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Research Article

The Assembleia de Abrantes Headquarters Building by Raul Lino—An Analysis based on Documentary Research

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ABSTRACT

The Assembleia de Abrantes building, designed in 1923 and intended as the headquarters of a recreational and cultural club, was one of the first and most relevant projects of Raul Lino (1879-1974) in that city. The building was classified in 2014. This paper proposes the study and interpretation of its main architectural and construction features, in order to understand whether there is a correlation between the *Casa Portuguesa* programme advocated by Raul Lino and the programme of this building designed to house a local club. The methodology that guided this study focused on the analysis of primary and secondary sources (drawings, written architectural documentation, correspondence between the client and the architect, books and other written publications), photographic and geometric surveys and their graphic recording. Existing architectural documents were analysed. The study was also based on Lino's theoretical reflections on the function and materiality of Portuguese dwellings, published between 1918 and 1933. It can be concluded that there is a correlation between the *Casa Portuguesa* programme and that of this building, relating to the internal organization of spaces and construction systems. This work enabled the identification and aggregation of project documents dispersed across two documentary funds. The results obtained contribute to the documentation of preliminary studies for future construction work on the *Assembleia de Abrantes* Headquarters building. This work aims to make an additional contribution to the interpretation and understanding of Raul Lino's architectural work, focusing on the construction perspective.

Keywords: Portuguese Architecture of the Twentieth Century; Architect Raul Lino; Architectural and Constructive Characterization; Building for Recreational and Cultural Activities; History of Architecture and Construction.

INTRODUCTION

Raul Lino da Silva (1879-1974) was a renowned Portuguese architect who started his studies in England and Germany. In 1897, he returned to Lisbon, to start what was to become a long and productive career in architecture (Fundação Calouste Gulbenkian, 1970; Ribeiro, 1994). The Calouste Gulbenkian Foundation Art Library (CGFAL), holds more than 650 architectural plans drawn up between 1902 and 1974, most of which were for buildings throughout Portugal. Some of these buildings no longer exist (Mascaro, Bortolucci, & Lourenço, 2009).

Although a significant part of his architectural production, around 270 design projects, is located in Lisbon area and the majority of published studies focus mainly on the iconic houses of Sintra and Cascais (Ramos, 2011; Lemos, 2012) the houses built in Coimbra have also caught the attention of researchers (Craveiro, 1983; Sequeira, 2013) and there has also been interest in studying his work carried out in Abrantes (Oliveira, 2012, 2013; Oliveira & Jaramillo, 2016; M. Rocha, 2019). Despite the growing interest in his work, an in-depth study of his architectural production is still lacking that would allow us to compare his architectural and constructive perspectives. Aggregating and systematizing this level of knowledge is important to extend information about any built work, but also to support decision-making about planning and preventive action on the buildings themselves

and the urban space surrounding them (Godwin, 2011; Elsorady, 2014; Palomar, Valldecabres, Tzortzopoulos, & Pellicer, 2020; Tobiasz et al. 2019).

In the CGFAL collection, 23 architectural plans for the Abrantes municipality have been found including new constructions, renewals and extensions of existing buildings, a mausoleum and a plinth intended for a statue. These projects include the building of the *Assembleia de Abrantes* Headquarters (AAH) located in the historic core of the city, studied by Oliveira (Oliveira, 2012) who analysed the transformations of the urban space surrounding the site that came to be occupied by the building. Later, the same author also explored the urban impact of the implementation of the AAH building and two other facilities, i.e. Cine-Teatro S. Pedro and Grémio da Lavoura, on the public space of Abrantes (Oliveira, 2013).

The heritage significance of a building depends on its unique characteristics that express its value in various dimensions: historical, artistic, cultural, social and economic (Bertolin & Loli, 2018). As set forth in the Madrid-New Delhi Document (International Council on Monuments and Sites, 2017), the cultural significance of a given property may reside in its tangible attributes or in its intangible values. Value is associated with a specific characteristic which, in the case of a building, can be a particular quality of the construction or the meaning that the community attaches to it as a symbol of identity, as is the case with historic buildings (Palomar et al., 2020). The buildings to which a certain significance is attached accompany the evolution and social transformations, becoming part of the narrative of the place to which they belong. The relative significance of these buildings can trigger protection procedures, informal or formal, through processes that define, delimit and legitimize them (Barrère, 2016). In 2014, the Abrantes Municipality classified the AAH building as a Monument of Municipal Interest (Câmara Municipal de Abrantes, 2014) thus recognizing the relative value it represents for the surrounding communities.

Regarding the research on the constructive perspective of the AAH building, except for the author's own texts and the graphic elements of the project, no other works have been identified as, besides the abovementioned studies, only occasional references to the building have been found (Oliveira & Jaramillo, 2016; Pereira, 2013; Oliveira, 2016).

In the AAH's architectural plan, the pieces examined not only were scarce, but also contained fragmented information that did not allow a detailed characterization of the construction. However, we believe that this documentary gap can be complemented by the analysis of other written records, namely the two early books published by Lino (1918, 1933) and his study on Portuguese residential architecture (Lino, 1929).

Although his theoretical work focuses on residential buildings, it is possible to identify in the building several architectural and construction characteristics that the architect defined as paramount in his vision of the *Casa Portuguesa* (Portuguese House). The main purpose of this article is to identify and correlate the architectural and construction features present in the AAH project, intended for recreational and cultural activities, with Lino's theoretical considerations for (his) Portuguese house. The main research question is whether there is any correlation between the architectural programme of Raul Lino's *Casa Portuguesa* and that of the AAH building. This question pertains to the internal organisation of the spaces, as well as the materials and construction systems incorporated in the AAH building.

The initial concept of "house", i.e., a construction intended for family housing (Lino, 1918), is thus considered to have added other building typologies to accommodate all daily activities (Oliveira & Jaramillo, 2016), which explains the diversity of works the architect was commissioned throughout his career. It is also our aim to highlight the formal and material elements present in the AAH building project, which its author considered crucial for portraying the 'Portuguese-style house', taking into account the safety, comfort and sanitation of the built space.

The article commences with an introductory section and is then structured as follows: section two presents the literature review, section three sets out the methodology adopted for the study. Section four provides an overview of the historical context of the AAH building, its architectural and constructive characterization, analyses, interprets and discusses the architectural and constructive composition of the AAH building in the context of its historic and cultural significance and its common architectural and constructive elements with those of *Casa Portuguesa*. Finally, section five presents the concluding remarks.

LITERATURE REVIEW

Raul Lino's professional experience was not limited to architecture. He also made a significant impact as a writer, contributing regularly to publications related to cultural heritage. He was also an accomplished illustrator and director. Later in his career, he contributed to a national body that oversees Portugal's architectural heritage,

the Direção-Geral de Edifício e Monumentos Nacionais – DGEMN (Rodrigues, 2005). However, Raul Lino is most commonly associated with his career in architecture and his perspective on the Portuguese family housing model, the *Casa Portuguesa*.

The majority of Raul Lino's projects at CGFAL are for residential buildings. However, there are also projects for school buildings, hotels, sanatoriums, cultural associations, town planning projects and funeral facilities. Many of these were built during the twentieth century. The AHH building project designed by Raul Lino in 1923 falls into the category of buildings intended for cultural and recreational activities. The building is currently used on occasions for the same purposes for which it was originally designed.

Some of the buildings constructed during the twentieth century are still in use. However, their recent construction history and relatively short heritage status in the context of architecture and construction have led to a lack of recognition of their significance resulting in an absence of recognition, abandonment, lack of maintenance, or even anachronistic interpretations and alterations to the original architecture (Lenticchia, Miraglia, Quattronea, & Ceravolo, 2023). The twentieth century saw significant developments in the architecture and construction industry, with the introduction of new materials and techniques. These changes have had a profound impact on construction processes, as well as on repair, replacement and conservation procedures. It is not uncommon for these changes to result in functional anomalies in materials and systems, or in the obsolescence and adaptation (MacDonald, Burke, Lardinois, & McCoy, 2018). Furthermore, the current global context and the one predicted for the future, due to the growing effects of greenhouse gases, may result in threats to the planet's ecosystems, humanity itself and the vulnerability of its built heritage. Therefore, urgent action is required. The first step in ensuring the protection of a building is to identify and assess its significance. It is now widely accepted that the architectural heritage of the twentieth century is worthy of care and conservation (Gültekin, 2017; MacDonald et al., 2018).

A number of studies have been conducted with the objective of enhancing visibility of the built heritage from the twentieth century. Some of these studies concentrate on the architect, while others examine different aspects of a reference building from the perspective of its creator (e.g. innovative technologies, influences from other authors or its architectural setting at the time it was built).

Lizondo-Sevilla and Domingo-Calabuig (2023) contextualise the work of German architect Lilly Reich within the architectural framework of the first half of the twentieth century. Sun (2023) analyses the evolution of Chinese architect Liang Sicheng's buildings in the 1920s and 1930s through three of his representative architectural drawings.

MacDonald et al. (2018) outline two field projects related to Louis Kahn's Salk Biological Institute (1965) and the house of Ray and Charles Eames (1949). These projects are part of the Conserving Modern Architecture Initiative, CMAI, which aims to advance the practice of conserving twentieth-century heritage through research and investigation. These field projects demonstrate how the typical conservation approach can be applied to a modern place, and how a rigorous process of scientific analysis and investigation can inform on the difficulties of technical problems.

In a further contribution to the field, Chiu, Goad, Myers, and K1l1nçer (2019) examine the Jørn Utzon design for the Sydney Opera House and the role of the Chinese writer Lin Yutang in the architect's career. In order to achieve this objective, the authors analyse Utzon's designs for the Sydney Opera House and the book written by the Chinese writer, My Country and My People.

Licordari (2021) presents the Centennial Hall in Wroclaw as a pioneering example of early twentieth-century modern architecture and engineering. It provides an overview of the architectural, technological and landscape aspects of the design, created by Max Berg.

In a study presented by Rocha and Tomé (2021), the authors used HBIM to model *Casa de Santa Maria*, designed by Raul Lino in 1902. *Casa de Santa Maria* was commissioned by a Portuguese aristocrat and is widely regarded as one of Raul Lino's most notable residential designs, the *Casas Marroquinas*. The HBIM model was linked to a website that integrated a viewing platform with the objective of disseminating this significant architectural heritage.

The field of documentary studies, which includes the analysis and systematisation of building materials and techniques, plays a crucial role in the preservation of architectural heritage constructed throughout the twentieth century. From a technical standpoint, these studies can provide invaluable support for conservation and repair interventions, given the fact that the majority of the materials in question are no longer in production and the associated knowledge regarding construction practices has been largely lost. Over time, the construction industry has developed a range of innovative materials and systems that have replaced the traditional ones. However, due to the rapid pace of technological advancement, these materials and systems have also become obsolete. From a

broader perspective, the findings of these studies can be leveraged to disseminate this architectural heritage through digital platforms.

METHODOLOGY

In the first phase of the work, it was deemed essential to collect the reference elements that would enable the creation of an information base to understand the origins and development of Raul Lino's architectural projects, namely those built in the municipality of Abrantes. In this connection, and with the aim of refining his understanding of the aesthetics of Portuguese architecture, the materials and the inherent construction processes, we began by analyzing his theoretical considerations (Lino, 1918, 1929, 1933).

Although it was not a practical guide on how to design "beautiful houses", the 1918 book (Lino, 1918) aims, according to the author, to raise the reader's awareness of the aesthetic value of affordable housing; whereas Casas Portuguesas (Lino, 1933) published after the AAH project reveals, in comparison to the initial book, the improvement in the systematization of the programmatic contents presented, namely in the technical aspects. The historical study that Raul Lino published in 1929 (Lino, 1929), also after the completion of the AAH project, is of value in order to understand what he considered to be the main characteristics of Portuguese housing.

In addition to the works mentioned, the interpretation and analysis of the documentary resources were also aided by the article on the AAH building, published in 1947 (Lino, 1947). In this article, written twenty-four years after the project was drawn up, Raul Lino places the building in the context of social facilities for recreational and cultural purposes, explains briefly how he met the requirements of the program on an uneven and topographically difficult site, and justifies some architectural and construction choices which complement, even partially, the understanding of the project.

The design, methods, data collection and analysis processes concerning AAH were previously outlined in detail by Moreira and Serrano (2024). Table 1 provides an overview of the plan that guided this study.

Table 1. Methodology Workflow

Research stages	Description
Historical documentation	Primary Sources Municipal Archive Eduardo Campos: - Public fund (Abrantes City Council): Technical documents include project drawings -blueprints-, specs and administrative documents. - Private fund (Sociedade da *Assembleia de Abrantes*): Manuscripts documents include letters, requirements proceedings, budgets, etc FCG Art Library: - Technical documents include project drawings -blueprints-, specs and letters. Raul Lino's theoretical oeuvre: - Books published by the author between 1918 and 1933 and articles in national periodicals. Secondary Sources - Academic theses (doctoral and master's theses), scientific articles and books about the architect and his work.
Survey	- Photographic survey of the exterior and interior of the building. - Geometric survey of some elements of the building
Graphical registry	- Redraw of ground floor plan and 3d volumetric model of Assembleia, based on original blueprints, photos and specs.
Analysis	- Architectural and constructive features analysis based on former documentation, survey and graphical registry stages.

The remaining documentary research was carried out through consultation with his architectural collection at the CGFAL and the documentary sources held in the local Municipal Archive Eduardo Campos (MAEC) in Abrantes. Table 2 shows the documentary sources consulted between April 2021 and February 2023. Of the set of graphic pieces held at the CGFAL (Lino, 1923), only one is signed and dated (1923). At MAEC, the set of sources consulted includes the architectural design brief signed and dated 1971 (Assembleia de Abrantes, 1971), a variety of drawings, one of which is also dated 1971 and also two drawings corresponding to an alteration of the AAH building façade following the paving works in the then called Largo Barão da Batalha, which is dated 1955

(Assembleia de Abrantes, 1955). The analysis and comparison of these documents allowed us to observe some differences between the project dated 1923 and the 1971 project, namely the reconfiguration of the dividing walls of the game rooms with the consequent elimination of the chimney and the alteration of the shape of the stage.

Some visits have also been carried out that allowed on-site observation of some formal and material characteristics of the AAH building (Table 2).

Table 2. *Assembleia de Abrantes* Headquarters Building Project: Documentary Sources Consulted at CGFAL and MAEC

Origin	**Consulted Documents**	
CGFAL	Drawings (Lino, 1923)	- *Assembleia de Abrantes* - plan study, scale 1:100, Lisbon, 1923 (1 page); signature: Raul Lino. - Roof plan, scale 1:100, undated (1 page); unsigned. - Drawing of door with profile, scale 1:20, undated (1 page), unsigned. - Alteration of window openings, scale 1:20, undated (1 page), unsigned. - Miscellaneous drawings, scale 1:10, undated (1 page), unsigned. - Miscellaneous drawings, scale 1:10, undated (1 page), unsigned. - AAH building, scale 1:100; Drawing of façades, sections and plans, scale 1:1000, undated (1 page), unsigned. - AAH building, no scale indication, Watercolour drawing of façades, undated (1 page), unsigned.
MAEC	Drawings (AA 1955, 1971)	- Ground floor plan with sewage network, scale 1:00, undated (1 page), signature over stamp.* - Ground floor plan with water network (scale 1:100), undated (1 page), unsigned.* - Drawings of façades and ground floor plan (scale 1:100), date stamp 14 October 1971 (1 page), two signatures, one of which over stamp.* - Drawings of elevation alterations (scale 1:50); stamp dated 28 March 1955; signature of the Head of Secretary.
CGAL: Calouste Gulbenkian Art Libary; MAEC: Municipal Archive Eduardo Campos. *These data are presented in duplicate, undated and unsigned in a file dated '198_'.		

RESULTS AND DISCUSSION

The two following sections present a historical background to the AAH building, together with an account of its principal architectural and construction features. This account is based on the project documents, the survey and on-site observations carried out. The two remaining sections address the historical and cultural significance of the AAH building, establishing a correlation between the constructive and architectural elements identified and those associated with *Casa Portuguesa* by the architect Raul Lino.

History and Urban Context

In 1923, the Club members of *Assembleia de Abrantes* commissioned Raul Lino to design its headquarters building, which was completed in 1924 but was only inaugurated in 1928. Currently, the building (Figure 1 and Figure 2) remains the property of the Club.

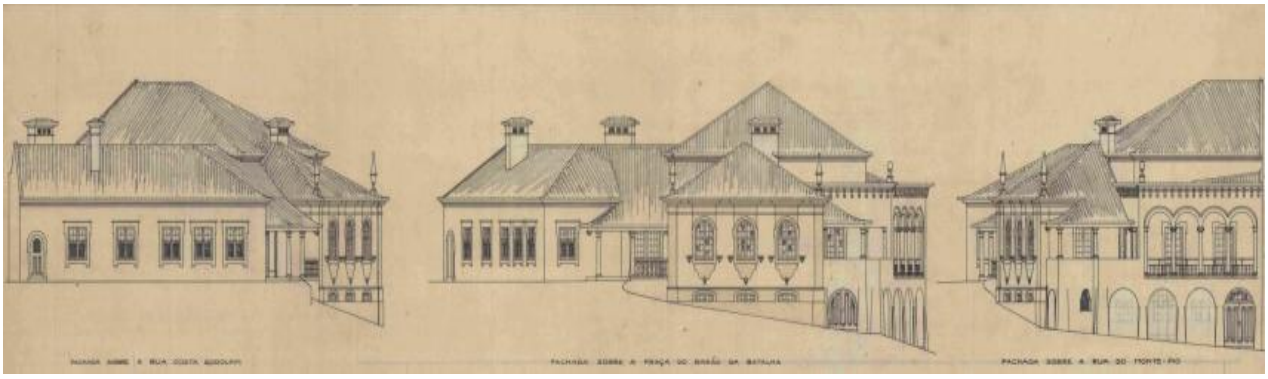


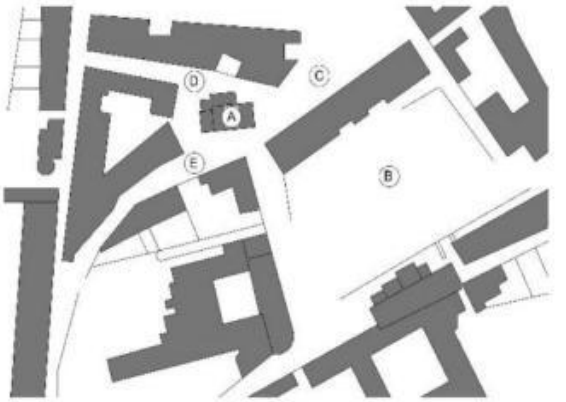
Figure 1. *Assembleia de Abrantes* Headquarters (AAH) Building: Project Elevations (Lino, 1923; Credits: Raul Lino Estate|FCG – Art Library and Archives)

Figure 2. *Assembleia de Abrantes* Headquarters (AAH) Building: Main Façade to the Largo General Avelar Machado

The AAH building was erected in the western limit and was part of the last stretch of one of Abrantes' main roads, ending at the chapel of S. Sebastião (Fernandes, 1968). The neighborhood in front of the church yard of this chapel is divided into two streets (Figure 3a), *Rua de S. Sebastião* (current *Rua do Montepio Abrantino*) and *Rua das Estalagens* (current *Rua de Nossa Senhora da Conceição*).

In the mid-nineteenth century, this place underwent significant changes, namely the demolition in 1859 of the S. Sebastião chapel, an empty space that was meanwhile used for the implementation of the AAH building and for the redesign of the neighboring square, *Praça Barão da Batalha*, as can be seen by comparing the Abrantes 1817 plans with today's plans (Figure 3a and Figure 3b).

The AAH building is bounded to the East by *Largo General Avelar Machado*, to the North by *Rua do Montepio Abrantino* and to the South by *Rua Nossa Senhora da Conceição* (Figure 3b). The building was erected in an area of steep slope, on a plot of land made available by the Abrantes City Council and another bought by one of the partners of the *Assembleia de Abrantes* Club (Assembleia de Abrantes, 1923).



a) A. S. Sebastião chapel; B. *Praça do Rocio* (current *Jardim da República*); C. *Praça da Palha de Cima* (current *Praça Barão da Batalha*); D. *Rua de S. Sebastião* (current Rua do Montepio Abrantino); E. *Rua das Estalagens* (current *Rua de Nossa Senhora da Conceição*).

b) 1. AAH Building; 2. *Montepio Abrantino* Building 3. House of *Capitão-Mor* (demolished).

Figure 3. Plan of the Area Surrounding the AAH Building Site: a. Abrantes Plan (detail). Authors' Own Elaboration based on "Planta da praça, e povoação de Abrantes", by João Damasceno Pinto and José António de Abreu, Post. 1817; b. Plan Showing the Current Layout of the AAH Building Site. Authors' Own Elaboration based on the City Plan Provided by Abrantes City Council

Constructive Features

In construction terms, the AAH building incorporates materials and techniques traditionally used at the time the building was built, as Lino found in vernacular architecture a formal repository, but also a wealth of materials and construction traditions derived from empirical knowledge of local techniques. Focus on context, place and landscape enhanced by a holistic view of the world was reflected in his architectural production (Lino, 1918).

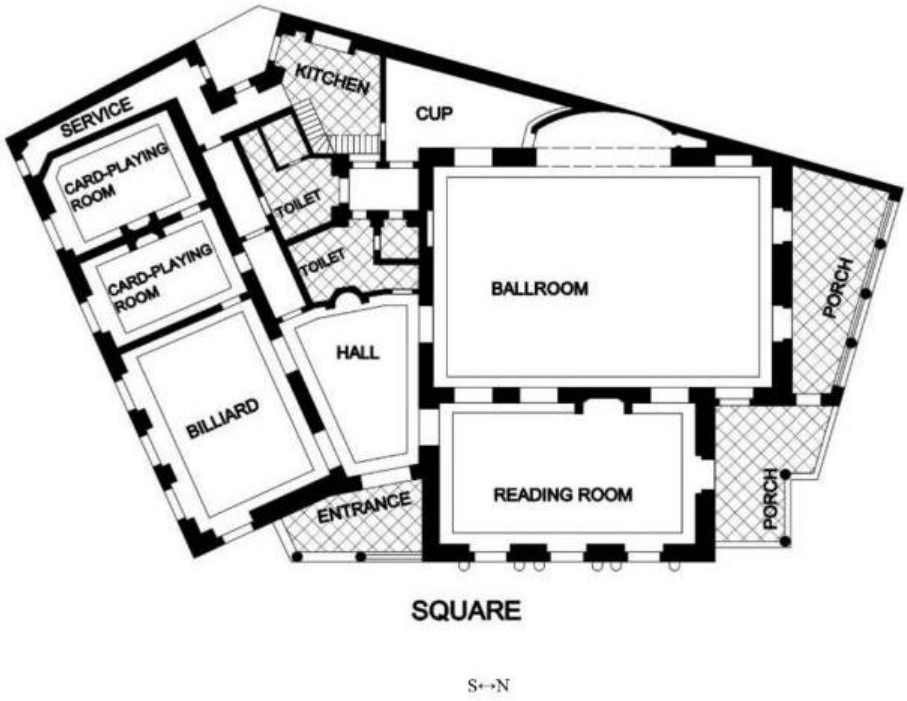


Figure 4. Assembleia de Abrantes Headquarters Building Ground Floor Plan. The Square refers to the Current Largo General Avelar Machado. Authors' Own Elaboration based on the Drawing Published in the "Mensário das Casas do Povo" (Lino, 1947).

The AAH building has three fronts facing east, north and south. The main entrance, protected by a porch, faces the *Largo General Avelar Machado* and is oriented to the East (Figure 2 and Figure 4). The central body of the main façade features three window openings with arched lintel and apron (Figure 2) corresponding to the reading room (Figure 4). This body is flanked by two porches: to the left is the main entrance porch and to the right is a porched balcony (Figure 2 and Figure 4). The recreational spaces were placed on *Rua do Montepio Abrantino* to the North: the ballroom which adjoins the reading room (Figure 2 and Figure 4) and projects to the exterior through the porched balconies. On *Rua de Nossa Senhora da Conceição*, to the South, Lino positioned the spaces for games: A billiard room and two card-playing rooms in a succession of three communicating rooms (Figure 4). The privacy of these spaces was ensured by interior wooden shutters and lattices on the windows that are at street level "to prevent passers-by from seeing inside the house" (Lino, 1947, p.11).

Table 3 and Table 4 show the construction elements, structural and non-structural respectively, according to the design brief. The construction elements considered in this study are the components (building materials and/or systems) of a building that ensure technical or operational functions such as structural stability, safety, protection and sanitation. It was also considered that architectural elements may correspond to the same construction components when they also have decorative functions.

Table 3. Structural Building Elements

Building Element	Materials and/or Building System
Foundations	Stone masonry and hydraulic mortar
Exterior walls and some interior walls*	Stone masonry and hydraulic mortar
Upper floors	Wooden structure
Roof	Wooden structure
* The remaining interior walls (with no resistant function) are in brickwork one-brick-thick or one-and-a-half-brick-thick.	

Table 4. Non-structural Building Elements

Building Element		Materials and/or Building System
Wall covering	Exterior and interior walls	Plaster and painting
	Interior walls of sanitary facilities	Plaster and paint + tile wainscot
Floor covering	Lounge, reading room and dinning area	Wooden floor
	Entrance hall, porch, bar room and games room	Floor tiles
	Sanitary facilities, kitchen and corridors	Tiles over earth floor
Ceiling coating		Painted wood; plastered and painted partition
Roof lining		Barrel tiles
Doors and frames		Painted wood

The considerable difference in ground level allowed the porched balconies on the northern façade to be kept away from passers-by and also benefited the installation of underground storage rooms (Lino, 1947) that can be accessed via the staircase located in the kitchen (Figure 4).

In 1955, the elevations under the corner porch have undergone alterations due to the paving works at *Largo Barão da Batalha*. These alterations included the replacement of the existing doorways in the elevation towards *Praça Barão da Batalha* and the small window opening in the elevation towards *Rua do Montepio Abrantino* by a window opening and a doorway, respectively (Assembleia de Abrantes, 1955).

Table 5 shows the different facilities that were included in the architectural design of the AAH building. The documents in the file dated 1971 include the layout of water and sewage infrastructures and consider their connection to the public network.

Table 5. Technical Installations and Equipment for Heating in the AAH Building

Equipment		Materials and/or System
Water networks		Galvanized iron piping connected to the general supply network
Sewage network		Ceramic stoneware shackles connected to the public collector
Sanitary facilities	For women	1 toilet bowl + 1 bidet + 1 washbasin
	For men	1 toilet bowl + 1 urinal + 1 washbasin
Heating devices		1 fireplace in the reading room
		2 fireplaces in the game rooms

Historic and Cultural Significance of the Building

Buildings serve various purposes as they embody the cultural aspects of a society and express its socio-economic dynamics. The historical and cultural significance of a building can be evaluated according to a set of criteria that includes its value as a testimony of historical experiences, its importance for collective memory, its aesthetic, technical or material value, its architectural conception, and the quality of the work of the architect or builder. These categories/criteria must reflect, separately or jointly, the values of memory, antiquity, authenticity, originality, rarity, uniqueness or exemplarity, as set forth in the national legislation for cultural heritage and in international standards (Lei nº 107/2001, art. 2º , 17º , 2001; United Nations Educational, Scientific, and Cultural Organization, 2023).

In accordance with the International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage (ISCARSAH) principles and guidelines, the objective of the historical survey is to comprehend the conceptualisation and significance of the building, the techniques and skills employed in its construction (...) (International Council on Monuments and Sites, 2003). This information is vital for effective conservation practices.

The characterisation of a historical and constructive period typically involves the typification of general construction features. This knowledge is useful for identifying common damage and repair methods for structural materials. However, individual case studies provide greater precision, security and detail, which are essential for developing effective intervention plans.

A building possessed relevant historical significance, due to its historical context and use, unique architectonic characteristics, regarding building type, materials or method of construction, architect and design conception (Kalman, 1980) evaluated within artistic, historical, social and scientific dimensions (International Council on Monuments and Sites, 1994).

The AAH building was designed to house the headquarters of a recreational association, a type of building that is typically characterised by the provision of exclusive assembly and leisure spaces reserved for distinct social groups (Bernardo, 2001; Arriscado, 2005). These restricted spaces of sociability, which were typically reserved for popular or elite groups, are now a relatively rare testament to a societal model that was dominant from the 1980s until the mid-twentieth century. In Abrantes, the most notable associations were the Montepio Abrantino (founded in 1856), the *Clube Abrantino* (which began its activity in 1878), and, from 1922 onwards, the *Sociedade da Assembleia de Abrantes* (established by a group of dissidents from the former). The centenary club was established and attended by members of the Abrantes elite, including political and administrative office holders, liberal professionals, and landowners, both industrial and agricultural. In the present day, despite the fact that the function of the AAH spaces no longer corresponds to that which was originally intended, there have been no significant alterations made to the exterior configuration and decoration of the rooms. Furthermore, the building has been maintained in its original state of integrity.

Architectural and Constructive Elements Common to Those of *Casa Portuguesa*

An analysis of Raul Lino's written work reveals the presence of distinctive architectural and constructive elements in the *Casa Portuguesa*.

Tables 6 and Table 7 contain the location of the descriptions for different architectural and construction elements that, from Raul Lino's perspective, characterize the *Casa Portuguesa* and are recognized in the AAH building plan (Lino, 1918, 1929, 1933). Although several architectural and constructive elements have been identified (Tables 6 and 7), this study will focus on two of the elements that, according to the architect, best define and characterize the *Casa Portuguesa*: the porch and the roof system.

Table 6. Identification of the Architectural Elements Included in the AAH Building Plan and Their Descriptions in Raul Lino's Books (1918, 1929, 1933)

Architectural Elements/Book	**'A Nossa Casa' (1918)**	**'Casa Portuguesa' (1929)**	**'Casas Portuguesas' (1933)**
Porch	Pages 29, 39, 44, 46.	Pages 6, 7, 17, 42, 43, 68.	Pages 35-36.
Roof	Pages 29, 35, 38.	-	-
Decorative elements under the window aperture (apron)	-	Page 49.	-
Tiles*	Pages 54, 56.	Pages 12, 51, 53.	-
Portugues-style eaves	Pages 36-37.	Pages 53, 58.	Page 69.
Stonework quarry/quarry stone/squared ruble	Page 33.	Pages 53, 58.	Page 63.
Chimney (shape)	Page 29.	Pages 29, 6, 68.	-
Colouring of exterior walls (yellow and white)	Pages 32, 33, -54, 58.	Pages 49-50.	Page 64.
Roof coverings	-	Page 42.	
Main entrance and hall	Pages 26, 40-42.	Page 7.	Pages 25, 31.
Iron railings	Pages 68, 69.	Page 50.	-
Arched bay windows	-	Page 27.	-
Front/main door	Page 39	-	-
Window lattice	-	Pages 60-61	Pages 36-37.
* Decorative element			

Table 7. Identification of the Construction Elements Included in the AAH Building Plan and Their Descriptions in Raul Lino's Books

Construction Elements/Book	**'A Nossa Casa' (1918)**	**'Casa Portuguesa' (1929)**	**'Casas Portuguesas' (1933)d**
Wall tiles*	Page 54, 56.	Pages 45, 58, 61.	-
Carpentry (doors, windows and lattices)	Page 59.	-	Pages 28, 32-33, 65, 66.
Roof (structure)	Page 35.	Pages 58, 68.	Pages 19, 28-29, 71, 72.
Exterior walls	Pages 48-49.	-	Page 27.
Wood flooring	Page 48.	-	-

Construction Elements/Book		**'A Nossa Casa' (1918)**	**'Casa Portuguesa' (1929)**	**'Casas Portuguesas' (1933)d**
Coverings	Roof	Pages 35, 36-37.	-	Page 28.
	Floors	Pages 39, 46-48.	Page 23.	-
	Walls and ceilings (whitewash)	Pages 28, 31, 32.	Pages 14, 43, 39-40, 59-60.	Pages 64-65.
Heating system		-	-	Page 39-40.
Wood ceilings		Pages 60, 61.	Page 12.	-
Sloping terrain		Page 34.	-	Page 15.
Ventilation		Pages 44, 63.	-	Pages 31-33.
* Building material				

The entrance porch and the porched balconies are some of AAH building's most prominent features. For Raul Lino, the porch materialized the "characteristic feature of our house (...) as useful as pleasant" (Lino, 1933, pp. 35-36) (Figure 2). The porches could protrude from the façade with straight or curved shapes, connected to interior or exterior stairs, or coexist to a greater or lesser extent independent of the house or garden. The benefits of a porch would depend on its proper adaptation and solar orientation, regardless of its relation to the different rooms of the house (Lino, 1918). The ideal orientation of the porch would be the one that allowed the benefits of the sunlight from the South and West so that in the hot season and when adequately ventilated it would work as a good temperature regulator of the adjacent rooms, while in the cold season its presence would not hinder the entrance of sunlight. However, Lino also advocated its orientation to the North when topographic and scenic conditions so required, recommending in this case its glazing as protection from North and East winds without the risk of turning it into a greenhouse (Lino, 1918, 1933).

For this building, Raul Lino designed porches in different positions and shapes: the porch at the main entrance is oriented to the east whereas the porched balconies are oriented to the north.

Supported by ashlar pillars, the entrance porch was intended to shelter visitors materializing, together with the entrance hall, the architect's concept of the reception hall in a *Casa Portuguesa* (Lino, 1918). In Lino's modern dwelling, the entrance hall, a wide and deep room with a predominance of "stone-and-lime", can include different architectural motifs such as tiled floors, tile wainscoting, niches or tile decorations (Lino, 1918, pp. 40, 42), elements that can be found in the AAH project.

In addition to the benefit that justified the inclusion of the porches mentioned in section 3, Lino notes that the topographical conditions of the terrain can be used to "give great emphasis to the general lines of a house" (Lino, 1918, p. 34). Glazing protection, suitable for north-facing porches (Lino, 1918, 1933), was not considered for either of these two porched balconies. Despite being formally distinct, these balconies include stonework columns (Figure 2) which represent "imperishable beauty" and which "whilst framing the views, give them great prominence" (Lino, 1918, p. 46). It is believed that these details contribute to distinguishing the AAH building from ordinary constructions. This distinction is complemented by other stonework such as the columns and baluster of the main entrance or the decorative elements crowning the roof, or the frames and aprons of the arched lintel windows of the east façade (Figure 2).

The roof and particularly its shape are of "great importance" for Lino: the "charm of the old roofs" is due to the use of barrel tiles, the Portuguese style eaves, but also to the ease of adapting them to any shape (Lino, 1918), probably alluding to the traditional wooden structures and that would allow various shapes. Despite this poetic vision, Raul Lino would be well aware of its functional importance: protection of the building from rainwater, arguing that "the weak point of the roof is the cross-sections determined by the design layout and the need to use zinc sheeting or other metal and its welds" (Lino, 1933, pp. 28-29), a condition that could be avoided by simplifying the plan, after making it compatible with the organization of the building's spaces.

Besides the relative ease of construction, the benefits of simply designed roofs were also reflected in their functionality, maintenance and conservation "avoiding sharp angles where not only more water accumulates, but also all the dirt it carries" (Lino, 1933, p. 29) and would result in unnecessary repair expenses: "Many people overlook the fact that, practically speaking, the cost of the house includes, not only the construction but also (...) - and very important - the annual maintenance, conservation and repair costs of the dwelling or building" (Lino, 1933, p. 23).

Figure 5 shows the building's roof configuration and its relationship with the organization of the interior spaces. AAH building's roofs are "easy to build and harmonious in appearance" and divided into different bodies, with raised elevations in the ballroom area to create a taller ceiling, a design that works in harmony with the

layout of the rooms inside the building (Lino, 1947, p. 11). The layout included functional spaces centred around the entrance hall, a layout principle typical of late nineteenth-century English domestic architecture known as the "agglutinative plan" (Hitchcock, 2023).

A key element in the building's planimetric organization, the hall serves as a space for linking the different rooms and functional areas: the game rooms, the reading and the ballroom (Figure 5). In the design of the façades, this solution is reflected in the stand-alone architectural units with varying heights, spans and roofs, which correspond to different interior spaces and reinforce façade fragmentation.

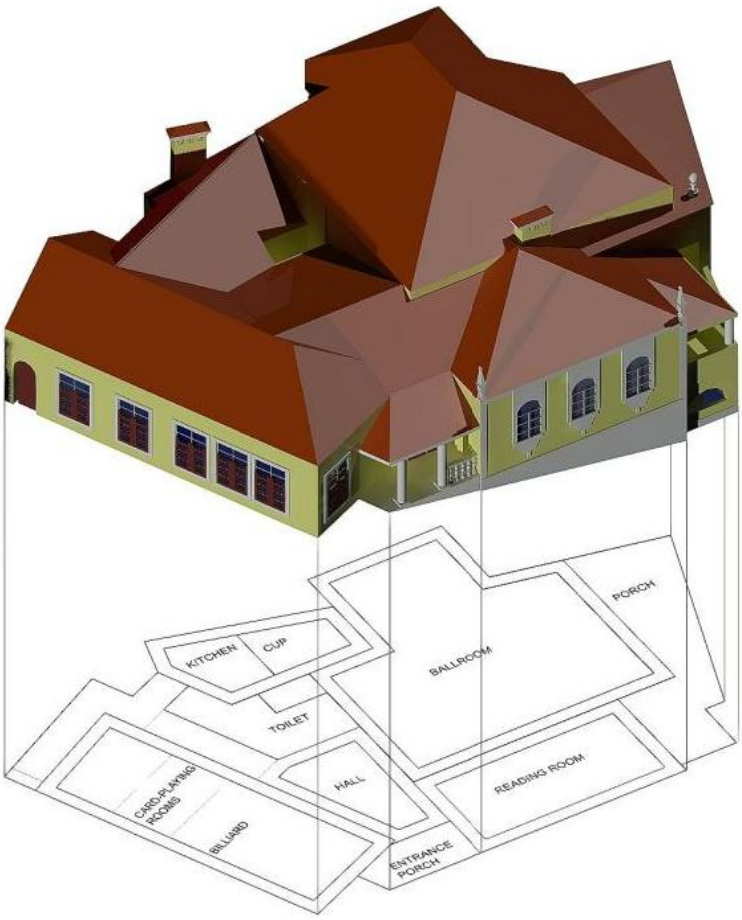


Figure 5. 3D Representation of the Building's Roofing System and its Relationship with the Interior Spaces: South Elevation and Main Façade, According to the Current Configuration of the Building's Boundaries

A comparison of the plans in Figures 4 and Figure 5 reveals discrepancies in the delineation of the building boundaries at the rear of the site lot. A review of the documentation at the MAEC (Assembleia de Abrantes, 1922-1971) revealed a conflict between the Abrantes City Council and the *Assembleia de Abrante*s Society, which had commissioned Raul Lino to design the project. The disagreement concerned the intended use of the building on land provided by the municipality. This led to a delay in the equipment's operation in relation to the completion date of its construction. The building was completed in 1924, but only inaugurated in 1928 (Vida Elegante, 1928). It is thought that Raul Lino published the article and drawings on the AAH building in 1947, based on the initial project plan.

In traditional Portuguese construction, the lower area of the roof was topped by a protruding edge - the eaves - which, besides having a unique aesthetic function which distinguishes it from buildings in other countries, protected the walls from direct contact with rainwater and was in Lino's words "the smooth line of (...) roofs with overhanging edges and gracefully curved corners" (Lino, 1918, p. 29). The eaves were always made of barrel tiles regardless of the type of tile used in the roof (Costa, 1957), which is another distinguishing feature in the Portuguese house and is also present in the AAH building.

Lino's prudent concerns with the ventilation conditions (Table 7) suggest that the super-elevation of the ballroom area (Figure 2 and Figure 5) would also be associated with the need for its greater volume to ensure the

desirable and necessary conditions of health of a multi-purpose space, where a large number of people could gather. The simplicity of the constructive solution referred to for the roofs would thus have resulted from the satisfaction of the practical and functional requirements mentioned, but also from the conditions imposed by the programme and, not least, from the uneven nature of the terrain. The compliance with this complex set of requirements probably led Lino to argue that "(...) very few will have an exact idea of how much it costs to obtain a solution of this magnitude with a natural and harmonious appearance!" (Lino, 1947, p. 11).

The preceding analysis of the constructive and architectonic features of AAH was informed by a correlational and comparative study, whereas the documentary research and survey were conducted in accordance with the guidelines set forth by Raul Lino in his books on domestic architecture. Our findings indicate that the AAH building project design exhibits a programmatic correspondence between Raul Lino's theoretical and practical oeuvre, which is likely rooted in the concept of male sociability as a parallel to that of the domestic family circle.

CONCLUSION

In his writings, Lino reflected on "*foreign*" architecture and on its inadequacy to the characteristics of Portugal, providing solutions in line with what he believed to be national traditions (*Casa Portuguesa*), while at the same time safeguarding safety, hygiene and comfort standards of the time and circumstances. These concepts seem to have permeated architectural and construction solutions adopted by the architect for the AAH building, organizing its spaces according to his principles of family-home design and adopting local materials and functional construction systems. Lino showed concern for building with simplicity and economy of resources, anticipating benefits for the conservation and maintenance of the buildings he designed.

In the case of the AAH building, this care is evident in the roofing system where, according to himself, simple forms should be employed to allow for easy construction, conservation and maintenance. Additionally, to the roof's constructive requirements, the AAH building has other architectural and constructive characteristics that are consistent with Raul Lino's theories on *Casa Portuguesa*.

The project proposed by AAH involved the creation of a multi-functional space intended for the recreational and cultural activities of the Club members and, on occasion, their families. The design was informed by the values of domesticity, including privacy, intimacy and comfort, as well as institutional representativeness. It drew upon and adapted the technical, ethical and aesthetic guidelines set out in Lino's theoretical oeuvre. By extending these lessons to the AAH project, the building represents a significant contribution to Raul Lino's legacy, exemplifying a deliberate and strategic integration of domestic values into a non-residential typology.

The most obvious architectural elements are the porches with their stone columns and the shape of the roof and its finish (Portuguese-style eaves). However, other notable features include the exterior wall cladding colours (ochre and white), the shape and composition of the window panes, the organisation of the building's main entrance and its ceramic tiles. The edifice, commissioned by an elite local club, exhibits external features that, according to Raul Lino, distinguish it from a building of ordinary construction. These include stonework of columns and baluster at the main entrance, decorative pinnacles crowning the roof, window openings with arched lintels and aprons, eaves supported by stone corbels, and a porched balcony in loggia.

It is also noteworthy that the coherence and functionality of the organisation of the other inner spaces in the building, which are used for the cultural and recreational activities of the Club, are in line with Raul Lino's vision for the organisation of space into a house that is used for residential purposes. The interior spaces were designed with the intention of fostering male conviviality. These included game rooms, card and billiard rooms, a reading room, and a ballroom, which were intended to be accessible to the family on festive occasions. Furthermore, within the building, wooden floors, wooden ceilings and carpentry were identified as constructive systems that were common to those of *Casa Portuguesa*.

The architectural plans for the AAH building consulted at the CGAL and at the MAEC revealed a series of graphic documents with dispersed and incomplete information: the CGAL has a set of drawings that can be assumed to date from 1923, and at the MAEC there is a file from the 1980s which includes the graphic pieces and a design brief from 1971. Other documents held at MAEC refer to requests for renewal, maintenance and conservation works. The design brief includes a summary of the material structure of the AAH building.

The analysis of the blueprints was complemented with the specifications on the Portuguese house published by the architect between 1918 and 1933 and with a text from 1947 about the AAH building, thus collecting a set of scattered data on this architectural project. It can also be said that this building is generally in accordance with the design plan drawn up by Raul Lino.

Specific knowledge of the works of Raul Lino such as the present study contributes to shed light on his

architectural legacy and the construction methods used, but also to complement studies prior to intervention works, namely in the selection of materials and conservation methods in line with his ideas, and technically compatible with the building's existing materials. Lino advocated the use of local and traditional materials and building systems, the majority of which no longer exist or have been lost through the passage of time.

The present study demonstrates, in a concrete manner, the interconnection between architecture and tectonics in Lino's work, substantiating that the intrinsic characteristics of the construction material exert a tangible influence on the aesthetic and formal qualities of the architectural work.

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