



ICCM
International Committee
for the Conservation of Mosaics

Newsletter 14

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12th Conference of the ICCM Conservation and Presentation of Mosaics: At What Cost?

The 12th Conference of the International Committee for the Conservation of Mosaics (ICCM) was held at Alghero and Sassari in Sardinia (Italy), 27-31 October, 2014, at the invitation of the Soprintendenza per i Beni Archeologici per le province di Sassari e Nuoro (Ministero dei Beni, delle Attività Culturali e del Turismo). The conference enjoyed support from the University of Sassari, The Getty Foundation and the University of Cyprus. See <http://www.iccm.ac.cy/index.php?link=presentboard.php> for the results of the elections and the new Board.



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Mosaic Conservation Course (MCC) 2014-2016

A MOSAIKON initiative

Roberto Nardi



Earlier in 2014 the Centro di Conservazione Archeologica - Roma (CCA) began the 2014-2016 edition of MCC, Mosaic Conservation Course, dedicated to cultural heritage professionals from Jordan, Libya, Syria and Tunisia. The programme is part of MOSAIKON, an international initiative to increase capacity for mosaic conservation in the Mediterranean region, led by four institutions: the Getty Conservation Institute (GCI), the Getty Foundation, the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and the International Committee for the Conservation of Mosaics (ICCM).

MCC began in 2011 with a series of training courses for professionals from Syria, Jordan and Tunisia. 2014 saw the completion of the first stage of the programme with two new courses: the first, comprising two four-week modules, was attended by six members of the Directorate of Antiquities Libya, while the second, a single four-week module, was aimed at Jordanian and Tunisian professionals.

The second stage of the programme, dedicated to advanced training, will take place in 2015-2016. It is structured in two specialisation courses, MCC Tunisia and Jordan and MCC Syria and Libya, each consisting in two four-week modules. Professionals selected among the participants of the previous courses will be invited to attend. All courses combine theoretical lessons with daily laboratory practice, focusing on the treatment of archaeological mosaics. Participants also take part in study visits, fieldwork and English lessons.

MCC 2014-2016 includes a Regional Technical Assistance Programme, the aim of which is to support alumni in implementing best practice upon returning to their home institutions. The Centro di Conservazione Archeologica - Roma (CCA) will work in collaboration with the alumni in improving conservation laboratories, reorganizing storage facilities and identifying local suppliers of appropriate equipment and materials.



An important objective of MCC is to encourage professional networking among conservators-restorers in the Mediterranean region. To this end, two General Alumni Meetings were planned: one took place in 2014; another will take place in 2016 at CCA's operational headquarters near Rome. In October 2014, course participants attended the 12th ICCM Conference in Alghero (Italy).

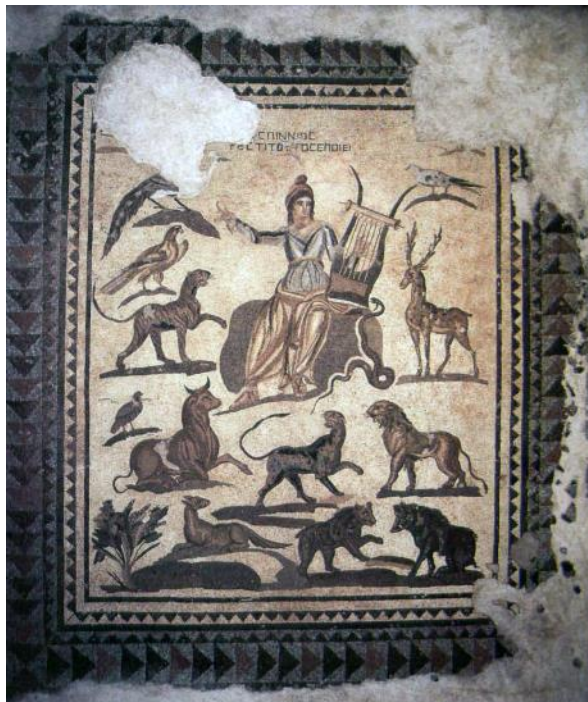
CCA is committed to disseminating knowledge and promoting public understanding of conservation. Throughout MCC 2014-2016 we will be sharing resources for mosaic conservation and news about our current activities on the new CCA website (www.cca-roma.org), on Facebook (www.facebook.com/CCARoma) and Twitter (twitter.com/CCA_Roma). Staff and students will keep you updated on their work on the Mosaic Conservation Course blog (www.cca-roma.org/blog), which we hope will encourage debate among the conservation community.



Training Courses du programme européen NARNIA

Anne-Marie Guimier-Sorbets

Dans le cadre du programme européen Marie Curie **NARNIA (New Archaeological Research Network for Integrating Approaches to Ancient Material Studies, FP7-PEOPLE-2010-ITN, <http://narnia-itn.eu>)**, les universités de Chypre (Nicosie, Archaeological Research Unit) et de Paris Ouest-Nanterre (Laboratoire Archéologies et Sciences de l'Antiquité) ont organisé des Training Courses destinés aux « fellows » de ce programme et libéralement ouverts à toutes les personnes intéressées, et notamment aux étudiants de ces universités. Conformément aux exigences de ce type de programme européen, les cours ont été assurés en Anglais, ce qui a permis à des étudiants venus de plusieurs continents d'assister à ces formations, organisées sous la direction scientifique de Démétrios Michaelidès et d'Anne-Marie Guimier-Sorbets.



Le 1^{er} training course s'est tenu à Nicosie du 11-14 Octobre 2012, et il avait pour titre *Mosaics in the field. Issues of iconography, material selection and preservation*.

Le 2^e et le 3^e training courses ont eu lieu à Nanterre (Maison René Ginouvès, Archéologie – Ethnologie) du 22 au 25 mai 2013 sous l'intitulé *Interior decoration in the Eastern Mediterranean during Hellenistic and Roman times: mosaics, paintings, iconography, materials, techniques and conservation* du 27 au 29 Mai 2013, il fut question de *Information systems for Archaeology and Cultural Heritage*.

Nous sommes revenus à Nicosie (Archaeological Research Unit) du 4 au 6 novembre 2013 pour le 4^e et dernier Training Course de cette série, sous le titre *Cultural Heritage practices: issues of archaeological conservation and site preservation*.

Nous avons entendu plus de 60 interventions relatives à l'étude des mosaïques et des peintures, de leurs matériaux et techniques, à l'archéométrie, aux méthodes et techniques d'analyse photographique, aux bases de données et systèmes d'information, mais aussi, bien sûr, à la conservation des sites archéologiques et des mosaïques, puisque Stefano De Caro, Jeanne-Marie Teutonico, John Stewart, Evelynne Chantriaux, Roberto Nardi et Andreina Costanzi-Cobau ont présenté leurs travaux. Ces cours ont été complétés par des visites de sites et de musées, sous la conduite de leurs responsables.

Un volume regroupant les textes des communications relatives aux mosaïques et peintures est actuellement en préparation, sous la direction de Démétrios Michaelidès et Anne-Marie Guimier-Sorbets. Sa sortie est prévue en 2015.



The three-aisled Early Christian basilica of Hermione

George Karabalis

The 4th century three-aisled Early Christian basilica of Hermione is located in the prefecture of Argolis in the Peloponnese, Greece. It includes a nave, a semicircular vault, a bema, a narthex, an exterior and southern and northern side aisles. It comprises amazing decorative mosaics, one surviving inscription, geometric motifs as well as floral and animal decoration. The late A. Orlandos refers to it as the most notable Early Christian basilica in the Balkans. The *tesserae* of the mosaics have twelve different hues.

In 2005 important mosaics depicting animal scenes as well as floral decorations had been detached. In 2013 work began on the repositioning of the mosaics on the archaeological site. The new methodology that was used to reposition the mosaics is “transported construction in reinforced mortar”. With this new methodology we have achieved satisfactory results. More specifically, the mosaics are not destroyed either during maintenance or during their reinsertion. The repositioning is done piece by piece and then we fill in the joints with a series of *tesserae*.

An important element of the new methodology is that there is the possibility that the repositioned mosaics can be detached, transported and placed in any gallery in the world and then returned to their original position without any wear or stress on the mosaic as a whole. The new methodology “transported construction in reinforced mortar”, was presented in a day workshop in the Getty Museum in Los Angeles in the summer of 2014.

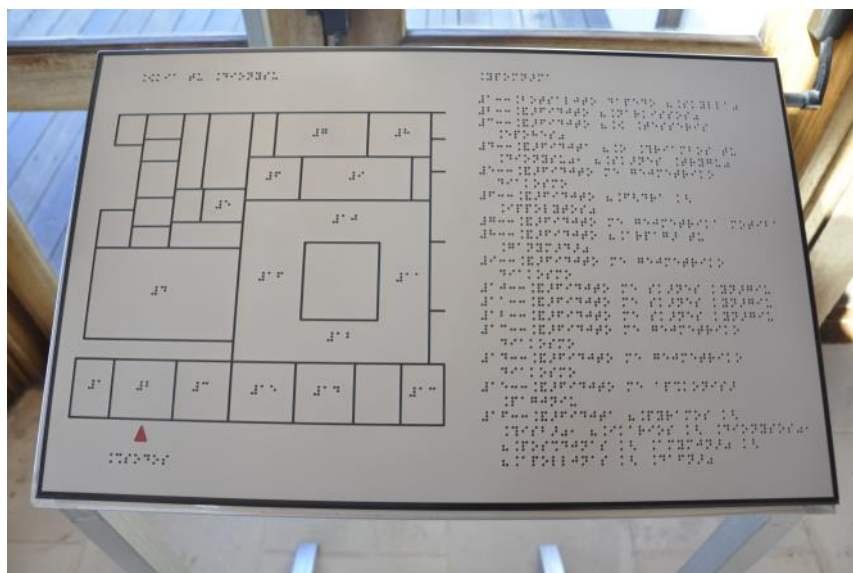


The pilot project entitled “Guided tours for visually impaired persons at the House of Dionysos, archaeological site of Kato Paphos”, Cyprus *Marina Solomidou-Ieronymidou and Eleftherios Charalambous*

The strategies employed by the Department of Antiquities of Cyprus concerning the sustainable management and protection of the island’s archaeological heritage largely focus on mosaics, as they comprise an important part of the island’s material culture. In particular, the Mosaics Conservation Programme has been especially established in order to provide a solid framework for the preservation, study and promotion of mosaics, based on the systematic conservation and recording of mosaics across Cyprus, also drawing on the application of recent methodological techniques and advances.

This line of inquiry is certainly the result of the recognition by the Department of Antiquities that the mosaics comprise a significant part of the overall archaeological record, as they enable a direct insight into aspects of the island’s Hellenistic, Roman and Early Byzantine past, such as socio-political aspects, art and religion, and everyday life. Thus, the Mosaics Conservation Programme aims at preserving these cultural values, as well as at highlighting the potential in conserving our common archaeological heritage and cultural values for future generations.

It is within this context that a pilot project was put forward by the Department of Antiquities, aiming at providing access to visually impaired persons to part of the mosaics of the archaeological site of Kato Paphos. In particular, the pilot project, inaugurated in October 2013, was entitled “Guided tours for visually impaired persons at the House of Dionysos, Archaeological Site of Kato Paphos”. Building on the afore-mentioned relationship between the mosaics and sustainable heritage, the underlying objective of this project was to provide equal opportunities to all of society to become familiar with and understand, in a direct and tangible manner, the nature of the mosaics itself, and elucidate issues, such as manufacture technology, that are at the core of archaeological investigation.



The plan of the House of Dionysos in relief for visually impaired persons.

In collaboration with the “St Barnabas” School for the Blind, bilingual informative panels were produced in the Braille writing system and placed at the House of Dionysos, which is also part of the Department of Antiquities’ strategies involving the conservation of the mosaics and the upgrading of the existing infra-structure and shelters. A plan of the house was also produced in relief, which enables the direct understanding of the architectural organisation. Moreover, a copy of a mosaic with *tesserae* in relief was created in an attempt to provide an insight into the character of the motifs depicted on the surface. As part of the efforts to provide accessibility to all available historic and archaeological information relating to the archaeological site of Paphos and the House of Dionysos, guides were published in Greek and in English in the Braille writing system, as well as in an enlarged font, for the people with impaired vision. Furthermore, in order to secure the success of the pilot project, the guards of the archaeological site were trained by special trainers of the School for the Blind, so as to act as assistants to visually impaired persons, and increase the benefits of their visit.



Reproduction in relief of a motif deriving from a mosaic of the House of Dionysos, for visually impaired persons.

In summary, it is our belief that such projects will highlight further the value and great significance embedded in the sustainable preservation and promotion of mosaics, while they will also increase the relationship between the public and the archaeological heritage. Finally, it is important to note that this pilot project will form the basis for the application of similar projects to other monuments and archaeological sites in Cyprus.



Interior of the House of Dionysos.

Revising the reburial system of mosaics of the "Church of the Lions" at Um Er-Rasas in Jordan: Documentation, training and local community involvement *Stefania Chlouveraki and Basem Mahamid*

The site and the mosaics of Um er Rasas - 'Kastrom Mefa'a'

The ruins of Um Er-Rasas occupy an area of 20 hectares in the eastern steppe of Madaba and include remains of the Roman, Byzantine and early Muslim periods dating from the end of the 3rd to the 9th century. The ruins of Um Er-Rasas include 16 early Christian churches, most of them adorned with high quality mosaic floors of the late 6th century with several inscriptions as well as representations of Byzantine cities. Eleven churches have been excavated while the largest part of the site remains unexplored. Amongst the excavated churches are the Complex of Saint Stephen with four churches, the 'Church of the Lions', the 'Twin Churches' (the Church of the Rivers and the Church of the Palm Tree), the 'Church of Bishop Paul' and the 'Church of the Priest Wa'il', all excavated in the 1990s. The site was inscribed in the World Heritage List in 2004 at the 28th Session of the World Heritage Committee.

The wealth of inscriptions, motifs and colours as well as the depiction of Byzantine cities place this assemblage amongst the most important mosaics of Jordan and was one of the many criteria for its listing as World Heritage. Other mosaic church floors depict birds and animals, fishermen and hunters incorporated into extensive geometric mosaic carpets. Unfortunately, most of the mosaics were defaced by iconoclasts. However, enough was spared to testify to the quality and the richness of the motifs and the colours used.

A shelter provided with elevated walkways has been erected over the complex of Saint Stephen, in order to protect the mosaics while offering public access to the best preserved mosaics of the site. The first shelter was constructed soon after the excavation of the mosaics and was recently replaced by a new structure. The rest of the excavated mosaics have been reburied until a comprehensive conservation and management plan can be implemented on the site.

Revising the reburial system at the 'Church of the Lions'

During our visit to Um Er-Rasas in December 2012, we attested to the inefficiency of the materials and the methods used for the reburial of the mosaics (Fig. 1). The simple plastic (polyethylene) sheets that were used directly on the surface of the mosaics had been destroyed by UV radiation while those that resisted the sun favoured the condensation of water vapour. In areas where the plastic sheet shredded the hard quartzite desert sand was abrading the surface of the mosaics. One year later, in the beginning of 2014, the condition of the mosaics appeared to be worse as most of the plastic was destroyed and an extended mosaic surface was exposed (Fig. 2).



Fig. 1: General view of the 'Church of the Lions'.



Fig. 2: Insufficient protective measures.

As a response to this problem the Department of Antiquities of Jordan (DoA), in collaboration with the European Center for Byzantine and Post Byzantine Monuments of Greece (EKBMM), organised a three-day workshop on site, aiming at the involvement of the local community in the protection of the site and the training of local technicians in documenting the mosaics and taking more effective preventive measures with locally available materials.

The workshop took place from 9-11 February 2014 and a maintenance plan is currently being created, based on the information collected in this campaign and making use of the didactic material and the manuals that have been produced by the MOSAIKON programme. The goal is to enable the staff of the site to inspect the mosaics regularly and to report the problems before they become irreparable. The 'Church of the Lions' was selected as the case study of this first initiative for the protection of the mosaics of Um er-Rasas (Fig. 3).



Fig. 3: Addressing the problems on site.

The outcome of the programme

The warm response of the members of the local community and of several people from Madaba and Amman who were invited to attend or to participate in the workshop was the first positive outcome. The DoA appointed eight trainees to participate in the programme while five members of the EKBMM mosaic conservation team volunteered to participate as trainers. After the completion of the first day another seven people from the community volunteered to join the project. Around 20 people, including trainees, volunteers, guards of the site and conservators worked intensively for two days to uncover the partially covered mosaics, to record their condition and to cover them with geotextile and bagged sand (Figs 4-6).



Fig. 4: A low-cost custom-made crane was installed on site for the photographic documentation of the mosaic floors.



Fig. 5: Training technicians on the examination and documentation of mosaics.



Fig. 6: Trainees, volunteers, conservators and guards all working intensively to achieve the goals of this short workshop.

Due to the limited funding the completion of all work was not possible. However, the demonstration of the methodology was completed and materials were provided for the completion of the project by the staff of the site, with the help of workers from the Department of Antiquities of Madaba. The trainees were taught how to examine and to record the condition of the mosaic in maps which will be used as a base for monitoring them in the future.

This pilot programme will allow us to estimate the cost, the equipment and the man-hours that are required for protection of all the excavated mosaics of Um Er-Rasas; it can be further used by the DoA for the development of a maintenance plan or protocol for the protection of the mosaics of Jordan.

The entire project, run on a very low budget and supported by the personnel of the DoA and volunteers, sets an example of an action plan in cases where emergencies are occurring and funding is not readily available. Even a low budget programme, with the correct approach, the use of local resources and the contribution of the local community can make a great difference in the protection of mosaics.

Consolidation préventive des mosaïques de Bir Kasdali Bordj Bou Arreridj *Mohamed Cherif Hamza et Arab Smain*

Le but de la mission consistait à évaluer l'état de conservation des mosaïques exhumées fortuitement au cours des travaux de viabilisation entrepris dans une parcelle agricole.

L'appréciation de leur état devait ensuite permettre de déterminer les mesures d'urgence nécessaires à leur consolidation et sauvegarde *in situ*.

La première opération effectuée sur place était la documentation ; elle nous a permis de constater les dégâts subis par le creusement de la tranchée et d'inspecter l'état des pavements découverts par la suite. Dans l'ensemble, les mosaïques sont dans un mauvais état de conservation, sauf pour deux pavements décorant des bassins.

Nous avons remarqué la présence de divers types d'altérations : indicateurs d'une dégradation lente et progressive. En effet, des fissures, des déformations ainsi que des gondolements sont apparents sur la surface du tessellatum.

On signale aussi une perte d'adhérence entre le tessellatum et son assise. L'origine de ces altérations mécaniques est l'implantation du site dans un champ agricole (passage d'engins) ainsi que la présence d'une route à proximité très fréquentée.



Sur la qualité des tesselles nous avons remarqué l'exfoliation et la dégradation jusqu'à devenir parfois pulvérulente pour une catégorie de tesselle (précisément les tesselles vertes) ; mais faute d'analyse nous ne pouvons affirmer avec exactitude quelle est la nature de ces tessères poudreuses.

Après ce bref constat, nos soins d'urgence ont porté sur :

- le nettoyage mécanique à sec de la surface des pavements des deux bassins
- le dégagement des bords et l'enlèvement de la terre déposée dans les lacunes et leur comblement par un mortier de chaux
- la consolidation des bords de certains pavements par la pose de solins constitués d'un mortier de chaux
- la collecte des tesselles éparpillées.

A la fin de cette courte mission d'intervention d'urgence, nous avons procédé au recouvrement des mosaïques par un filet en plastique « bidim » et d'une couche de sable d'environ 5 cm comme protection temporaire dans l'attente d'une prochaine campagne de consolidation et de restauration.



Les mosaïques de la Maison de la Jonchée à Cherchel (*Caesarea*, Algérie):

Régénération et virtualisation des espaces disparus

Sabah Ferdi et Fawzi Doumaz

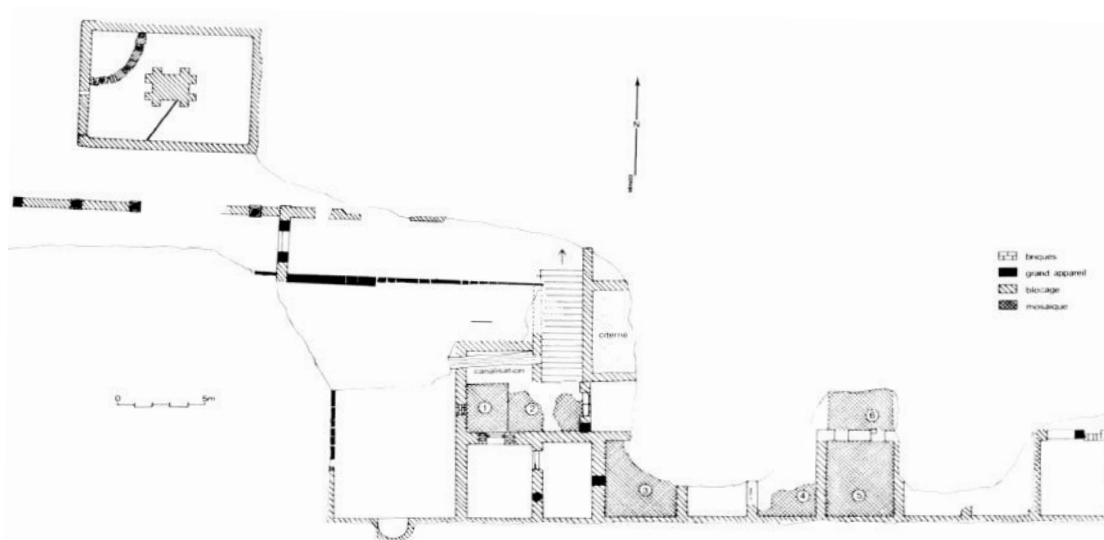
La Maison de la Jonchée doit son nom au motif végétal qui décorait la salle d'apparat de cette luxueuse demeure. Grâce au plan publié par Ph. Leveau, les pavements de mosaïques replacés dans leur contexte architectural nous permettent d'apprécier l'originalité et la spécificité étonnantes de l'atelier de l'antique Césarée.

Située au sud-est du plateau littoral de Cherchel, cette vaste habitation considérée comme une des plus vastes demeures de *Caesarea*, n'a jamais été entièrement dégagée ; les vestiges mis au jour entre 1963-1964 s'étendaient sur plus de 60 mètres d'est en ouest et sur plus d'une 30 mètres du nord au sud. Son plan d'ensemble comportait deux niveaux séparés par un mur de terrasse en grand appareil dont plus de 15 mètres ont été dégagés.

Toutes les pièces, à l'exception d'une seule à l'ouest, beaucoup plus vaste, avaient la même profondeur (4,50 m) et leur largeur variait entre 3 et 3,80 m. Elles communiquaient entre elles et avaient des seuils qui s'ouvraient sur un long couloir au nord.

Plus de 70 m² de mosaïques ont été retirés du site dont quatre grands panneaux entreposés aujourd'hui au parc de la mosaïque du nouveau musée.

De nature pluridisciplinaire ou interdisciplinaire, ce projet est destiné à établir une méthodologie pour la modélisation numérique des espaces disparus ainsi que leurs contenus mosaïstiques et architectoniques, en prenant pour prototype la Villa de la Jonchée. Il sera réalisé, en faisant appel à des techniques conjuguées, grâce à une équipe d'archéologues du Centre National de Recherche en Archéologie (CNRA) et de géomaticiens de

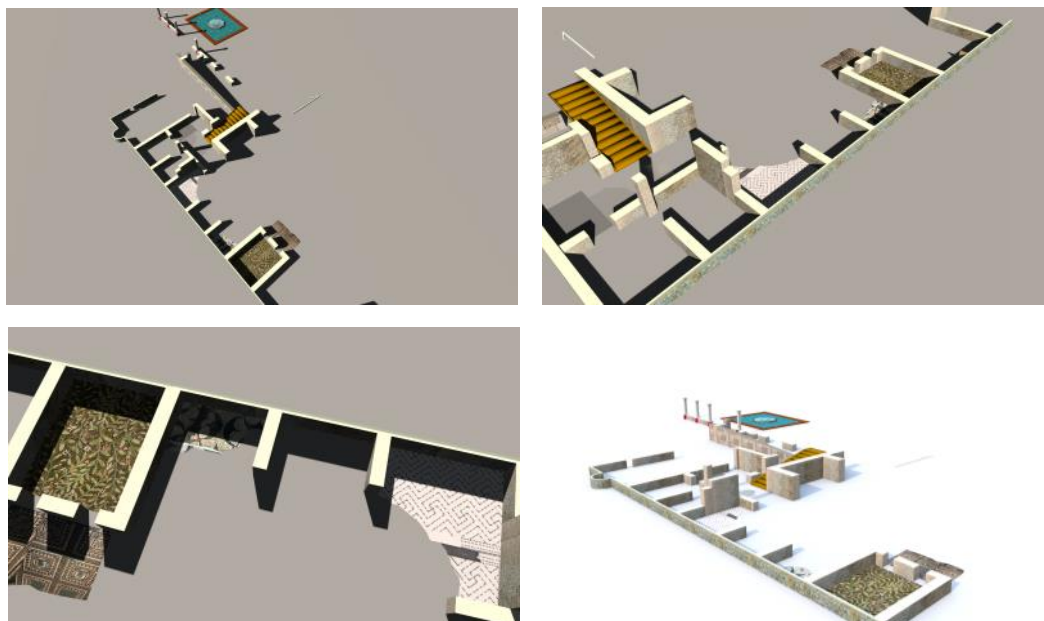


Géophysique et Volcanologie (INGV) de Rome, composée par Fawzi Doumaz et Valerio Lombardo. Dans une première phase, elles reposent sur l'exploitation des relevés planimétriques des édifices (2D) établis lors des découvertes archéologiques et l'utilisation combinée de logiciels en vue de numériser et vectoriser les éléments architecturaux pour obtenir rapidement un modèle 3D exploitable par des logiciels spécialisés pour le rendering et ray tracing.

Ces logiciels de modélisation sont capables de caractériser les éléments architecturaux tels que murs, piliers, colonnes, pavements, pièces, escaliers etc., et d'effectuer des extrusions volumétriques d'objets originellement plats, donnant ainsi naissance à des fichiers pouvant être sauvegardés en formats standards connus tels que OBJ, SVG, 3DS. Ces fichiers seront ensuite édités dans des logiciels plus puissants afin de modifier les formes géométriques, donner des textures et produire ainsi un rendu graphique 3D de haute qualité. Outre la production de rendu 3D statique sous différentes angulations et avec des niveaux de détail infinis, il est possible d'utiliser ces modèles 3D une fois épurés et habillés savamment grâce à l'intervention de chercheurs de justes formations et connaissances (archéologues, architectes, historiens), dans des environnements permettant l'animation de ces espaces virtuels en temps réel.

Dans le cas de la Maison de la Jonchée, vu leur singularité et beauté, les mosaïques ont fait l'objet d'un intérêt particulier dans le modèle 3D, elles ont été repositionnées dans leur emplacement originel, sous forme de textures dans les polygones numérisés à partir du plan d'ensemble reportés par Ph. Leveau puis par S. Ferdi, dans son travail de thèse sur le corpus des mosaïques de Cherchel. Même si les mosaïques sont actuellement exposées dans le parc des mosaïques de Cherchel, cette technique d'habillage numérique à partir de photographies réelles d'époque ou réactualisées, grâce aux moyens et techniques modernes de photographie d'une part et de dessin assisté par ordinateur (DAO) d'autre part, permet au visiteur virtuel d'en apprécier la splendeur et le détail.

Le modèle numérique, ainsi obtenu, à partir de la virtualisation des espaces disparus nous permet de proposer une visualisation de ces zones inexistantes et la contextualisation des pavements dans leur environnement d'origine tout en introduisant la notion d'échelle, de distance, d'angles, de couleurs. Cette réalité virtuelle permet de passer de l'objet réel et de ses connaissances vers un modèle numérique replacé dans son contexte immatériel.



Cette maquette numérique permettra ainsi d'accroître de multiples applications à caractère virtuel et de déboucher vers une nouvelle vision de la conservation du patrimoine. En effet, la démarche que nous proposons pourrait être une solution au problème de conservation et de stockage des objets patrimoniaux (en l'occurrence les pavements de mosaïque de Cherchel dont les conditions d'entreposage et de présentation, inadaptées, rendent difficile leur étude et participent à leur dégradation).

Mettre en place des collections à caractère virtuel pourrait être une des finalités qui pourrait s'avérer utile en cas de perte, d'aliénation ou de disparition de l'objet lui-même. Il s'agit en fait d'une veille technologique d'un nouveau type pour la sauvegarde du patrimoine mosaïstique de l'Algérie. La capitalisation des connaissances par l'outil numérique permettrait également de réaliser, préventivement, la conservation de celles-ci avant leur disparition ou leur usure, leur classement dans des conditions optimales et de développer leur accès au public et aux chercheurs. Il est important de considérer ces techniques comme des outils de communication afin de produire de la divulgation et vulgarisation à plusieurs niveaux, autour du patrimoine.

Roman Villa of Rabaçal, Penela, Portugal: Protection Plan 2014-2017

*Ana Luísa Ravara Mendes, Sónia Vicente,
Marília Ferreira and Miguel Pessoa*

The Roman Villa of Rabaçal was part of the territory of the former *Civitas* of Conímbriga, dating from the 4th to the 5th century AD. The Villa was used as home to a noble Roman family, whose land surpassed an area of 100 hectares. The owner and his family lived in a noble residence (*pars urbana*) and had their own bath building (spa), servants' quarters (*pars rustica*) and dependencies dedicated to farming (*pars frutuaria*). Centuries after the Villa was abandoned, it was partially reoccupied in the 15th and 16th centuries as a cemetery.

The field research began in 1979 and, in 1984, the archaeological studies started to take place, continuing until today. Between 1984 and 1994, the archaeological excavations uncovered a remarkable set of 20 mosaic pavements within the *pars urbana*. These mosaics display a great technical and artistic quality (Fig. 1).



Fig. 1: Seasons Mosaic of the Roman Villa of Rabaçal - representation of summer.

The Protection Plan for this property points to the need of building a protective cover and to the full restoration of the mosaic pavements. This includes the previous development of a series of studies, already in progress, aimed at assessing the conservation treatments that need to be applied, in each case, before and after the implementation of the protective cover. The preliminary study of the protective cover and the future musealisation of the Roman Villa of Rabaçal were developed by architect Álvaro Siza Vieira and represent an innovative project in this field (Fig. 2).

The cover consists of a grid in laminated wood with transparent plastic material, which lets in natural light. It also allows the protection of the archaeological site from the elements and it creates new visit itineraries with slightly raised wooden walkways which link different areas of the complex. The idea is to create a path which allows the visitor to gradually approach the architectural estate, first observing it from a distance, in the valley, and culminating with the direct observation of the mosaics and other archaeological elements.

Preventively, the pavements are covered with a layer of sand which functions as a protective barrier against degradation agents. However, constant maintenance and the periodic execution of some conservation procedures are required to maintain the pavements' stability. For this reason, every year emergency conservation interventions are carried out by a team composed of volunteers and national and international students. In 2013, the "VIIIth Workshop on Methodologies for the Conservation and Restoration of Roman Mosaics *In Situ*" was held in the Roman Villa of Rabaçal, whose intervention methodology is based on preserving the archaeological elements in their original position.

These interventions, performed annually, have been instrumental in stabilising the mosaic pavements and in improving the readability of the represented motifs, until all the necessary requirements for implementing the protective cover and the full intervention in these pavements is fulfilled.



Fig. 2: Preliminary study for the protective cover project of the Roman Villa of Rabaçal, developed by architect Álvaro Siza Vieira.

The “*In loco verticalis* Mosaic”.

Roman Villa of Santiago da Guarda, Ansião, Portugal

Pedro Sales and Marília Ferreira

The rehabilitation project of the large mediaeval building known as the *Paço dos Vasconcelos* of Santiago da Guarda, started in 2002, has uncovered the ruins of a Roman villa with a remarkable set of seventeen polychrome and geometric mosaic pavements (with the exception of one which has an alternating composition of black and white squares). These lie underneath the foundations of this building, dated from the 16th century AD, and of an adjacent tower dating from the 15th century AD, classified as a Portuguese national monument (Fig. 1).

The Roman Villa of Santiago da Guarda, with the vast group of mosaics that it possesses, is an integral part of the tourist and cultural programme of the central region of Portugal, designated as the "Axis of Romanisation", alongside the Roman Villa of Rabaçal and the former *Civitas* of Conímbriga (for more information please visit the site: www.terrasdosico.pt)

Conímbriga's Mosaic Restoration Workshop Team, a partner in this project, has carried out the necessary measures for the protection, consolidation and conservation of the mosaics *in situ*. Regarding the present use of the building, which focuses essentially on the presentation and valorisation of the mosaics, and on the need to create the conditions to better preserve two of the pavements discovered, it was decided, particularly given the architectural context they are found in, to display them vertically. After a rigorous intervention by the conservation team, they were lifted and applied on the wall adjacent to their find-spot.



Fig. 1: The *Paço dos Vasconcelos* in Santiago da Guarda.

One of the mosaics lifted has an apsidal form and the other (which is in the process of being lifted and was divided into nine sections) also has an apsidal part, juxtaposed in a large rectangle of geometrical composition with vegetable motifs inscribed in a pattern of swastika meander. It is a large mosaic which was not entirely uncovered, but whose visible surface is, approximately, 5.92 meters long by 3.12 meters of width. However, it has many gaps in its central zone (Fig. 2).

Both mosaics were repositioned using a new support reinforced by alveolar panels, and the treatment of the gaps was done using a stone-based filler. The restoration of the tesserae strips and lines was also done in order to improve reading and interpretation of the whole. Occasionally, geometric compositions were restored.

The relaying of the *opus tessellatum* into light and rigid structures, allowed the assembly and attachment of the panels together, by means of metallic fasteners which support the mosaics placed on a vertical plane.

The report of this particular case is not intended to praise the lifting of mosaics but, on the contrary, to describe a situation that, among other things, due to the constraints imposed by the present use of the rehabilitated building is, presently, and in terms of mosaics of this dimension, a unique case in Portugal (Fig. 3).



Fig. 2: The mosaic after discovery.



Fig. 3: The mosaic placed on the wall of the medieval building.

Presentation of Early Christian mosaic fragments from Roman Emona using a movable support with lightweight mortar

Bernarda Županek, Katarina Žagar, Maja Gutman, Sabina Kramar, Matjaž Bizjak and Martina Lesar Kikelj

The Late Roman/Early Christian mosaic discovered in the so-called room 8, insula XIII of Roman Emona (Ljubljana, Slovenia), has undergone a complex conservation and restoration programme in 2013-2014. The entire mosaic was lifted and is to be exhibited at the large exhibition held in the Museum and Galleries of Ljubljana, from 2014-2015: *Emona: the city in the empire*. The exhibition will be a part of a wider cultural programme, coordinated by the Municipality of Ljubljana, commemorating 2000 years since the building of the Roman colony of Emona, the first city in the area of the modern Slovenian capital.

The mosaic represents a carpet with a central panel bordered by a white and a black band, and its dimensions were approx. 5.60 x 9.60 m when whole. The central panel shows a diagonal grid of serrated black/red/white filets (square size of 0.69 m) with geometric red/black rosettes in the squares. It is a product of a mosaic workshop active in Emona at the end of the 4th century. After its initial discovery in 1912, the mosaic was re-buried but was uncovered again during rescue excavations of the wider area in 1996-1998. After the discovery, it underwent thorough documentation (measuring, photo documentation, drawing onto a plastic film on 1:1 scale), that later proved to be crucial for the restoration. The next step was dividing the mosaic surface intended for lifting. On average, each individual piece measures 1.70 x 0.80 m, while the whole surface of the preserved mosaic measures 18.8 m². For the purpose of mosaic presentation, the choice of a suitable movable support has been of the utmost importance. It had to be lightweight and at the same time ensure compatibility and reversibility as well as easy handling during transport and reassembly of the restored fragments.



Fig. 1: The mosaic during the 1997 excavation.

Photo: Aleš Ogorelec, Museum and Galleries of Ljubljana.

After the mechanical removal of soiling and remains of original mortar, the mosaic back was covered with lightweight mortar that has been made and tested especially for the occasion. Instead of classical aggregate, lightweight aggregate was used from recycled glass of different grading, and natural hydraulic lime as a binder. Simultaneously with other procedures, vectorisation was being carried out, based on the previously retouched photographic reproduction of the mosaic. With the aid of a computer programme, we documented the position, colour and outline of individual tesserae, also marking detached and broken tesserae.

Each of the fifteen pieces of the mosaic was placed on an individual support linked to the others. Stratigraphy of the new support thus includes an aerolam panel as the base, appropriate adhesive glue, a spacer plate and lightweight mortar. Then, the temporary facing protection was removed and the tesserae cleaned and the lacunae filled with an imprint of the mosaic tesserae. As the last step, we are developing the system of re-attaching separate fragments into a whole.



Fig 2: Applying a first layer of new lightweight mortar. Photo: Katarina Žagar, archive of Restoration Centre.



Fig 3: Applying the last layer of mortar. Photo: Katarina Žagar, archive of the Restoration Centre.



Fig 4: Final cleaning: the cleaned surface of mosaic is visible on the right. Photo: Katarina Žagar, archive of the Restoration Centre.

Workshop for Documentation and Conservation of Roman and Late Roman Mosaics, Stobi

Angela Pencheva

The ruins of the ancient city of Stobi in FYROM are located 70 km from Skopje, at the confluence of the Crna and Vardar Rivers. Stobi was an important urban, military, administrative, trade and religious centre of the Roman and Early Byzantine Empires. Nowadays the site is within an archaeological park and includes 27 hectares of archaeological remains: 26 exposed buildings, including a theatre, a synagogue, palaces, houses, basilicas, and baths; suburbs and cemeteries are located outside the city walls. Since 2012 Stobi has been included in the World Monuments Funds Watch List.

Nowadays, approximately 1560 m² of the excavated area of Stobi are covered with entirely- or partly-preserved mosaics, dating mainly from the 2nd to 6th centuries AD. Most of them were discovered in public or residential Roman and late Roman buildings: the Episcopal Basilica, the Extramural Basilica, the Theodosian Palace, Synagogue II, the "Casino", the House of Peristeria and the House of Polycharmos.

The first preventive conservation of the mosaics in Stobi started in the 1930s and continued sporadically in the following decades. Nowadays many of the mosaics require urgent conservation due to the damage caused by the weather and lack of proper and constant maintenance in past decades. In 2009, the *National Institution Stobi* started a long-term programme for the complete conservation and exhibition of the mosaics at Stobi.

In 2012, collaboration between the *Balkan Heritage Foundation* and the *National Institution Stobi* resulted in the establishment of the **Workshop for Documentation and Conservation of Roman and late Roman Mosaics**, which aims to support their long-term strategy for conservation and preservation of the site's mosaics. The result is that 70% of the accumulated funds from the Project are contributing directly to the site.



The workshop is designed for students in conservation and restoration, fine arts and archaeology, as well as volunteers from all over the world. Over a period of two weeks the participants are guided through the sequential stages of documentation, conservation, restoration, as well as the history and technology of Roman and late Roman mosaics. This includes:

- practical work in the documentation and conservation of Roman mosaics
- lectures and training on mosaic history and conservation
- excursions to the ancient cities of Heraclea Lyncestis, Lychnidos (Ohrid UNESCO Heritage Site), Pella and Vergina (UNESCO Heritage Sites)

In 2012-13, the Field School Project was focused on the complete conservation of two floor mosaics in the Theodosian Palace, and in 2014 on one of the mosaics in the Episcopal Basilica, which is considered to be the oldest and most important Early Christian monument in FYROM. Another mosaic of the Episcopal Basilica is being considered for conservation in 2015.

<http://www.bhfieldschool.org/>



Protective shelters for archaeological Sites: a Symposium

Leslie Friedman

Over thirty heritage professionals from throughout North Africa, the Middle East, Europe and North America convened at the site of Herculaneum, Italy from September 23-27, 2013 for a week-long symposium on protective shelters for archaeological sites. Supported by a grant from the Getty Foundation, the symposium was hosted by the Herculaneum Conservation Project and the Herculaneum Centre, in collaboration with the MOSAIKON Initiative partners, which include the Getty Conservation Institute, the Getty Foundation, ICCROM and ICCM.

Through a combination of presentations, case studies from the sites of Herculaneum and Pompeii, and on-site exercises and group work, different aspects of sheltering archaeological sites were addressed. Key topics discussed throughout the week included the decision-making process for sheltering, assessing site values and the site management context, evaluating environmental and material conditions, reviewing architectural designs and implementation, and the need for ongoing evaluation and maintenance. Results from the symposium will be published in a summary volume including key case studies.

Please follow these links for more information about the Herculaneum Conservation Project (www.herculaneum.org), the Herculaneum Centre (www.herculaneumcentre.org), and the MOSAIKON Initiative (www.getty.edu/conservation/our_projects/education/mosaikon).



Delegates in Herculaneum on a privileged visit to the Villa dei Papiri, with its temporary shelter.

New resources available on the Internet

Publications

Readers may already be aware of the useful publications on the Getty Conservation Institute website, available as free pdfs from: http://www.getty.edu/conservation/publications_resources/pdf_publications/

- *Illustrated Glossary: Technician Training for the Maintenance of in Situ Mosaics*, Livia Alberti, Elsa Bourguignon, Ermanno Carbonara, Thomas Roby and Juana Segura Escobar, 2013 (English and French versions)
- *Mosaics in Situ: An Overview of Literature on Conservation of Mosaics in Situ*, edited by Thomas Roby and Martha Demas, 2012
- *Technician Training for the Maintenance of in Situ Mosaics*, Livia Alberti, Elsa Bourguignon and Thomas Roby, 2013 (English and French versions)

Newly available are the proceedings of the ICCM:

- **2005 Hammamet conference:** *Lessons Learned: Reflecting on the Theory and Practice of Mosaic Conservation. Proceedings of the 9th Conference of the International Committee for the Conservation of Mosaics, 2005*, edited by Aïcha Ben Abed, Martha Demas and Thomas Roby, 2008
http://www.getty.edu/conservation/publications_resources/pdf_publications/lessons_learned_reflecting.html
- Mosaics No. 1: Deterioration and Conservation (1978)
<http://www.iccm.ac.cy/index.php?link=publicationdetails.php&serial=5>
- Mosaics No. 2: Safeguard (1981)
<http://www.iccm.ac.cy/index.php?link=publicationdetails.php&serial=6>
- Mosaics No. 3: Conservation in situ (1983)
<http://www.iccm.ac.cy/index.php?link=publicationdetails.php&serial=2>

Arches Project

Arches is a collaboration between the Getty Conservation Institute (GCI) and the World Monuments Fund (WMF), to provide an open-source information system to inventory and manage immovable cultural heritage. Arches uses widely-adopted standards for heritage inventories, heritage data, thesauri, and information technology, designed for heritage institutions to meet their particular needs:

http://www.getty.edu/conservation/our_projects/field_projects/arches/

Art in the Making in Antiquity: Stoneworking in the Roman World

The Art of Making in Antiquity is an innovative digital project of King's College London, designed for the study of Roman stoneworking, using the photographic archive of Rome-based sculptor Peter Rockwell. This website aims to enhance current understanding of the carving process and to investigate the relationship between the surviving objects, the method and sequence of their production and the people who made them. The resource comprises around 2,000 images, largely Roman monuments with a selection of contextual sources, accompanied by analysis of the working practices underlying their making: <http://www.artofmaking.ac.uk/>

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