SIZATLAS

# ALVES COSTA HOUSE


1 Boa Nova Tea House and Restaurant
2 Ocean Swimming Pool
3 Alves Costa House
4 Alcino Cardoso House
5 Bouça Housing Complex
6 Faculty of Architecture of the University of Porto
7 Santa Maria Church and Parish Centre
8 Portugal Pavilion, Expo'98
9 Serralves Museum of Contemporary Art
10 Beires House
11 Malagueira Neighbourhood
12 Borges & Irmão Bank
13 Avelino Duarte House
14 Setúbal School of Education
15 Reconstruction of the Chiado area
16 Viana do Castelo Public Library
17 Pinto & Sotto Mayor Bank
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) 360º 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 sur–rounding 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) 360º 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 Alves Costa House (1964-68) is situated in Moledo do Minho, a parish of the municipality of Caminha, located at the mouth of the Minho River. When the house was built, this former agrarian community was already a highly popular holiday destination in the summertime because of its beach. The project began in 1964, although construction was only completed in 1971.

The surrounding area features detached single-family houses on expansive lots, immersed within a pine forest stretching to the southeast. The Alves Costa House seamlessly integrates with the topography, existing vegetation, and plot shape. Its elongated polygonal form, gently curved to echo the plot's contour, faces northwest. The house's location respects the intrinsic values of the landscape, recognizing it as a key aspect of the area. Placed at the lowest level of the plot, the house seamlessly extends into the exterior space, which becomes a natural addition to the interior. Defined not only by the construction but also by the topography itself, the exterior space comprises a series of interconnected platforms and steps, facilitating movement and articulating connection routes between spaces.

The Alves Costa House was commissioned in 1964 by Henrique Fernando Alves Costa, historian and film critic, at a time when his son, Alexandre Alves Costa, was beginning his architectural studies and working in Álvaro Siza's office. The relationship between the client, architect and craftsmen was founded on deep affection and friendship.

Collaborators on the project included Francisco Guedes de Carvalho and Adalberto Dias.

Situated on the coastal front of a former rural community, the area had been the object of a Preliminary Study for an Urbanization Plan. The house's design aligns with the main guidelines of the plan, with some adjustments made after careful examination of the terrain and its topography. At the time of the construction (untill 1971), there were no buildings on the neighbouring lots. Therefore, the decision to open the house towards the interior while closing it to the exterior wasn't a rejection of the surrounding context. However, we can detect a preventive intent associated with practical reasons listed in the design report, such as a desire for intimacy and protection from the prevailing winds in the region.

While the house was built, Siza grappled with two contrasting design approaches: one advocating complete openness, while the other favoured full enclosure. All the openings were directed towards the pine forest to the west, except for the kitchen, which opens towards the entrance podium, and the two windows facing the street. In a decisive design move, Álvaro Siza opted to paint every element white, including window frames, gutters, and drainage pipes, arguing that there was "too much detail" otherwise.

Embracing the concept of shelter, the design of the house exhibits a façade that is closed towards the street yet opens expansively to the plot's interior. This deliberate arrangement fosters a welcoming and intimate

atmosphere within the interior spaces, maintaining a continuous connection with the courtyard. Floor-to-ceiling windows facing the inner courtyard contrast to the almost blind walls facing the street, which emerge as a telluric and protective mass. Exceptions to this design strategy are found in two precisely positioned openings at the corner, misaligned yet harmonizing with the overall volume and façade. Developed on a single floor, the house takes advantage of the shell-shaped topography of the terrain, which allows the living areas to face inward. Its "L" shape is defined by two volumes with sloping roofs in opposite directions, one of them slightly higher. This configuration optimizes spatial organization while emphasizing the relationship between indoor and outdoor spaces, creating a harmonious balance between shelter and openness.

The house is divided into three zones: on the north side, there are three bedrooms and one bathroom; on the south side, the service area includes the kitchen, a small bedroom, a bathroom, the garage and a laundry room; and in the centre, there is the main entrance and the living room. Positioned at the core of the house, the living room opens towards both the driveway and the courtyard simultaneously. This central space serves as a link between the sleeping quarters and the service area, playing a fundamental part in the functional articulation of the house.

Although primarily a holiday retreat, this home allows for intimacy, even when accommodating a large group. The entrance pathway is delineated by walls arranged at different angles, inviting visitors to discover the house gradually. The exterior to interior transition is made through a dual rotation movement, with the house's entrance revealed only upon approaching the garage. This inflexion, enhanced by the labyrinthine path between the garage and the garden, reflects the intention of isolating the living spaces from the street. Outside, low retaining walls interact with the topography, defining different levels and areas of permanence. One of these concrete walls follows a diagonal path, defining a terrace in front of the living room.

Regarding construction technology, the Alves Costa House expresses the critical revision of traditional systems as a privileged expressive vehicle, reinterpreting the vernacular. As stated by Álvaro Siza, the choice of materials and construction processes answered economic and quality criteria: load-bearing walls made of granite masonry, roof supported by wood trusses and covered by ceramic roof tiles, ceilings made of painted chipboards, hydraulic mosaic for interior pavements, and white painted wooden doors and frames. The sole exposed wooden truss crosses the living room at the edge where the two volumes meet, supported by a wooden pillar. In this house, concrete was minimised and only occasionally employed for the lintels of the larger spans. As in the Boa Nova Tea House and Restaurant, this project reveals the influence of Portuguese vernacular architecture in the design of the roofs, in the detailing of the timber elements and, above all, in the relationship with the site. In this respect, there is a direct connection with the House of Ofir, designed by Fernando Távora in 1957.

The Alves Costa House expresses an integration between the whole and the parts, namely the detail of the wooden window frames facing the pine forest considered in continuity with the roof structure.

The Alves Costa House has been widely recognized since its construction and has been extensively photographed and published. Due to its relevance in the context of 20th-century architecture, the building is inventoried (IAP20, Docomomo Iberico) and is currently under a National Monument listing process.

Given its landscape setting, the Alves Costa House is subject to typical wear and tear, requiring specific maintenance tasks. These include repairing the roof, restoring windows, painting interior and exterior walls, and upkeep of elements like gutters and the chimney.

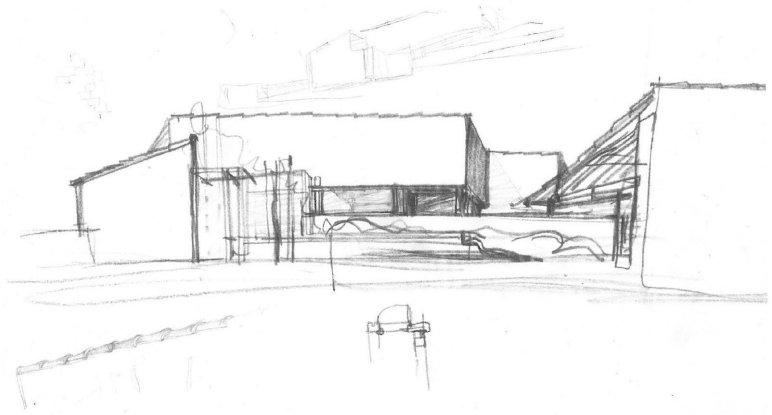
All maintenance work carried out by the owners has been conducted with utmost respect for the integrity and authenticity of the original building. Window restorations, for instance, have not only preserved the original design but also enhanced their functionality, with a careful adherence to the architect's specified color scheme.

The roof, being a vital component of the house, has undergone thorough inspection and maintenance, involving the replacement of damaged tiles and reinforcement of waterproofing measures.

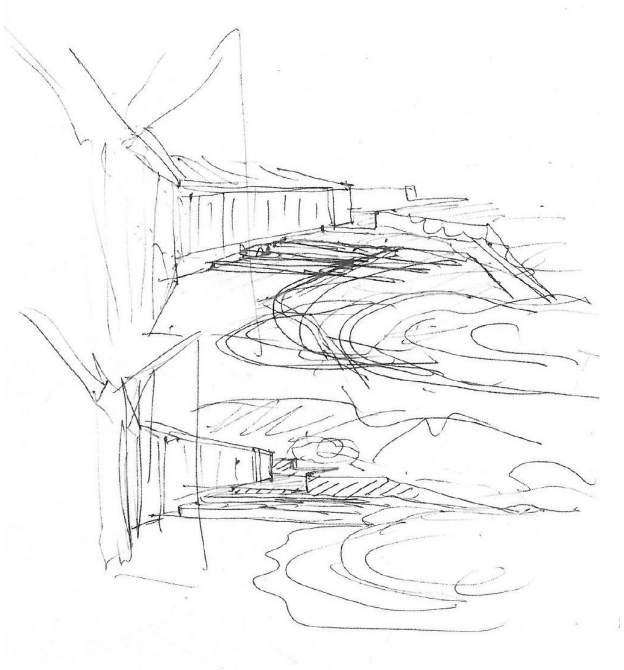
Furthermore, comprehensive conservation efforts have extended to the interiors, encompassing tasks such as repainting walls, refurbishing ceiling panels, and rejuvenating window frames.

Both the exterior and interior pavements have been well-maintained and remain in excellent condition.

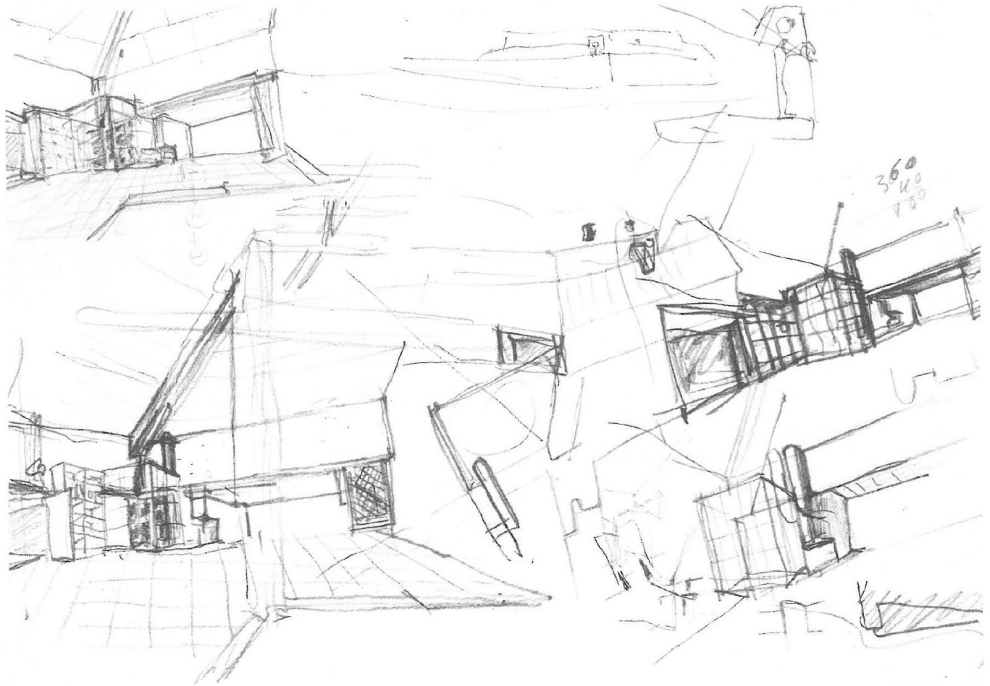
The Alves Costa House gained significant recognition in prominent publications on Álvaro Siza during the 1970s and 1980s, including "Controspazio" (September 1972), "ARQVITECTURAS BIS" (March 1976), and "Quaderns d'arquitectura i urbanisme" (1983). It was also featured in the catalogue for the exhibition "Álvaro Siza arquitecturas 1980-1990," co-produced by the Centre de Création Industrielle, Centre Georges Pompidou, and the Portuguese Secretary of State for Culture. Although this is not one of Álvaro Siza's most internationally publicised works, it represents a pivotal point in his path that justifies the qualities that Gregotti (1972) would attribute him: an unfashionable architect who makes heartwarming architecture, designed with attention and desire.



02. Preliminary design of the building.



03. Studies for the volume articulation with the garden.

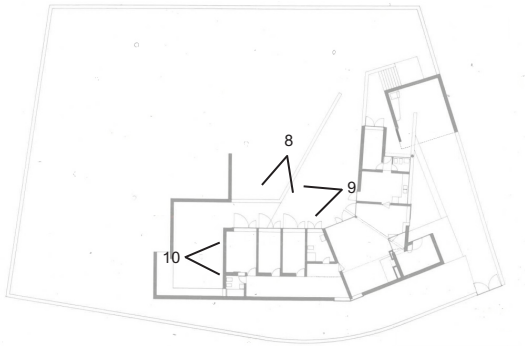


04. Studies for the living room.

05. South façade and garage.

06. Main entrance.

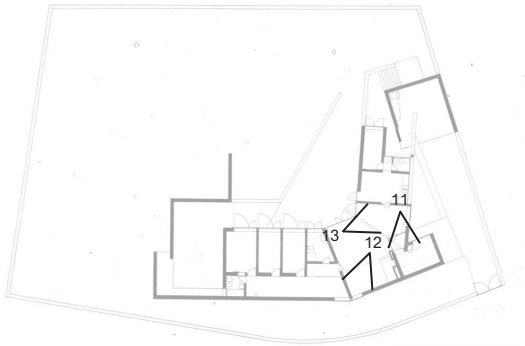
07. Garden access through the entrance driveway.




08. West façade.

09. West façade and garden.

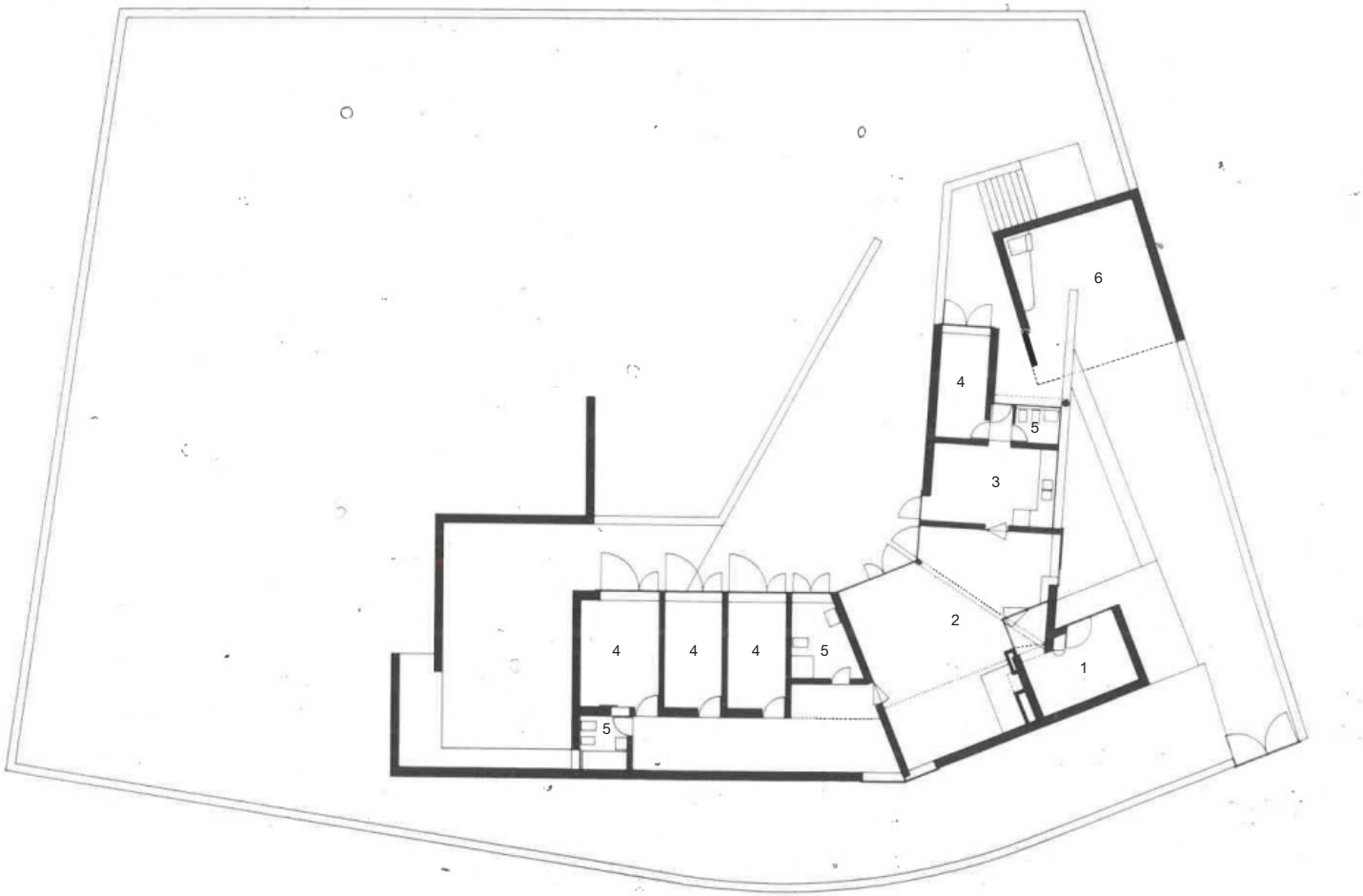
10. North façade.




11. Entrance hall.

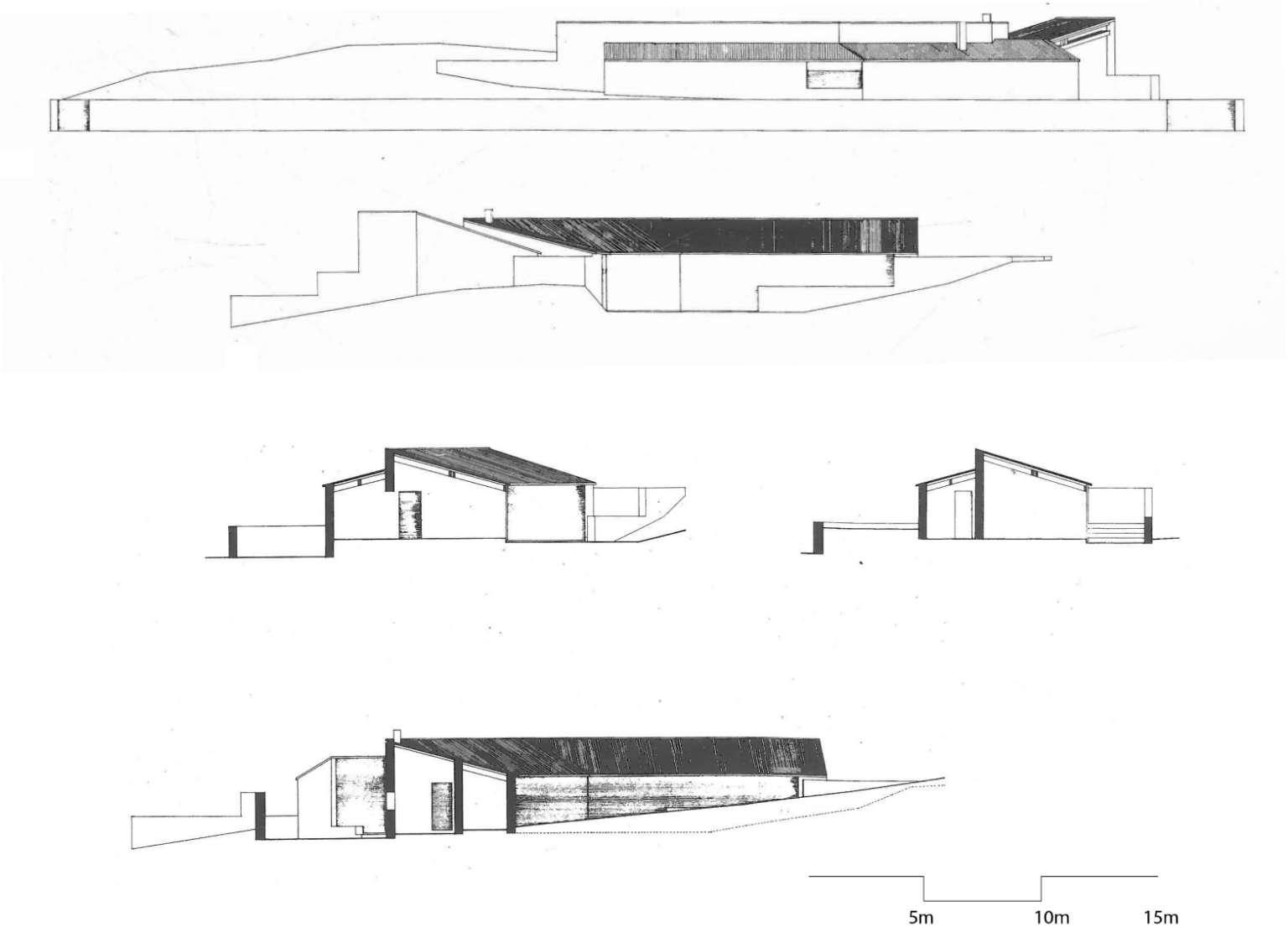
12. Living room.

13. Dining room.




1. Entrance 2. Living Room 3. Kitchen 4. Bedroom 5. Bathroom 6. Garage

14. Floor plan.




15. Elevations and sections.

# CONSTRUCTION

## STRUCTURAL SYSTEM

In the Alves Costa House, “it was decided to build using traditional processes” (Siza, 1965: 1), taking advantage of the availability of artisanal labour. Given the need to contain costs, the option was to make the construction extremely simple, combining traditional stone masonry walls with the occasional use of reinforced concrete, in a mixed system “of an affordable nature” (Siza, 1965: 1).

The vertical structure of the Alves Costa House is based on load-bearing walls made of granite blocks, and the foundations are made of granite perpend, with 28cm-thick rows laid at the bottom, with widths of 50 and 90cm. The horizontal structure of the Alves Costa House is made up of ‘bayerised’ wooden beams on the roof, with a section of 22 x 8cm, supported on the perpend walls and on the intersection of the two main roof slopes, which is made up of two visible beams, in the same wood, supported by a reinforced pillar and the wall.

According to Josep-Lluís Mateo, “the appearance of a double beam” helps to emphasise the theme of torsion in the interior of this house (1983: 35). The horizontal structure is also composed of occasional reinforced concrete beams set in continuity with the stone masonry walls.

## WALLS

Subsequent to the vertical structure, the exterior walls are made of granite perpend masonry, 28cm thick. All the exterior walls are plastered with a sandblasted finish and whitewashed, both on the outside and inside. On the outside, the walls are waterproofed with mortar composed of cement, hydraulic lime and sand with a smooth finish.

The interior partition walls are made of 15cm-thick hollow masonry bricks, with a plastered and whitewashed finish in a creamy white colour. The fireplace is made of refractory brick, including the interior chimney.

## FLOORS

The interior floors are covered with hydraulic mosaic tiles, laid on a levelling screed made up of cement and sand at a ratio of 1:2.5 (by volume), plus 5% water repellent, on a 10cm thick layer of concrete screed, levelled, watered and compacted with a mallet, on a 20cm thick gravel box. The mosaic is laid with cement and sand mortar at a 1:4 ratio.

The exterior floors are made of a trowelled screed laid on a layer of 10cm-thick concrete screed, on a 20cm-thick gravel box, as is the case inside.

## ROOFS

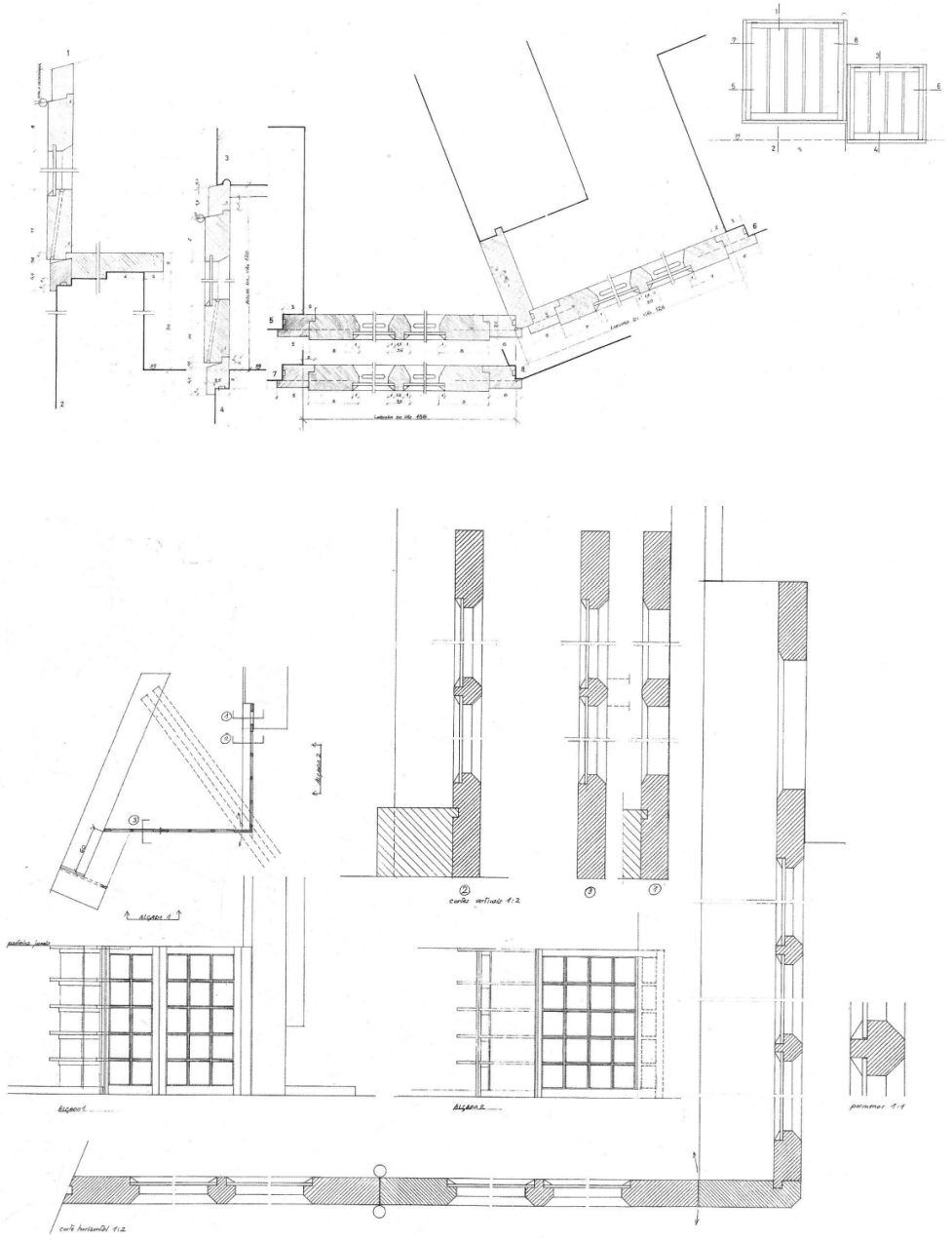
On top of the aforementioned timber structure, 6 x 6cm beams are installed, spaced 45cm apart, supported by 8 x 8cm purlins, covered by a smooth lining board, on which 4 x 2cm slats are laid to support and fit the round ridge 'Campos' roof tiles. All the wooden elements are made of 'Bayerised' pine, like the beams described above.

The ceiling is made of 4mm thick painted 'Tabopan' boards, and 4cm thick cork thermal insulation, fixed to the beams.

## OPENINGS

All the exterior window frames are executed in Kambala wood, 4cm thick, fixed to the openings with brass screws for lathes or brown wedges, and sealed with bituminous sealant. The finish is white enamel paint, over a mortar and oil paint base. The glazed frames have 4mm thick glass, fixed by wooden muntins with brass screws and washers.

The interior frames are made up of "Jomar-Okal" doors, veneered in Kambala wood, with flush edges, including frames and trims in the same wood. The fittings are mostly in brass. All the frames, trims and skirting boards are painted with enamel paint.



17. 18. Carpentry details.

# DESIGN PRINCIPLES

## RESPECT THE TOPOGRAPHY

*There was a concern to respect the topography, in the conviction that changing it, within each plot, implies destroying what is one of the most positive aspects of this area: the landscape.* (Siza, 1965)

## THE LIVING AREAS FACE INWARDS

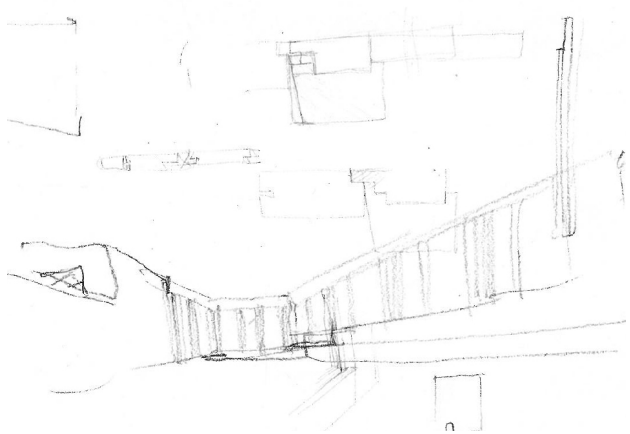
*The house is developed in a single level, taking advantage of the topography of the terrain, in the shape of a shell, so that the living areas face inwards.* (Siza, 1965)

## REDUCTION OF THE COVERED AREA TO THE ESSENTIALS

*The result of this principle is an external extension of the house, limited by the built volume and the relief of the terrain, of sufficient intimacy, sheltered from the prevailing winds, and compensating for the reduction of the covered area to the essentials.* (Siza, 1965)

## ECONOMICAL CONSTRUCTION

*The construction is economical. The walls are granite or brick masonry, plastered and whitewashed, on top of which rests the wooden roof structure.* (Siza, 1965)



19. Study for the west façade.

# ATTRIBUTES

## ARCHITECTURE RESPONSIVE TO A PHYSICAL, SOCIAL AND HISTORICAL CONTEXT

The component part is harmoniously adapted to the topography and to the surrounding pine trees landscape. The 'L' shape provides the intimacy of the use programme as required by the owners.

## INTEGRATION OF INTERNATIONAL AND LOCAL REFERENCES

The building expresses the critical reinterpretation of the vernacular and rational organization of the domestic space with the resonance of the modern vanguards.

## SCULPTURAL VOLUMETRIC EXPRESSION

Its "L" shape follows the geometry of the plot and at the same time creates an intimate and domestic indoor atmosphere. Besides that, the sloping roof makes it possible to differentiate the volumes and spaces.

## ORIENTED SPATIAL EXPERIENCES

The component part evidences an expression of oriented spatial experiences. The paths to access the interior of the house and the pine forest are designed in a labyrinth-like sequence. The house's relationship with the exterior relies on a system of almost blind walls, playing simultaneously a protective role and creating an oriented spatial experience that invites movement and phenomenological experience.

## TOTAL WORK OF ART INCLUDING DETAILS, FURNITURE AND ARTWORKS

The building expresses a perfect integration between the whole and the parts, namely the detail of the wooden window frames facing the pine forest considered in continuity with the roof structure.

# AUTHENTICITY AND INTEGRITY

## AUTHENTICITY

The component parts have not suffered significant changes and maintain the general authenticity of the original design. Minor changes have been carried out to adapt to the current living standards and legislation in compliance with the preservation of authenticity. All conservation works have been carried out with the best methodologies to preserve their authenticity, benefiting from the supervision of heritage safeguarding bodies and Álvaro Siza.

The Alves Costa House is fully consistent with the original design and remains remarkably unchanged since its construction, maintaining its design and shape.

Also, the component part maintains the fabric of the original materials. The natural ageing is followed by accurate periodic maintenance conducted by its owner, fully respecting the authenticity of materials, details and furnishings.

The Alves Costa House maintains its original use as a holiday home. Additionally, it is also frequently visited by architects, researchers and architecture students.

The Alves Costa House urban setting has maintained its original purpose as a low-density housing area with pine trees, and does not face significant development pressures. The proposed Buffer Zone will maintain the authenticity of location and setting. The Alves Costa House maintains a close connection with nature and its spirit of holiday destination near the beach.

Maintenance routine actions are performed by the same local contractors over time, respecting the original traditions and techniques

## INTEGRITY

The Alves Costa House 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.

The component part limits include all the necessary elements that express the significance of the Alves Costa House and the built area is of an adequate scope for presenting the attributes and the cultural significance of the whole. The building has not undergone any significative change since its construction and does not suffer from adverse effects of development or neglect.


Moledo do Minho no ano 1971

# STATE OF CONSERVATION

The Alves Costa House is in a very good state of conservation. It has undergone systematic conservation and maintenace works, ensuring the best stability and safety conditions for its users. Remarkably, no structural repairs were necessary, attesting to the high-quality of the original construction.

Given its landscape setting, the natural degradation and weathering of the Alves Costa House's fabric and material components are normal, requiring localized maintenance of its elements, including roof repairs, window restoration, and interior and exterior wall painting, as well as other elements such as gutters and the chimney.

All interventions carried out by the owners respected the integrity and authenticity of the original building. The restoration of the windows has preserved the original design while improving its efficiency; they were painted in the same colour.

The roof was subject to revision, which included replacing broken tiles and waterproofing.

The interiors were also the subject of a comprehensive conservation action, which included wall painting, ceiling panels, and window frames. Both exterior and interior pavements are in good condition.

# 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) 360º virtual tours, and iii) BIM didactic models.

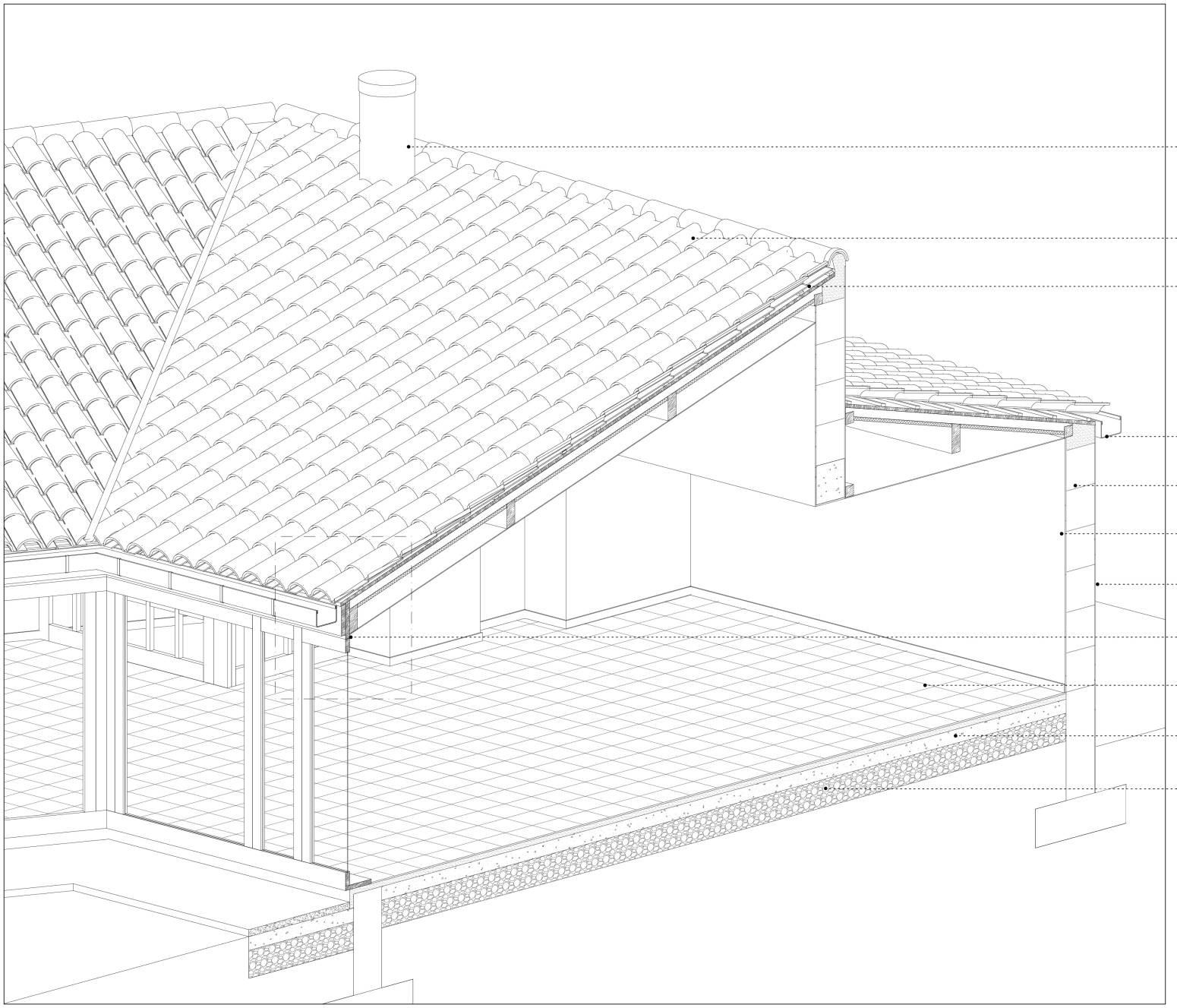
The development process involves is supported on previpus analysis of archival and bibliographc documentation and field work observation. This integrated metholodology provides holistic and in-depht analysis of the architectural works, expressing their design principles and OUV attributes, spanning form 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 word.

## DIDACTIC MODELS

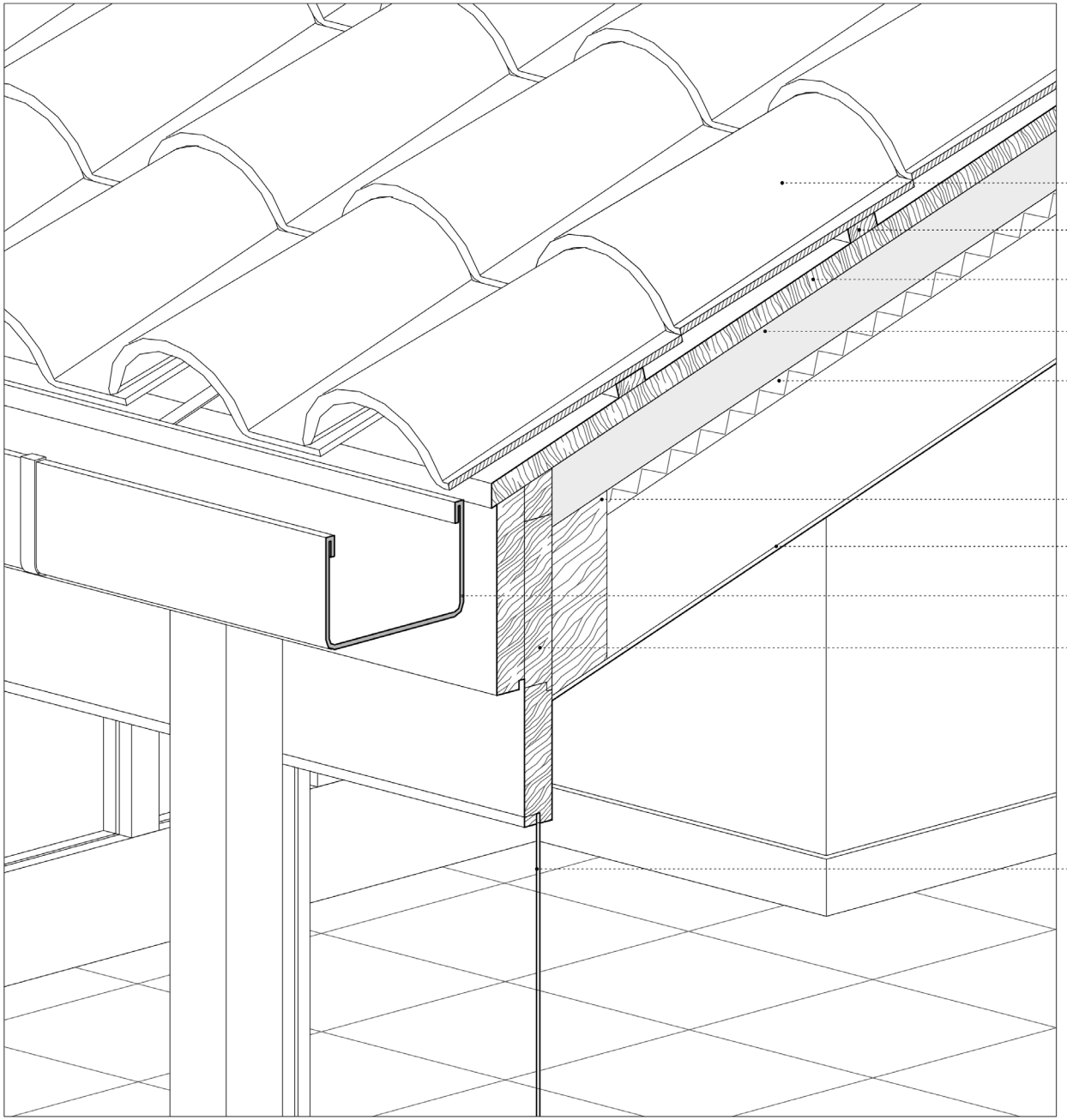
BIM didactic models have as their main objective to conduct a thorough tectonic perspective of a representative section of the building, namely on its construction and material features. Also, by comparing diverse solutions proposed for different buildings within the SizaATLAS research project, the models enable a holistic evaluation of Siza's architectural achievements, emphasizing the integration of form, function and construction.

Drawing representation takes inspiration from Edward Ford's "The Details of Modern Architecture" these models prioritize clear language to disseminate knowledge effectively. The development process of the models involves cross-referencing analysis between archives and bibliography research combined with field work observation.

The Didactic Models offer an integrated approach to examining the architectural tectonics of Siza's designs. Hence, they meticulously detail material layers and construction methodologies, encompassing structural system, walls, roofs, frames and the respective intricate details.




24. Didactic model, 2023.




25. Didactic model (detail), 2023.

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Siza ATLAS: Filling the gaps for World Heritage

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