The Mosaics of the Roman Villa of São Simão, Penela, Portugal

Penela, Portekiz’de Yer Alan São Simão Roma Villası’ndan Mozaikler

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Abstract

The Roman Villa of São Simão, part of the ancient municipium of Conímbriga, in the province of Lusitania, is located in the area correspondent to the churchyard, public road and lands adjacent to the Chapel of Our Lady of Grace, in São Simão, within the fertile valley of the Dueça River, in the municipality of Penela, district of Coimbra.

The mosaic pavements uncovered in 2001 together with the newly discovered mosaics identified in 2015 and the remaining set of in stucco wall coverings reveal an impressive occupation whose study reinforces and brings new information about the Roman rural rule of this territory.

A preliminary study of the mosaic pavements is presented taking into consideration the decorative motifs depicted, the state of conservation and the interventions made in situ during the archaeological excavation.

Keywords: Mosaic, villa, S. Simão, conservation, excavation.

Öz

São Simão Roma Villası antik dönemde Lusitania Eyaleti’nin Conímbriga Bölgesi’nde yer almaktadır. Günümüzde Coimbra Bölgesi’nde, Penela Belediyesi sınırları içinde, Dueça Nehrinin verimli vadisinde Zarafet Leydisi Şapeli’ne ve karayoluna çok yakın bir konumda bulunmaktadır.

2001 yılında ortaya çıkarılan mozaik döşemelerin yanı sıra 2015 yılında yeni keşfedilmiş olan mozaikler ve alçı duvar kaplamalarına ait kalıntılar, bu bölgeye Roma döneminde yoğun olarak yerleşildiğini göstermektedir.

Bu ön çalışmada, betimlenen dekoratif motifler, mozaiklerin korunma durumları ve arkeolojik kaz sırasında yapılan in situ önlemler ele alınacaktır.

Anahtar kelimeler: Mozaik, villa, S. Simão, koruma, kazı.

Introduction

The Roman Villa of São Simão is located in the territory of the ancient municipality of Conímbriga, part of the Conventus Scalabitanus, in the province of Lusitania. In the immediate vicinity of this villa, it is possible to find the Roman Villa of Rabaçal, the Roman Villa of Santiago da Guarda and the civitas of Conímbriga.

The Roman Villa would occupy the valley next to the water line of the Dueça River. The thermal baths and its rustic area, characteristic of this type of agricultural farm (Alarcão 1990a; Alarcão 1988b), have not been located yet. However, there are records of several sites, in the valley, with the presence of both construction ceramic material and common ceramic material of Roman typology which could be agricultural annexes of the villa’s fundus.

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The presence of some import material (1 fragment of *Terra Sigillata* from South Gaul and 4 fragments of *Terra Sigillata* from Hispania), dating from the 1st/2nd centuries AD, and two coins dated from Constantine’s Reign can point us to the construction of the villa within two phases of occupation, one during the High Roman Empire and the other during the Late Roman Empire.

**Geographical location of the Archaeological Site**

The Roman Villa of São Simão is located in the municipality of Penela, situated in the Beira Litoral province, and belongs to the district and diocese of Coimbra. The municipality occupies an area of 132.49 km². It borders, in the north, with the municipalities of Condeixa-a-Nova and Miranda-do-Corvo, in the south, with Ansião, in the west, with Soure and Ansião and, in the east, with Figueiró dos Vinhos, these last three belonging to the district of Leiria. The municipality of Penela is constituted by four parishes - Cumieira, Espinhal, Podentes and the Union of Parishes of São Miguel, Santa Eufémia and Rabaçal (Figs. 1-2).

**Historical Background**

The occupation of the valley of the Dueça River dates from the proto-historical period to the present time. There are two “castros” (hill forts), one in Tombadouro and the other in Sobral, Union of Parishes of São Miguel, Santa Eufémia and Rabaçal. Their occupation dates back to the final Bronze Age - Iron Age to the Roman Age.

The “castro” of Sobral, a settlement from the Iron Age, with occupation during the Roman period, overlooks the Sabugueira River. A wall of about 3,20 meters is visible together with two doors giving access to it (Arnaut 2009: 90). Here, it was possible to identify a fragment of a fibula - caudal appendage in the shape of a baluster, dating from the 4th century BC - and ceramic material from the Roman period (common ceramics and construction ceramics, kept in the Museum of the Roman Villa of Rabaçal).

From the “castro” of Sobral, it is possible to see in a straight line, at a distance of about 3,125 km, the “castro” of Tombadouro or Furadouro, in the parish of Santa
Eufémia. In this “castro”, it was identified the presence of ceramic material, a stone axe, fragments of bronze and slag dating from the Bronze Age. The site needs a more in-depth archaeological study to assess its diachronic occupation. Both “castros” are situated in the valley of the Dueça River.

In the valley of the Dueça River, there is also the Roman Villa of São Simão, next to the Chapel of Our Lady of Grace (Fig. 3). So far, the Villa’s name during the Roman period hasn’t been ascertained, which led various authors (Alarcão 1988a; Alarcão 1990b), to refer to it as the Roman Villa of São Simão. From the various punctual interventions that have been carried out on the site, it is possible to point out a chronology set between the 1st/2nd centuries AD and the 4th century.

Recently, it was possible to identify some Hispanic TS (Terra Sigillata), with high-imperial chronology, bichrome and polychrome mosaics, which stylistically point to distinct phases of occupation, and two 4th century coins. Only a thorough and broader study will be able to provide clarification regarding the diachrony of the site.

There are references to the existence, in the 13th century, of a hermitage at the foot of “mount sheep” (Vez Mount) in São Simão (Arnaut 2009: 94). However, this information has not been confirmed by any archaeological evidence. In the 15th century, there is information regarding a Franciscan convent at the foot of Vez Mount. There are those who locate it in a narrow valley near a water spring and on the banks of a river. This site could be located in São Simão or in Santo António da Ribeira (Gois 2009), where the place name still exists, with the presence of a chapel devoted to Saint Anthony (Santo António).

Research Synopsis


In 2001, during the construction works of a wall to support the Chapel’s churchyard, two mosaic pavements decorated with geometric motifs (Pessoa et al. 2001), both polychrome, were uncovered. Of these, only one, along with some archaeological material, was preserved in situ. A brief study of these two pavements was presented by Miguel Pessoa (Pessoa 2005).
Again, in 2004, following a request for the construction of sanitary facilities, Roman plumbing and structures were identified (Pessoa – Vicente 2004).

In 2012, the area was once again the subject of archaeological excavations, this time for housing construction purposes. Structures were once again identified and maintained in situ (Rodrigues 2012).

In 2015, during the archaeological monitoring of the installation works of sanitation infrastructures in Serradas da Freixosa - São Simão, several structures and pavements were identified in the public road, which, due to their magnificence and grandeur, led the Municipal Council to seek an alternative to the planned pipeline implementation and propose the site to be researched (Fig. 4).

Associated with the Roman presence, a 15th century necropolis was identified. In the bibliography used, several authors referred to the presence of a hermitage or convent of Saint Francis (São Francisco) at the foot of Viso, Ver or Vez Mount (Vicente et al. 2015).

It is important to highlight that the mosaics identified so far are all geometric (Fig. 5).
Identified structures and mosaics

During the emergency excavation carried out in 2015, several proven Roman structures were identified along with another one that raise the hypothesis of a reoccupation of the site at a later period due to its apparently irregular and somewhat careless construction. We suppose that it is a structure subsequent to the Roman period because of the type of apparatus used, the cut and disablement of the pavement of “mosaic 3” and the total area of the compartment.

In area 1, we identified a structure built with fitted blocks (wall 1), with about 6, 70 m long, in opus incertum. In its foundation, we recognized the base built with small stone, in a visible strip, with about 7, 5 cm of grouped stone. The interior floor of this compartment is in opus Signinum. The wall (wall 2) that limits the area of opus Signinum and the area of “mosaic 3” is 2, 10 cm wide, also corresponding to the width of the ditch.

In the north section, it is possible to see that there is a wall start-up, perpendicular to the wall of the current churchyard of the Chapel. Is it another division of the house, located inside the churchyard?

Area 2 and area 3 correspond to the room with “mosaic 3”. The baseboard has a finishing fringe in opus Signinum, with about 6/8 cm of thickness, between the wall and the mosaic. The wall would have had in stucco plaster (Alarcão 1994).

In area 3, a somewhat crude apparatus structure (wall 3) was identified, constructed on the pavement of “mosaic 3”. The wall is about 58 cm wide by 1.90 m long.

In area 4, a corridor was identified, limited by walls 4 and 5, of about 2.20 m wide. The mosaic pavement (“mosaic 4”) is bichrome and the tessellatum has a higher density per dm² than “mosaic 3”.

Would the area with “mosaic 5” correspond to a room? Taking into consideration the visible area, it is not possible to assign it a specific function. An area of about 2, 50 m of mosaic’s length, with about 0, 90 m width, is visible.

In area 5, we identified a structure, which we present in the general plan of the site.

Interpretation of the decorative motifs

“Mosaic 1”

The description is made by Miguel Pessoa on the occasion of the construction of the wall, in 2001, and published in the article “Contributo para o estudo dos mosaicos romanos no território das civitates de Aeminium e de Conímbriga, Portugal” in Revista Portuguesa de Arqueologia, vol. 8, no. 2, 2005 (Figs. 6-7).

“This is a mosaic with a reticulated pattern of square bands decorated with guilloche, showing an interpenetration of quadripartite squares, decorated in the center with a cross of interlaced pairs of bands and expanded circles, decorated with either embattled dents or shaded bands as intersection motifs, which determine irregular octagons with four sides concave. Density of about 200 tesserae per dm² (Blanchard 1973: nº330; Décor I: pl.168b; Décor II: 40)”.

Figure 6
Photographic record of “mosaic 1”.

Figure 7
Graphical reconstruction of the pavement of “mosaic 1”.
“Mosaic 2”
It features an undulating ribbon motif in a very precarious state of conservation. Unfortunately, this mosaic pavement disappeared (Décor I: 114 pl. 64b) (Fig. 8).

“Mosaic 3”
Does it suggest the possibility of a triclinium room? Due to the dimensions that it presents (width of 8, 70 m) and also due to the layout of the mosaic panels (Fig. 9).

According to the presented graphic diagram (Figs. 10, 11), the following description is presented:

Nº 1 and 1a – White fillet with non-continuous oblique squares. These fillets appear to be the lateral limits of the room (Décor I: 31 pl.5a)

Nº 2 – Outlined orthogonal pattern of irregular octagons, adjacent and intersecting on the shorter sides (Décor I: 260 pl.169a). In the center of the octagon, the central square is filled with a lozenge. The interior of the hexagons is filled with bichrome lozenges.

Nº 3a – Polychrome row of tangent semicircles formed of two tangent spindles, forming alternately inverted thorns, the colours counterchanged, with ensconced serrated triangles (Décor I: pl. 93 pl.45g variants);

Nº 3b – Polychrome four strand guilloche on a black ground (Décor I: 123 pl. 73 b, c, d, e);

Nº 3c – Row of countercurved arc with alternating colour (red / yellow) in a frame (Décor I: 99-10 pl. 49 to 51).

Nº 4 – A damaged panel where it is possible to understand that it has a two-strand guilloche (Décor I: 120 pl. 70 h, i, j) in the frame of the central panel and, in the interior, squares filled with other tipped lozenges. It’s polychrome.

Nº 5 – Pattern of spaced swastika-meander with single returns and squares (Décor I: 300 pl.190a).

Measures: length 8, 70 m x width 2, 30 m
Material used: White, black, yellow, red and pink limestone tesserae
Density: 59 tesserae per dm²

“Mosaic 4”
The area occupied by this mosaic suggests it to be a corridor (Fig. 12).

According to the presented graphic diagram, the following description is presented (Figs. 13, 14):
**Nº 1 and 1a** – It features a swastika-meander of spaced single-returned swastikas with a square in each space; inside the square, there is a crosslet; on the opposite side of the corridor, the same motif with a variant inside the square: lozenge (Décor I: 81 pl. 38a).

**Nº 2** – Central corridor motif: outlined orthogonal pattern of irregular octagons adjacent and intersecting on the shorter sides, forming squares and oblong hexagons (Décor I: 260 pl. 169a). In the centre of the octagon, the central square is filled with a lozenge. The interior of the hexagons is filled with bichrome and polychrome lozenges, of irregular size.

**Measures:** length 2.50 m x width 1.50 m

**Material used:** White, black, yellow and dark pink limestone *tesserae*

**Density:** 104 *tesserae* per dm²

“Mosaic 5”

At the present time the identification of its function is not possible (Figs.15a-b). It is possible to verify that the pavement had already had many restored areas in its time through the rectification of gaps with simpler materials, like *opus Signinum*, confirming this *Villa*’s ample diachronic occupation. As a consequence of the restoration works, it would be possible to maintain the use of the compartment regardless of the aesthetic appearance.

According to the presented graphic diagram, we suggest the following description (Figs. 16-17):

*Polychrome mosaic:* it presents a band of white *tesserae* close to the wall.

**Nº 1** – Polychrome intersection or ten-strand guilloche (Décor I: 123 pl. 73f)

**Nº 2a** – It has alternating bands of polychrome rows of tangent semi-serrated right-angled-Z pattern on a black ground (Décor I: 74 pl. 32h);
Nº 2b – Monochrome band with white tesserae (Décor I: 26 pl.1y);

Nº 2c – polychrome band with two-strand guilloche on a black ground (Décor I: 120 pl. 70h,j);

Nº 2d – Black crosslet band on a white ground (Décor I: 30 pl. 4b)

Nº 2e – The centre of this mosaic has a pattern of staggered bands of swastika-meander alternately with double returns and recessed reverse returns in simple guilloche, on a black ground; (Décor I: 294 pl. 87b); it is a variant; on a white ground band with black crosslet. (Décor I: 30 pl. 4b)

Nº 3 – Row of tangents wheels of triangles (forming squares, parallelograms and triangles), it’s polychrome (Décor I: 68 pl. 29g); it is a variant.

Measures: length 5,10 m x width 4,20 m

Material used: White, black, yellow, red and light pink limestone tesserae

Density: 160 tesserae per dm²

“Mosaic 6”

According to the presented graphic diagram, we suggest the following description (Figs. 18-20):

Alternating serrated squares, in yellow and blue colour, on a white ground. (Décor I: 181 pl. 113f);

Measures: length 0,73 m x width 0,20 m

Material used: White, yellow and bluish gray limestone tesserae

Density: 89 tesserae per dm²

State of conservation and intervention methodology

Any cultural asset, both movable and immovable, is exposed to a number of factors and conditions that vary over time and directly affect its conservation.
The process of degradation of a mosaic begins soon after its conception due to its exposure to a series of factors that contribute to a progressive deterioration. Thus, three distinct alteration periods can be considered: during the use of the mosaic, during the period underground, and after its exhumation (Pasés Oviedo 2004).
In Roman time, during the period of use, the mosaic was subject to the continuous wear of the surface of its tessellatum, due to the function of pavement that it performed, in addition to the inevitable detachment of tesserae, which lead to the occurrence of some gaps.

As it was usual, these gaps were repaired with the available materials, often using tesserae to reconstruct the gap without worrying about the colour, the continuity of the decorative motifs or the size of the tessel. It served exclusively as a barrier to prevent the decay of the tessellatum.

During the burial process itself, it is necessary to consider the fall of walls and roofs, associated with the collapse of the building. The pressure itself of these materials and the successive layers of soil that covered the pavements often caused deformities in the surface of the mosaics.

It is also necessary to consider the reoccupation of the space, in this case, as a 15th century necropolis, which, despite being at a higher ground level, involved earthmoving action that possibly affected the pavements. The same thing happens with some later structures (wall) set directly on the mosaic pavements.

The most recent urbanistic changes are indeed the factor that has had the greatest impact, namely the expansion of the Chapel’s churchyard and the planting of olive trees inside it, the construction of the road and the opening of a ditch for water supply purposes. The functioning of the road and the inherent circulation of vehicles imply a constant trepidation that consequently results in several damages.

Also worthy of note is the action of plants, common in farming areas, that with their roots cause serious damage such as tesserae detachment, fissures, gaps and deformities, among others. In addition, underground waters and water infiltration, which carry all types of salts and acidic substances, cause chemical damage which will originate processes of disaggregation and crust formation on the surface of the mosaic (Getty Conservation Institute 2003).

Although the environment during the underground period has very specific characteristics such as high relative humidity, absence of light, lack of oxygen, mild temperatures, inner pressure caused by sedimentation, etc., there is a situation of balance and stability of these factors during several centuries. In fact, even when there are changes, these are slow and gradual.

The moment of the discovery and exhumation of the mosaic pavements is certainly the most traumatic moment since there is no gradual process of adaptation but rather an abrupt rupture with the balanced conditions acquired during the long centuries underground.

In addition to the sudden variations of humidity and temperature that occur at this moment, there is also an exposure to wind and sunlight. At this stage, it is important to consider the action of human beings, who become a factor of risk either voluntarily or involuntarily.

Mapping of the state of conservation: characterization and extent of damage

“Mosaic 3”

“Mosaic 3” is in a poor state of conservation (Fig. 21). This pavement presents several deformities (blistering / concavities) and a large number of detached as well as loose tesserae (Fig. 22), in addition to several gap areas.
The distance it is from the surface is very short which exposes it to all the trepi-
dation associated with a fully functioning road.

The construction of the ditch for the installation of water pipes, the road con-
struction and the expansion of the Chapel’s churchyard have been the factors
with the greatest impact on the state of conservation of this pavement.

A great gap area is still visible, resulting from the planting pit of an olive tree that
adorned the churchyard.

The identification of a wall built over the mosaic pavement reflects the later oc-
cupation of that space and a readaptation of what would seem to be a single com-
artment in the Roman period and that is now divided into two distinct areas.

“Mosaic 4”

This pavement, possibly a corridor, is in a reasonable state of conservation (Fig.
23). The fact that it is located at a low ground level has protected the pavement
when the water ditch and road were built. However, it is possible to see some
fissures, large gaps and several black incrustations, possible concretions formed
during the deposition and burial process.

A restoration, apparently executed during the Roman time, is visible with the use
of larger sized tesserae, placed in a distinct orientation and without any regard
for the continuity of the decorative motifs represented on the pavement. These
aspects lead to the idea that the restoration was done only with the purpose of
rectifying a gap and avoiding tesserae detachment (Fig. 24).

“Mosaic 5”

In mosaic found in 2015 is possible to observe a pavement in great state of con-
servation with a reduced number of gaps (Fig. 25). However, despite the precau-
tions during the extraction process of the building materials, directly over the
tessellatum of this pavement, the involuntary extraction of a fragment occurred
which originated the occurrence of a gap.
Figure 23
Mapping of the state of conservation, extension and damages of “mosaic 4”.

Figure 24
Ancient restoration work done with white tesserae placed in a distinct orientation.

Figure 25
Mapping of the state of conservation, extension and damages of “mosaic 5”.
The strong adhesion of the coffer caused the fracture and extraction of a small fragment, which was transported to the laboratory of the Museum of the Roman villa of Rabaçal in order to proceed with the appropriate consolidation works and the individualization of the pieces.

The most significant pathology identified in this pavement concerns the black incrustations that cover a large part of the motifs, but which do not interfere with their interpretation (Fig. 26).

“Mosaic 6”

The small fragment of this uncovered pavement revealed a good state of conservation (Fig. 27). However, it should be noted that there is a great disaggregation of the limestone that make up the tesserae of this pavement, especially in what regards the yellow tesserae, made of marly limestone, with high levels of porosity and more susceptible to both physical and chemical degradation (Fig. 28).

Intervention Methodology

Preventive conservation is a fundamental tool during the intervention phase, minimizing the effects that adverse conditions can cause on the pavements (Brandi 2006). Taking this into consideration, some important measures were immediately taken such as the placement of awnings to cover the area to be excavated in order to avoid the direct incidence of sunlight and consequent increase of temperature and sudden reduction of the implied humidity.

As for the intervention methodology carried out, the main objective, one that has been defended internationally in the last years, is to prioritize the in situ conservation of mosaic pavements, through the adoption of a series of necessary measures for its protection and safeguard (ICOMOS 1990).

Regarding the intervention methodologies employed in the field, only preventive interventions were performed, necessary for the careful registration of the pavements (E.C.C.O. 2003). Thus, it was decided to eliminate earthy deposits on the surface through the use of mechanical means and sponges dampened with clean water (Fig. 29).
Figure 29
Surface cleaning of the *tessellatum*.

Figure 30
Limit consolidation of gaps.

Figure 31
Laboratory intervention methodology (“mosaic 5” fragment) - a) disaggregation of the original support mortars; B) cleaning and removal of soil and deteriorated mortar; C) consolidation of the mortar from the interstices of the *tesserae*; D) reconstitution of the support layer; E) separation of pieces; F) surface cleaning of the *tessellatum*. 
Some procedures were occasionally performed to consolidate the limits of the gap areas, with mortar of a similar trace to the original one in order to avoid the decay of the *tessellatum* in these areas and the consequent increase of the gaps (Fig. 30).

In the laboratory, it was necessary to proceed to the cleaning and stabilization of some mosaic fragments, by removing earthy deposits and deteriorated mortars (Fig. 31a-31b), and by consolidating the remaining mortars in the interstices of the *tesserae* (Fig. 31c).

The support layer was reconstituted with a lime-based mortar and the reinforcement of the extremities of the fragments (Fig. 31d). Finally, the *tessellatum* surface of each fragment was cleaned (Figs. 31e, 31f).

**Protection and safeguarding of structures and mosaic pavements**

Taking into account the principle of *in situ* conservation, future work continuity and the need to restore the use of the road to serve the residents, it was decided to rebury the structures and pavements. However, the improvement of the burial conditions was essential for a good conservation in order to avoid the direct contact with the excavation soil, composed of organic materials and soluble inorganic contaminants.

For that purpose, it was initially decided to cover with an inert and stable geotextile blanket, which provides good contact with the surface of the *tesserae* and prevents the precipitation of salts on the surface of the *tessellatum*, followed by a layer of desalinated sand (20/30 Cm) to prevent contamination, another layer of expanded inert clay (20/30 cm), which to a certain extent absorbs trepidation, and finally a layer of soil.

This way, the direct contact of the mosaic with the burial land is avoided through the creation of a buffer box to prevent the movements and vibrations associated to the road circulation. This will also facilitate the future works of exhumation and cleaning of these pavements (Figs. 32-33).
Conclusion

In an initial approach to the mosaic pavements of the Roman Villa of São Simão, it is likely that, in the *pars urbana*, there are two moments of mosaic execution. “mosaic 1”, “mosaic 5” and “mosaic 6” suggest the existence of a team of technically better equipped mosaicists, with greater accuracy level in geometric execution. An emphasis is given to the *tesserae* density of “mosaic 1” and “mosaic 5”, which has an average of 160 to 200 *tesserae* per dm², and which may be of the Late Roman period.

However, “mosaic 3” and “mosaic 4”, simpler in their geometric composition and with a lower density of *tesserae* (59 to 100 *tesserae* per dm²), may be from a period earlier than the Late Roman.

These differences in geometric composition, mosaic chromaticism and *tesserae* density may point to two moments in time or two different workshops. A thorough study is necessary to reach such conclusions.

From this overview, it is possible to understand the urgency of a research project for the area, in which its functional and chronological articulation will be predicted.

The Research Project 2016 - 2019, “The Archaeological Site of São Simão”, approved in 2016, also contemplates the identification of the *pars rustica* (rural area) and the extension of the Villa’s *fundus*.

The research project that now begins also has as an ultimate aim the protection of the archaeological site, reducing the urban pressure on the area and its possible musealization.

According to the project’s plan / schedule, there is the intention of excavating the Chapel’s churchyard, with the objective of identifying the architecture of the *pars urbana* (urban area) and the mosaic pavements that are expected to exist.

*In situ* conservation of the findings will be a priority. However, all findings will be kept at the Museum of the Roman Villa of Rabaçal, where the listing, inventory, study, conservation and restoration works, exhibition and promotion will take place.

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