

# 17<sup>TH</sup> Century Patterned Azulejos from the Monastery of Santa Marta, in Lisbon

## ABSTRACT

This article discusses Portuguese tile-making at the former Monastery of Santa Marta de Jesus, currently the Hospital of Santa Marta, still *in situ*. With the main goal of studying 17<sup>th</sup> century patterned tiles it explores the documentation as well as the ideas and solutions invented by the tile-layers that applied the tiles to the walls. Also, the authors aim to introduce the new information system for the Portuguese *azulejos*' inventory. Named *Az Infinitum* - Azulejo Indexation and Reference System, it results from an institutional partnership between Rede Temática de Estudos em Azulejaria and Cerâmica João Miguel dos Santos Simões (João Miguel dos Santos Simões Thematic Network on the Study of Tiles and Ceramics / IHA-FLUL) and the Museu Nacional do Azulejo (National Tile Museum).

The proposed systematisation of knowledge, and its effect on the enhancement of the research of Portuguese tiles, is demonstrated through the case study of the patterned tiles of the Monastery of Santa Marta de Jesus.

**Keywords:** *Azulejo (Tile); Patterned tiles; Cataloguing; Inventory; New technologies.*

-----

### **Rosário Salema de Carvalho**

Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões, University of Lisbon | Lisbon | Portugal

-----

rsalemacarvalho@gmail.com

-----

### **Alexandre Pais**

Museu Nacional do Azulejo | Lisbon | Portugal

-----

mnazulejo.alexandrepais@imc-ip.pt

-----

### **Ana Almeida**

Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões, University of Lisbon | Lisbon | Portugal

-----

vespeira.ana@gmail.com

-----

### **Inês Aguiar**

Museu Nacional do Azulejo / Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões, University of Lisbon | Lisbon | Portugal

-----

inesaguiar00@gmail.com

-----

### **Isabel Pires**

Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões, University of Lisbon | Lisbon | Portugal

-----

ipaugusta@gmail.com

-----

### **Lúcia Marinho**

Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões, University of Lisbon | Lisbon | Portugal

-----

luciadavinci@gmail.com

-----

### **Patrícia Nóbrega**

Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões, University of Lisbon | Lisbon | Portugal

-----

patricianobregap@gmail.com

-----

## 1 | INTRODUCTION

The Monastery of Santa Marta de Jesus, currently the Hospital of Santa Marta, preserves *in situ* a wide range of tiles [1] displaying the different trends followed by Portuguese tiles during its five centuries of history (Ancião, 2010; Ataíde, 1975; Léon, 1984; Meco, 1984; Monteiro, 1999; Simões, 1971, 1979; Veloso & Almasqué, 1996). The patterned tiles, a main feature of 17<sup>th</sup> century production, are located in the primitive church and in the lower-choir, as well as in two other areas in the cloister's west wing. Figurative tiles, the other trend of Portuguese tiles, were used at Santa Marta in two large late 17<sup>th</sup> century compositions, representing scenes from the life of Saint Clare. These two blue-and-white compositions are attributed to Gabriel del Barco [1648 - c. 1700] and are currently located in the convent's main entrance.

Another highlight are the tiles entirely covering the walls of the Chapter House, the current auditorium, featuring iconography relating to Saint Clare, Saint Francis of Assisi and Saint Theresa, through various levels of reading. They were produced during the *Grande Produção Joanina* (King John V's Great Production), an artistic period in the second quarter of the 18<sup>th</sup> century. In another part of the Monastery, the famous altar devoted to Nossa Senhora da Salvação (Our Lady of Salvation), dated from the second half of the same century can be found.

In the cloister, the 18<sup>th</sup> century compositions featuring vases with flowers, usually called *albarradas*, on the ground floor, were complemented by cut-out borders produced in 1906, some of which were signed by Victoria Pereira [1877-1952]. On the top floor, the tiles dated from 1906-1907 were produced by the Viúva Lamego Factory.

This article focuses on the patterned compositions within Santa Marta, the importance of the figurative tiles notwithstanding, due to the variety and richness of examples that still can be seen in many areas of the old monastery (Figure 1).

Through the analysis of the remaining tiles and documentation, this article aims to raise issues related to the integration of the tiles within the architecture, and to underscore the wealth of solutions designed by the tile-layers. In this context, its goal is to connect this data to the history of Portuguese tiles, including [the working processes of painters and tile-layers and patronage systems.

This study was based on the hospital tiles' inventory as well as on the 'cataloguing of Portuguese pat-

terned tiles' project, both articulated in *Az Infinitum* – Azulejo Indexation and Reference System, available online at <http://redeazulejo.fl.ul.pt/pesquisa-az>.

Throughout this article, the project's objectives and methodologies are made explicit, with the aim of opening a discussion about the importance of databases as tools for research in art history in the digital age. The afore-mentioned project, developed by the authors, results from an institutional partnership between the João Miguel dos Santos Simões Thematic Network on the Study of Tiles and Ceramics and the National Tile Museum.



**FIGURE 1** | Chapel or cloister corner with 17<sup>th</sup> century pattern tiles, an altar frontal and a panel representing Saint Anthony, the Poor.

## 2 | THE MONASTERY OF SANTA MARTA DE JESUS IN THE 17<sup>TH</sup> CENTURY

The Hospital of Santa Marta has its origins in 1569. It was built for deprived noble women in the wake of the plague that devastated Lisbon that same year (Ancião, 2010; Ataíde, 1975; "História dos Conventos." 1974; Pereira, 1927; Saraiva, 1948; Serrão, 1977). The foundation of a female monastery for urban Poor Clares (second order) in that same place was au-

thorized in 1577 by Pope Gregory XIII. The building's construction began after 1583 with a design by architect Nicolau de Frias [? -1610], who was responsible for the architectural works until 1602 (Serrão, 1977, p. 159).

From 1616 to 1638, Pedro Nunes Tinoco [act. 1604-1641] was the architect responsible for building the rest of the nave and side chapels of the church, a work that had to be adapted to the pre-existent main chapel and cloister. From 1641 onwards, and after Pedro Nunes Tinoco's death, his son, João Nunes Tinoco [? -1690], became the architect responsible for the monastery, although his contribution was mostly of functional and maintenance works (Serrão, 1977, pp. 160-163).

Between 1701 and 1705 the architect João Antunes undertook a new refurbishment campaign that included the reconstruction of the cloister, which was in ruins, a fountain and a new dormitory (Serrão, 1977, pp. 165-166). Despite these works, the first references about tiles in the monastery dated from the period of Pedro Nunes Tinoco. The tiles, which covered a much wider surface of the church, were applied over several years, certainly between the first and third quarter of the 17<sup>th</sup> century. The walls of the main chapel were partially covered in 1638 and it is possible that in the following year, the whole nave had polychrome patterned tiles. The nave chapels were almost entirely covered with tiles, each had distinct patterns with a tile-laying chronology that dated back to the mid and second half of the 17<sup>th</sup> century, following the placement of identically designed headstones, which suggest a common pattern.

On the other hand, a tile-made cross integrated in the patterned tiles that covered the walls of the former lower-choir, features the year 1692. It was, probably, a late use of these kinds of tiles, but no extant documentation confirms it.

Since the corners of the cloister do not feature any additional chronological reference, it is likely that at least one of the corners received the tiles previously removed from the church (Ancião, 2010, p. 78; Ataíde, 1975, p. 103; Simões, 1971, pp. 120-121). The larger chapel was refurbished with an altar front and a figurative panel. However, the remaining patterned tiles may be a part of an original 17<sup>th</sup> century covering, perhaps a part of Pedro Nunes Tinoco's initial work.

Known documentation demonstrates that, in 1638, the tile-laying in this church stopped, certainly due

to financial difficulties of the Poor Clares. The main chapel and choir walls were only partially covered, probably with a 'Marvila pattern', of which only a small part has survived, on the right side of the wall in the main chapel (see Figure 2).

In that same year, on the 8<sup>th</sup> March, a contract was signed between the Sisterhood of Nossa Senhora da Natividade, located in the first chapel on the left side, and the nuns of Santa Marta, in which they offered the chapel in exchange for the conclusion of the tile-laying in the church, to be financed by the Sisterhood (Convento de Santa Marta 182, IV/F/165 (4), 89-3, 89-4). The document noted that the work should be completed with the same application method and patterned tiles on both sides of the main chapel, as well as on the upper area of the choir wall. The amount to be paid was around three hundred thousand réis (old currency) and the work was to be completed within a year.



**FIGURE 2** | The church's main chapel with 17<sup>th</sup> century tiles only on the right wall.

There is no documentation regarding the conclusion of these works, nor regarding the meeting of deadlines. However, a description dating from 1707 reveals that the church was covered with old tiles from the chapel arch towards the inside, as well as

from the upper part of the arches of the other chapels upwards. Even the entablement was tiled (“História dos Conventos...,” 1974, p. 368). This document underscores that, in addition to the aforementioned tiles, the walls of the nave also exhibited ceramic covering. It is equally interesting to note that, in the first decade of the 18<sup>th</sup> century, polychrome patterned tiles were considered ‘old tiles’, and were thus considered apart from figurative blue and white compositions, more prevalent at that time.

Indeed, in the mid-18<sup>th</sup> century, this figurative trend was applied on the nave of the church, with blue and white panels featuring images of saints between the arches of the chapels. Unfortunately, it is impossible to determine if these tiles replaced patterned panels, or even when or if the patterned tiles of the nave were removed.

It is likely that Domingos Pinto was the tile-layer in charge of the commission paid for by the Nossa Senhora da Natividade Sisterhood (Our Lady of the Nativity), as he was present at the time the contract was signed (Serrão, 1987, pp. 22-23). Furthermore, he was the same tile-layer who applied the tiles in the upper and lower confessionals, around 1654 (Convento de Santa Marta 182, IV/F/165 (5), 90-7, cited in Serrão, 1977, p. 163; Léon, 1993, p. 163). About Domingos Pinto it is known that on the 29<sup>th</sup> October 1632 he was mentioned in a statement of discharge that Inês de Baiona signed with several craftsmen to carry out refurbishments on her properties (Cartório Notarial de Lisboa 11, Livro de Notas 198, 50-52v cited in Serrão, 1984-1988, p. 95). It is possible that he was the same craftsman who, with Jerónimo Fernandes applied the wall coverings in the Misericórdia Church, in Oporto, in 1629-30 (Basto, 1964, p. 271; Vitorino, 1925).

For the lower-choir’s decorative work of 1692, payments were made to Miguel dos Santos and Lourenço Nunes in that same year, for the painting of the ceiling (Convento de Santa Marta 203, IV/G/50 (1), 188-120 cited in Serrão, 1977, p. 28), and to Manuel da Costa, tile-layer, for his tile-laying (Convento de Santa Marta 203, IV/G/50 (1), 188-119 cited in Serrão, 1977, p. 28; Léon, 1993, p. 163). The latter received ninety-three thousand, five hundred and fifteen réis for tiles, lime, sand and for his labour. The year of 1692 sets a timeline for implementing this kind of blue-outline patterned tiles, very modern when compared to what was then practised in the workshops of Lisbon. Equally anachronistic as far as pattern is concerned, yet consistent with the year 1692 painted on its base, is the cross with a skull located on the top wall of the lower-choir. Its purple contour was a common feature of the period. This

solution for the choir, using patterned tiles, could also be justified by the fact that the church was already well covered with patterned tiles, so a solution of continuity could appear to be a coherent choice.

### 3 | PARTICULAR ASPECTS OF THE TILES

The tile-layer, a marginal figure often forgotten in the history of Portuguese tile making, played in fact, a central role in the process of any ceramic commission. He worked as a sort of general coordinator, intervening in all the stages of the work, from the articulation of the commission with the patron until the tile-laying process, managed by him (Câmara, 2005, pp. 235-283; Carvalho, 2012; Correia, 1918, pp. 167-178; Mangucci, 2003, pp. 135-141; Simões, 1979, p.7; Simões, 1999, pp. 81-101; Simões, 2002, pp. 176-187).

As is the case with painters or potters, the names of these masters are unknown today, and only their works, whose impact is still remarkable, remains to this day. As we have stated, the Monastery of Santa Marta is an exception, as we know at least two tile-layers that applied patterned tiles in the church and the lower-choir, Domingos Pinto and Manuel da Costa, respectively. In the case of the church, little remains of the pattern applied in the main chapel and nave. It is impossible to know whether the same master worked on the tiling of each chapel, whose chronology is different or if it was the work of several others. Despite of having been created over several decades, and being the result of commissions distinct from each other, we are surely in the presence of a programme with common guidelines safeguarding the visual unity of the temple. This may be the reason why a variety of patterns and frames stand out, and why the diversity of wall-covering solution displays, in several chapels, similar techniques.

In the chapel of Cristóvão Fernandes da Rocha, on the left side, the tile-layer chose to use a white frieze in the recesses of the tombstone frame in order to simulate the stonework and facilitate the implementation of the tile frame (in Portuguese *cercaduras* C-17-00139) [2] (see Figure 3).

In the chapel of Dona Joana Pereira and in the chapel of Dona Margarida da Silva, there is an interesting solution filling the space between the tombstone’s stonework and the interconnecting passages located immediately below. The area was too small to apply two entire overlaid tile strands. So, the tile-layer overlapped two frames (C-17-00137 and C-17-00076), by cutting the edges in order to join the tile strands thereby suggesting a bar (borders formed by two or three juxtaposed or



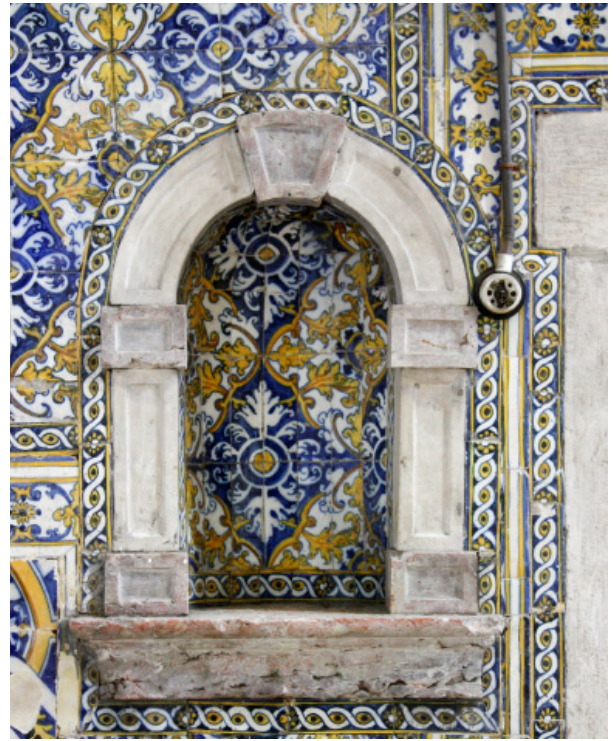
**FIGURE 3** | Chapel of Cristóvão Fernandes da Rocha. Detail of the frames and of the white frieze used with the tombstone.



**FIGURE 4** | Chapel of Dona Joana Pereira. Detail of the frames used as a bar overlaid tile strands) (see Figure 4).

On the right side of the Church of Santa Marta, two chapels use the same frame (C-17-00071) although the solutions are different. In the Chapel of Estevão Curado Florim the frame was equally applied to suggest a bar, while in the chapel of Gaspar Vieira de Araújo, the frame was used together with a frieze (F-17-00050). This same frieze was applied around a small niche and the pattern (P-17-00251) used in the walls of the chapel was faceted to be adapted to the curved surface inside the niche (see Figure 5).

Another niche, located in the Chapel of the Brotherhood of Glorioso Santo António (Glorious St. Anthony) has a different kind of bordering due to the removal of the wider edge of the frame with Greek motifs (C-17-00138), thus simulating a frieze (see Figure 6). In the walls, this element is applied with the frame, a similar solution to that used in the previously mentioned chapel of Gaspar Vieira



**FIGURE 5** | Chapel of Gaspar Vieira de Araújo. Detail of the niche with a frieze and, in the interior, with the same pattern of the walls, de Araújo.



**FIGURE 6** | Chapel of the Brotherhood of Glorioso Santo António. Detail of the niche with a frieze.

In the lower-choir the tile arrangement reveals the interplay between tile patterns and architectural features as devised by the tile-layer. A pattern of four-lobed motifs (P-17-00602) bordered by a bar decorated with vegetal curling (B-17-00105) is on the walls above the wood panels. The arches of the vaults present a pattern of flowered motifs

(P-17-00311) delimited by a frame (C-17-00140) (Figure 7). Between these two levels, and accentuating the stone corbels, a frame known as 'egg-



**FIGURE 7** | Arches of the vaults in the lower-choir.

and-dart' (C-17-00141) was applied. This sequence is interrupted by the central windows of the back wall, where a different pattern is used, delimited by frame C-17-00140, at times interrupted perhaps because of a later work.

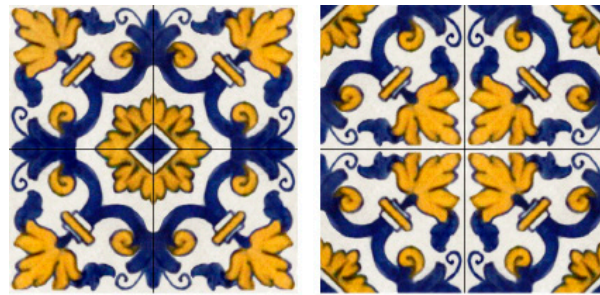
Another particular feature of these tiles is the combination of patterns of different modules, a less common method of tile application. The pattern of larger dimensions (P-17-00602, with 6x6 tiles) was applied in the lower area of the walls, where the pattern of smaller dimensions (P-17-00311, with 2x2 tiles) covers the arches of the vaults (Figure 8).

One of the reasons behind this choice may be the P-17-00602 module dimensions. With six tile strands in height it corresponds exactly to the space available, thus replicating itself only horizontally.

In the chapel, or cloister corner, subject of several works, it is important to highlight the connection between tiles and architecture, in particular the relationship between the stone and the monochrome white tiles, simulating an entablement that runs throughout the area.

#### 4 | THE INVENTORY PROCESS

In November of 2009, the João Miguel dos Santos Simões Thematic Network on the Study of Tiles and Ceramics, through the History of Art Institute of the University of Lisbon (Faculty of Letters) signed a collaboration protocol with the Centro Hospitalar de Lisboa Central (CHLC) (Lisbon Hospital Centre) which aims, among other aspects, to record and take an inventory of the CHLC's tiles, which includes the Hospital of São José, the Hospital of Santa Marta



**FIGURE 8** | Pattern P-17-00311 with 2x2 tiles used on the arches of the vaults in the lower-choir and pattern P-17-00602 with 6x6 tiles used on the walls.

and the Hospital of Santo António dos Capuchos.

This work, which began in 2009 at the Hospital of São José, continued in the Hospital of Santa Marta during the year 2010. The Network researchers were responsible for the entire *in situ* inventory, which included a photographic record, measurements, indications about the condition of conservation and the description of each composition. This process has also been complemented with historical, artistic, iconographic, documental and bibliographical references, among others. This was followed by further inventory processes, during which certain areas were studied in connection with other subjects, such as Biology, History of Science, etc.

The data uncovered was subsequently inserted into the information system specifically adapted to the inventory of *in situ* tiles - Az *Infinitem* - Azulejo Indexation and Reference System [3]. This system is accessible online through five interrelated main areas that structure it: (1) *in situ*, (2) iconography, (3) patterns, (4) authorships

and (5) bibliography. The patterns area results directly from the ongoing project 'cataloguing of Portuguese patterned tiles'. The construction of a tool for cataloguing patterns (which also includes bars, frames, friezes, corners), with the purpose of studying the entire corpus of Portuguese tiles, including and reviewing the records of Santos Simões (Simões, 1971) regarding 17<sup>th</sup> century tiles, which now benefit from new technologies, is being undertaken by this inventory group since 2010.

The Hospital of Santa Marta, which preserves a wide variety of 17<sup>th</sup> century tile patterns *in situ*, constituted a privileged case study to develop and test the system's patterns section.

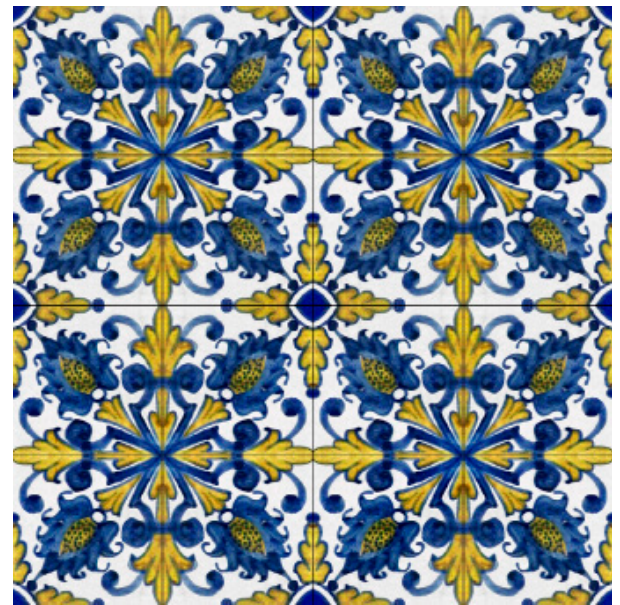
The cataloguing consists of a unique recognition of each pattern and its characterization, identifying the locations where they can be found through the *in situ* area. Each pattern corresponds to an item record with a set of fields, which include authorship, chronology, colours, production and visual rhythms. This systematization may in the near future result in new possibilities of research, concerning manufacturing chronologies and application, for example.

Other fundamental and cross-influence fields are the 'description', which includes detailed analysis of the motifs, pointing out the differences between similar patterns, and the images database. The last one consists of digitally manipulated type-images that simulate each pattern assembly and its application on an extended surface. This approach, which combines text and image to detect formal and chromatic differences, leads to the identification of new patterns.

In the Hospital of Santa Marta's inventory, the chronology of the patterns studied led us to review the only pattern catalogue ever made in Portugal, carried out by Santos Simões. We chose to maintain some of his proposals but, at the same time, introduced some innovative possibilities. With the work undertaken by Simões as a starting point, we uploaded data regarding the pattern areas of 17<sup>th</sup> century tiles into the system. Naturally, this presented both advantages and disadvantages: on one hand we began from a pre-existing base which needed to be adjusted, on the other hand, Simões' research allowed us to attain an easier and more immediate grasp of the challenges faced and allowed for a faster resolution of some of these issues. The idea of extending this cataloguing to patterned tiles of other periods required us to keep the catalogue numbers already assigned by Santos Simões for the 17<sup>th</sup> century adding two

more digits to each number, as well as adding the century designation in order to allow an immediate chronological reading. However, the differences detected between patterns led to an almost immediate identification of new patterns and thus to the use of new inventory numbers, starting with P-17-01001.

This pattern, known as 'corn-cob' or 'pine nut' (in Portuguese *maçaroca*), the first of the 'new' list, was used in the chapels of the Church of the Monastery of Santa Marta and reapplied in other places within the Monastery (Figure 9). It differs formally from the eighteen patterns illustrated by Simões (1971, pp. 42-43), mainly in the different proportion between its fusiform centre and the oblong shapes that surround it.



**FIGURE 9** | The 'corn-cob' pattern P-17-01001.

Similarly, the largest pattern ever produced in Lisbon's ceramics, identified by Santos Simões as P-999, and designated by this researcher as 'Marvila' (Simões, 1971, p. 124) as it was located in a church with the same name in Santarém (Figure 10), was also used in the church of Santa Marta, and was now reclassified as P-17-00999.

However, some formal differences eventually demonstrated that this was a 'new' 'Marvila' pattern, and it was catalogued as P-17-01018 (Figure 11). In addition to some of the details present in the main elements, the major difference is in a rectangle which serves as a linking element. In the original 'Marvila' pattern this element is monochrome white, while in Santa Marta it is filled with yellow curling foliage.



**FIGURE 10** | The 'Marvila' pattern P-17-00999, found on Church of Marvila, in Santarém.

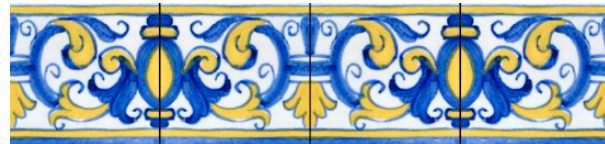


**FIGURE 11** | The 'Marvila' pattern P-17-01018, used on the main chapel of the Monastery of Santa Marta.

The concept of centres of rotation, used by Santos Simões, regards the existence of a main centre, and was discarded. Simões illustrated the pattern modules with drawings by Emilio Guerra de Oliveira, colouring only the minimum element of repetition. The idea was perhaps to focus the notion of pattern construction as seen from the tile-layers' point of view. In addition to the difficulties in viewing the pattern repetition effect, this option demanded the existence of a centre of rotation. This became an

issue whenever a pattern demonstrated having more than one centre. Thus, the option taken in the current catalogue was not to choose one main centre but instead to process all centres graphically and textually, without a hierarchy. For example the pattern P-17-00311, applied to the arches of the vaults and on the back wall of Santa Marta's lower-choir, was represented in Santos Simões' catalogue with just one centre. In the current inventory it is featured with two centres of equal importance.

In another example, the blue and white frames identified by Santos Simões as C-59 are also applied on the same wall. Here, however, they are applied in a multi-coloured version. This colour variant necessitated a new inventory number in the current catalogue: C-17-00140 (Figure 12).



**FIGURE 12** | Frame C-17-00140.

Therefore, the catalogue emphasizes the observer's point of view, simulating, as already mentioned, the assembly of modules and their repetition on extended surfaces.

## 5 | FINAL NOTES

The project 'cataloguing of Portuguese patterned tiles', which has as a case study the patterned tiles in the former Monastery of Santa Marta, analysed throughout this article, is part of a wider system called *Az Infinitum - Azulejo Indexation and Reference System* (<http://redeazulejo.fl.ul.pt/pesquisa-az>). This tool, which allows for an efficient data management regarding Portuguese tiles, whether made in Portugal or applied in the Portuguese territory, articulates five main subject areas.

The *in situ* area, which refers to tiles still viewable on site in their original locations, is organized hierarchically, from general to particular, i.e., building / place / tiles walls coverings. The iconography subject area provides a detailed description of each figurative composition, in articulation with the *classification system for cultural content Iconclass* ([www.iconclass.org](http://www.iconclass.org)). The area patterns subject area presents a catalogue of patterns, bars, frames, friezes and corners. The authorship subject area incorporates biographies of authors related to the making of the item in question, including painters, potters, tile-layers, factories or ceramists.



And the bibliography subject area lists a number of annotated references of interest in the field of Portuguese tiles.

All these subjects are cross-referenced, allowing for different possibilities of browsing and searching, creating a network of relationships from any given entry point.

Taking advantage of the new technologies for research in History of Art, unavailable to those who came before us, such as Santos Simões, this tool allows us to systematize knowledge of Portuguese tiles and to provide this information to the scientific community as well as to the general public.

Az *Infinitem*, in progress since 2010 and constantly updated, intends to be a gathering place of information and research that, in the near future and with the collaboration of the scientific community, may bring new perspectives on the history of Portuguese *azulejos*.

#### ACKNOWLEDGEMENTS

We want to acknowledge the Centro Hospitalar de Lisboa Central, Museu Nacional do Azulejo and Fundação para a Ciência e a Tecnologia, which funds the authors' grants.

#### ENDNOTES

[1] The Portuguese word *Azulejo* does not merely mean tile, but rather a concept and a tradition of laying ceramic wall coverings in Portugal, and is therefore completely original. However, for better reading, the authors chose to translate the word *azulejo*, reverting to the original word whenever the importance of the concept demands it.

[2] In Portugal tile borders are distinguished by shape and by mode of application. A bar is a type of tile border formed by two or three juxtaposing or overlaid tile strands. A frame is a type of tile border formed by a tile strand. A frieze is a type of tile border formed by a tile strand featuring a third, or half of a tile. At the beginning and end of these forms we can also find end tiles or corners (Simões 1971; Mântua and Henriques and Campos 2007).

[3] Developed by Sistemas do Futuro, Multimédia Gestão e Arte, Lda.

#### REFERENCES

Ancião, J. M. (2010). *O Mosteiro de Sancta Martha, monografia do antigo convento / hospital de Santa Marta de Lisboa*. Lisboa: Liga dos Amigos do Hospital de Santa Marta.

Ataíde, M. (1975). Igreja e Convento de Santa Marta. *In Monumentos e Edifícios Notáveis do Distrito de Lisboa* (pp. 99-104). Lisboa: Junta Distrital de Lisboa.

Basto, A. M. (1964). *Apointamentos para um dicionário de artistas e artífices que trabalharam no Porto do século XV ao século XVIII*. Porto: Câmara Municipal do Porto.

Câmara, A. G. (2005). 'A Arte de Bem Viver' *A encenação do quotidiano na azulejaria portuguesa da segunda metade de Setecentos*. Lisboa: Fundação Calouste Gulbenkian / Fundação para a Ciência e a Tecnologia.

Cartório Notarial de Lisboa 11, Arquivo Nacional da Torre do Tombo. Livro de Notas 198, 50-52v.

Carvalho, R. S. (2012). Entre Santos e os Anjos. A produção azulejar na Lisboa do século XVII. *In Um gosto português. O uso do azulejo no século XVII* (pp. 53-62). Lisboa: Museu Nacional do Azulejo/Athena.

Convento de Santa Marta de Jesus, Cartórios dos Conventos (ex-AHMF), Arquivo Nacional da Torre do Tombo. 182, IV/F/165 (4), n.º 89-3.

Convento de Santa Marta de Jesus, Cartórios dos Conventos (ex-AHMF), Arquivo Nacional da Torre do Tombo. 182, IV/F/165 (4), n.º 89-4.

Convento de Santa Marta de Jesus, Cartórios dos Conventos (ex-AHMF), Arquivo Nacional da Torre do Tombo. 182, IV/F/165 (5), n.º 90-7.

Convento de Santa Marta de Jesus, Cartórios dos Conventos (ex-AHMF), Arquivo Nacional da Torre do Tombo. 203, IV/G/50 (1), n.º 188-119.

Convento de Santa Marta de Jesus, Cartórios dos Conventos (ex-AHMF), Arquivo Nacional da Torre do Tombo. 203, IV/G/50 (1), n.º 188-120.

Correia, V. (1918). Azulejadores e pintores de azulejo, de Lisboa - olarias de Santa Catarina e Santos. *A Águia*, 77-78, 167-178.

*História dos Conventos, Mosteiros e Casas Religiosas de Lisboa*. (1972 [1704]). Lisboa: Câmara Municipal de Lisboa.

Léon, F. P. (1993). Os Painéis de Azulejos Sobre Santa Teresa de Jesus no Convento de Santa Marta de Lisboa. *Museu*, 1, 161-181.

Mangucci, C. (2003). A estratégia de Bartolomeu Antunes. *Al-Madan - Arqueologia, Património e História Local*, 12, 135-141.

Mântua, A., Henriques, P., and Campos, T. (2007). *Cerâmica - Normas de Inventário*. Lisboa: MC/ Instituto dos Museus e da Conservação.

Meco, J. (1984). Azulejos de Lisboa. In *Azulejos de Lisboa: exposição* (pp. 15-82). Lisboa: Museu da Cidade e Câmara Municipal de Lisboa.

Monteiro, J. P. (1999). Os 'Pia Desideria', uma fonte iconográfica da azulejaria portuguesa do séc. XVIII. *Azulejo*, 3/7, 61-70.

Saraiva, J. M. C. (1948). *Documentos da fundação do Convento de Santa Marta de Jesus em Lisboa*. Lisboa: Arquivo Histórico do Ministério das Finanças.

Serrão, V. (1977). O Arquitecto maneirista Pedro Nunes Tinoco - Novos Documentos e Obras (1616-1636). *Boletim Cultural da Assembleia Distrital de Lisboa*. Lisboa: Assembleia Distrital de Lisboa, 83, 143-201.

Serrão, V. (1984-1988). Documentos dos protocolos notariais de Lisboa, referentes a artes e artistas portugueses (1563-1650). *Boletim Cultural da Assembleia Distrital de Lisboa*, 90, 55-103.

Simões, J. M. S. (1999). Azulejaria Lisboeta no reinado de D. Pedro II - ambientes de trabalho e estatuto social dos artífices. *Boletim Cultural da Assembleia Distrital de Lisboa*, 93, 81-101.

Simões, J. M. S. (2002). *Arte e Sociedade na Lisboa de D. Pedro II - ambientes de trabalho e mecânica do mecenato* (Master's thesis). Faculdade de Letras da Universidade de Lisboa, Lisboa.

Simões, J. M. S. (1971 [1997]). *Azulejaria em Portugal no século XVII*. Lisboa: Fundação Calouste Gulbenkian.

Simões, J. M. S. (1979). *Azulejaria em Portugal no século XVIII*. Lisboa: Fundação Calouste Gulbenkian.

Veloso, A. J. B., and Almasqué. I. (1996). *Hospitais Cívicos de Lisboa: história e azulejos*. Lisboa: INAPA.

Vitorino, P. (1925). *Azulejos datados (Misericórdia do Porto - 1628)*. Separata da *Revista de Estudos Históricos*. Porto, Instituto de Estudos Históricos - Faculdade de Letras da Universidade do Porto.

## BIOGRAPHIC INFORMATION

Rosário Salema de Carvalho is a researcher at Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões [History of Art - Institute of Faculty of Letters from the University of Lisbon] since October 2007, and coordinates the projects related to tile studies and inventory, in collaboration with Museu Nacional do Azulejo and also with the company "Sistemas do Futuro", for the development of a database for tiles inventory. She has been doing research on heritage, especially in the area of Portuguese tiles, and wrote several books and articles. Presently she finished her PhD dissertation in Art History, at the same University, dedicated to one of the most significant periods of the history of Portuguese tiles, the Masters Cycle, under the supervision of Prof. Dr. Vítor Serrão and co-supervision of Prof. Dr. Ana Paula Rebelo Correia.

Alexandre Pais is a researcher at the Museu Nacional do Azulejo, from 1993 to 2004 and again since 2009. He has also worked at the Pena Palace, Sintra (1987-1993) and at the Portuguese Institute for Conservation and Restoration, previous Institute José de Figueiredo (2004-2009). He has lectured in the Escola Superior de Artes Decorativas at the Fundação Ricardo Espírito Santo, Universidade Católica Portuguesa and Escola de Conservação e Restauro, Sintra, and has several Master and PhDs Thesis under his co-supervision. He has published various articles and books on artistic heritage, mainly on Portuguese azulejos and ceramics, and he is a member of several research groups. Presently he finished his PhD in Decorative Arts at the Universidade Católica Portuguesa, dedicated to the production of Portuguese faience from c. 1550-1750, under the supervision of Prof. Dr. Gonçalo Vasconcelos e Sousa.

Ana Almeida is a researcher at Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões since December 2008. She has worked on the Museu Nacional do Azulejo (1999-2003), Arts Institute - Direcção Geral das Artes (2004-2008) and Loures City Hall - Câmara Municipal de Loures (1996-1997). Her research interests include contemporary ceramic, Public

Art, Urbanism and Architecture. Presently she is preparing a PhD dedicated to the relation between Ceramics and Architecture on the Modern Movement in Portugal, under the supervision of Prof. Dr. Vítor Serrão and co-supervision of Dr. Alexandre Pais and the architect Ana Tostões.

Inês Aguiar is a researcher Museu Nacional do Azulejo and at Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões since 2011. She attended Ar.Co - Centro de Arte e Comunicação Visual (Center for Art and Visual Communication), where she completed the Complete Plan for Studies in Photography in 2007. She graduated in Art History at Faculty of Letters of the University of Lisbon, where she also attends the Master in Arts, Heritage and Restoration. Her research interests include photography and digital media.

Isabel Pires is a researcher at Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões since October 2007. She collaborated with the Museu Abade de Baçal in Bragança (2002-2003) and with the Museu Nacional do Azulejo (2003-2008) as a technician in the field of Inventory and Management of Collections. She has developed research about pattern tiles and, presently, she is preparing a Master's Thesis dedicated to tile façades on the south bank of the river Tejo [Barreiro] between 1850-1925 under the supervision of Prof. Dr. Vítor Serrão and co-supervision of Prof. Dr. Francisco Queiroz.

Lúcia Marinho is a researcher at Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões since October 2007. She collaborated with the House-Museum Dr. Anastácio Gonçalves (2003-2005), in the inventory and exhibitions department. Her research interests include horology, iconography and baroque tiles. Currently she is preparing a PhD entitled "The Iconography of Saint Teresa of Jesus from the collection of the Museu Nacional do Azulejo", under the supervision of Prof. Dr. Vítor Serrão and co-supervision of Dr. Alexandre Pais.

Patrícia Nóbrega is a researcher at Rede Temática em Estudos de Azulejaria e Cerâmica João Miguel dos Santos Simões since March 2009. Her research interests include museum studies, iconography and pattern tiles. Presently, she is preparing a Master's Thesis in Museum Studies at Faculdade de Ciências Sociais e Humanas in Universidade Nova de Lisboa, under the supervision of Prof. Dr. Raquel Henriques da Silva and co-supervision of Dr. Alexandre Pais.