

# THE ŻEJTUN ROMAN VILLA: CONSERVATION ISSUES

JoAnn Cassar<sup>1)</sup> and Roberta De Angelis<sup>2)</sup>

<sup>1)</sup> *Department of the Built Heritage, University of Malta, joann.cassar@um.edu.mt*

<sup>2)</sup> *Department of the Built Heritage, University of Malta, roberta.deangelis@um.edu.mt*

## ABSTRACT

This paper deals with conservation issues in relation to the residential area of the Roman Villa complex, consisting of four adjoining rooms paved with lozenge-shaped tiles, and enclosed by walls with remains of plaster, some bearing traces of paint. Multi-disciplinary studies in this respect are being carried out by the Department of the Built Heritage of the University of Malta. These studies have included the documentation and mapping of the current state of conservation of the floors and walls, drawn up by the students of the Bachelor degree in Conservation and Restoration Studies (University of Malta) and conservators from Heritage Malta. Documentation is always the first step in a conservation programme. Here it primarily helped the team to understand the distribution of deterioration, assess the causes of deterioration, both natural and anthropogenic, of these areas. Environmental monitoring, which will continue even after a protective shelter has been built, is currently under way. A research programme is now being carried out to choose the best herbicide to tackle the growth of vegetation on the site, and another programme will help choose appropriate grouting material and mortars to consolidate the loose remains of plaster. Following the completion of these measures, a maintenance plan will be put in place to ensure the continued conservation of the site.

## INTRODUCTION

The Żejtun Roman Villa complex was discovered in 1961 and excavated during a series of archaeological campaigns in the 1970s (see Bonanno and Vella, this volume) and continued in recent years. The western part of the complex, defined by the archaeologists as the residential zone of the Villa (Fig. 1) includes four rooms paved with terracotta tiles, and enclosed by walls still bearing remains of plaster with traces of paint. This paper concerns a multidisciplinary research project, still at an initial stage, being carried out by the University of Malta to study and preserve these parts of the complex. The Department of the Built Heritage is leading the conservation project and the Department of Classics and Archaeology is leading the archaeological studies. The whole programme is being supported by Din l-Art Helwa and the HSBC Malta Foundation.<sup>1</sup>

## DESCRIPTION OF THE SITE AND ITS DECORATED REMAINS

The residential area of the complex was excavated between 1972 and 1976. Unfortunately, very little remains of the painted decoration displaying decorative motifs and a fairly rich palette, visible when the site had just been excavated (Bonanno and Vella, this volume). Remaining

are a few traces of red or yellow paint, showing no distinct decorative pattern. An exception is the eastern room, where a sort of dado, painted in red over a white background, can still be distinguished, although with difficulty (Fig. 2). During the condition assessment (see below), also scant microscopic traces of green-blue paint were noticed in a few locations.

The walls of the Villa have a heterogeneous structure and are partly hewn from the bedrock, and partly built using rubble and ashlar (Fig. 3). Even the plaster remains show a diverse typology with a texture ranging from fine to very coarse. All this is in line with the strong indications, already put forward by archaeologists, that the site was used or re-used over a fairly long period of time (Bonanno and Vella, this volume).

The lozenge-shaped terracotta tiles appear to be largely homogeneous in their size and composition. Their arrangement follows a herring-bone pattern, aligned on an East-West axis in three rooms and on a North-South axis in the other. Only in one small area were slightly smaller and misaligned tiles noted. Evidence of preparatory layers can also be seen where the tiles have been lost (Fig. 4).

Restoration works, which presumably took place in the 1970s, concerned primarily the tiled floor of the long room (room 1 in Fig. 1). Here a large (probable) cement repair was applied where the preparatory layers for the tiles had been lost. Where these layers were still extant, edging repairs in (probable) cement were instead applied along the tiles, presumably to prevent them from being dislodged. A number of tiles were also relaid in some small areas, probably again using cement, especially but not only along the perimeter of the floor of the long room.



Figure 1. Aerial photograph of the villa remains in the grounds of the Girls' Secondary school, Zejtun. The individual rooms are numbered. Photograph by courtesy of the Armed Forces of Malta.



Figure 2. Detail of a plaster bearing traces of red paint (bottom image) in room 4 (top image). Photograph by the students in Conservation and Restoration Studies, University of Malta.



Figure 3. Detail of room 4 showing plaster applied to bedrock. Photograph by the students in Conservation and Restoration Studies, University of Malta.



Figure 4. Detail of the tiled floor of room 1 showing the preparatory layer where some tiles have been lost. Photograph by the students in Conservation and Restoration Studies, University of Malta.



Figure 5. Detail of room 2 showing the effect of the growth of vegetation on plaster remains. Photograph by the students in Conservation and Restoration Studies, University of Malta.

## STATE OF CONSERVATION

There is now unfortunately widespread deterioration in the tiled floors and especially in the plaster remains, many of which appear detached (Figs. 4 and 5). The current state of conservation of all of these areas was documented by students following the Bachelor degree in Conservation and Restoration Studies (Department of the Built Heritage), supervised by conservators from Heritage Malta Conservation Division. The main deterioration forms affecting the floors, walls and plaster remains were described in a detailed visual glossary, and their distribution mapped on large-scale photographs. The hand drawings prepared on site are currently being converted to ACAD drawings by a professional conservator.

This visual glossary identified the main forms of deterioration as follows:

### Tiled floors

- areas where all tiles and bedding layers are missing
- areas where tiles are missing and bedding layers are exposed
- cracks and fissures between existing tiles, and missing grout, often leading to the loosening of these same tiles
- fractured and broken tiles
- microcracks within the tiles
- worn and/or otherwise damaged tiles
- lack of adhesion of tiles to bedding layers, or between bedding layers
- depressed areas or bulges within the existing tiled areas
- accumulation of dirt and biological growth on and around the tiles.

### Walls and areas of plaster

- Cracked and dislodged building stones
- Deteriorated stones
- Loss of mortar between stones
- Biological growth in between and on the stones and soil accumulation
- Loss of plaster, including fragments still present on the ground

- Loose plaster with soil and plants growing behind plaster remains
- Cracked and fragmented plaster remains
- Deteriorated plaster
- Biological growth on the plaster remains
- Loss of paint on plaster.

## CAUSES OF DETERIORATION

The causes of the widespread deterioration of these decorative elements are multiple and interact one with the other. As typical for archaeological sites, they are largely of natural origin e.g. vegetation, rain, soluble salts, wind, sun. The action of many of these factors is even more harmful since they are cyclic.

The annual growth of intrusive plants and trees is a major cause for concern since it damages both materials and structures, as well as archaeological deposits, leading to cracks and fissures within the building and decorative materials. Roots growing within the structures' interstices slowly dislodge fragile tiles and fragments of stone, mortar and plaster (Figs. 5 and 6). Rainfall causes the collapse of plaster fragments, and of the fragile parts of the stone walls, whilst recurrent ponding has been observed to take place in several areas within the tiled rooms (Fig. 7). Soluble salts, originating from the air, transported by rain and/or emanating from the soil, sometimes also coming for the use of unsuitable restoration materials, enter the porous materials and crystallise cyclically with every wetting/drying cycle, leading to disaggregation of the original materials, which can be stone, mortar, bedding layers or decorative tiles.

Although most of the deterioration observed on site is attributable to adverse climatic conditions, humans also play a role. The current deterioration is for the most part the result of 35 years of neglect,



Figure 6. Detail of room 2 showing the effect of the growth of vegetation on the tiled floors. Photograph by the students in Conservation and Restoration Studies, University of Malta.



Figure 7. The residential area of the Roman Villa after rainfall. Photograph by the students in Conservation and Restoration Studies, University of Malta.

following the exposure of a previously buried site. More recently, several stone blocks have been turned over by thoughtless individuals probably looking for snails, whilst the current fragility of the site makes the presence of visitors, even the careful ones, somewhat risky.

## CONSERVATION PROJECT

The project currently under way aims to address the most pressing conservation needs of the Žejtun Villa.

Special attention is being dedicated to the residential zone, since this is clearly the most vulnerable and information-rich area of the entire complex.

The main steps of the conservation plan include:

- To record, assess and monitor the condition of the site
- To temporarily protect the vulnerable parts of the site
- To carry out environmental monitoring
- To secure those areas of the walls where there is an imminent risk of the plaster being dislodged or lost, and on the floors where tiles are loose or even being lost
- To explore methods to prevent the re-growth of vegetation
- To plan for the long-term protection of the site, including the erection of a permanent shelter over the residential area.

## CURRENT STATE OF AFFAIRS

The conservation plan for the remains of the four decorated rooms on the site is currently under way. The first phase has included the recording, assessment and monitoring of the state of conservation of the decorated areas.

Under way are two focused research programmes - one aimed at evaluating the repointing mortars and grouts to use in the conservation of the tiles and plaster, and another aimed at selecting the best herbicides to use for the control of the weeds which take over the site with each rainy season. These programmes are being undertaken by students and graduates of the Department of the Built Heritage, under the supervision of the authors, and with the participation of Heritage Malta conservators and scientists. Schoolchildren from the Žejtun school, under guidance of a Science teacher, are also helping with the herbicide research programme.

It is being planned that a protective shelter, which may be temporary or permanent, is erected over the site to reduce the harmful effects of adverse environmental conditions on the fragile decorative elements of the site.

Continuous environmental monitoring (air temperature and relative humidity) of two areas within the site has now commenced. Once the shelter will be in place, this monitoring will continue for a year and will include one area inside and one outside the shelter. This will allow comparison of the external conditions with the conditions prevailing under the shelter, and will allow the conservation team to assess the effects the shelter is having on the well being of the site.

## THE WAY AHEAD

What has here been described so far is only the start of a long process which needs to be sustained if the remains are to continue to survive. This will include continued monitoring of the environmental conditions, and regular maintenance of the site itself, including periodic removal or treatment of weeds, and targeted interventions such as reapplication of mortars and reattachment of loose tiles. It is only in this way, with our continued commitment to the conservation of the site that these important remains will continue to live on, acting as a source of valuable information on our past and as a fount of enjoyment for all.

## ACKNOWLEDGEMENTS

The Žejtun Villa Conservation Project started as a result of a conversation between a research assistant at the University of Malta, Maxine Anastasi, and a former executive president of Din l-Art Helwa, Martin Galea in 2008.

Since then the Project developed thanks to a number of partnerships, involving students, professionals and volunteers: at the University of Malta, the Departments of Classics and Archaeology and the Department of the Built Heritage; at HSBC, the HSBC Malta Foundation and the bank employees who volunteered to clear the site in 2011 (co-ordinated by Martin Scicluna, Josef Camilleri, Doriette Camilleri); at Din l-Art Helwa, successive presidents and council members (especially Martin Galea, Petra Bianchi, Simone Mizzi, Martin Scicluna, Maria Grazia Cassar); at Santa Margherita College (formerly Carlo Diacono Secondary School), particularly the current headmistress (Anna Spiteri) and the previous one (Maria Ciappara), together with the College Principal (Janet Mifsud) and the Foundation for Tomorrow's Schools (Charles Farrugia), and the Science teacher Anthea Barbara, who is coordinating the NSTF project on

herbicides with students from the college. The students following the Bachelors degree course in Conservation and Restoration Studies at the University of Malta involved in documenting the state of conservation of the remains under the supervision of Perit Ruben Abela and conservators Frank Chetcuti, James Licari, Ruby Jean Cutajar, Joanne Dimech were: Clayton Bonello, Chiara Galea, Claire Marie Scerri, Annetto Schembri, Francesco Sultana, Luca Tufigno, Jane Marie Vella. The rectified photographs were taken by Hermann Bonnici and Joanna Hili Micallef is producing the ACAD drawings. Charlene Zammit is a final year BE&A student who is studying herbicides for possible use on the site; Stephanie Sammut from Heritage Malta is also helping in this area. The Project is being undertaken with the permission of the Superintendence of Cultural Heritage; we thank Anthony Pace and Nathaniel Cutajar for their interest and help.

## BIBLIOGRAPHY

- AGNEW, N., MAEKAWA, S., COFFMAN, R., MEYER, J. (1996) Evaluation of the performance of a lightweight modular site shelter: Quantitative meteorological data and protective indices for the 'hexashelter'. *Conservation and Management of Archaeological Sites*, 1(3), pp. 139-150
- ANASTASI, M., BONANNO, A., CASSAR, J., DE ANGELIS, R., VELLA, N. (2011) *The Żejtun Roman Villa Conservation Project*. Vigilo, 40, pp. 14-17.
- ANON. (2003) *Mosaic in situ project. Illustrated glossary*. Getty Conservation Institute, 2003. Available from: [http://www.getty.edu/conservation/publications\\_resources/pdf\\_publications/mosaicglossary.pdf](http://www.getty.edu/conservation/publications_resources/pdf_publications/mosaicglossary.pdf) (Accessed 26 August 2012)
- CANEVA, G., NUGGARI, M. P., SALVADOR, O. (eds) (2008). *Plant Biology for Cultural Heritage: Biodeterioration and Conservation*. Getty Conservation Institute, 2008.
- CASSAR, J. (2002) Deterioration of the Globigerina Limestone of the Maltese Islands. Siegesmund, S., Weiss, T., and Vollbrecht, A. (eds). *Natural Stone, Weathering Phenomena, Conservation Strategies and Case Studies*. Geological Society, London. Special Publications, 205, pp. 33-49.
- STANLEY PRICE, N. (1991) *The Conservation of the Orpheus Mosaic at Paphos, Cyprus*. Getty Conservation Institute. Available from: [http://www.getty.edu/conservation/publications\\_resources/pdf\\_publications/orpheus\\_mosaic.pdf](http://www.getty.edu/conservation/publications_resources/pdf_publications/orpheus_mosaic.pdf) (Accessed 21 August 2012)
- TAYLOR, J. (n.d.) *Lime: the basics*. Available from: <http://www.buildingconservation.com/articles/limebasic/limebasic.htm> (Accessed 24 August 2012)
- VELLA, J.M. (2010) *Documentation and condition assessment of the archaeological decorative remains at Żejtun Roman Villa*. Unpublished report, Department of the Built Heritage/Heritage Malta.

## FOOTNOTE

<sup>1</sup> Most of the information reported below comes from a condition assessment carried out through visual observation by the students following a Bachelor degree in Conservation and Restoration Studies (University of Malta) in October-December 2010, supervised by conservators from Heritage Malta.