

SIZATLAS

BOA NOVA TEA
HOUSE AND
RESTAURANT



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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 Boa Nova Tea House and Restaurant (1958-63), located in Leça da Palmeira, a parish and former village in the northern part of the Matosinhos municipality, adjacent to Porto, sits directly on the rocky coastline, near the Boa Nova chapel and a few meters from Leça's Lighthouse.

The Boa Nova Tea House and Restaurant is the result of a meticulous integration with its natural surroundings, fostering a deliberate dialogue with the preexisting rock formations and the nearby chapel. Both the exterior and interior paths are in constant interplay with the sea view. Partially buried on the east side, the building fully opens to the rocks that emerge from the sea to the west.

The commissioning of the Boa Nova Tea House and Restaurant was led by Fernando Pinto de Oliveira, the mayor of Matosinhos, who envisaged an ambitious scheme for the redevelopment of Leça da Palmeira's seaside area with the aim of promoting its potential as a tourism and leisure destination. Álvaro Siza, intimately familiar with the location due to his childhood spent in Matosinhos, conceptualized the design for the Boa Nova Tea House and Restaurant and the Ocean Swimming Pool. His influence extended further with the development of the Plan for the coastal road connecting Leça and Boa-Nova (1965-1974), which also included the monument dedicated to the poet António Nobre (1967-1980), leaving a significant impact in the region.

In 1956, the Municipal Council of Matosinhos launched a public competition for a tea house and restaurant design. The studio of Fernando Távora opted to divide into two groups, each tasked with developing distinct proposals, varying in site location and orientation. One faction was led by Távora alongside António Menéres and Alberto Neves, and the other by his studio partner, the architect Francisco Figueiredo, together with Álvaro Siza and Botelho Dias. Ultimately, Fernando Távora's group designed the winning proposal.

Delegating the project's development to his collaborators, Távora embarked on an expedition to the United States and Japan, funded by the Gulbenkian Foundation. The absence of a topographic plan of the site led Siza and Menéres to conduct an exhaustive survey of the rocks, meticulously assessing the landscape to inform the design process.

A year later, Siza presented an alternative solution regarding the integration of the Boa Nova Tea House and Restaurant into the natural landscape. Távora embraced this proposal and handed the project's authorship and the supervision of the building site to Álvaro Siza. Construction took place between 1959 and 1961, with the opening to the public occurring in 1963.

The engineer for this project was Aires Pereira, and the contractor was Soares da Costa SA, a firm dedicated to the execution of high-quality workmanship. Throughout the construction phase, adjustments were made to better accommodate local climate conditions while preserving the essence of

the original design. The wooden roof structures were replaced with concrete slabs supported by beams resting on either concrete pillars or load-bearing walls.

The construction started in 1959 and lasted until the end of 1961. The official opening only took place in 1963 due to production delays of the original furniture and the assignment of a concessionaire. The building's access and the parking lot were developed right after the opening.

The Boa Nova Tea House and Restaurant comprises three distinct volumes, corresponding to the lobby, the tearoom and the dining room. These volumes are developed in an irregular rectangular plan, dictated by the existing context and defined by two rocks serving as its boundaries. Hence, the roofs are set with varying heights and slopes, contributing to a dynamic and sculptural volumetric expression through a combination of shapes, planes and heights. In the lobby area, the wood ceiling opens, fragmenting the landscape so that views of the sea, sky and land are framed separately. Inside, the ceiling "frees" itself from the roofs, creating new planes inside each volume. This design generates a sense of tension between the interior spaces and the outer shell.

The Boa Nova Tea House and Restaurant's is designed to offer an immersive experience, in harmony with its natural context. The building's layout is organized in two main rooms, strategically positioned to maximize their connection with the landscape, with one room slightly elevated above the other. The smaller upper room, originally intended as a tearoom, features windows facing

south and west, while the larger room serves as the main dining area, with west-facing views. Notably, the design includes a unique feature inspired by Mies van der Rohe's Tugendhat House, allowing the dining room windows to descend into the ground, seamlessly extending the dining space onto the outdoor terrace while inviting the sea breeze indoors. Service areas, including the kitchen and the staff area, are located and organised on the east side of the building, facilitating independent or simultaneous operation. The main entrance is positioned beneath an overhang of the roof, on the upper floor of the highest volume. Within the lobby, a reception counter is situated to the left, adjacent to a waiting area and public bathrooms, with a staircase leading to the lower level. Above the staircase, a skylight and window frame the horizon between the sea and the sky, no longer visible when walking down the stairs. Upon reaching the lower floor, visitors encounter the bar to the east, the tearoom to the south, and the dining room to the north, offering panoramic views of the sea, rocks and sky.

Siza's design extends beyond the building itself, seamlessly integrating with the surrounding landscape. A carefully curated path offers visitors surprising views, guiding them to the entrance. The approach to the building begins in the parking lot adjacent to Boa Nova Beach to the south. Here, a white retaining wall emerges from the ground, creating a height difference with the landscaped area. At the end of this wall, a concealed flight of stairs determines a change in direction. One no longer sees the building as the sight is directed south to the beach and the sea. Turning west again, the visitor

has its first close contact with the rocks over which the building sits. One last set of stairs leads to the building's entrance, located under the roof overhang. Here, the low ceiling encourages visitors to stoop slightly as they pass through, creating a sense of intimacy and anticipation.

In this work, Siza introduces elements of traditional architecture through white painted walls, tiled sloped roofs and wooden elements. Also, he introduces modern techniques, such as reinforced concrete pillars and slabs, showcasing an exceptional integration of traditional and modern construction techniques. Furthermore, Siza's attention to detail is evident in the incorporation of decorative wooden elements, such as the protruding boards framing the skylights or the wainscot, which follows the stairs' profile. These details draw inspiration from a range of international architectural influences, including Japanese architecture, as well as the works of Alvar Aalto and Frank Lloyd Wright.

Despite being originally conceived as a timber structure, it was ultimately built in concrete, relegating wood for claddings. In doing so, Siza chose to evoke the tectonic origin of this element.

The Boa Nova Tea House and Restaurant follows a multi-scalar strategy. Every element of this building was designed as a part of the integral whole, from the furnishings to the light fixtures or the retractable windows of the dining room.

The Boa Nova Tea House and Restaurant has been the subject of numerous essays

and academic works, photographic reports and documentary films, becoming a place of pilgrimage for architects and scholars from all over the world. Due to his significance in the context of modern 20th-century architecture, the Boa Nova Tea House and Restaurant is listed in several inventories (Heritage Map – Municipal Master Plan of Matosinhos, SIPA, IAP20, Docomomo Iberico).

On May 25, 2011, the building was listed as a National Monument by the Directorate-General of Cultural Heritage (Direção-Geral do Património Cultural), and therefore, a Buffer Zone (Zona Especial de Proteção – ZEP) was defined (Automatic Buffer Zone with a 50 m radial perimeter, as determined by Portuguese legislation).

On October 24, 2012, under the 608/2012 Decree, a new Buffer Zone was defined, which included two works of Siza listed as National Monuments: the Boa Nova Tea House and Restaurant and the Ocean Swimming Pool. The joint definition of the Buffer Zone is attentive to the specificities of the place and its relationship with the buildings, displaying an understanding of the unity of location, topography and visual relations, as well as the conditions defined by the current management and planning tools. The definition of the Buffer Zone also aims to safeguard listed properties and their surrounding landscape, ensuring the continuity of dialogue between the Boa Nova Tea House and Restaurant, the Ocean Swimming Pool and the seaside.

Over the years, Álvaro Siza was commissioned to oversee two conservation

interventions for the Boa Nova Tea House and Restaurant, which included the preservation of the original materials and the update of infrastructures and equipment.

The first intervention took place in 1991 under a new concessionaire. However, in 2011, the building faced abandonment, decay, and vandalism, including the theft of copper gutters and furniture. B In the context of a new twenty-year concession to Rui Paula, a Portuguese chef, Álvaro Siza conducted a second intervention between February 2013 and July 2014, which comprised the conservation of all doors and windows, the production of furniture replicas, the localized repair of exposed concrete, the replacement of roof tiles and copper gutters by similar ones, the installation of air conditioning, the updating of technical spaces and the kitchen, and the electrification of the retractable windows' mechanism. Repairs on concrete followed a chromatic, texture,

and formwork integration, finished with the application of a protective transparent coating.

In addition to its local significance, the designation of the Boa Nova Tea House and Restaurant as the first 20th-century building in Portugal to be listed as a National Monument, alongside the Ocean Swimming Pool, highlights its international impact.





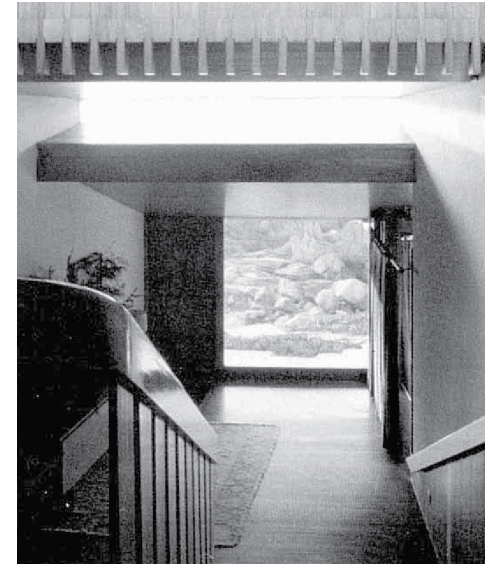
03. The site before the extension of the coastal avenue.



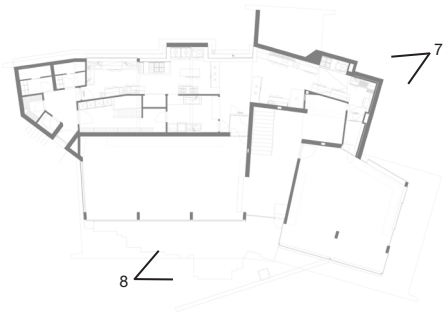
05. West façade.



04. Access route towards the building's entrance.



06. Entrance.



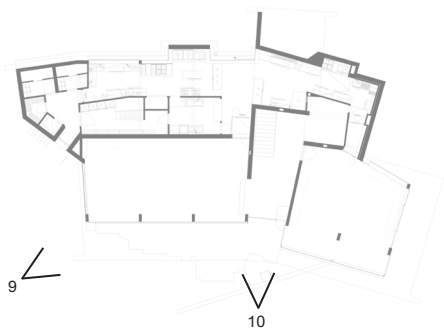
07. Entrance route.



08. Detail of the east façade and of the tea room overhang.



09. East façade.



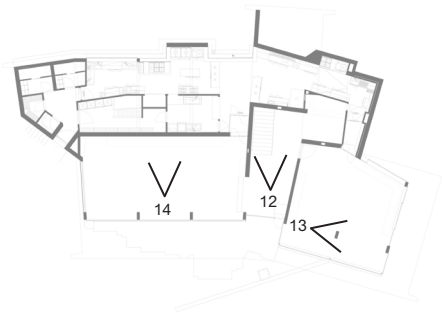
10. West façade.



11. West façade detail.



12. Terrace.



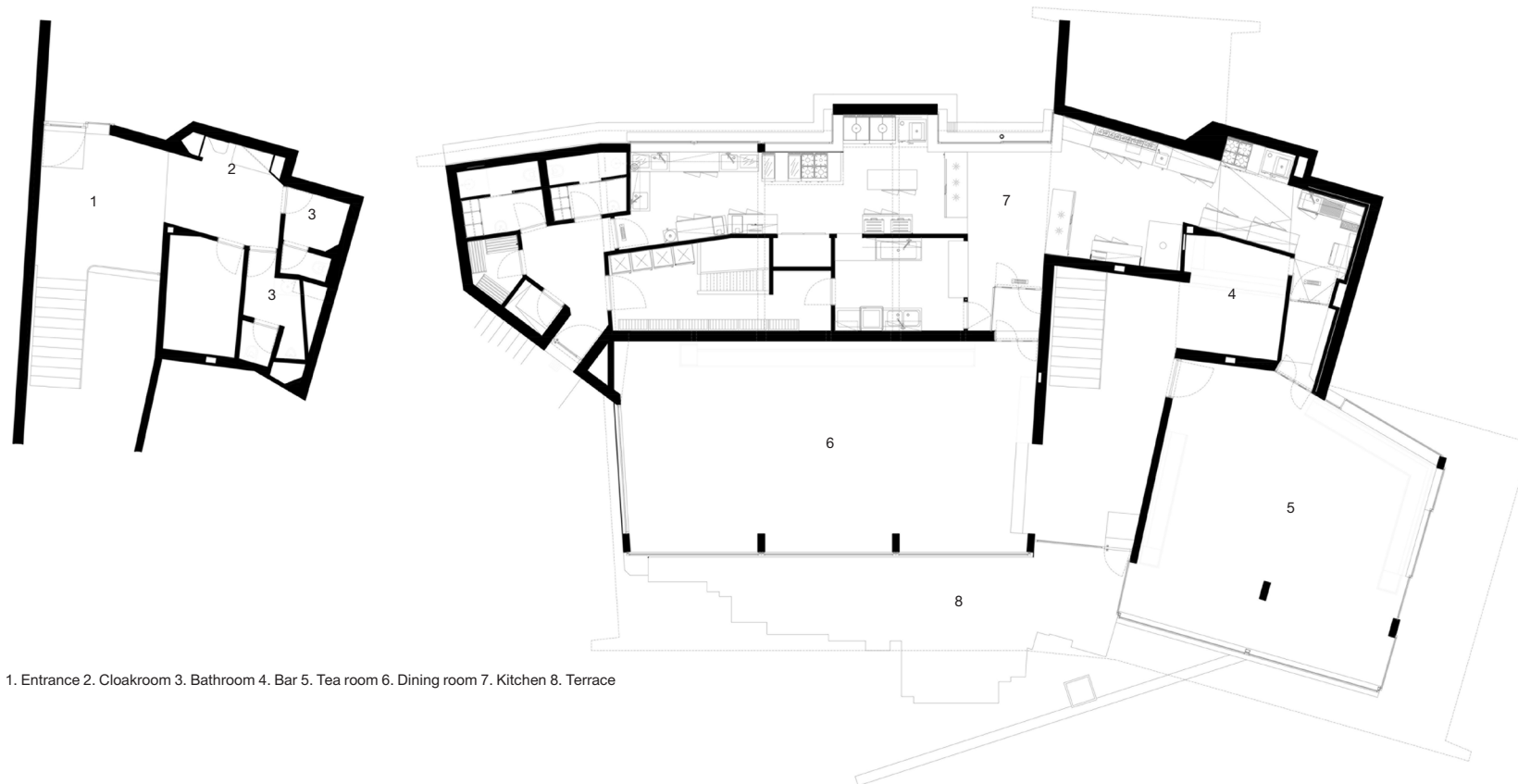
13 . Entrance hall.



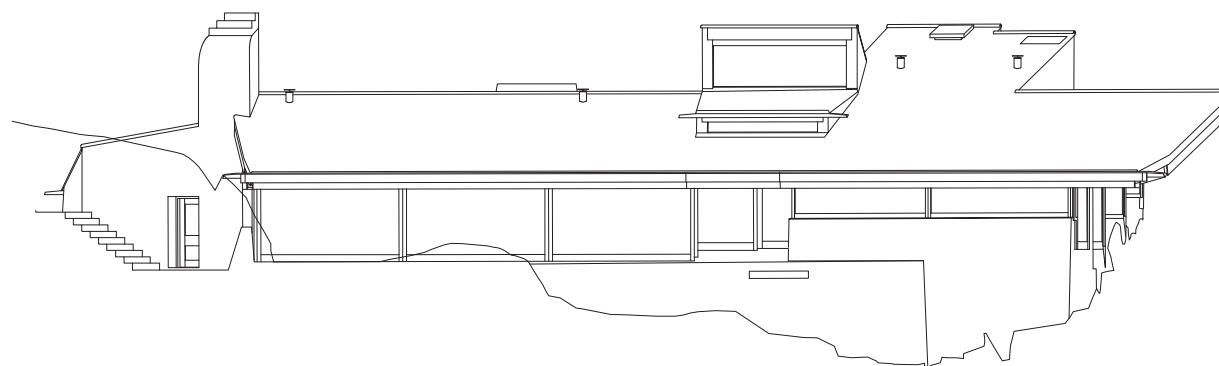
14. Tea room.



15. Dinner room.

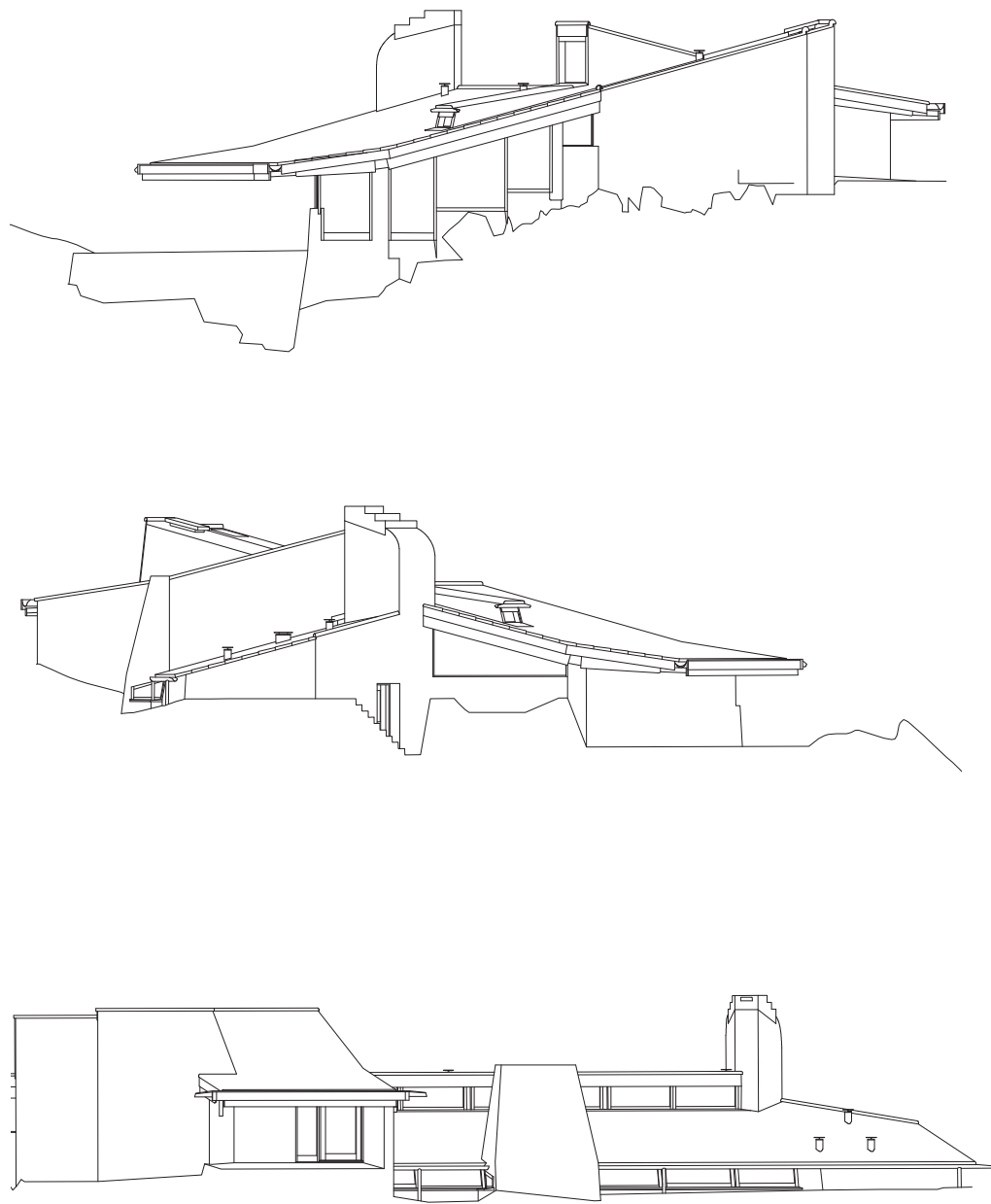


1. Entrance 2. Cloakroom 3. Bathroom 4. Bar 5. Tea room 6. Dining room 7. Kitchen 8. Terrace

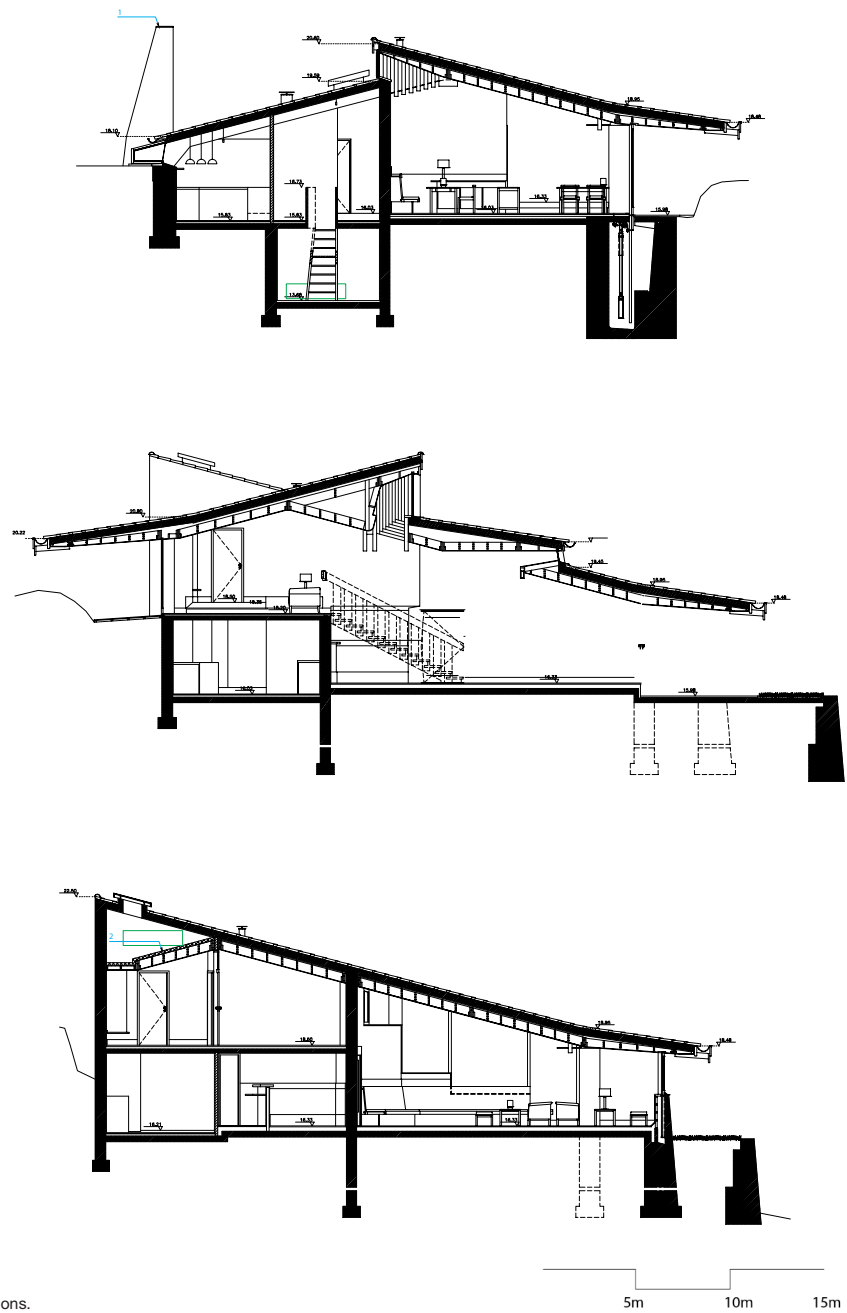


16. 17. Floor plan and west elevation.





18. Elevations.



19. Sections.

CONSTRUCTION

STRUCTURAL SYSTEM

According to the Design Report of the Executive Project, the final solution for this building remained faithful to the essentials of the preliminary design. “However, a more careful analysis of the local climatic conditions advised an improvement in the timber quality initially planned” (Távora, 1959: 161). “It was also deemed convenient to replace the timber roof structures with concrete slabs” (Távora, 1959: 161).

The vertical structure of the Boa Nova Tea House and Restaurant building comprises 28cm-thick granite walls and cyclopean concrete for retaining walls, along with reinforced concrete pillars (with an exposed finished) to support the roof structure. The horizontal structure consists of reinforced concrete beams supporting the roof slabs, which are made of 12 cm-thick cast ceramic elements with a 3cm compression layer.

WALLS

Following the vertical structure, the exterior walls are constructed from 28 cm thick perpendicular masonry, resting directly on the rocky substrate or on cyclopean concrete foundation footings. On the west side, the façade consists of exposed reinforced concrete pillars supported by a cyclopean concrete retaining wall. This is paired with another wall of the same material to form a recess for the retractable windows of the room. All exterior walls are finished with plaster and painted on the outside.

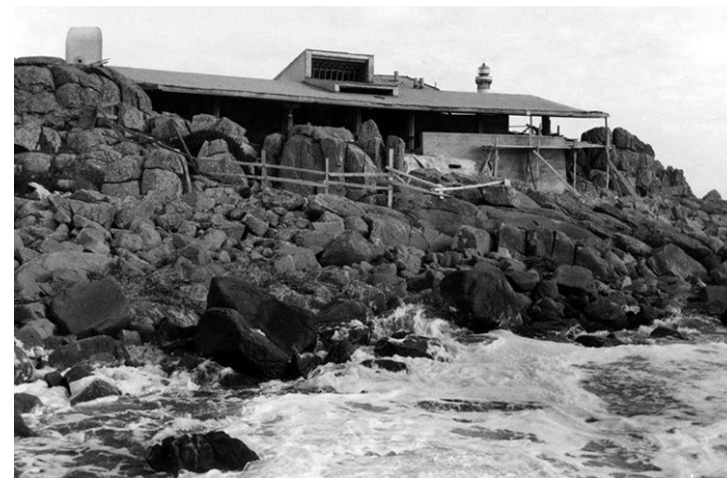
FLOORS

The floors in direct contact with the ground consist of a 10 cm layer of rockfill and 15cm of gravel, compacted with a layer of concrete screed and levelled with a waterproofing screed based on a cement and sand mortar mix at a ratio of 1:2.5, enhanced with water repellent. On top of this base, wooden laths are used to fix varnished Afzelia wood planks (15 x 2.5cm) laid on 5 x 4cm trapezoidal battens, spaced 40cm apart, in “bayerised” Mussibi wood, fixed with cement and sand mortar, with skirting boards made from the same material. For floors on concrete slabs are levelled with screed and covered with Afzelia wood planks.

All the exterior pavements consist of a 15cm layer of gravel on compacted soil and a 10cm thick layer of lightly reinforced concrete screed, over which “3cm thick ‘Ançã’ limestone is applied” (Siza, 2012: 56).



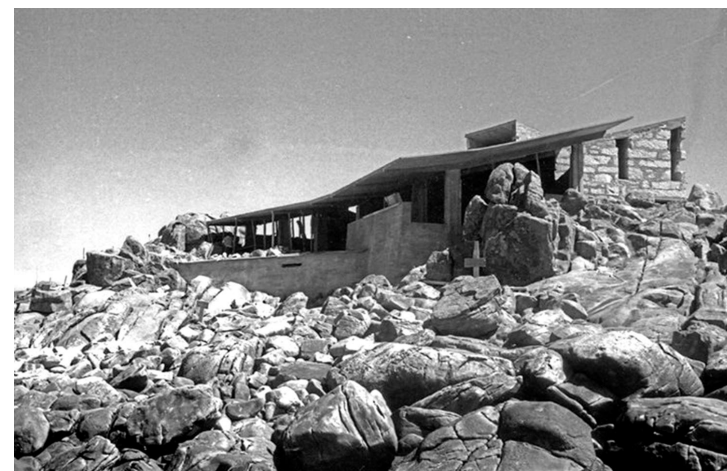
20. Laying of the foundations.



22. West façade during construction.



21. Construction of the perimeter walls.



23. South façade during construction.

ROOFS

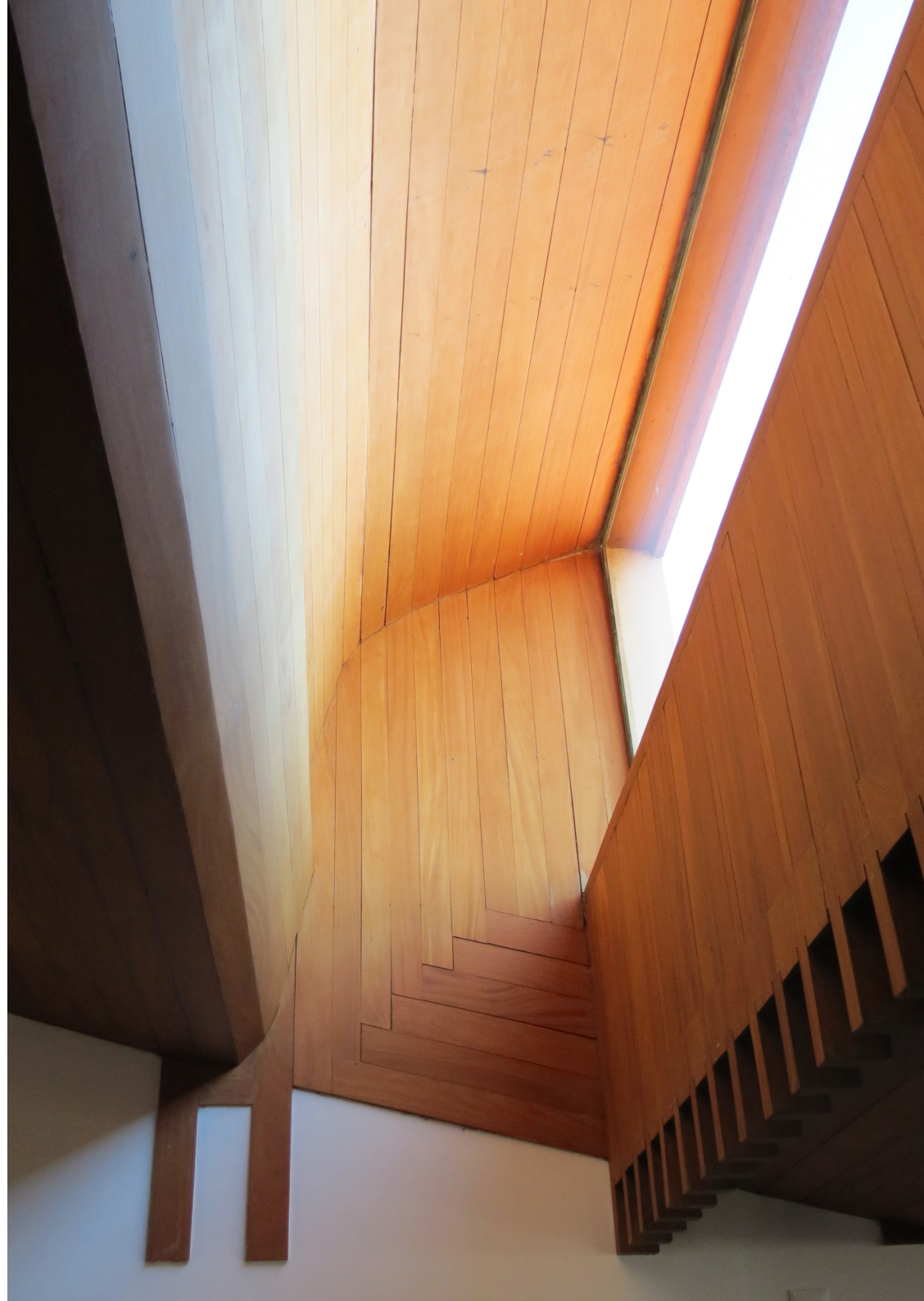
The sloping roof slabs maintain an outer layer of Roman-type tiles, 45 cm long (Siza, 2012: 11). Ridge tiles, also 45 cm long, are used at the ridges and ends. The tiles are fixed by moulded projections in the water-resistant screed covering, which includes small openings to prevent water accumulation in case of leakage. The gutters and flashing are made from 2 mm thick copper sheeting.

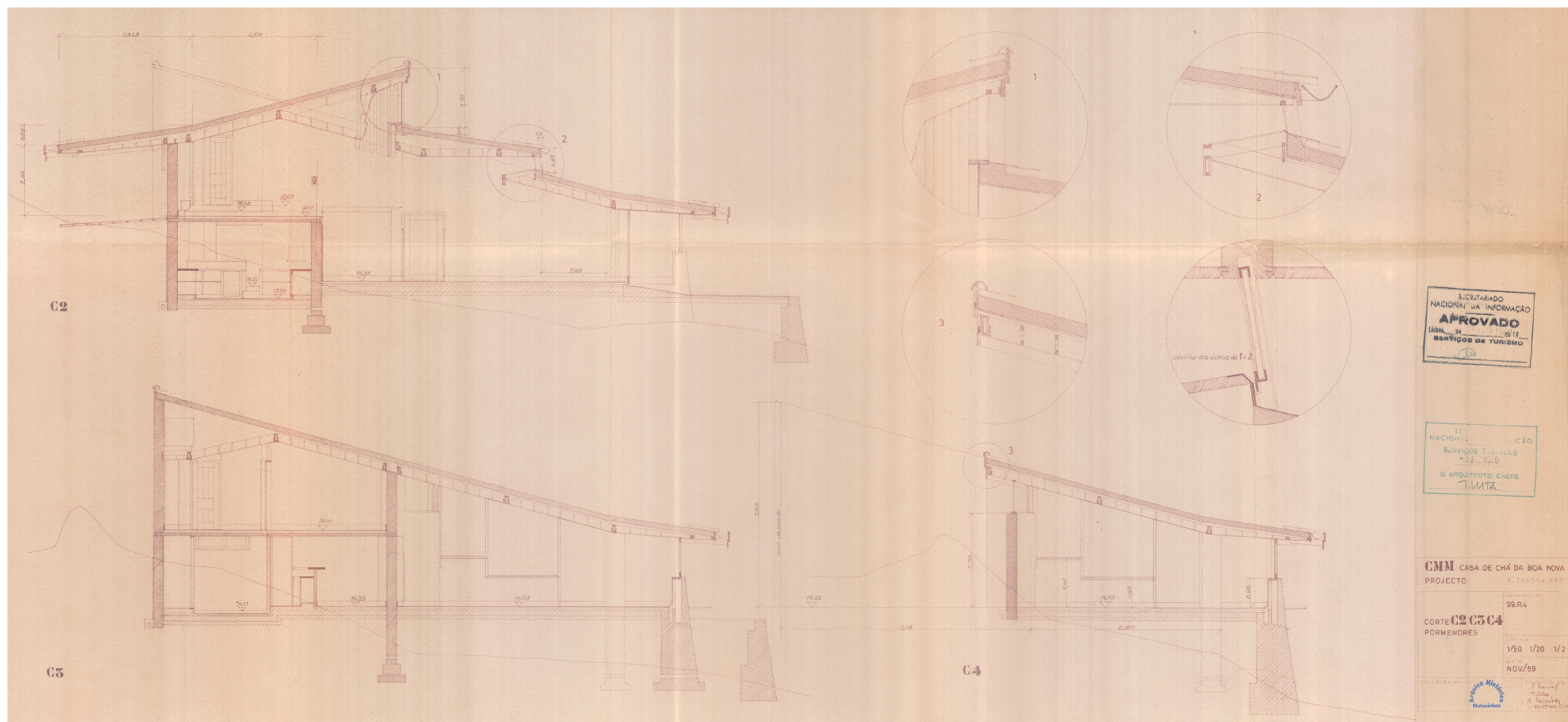
The underside of the roof is finished with 12 x 1.2 cm afzelia wood, fixed to a framework of “bayerised” wood with brass screws concealed with wooden plugs. The entablatures are made from 4 cm thick afzelia wood.

Thermal insulation consists of a 25 mm layer of expanded polystyrene (‘frigolite’) bonded to the roof slab. The ceilings of the service areas have a plastered finish painted with two coats of water-based paint. Additionally, all wooden claddings have been treated with three coats of synthetic varnish.

OPENINGS

All exterior doors and windows are made of afzelia wood. All exterior openings feature sills and various trims in copper. The west façade features a window solution that retracts vertically into a purpose-built recess. Like all wooden elements, all exterior frames have been treated with three coats of synthetic varnish.





25. Sections and details, 1959.

DESIGN PRINCIPLES

HARMONY BETWEEN THE AUTONOMY OF THE BUILDING AND WHAT HAD EXISTED BEFORE

The project unfolded with utmost attention to the tangible balance involving nature, a chapel, and slightly further ahead, a lighthouse. (...) The main aim, therefore, was to let the chapel take prominence without the restaurant becoming a construction devoid of character: harmony between the autonomy of the building and what had existed before needed to be established. (Siza, 1998, p. 23)

CLINGING TO THE ROCKS, AS IF TO AN ANCHOR

In its initial stage, the project followed the contour of the rocks continuously, clinging to them, as if to an anchor. Later, upon realization of the excessive discontinuity, or rather, the immaturity of the building's profile, an almost horizontal roof was chosen, while articulation of the levels of its various features made it possible to position the restaurant along the rocks. (Siza, 1998, pp. 23-25)

ARCHITECTURE DOES NOT END ANYWHERE

During these initial works, an irrepressible and prevailing idea began to blossom, that architecture does not end anywhere; it goes from the object to space and, by consequence, to the relations among spaces, until its encounter with nature. (Siza, 1998, p. 31)

INTERIOR SPACE IS NOT THE NEGATIVE OF THE EXTERIOR

The interior space is not the negative of the exterior. The wooden ceiling frees itself, modeling the interior volume without breaking the exterior. There is a visible tension in the encounter between the interior and the exterior. (Siza, 1964, p. 17)

AVOID THE CONSTANT IMPOSITION OF THE LANDSCAPE

I understood from the start that it was necessary to avoid the constant imposition of the landscape – a restaurant is not a belvedere. (Siza, 1964, p. 17)

THE WOODEN CEILING SEPARATES AND FRAGMENTS THE VIEW

From the entrance, the wooden ceiling separates and fragments the view: the encounter between sky and sea and between sky and land is seen separately. (Siza, 1964, p. 17)



ATTRIBUTES

ARCHITECTURE RESPONSIVE TO A PHYSICAL, SOCIAL AND HISTORICAL CONTEXT

The component part expressively responds to the context, particularly the landscape, topography and preexisting elements. Being partially buried on the east side, the building fully opens to the rock surfaces that emerge from the sea, using them as a boundary. Both exterior and interior paths are in constant interplay with the sea view. Since its construction it has a close connection with local communities and is part of their collective memory.

INTEGRATION OF INTERNATIONAL AND LOCAL REFERENCES

The component part incorporates multiple international references in its design, namely Alvar Aalto and Frank Lloyd Wright, as well as Japanese architecture in the detailing of the wooden elements or the sloping roofs. Vernacular elements inspired by Portuguese vernacular architecture such as plastered white walls and tiled sloped roofs are combined with a modern language, clear in the curtain walls (horizontal glass windows) and the exposed concrete structure.

SCULPTURAL VOLUMETRIC EXPRESSION

The building composition and volumetric expression adapt to the rocks' outline, using

them as a boundary. The roofs are set at varying heights and slopes, creating a diversity of volumes, planes and heights together with the white walls and chimneys.

ORIENTED SPATIAL EXPERIENCES

The component part's design extends to the surrounding landscape, through a carefully designed promenade providing different sights to the sea and experiences while leading the visitors inside. This path goes on to the interior of the building, with the sloping planes of the ceiling fragmenting the landscape so the views of the sea, sky and land are framed separately. The interrelation between interior and exterior is enhanced by the possibility that the dining room windows have of being sunk into the ground, allowing for the extension of the dining area to the outdoor terrace.

TOTAL WORK OF ART INCLUDING DETAILS FURNITURE AND ARTWORKS

The carpentry details of this design are very intricate and visible in the way the wood is used to blend the ceiling's variety of slopes, the skylight openings and intersections with the concrete pillars. Every element of this component part was designed and thought of as a part of the integral whole, from the furnishings to the light fixtures or the retractable windows of the dining room.



AUTHENTICITY AND INTEGRITY

AUTHENTICITY

The Boa Nova Tea House suffered some minor changes in the last conservation project, including the removal of a small window, the relocation of kitchen's doors, the addition of a new stair access to the basement and the lowering of floor level in this last area, as well as the relocation of ventilation chimneys in the roof. These changes don't affect the building's original overall character.

The building's original materials have been well sustained thanks to their simple maintenance requirements and through conservation, as described in detail in Section 5. The roof tiles were completely replaced with shorter ones from a different company (as the original one was out of production), with special attention not to change roofs' character and movement. The copper gutters that have been altered and/or stolen were replicated with the help of existing documentation. The exposed concrete elements show small colour variations in the areas where their surface was repaired due to material spalling and rebar corrosion. Small artificial light sources were added in the grass along the building's access path.

While most of the building's uses and functions remained unchanged from its original ones, the tea room, one of its prominent features, is nowadays being used as a second dining room making the Boa Nova Tea House function solely as a restaurant. Additionally, the functions of two rooms in the staff's area were swapped.

The original manual mechanism of the retractable windows in the two main rooms

were replaced with an electrical hydraulic one, and it was added of a control panel in the wall

The Boa Nova Tea House remains in a semi urban setting very close to its original one, with a few exceptions such as the construction of the oil refinery, located at its North side, built shortly after the restaurant and the replacement of the stone pavement around the nearby chapel.

The restaurant maintains the original and close connection with nature, being located in the Boa Nova's rocks. The promenade experience remains intact, with all the different views and landscape framing, preserving their sensation and spirit.

INTEGRITY

The property limits defined by the Special Protection Zone include all the necessary elements that express the significance of the Boa Nova Tea House. These include the restaurant, the access pathway and the immediate surrounding landscape, such as the rocks and the grass area, which provide to the building its distinctive setting. Aside from the update of installations and the kitchen's equipment, the Boa Nova Tea House only suffered small changes during its lifetime, such as the replacement of the original manual mechanism in the retractable windows in the two main rooms, that were replaced with an electrical hydraulic one, and the removal of a small window. All the conservation works were done by

the Álvaro Siza, with close attention and respect for the original design and materials. The concrete repair was done in small located interventions in the areas of the surface that presented signs of rebar corrosion and material detachment. Although the current roof tiles aren't exactly the same as the original ones, the intervention respected the roof's original character. Due to acts of vandalism, theft and storms that happened in the past, the window's glass, copper gutters and furniture had to be replicated, which was done following original drawings and photographs. These, together with other minor changes that are not perceptible for the visitors, have no impact on the integrity

of the building. On the other hand, the current concessionaire has made some changes that affect its significance. In addition to swapping some of the replicas of furniture with other furniture, the tea room, one of its prominent features, currently functions as a second dining room, making the Boa Nova Tea House function solely as a restaurant. The buffer zone's limits include the views from the restaurant to the extended landscape (the beach and the seaside), it also includes the whole platform where the building sits as well as the baroque chapel that is part of the building's significance. The Boa Nova Tea House currently doesn't have development threats.





STATE OF CONSERVATION

The Boa Nova Tea House and Restaurant is in a very good state of conservation after the last interventions in 1991 and 2013. In the first intervention of 1991, Siza carried out conservation works which comprised the treatment of surfaces and the updating of technical spaces.

Recently conducted by Álvaro Siza, between February 2013 and July 2014, leading to a new twenty-year concession to Rui Paula, a Portuguese chef, the recent intervention comprised the conservation of all doors and windows, the production

of furniture replicas, the localized repair of exposed concrete, the replacement of roof tiles and copper gutters by similar ones, the installation of air conditioning, the updating of technical spaces and the kitchen, and the electrification of the retractable window mechanism that allows the dining room to be completely open to the outside, creating continuity between the inside of the building and the surrounding landscape. Repairs on concrete followed a chromatic, texture, and formwork integration, finished with the application of a protective transparent coating.



30. Replacement of the roof tiles and waterproofing membranes.



32. Conservation intervention on interior wood paneling.



31. Replacement of the roof tiles.



33. Kitchen renovation.



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 multiscale 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.

Regarding the Boa Nova Tea House and Restaurant, there were some limitations in the photogrammetry captures, similar to other buildings designed by Siza, due to the presence of white surfaces and its integration within the landscape. Considering the location of the building, exposed to potentially adverse weather conditions with strong winds, it was necessary to appropriately schedule the visit times to the site.

As for the 360° virtual tours, they were adapted to the restaurant's operating hours to avoid disrupting working times. The BIM didactic model evokes one of the most representative sections of the construction, with its sloping roof, featuring one of the main areas of the restaurant. It details the west-facing façade's window frames, which look out to the ocean, as well as the retractable window system that allows the glass to be lowered, extending the interior space to the exterior.

Moreover, the didactic model allows exploration of the constructive details of the roof, illustrating the ingenious way Siza replaced the initially planned wooden structure with a tiled roof featuring concrete elements.

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.

360° VIRTUAL TOURS

Virtual tours are an increasing instrumental in the documentation and preservation of cultural heritage, contributing communication, and conservation monitoring.

The development of the 360° virtual tours captions was guided both by the OUV attributes and the design principles of each building.

Images for these tours were acquired by a Ricoh Theta camera, ensuring precise timing and favorable weather and light conditions. Subsequently, the virtual tours were processed and enabled using software developed by detalhar.pt. The QR codes in the booklet allow for interactive virtual tour experiences of the buildings, focusing on the main attributes and design principles.

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.



35. 36. 37. Photogrammetry.

SIZATLAS

THE BOA NOVA TEA HOUSE

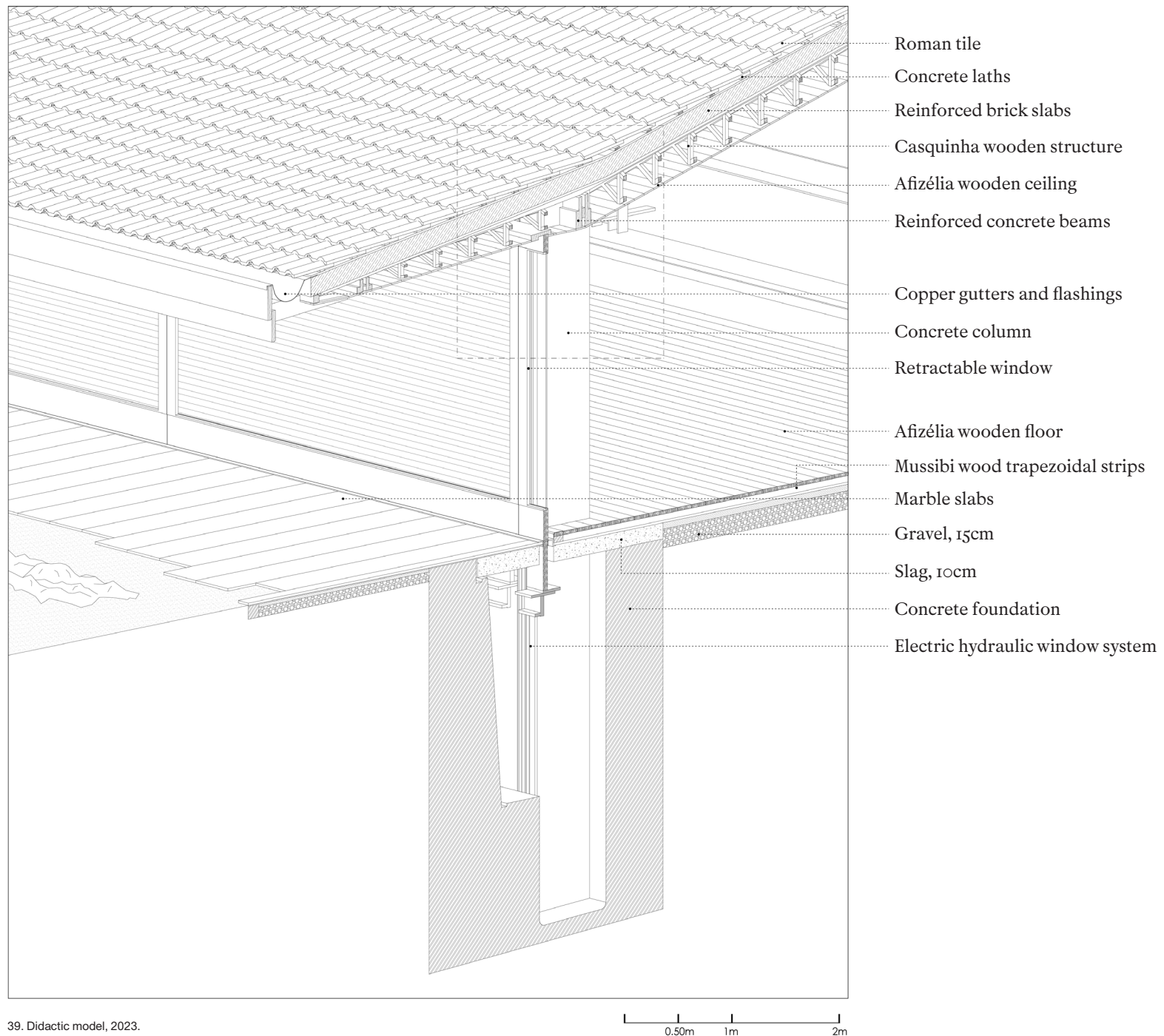
ÁLVARO SIZA



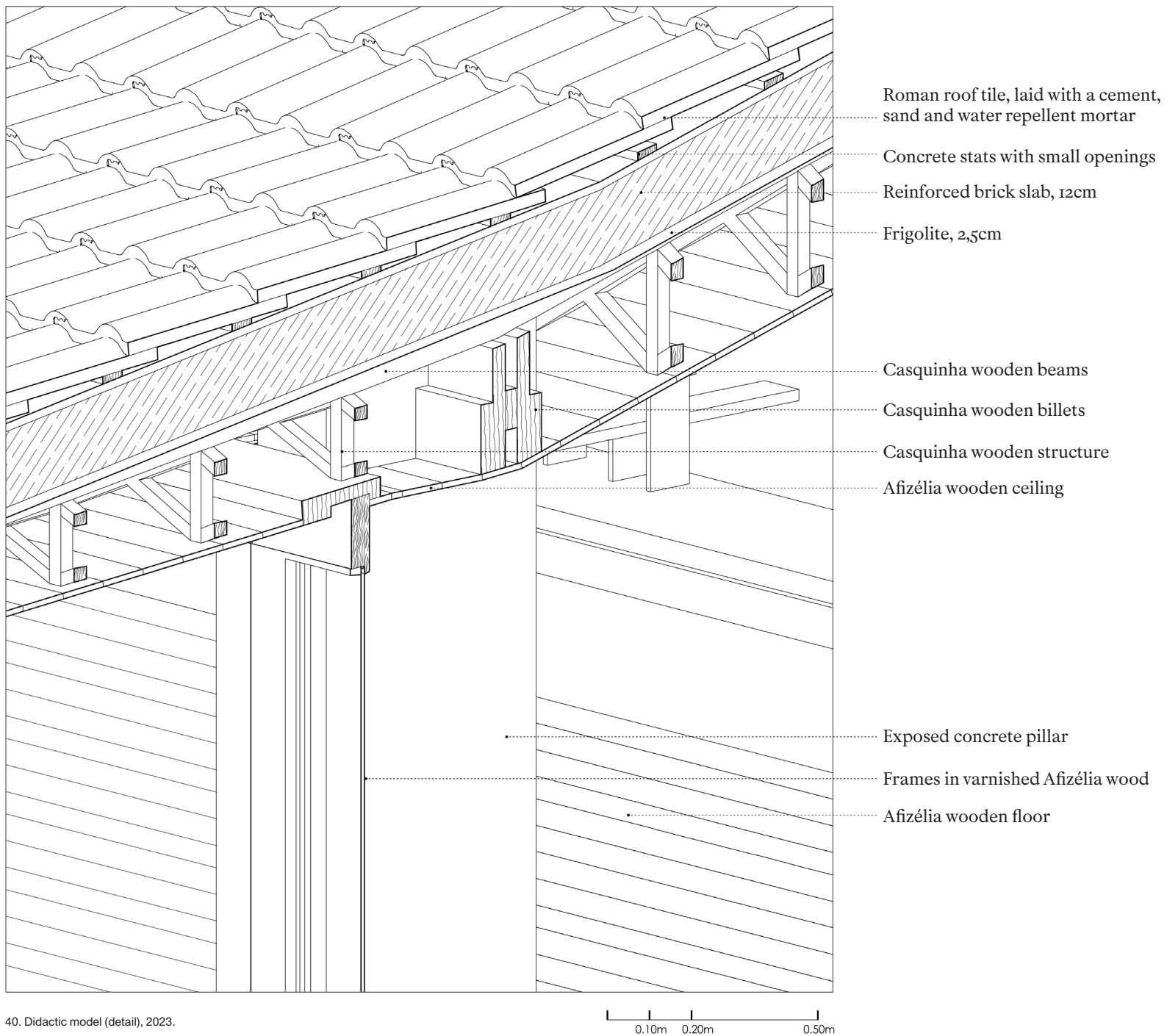
38. 360° Virtual Tour.



Virtual Tour



39. Didactic model, 2023.



40. Didactic model (detail), 2023.

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