The present paper aims to analyze the cataloguing of azulejo frames, done for the project Cataloguing Portuguese azulejo patterns initiated in 2011, which can be consulted at Az Infinitum – Sistema de Referência e Indexação de Azulejo (Azulejo Indexation and Referencing System) (http://redeazulejo.letras.ulisboa.pt/pesquisa-az).

The importance of the azulejo frame and its independent study, and its connections with the study of the patterns that constitute the remain of the wall and ceiling coverings, has been a crucial concept since the beginning of the project, as it contributes to a better understanding of how pattern azulejo frames were understood throughout the centuries.

Also, the systematic cataloguing allows the addition and continuous processing of new data in Az Infinitum, stimulating the emergence of new questions and thus contributing to the production of theoretical knowledge, without never losing sight of its object of study: the work of art in situ.

**KEYWORDS**
Azulejo | Frames | Cataloguing | Photography

**RESUMO**
O presente artigo tem como objectivo analisar a catalogação de emolduramentos de azulejo no âmbito do projecto Catalogação de padrões da azulejaria portuguesa, iniciado em 2011 e que pode ser consultado através do Az Infinitum – Sistema de Referência e Indexação de Azulejo (http://redeazulejo.letras.ulisboa.pt/pesquisa-az).

A importância do emolduramento e do seu estudo independente – ainda que em articulação com o estudo dos padrões que constituem o revestimento – impôs-se como crucial desde o início do projecto pretendendo-se, deste modo, contribuir para uma melhor percepção de como os emolduramentos em azulejo foram entendidos ao longo do tempo.

Neste contexto, a catalogação sistematizada permite a permanente actualização da informação no Az Infinitum, estimulando a emergência de novas questões, contribuindo deste modo para a produção de conhecimento teórico, sem nunca perder de vista o seu objecto de estudo: a obra de arte in situ.

**PALAVRAS-CHAVE**
Azulejo | Emolduramento | Catalogação | Fotografia
INTRODUCTION

The first known comprehensive catalogue on 17th century Portuguese azulejo pattern, entitled “Azulejaria em Portugal no século XVII”, was initiated by João Miguel dos Santos Simões and published in the 1970s by Fundação Calouste Gulbenkian. This work featured azulejo patterns and frames, illustrated by drawings partially coloured from Emílio Guerra de Oliveira. This catalogue displayed the items already organized by patterns, double, single and half or third azulejos frames, sometimes with corners, and grouped in what Santos Simões called “families”. These “families” were, in turn, defined by a group of common graphic motifs featured on each item. Moreover, the author identified the places where one could see the frames and patterns. This work was highly important for the study of azulejo and visionary for the way the subject was presented, yet only targeted a limited timeline. The need to extend the cataloguing to other centuries and to make it through the use of a digital system that would support further the research, provided the rationale for the project Cataloguing Portuguese azulejo patterns. Presently, the project has already examples of frames of azulejo from the 17th to the 20th century. However, this paper will focus only 17th century frames.

The project began in 2011, in a partnership between Az – Rede de Investigação em Azulejo, a research group from ARTIS – Instituto de História da Arte of Faculdade de Letras (Universidade de Lisboa) and the National Azulejo Museum, aiming to create a comprehensive catalogue of the azulejo patterns and frames made and/or applied in Portugal. The work done within the project is displayed on Az Infinitum – Sistema de Referência e Indexação de Azulejo (Azulejo Indexation and Referencing System) and accessible online through (http://redeazulejo.letras.ulisboa.pt/pesquisa-az).

CATALOGUING AZULEJO FRAMES

The project Cataloguing Portuguese azulejo patterns, aims to study azulejo frames and patterns of coverings that remain in situ. This is critical because it allows a more realistic knowledge of how it has evolved until today. Being limited to the coverings that are inventoried, the research group analyses each frame and its corners. At this point is important to mention that azulejo frames have different and defined typologies:

A) double or triple azulejo frames formed by two or three juxtaposed rows of azulejos, ending in corners;

B) single azulejo frames are formed by only one row of azulejos and also ending in corners

C) half or third azulejo frames are formed by elements smaller than one azulejo, sometimes also ending in corners. [fig.1]

In the catalogue each frame as an alphanumeric code, constituted by numbers and letters, and the letters are linked to the Portuguese name of each type of frame. So B designates double or triple azulejo

1. João Miguel dos Santos Simões (1917-1972) was a researcher which is still considered a key figure in Portuguese azulejos area of study, with work published in Portugal and internationally. His fundamental work – especially in inventory and research – contributed decisively to promote Portuguese azulejaria, as legitimate and crucial area within History of Portuguese Art. To a more complete biographical note and bibliography, see http://redeazulejo.fl.ul.pt/redeazulejaria_en/pagina,278,354.aspx

2. Emílio Guerra de Oliveira (b.1933) is a painter who collaborated with Santos Simões. His drawings can be seen on a recently launched project entitled Digitile, which also displays online a collection of photographs and documents from Santos Simões research work. http://digitile.gulbenkian.pt/cdm/search/searchterm/Oliveira,%20Em%C3%ADlio%20Guerra%20de,%201933/-/mode/exact

3. Az – Azulejo Research Network, ARTIS – History of Art Institute, Faculty of Letters, University of Lisbon.

4. The study subject of this research team is in situ azulejo coverings, as azulejo is seen as integrated heritage. However, some examples of frames and patterns, especially older ones, are more difficult to see in situ or are highly damaged. Consequently, in order to provide complete knowledge about patterned azulejo frames, the research group may use photographs of azulejos that are in the National Azulejo Museum or in private collections.
frames – in Portuguese, barras –, the C designates the single azulejo frames (cercaduras) and the F designates the half or third azulejo frames (frisos). The alphanumeric code – or catalogue code – also contains the century of production and a five digit number that is the catalogue number of the frame\(^5\). In the cases where the frame has one or more corners, its catalogue code will also integrate the code of the corner. So, the code for corner ct – in Portuguese canto – is added to the original double azulejo frame code, as well as the number of the corner, and then linked to the specific frame.

This naming convention was created with Santos Simões codes as basis. However, it was adapted, in order to allow attributing new codes to frames that might not have been catalogued. Additionally the ct code was created so corners may be catalogued, described and analyzed independently. This link to Santos Simões work, through the catalogue code is important because it indicates certain continuity between the two catalogues, with the purpose of comparing them and generating new findings. The catalogue also reveals that there were 17th frames and corners that did not feature in the 1970s published catalogue.

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\(^{5}\) As it was early mentioned, our catalogue codes had as base the catalogue codes from Santos Simões in order to avoid attributing two different codes to the same item. As an example, C-71 in Santos Simões will be C-17-00071 in our catalogue. Therefore, all “new findings were given catalogue numbers after the last number attributed by Santos Simões. The order of new pattern and frame catalogue numbers is linked to the in situ inventoring projects.
Describing 17th century frames – and patterns – may be a challenging task, mainly because frames may look very similar. But when subjected to a more thorough observation, they reveal small yet significant changes in ornamental motifs or organization. New findings generate different descriptions which, in turn, generate different catalogue codes. Each frame that is being catalogued and entered in the Az Infinitum database is first studied through photographs. These photographs will later be used as a base for photomontages which also have an important role for the frames study. The description focuses exclusively on what is seen on the frame and not the information the research group has on that frame. A typical description indicates features as the colour of the outline, the shape of the main elements and of the linking element[fig.2] or how they behave with each other in repetition. In the cases of similar frames – that usually are linked in a family[7] –, the descriptions follow the same structure in order to highlight the different motifs.

The study of azulejo frames is in its early stages. Nevertheless, the work developed so far reinforces the notion that – as far as the 17th century is concerned – the variety of decorative solutions exceeds the ones presented by Santos Simões (Pais, 2012: 83). Currently, 37 single azulejo frames are catalogued and indexed in Az Infinitum, yet only 8 of them match the 134 single azulejo frames catalogued by Santos Simões. For double azulejo frames, Santos Simões catalogued 63 examples, from which only 4 match our 12 catalogued double azulejo frames. The cataloguing of half azulejo frames is yet inconclusive since the research group has repeatedly found the same examples in the in situ coverings, although Santos Simões has catalogued 49 different half azulejo frames.

As already has been mentioned, in our catalogue the corners are described, illustrated and catalogued independently, although they are linked to the frames they were applied to. This procedure allows us to have a more complete understanding of the creative solutions used by 17th century tile-layers[8] (Carvalho et al, 2012a: 52), as corners connect with the frames in order to create distinct graphic

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6. The main element of an azulejo frame is the motif that covers more widely the surface of the module. In repetition, all the main elements are linked by smaller motifs, designated as linking elements. However, other situations may occur such as frames in which all the main elements are directly link to each other, or frames that have two different and equally relevant elements, disposed in alternation.

7. The concept of “family” applied to patterned azulejos refers to a group of frames (or patterns) that share common motifs and behave similarly in repetition. These “families” often have names derived from the shared motif, such as “acanthus” (acantos), “lace” (rendas) or “hammers” (martelos). These are not scientific designations, but popular names that persisted through time, already used by Santos Simões.

8. In Portuguese they are denominated ladrilhadores.
dynamics. This can be observed in cases where the frames have two different corners. In such cases, the corners play with the frames in two ways:

A) Each corner is created to be linked to different elements of the frame but that does not change the visual effect of the frame when applied on a surface [fig.3];

B) Each corner is created to be linked to different sides of the frame, which can be applied one way or upside down⁹, therefore changing the visual effect of the frame [fig.4].

The corners are then linked to the frame, in *Az Infinitum* so all its information, including these visual changes, can be easily accessed by users.

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9. This effect can happen when the frame is not symmetrical. The asymmetrical frames are the ones which have two graphically distinct sides, when one draws a longitudinal imaginary line through its middle.
At this point it is important to mention the role of digital images for the research. The study of azulejo, as any study in History of Art, also relies on information generated from visual resources. In “Azulejaría em Portugal no século XVII”, the patterns and frames where illustrated with the drawings of Emílio Guerra de Oliveira. However, these drawings were only partially coloured, highlighting the module, which is the minimum number of azulejos needed to constitute the graphic element that – in repetition – generates the pattern or frame. Unfortunately, this mode of illustration in the print publication does not work well for replicated patterns.

Early in the project Cataloguing Portuguese azulejo patterns we asked ourselves how the frames should be illustrated in their online catalogue records. During the inventory process, digital photographs are taken in order to document the frames in situ, which allow us to record information, such as how the frame was applied, how it was articulated with the place where it was applied, with which patterns and frames and what was its physical condition at the time of the inventory, among other things. Nevertheless, the lighting conditions are distinct in each location and generate frame images that vary from each other. This makes comparing frames challenging. Taking the frames out of their context in order to study them, is an exercise of abstraction that needs imagery to support our goal: clean illustrations that can present the frames’ features at the same level, so they may be analyzed, described and compared. In fact, these difficult circumstances with in situ photographs may have been one of the reasons that led to the use of drawings instead of photographs to illustrate Santos Simões’ catalogue.

Nowadays, the use of digital photography simplifies this task. In the present project, frames – in their abstract form – are represented by photomontages generated from the digital photographs. We choose the photograph of azulejos that are in better condition, i.e. that are more complete in its graphic elements, for which the images are devoid of elements that may interfere with the reading of the pattern, such as impurities or small defects. The photographs are then digitally processed to create a simulated assemblage of the frame [fig.5]. The same procedure is applied to corners.

![Fig.5 - Detail of an in situ double azulejo frame. The double azulejo frame photomontage (photo by Inês Aguiar, 2015)](image-url)
To resume digital photography is used for the analysis and study of azulejo patterns in two ways: first, as an *in situ* document, where one can get information about all the frames, corners and patterns and their architectural environment; second, the photomontages, where frames and corners are isolated to be analyzed in their singularities, described and catalogued in the online database. Despite of the technological developments, one may say that photography continues to contribute to the production of knowledge, within History of Art, not only by representing it but also by taking part in it.

**ORGANIZING AND DISPLAYING INFORMATION**

Since the beginning of its implementation *Az Infinitum* is conceived as Digital Humanities tool. It allows the upload of visual information as well as documentation. Furthermore it is permanently increased to and accessed by an online community. Yet, since azulejo is an integrated heritage, it is also important that the user access information on its own terms.

*Az Infinitum* is an Indexation and Reference System for azulejo, which is accessible online through five great areas: (1) *In situ*; (2) Iconography; (3) Patterns and Frames; (4) Authors and (5) Bibliography, all interconnected. It is at the same time the system where the data is uploaded. It is also the publishing platform and our main project that aggregate all the other projects. The project Cataloguing Portuguese azulejo patterns generated the area “Patterns and Frames”, which users can access the information produced in the project. Each frame has its own record that displays information, such as the frame description, catalogue code, chronology, area of production, technical information, bibliography or the persons who were involved in the inventory process. It is also possible to see all the frame’s corners, as well as the frames that belong to the same “family” and, likewise, to access their files [fig.6]. If the search is initiated through an *in situ* file, the user will have access to information about the place, organized hierarchically and linked to the frame information mentioned above.

The visualization of all this levels of information – textual and visual – is crucial to a more comprehensive understanding of each frame, and in time can generate findings that lead to geographical and chronological readings, furthering our knowledge in patterned azulejo. Finally, it is worth mentioning that in order to enhance scholarship, *Az Infinitum* will soon link engravings to frame records to reveal the visual sources of figurative azulejo. Furthermore, archival photographs will be indexed so it will be possible to see where each covering was applied throughout time and to what changes it was subjected, or see coverings that have disappeared. *Az Infinitum* will work as an interface where these photographs provided by digital archives will be linked in order to build a “map” of each azulejo covering, thus allowing to compare different levels of information, aiming to make new connections, shedding light on areas in the history of azulejo still unknown today.

**11.** Although each azulejo is an independent tridimensional item, it is created to integrate a specific architectural structure, in order to change it visually and solving different problems. Therefore, should not be considered as an object but integrated heritage. For an example on how 17th century azulejos were applied to visually solve different problems in the same building, see (Carvalho et al, 2012: 52-54).
Fig. 6 · Az Infinitum. C-17-0007 file (photo by Inês Aguiar, 2015)
CONCLUSION

Usually considered a peripheral subject, the study of azulejo frames is still in its early stages. The work of Santos Simões established an important basis on the subject and today we have the tools to review and enhance this field of research. Nevertheless, the work done so far in the project Cataloguing Portuguese azulejo patterns, suggests that we are facing an autonomous, complex and highly creative subject. For the purpose of this research, visual resources – as well as documentation sources – should be used in all their forms in order to add more levels of complexity, to promote new scholarship and a new understanding of azulejo frames, in essence to reframing it. Among these visual resources, photography – which traditionally worked as a visual document – has, in its digital form, opened new possibilities as a resource that continues to actively contribute to the production of knowledge. The management of great volumes of diverse data its only possible thanks to digital systems such Az Infinitum, where structured data is indexed and linked to allow a more in-depth perception of azulejo in all its physical features and historical complexity. Moreover, it allows this information to reach a wider community, thus actively starting a more dynamic relation between researchers and society at large, connecting them on the updating of historical readings on such an important cultural art form that are azulejos. Finally, it is important to mention that practice of indexing structure data, have another role highly relevant role as it paves the way for future contribution to Semantic Web, which is web 3.0 or even web 4.0.

BIBLIOGRAPHY


