

## Quşayr ‘Amra Conservation Project: 2010 - 2014

Quşayr ‘Amra is a magnificent *bathhouse* located in the eastern desert of Jordan, 80 km east of Amman, along the road to Azraq and it is one of the four World Heritage Sites in Jordan, having been inscribed on the list in 1985. It is part of a large complex including a *qaşr*, a watchtower, quarries, two deep wells and associated hydraulic features, and other unexcavated infrastructures. Recent epigraphic discoveries and C<sup>14</sup> dating are in agreement in assigning the construction of the bathhouse to the reign of caliph Hisham between 723 and 743 AD, although it seems that was Prince Walid Ibn Yazid who actually commissioned the construction and decoration of the bathhouse.

Quşayr ‘Amra is commonly assigned to the broader group of desert castles, typical architecture of Umayyad times scattered in the deserts of Syria and Jordan. These structures were built by the Umayyads to strengthen political and economic control over the region while also offering attractive spaces to engage the chiefs of local *bedouin* tribes in leisure activities and political discussions, thus ensuring that relations with them remain firm<sup>3</sup>.

In 2008 the Department of Antiquities of Jordan approached the World Monuments Fund

requesting financial and technical assistance in tackling a number of problems identified in the conservation of the mural paintings which are the most important feature of the site. This request resulted in a joint project of the Department of Antiquities, World Monuments Fund (WMF) and the Istituto Superiore per la Conservazione ed il Restauro (ISCR - Institute for Conservation and Restoration, Italy) which began in 2010 and is still ongoing.

### History of Discoveries and Interventions

Early mentions of Quşayr ‘Amra appear in the 17<sup>th</sup> century chronicles of Hajj pilgrims. However, the first clear reference to the site and its paintings dates back to 1806 and was made by Ulrich Seetzen (1808). Shortly after, in 1812, Quşayr ‘Amra was visited by Johann Ludwig Burckhardt, who explored the site and its surroundings and who briefly reported on the presence of paintings and other archaeological features (1824).

At the end of the same century, in 1896 and 1897, Gray Hill tried to visit the site, but was discouraged by intertribal conflicts and the volatile security in the area. The site was briefly visited again in 1898 by the Czech

1. Istituto Superiore per la Conservazione ed il Restauro.

2. World Monuments Fund.

3. Alhasanat et al. 2012. Early interpretations saw these structures as ‘pleasure palaces’ or ‘hunting lodges’ (see for example Cress-

well 1969 or Hillenbrand 1982). More recently the strategic role of these structures has been recognized (see also Vibert-Guigue and Bisheh 2007).

priest and scholar Alois Musil, who succeeded in entering the main monument building before being forced to escape due to a sudden *bedouin* attack. Musil returned to the site in 1900 for a brief documentation campaign (1902). Musil came again in 1901, this time with painter Adolph Mielich, to complete the documentation with further photographs, measurements and drawings (1907). In this occasion, Musil and Mielich also undertook a first cleaning of the paintings with brushes and chemicals, which presumably initiated, at least in some areas of the site, their progressive deterioration and decay. Fragments of paintings were also detached from the walls and brought to Vienna for study purposes, including fragments of the renowned scene of the six kings. These fragments are currently conserved at the Museum of Islamic Art at the Pergamon in Berlin.

In 1907, or possibly between 1909 and 1912, the site was visited by Friars Antonin Jaussen and Raphaël Savignac, both from the École Biblique in Jerusalem, who carried out a new documentation survey of the site, including new photographs, drawings and measurements (Jaussen and Savignac 1922). A further visit by Alois Musil in 1909 ensured full documentation of the inscription preserved on the southern wall of the western aisle of the main hall. In this occasion Musil also tried to export one more fragment of the paintings, but was caught by a *bedouin* attack during the preparatory work. Musil left abruptly while he was pasting bandages to the fragment in order to facilitate its detachment. Puzzled by the bandaged image they found upon their entry, the *bedouin* destroyed it. In the Twenties or early Thirties the site was the object of explorations and documentation by Sir K. A. C. Creswell, at that time Inspector of Monuments in Palestine and Syria (1932). Later on, in the Thirties and up to the Fifties, it hosted several visits by Gerald Lankester Harding, Director of Antiquities of Jordan from 1936 to 1956.

The Fifties and early Sixties were also

the time of the earliest conservation work at Quşayr ‘Amra. These were carried out by the Department of Antiquities and consisted of consolidation of the outer walls through application of cement fillings and patches, and replacement of stones. One had to wait until the Seventies for the first major, comprehensive conservation project, which was undertaken by the Archaeological Museum of Madrid between 1971 and 1974. The project included new site surveys and documentation, which integrated existing data and provided new archaeological information on part of the hydraulic systems and on some defensive structures west of it. The project particularly focused on the paintings, which were cleaned of soot and grease, and then protected by a layer of resin polish (shellac) and enhanced by repainting of the drawings’ outlines (Almagro *et al.* 2002). A monitoring mission in 1979 verified the process of ageing and deterioration of applied chemical agents, as well as the impact of natural factors on the conservation works.

In 1985 Quşayr ‘Amra was nominated a World Heritage Site in consideration of the uniqueness of its paintings and because of the exceptional testimony it bears to the Umayyad civilization. Owing to the combined preservation of its architectural and decorative features, at that time Quşayr ‘Amra emerged as the best-preserved architectural ensemble, if not the most complete, of all the Umayyad palaces and castles in Jordan and Syria. Still today, the site embeds these values, and is a key reference for early Islamic art.

Quşayr ‘Amra was again the object of coordinated national and international interventions between 1989 and 1996, when a team from the Institut Français du Proche-Orient (IFPO) and the Department of Antiquities of Jordan undertook an extensive documentation project with 1:1 reproduction of all paintings and their soft cleaning as per documentation needs. The project provided the most comprehensive and detailed study ever

made on the paintings of Quşayr 'Amra (Vibert-Guigue and Bisheh 2007). It also allowed for some archaeological work that led, among others, to the recovery and consolidation of the spur wall west of the main building and of the hydraulic infrastructure north of it. Accessory conservation works also included the paving of the main monument building with stone slabs designed and positioned in congruence with the original pavement setting (Bisheh *et al.* 1997).

In 1996 a new Spanish mission from the University of Granada intervened on the paintings, particularly those of the so-called 'throne room', to counteract the rapid deterioration of the fixative used in the Seventies. At the same time, and until 1999, the site went through a set of coordinated actions by the IFPO, the French Embassy, UNESCO and the Department of Antiquities. These actions targeted site presentation and enhanced accessibility and included the design and construction of the new Visitor Centre, the set-up of the exhibition and the development of information boards on site (Morin and Vibert-Guigue 2000). Further photographic documentation and photogrammetry of the interior and exterior elevations was conducted between 2005 and 2010 by the Spanish archaeological mission in Amman.

Since 2010 the site has undergone a thorough conservation process targeting simultaneously the building and its decorative features, as well as the management of the site and its community-based preservation and enhancement. The project is a joint collaboration between WMF, ISCR and the Department of Antiquities of Jordan. So far, the project has conserved the exterior of the monument, solving the problem of water infiltration, proceeded with the conservation of the entire western aisle of the main hall and of the first room of the baths (the *apodyterium*), unveiling unprecedented aspects of these rare artistic representations, and it has contributed to heightened awareness among local stakeholders of the value and importance

of Quşayr 'Amra. It has also allowed for the design of a medium- to long-term management system that ensures the sustainable conservation of the site and its values (De Palma *et al.* 2012; Palumbo and Atzori 2014).

### Archaeological Remains

Quşayr 'Amra (FIG. 1) is located on the banks of Wadi al-Butum, a water stream running north-west to south-east and hosting an extraordinary population of terebinth trees (*Pistacia atlantica*) dating back centuries. It extends over an area of approximately 1 km<sup>2</sup> and includes a variety of archaeological remains. The best known is the *bathroom*, the main monument building at the site, which displays in its interior the world-renowned and unique cycle of Umayyad paintings. The building opens on a main audience hall with a water basin on its north-eastern corner. The hall is divided into three longitudinal aisles, each covered with a vaulted roof and decorated by paintings with various scenes inspired by Classical, Byzantine and Islamic imagery. To the south, the hall continues into the so-called 'throne room', which is again entirely painted and gives access, on the east and on the west, to two alcoves. The walls and ceiling of the alcoves are also covered with mural paintings, while the floors are decorated with geometric mosaics. To the east of the main audience hall, a small opening leads to the *bathroom* area, divided in three rooms of approximately 6 m<sup>2</sup> each: the *apodyterium*, the *tepidarium* and the *caldarium*.

The *apodyterium* is characterized by a stone bench running along its southern wall and is covered by a vaulted roof. The *tepidarium* has a cross-vaulted roof and its walls were furnished with marble slabs covering a system of terracotta pipes channelling hot air. The pavements of the *tepidarium* and *caldarium* rest on *pilae*, small basalt pillars placed between the pavement and the ground level to create a hollow space for free circulation of hot air. The *pilae* placed in



1. Qusayr 'Amra and its *saqiya*.

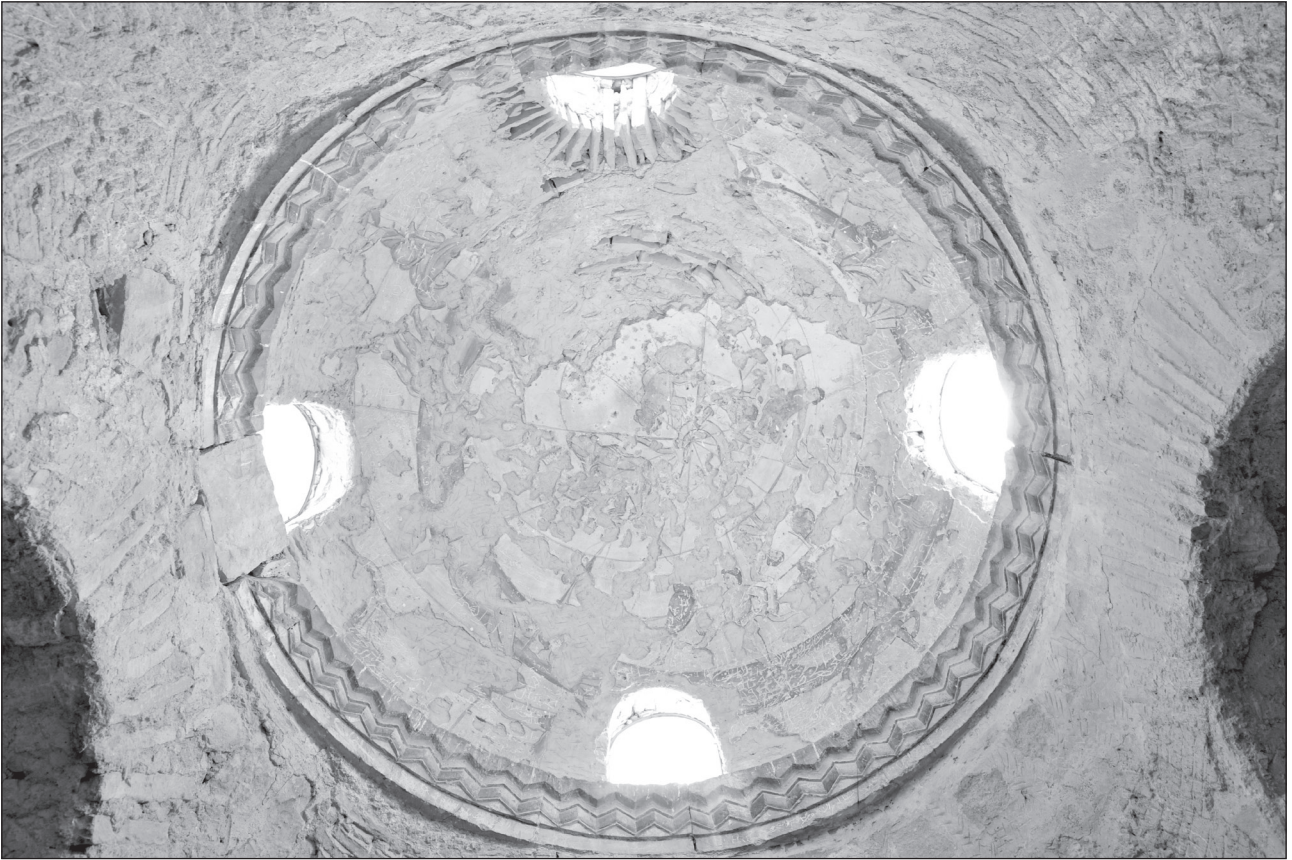
contact with the walls were built of fired bricks. The *caldarium* is roofed with a dome ceiling pierced by four small windows opening to the north, east, west and south, which rest on pendentives. The ceiling is decorated with a reproduction of the constellations, represented with their zodiac symbols; it is the earliest surviving example of a representation of this kind on a hemispherical surface (FIG. 2).

Beyond the *caldarium*, on its eastern side, are the *hypocaust* and the *praefurnium*, the working spaces where fire was lit and kept to produce hot air and water. In front of the main monument building, and north of it, is the hydraulic system (*saqiya*) that allowed water to flow into the *bathhouse*. The system comprises a well and cistern for water storage, with a circular track for water to be pumped by animal-power. A guardian probably ensured the correct execution of this task and good functioning of the hydraulic system, since a small guard-room is located nearby. A spur wall to the west of the

main building protected the *bathhouse* from the overflow of Wadi al-Butum, an event that still occurs at Qusayr 'Amra from time to time.

East of the main monument building is a second *saqiya*, which was excavated in the Seventies by the Spanish archaeological mission. This *saqiya* is located on the bank of Wadi al-Butum and is similar to that described above, with a cistern, well and circular animal track. Potentially, its function might have been to irrigate the agricultural fields or gardens surrounding the baths.

North-west of the main monument building is the *qasr*, a squared alignment of archaeological debris with two projecting features on its northern side, presumably defensive towers, and one on its southern side, possibly the doorway. With the exception of some minor archaeological surveys in the Seventies and recent aerial imagery analyses, there is no interpretative study of the *qasr* - which presumably aimed to provide living



2. *Caldarium* dome with representation of the constellations.

space for those enjoying the *bathhouse* and other relaxations at Quşayr ‘Amra, but which was actually an unfinished building that was abandoned before it could ever be used.

No matter what the function, the *qaşr* has sustained progressive destruction, as demonstrated by comparison of old and more recent aerial photographs of the area. Other archaeological remains include a watchtower, located a few hundred meters south-east of the *qaşr* and surveyed by the Spanish team in the Seventies, an open-air mosque, investigated early in 2000 by archaeological soundings and now almost entirely disappeared, a ford across the bed of Wadi al-Butum, slightly south of the *qaşr*, and possibly some further protective walls, east and north-east of the main monument building.

Recent investigations by the present project have also revealed, close to the visitor center, a structure containing a number of rooms, possibly a workshop related to the construction

of Quşayr ‘Amra, given the nature of the materials found, which included thousands of unused glass *tesserae* similar to those found on the floor mosaics of the alcove room and those found on the floor of the *caldarium*, which once decorated the pendentives and upper walls of the *caldarium* room. The same archaeological investigations have also located the quarries used to extract the stone for the construction of the various structures found on site, as well as a number of sites dating from the Lower to Upper Palaeolithic periods.

### **The Natural Environment**

Quşayr ‘Amra was built as the desert hub of a ruling class of desert origin, the Umayyads, in order to control this part of their territory, to interact with chiefs of local tribes and to enjoy leisure activities, which included the hunting of wild ass (onager).

One clear element in the choice of the location is the presence of water, which is guaranteed

seasonally by Wadi al-Butum, a stream running north-west to south-east over an area of approximately 320 km<sup>2</sup> ranging in elevation from 700 m asl on the hilltops to 500 m asl in the *wadi* bed near its outlet into Azraq oasis.

The accrued soil moisture surrounding the stream supports the existence of Mediterranean vegetation, particularly terebinth (Ar. *butum*) trees (*Pistacia atlantica*) which flourish all along the course of the *wadi* and date back centuries. This verdant area also hosts a variety of living taxa, particularly birds (27 species of which seven are resident) and small mammals (e.g. red fox and Cape hare). Wadi al-Butum appears as a green splash in the middle of typical Jordanian *badiya*, a desert of clayey soils covered by black basaltic rubble (Ar. *harra*; especially in north-eastern Jordan) or by a thin layer of chert (Ar. *hammada*). The latter zone, the *hammada*, characterizes the Quşayr ‘Amra area.

### The Paintings

The paintings are the most striking feature of Quşayr ‘Amra and are, to date, the most complete testimony of figurative art in Umayyad times. They are thus of fundamental importance in understanding the birth and evolution of Islamic art in terms of themes, iconography and techniques. A product of the Greco-Syrian artistic tradition in its provincial form, the paintings display a rich and articulated iconographic repertoire where a variety of themes with no apparent unity blend images, texts and narratives borrowed from Greek mythology, Sasanian tradition, Byzantine-style portraits and hunting scenes with depictions of animals, birds and other heterogeneous figures of pagan and symbolic origin.

The main hall is characterized by paintings covering all walls in their entirety, from the ground floor to the ceiling and vaults. The decoration here is divided in two registers: a lower register (the bottom two metres) and an upper register (the upper 3 - 4 metres, also

including the vaults). The lower register is characterized by alternating false marbles and lesenes, topped by a Corinthian capital with palmette. The upper register hosts a variety of scenes of leisure activities, professional tasks and possibly political engagements.

In **the western aisle**, the western wall is further subdivided into two sub-registers: above, a hunting scene fills it throughout its length, with hunters capturing a herd of onager by pushing them into an area surrounded with a net. Below, a composite scene juxtaposes a scene of some sort of game (to the right) with that of a bathing woman (in the centre) and the famous procession of the so-called six kings (to the left) (FIG. 3). Inscriptions above the heads of these figures identify three of them as the Byzantine Caesar, the Sasanian emperor Chosroe and the Negus (king) of Abyssinia; the identification of the remainder is hypothetical, including a commonly-held assumption that one represents the Visigoth king Roderic. Another interpretation (Di Branco 2007) prefers to identify them as the recipients of embassies sent by Mohammed in year 6 of the *hijra* (628 AD), when he asked them to convert to Islam. This interpretation would see the six ‘kings’ as the Byzantine Emperor Eraclius, the Coptic Patriarch Benjamin I, the Sasanian Emperor Chosroes II, the Abyssinian Negus Ella Saham, the Ghassanid Phylarch al-Harit b. Abi Shimr and the lord of Yamamah, Hawda Bin Ali al-Hanafi. Cleaning of this panel has revealed previously unknown details in the garments and facial features of the ‘kings’, which suggest the work of a master painter given the extremely high quality of the portraiture.

On the eastern wall of this aisle, a few figures appear at the back, including standing people and images of a basket of grapes, the hind legs of an animal and the head of a Kerberos. The southern wall is particularly well-preserved and displays an audition with a prince. He is sitting on a bed or sofa and wears rich garments. He is surrounded by other figures, including a



3. West wall painting of the so-called 'six kings'.

scribe and a woman waving a fan. The scene is completed by the image of two peacocks under two Greek inscriptions: XAPIS (Charis = Grace) and NIKH (Nike = Victory). On the top of this scene, two sitting figures are displayed on the two sides of the window - they appear to be thinking, and recent interpretation following the project's discovery of two Greek inscriptions above their heads suggest they may represent the Prophet Jonah (FIG. 4). This wall also hosts two Arabic kufic inscriptions, one appearing between the architectural decoration and

figurative representation, the other above the upper window. The former, in large letters, is a typical invocation to Allah (so-called *basmala*); the latter was discovered in 2012, thanks to the work of the conservators, and describes the name of the prince who commissioned the building, Walid Ibn Yazid, who became caliph in 743. It is however certain that it was painted while he was still crown prince, since the inscription does not bear the common epithets used by caliphs in celebratory inscriptions. The northern wall, cleaned between 2013 and 2015,



4. Representation of Jonah on the lunette of the south wall (main hall, west aisle).

is finally visible. On the top lunettes it depicts another representation of Jonah, this time with the marine monster eating him (on the right) and depositing him on the shore (on the left). Below, there is an interesting composition that was almost totally undecipherable before the recent conservation intervention, representing a naked naiad swimming in a sea or lake, while below her a boat is represented, with fishermen pulling up a net full of fish (FIG. 5).

The central aisle is also decorated on a double register. The lower, at the level of the arches, displays a series of richly dressed men and women within natural and built settings. The upper register starts just above the arches and extends over the whole vault. The decorative space is divided in 32 squared spaces framing human figures engaged in a variety of leisure and other activities, such as music and sport.

The eastern aisle is also divided in two sub-registers, although the theme represented therein is mostly onager hunting. The vault is the most

remarkable element of this aisle, and provides a comprehensive catalogue of crafts and activities connected with construction work. Divided into small, squared fields, the vault depicts 32 activities which were presumably associated with the construction of this monument, including blacksmiths forging metal, carpenters, masons squaring stone blocks, labourers preparing mortar and others carrying various tools such as saws, punches and chisels. The two northern and southern walls are also painted and depict a hunting scene, with onagers trapped within a net being killed (northern wall) and butchered (southern wall).

The main hall continues south into the so-called throne room, where the paintings are concentrated in the upper register. The key image is that depicted on the southern wall, displaying a prince sitting on his throne flanked by two characters. On the baldachin above his throne, an inscription published by Imbert (2007) is interpreted as an invocation to God





5. Fishing scene on the north wall (main hall, west aisle).

to pardon and protect the crown prince. The eastern and western walls are also decorated with a sequence of human figures framed by Corinthian columns supporting semi-circular arches. These characters represent men and women, all richly dressed and seemingly in a natural context, as can be inferred by the presence of trees and plants. On the two sides of the throne room are two small doors that give access to the two alcove rooms. These rooms are richly decorated with patterns representing curly vine tendrils, grapes and rich, geometric mosaics on the floors. The lower register of the paintings again displays architectural motifs with false, squared marble slabs.

The bath area is also characterized by paintings, particularly on the upper register and vaults, since the lower register is covered with real marble slabs hiding a heating system of terracotta pipes. The *apodyterium* is roofed with a barrel vault decorated with a net of rhomboids created by sequences of patterns representing vegetation motifs, probably palmettes. The rhomboids host various human and animal figures, including a musician-bear, gazelles, herons and other animals. Dancing human figures add to the variety of this composition. In the centre of the vault there is a series of three busts, the central one being that

of a woman (FIG. 6). The two lunettes in this room are also decorated with figurative scenes. The eastern one displays a man with a winged Eros, originally interpreted as mourning over a body wrapped in a shroud. However, cleaning has revealed that the scene represents Dionysus observing Ariadne asleep on a beach in Naxos. Parallels to this representation are known throughout the Roman world. The western lunette shows two human figures, a woman and a man, sitting on the two sides of the real window and probably looking at each other. Below the window is the representation of a seated *putto*.

The *tepidarium* is roofed by a cross-vault entirely covered with phytomorphic patterns of intertwined leaves. These patterns extend to its northern lunette, above the window, where they are enriched by curly vine tendrils and grapes. The other three lunettes display figurative scenes with women and babies, possibly bathing and within architectural settings. The *caldarium* is the last decorated room; its pendentives and niches were probably covered with glass mosaics (some tesserae are still *in situ*). The domed ceiling is decorated with a representation of the night sky with the constellations represented by their zodiacal signs.



6. *Apodyterium* vault with allegoric and animalistic representations.

### Conservation Activities

Natural and man-made factors represent a constant threat to the preservation of this site

and its values, authenticity and integrity. These include sandstorms, floods, vandalism, maintenance issues, tourism and site management.

The protracted, combined activity of these factors led to the Department of Antiquities requesting assistance to tackle these problems. As a response, WMF coordinated with ISCR and the Department of Antiquities of Jordan in undertaking an assessment of the site's conditions and the design of a project for the conservation of the building's exterior and of its mural paintings inside. In spring 2009 two missions were conducted and samples of mortars from the interior and exterior of the building were analyzed in Italy. In 2010, two more missions were conducted to complete sampling and conduct analyses of the pigments and previous conservation products.

The actual conservation intervention started in 2011. The project has a broad range of actions, targeting the conservation of the main monument building's decoration (paintings and mosaics) and architectural structures, but also incorporating other fundamental elements for the long-term, sustainable conservation of the site. In particular, these include: (1) the development of a holistic site management plan in close collaboration with the national authorities and key concerned stakeholders, (2) community participation and engagement, through awareness activities as well as through assessment of possible income-generating activities linked to the site, (3) capacity building and education of current and future generations of conservators in Jordan, through collaborations with universities and relevant local authorities, and (4) the promotion of scientific research and international debate on the interpretation of Quşayr 'Amra, through the organization of conferences and seminars and through the constant publication of new data.

The intervention in 2011 included high-resolution photography using normal, infrared and ultraviolet light, in order to provide a record of the building's condition before the conservation intervention. A thermal analysis of the building was also conducted in order to identify the positions of stone blocks under

painted layers with the hope of identifying the causes of detachments of these layers from the walls. More documentation work included the interior and exterior laser-scanning of the monument and surrounding area, and the definition of the site's boundaries, which included the preparation of a detailed topographic map of the entire archaeological complex.

Other activities included the external consolidation of the main monument building, where the bases of the walls and the tops of the vaults showed substantial loss of mortar, which was resulting in dangerous water infiltration. A preparation of lime mortar was applied, using a formula close to the original Umayyad mortars. New windows and coverings on ceiling openings were installed to prevent water and animals from getting into the building. Broken windows and glass covers were one of the primary reasons for water and pests penetrating the building and causing substantial damage to the paintings.

Inside the building, a team of Italian conservators painstakingly removed thick layers of shellac, a fixative used in previous conservation work, from the paintings in the western aisle. The decay of shellac has left a shiny yellowish hue on the paintings and, because it is an impermeable substance, it is also causing the detachment of paint layers from their base. The deep cleaning conducted during these conservation interventions revealed not only a rich colour palette where blue, orange, red and yellow prevail, but also previously unknown details, which are bound to change the interpretation of the paintings and our understanding of Umayyad art.

### **Management**

The management of a heritage site is the key to the long-term conservation and enhancement of the site's values and features. Accordingly, a management plan has been an obligation for all UNESCO World Heritage Sites since 2005.

However, as Quşayr ‘Amra was inscribed before this requirement was put in place, it has lacked a management plan until now.

The Quşayr ‘Amra Site Management Plan was developed in close collaboration with the Department of Antiquities of Jordan and the Ministry of Tourism and Antiquities. A preliminary action was the identification of the several stakeholders affected by the conservation and use of the site. These included, among others, national authorities variously concerned with heritage and tourism management, as well as with the protection and exploitation of the site and its environmental context. These also included the municipalities of Azraq and Muwaqqar, together with representatives from the *bedouin* tribe of Beni Sakher, who for centuries have occupied this part of the eastern *badiya*. Stakeholders were met on an individual basis and three Stakeholders’ Workshops were organized in 2012 to promote plenary exchange and discussion on the preservation and management of Quşayr ‘Amra.

As part of the documentation process associated with site management planning, WMF launched and maintained collaborations with a variety of institutions around the world. The documentation material was used to create physical and virtual repositories of information at the Department of Antiquities, with the ultimate purpose of facilitating international research through its improved accessibility.

The site management process also included analyses of the key threats to the physical conservation of Quşayr ‘Amra and assessment of the current management system, key competencies and the division of responsibilities among the Jordanian authorities. Ad-hoc strategies for the long-term conservation and enhancement of Quşayr ‘Amra, were integrated into the plan, which was completed in December 2013 and delivered to UNESCO in Paris in fulfillment of the country’s obligation to provide this document to the World Heritage Centre (Palumbo and Atzori 2014).

## Community Participation

Local and national communities are the first and last beneficiaries of any conservation project, since their roots and daily life are profoundly intertwined with the heritage being preserved. In line with this philosophy, the Quşayr ‘Amra project includes a component on community participation and awareness, which is implemented on-site through awareness activities and business development promotion.

Quşayr ‘Amra is located in the lands of Beni Sakher, one of the key *bedouin* tribes in Jordan since at least the 18<sup>th</sup> century. Extensive both in terms of territory and number of members, the Beni Sakher are further divided into clans, of whom the Khreisheh are based at Quşayr ‘Amra. Because of their intimate connection to the land, a key community activity to date has been engagement with local representatives of the tribe, in order to (1) explore their memory of the site and its traditions, (2) analyze aspects of tribal identity associated with it, (3) assess their current interest in site-conservation and (4) raise awareness of the value of Quşayr ‘Amra and the importance of its legacy. These activities are constantly ongoing and intend to prepare the ground for the long-term community-based conservation of the site, which is the only effective key to sustainability.

A second key element of community participation activity is the engagement of local stakeholders at national and local level, particularly the two concerned municipalities of Muwaqqar and Azraq. Again, most important activities to date have been one-to-one and plenary meetings to promote discussion on Quşayr ‘Amra, gather information on local attachment and identity as perceived in connection to the site, and raise awareness of its values and importance for both the country and the whole world. These meetings have included a situation-and-opportunities assessment of tourism-related income-generating activities in Quşayr ‘Amra, and discussions are currently ongoing regarding the possibility of revitalizing

local handicrafts and skills for the production of souvenirs to be sold in the Visitor Centre.

### **Capacity Building and Education**

The project also intends to contribute to building-up the knowledge and skills of present and future generations of Jordanian conservators, with the ultimate purpose of ensuring long-term, sustainable conservation at Quşayr 'Amra and in Jordan.

In January 2011 two training courses took place in Amman for staff of the Department of Antiquities and other skilled conservators in the country. The first course trained technical workers and masons in techniques of lime-mortar production and application; the second targeted conservators and provided training in techniques for the cleaning of mural paintings. Trained conservators and technical workers later participated in the conservation work, and were particularly engaged in the cleaning and consolidation of the exterior of the main monument building.

Separately, in 2012 the project started a close collaboration with the Queen Rania Institute for Heritage and Tourism at the Hashemite University in Zarqa. This collaboration aimed to enhance educational opportunities for university students, particularly through on-the-job training at Quşayr 'Amra. Two activities were put in place: one with Masters students on the analysis of tourism flows at the site, the other with undergraduate students on site interpretation and presentation.

The first activity involved the implementation of a tourism survey to monitor, investigate and analyze tourism patterns and the average tourist profile at Quşayr 'Amra. Under the coordination and technical guidance of WMF, a team of students counted and interviewed approximately 1,000 visitors over three survey campaigns of one week each at different stages within the time-span of one year. The data collected were later analyzed by WMF experts, and shed new light on types of tourism and tourist at Quşayr

'Amra, a fundamental piece of information for site management and future development. The second activity was designed to respond to a compelling need at Quşayr 'Amra, *viz.* revision of current means to present the multifaceted values of Quşayr 'Amra. The activity engaged about 50 Museum Studies undergraduates from the Hashemite University. Students were introduced to the history and values of Quşayr 'Amra through a one-day trip to the site. On this occasion, they were particularly invited to observe the Visitor Centre and analyze it against theoretical knowledge acquired through their Museum Studies course. This visit was followed by a month of activity, during which the students re-conceptualized and re-designed the Centre. As a key component of the course assignments, projects were submitted to the University and discussed during a plenary presentation workshop. The six best projects were presented to the WMF at the end of the activities in a meeting held at the Hashemite University.

### **Scientific Research and International Debate**

Quşayr 'Amra is a unique and fertile ground for new discovery, and much remains to be done with regard to its investigation and analysis. With the aim of promoting a holistic approach to the conservation and management of the site, the Quşayr 'Amra project regularly organizes workshops, gathering art historians, epigraphists and archaeologists to discuss new findings.

The continuous discovery of new drawings and details hidden under layers of grime and recent paint impose the adoption of rigid restoration techniques and strict philological guidelines to avoid loss of authenticity. Particularly, the philological approach requires extended research on the socio-cultural milieu and literary / historic frames of reference of the painters who decorated it.

Many of the other archaeological remains at Quşayr 'Amra are still in need of thorough

investigation and interpretation. This will be fundamental to improving our understanding of the spatial articulation and function of Qusayr ‘Amra in Umayyad times. Indeed, the *bathhouse* building is but one component of a larger complex of uncertain extent, which must also have included living quarters (possibly the *qaṣr*), defensive structures (possibly the watchtower) and perhaps a *paradeisos*, a garden irrigated by the waters of the nearby *wadi* through a system of dams and canals. A first archaeological survey was undertaken in the autumn of 2012 to map archaeological evidence over an area of approximately 0.5 km<sup>2</sup>, which included the *wadi* bed. The survey resulted in the identification of Palaeolithic hunting sites and substantial quantities of stone tools. Archaeological soundings were also carried out in autumn 2012 and spring 2013, targeting the furnace of the main monument building, parts of the *saqyia* north of the main monument building and, particularly, one of the mounds north of the *bathhouse*. The latter excavation resulted in the identification of a wall structure, possibly associated with a workshop for the production or cutting of glass *tesserae* as suggested by thousands of pieces recovered from the same context.

Research proceeds in tandem with scientific debate, which is key in achieving satisfactory heritage interpretation. For this reason, international workshops were organized in 2012, 2013 and 2014 to introduce the project and its preliminary results to the scientific community. The workshops gathered international experts from Europe, United States and the Middle East, and were a successful laboratory for ideas and discussion on heritage conservation, early Islamic art and architecture, and - particularly - the interpretation and sustainable preservation of the Qusayr ‘Amra World Heritage Site.

In conclusion, this project would not have been possible without the constant support and collaboration of the Department of Antiquities and its professional and technical staff. The

inclusion of students and civil society in the project served also to raise local awareness about the importance of the site and the challenges it faces. Finally, sharing information with scholars around the world provided a unique opportunity to build an archive of data which will serve the needs of future research on this unique World Heritage site.

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