

SIZ**A**TLAS

BEIRES HOUSE



- | | | | |
|---|--|----|-----------------------------------|
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| 2 | Ocean Swimming Pool | 11 | Malagueira Neighbourhood |
| 3 | Alves Costa House | 12 | Borges & Irmão Bank |
| 4 | Alcino Cardoso House | 13 | Avelino Duarte House |
| 5 | Bouça Housing Complex | 14 | Setúbal School of Education |
| 6 | Faculty of Architecture of the University of Porto | 15 | Reconstruction of the Chiado area |
| 7 | Santa Maria Church and Parish Centre | 16 | Viana do Castelo Public Library |
| 8 | Portugal Pavilion, Expo'98 | 17 | Pinto & Sotto Mayor Bank |
| 9 | Serralves Museum of Contemporary Art | 18 | Adega Mayor |

Scale 1:100,000

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INTRODUCTION

CONTEXT

Twentieth-century heritage is particularly vulnerable because of its formal and material solutions, but also due to the fact of having scarce recognition among the civil society and heritage safeguarding bodies. Considering this background, the ICOMOS study “The World Heritage list: filling the gaps – an action plan for the future” (ICOMOS, 2005) and the Global Strategy of the UNESCO World Heritage Committee (WHC) have encouraged State Parties to submit twentieth-century heritage nominations (UNESCO-WHC, 1994).

In this context, the ICOMOS-Portugal presented the “Ensemble of Álvaro Siza’s Architecture Works in Portugal” to the World Heritage (WH) Tentative List, in 2017, later submitted to the WH List by the Faculty of Architecture of the University of Porto, in 2024, under the title “Álvaro Siza’s Architecture: Modern Contextualism Legacy”. This nomination proposal expresses Álvaro Siza’s outstanding architecture spanning across the second half of the twentieth century, which testifies to the critical revision of the Modern Movement principles towards a more contextual and humanist approach. This modern contextualism is an exceptional legacy conveyed by Álvaro Siza’s architectural works and his ‘School’, with major impact across different generations of architects, in distinct continents, addressing the needs and the aspirations of local populations. The component parts emerge as a result of the architecture development in the second half of the twentieth century, responding to the specific

conditions of local contexts and producing alternative responses to the prevailing axioms of the international Modernism, while also contributing to the Postmodern debate. Siza is a worldwide recognized architect with approximately five hundred projects and built works spread across four continents and sixteen countries, and the subject of more than one hundred distinctions and awards, nineteen Honorary degrees, and hundreds of dedicated publications.

Despite international recognition of the quality of Siza’s architecture, there is not yet a complete and systematic inventory and consistent documentation of his built works. The information is usually scattered, partial or incomplete. The existent literature focuses more on formal aspects of the designs, and little on the tectonics and material dimension of his works, including the building’s state of conservation and the potential threats affecting them.

With this framework, the project ‘SizaATLAS: Filling the gaps for World Heritage’ (SizaATLAS) was submitted and funded by the Foundation for Science and Technology (FCT) between 2021 and 2024. This research project aims to address: i) a collaborative platform for interactive dissemination; ii) a comprehensive inventory of all of Siza’s built works; iii) a detailed documentation of the 18 buildings selected for the WH Tentative List (which is the main focus of the present booklet); iv) Recommendations for the WH nomination; and v) Dissemination and knowledge transfer.

METHODOLOGY

The research methodology for the documentation booklets is supported by a cross-analysis of different methods and tools: i) archival and bibliographic research; ii) field work observation and surveys; iii) digital documentation such as photogrammetry, virtual tours through 360° photos, 3D BIM didactic model of representative constructive sections and details. This multi-method approach, combining traditional and digital techniques, aims at providing holistic, integrated and comprehensive documentation, providing accessible information for diverse audiences, ranging from specialists to the general public, and a robust framework for management and conservation informed by the attributes of Outstanding Universal Value (OUV) and Álvaro Siza's design principles.

i) Archival Research included the consultation of documentation held by the Serralves Foundation, the Calouste Gulbenkian Foundation, the Canadian Centre for Architecture, or Drawing Matter. In addition, municipal archives and libraries were also consulted to gather as much relevant information as possible. Research included textual and graphic documentation, such as licensing projects, written documents, technical drawings, sketches, photographs, models, and correspondence. Also, comprehensive literature was developed for each building documentation.

ii) Fieldwork encompassed a meticulous exploration of the building's spaces and discussions with staff members, which provided valuable context and enhanced

comprehension of the buildings. To ensure a comprehensive documentation process, an extensive photographic survey was conducted, employing drones to capture both aerial perspectives and detailed captions of the sites. Furthermore, this process included an in-depth analysis of construction details, with a particular focus on tectonic features.

iii) The digital documentation protocol was thoughtfully devised to facilitate the systematic organization and seamless integration of all gathered data, culminating in the creation of a comprehensive and easily accessible archive for future reference. The methodology for digital documentation, framed within the SizaATLAS research project, employs combined techniques to document Álvaro Siza buildings, namely: a) photogrammetry, b) 360° virtual tours, and c) BIM didactic models.

BOOKLET STRUCTURE

The booklets are structured in 9 sections.

The INTRODUCTION provides the background, aims and methodology of the SizaATLAS documentation booklets.

The HISTORY AND DESCRIPTION section provides a general context of the building analysed in the booklet, including the following aspects: place and date of construction; landscape, natural features and preexistences; context of the building commission; design and construction phases; detailed description of the design process supported on archival resources; composition, volumetrics and geometry; programme and

functional organization; promenade and light; tectonics and constructive detailing; Integrated artworks and furniture; awards and recognitions; recent interventions; international impact of the work.

As regards the section CONSTRUCTION, it aims at providing a tectonic perspective of the buildings through a representative section and details focusing on its Structural System, Walls, Roofs, and Frames.

The DESIGN PRINCIPLES aim to clarify Álvaro Siza's original design intent, being a permanent reference for the conservation of the building and an instrument to manage proposals for change. It should also be considered when establishing planning controls for the surrounding landscape, ensuring the preservation of visual relationships and future long-term improvements to the setting. To remain faithful and respectful of Siza's thoughts and design approach, these design principles are based on his own words, namely on a selection of 'aphorisms' collected from his texts, design reports, and interviews.

The ATTRIBUTES section relates to the specific and unique qualities expressed in the OUV for the WH nomination proposal "Álvaro Siza's Architecture: Modern Contextualism Legacy", namely: i) Architecture responsive to a physical, social and historical context; ii) Integration of international and local references; iii) Sculptural volumetric expression; iv) Oriented spatial experiences; v) Total work of art including details, furniture and art works.

STATE OF CONSERVATION is a description of the building's current condition and recent conservation or reuse interventions. In most cases, the buildings have been submitted to recent conservation interventions which adapted them to current legal, sanitary, accessibility or comfort standards.

DIGITAL DOCUMENTATION results from an integrated methodology combining: i) photogrammetry; ii) 360° virtual tours (available through QR Codes); and iii) BIM didactic models. These techniques are adapted to each building with some limitations related with the photogrammetry conditions (vegetation, surface colours, and others) or to the access to the buildings, which was authorized in public buildings, and restricted in private houses and bank agencies.

SOURCES AND BIBLIOGRAPHY refer to the archives and specific literature consulted for each building under analysis.



HISTORY AND DESCRIPTION

The Beires House (1973-76) is located in Póvoa de Varzim, a town to the north of Porto. Also known as the 'bombed house', it features a deliberate abstract ruin-like appearance on one side. Commissioned to Álvaro Siza in 1972, it was designed as a single-family house, with construction taking place between 1974 and 1976.

Situated on a small suburban plot measuring 17 x 30 metres, the Beires House is part of a reticular expansion plan around the city. This plan, lacking significant control beyond a few urban regulations, resulted in diverse forms and materials with little coherence or contextual appropriateness. Despite this unregulated environment, the Beires House embraces its suburban surroundings, acknowledging the city's development, even in an ironic manner.

During the period from 1961 to 1974, Álvaro Siza challenged architectural formalism and regionalisms, seeking to blend vernacular tradition with modern construction principles. This era of international influences and modernization culminated in the overthrow of the dictatorship and the establishment of democracy following the April 1974 Revolution. Siza's contributions significantly elevated the international recognition of Portuguese architecture. The design and construction of the Beires House, completed between 1973 and 1976, occurred during this transformative period, reflecting Siza's belief in harmonizing tradition with modern values. It stands as Siza's final residential project before the 1974 Revolution, conceived amidst profound societal changes in Portugal, where Siza applied a sensitive

and innovative approach to reconciling tradition and modernity.

Throughout the design and construction phases, the project found its initial inspiration in international architectural references due to vague contextual cues. The curtain wall of the front façade recalls the Cambridge University Library by James Stirling, while the influence of Erich Mendelsohn's work became apparent in the conception of the rear façade.

During their interaction, the client suggested Siza explore the courtyard house model applied in the Luís Rocha Ribeiro house in Maia (1960-62/1969), yet site constraints made this impractical. Nonetheless, this sparked Siza's reinterpretation, leading to a spatial reorganization where the courtyard shifted towards the front, nearing the street and separated by a wall. The floor plan's rectangular shape, developed around the small front yard as desired by the client and with the entrance on the east side, distributed the programme over two floors, creating an amphitheatre facing the outdoor space. However, this rectangle was "fragmented" to the southwest, resulting in a violent expression of rupture. This interpretation, resistant to its urban context rather than sentimentally contextual, emerged from these adjustments.

Despite adhering to the alignment regulations for the plot, the volumetric expression of the Beires House evokes a subtle critique of the homogeneity of the idealised dream of suburban life imposed on the Portuguese landscape. Through its

distinctive composition, volume, and geometry, the Beires House challenges conventional notions of suburban architecture. The house features a rationalist parallelepiped volume, complemented by an apse, yet brutally ruptured. This rupture results from both a combination of external forces, stemming from the context, along with impulses arising from the interior spaces and their spatial definition. This combination is evident through a strong dichotomy between the contained spaces and the container, between solidity and fragility, and transparency.

The house's rectangular layout stands in stark contrast to the radial floor plan and the striking curtain wall that faces the front yard. Spanning two floors, the entrance lies on the east side, while the broken rectangle extends to the south and west. The first floor contains the living room, dining room, and study, while the second floor comprises two bedrooms and the master bedroom – with an antechamber and bedroom – which open out amphitheatre-style to the outdoor space. Privacy between indoor and outdoor areas is maintained by a pergola and guillotine windows enclosing the continuous balcony on the second floor's southwest side. Service rooms, positioned to the north, relate to the interior garden area, providing access to the laundry room and garage.

The Beires House juxtaposes its rectangular layout with a radial configuration of partition walls, creating a captivating interplay of perspectives. Manipulating the light from the curtain wall, various shades are achieved through the clever integration of pleated blinds and wooden shutters, adding depth and character to the interior spaces.

The Beires House features a hybrid construction system with concrete slabs supported on load-bearing granite walls. Additionally, the reinterpretation of traditional Minho windows in the modern curtains wall's design exemplifies Siza's incorporation of sculptural plasticity into his architectural style. The complexity of the details of the curtain wall makes the building challenge the technological resources of the time, entering a zone dominated by sculpture and abstract representation in the architect's work. Inside, the system of movable partitions, blinds and sliding doors serves to adapt the spaces to domestic needs while also addressing climatic conditions.

In Siza's office archives, an array of drawings is dedicated to the intricate curtain wall of the Beires House. These sketches encapsulate the challenges posed by its sinuous form and its seamless integration into the overall architectural composition. They showcase Siza's meticulous attention to detail and his pursuit of a harmonious design and underscore his dedication to architectural excellence, making them invaluable assets in understanding the property's unique artistic and functional aspects.

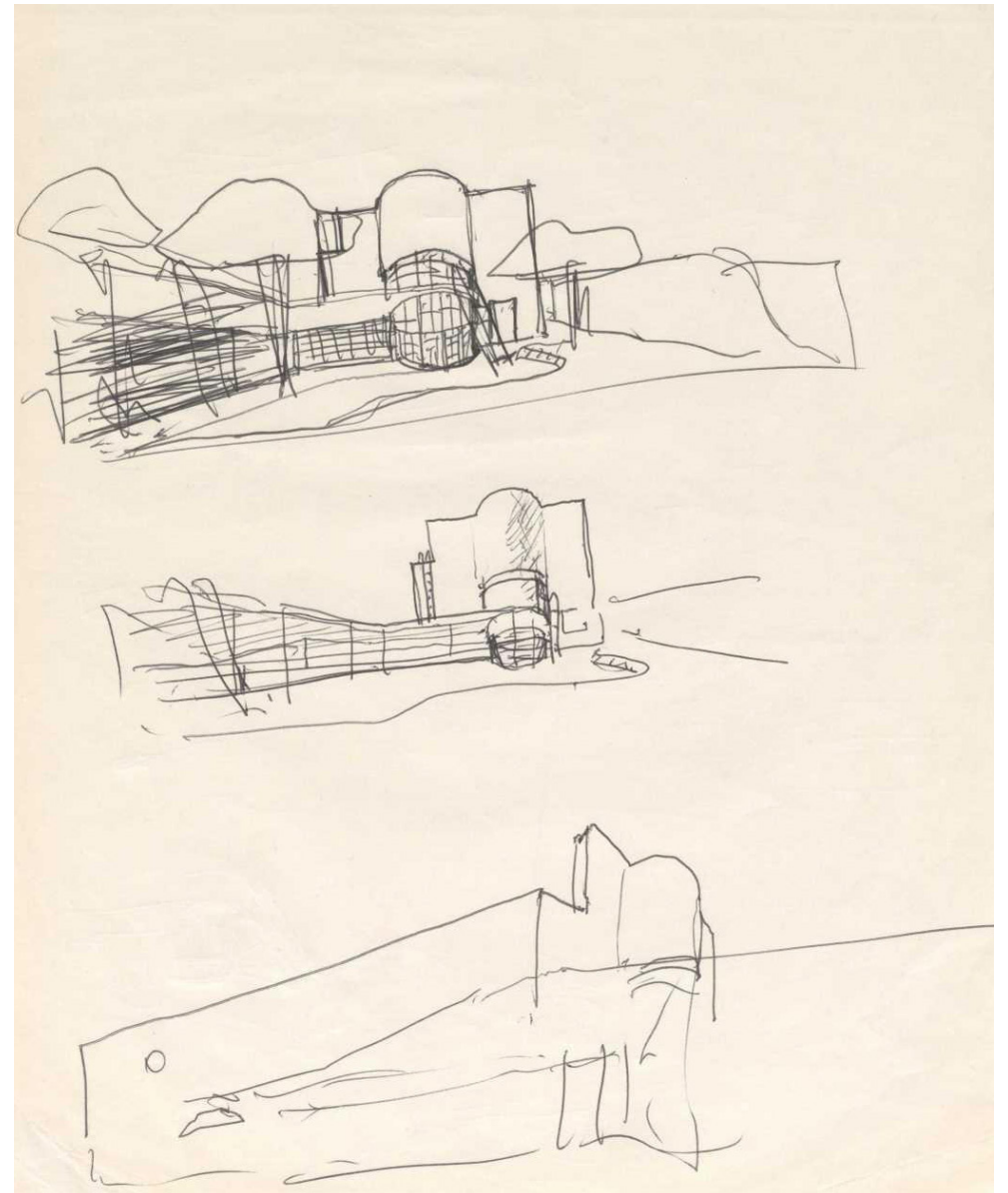
The Beires House is widely acknowledged in essays and interviews as a pivotal work in Siza's career, conceived during a period of significant architectural evolution. Its recognition spans international journals since the 1970s and continues through recent academic publications. Notably, it holds a place of distinction within Kenneth Frampton's seminal work, "Modern Architecture: A Critical History".

The Beires House exhibits signs of wear and deterioration, characterized by reversible damage that does not significantly impede its functionality. Addressing these issues would require targeted consolidation or repair interventions tailored to maintain the structural integrity and authenticity of the property. In fact, despite the lack of maintenance, the complex window system, designed and installed in the 1970s, continues to function perfectly, although it remains fragile.

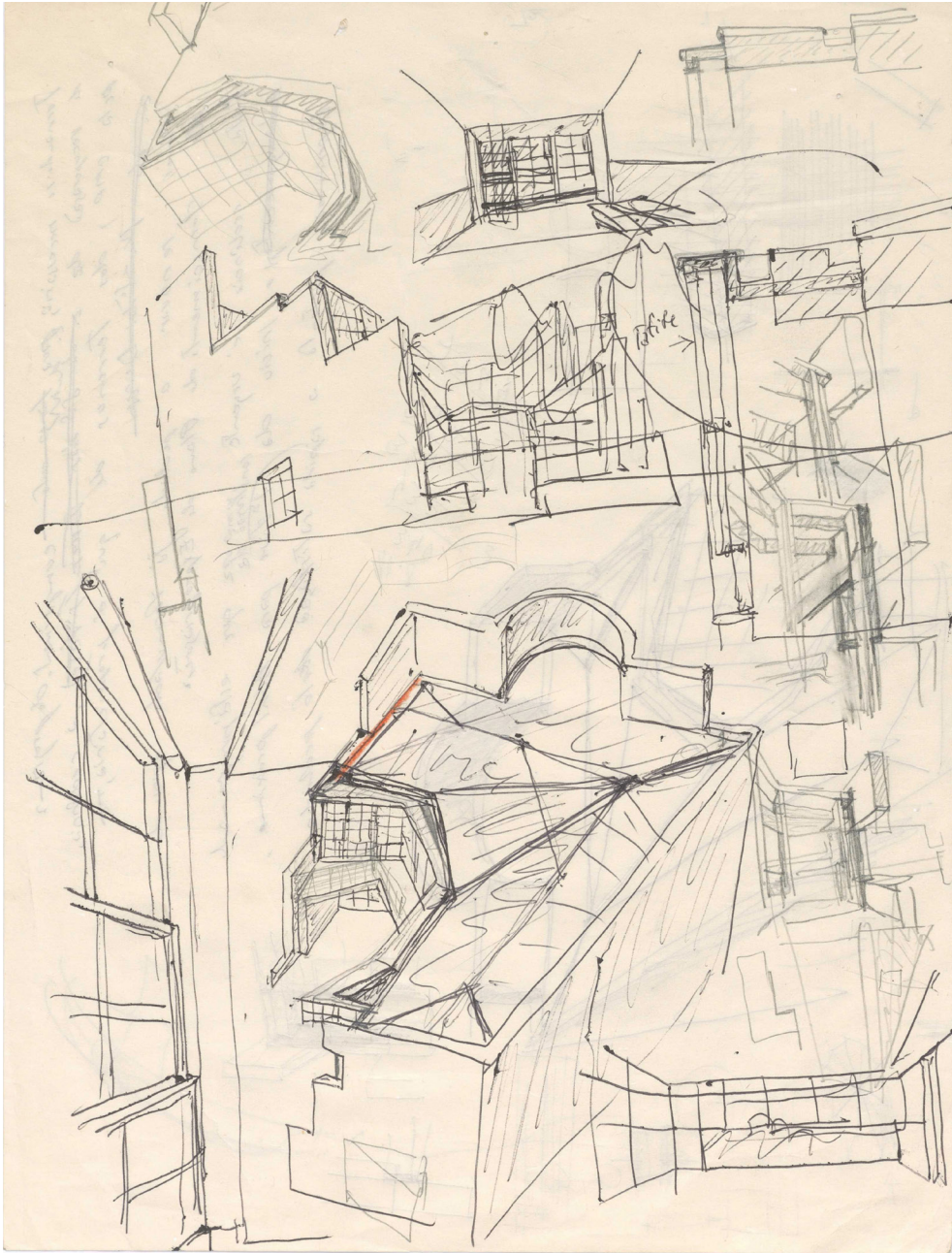
The Beires House has garnered widespread attention since its completion, being prominently featured in publications like "Architecture Mouvement Continuité (AMC)" in 1978 and Lotus in 1979, among other prestigious architecture journals. Continuously cited as one of Siza's most significant works, it remains a focal point in conferences and articles on architecture.



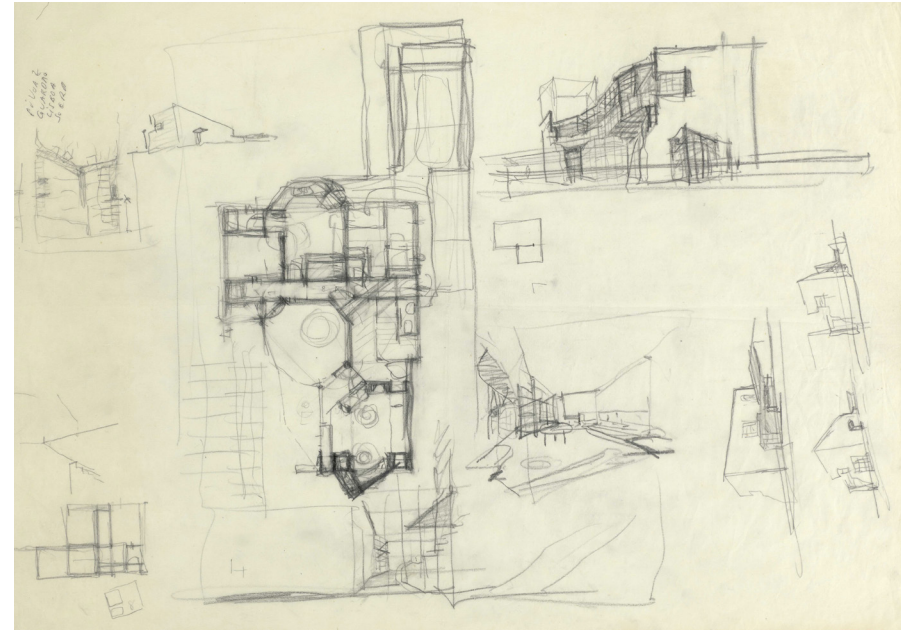
02. Studies for the curtain wall.



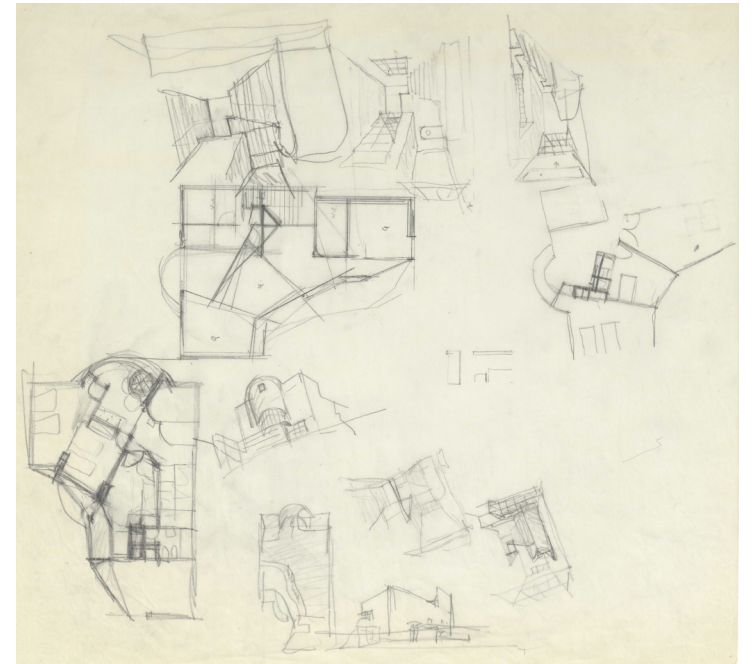
03. 04. General perspectives.

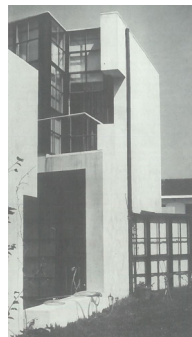
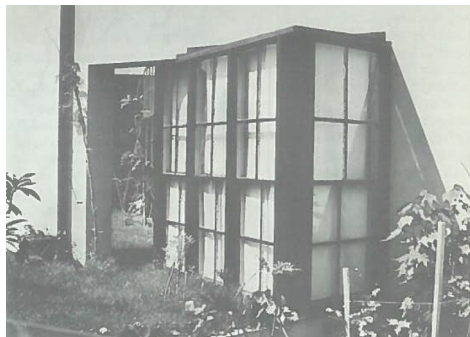
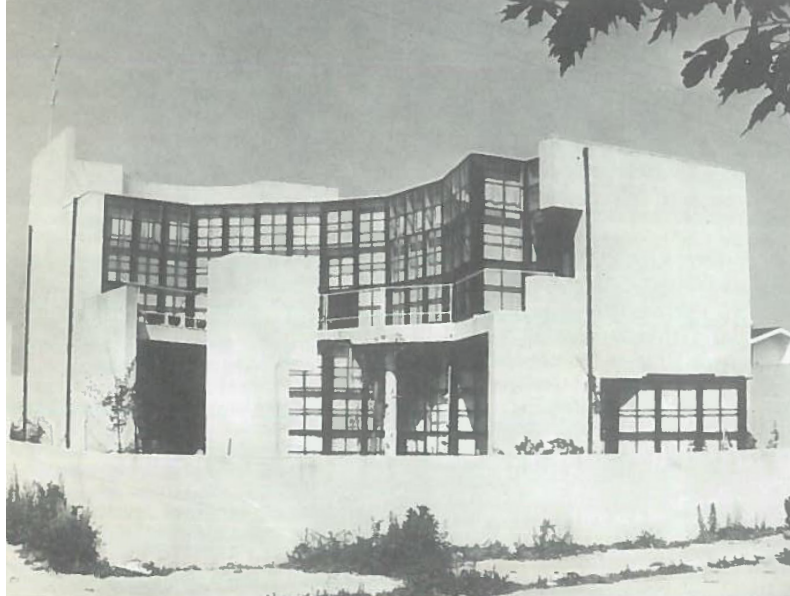
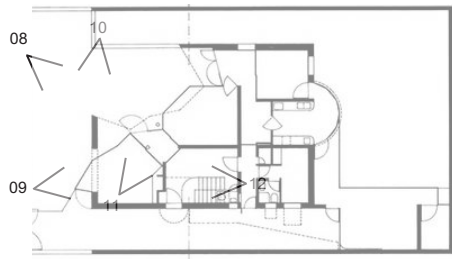


05. Curtain wall and volume articulation studies.



06. 07. Plan articulation studies.

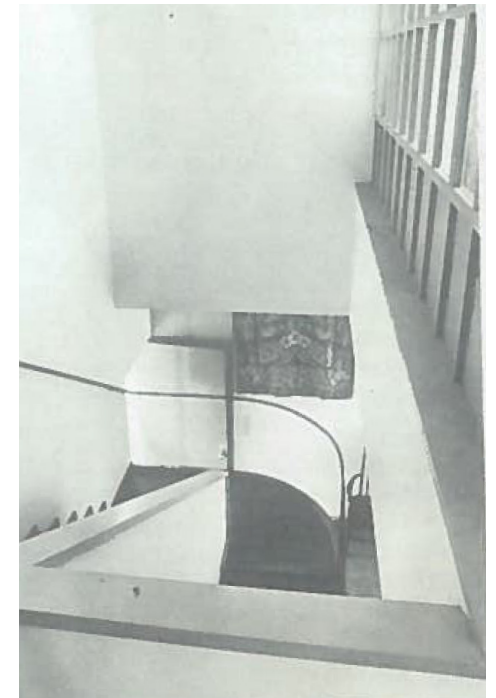




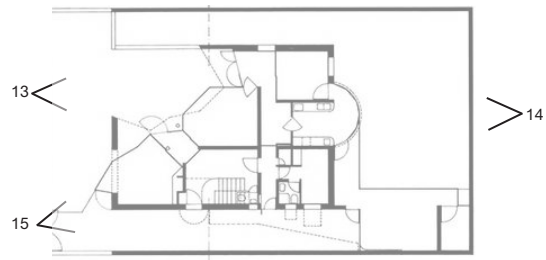
08. 09. 10. Southwest façade with frame details.



11. Living room.



12. Staircase to the first floor.



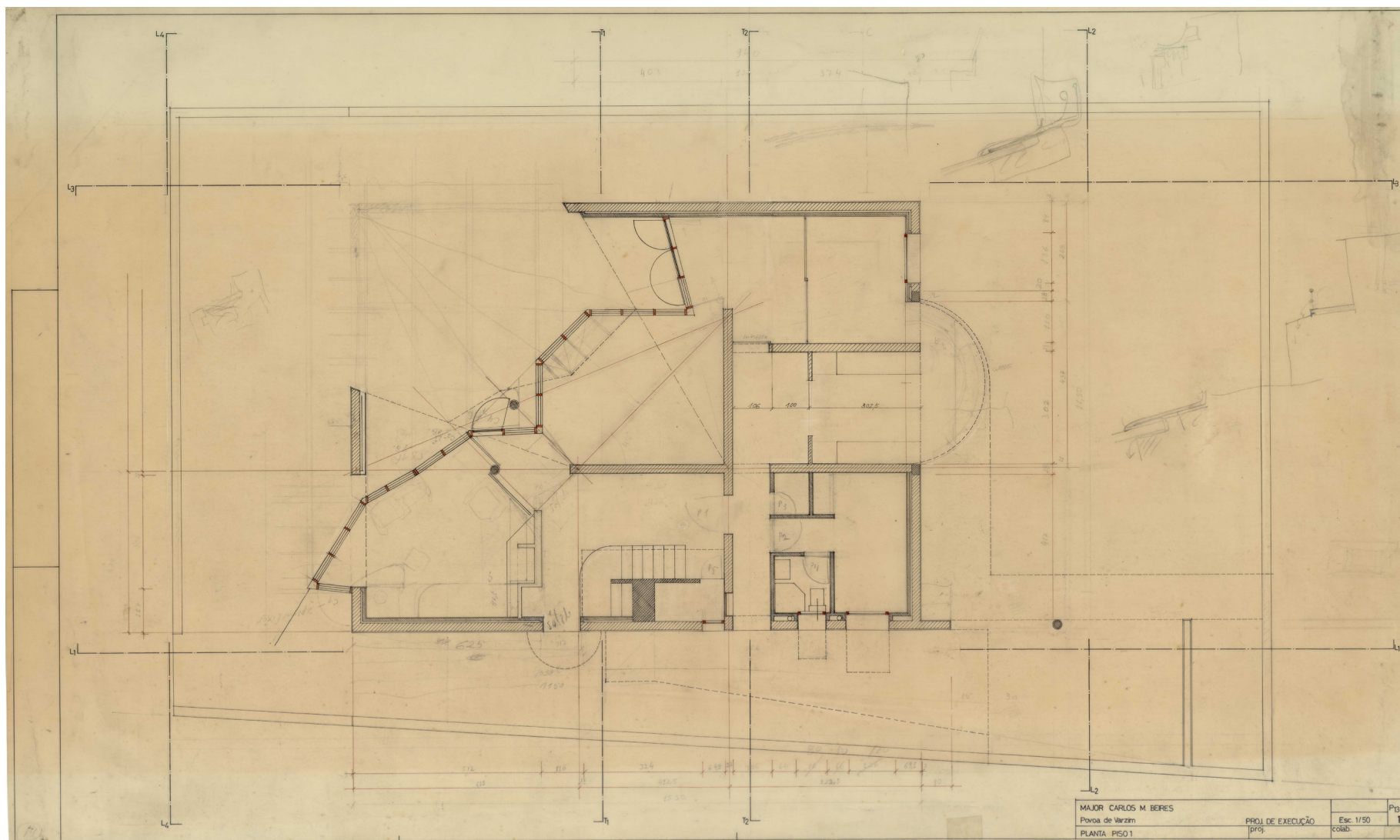
13. Southwest façade.



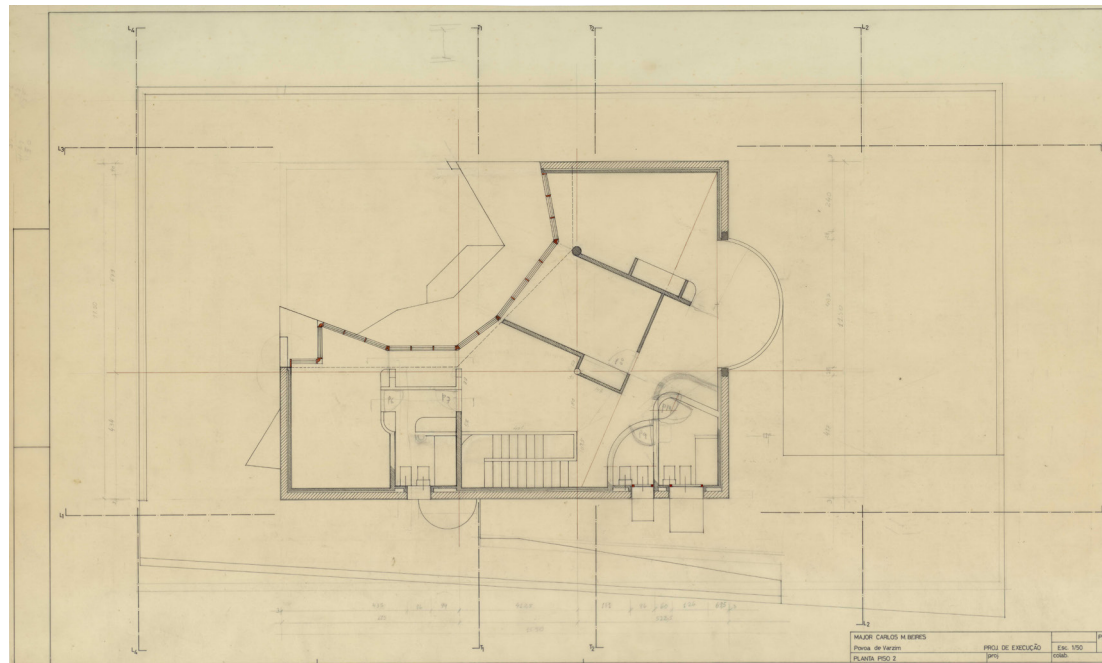
14. Northwest façade.



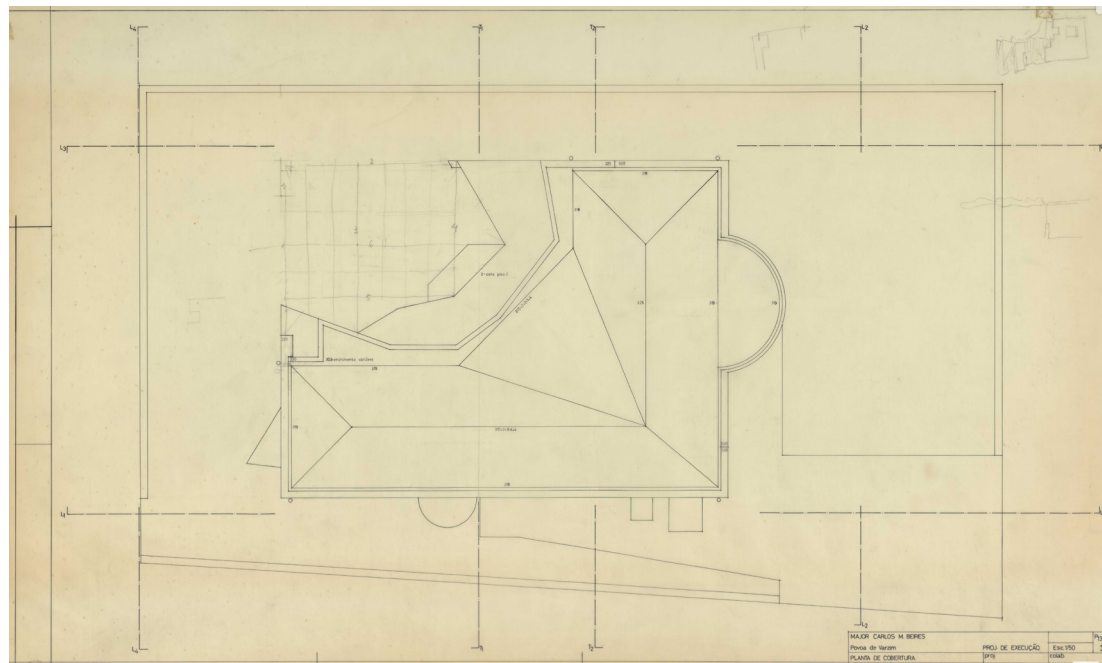
15. Southeast façade.



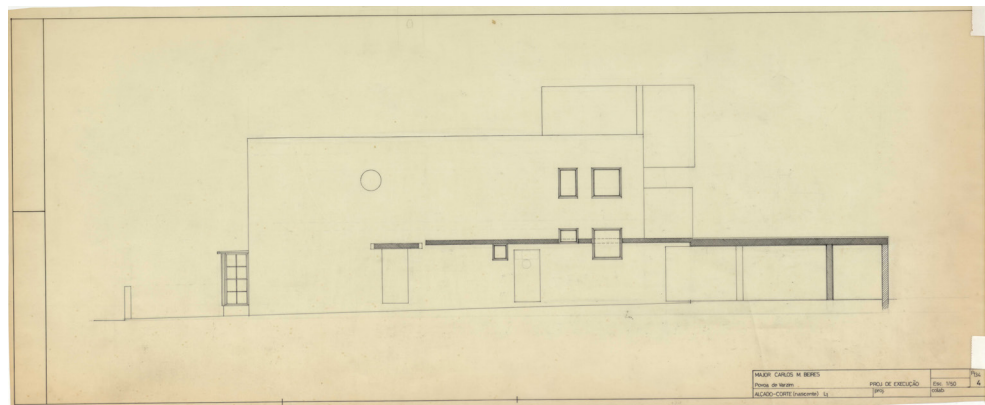
16. Ground floor plan.



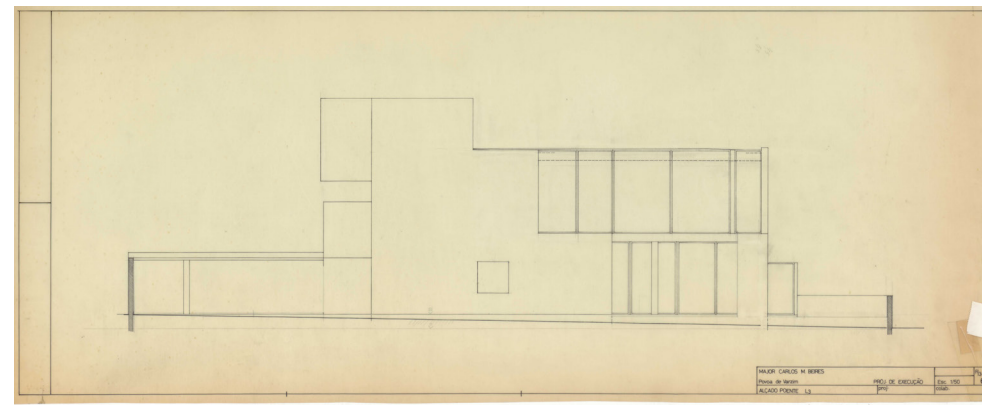
17. First floor plan.



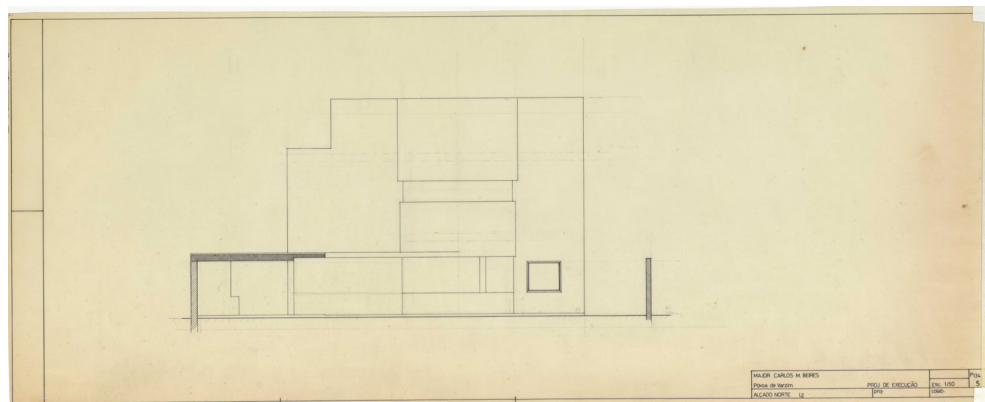
18. Roof plan.



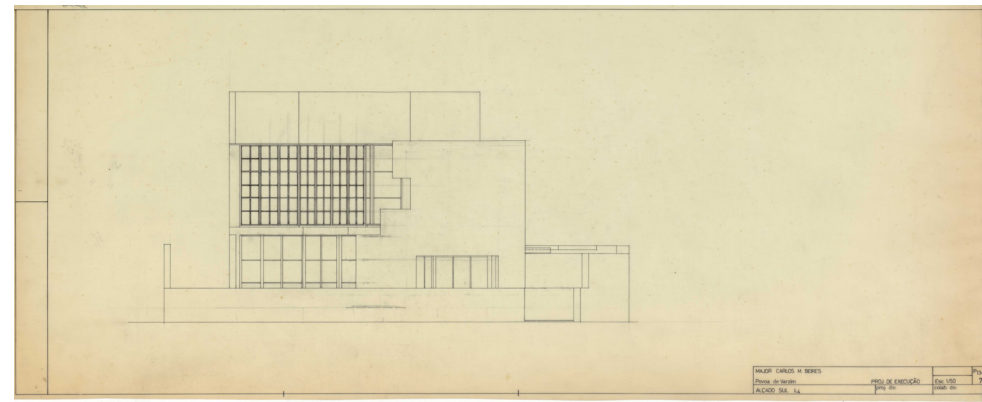
19. East Elevation and Section.



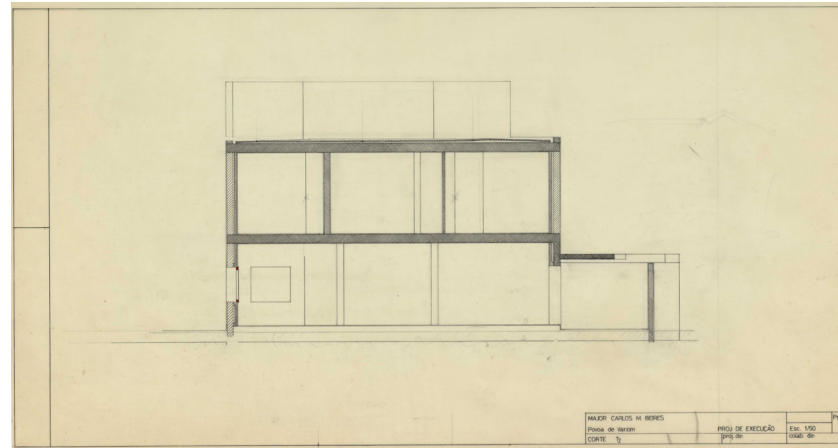
21. West façade.



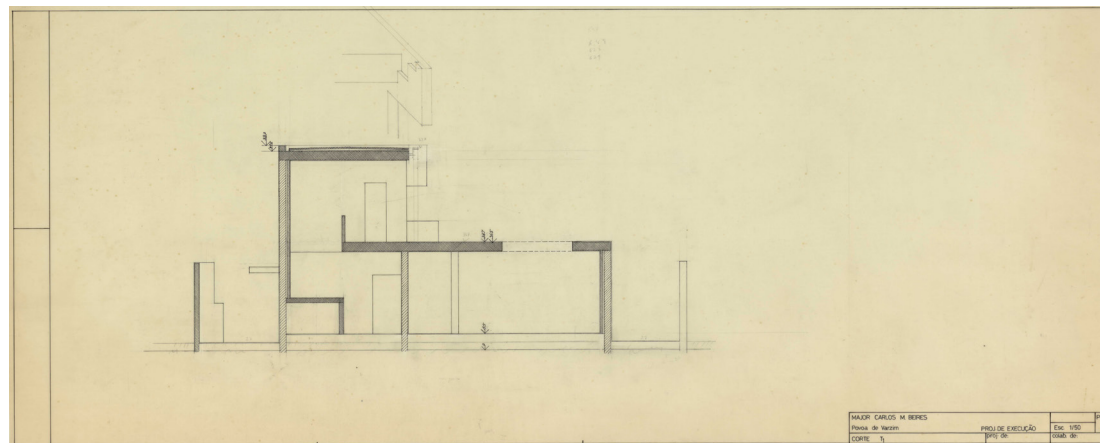
20. North façade.



22. South façade.



23. Section.



24. Section.

CONSTRUCTION

STRUCTURAL SYSTEM

In the Design Report of the Preliminary Project for the Beires House, the structural system is briefly described as a hybrid system that combines traditional granite masonry load-bearing walls, known as *perpend*, with the occasional use of strategically placed reinforced concrete pillars (Siza, 1972: 2). Contrary to expectations, there is no porticoed resistant structure with pillars and beams, popularised by the Modern Movement and widely disseminated at the end of the Second World War.

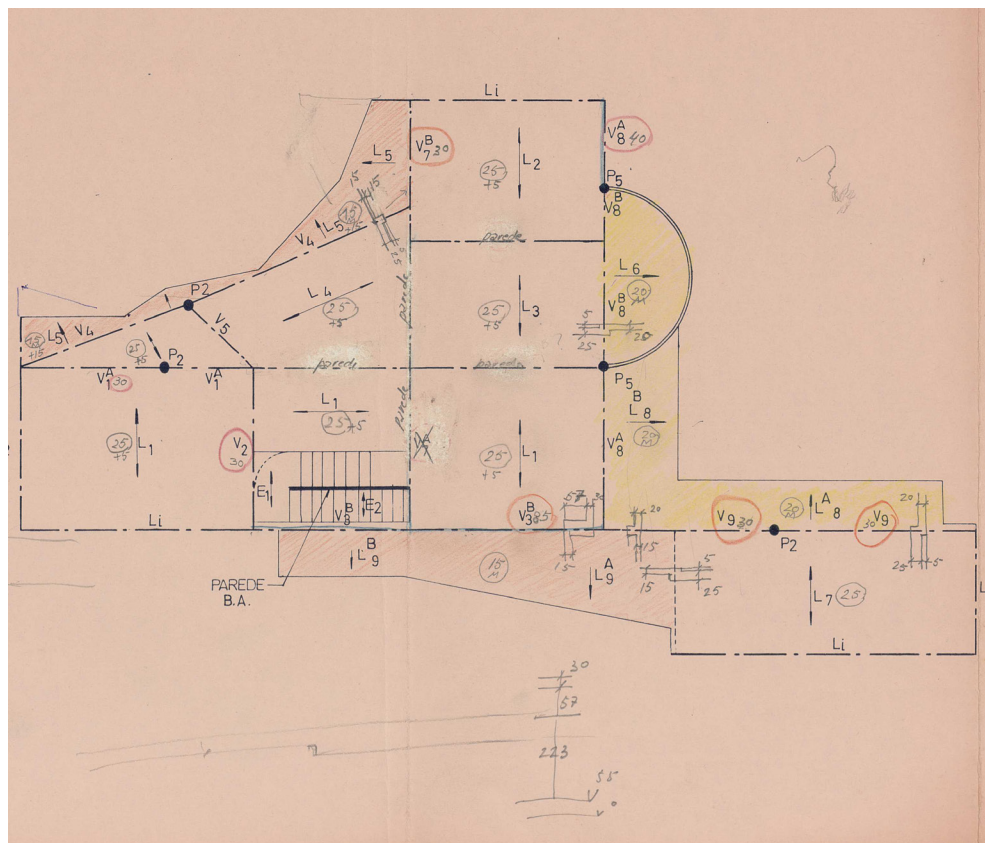
The vertical structure of Beires House primarily consists of 22 cm thick granite masonry walls, both exterior and interior, which rest on continuous cyclopean concrete footings with widths of 70 cm and 60 cm respectively, both 40 cm thick. The vertical structure is complemented by five types of reinforced concrete pillars that support the cantilevered spans, with foundations based on 15 cm-thick cyclopean concrete footings.

The horizontal structure comprises lightweight slabs on the 2nd floor and the roof, with some solid reinforced concrete areas on the cantilevers facing the patio and those corresponding to the bay window. The support beams for these slabs are made of reinforced concrete and are, in most cases, embedded in the thickness of the floors (Tavares, 1973: 1).

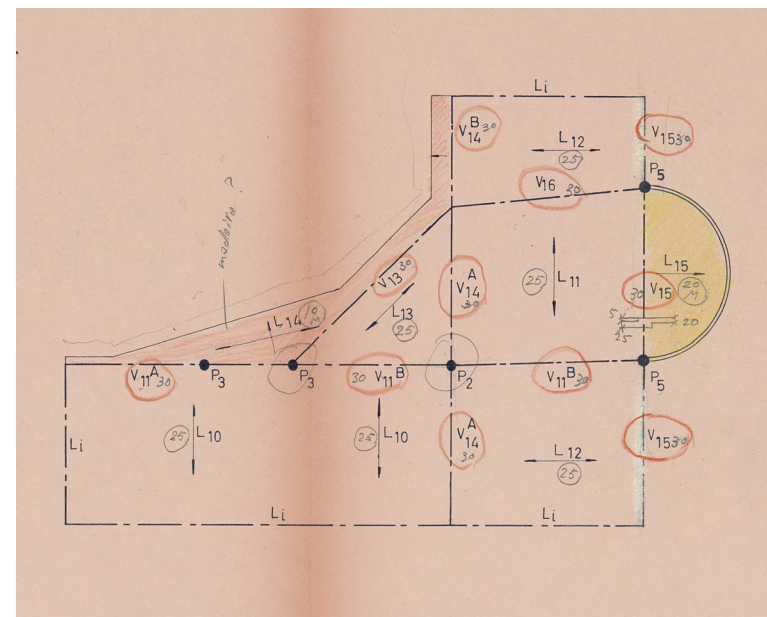
WALLS

Following on from the vertical structure, the exterior walls of Beires House are double-layered. The outer layer consists of 22 cm thick granite *perpend*, and the inner layer is made of 7 cm thick hollow brick, separated by a 5 cm air gap. No thermal insulation is used in the air gap, indicating a belief that the separation between the two wall panels would sufficiently improve thermal comfort. The exterior wall surfaces were plastered and rendered with a mixture of cement, hydraulic lime, and sand mortar in a 1:2:5 ratio (by volume), with a fine sanded finish, and painted with pliolite resin-based paint.

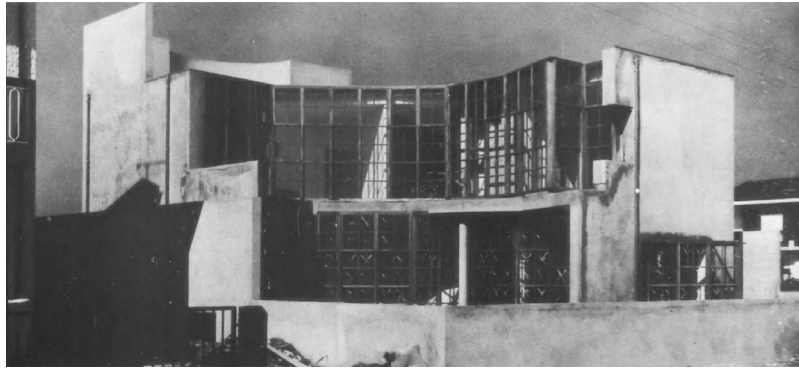
Some of the interior partition walls on the 1st floor are also made of 22 cm thick granite *perpend*. Additionally, there are 15 cm and 7 cm thick walls made of hollow brick masonry. All the interior walls were plastered with a mixture of cement mortar, hydraulic lime, and sand in a 1:2:8 ratio, finished with a sealant layer of cement mortar, white lime, and sand in a 2:4:1 ratio, except in areas covered with ceramic tiles. The interior wall surfaces were painted with pliolite resin-based paint. Skirting boards, except in the bathrooms and kitchen, are made of treated pine wood with a painted finish.



25. Ground floor structural plan.



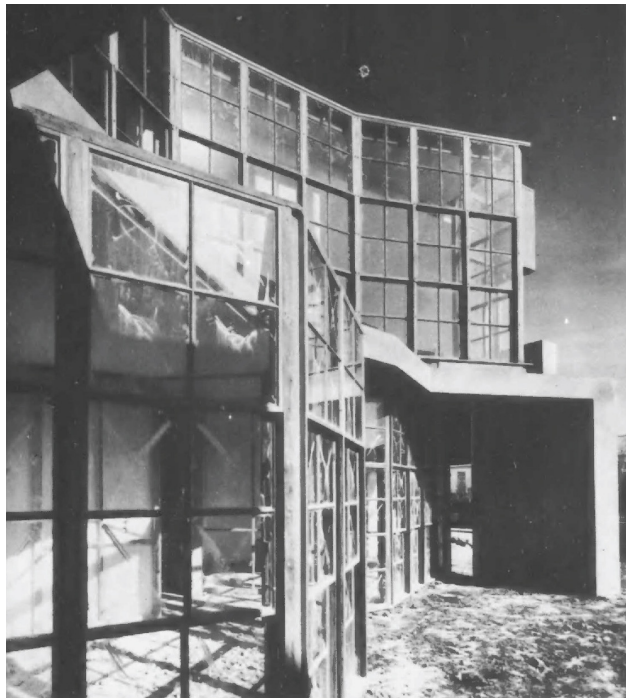
26. First floor structural plan.



27. South façade during construction.



29. South façade during construction.



28. West façade during construction.



30. North façade during construction.



31. Interior staircase during construction.

FLOORS

The first floor is composed of a 20 cm thick gravel box, laid on well-leveled and compacted ground, over which a 10 cm thick light concrete has been applied. This layer is regularized with a cement and sand mortar at a 1:3 ratio, with a fine sanded finish, to receive cement and sand waterproofing mortar at a 1:2 ratio (by volume), enhanced with a water repellent. The 1st floor is covered in 30 x 30 cm hydraulic mosaic tiles. The 2nd floor, except for the toilets, is covered in 0.6 cm thick cork. On the outside, the balcony floor has a troweled screed finish.

The ceilings were plastered and rendered with cement mortar, hydraulic lime, and sand at a ratio of 1:1:6 (by volume), finished with stucco plaster mortar, lime paste, and fine sand at a ratio of 1:1:2 (by volume), and painted with pliolite-based paint.

The entablature of the 2nd floor roof, which aligns with the window frames, features a treated pine wood structure, covered on the underside with 0.6 cm thick plywood, on which the thermal insulation is applied.

ROOFS

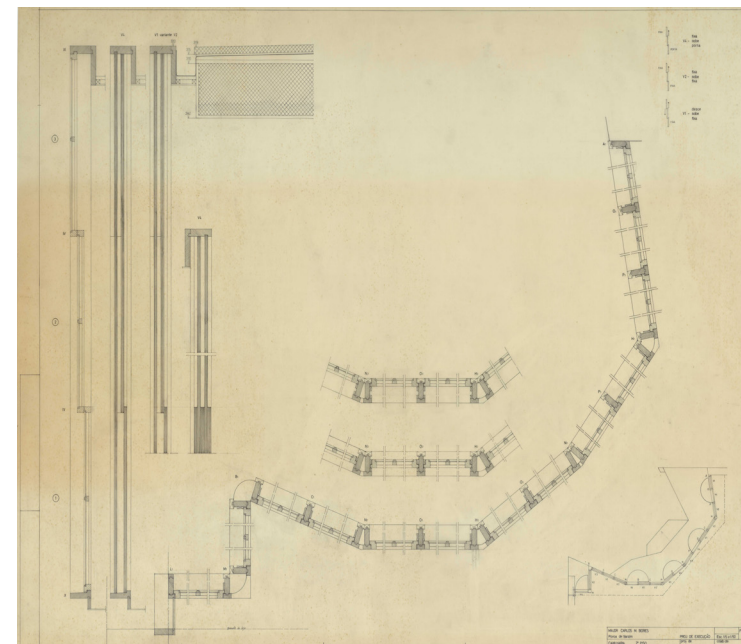
The solution envisaged for the roof slab cladding in the licensing and executive project consisted of a slope-forming layer of aerated concrete, thermal insulation in 5 cm thick black cork agglomerate, and a standing seam zinc sheet finish standing seam. However, this solution underwent a significant change during the construction phase,

and the zinc coating was abandoned, most likely for economic reasons. The implemented solution consists of asphalt sheeting over the formwork, maintaining the thermal insulation in black cork agglomerate, and a final finish in concrete slabs.

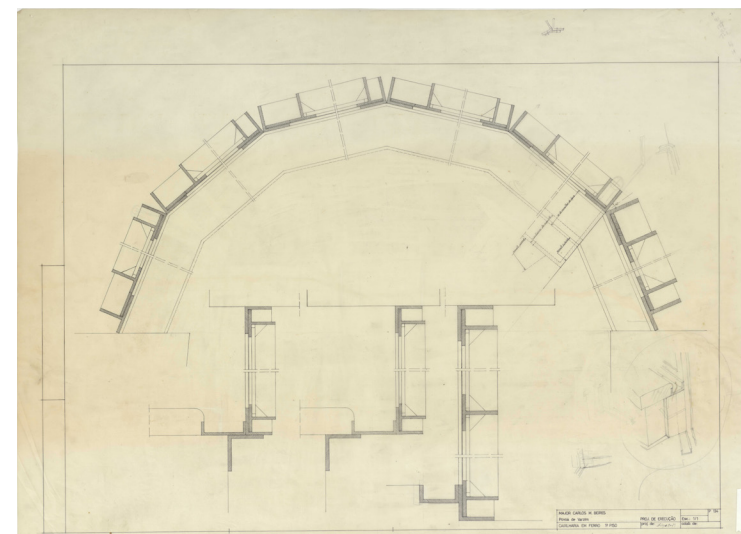
OPENINGS

The exterior window frames of the curtain wall facing the courtyard are made of 'Soprem' treated pine wood, impregnated with 'Bondex' on the outside and painted with enamel paint on the inside. The window frames have single glazing, and the fittings and accessories used are made of brass. The idea of large glazed panels with traditional sash frames, with the muntins having a special expression, finds references in popular Portuguese architecture, particularly in the enclosed balconies, also common in northern Spain. It's important to note that the proportions of these frames are very delicate, just like the traditional ones, making them look like metal profiles rather than wood.

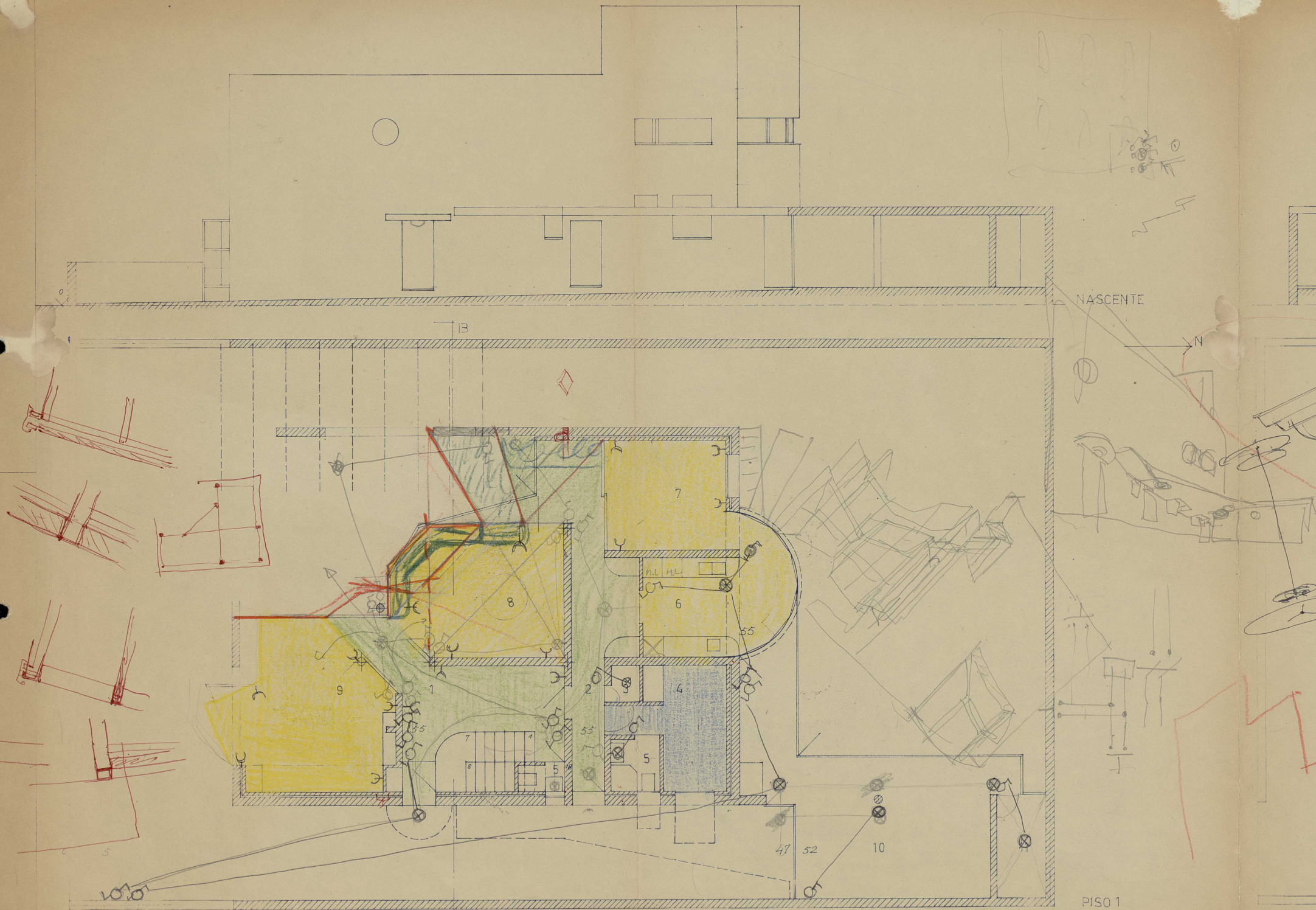
The interior frames, whether fixed, hinged, or sliding, opaque or glazed, are also made from treated pine wood, finished with enamel paint, and equipped with brass fittings and accessories.



32. First floor frame details.



33. First floor iron framing.



NASCENTE

PISO 1

1 ALMOGADOIRO 2 CORREDOR SERVIÇOS 3 DISPENSA 4 QUARTO 5 SANITÁRIOS 6 COZINHA 7 SALA 8 JANTAR 9 ESTAR 10 GARAGEM 11 ARRECADADO 12 ANTE-CÂMARA 13

DESIGN PRINCIPLES

THIS HOUSE IS CONDITIONED BY THE CHARACTERISTICS OF THE PLACE

This house occupies a 17x30m plot, and its volume is conditioned by the Regulations of the area in which it is located, by the particularities of the intended Program and by the characteristics of the place. (Siza, 1973)

THE PROGRAM IS DISTRIBUTED OVER A RECTANGULAR FLOOR PLAN “RUPTURED” TO THE SOUTH AND WEST

(...) the program is distributed over two floors, based on a rectangular floor plan, with accesses on the east side, and the rectangle being “ruptured” to the south and west. (Siza, 1973)

I DECIDED TO SKETCH A COURTYARD WITHIN A GEOMETRIC VOLUME

The client wanted a house with a courtyard (...) however the plot did not allow it. He insisted. So I decided to sketch a courtyard within a geometric volume. (...) Despite being a courtyard house, it is very open to the street. There is a solid wall with windows on three sides and a semi-destroyed, incomplete, broken and fragmented façade. (Siza, 2007, p. 11)

THE INTIMACY OF THE OUTDOOR AND INDOOR SPACES GUARANTEED BY A PERGOLA AND SASH WINDOWS

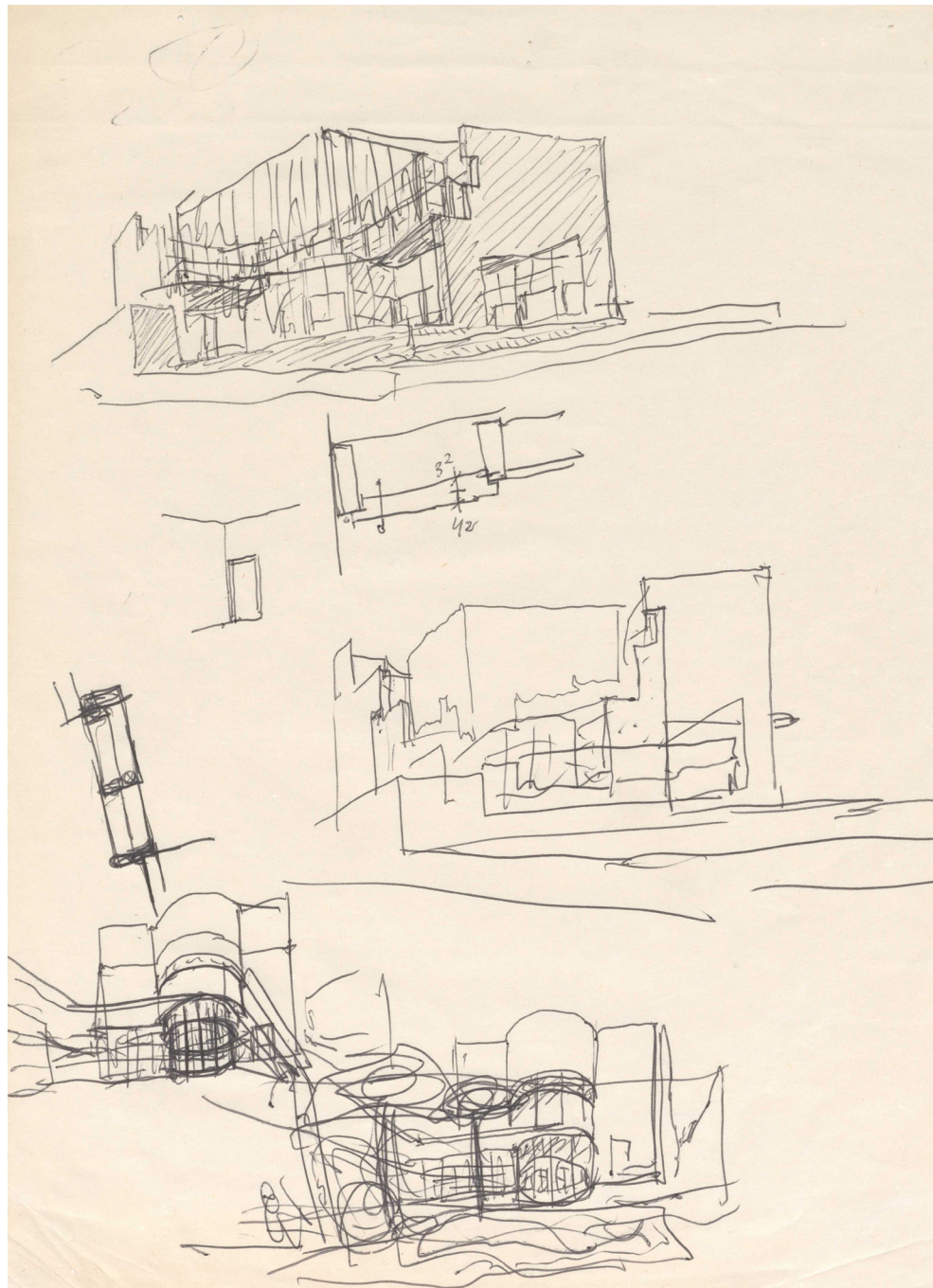
(...) and two bedrooms, facilities for the couple - antechamber and bedroom (on the second floor) open in an amphitheater to this outdoor space, with the intimacy of the outdoor and indoor spaces guaranteed by a pergola and sash windows that delimit to southwest the continuous balcony on the second floor. (Siza, 1973)

THE SHUTTERS COVER OR REVEAL THE LANDSCAPE

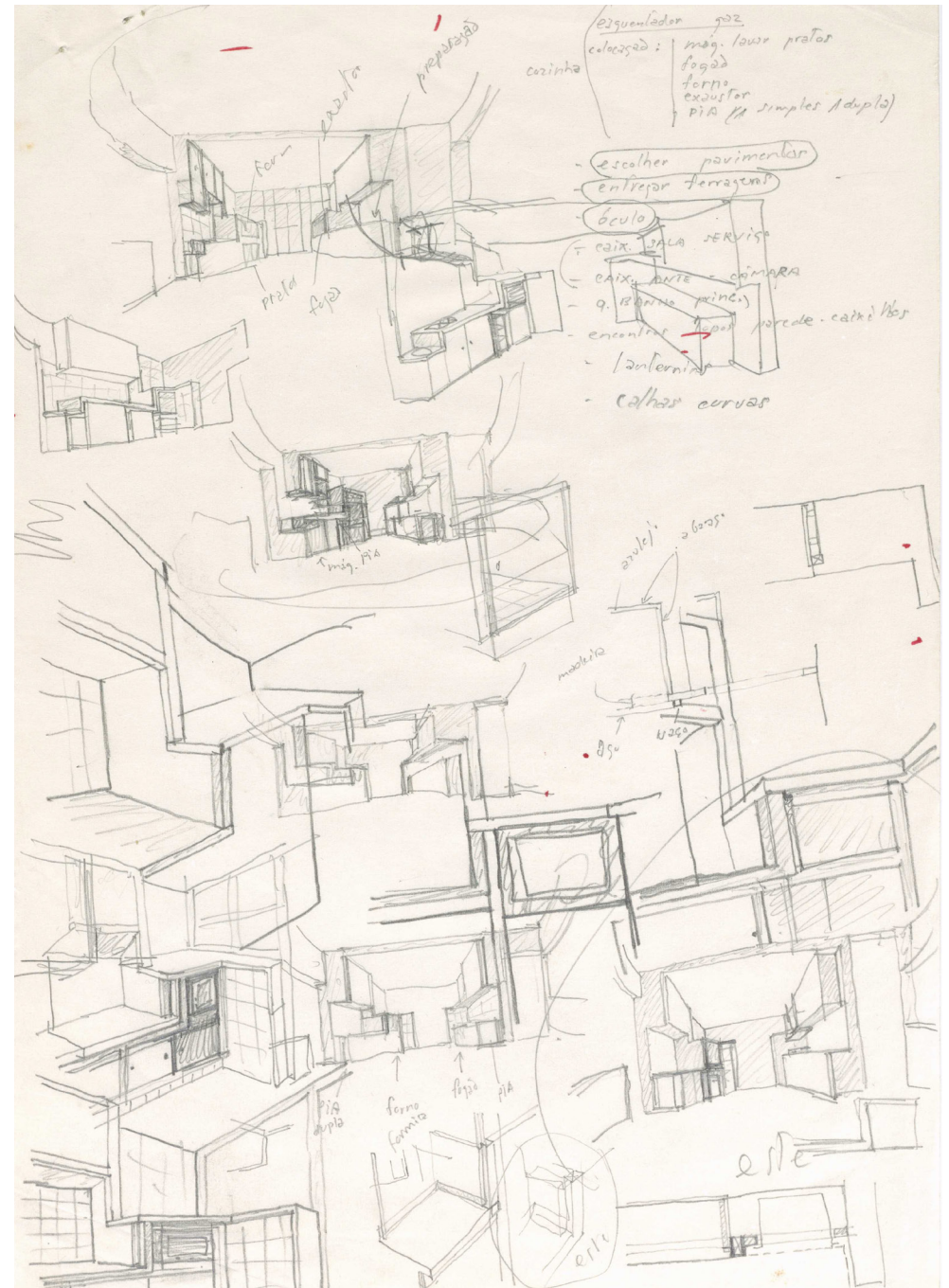
The house does not look small. The shutters cover or reveal the landscape, driven by the desire of those who inhabit it. Nothing depends on me. I observe, oblivious. (Siza, 2017, p. 124)

TIME – THAT ARCHITECT WHO TOLERATES NO MISTAKES

Only time – that architect who tolerates no mistakes – and the sun, filtered through the original curtains and the trees and shrubs that invade the garden, transform the spaces in continuous expansion and inscribe drawings on walls, ceilings and floors: spots of light and shadow that move without haste. (Siza, 2017, p. 124)



35. South and north elevation

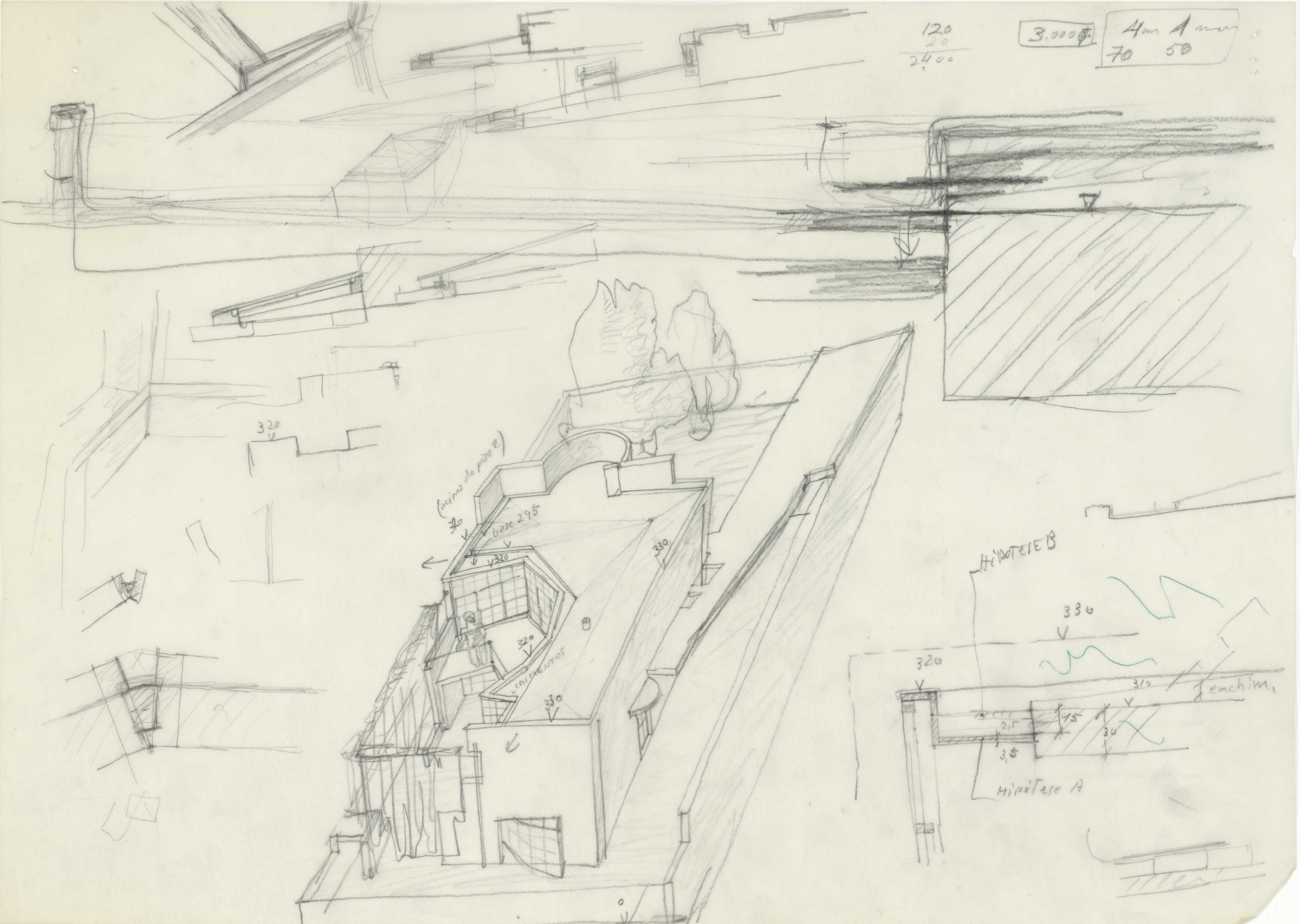


36. Kitchen design studies: perspectives.

120
20
2400

3.000

4m 4m
70 50



ATTRIBUTES

ARCHITECTURE RESPONSIVE TO A SPECIFIC PLACE, LANDSCAPE AND SOCIO-CULTURAL CONTEXT

The architecture of Álvaro Siza provides a sublime and grounded way of understanding the places where it is settled. The buildings, their paths, and their connections to their surroundings are the object of careful study and interpretation. His architectural designs respect the specific conditions of the place, integrating pre-existences, topography and natural elements, and are deeply engaged by a critical analysis of the surrounding landscape. This contextual approach also comprises the intangible qualities of the socio-cultural background, resulting from a broader interpretation of history, traditions, social practices, culture, and ways of living. Building complexes frequently result from the geometrization of pre-existing elements and characteristics of the site to define viewpoints, alignments and composition principles, with the whole responding to a broader interpretation of the landscape and socio-cultural context.

INTEGRATION AND SYNTHESIS OF INTERNATIONAL AND LOCAL REFERENCES

The architecture of Álvaro Siza is able to congregate, allude to and epitomize, in a single project, every period of architecture, from the more archaic to Renaissance, Mannerism, Baroque, and even Modern references. Building complexes are able to renovate and reinterpret Modernism through a

genuine and original architectural composition method, coherently non literally revisiting and summarizing styles, memories, building traditions and local references (including vernacular construction features), during a period of profound social, political and aesthetic changes.

SCULPTURAL VOLUMETRIC EXPRESSION

The architecture of Álvaro Siza has a sculptural quality that results from a very particular combination of volumes, rhythms, and curvilinear and asymmetrical shapes in the rigour and clarity of its outlines. This plastic dimension of his work is far from being superficial or an end in itself, as it is rooted in the ideas that beauty is the guarantee of absolute functional efficacy, and that form should not be limited to following function, but should instead transcend and free itself to be appropriated by users and adapted to new future uses.

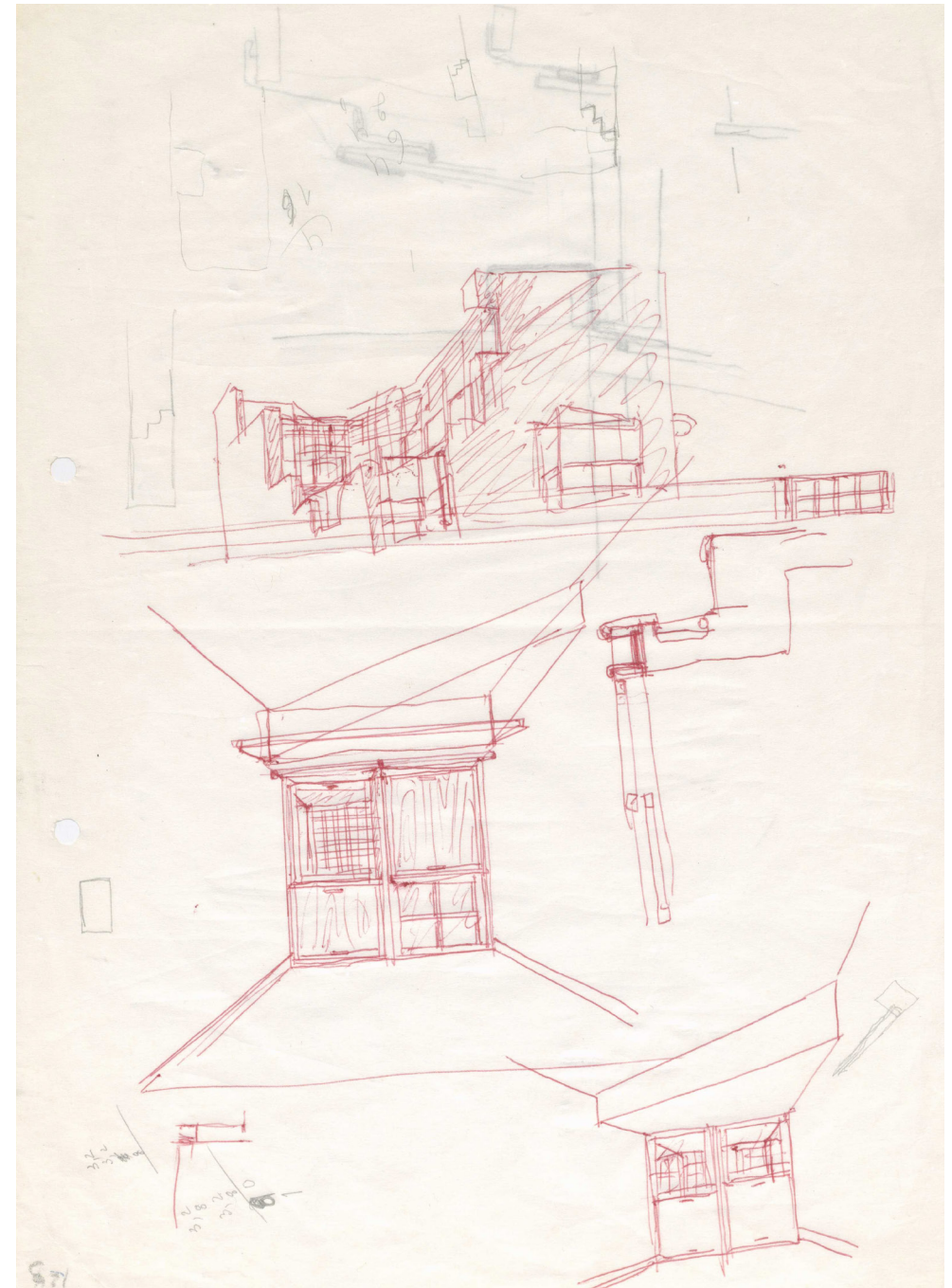
ORIENTED SPATIAL EXPERIENCES

The architecture of Álvaro Siza is inseparable from the idea of movement and displacement of the body through spaces, with the use of movement, light and visual openings. His works are designed as sequential experiences of space, revisiting the rationalist theme of the promenade architecturale, taking it to new heights through zig-zag paths and an imaginative use of the section.

The engagement of the body, in overlapping perspectives, long and short or up-and-down movements, open and closed or light and dark spaces, achieves exciting spatial experiences. Light, both natural or artificial, is of the utmost importance and takes part in the spatial experience in multiple ways, coming through horizontal slits set at eye level, very high clerestory windows framing the sky, continuous glass planes that dilute the separation between interior and exterior, strategically positioned skylights, or artificial lighting concealed in complex ceiling geometries. Besides bringing in light, these openings are carefully thought of in order to frame specific aspects of the surrounding landscape, or as components of long perspectives that go beyond the limits of the building and into exterior spaces, establishing a carefully planned visual indoor-outdoor relationship.

TOTAL WORK OF ART INCLUDING DETAILS, FURNITURE AND ART WORKS

The architecture of Álvaro Siza is the result of a multi-scalar design approach, intertwined with the idea of *gesamtkunstwerk* (“total work of art”), in which every detail (from construction to furniture or artworks) is thought and designed by the architect as part of a whole. The whole and the parts generate and influence each other, introducing spatial tensions amidst the smallest elements, for their superimposition and interconnectedness. Finishings are drawn with exquisite attention to details, inventing trims, connections and transitions between materials and coatings, with exclusive solutions, at times provocative, irreverent and surprising. This particularity is significant and specific to his work, and originates in the “know-how” of Portuguese artists and artisans, imbuing finishings with a surprisingly familiar quality.





AUTHENTICITY AND INTEGRITY

AUTHENTICITY

The conservation works carried out recently have managed to maintain the original design since the alterations have been developed by the architect himself. While some bad conservation work was done in the past, they never affected its shape or design. All current conservation work has not had an intrusive effect on the key components and aspects of the original project, essentially maintaining its design and shape.

The property maintains mostly the fabric of the original materials. Although some materials had to be replaced due to degradation, all the works were monitored by the architect in a delicate collaboration with a specialist, achieving a conservation work that maintains the substance of the material and its shape. The materials that were added in the new project follow the same line of the originals, which have been selected by the architect.

The pools fully maintain their original use and operation as they have such a specific program. Although today the pools carry out other types of events such as guided tours and some social events, the main function of the swimming pool it is still the same.

The urban context of the swimming pool has undergone different changes due to pressure by the real estate development. However, this project is inserted in a protection zone that prevents the development of invasive interventions to protect the urban context. Furthermore, the fact that it is located in front of the sea allows it to maintain visibility towards the coast without factors

affecting the views of the place. The new interventions in the building have been carefully developed by the architect respecting the site.

The pools maintain the original and intimate relationship with nature, being located in the rocky area of the coast of Leça da Palmeira. Also maintaining the building's path that guides the different lights in the space to determine the change between the urban and the natural is an important point that keeps the sensation and spirit that is lived in the building intact.

INTEGRITY

The Ocean Swimming Pool retains a very high degree of integrity as it is maintained in good condition, including all elements necessary to express its values and significance. The building itself retains a high degree of original fabric, including interior fittings and fixtures. Even though the wider landscape has changed significantly, the immediate coastal setting remains largely intact.

The property limits defined by the Buffer Zone include all the necessary elements that express the significance of the Ocean Swimming Pool, namely the access ramp, the changing rooms' building, beach pathways and platforms, both swimming pools, and the immediate surroundings, essential to the property's distinctive setting.



STATE OF CONSERVATION

Carlos Beires House, designed by Álvaro Siza in the 1970s, has retained its original condition reasonably well since its inauguration. However, it is important to note that the building requires some intervention to address certain issues, such as humidity in the ceilings and walls. While the structure continues to function, the wooden joinery facade, a distinctive feature of the design, shows signs of fragility and deterioration.

The curtain wall facade, although still performing its intended function, underscores the need for maintenance to preserve its effectiveness and integrity. The current state of the building reflects the durability of Siza's design but also highlights the necessity for ongoing conservation efforts to address these issues.



DIGITAL DOCUMENTATION

The digital revolution significantly impacts Cultural Heritage safeguarding offering advanced documentation and communication techniques. Modern heritage presents a rich opportunity for study and interpretation due to its diverse documentary, physical, and oral resources.

The methodology for digital documentation, framed within the SizaATLAS research project, employs combined techniques to document Álvaro Siza buildings, namely i) photogrammetry, ii) 360° virtual tours, and iii) BIM didactic models.

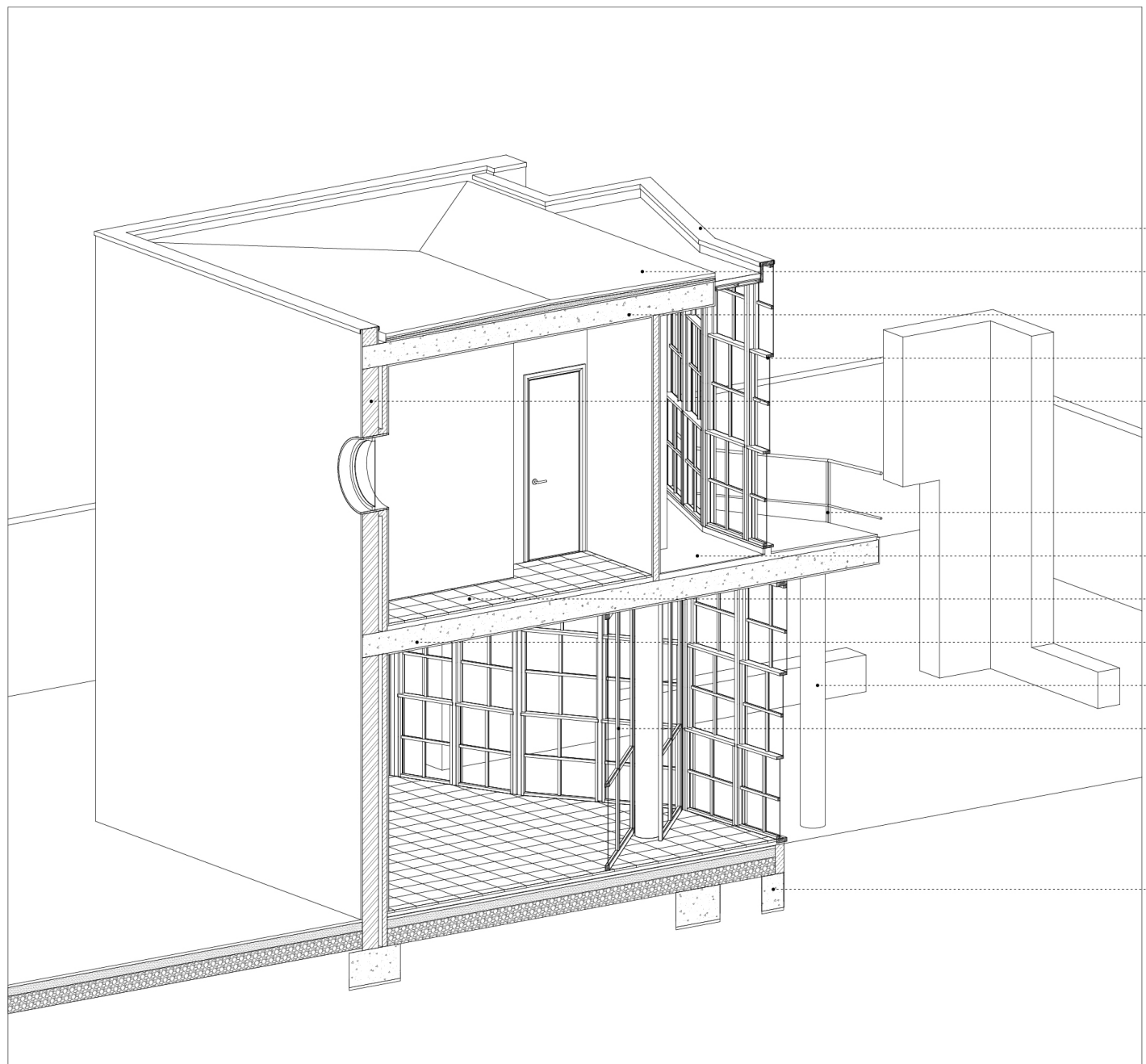
The development process involves is supported on previous analysis of archival and bibliographic documentation and field work observation. This integrated methodology provides holistic and in-depth analysis of the architectural works, expressing their design principles and OUV attributes, spanning from the relation with the context, the local and international references, the oriented spatial experiences, the volumetric expression and multiscalar approach, including construction and details. Also, it aims at info-accessibility and didactic dissemination of Siza's Architecture, allowing for interactive experiences to users all over the world.

PHOTOGRAMMETRY

Photogrammetry facilitates the three-dimensional representation of Siza's architectural works, interactively elucidating their relationships with the context and its volumetric dimensions. When combined with Building Information Modeling (BIM) and other digital tools, it establishes a robust documentation system.

In the last decade, photogrammetry has evolved as a crucial tool for the 3D documentation of cultural heritage, using various types of photos from both the ground and the air. Digital photogrammetry stands apart from traditional methods by employing digital images and computer systems, such as cameras, computers, and specialized software. With computer vision and automated processes, it is now possible to document very complex objects accurately and reconstruct the three-dimensional model with remarkable precision.

Utilizing drone photography from both DGI Air 2 and DGI Mavick Pro, alongside Map Pilot Pro software, comprehensive volumetric data was captured, providing insights into the buildings' integration with their context. This method not only captured the buildings' physical dimensions but also their visual impact on the surrounding landscape. Terrestrial photogrammetry further refined the models' accuracy, supported by Agisoft Metashape software for georeferencing. Employing a BIM approach ensured data interoperability and facilitated the creation of didactic models.



Zinc ruff

Slope formation layer, bituminous sheeting
and finishing with concreteslabs

Reinforced concrete slab 26cm thick

Curtain wall

Double exterior wall in stone
perforation and hollow brick

Metal railings

Cork floor

Hydraulic mosaic floor

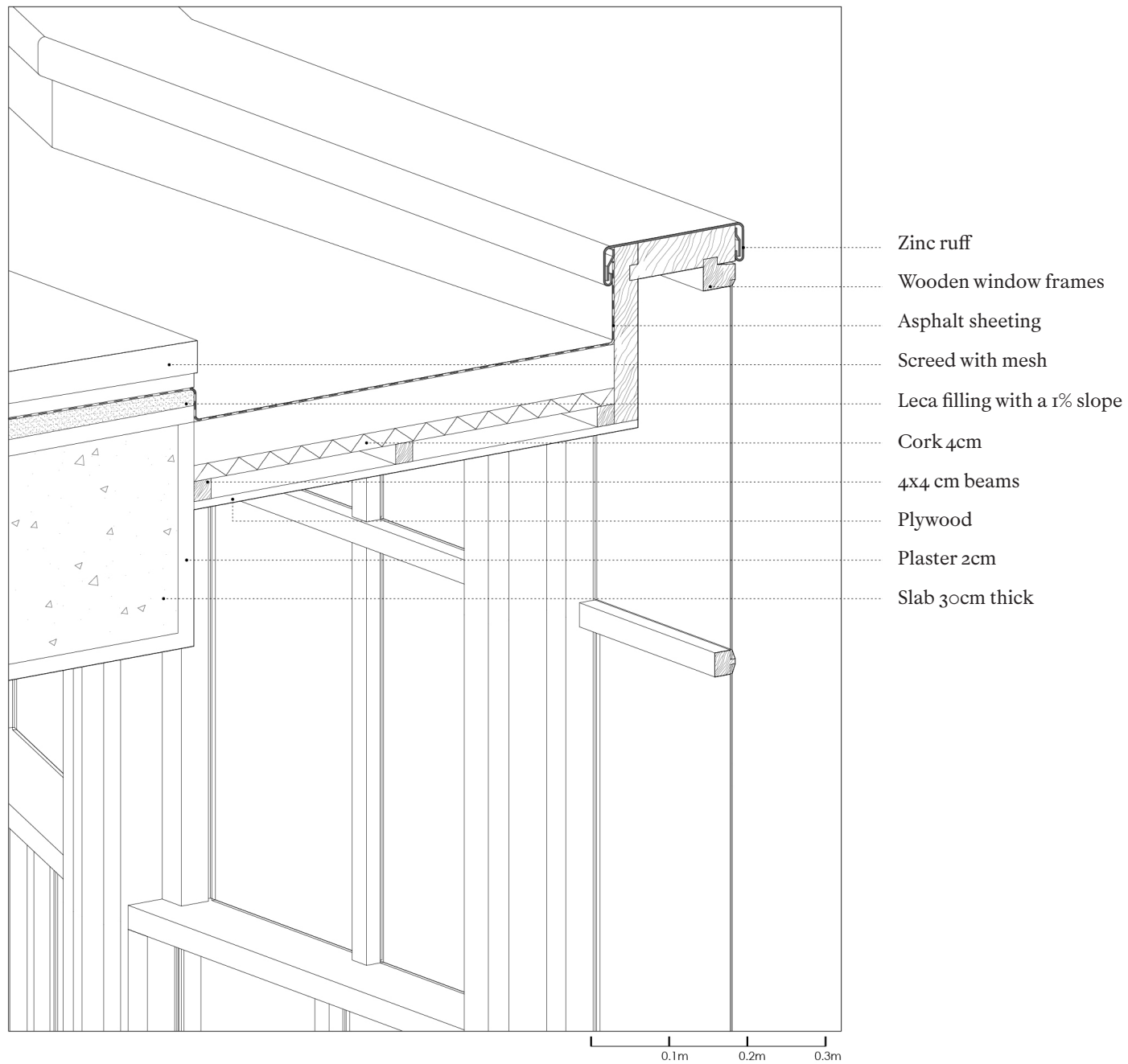
Reinforced concrete slab 26cm thick

Concrete pillar

Sliding panels

Concrete lintel

1m 2m 3m



43. Didactic model (detail), 2023.

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Siza ATLAS: Filling the gaps for World Heritage

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