

## **A study for the conservation of the architectural Islamic complex of Xhemal in Delvina (Albania)**

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### **ABSTRACT**

Water is a fundamental element for Islamic culture and the need to purify themselves before the prayer and religious celebrations is made in special baths - near mosques - called hammam. The hammam is usually a large public service building, but there are particular types of small dimensions and for the exclusive use of a wealthy family or, as in the case study here presented - related to the Islamic complex of Xhemal in Delvina (Albania) - an integral part of a religious centre.

Characterised by a singular complexity, the monumental site of Xhemal is composed of some aboveground tombs, a mosque, a tekke, two türbe, a fountain and a hammam indeed, as well as of ancient tall plants (cypresses and plane trees). The building, already listed by the national Institute for Cultural Monuments of Albania, has been the subject of a study carried out by prof. Valter Shtylla at the end of the 70s and classed as a hammam from the medieval period. Provisionally measured only in its plan, it is today in a state of serious deterioration, while an example of great interest. For this reason and, along with the entire complex, since 2008 it has been an object of study by the University of Bergamo and Enna Kore, within the research group formed by the Milan Polytechnic and the University Ca' Foscari, in the framework of the program “Albania tomorrow” co-funded by the Cariplo Foundation, in collaboration with the municipality of Delvina. The complex has recently been subjected to a complete laser scanning survey in order to develop a well-planned preservation and valorisation programme.

**KEYWORDS:** Islamic cultural heritage, hammam, conservation and valorisation, 3D survey

### **1 INTRODUCTION**

The territory of Delvina is a complex settlement system, which must be read in the context of its strategic location on the routes between the coast and the inland mountainous regions of southern Albania. Important military centre, the city controlled the commercial ways from the region of Agirocastra, connecting Saranda and Himara along the valley of the Kalasa river (Boriani et al., 2009). Of the ancient caravan route remain today some important infrastructure such as bridges and caravanserais, already catalogued by the *Institute of Cultural Monuments (IMK)*, the body responsible for the protection of national heritage (Maiellaro, 2008).

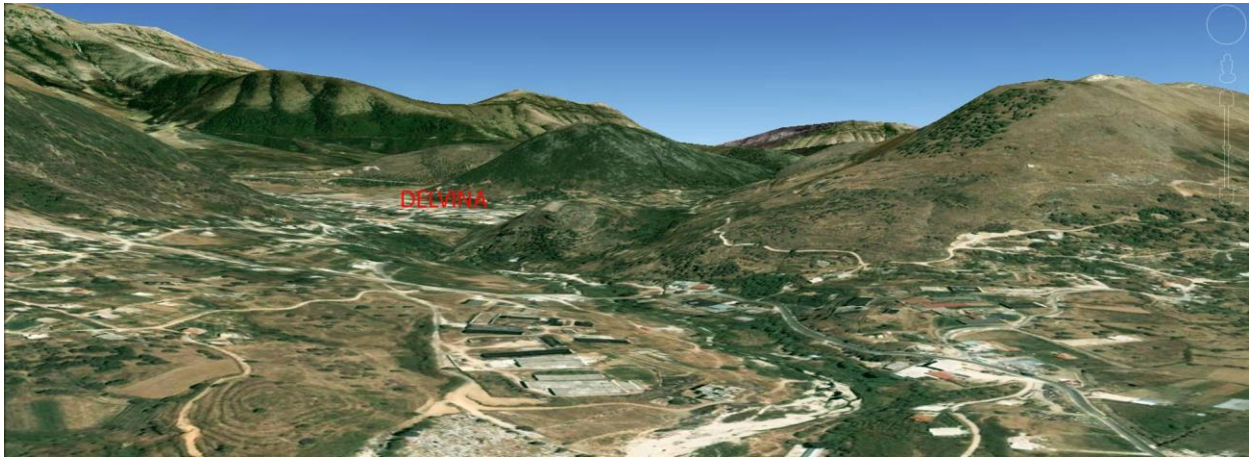


Figure 1: The region of Delvina

The conquering of the South of Albania by the Ottoman Empire in the 15<sup>th</sup> century, as the decision to elect the city as the administrative capital of the territory (the sanjakate of Delvina), resulted in a significant architectural and urban growth. It also started a process of Islamization of the population, through the building of places of worship and prayer (Hysi, 2009). In a few years, the city shifted from simple farming town to military, religious and commercial site, doubling its population; new neighbourhoods, buildings and palaces were constructed and the castle rebuilt.

The sources documenting this period are scarce and largely have been missed during the Communist period. The most reliable evidence for understanding the social and cultural history of the city in 17<sup>th</sup> century is the report of the Turkish traveller Evliya Çelebi, known by the name of *Seyahatname* (Book of Travels). The manuscript, in 10 books, contains descriptions of the countries explored and specific geographical and cartographic data, historical reconstructions on the descent of the settlements, information about their government and administrative arrangements as well as a list of the principal architectural structures of the urban centres. For each city are, in fact, listed the public buildings with an indication of the (major and minor) mosques, the schools (theological, Koranic and primary training), the Palaces and noble houses, the covered market, the religious centres, the public fountains and, finally, also the hammam.

The town of Delvina develops “*at east of the rook, with approximately 100 houses covered in tiles. The city is located in an open area and the houses are away from each other as the distance of an arrow, so that if bandits attacked a house, the neighbours would be aware of the fact. For this reason, every home has a large tower with iron doors and thick walls*” (Dankoff et al., 2000, p. 64). The essay then highlights the existence of a scattered settlement consisting of fenced building with large gardens. Very precise is the description of the castle and the mosque: “*The fortress of Delvina has a pentagonal shape, it has been built with solid stones on top of a rock (...) inside the fortress there are three houses, covered with shingles: one of the guardian, the other of the officer and the third of the Imam. In addition, there is a mosque without a minaret*” (Dankoff et al., 2000, p. 59).

The stories of Evliya Çelebi are considered by many authors at times unreliable because some described places appear to have never been visited by the traveller (they are, in fact, narrated, on the basis of other sources albeit not always quoted) and in any case, they are incomplete and chronologically limited to the second half of the 17<sup>th</sup> century. However, they highlight the military importance of Delvina and the close link between the armed control of the territory and the Islamic ideology.

The Islamic places of worship, built mainly in the vicinity of the places where the military conquest had settled - initially modest and placed within protected areas of the castles - became later even impressive and/or small “neighbourhoods” close to the forts. Their intent was to convey the superiority of the Ottoman Empire and Islam and promote the conversion of conquered peoples.

The paths of the ancient city are now hardly recognizable and heavily degraded due both to the neglect and to the will to erase the memory of the past in the age of “Albanian revolution”. The castle, now

in ruins, retains only a part of its fortifications and some remains of its towers; inside are indistinguishable parts of small masonry buildings, including a mosque without a minaret, probably dating back to the early period of the Ottoman invasion in Albania (Bace, 1977). Adjacent to the fortress, along the road leading to the fortified city from the heights, is visible the imposing remains of the Fatih Mosque, made during the period of Mehmet II in the second half of the 15th C. The fortress and the mosque dominate the Islamic complex of Xhemal, a figure that in Albanian language means “village of Jemal”.

This is a fascinating and mysterious place (popular legends testimony of the miraculous powers of the site) composed of a building with a small porch and a room with two tombs inside, a mosque with the base of the minaret by now collapsed (while keeping inside parts of the decorations in stucco and ceramic even if they are deprived of the wooden roof) and a burial area with two mausoleums. Other ruins allow to hypothesize a wider extension of the site, perhaps an Islamic school, other *tyrbe* (5 in total, another hexagonal in plan and two square-shaped), another building with a fountain with three jets and the ancient *tekke* now barely recognizable and transformed into dwellings (Simaku, 2013).

A source of water is still running a short distance, a large tank allows for a constant supply of water and a big bathtub partially covered in stone was probably used to wash cloths and drinking troughs for animals. A small stream, which still exists, allowed the water source to provide supplies to a small hammam, little further downstream.

Some scholars identify the area as an integral part of the ancient town of Delvina also because of the memories of Evliya Çelebi who describes only one bathroom in the heart of the city and close to the bazaar. This assumption, however, is a source of some concern (Simaku, 2013) that even the authors of this paper share for several reasons. The first inconsistency is evident from the reading of the map of the region, which clearly shows that the complex of Xhemal is at south of the fort in an area characterized by steep slopes, while the city narrated by Evliya Çelebi rises in the east of the fort and in a flat area near a large river. Another factor for consideration is the lack of remains or ruins (houses foundations, boundary walls, etc.) that could document the presence of a part of the city, if not the few listed buildings, closely linked to the Islamic religion. Finally, the small size of the hammam is functional only to a minor community of people, maybe different from the one indicated in the chronicles of travel; not all the hammam are always listed by Evliya Çelebi because of private use and/or simply unknown to him (D'Amora, 2010).

Given the proximity of the castle and the armed guard, it is much more plausible that the Islamic complex was linked to the Bektasci order, by nature closely linked to the military life of the Ottomans, given the central role that the monks had on the Janissaries, giving their blessing and becoming spiritual leaders (Macchiarella, 2009). A “holy” place not linked to the life of the city and for some reason omitted from the description of the traveller.

The current state of research and knowledge on Delvina do not allow making any certain statement. Because the archival sources examined did not let to confirm any of the hypotheses, it was decided to undertake a fact-finding phase by direct survey aimed at deepening the entire complex and the survivor

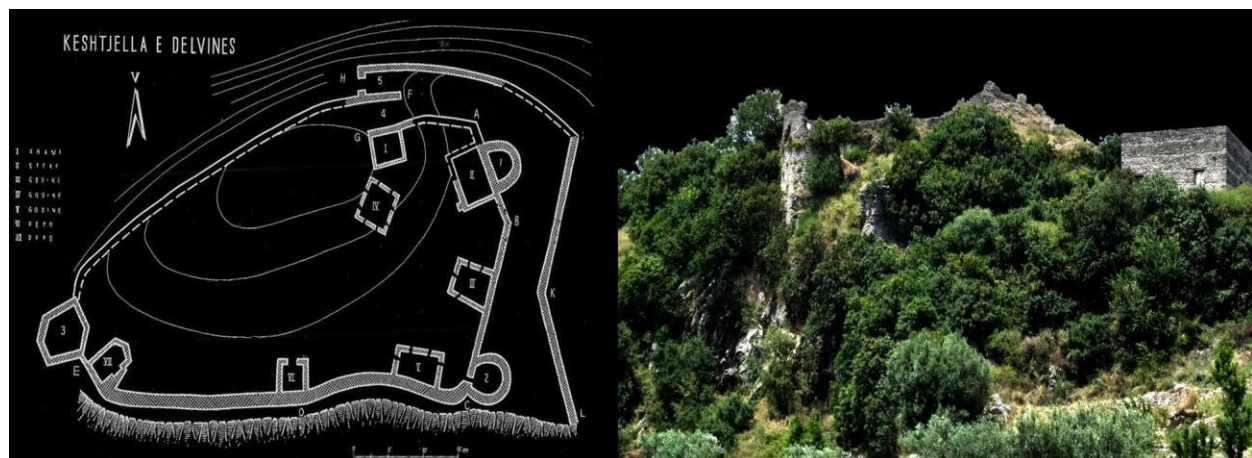


Figure 2: The castle and the mosque of Delvina

buildings from material and metric point of view (a knowledge, to date, extremely incomplete or erroneous), in order to trace its history and evolution.

The site is an example of great interest but is currently in a very strong state of neglect. It is practically unknown and distant from the tourist circuits: almost unattainable because of the lack of roads and hidden by vegetation. For this reason, it has been studied again since 2008 - along with the entire complex.

In the spring of 2011, a team of researchers from the Italian Universities of Bergamo and Enna, external consultants of the project “Albania Tomorrow” have conducted a first measurement campaign with 3D laser Scanning technology: an essential activity in order to develop a program of measures aimed at its preservation and promotion. In particular, the investigation has been focused on the hammam in Xhemal: a small interesting property inserted in the catalogue of the Albanian Hamam built between the 15<sup>th</sup> and the 19<sup>th</sup> century (Shtylla, 1979), now unfortunately in high static instability conditions and in greatest conservation need.

## 2 SOME ASSUMPTIONS ON THE XHEMAL’S HAMAM

In the Islamic architecture, the bathroom is an important building not only from architectural point of view, but also for the social and public roles it plays, as well as for the religious values to it associated, related to water and purification (Castiglia et al. 2008).

The Xhemal’s hammam in Delvina is a small building with a regular shape. It is an independent structure, isolated from the religious complex and from the other buildings, probably used only by the monks of the *tekke*. Its architecture is well organised and intimate. The interior space is fully used: four small rooms - the *apodyterium*, the *frigidarium*, the *tepidarium* and the *caldarium* - are clearly identifiable. It is worth pointing out that the names used by the authors to indicate the rooms - more suitable to describe a Roman spa rather than a small Albanian hammam – are only evocative of their function. Even V. Shtylla, in the absence of an accurate description of the rooms, refers to a “fire room”, an “undressing room”, a “bathroom” (Shtylla, 1979).

The access to the hammam was through a small opening directly into the *apodyterium*, a rectangular unheated room, covered with a vaulted ceiling and partly with a small dome with four *oculi*. Used as a dressing room, inside were located benches and shelves (as maybe testified by some holes in the walls) on which to place clothing; a second opening is today still existing but the authors of this paper speculate that it was made after a change in the building’s function. This hypothesis (that needs to be supported through a stratigraphic analysis) is based on the observation of the differences between the two openings: one characterised by worked stone piers with an overhanging arch in bricks and the other apparently reducible to a simple cut into the wall and shaped into the existing masonry bricks. The *frigidarium* directly connected to the *apodyterium*, is squared and slightly raised compared to the latter covered with a dome characterized by eight *oculi* with stucco decorations.

Any portion of masonry or other traces on the pavement unfortunately confirm the presence of a *piscinae* of cold water, perhaps never present in baths of this reduced size. A small passage connecting the “cold” with the “hot” rooms of the building: the *tepidarium* (bigger and kept up at moderate temperature) and the *caldarium* with warm water and steam. Both are covered with vaulted ceilings (some decorated) and are illuminated by eight hexagonal *oculi*, equal in number but differing in the organization. Terracotta pipes and channels under the floor are clearly visible and well kept. Outside are easily distinguishable the overhead base and a number of openings allowing to hypothesize the existence of an air interspace. Neither the furnace nor the water tank are existing while a portion of the barrel vault indicates their possible former existence as well as part of the waterproofing plaster.

The comparison with the description provided by the *Institute for Cultural Monuments* shows how sadly during the last forty years, there has been a worsening of the monument’s condition. In particular, there is no longer trace of the terminal part of the ceramic pipes, of the wooden parts and of the tanks. The building itself is hidden because infested by vegetation that has completely covered and concealed it, while the interior is a shelter for animals.

### 3 THE ACTIVITIES UNDERTAKEN: THE 3D SURVEY FOR THE BUILDING'S COMPREHENSION

The critical conditions of the buildings required a really detailed and fast survey in order to proceed with safety operations. For this reason, the authors of this paper performed the work, by using 3D laser scanning technology. Survey activities were carried out in only two days: the first day was consecrated to the establishment of a topographic network in order to geo-referencing the whole complex. The purpose of this phase was to reconstruct the site's spatiality and to determine, in an accurate way, dimensions, distances and plano-altimetric relationships between the different buildings.

The second day was devoted to the survey of the hammam. The building was scanned through the creation of two networks of targets: one external for the survey of the planimetry and of the elevations, the other internal in order to obtain the floor plan and the cross-sections, connected to the network previously realized.

The Faro Focus 3D, laser scanner with a very small weight (only five kilos) and a high-speed data acquisition used for this work has allowed to scan both within the halls (the small size of which would make it very difficult to use other instruments) and externally, in an area characterized by high steepness. The survey has allowed to obtain a photo-realistic and accurate 3D model consisting of very dense points (with a maximum distance of 5 mm) from which were obtained orthographic projections for the drawing of facades and profiles for the drawing of the cross-sections.

The activities carried out have increased the metric, geometric and material knowledge of the monument; the 3D model acquired permitted not only to re-draw in a correct way the building's walls but also to discover and graphical render the true geometry of the floor plan and that of the ceiling with the details of the vaults and of decorations. It also provided a clear indication on the building's deformations and on the crack patterns, as well as a better identification of structural elements and degradation phenomena through the texturing on the point cloud by photographic images.

### 4 CONCLUSIONS

The case study that this paper summarise is part of a larger program aimed at the restoration and enhancement of the whole complex carried out by the colleagues from the University Ca' Foscari of Venice and the Politecnico di Milano. Following the 3D survey and thanks to the analysis conducted, some safety activities were carried out on the hammam in order to avert the collapse, waiting for solvers consolidation work (Giarlelis et al. 2007). The state of neglect, the damages caused because of weathering and earthquakes have caused a disruption in the continuity and in the shape of the structural system with partial collapses and large cracks. The use of new technologies, 3D laser scanning has allowed the reconstruction of the real geometry of the building, offering the opportunity to realise a structural model more responsive to the real behaviour of the structure, favouring a more accurate static and dynamic analysis.



Figure 3: Laser scanning survey. Point clouds of the hammam and the part of the complex

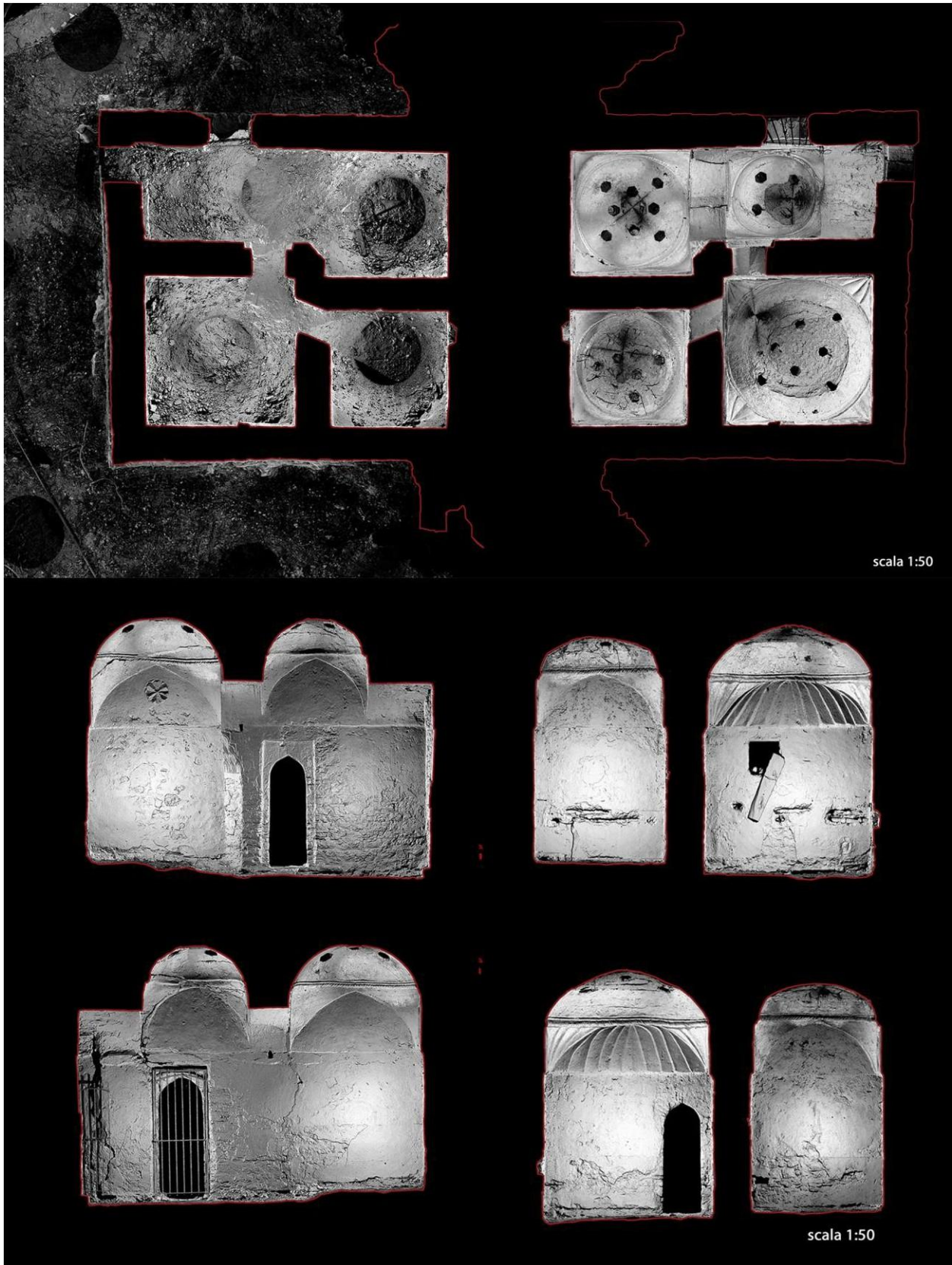


Figure 4: The hammam. Raw orthophotos from laser scanning survey

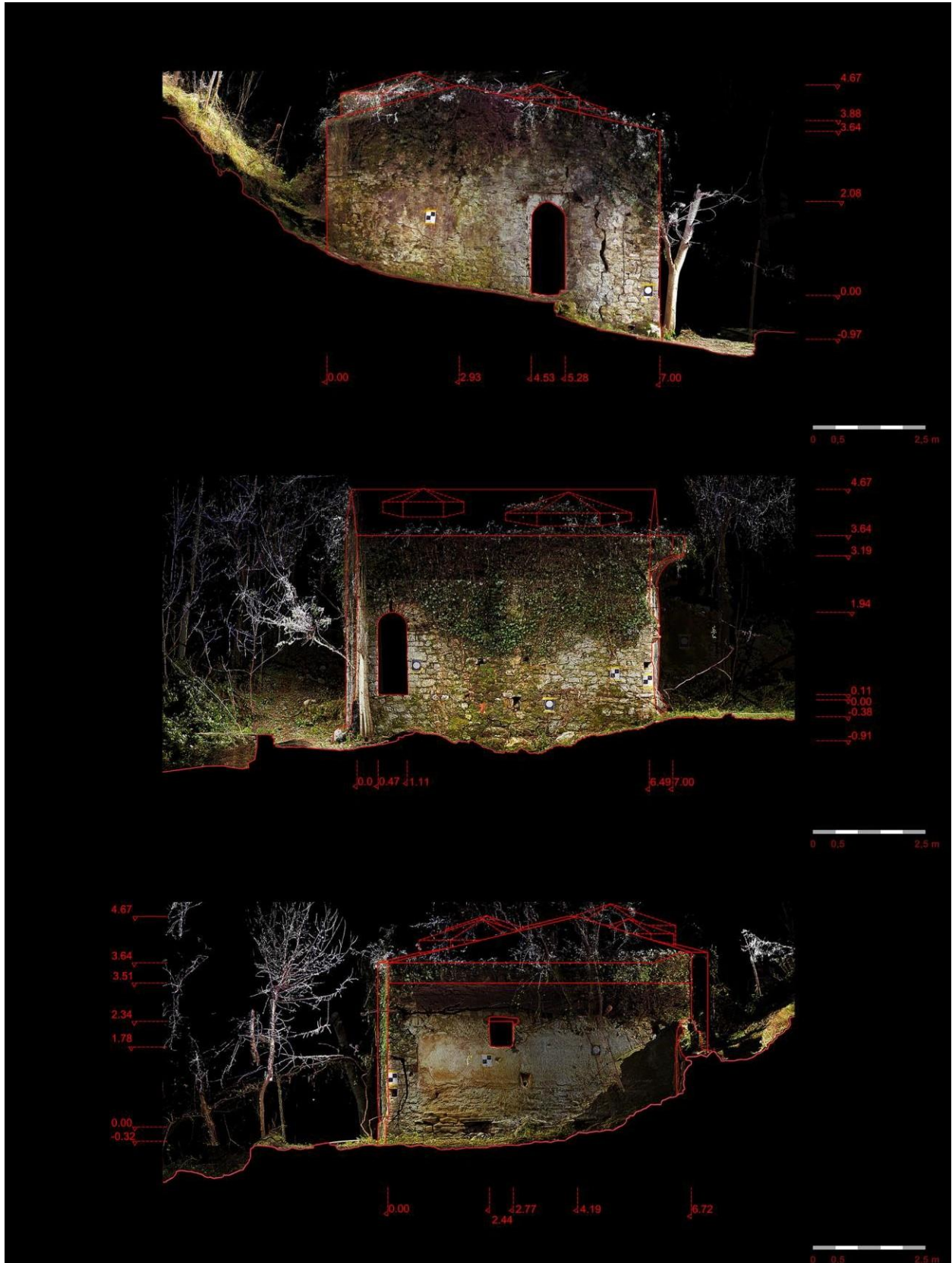


Figure 5: The hammam. Color orthophotos from laser scanning survey

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