display/update evacuation plan and emergency contact numbers

2. Technical systems:
- Inspection of CCTV
- Verification of underfloor heating performance

Annual & Multi-Year Maintenance

Every 3 Years

- Inspection of the façade to detect cracks, deterioration, or weathering.
- Façade cleaning (dust, soot, deposits).
- Minor touch-ups to mortar joints and small repair areas as needed.
- Replace damaged or worn-out elements of exterior finishes with compatible materials.

Emergency Maintenance Protocols

After an Earthquake

1. Immediate inspection of:

- Terrace waterproofing layer (possible cracking).
- Exterior façade for structural cracks.
- Dome and niche arches for fissures.

2. If damage is confirmed:

- Restrict access.
- Assemble an interdisciplinary specialist team to prepare a restoration plan.

After a Fire

- Assess the extent of damage, especially to equipment and timber elements.
- Assemble a specialist team if deterioration is noted.

After Heavy Rain

- Inspect all spaces beneath the terrace to detect water infiltration.
- Check plaster and wall finishes for new damp spots or dripping points.

After Strong Winds

- Inspect terrace drain openings (piletas) for blockages caused by debris.
- Verify the condition of doors and windows on the façade.

Conclusion

The maintenance system for the Hammam of Durrës emphasises regular equipment checks, seasonal monitoring of moisture and waterproofing systems, periodic façade inspections, and clear emergency procedures. Together, these measures ensure the long-term preservation of the monument's masonry, domes, plasterwork, and integrated digital installations, safeguarding both its historical integrity and its new interpretive functions.

8. Project Management and Funding

UNOPS (United Nations Office for Project Services) applied a unified, structured project management approach for the conservation and restoration of the Ethnographic Museums of Kruja, Kavaja and Durrës and for Bridge of Kurçaj and Hammam of Durrës, all implemented under the EU4Culture programme. Despite the different histories, conditions, and functions of all the monuments, UNOPS followed a consistent methodology designed to ensure quality, transparency, risk control, and long-term sustainability.

8.1 Condition assessment and conservation scope

For all buildings, UNOPS began by conducting:

- Technical assessment and Documentation
- Preliminary condition assessment
- Development of conservation scope

8.2 Stakeholder Coordination

- Collaboration with the Regional Directorate of National Cultural Heritage
- Engagement with users and State institutions operating inside each building
- Alignment with national heritage legislation and EU cultural preservation standards

8.3 Design Development and Technical Preparation

Throughout the duration of implementation of EU4Culture programme, UNOPS was supported by an external licenced conservation design team for development of conservation designs.

The conservation designs were controlled and coordinated by the UNOPS infrastructure and cultural heritage team, which closely controlled all the portions of design.

Compliance and Approval Process

- Reviews by UNOPS - Once designs were controlled by the internal UNOPS team, and were defined as ready, they were sent for additional control by UNOPS Infra-

structure and Project Management Group (IPMG). Only after designs were revised and IPMG certificate was issued, the designs were considered finalised.

- Reviews by heritage authorities - As per the Albanian legislation, once conservation designs are finalised, they are submitted for approval to the National Scientific Council at the National Institute for Cultural Heritage. If the Scientific Council does not have any comments, the designs are forwarded to the National Council of Material Heritage. Once approved and respective conservation permits are received, the design can be procured for implementation. Important to note is that if during implementation changes arise, designs need to be revised and re-sent for approval. Furthermore, and for the aspects of Museum displays re-designs, the permits were acquired through two cycles. The first cycle meant acquiring the approval for the concept of reconceptualised museum lines at both Ethnographic Museums, while the second cycle of approvals granted the final permission on full museum line designs. The permits for museum reconceptualisation are issued by the National Council of Museums.
- Incorporation of safety, fire-protection, and energy-efficiency measures

8.4 Procurement and Contractor Management

Once designs are equipped with all respective permits, UNOPS ensured transparent, competitive procurement, including:

- Selection of qualified contractors licensed for conservation of heritage assets
- Procurement followed UNOPS global procurement rules, ensuring integrity and value.

8.5 Oversight of implementation of works and quality assurance

During the implementation of works, UNOPS provided:

- On-site supervision on behalf of UNOPS, which meant that at least one associate civil engineer employed by UNOPS was daily on the site, monitoring progress, quality and controlling environmental, health and safety requirements. An important role for UNOPS engineers was risk management, where engineers were tasked with filing daily and weekly health and safety reports, risk assessment reports, and daily logs.
- Third party supervision - an external licensed supervision company was hired to support UNOPS in controlling implementation, certification of quality, implemented volumes, etc., throughout the duration of work. This was important, especially since the National Institute for Cultural Heritage, which initially provided this support, was lacking capacity specifically in areas of structural, mechanical and electrical engineering.
- Highly important was a follow up on all conservation measures which was done by UNOPS cultural heritage adviser regularly

8.5.1 Health and Safety

UNOPS applies a rigorous Health and Safety Management system designed to ensure that all restoration and construction activities are carried out with maximum protection for workers, visitors, and the surrounding community. This system is grounded in international HSE standards and includes comprehensive risk assessments, method statements, and safety protocols developed prior to the start of any work. On-site supervision ensures strict adherence to protective measures such as the use of personal protective equipment (PPE), scaffolding safety, fall-prevention systems, controlled access zones, and fire-prevention procedures—especially critical in heritage buildings containing combustible materials. UNOPS continuously monitors worksites, conducts safety briefings and toolbox talks, documents incidents, and enforces corrective actions to prevent reoccurrence. Through this structured approach, UNOPS maintains a safe working environment while safeguarding the integrity of cultural monuments and the well-being of everyone involved.

During the implementation of works, infrastructure project manager, lead construction management engineer and civil engineer were tasked with daily coordination and support as to ensure all the health and safety Measurements are met.

8.5.2 Documenting and reporting

UNOPS follows a rigorous documenting during implementation. Documentation is done through following:

- Shared digital drive-based documentation system, where all data regarding the design, contract, meetings, reporting, daily photo documentation, are stored and available to the engineering team
- The documentation as well includes all segments related to environmental management, risk management, HSSE management, logs and inspections.
- Reporting as well is done on several levels:
- Initially biweekly, and later monthly reporting to donor
- Biweekly detailed progress reporting to donor and beneficiary
- Regular technical and coordination meetings with both donor, beneficiary, asset managers and similar
- Reporting in UNOPS field data collection platform (UNOPScollect system) where daily logs, daily and weekly HSSE reports are collected

8.6 Testing, Commissioning, and Hand-Over

Prior to final completion is declared by the contractor, together with supervisor UNOPS checks:

- The functionality of new MEP (Mechanical, Electrical, and Plumbing) systems: electrical panels, fire alarms, UPS, HVAC, CCTV, generators

- Structural integrity and stability
- Quality of surface finishes, floors, roofs, and restored masonry
- Compliance with fire and building safety standards

Once all remarks have been addressed by the contractor, the works are subject to inspection. UNOPS, together with the contractor, supervisor, the National Institute for Cultural Heritage, the relevant Regional Directorate of National Culture, the site beneficiary, and the site manager, jointly conduct the site inspection.In parallel, and following the final supervisor's approval, all project documentation is handed over to a commission, which issues the Commissioning Act. Once the Commissioning Act is issued, the site is provisionally handed over to the beneficiary. This moment also marks the start of the Defects Notification Period (DNP). The DNP for all sites restored under EU4Culture was 12 months, with the exception of one site, which was an emergency stabilisation and did not require a DNP due to the temporary nature of the intervention.

Final Hand-Over

During the DNP period UNOPS conducts periodic controls and coordinates among beneficiary and contractor in eventuality of defects. At the end of 12 months final inspection is invited and if there are no remarks, the final hand-over certificate is signed by all parties, which marks the full conclusion of the works by UNOPS.

8.7 Overall Added Value of UNOPS Project Management

By applying its globally recognised project-management system, UNOPS ensured that all buildings benefited from:

- Transparency and international procurement standards
- High-quality heritage-compatible restoration
- Strong safety and risk mitigation
- Efficient use of EU4Culture funds
- Sustainable long-term maintenance frameworks
- Enhanced functionality while respecting historical authenticity
- Capacity building and knowledge transfer to national and local stakeholders
- Engagement of academic institutions and students through on-site learning opportunities
- Promotion of inclusive participation, including gender-balanced involvement of experts and professionals

UNOPS delivered projects that not only restored important cultural buildings but also strengthened institutional capacity for ongoing stewardship.

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