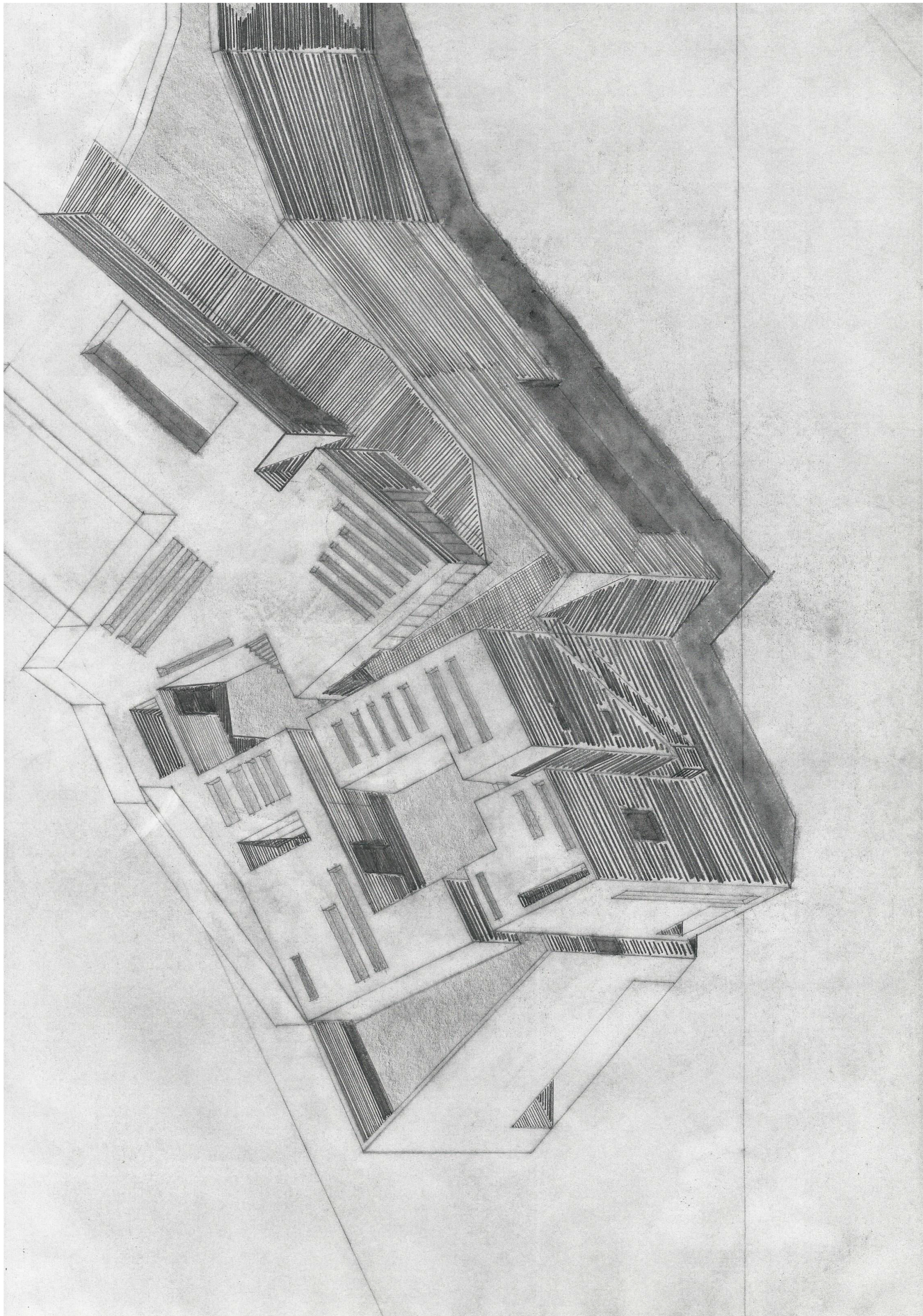


Casa Das Mudas, Madeira, Portugal

By Architect Paulo David

Omar Shaar





Casa Das Mudas, Madeira, Portugal

By Architect Paulo David

There is a building located on the cliff edge of a volcanic promontory at an altitude of 180m above the Atlantic Ocean. It is clad in basalt stone. Its main function is to display and exhibit art. Its sharp abstract volume, juts out of the steep rocky cliff, and it has pure rectilinear geometry. It starkly contrasts with the jagged, curved, irregular rocks below it. It was designed by the Portuguese architect Paulo David. The site is located on the island of Madeira, in Portugal. It was built in 2002 – 2004.



The building is designed as an abstract geometric continuation of the cliff's rocks. It juts out of the corner of the cliff's edge at a right angle, in such a way that it doesn't disturb the curved nature of the rocks' steep contour lines. The pure geometry of the building itself is rectilinear, and it doesn't follow the curvature of the steep topography.

Therefore, in plan, pure squares and rectangles which form the composition and form of the building, are positioned at subtle various angles to respect the direction of the contours of the hill, and to go with their lines, not against them, fitting onto the cliff without disturbing the nature of the rocks, in a natural sensitive manner.

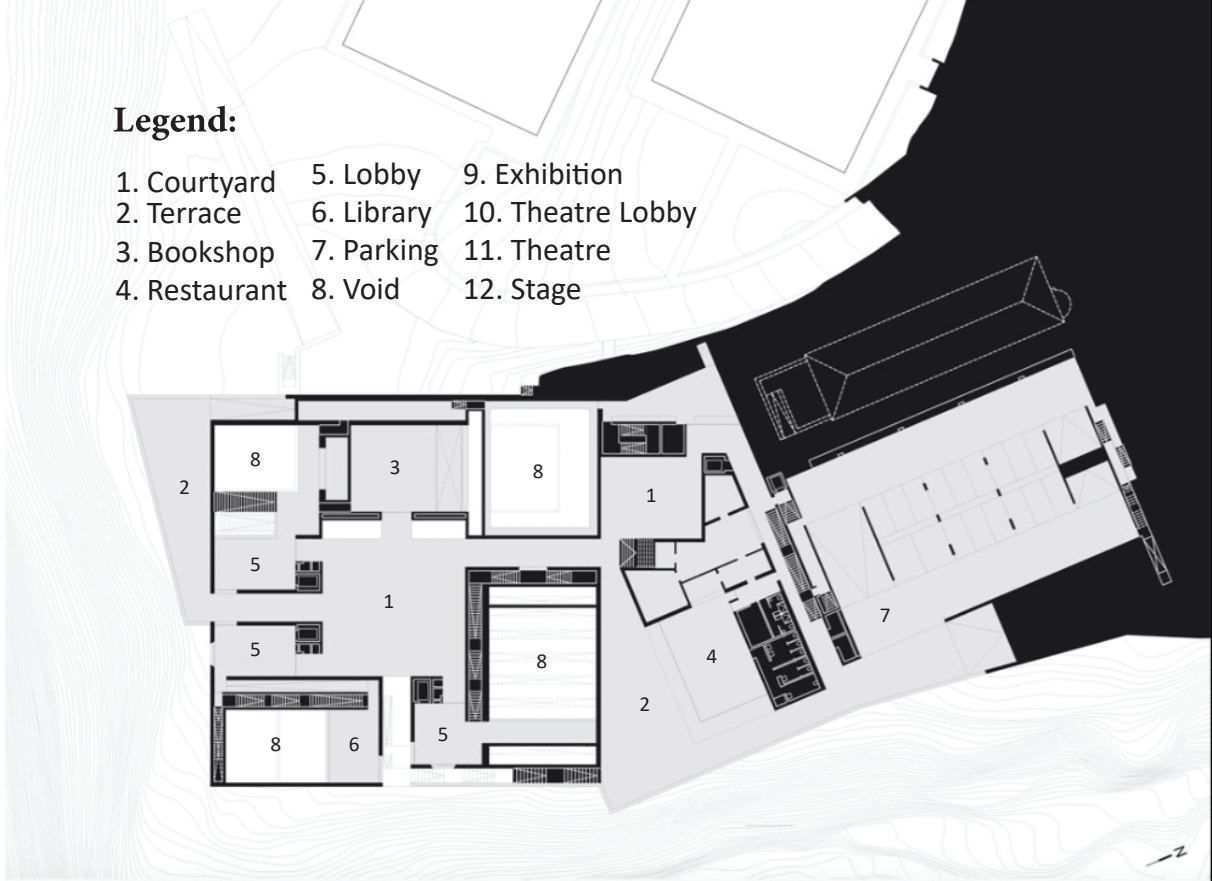


It is quite surprising, how the architect managed to fit this simple rectangular building onto a curved, steep cliff by using simple and subtle shifts in the positioning of the architecture's angles and proportions. He fits all the functions within simple rectangular volumes without, having to force the natural topography of the cliff to conform to the architecture itself. In other words, the building's design does not compromise its rectilinear geometric language and architecture, and it is placed on the cliff with minimal interference with the topography, thus making space for the building on this difficult precarious site.

The architect shows off his problem solving skills in the design process to compose several different factors together into a harmonious whole, where each factor such as the site, the simple concept, and the complex varied program don't affect each other negatively, in order to maintain a consistent whole design concept. It also displays his sensitivity and high skill-level of designing and representing architecture in drawing plans with subtle variations in positioning of the project's volumes in relation to the site, and with slight shifts in the angles in relation to each other. The architect uses design as a tool for complex problem-solving with simple pure geometry.

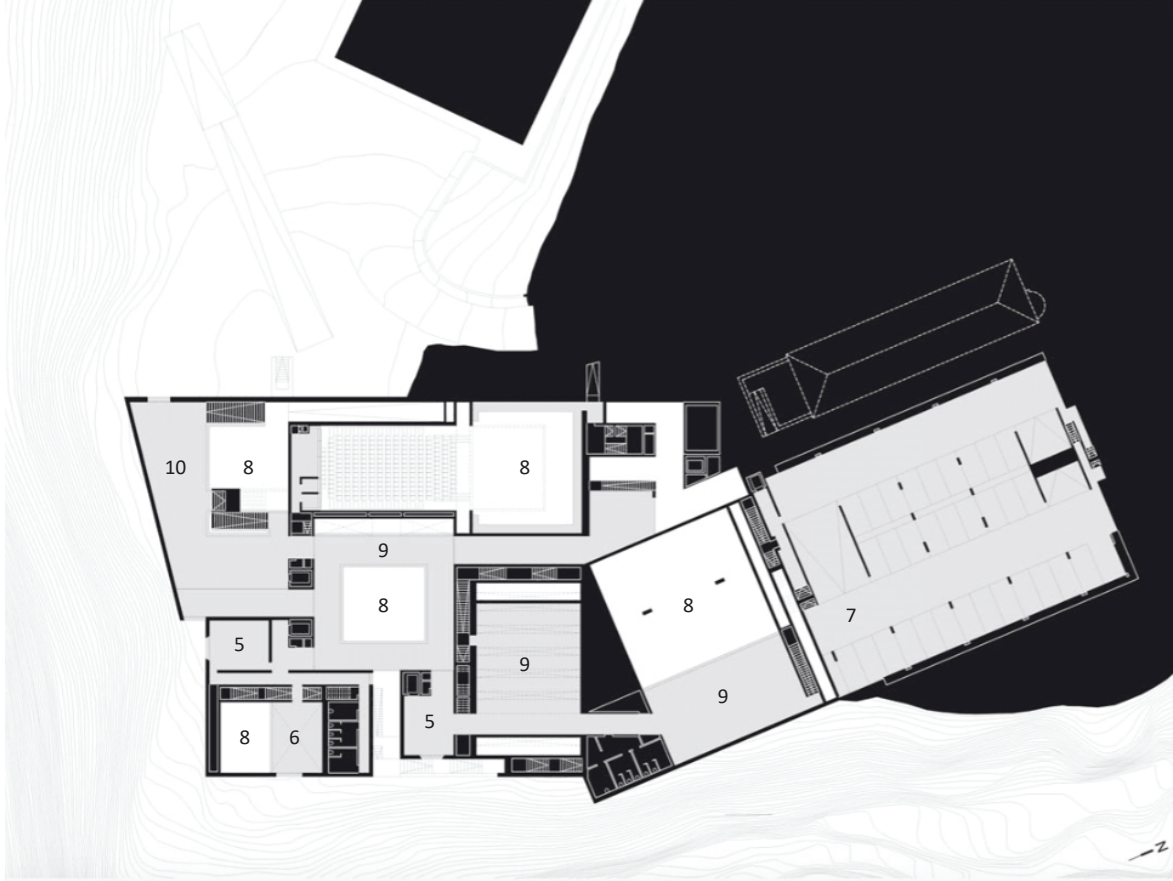
Legend:

- | | | |
|---------------|------------|-------------------|
| 1. Courtyard | 5. Lobby | 9. Exhibition |
| 2. Terrace | 6. Library | 10. Theatre Lobby |
| 3. Bookshop | 7. Parking | 11. Theatre |
| 4. Restaurant | 8. Void | 12. Stage |



Plan Level - 0

The building consists of two rectangular volumes that intersect each other at an obtuse angle. The architect placed the first volume at the corner of the cliff, on its south east edge. In plan, this main volume which contains the project's major functions has a square proportion. It is located adjacent to the steep topography at a right angle parallel to the general direction of the topography, as if the external walls of the building are an abstract geometric continuation of the contour lines of the cliff itself. It marks the difference between the two distinct territories of the building, and the topography of the natural cliff directly outside it.

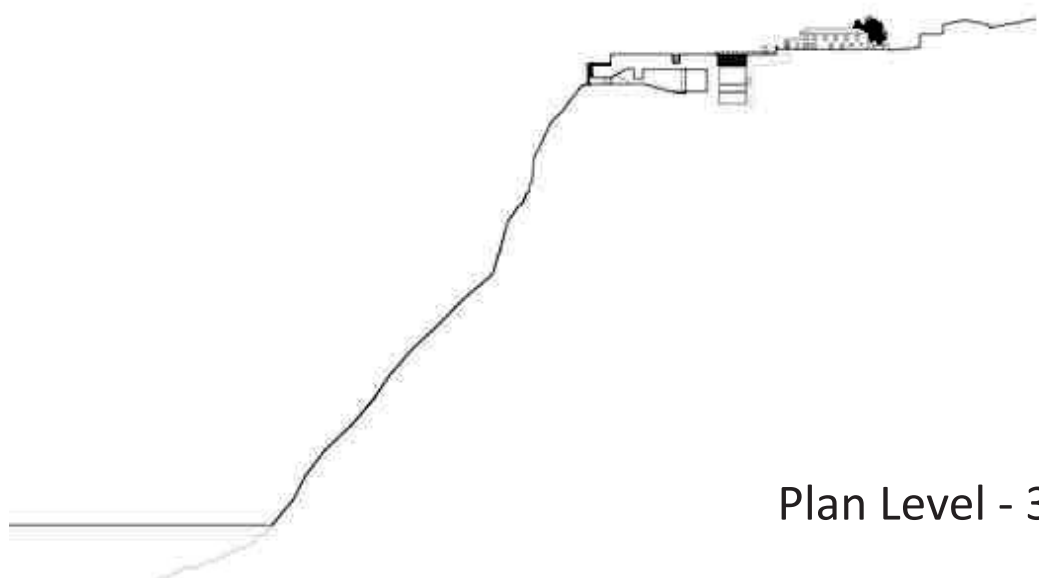


Plan Level - 1

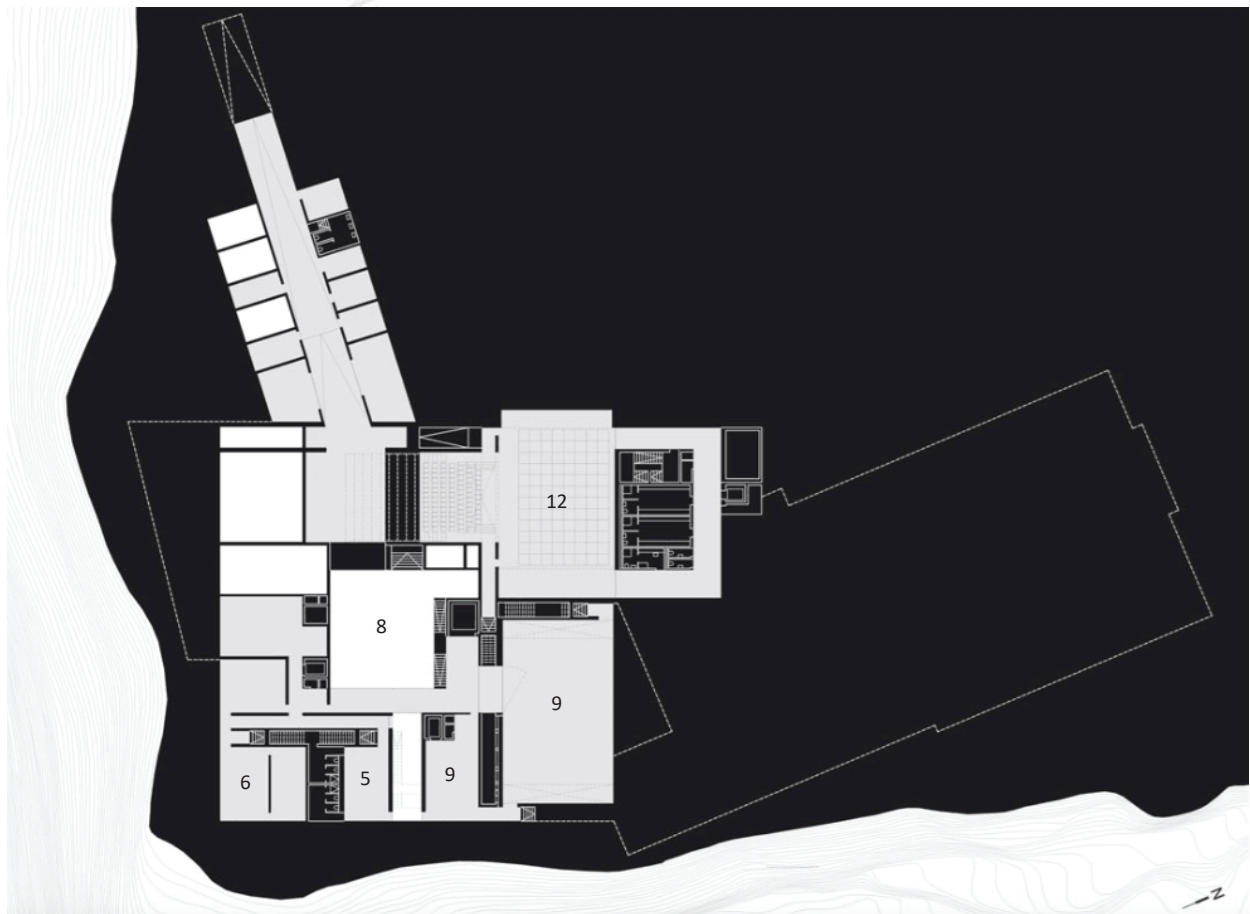


Plan Level - 2

Even though its volume has a bulky, weighty presence and appears to stand out from the landscape around it, it still has a balance between the size and volume of the building, to be large enough to house its various functions, and small-enough to fit onto the steep site without disturbing it in a sensitive manner.



Plan Level - 3



At the north end of the project, a well-proportioned long rectangular volume of the building contains the compound's main parking. It intersects the building's second wing at an obtuse angle, which contains the art center's major functions. A large tree is planted in the wedge-shaped courtyard near a restaurant in a space that is open the sky.



Near the parking to the west, is the older building that has already been located there before Paulo David's project was constructed. The architect did this in order to not demolish any existing structures on the site, respecting the cultural heritage of the area.

The composition of the building's main wing to the south, that contains the main museum functions, is organized along two horizontal axes that are parallel to each other, and they run across the building's length from one end to the other. This provides the visitor who walks through the compound's two courtyards a long perspective that cuts through the courtyard at a long and narrow angle, with a relatively low height.



The architect used 2 courtyards as empty voids to be integral parts of the museum's spatial and formal composition. They act as major design elements that are cut out of the large positive rectangular solid mass of the building.



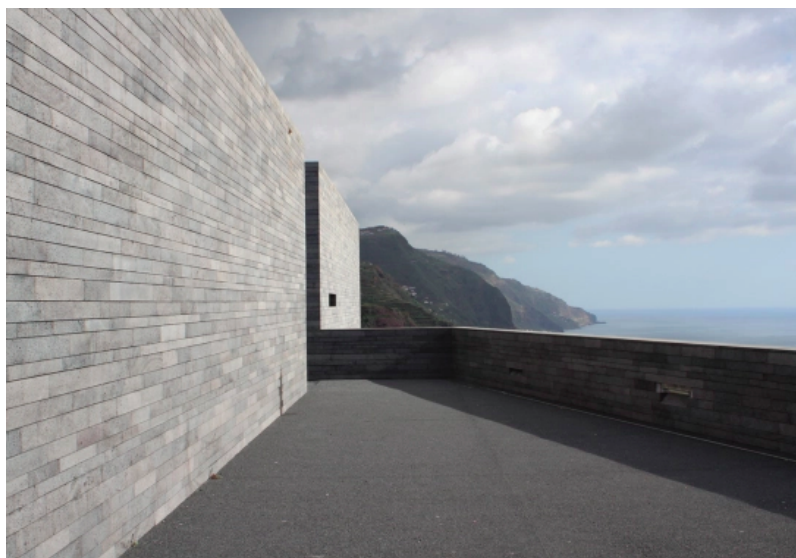
The first courtyard, located on the north-eastern corner of the building is placed on the right flank of the main circulation route. It leads towards the central courtyard that is open to the sky from a lower level. Both courtyards are exterior spaces open to the sky, and both have a rectangular proportion that is very close to a square. The larger courtyard at the center of the compound is aligned on the left side of the circulation space that connects the two courtyards to each other. The first sunk-in courtyard has a double – flight staircase that provides the visitor with direct access down to the lower sunk-in courtyards.



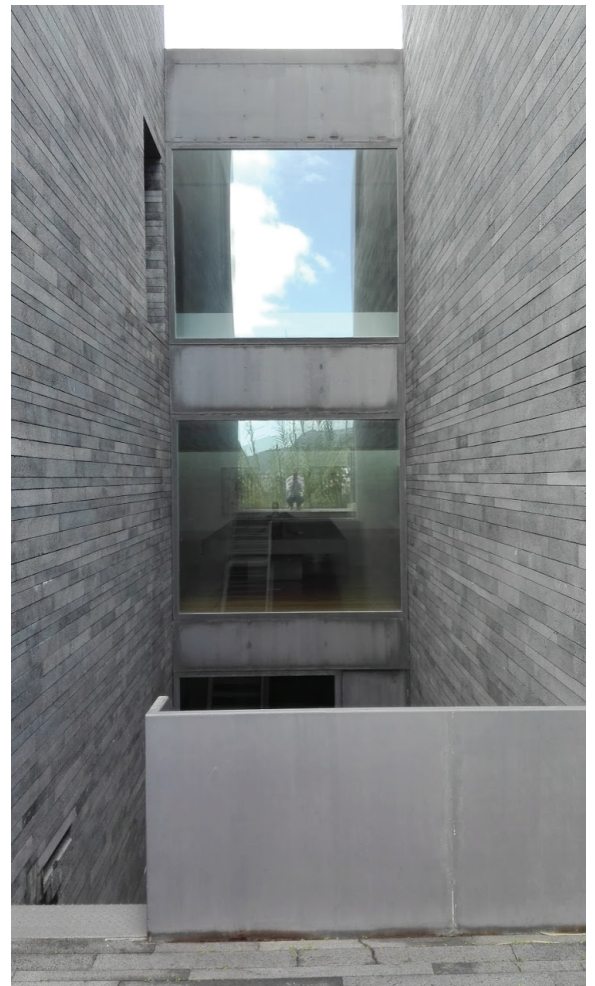
A third courtyard that has a trapezoidal shape and long and thin proportion intersects the courtyard behind it. High trees are planted in this courtyard, which opens up a view to the land at the east. When the visitor stands there, he has an open panoramic view to the eastern land.



The first smaller courtyard, on the right side of the project's circulation axis is open to the sky, but it has no direct view framed through the openings in the walls, except through the adjacent trapezoidal courtyard beside it. The second larger courtyard that is located on the left side of the project's circulation axis is also open to the sky, and has two other direct framed views to the land and to the ocean via long and narrow openings that cut deep through the building's mass.



The first view that is on the east elevation punctures the building's volumes to create a narrow circulation path from the courtyard to the outside. This volumetric cut is narrow in width, and deep and high. It frames a narrow vertical view to the land towards the east, for the visitor looking through it while standing in the courtyard. Another deep opening is a narrow and long corridor that frames a view for the visitor towards the south. It views a narrow and high vertical frame that opens a perspective view towards the Atlantic Ocean. This narrow passageway leads the visitor from the central courtyard out to an exterior terrace. It also has a trapezoidal proportion.



At the eastern end of the terrace is a shallow and long ramp that takes the visitor up to the roof of the building, which has parts that are accessible to pedestrians, but most of it is inaccessible.



The inaccessible areas on the building's roof are landscaped with flower boxes and patches of linear gardens, designed as horizontal linear strips parallel to each other. This gardened and tiled roofscape has no balustrades or parapets on its outer edge. And towards the north flank, the roofscape is designed in such a way that it emerges flush at the same level of the adjacent topography, as if it is an abstract geometric extension of the natural landscape behind it, but in straight, geometric, rigorous architectural language. Even though both surfaces are strikingly different in geometry and language, the architect managed to blend them together on the same level in a sensitive, discrete way and for the artificial building's surfaces to have a similar tone and texture to maintain harmony and scale of materials.

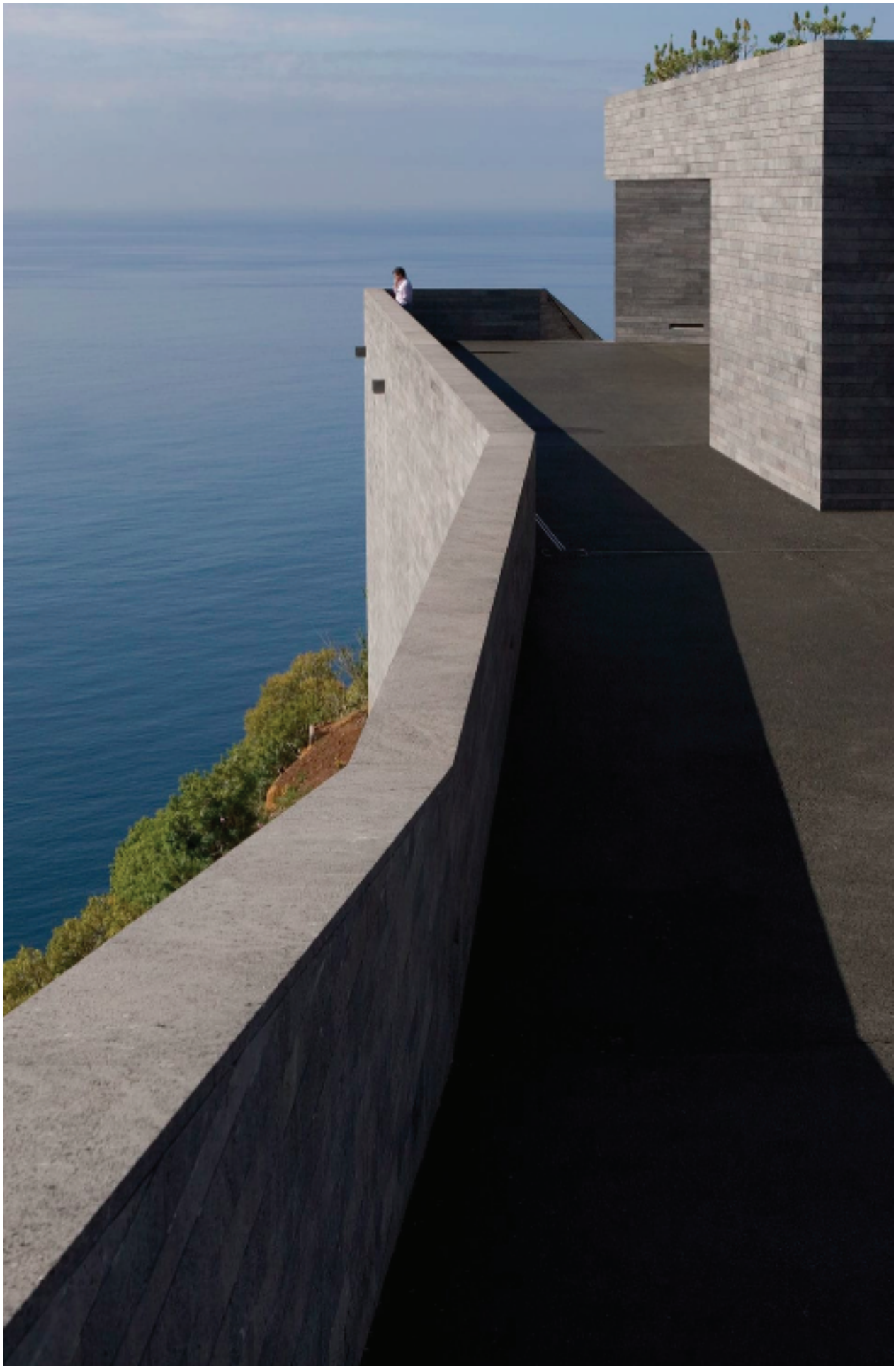
The architect maintains the pure geometry of the functional interior spaces as pure squares and rectangles, keeping the language of straight lines and right angles consistent throughout the entire museum.



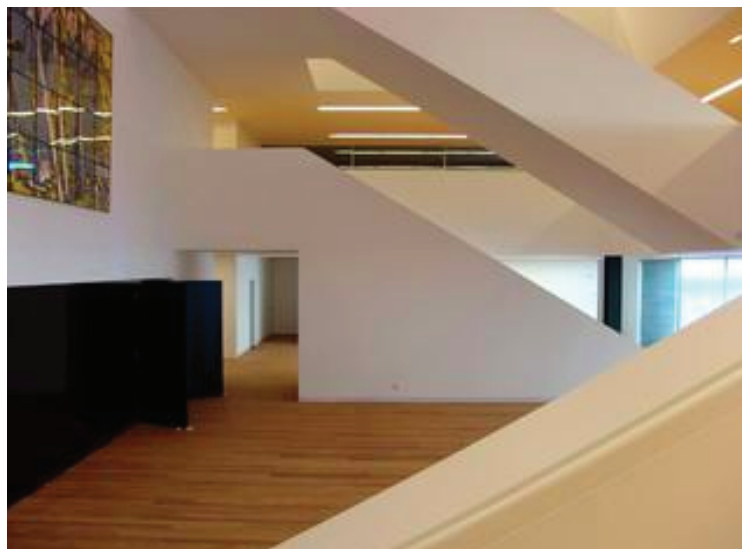
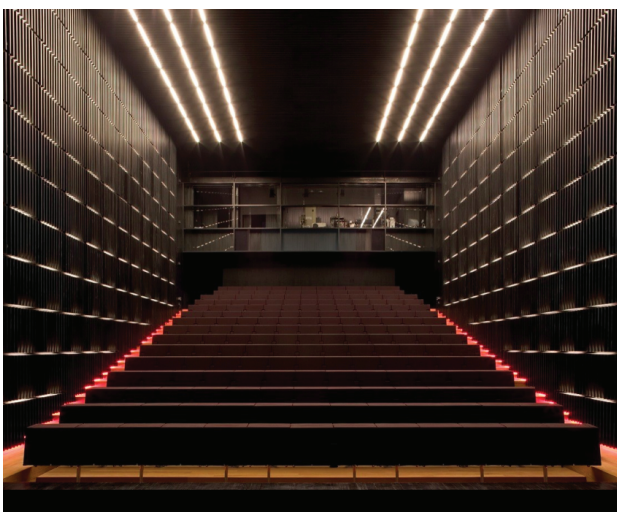
Acute and obtuse angles are employed only at exterior terraces, courtyards, balconies, and spaces open to the sky. These angled edges and lines are needed at particular points and corners in the project in order not to disturb the existing topography at the corner of the cliff's edge where the main cubic building is located.

On the south-west corner, the terrace open to the sky is trapezoidal in plan. On the east corner, the ramp that approaches the parking has 3 angled corners along its path that leads to a trapezoidal courtyard. It has a corner restaurant with a tree planted beside it in the courtyard, and provides a view to the land towards the east.

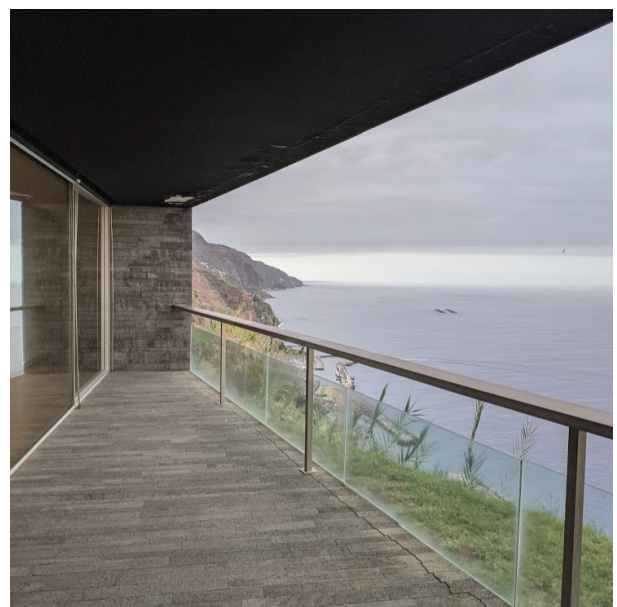
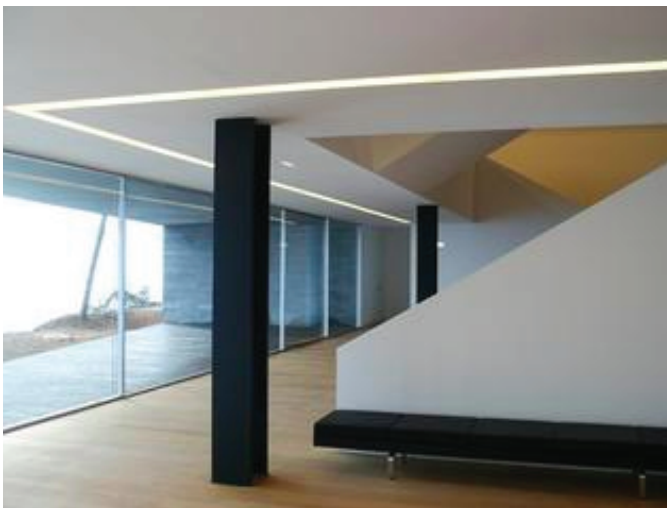


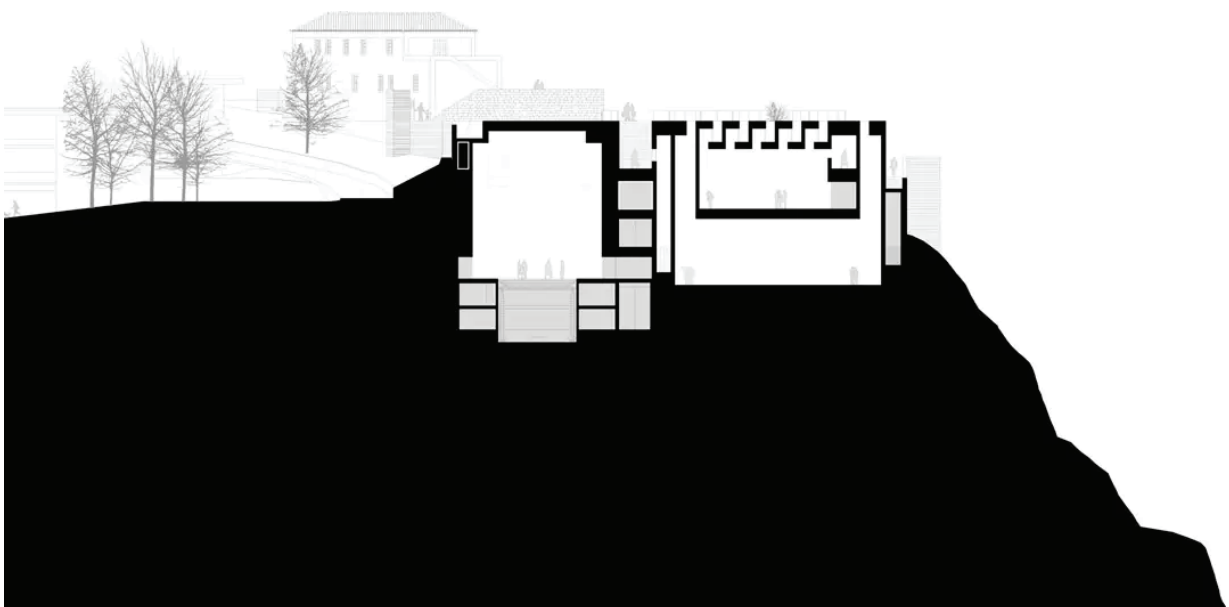
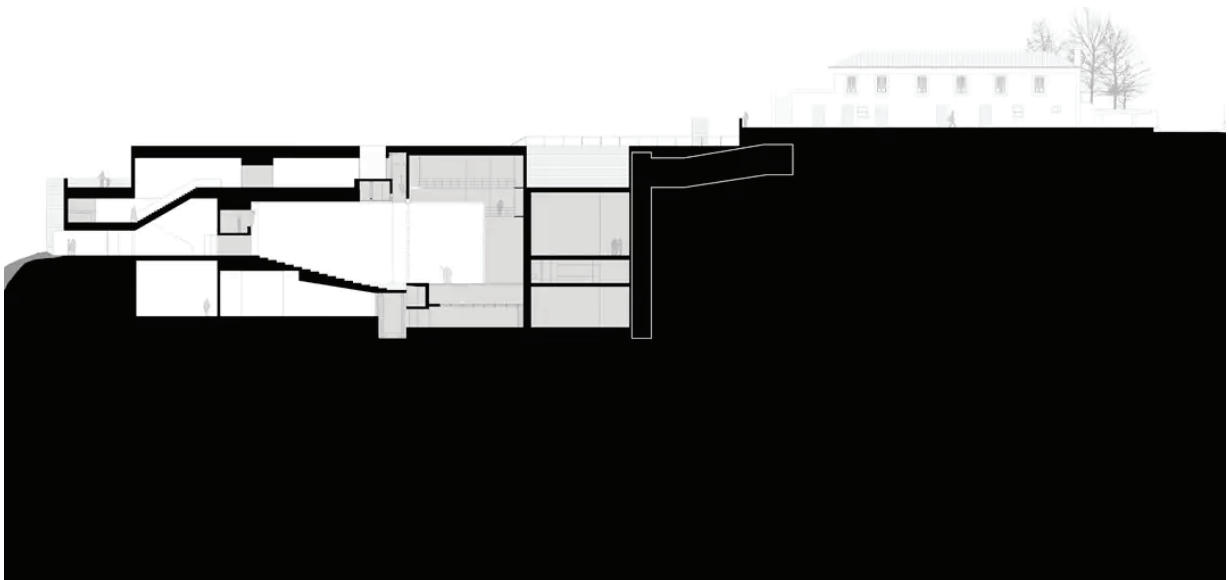
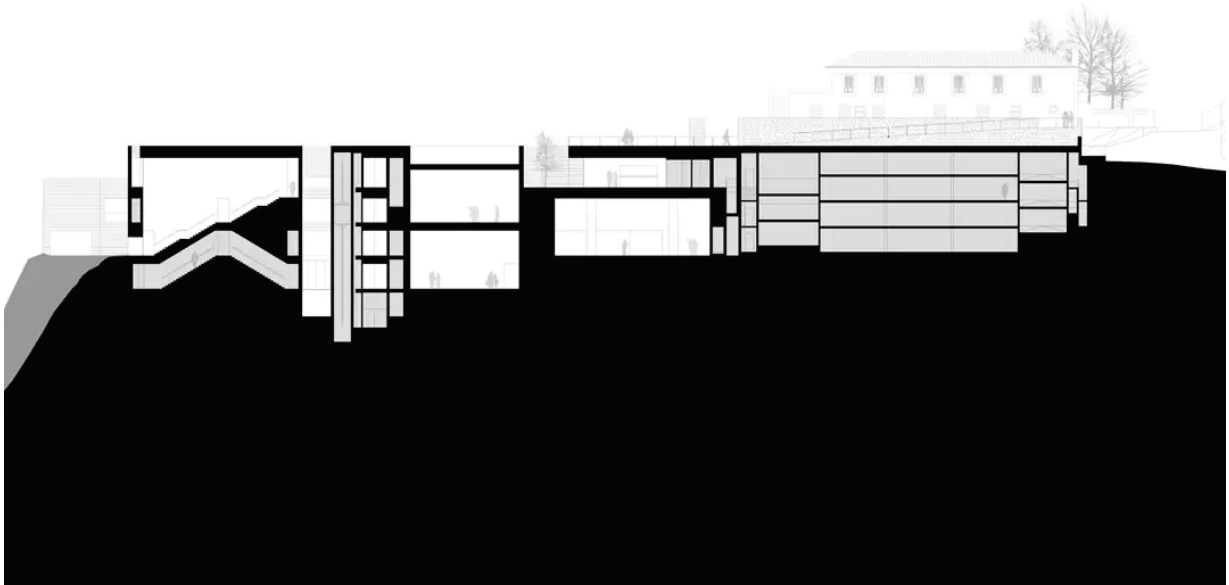


The museum spaces are organized in box-like functions around the main wing's central courtyard that is open to the sky. The architect arranged the functional spaces in a centrifugal manner in relation to the center of the courtyard. One can trace a circumscribed pattern of movement along the rotating direction of the spaces in relation to each other around the central square courtyard in plan. The virtual circumscribed circular motion of the spaces around the courtyard in relation to each other keeps the rotating dynamic motion of the visitor walking throughout the spaces consistent to maintain a seamless spatial experience from one space to the other in continuity. Each rectangular box has a shifted position opposite the one beside it at a 90 degree angle.



At the western flank of the museum, one can enter through the central courtyard on the right hand side into a bookshop. Below the bookshop on the lower floors, there is a triple-height theatre with a backstage. If the visitor standing in the courtyard moves forward past the bookshop, he/she can enter into the lobby space that is located behind the theatre. And beyond the lobby, one can cross through a narrow passageway that has a perspective towards the sea. The visitor reaches from the courtyard, across the passage, to an exterior terrace that is adjacent to the lobby, on the opposite side of the building's elevation. It is a large exterior balcony that acts as a viewing platform for the visitors to see the sea. Its outer parapet is slanted in plan, in order to conform to the direction of the topography. On the western side of the terrace, if the visitor turns right at the end of the perspective he comes across a ramp. The ramp returns the visitor back up to the landscaped roof, tiled with basalt stones.

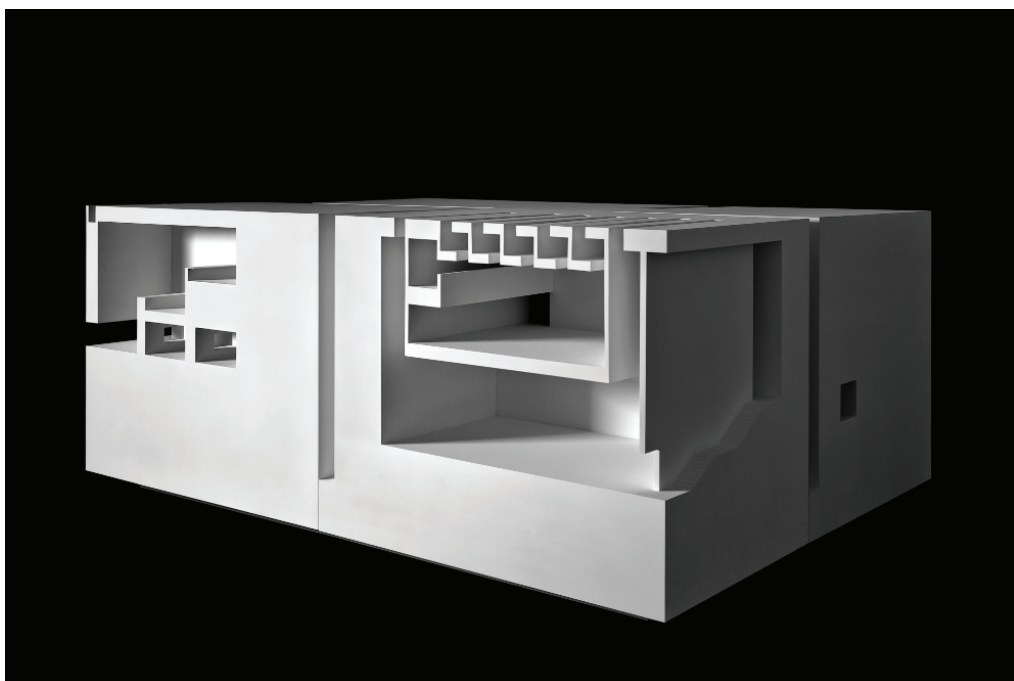




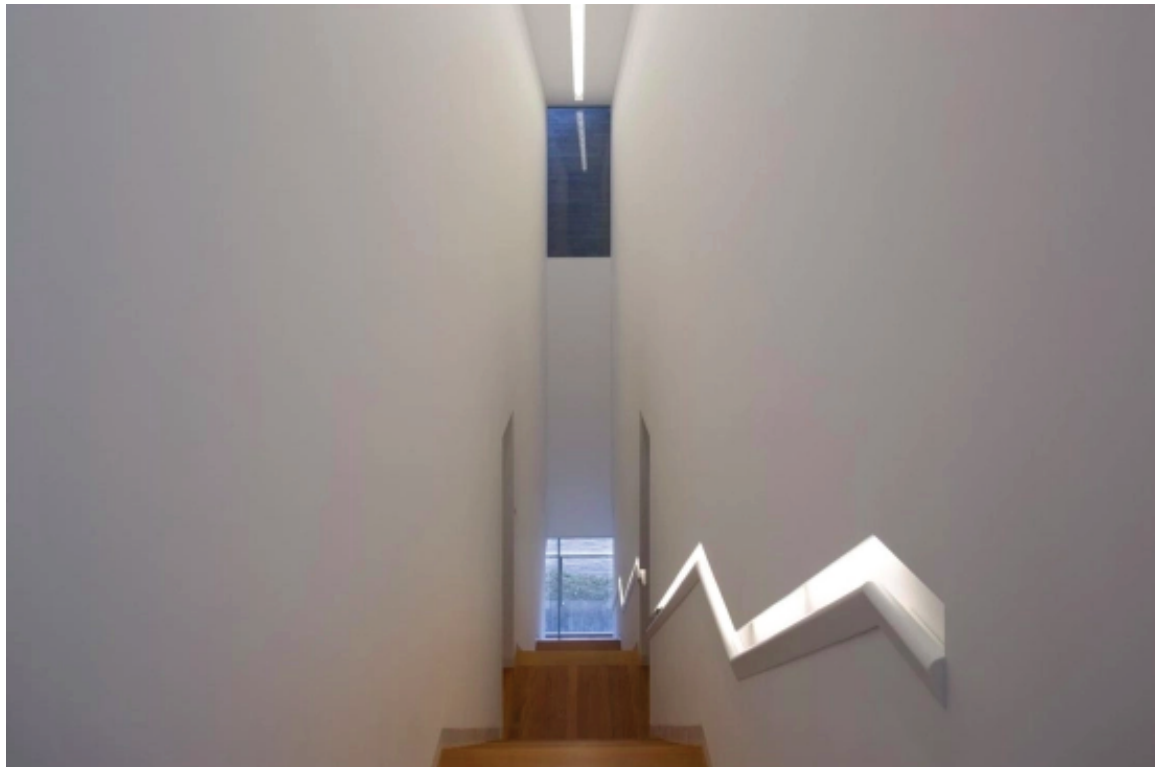
A large void is carved behind the stage at a full-height from its bottom level all the way up to the ceiling of the roof slab. It is designed in this way to take into consideration the specialized needs and requirements of fulfilling the design of a theatre and its set-design.

The lobby space is accessed through the courtyard in the center, by a side-door that leads to the interior double-flight staircase that alternates in direction downwards providing the visitor with access to the theatre. The backstage of the theatre has a roof sky-light located on top of the roof plan aligned above it. It is specifically designed as a distinct roof cover for the full-height void of the backstage space that descends down to the underground.

At the southern corner of the museum, near the edge of the precipice (steep cliff at its corner), the architect placed an important functional space that has a rectangular proportion, a library.



It has 3 successive levels within one space. It has a relatively long and thin proportion, with a triple height space that is the equivalent of 3 floors in section. The rectangle is divided into 3 equal parts; each part covers the distance of a third of the floor slab of the library. A long triple-flight staircase adjacent to the three successively receding floor slabs in the triple height space connects the three ascending floors via a vertical circulation of a three flight interior staircase. It leads the visitor from one floor to the receding floor above it and then to the third floor receding behind and above the second one. The circulation is vertical and has one linear direction, and it is designed in such a way that it allows the visitor access to each floor from a landing at the same level of the floor adjacent to it.



On the north-east corner of the compound two rectangular spaces are placed to contain 2 art galleries on top of each other. They are 2 exhibition spaces that display paintings and other works of art. The exhibition space on the upper floor is located directly beneath the ground floor slab where the sunk-in courtyard is, has a double-height volume, and it has a series of sky-lights on top of it on the roof that filter indirect sun-light through them. Two diametrically opposed sky-lights, each placed at opposite ends of the rectangular volume's short sides are designed in such a way that they are deep cuts or incisions in the ceiling to allow a contrasting flood of bright light to enter the space via the sides from above through the ceiling. This exhibition space also has a linear mezzanine at its backend that connects to an alcove behind it which leads the visitor back to the exterior central sunk-in courtyard. It is a narrow viewing platform that allows the visitor to see the exhibition space in its entire perspective from a higher position from the inside of the space.



Beneath the restaurant is another exhibit space which is larger than the one described before it. It has a wider and longer proportion and is only one large floor with a higher volume and relatively higher clear height. To support its long and wide span, and high spatial altitude, two thin floors to ceiling rectangular columns are erected at a point one third the distance of the entire length of the room. They are aligned in plan along the same virtual line, and positioned on the mid-point of each half line segment, at the same distance from each opposite wall.



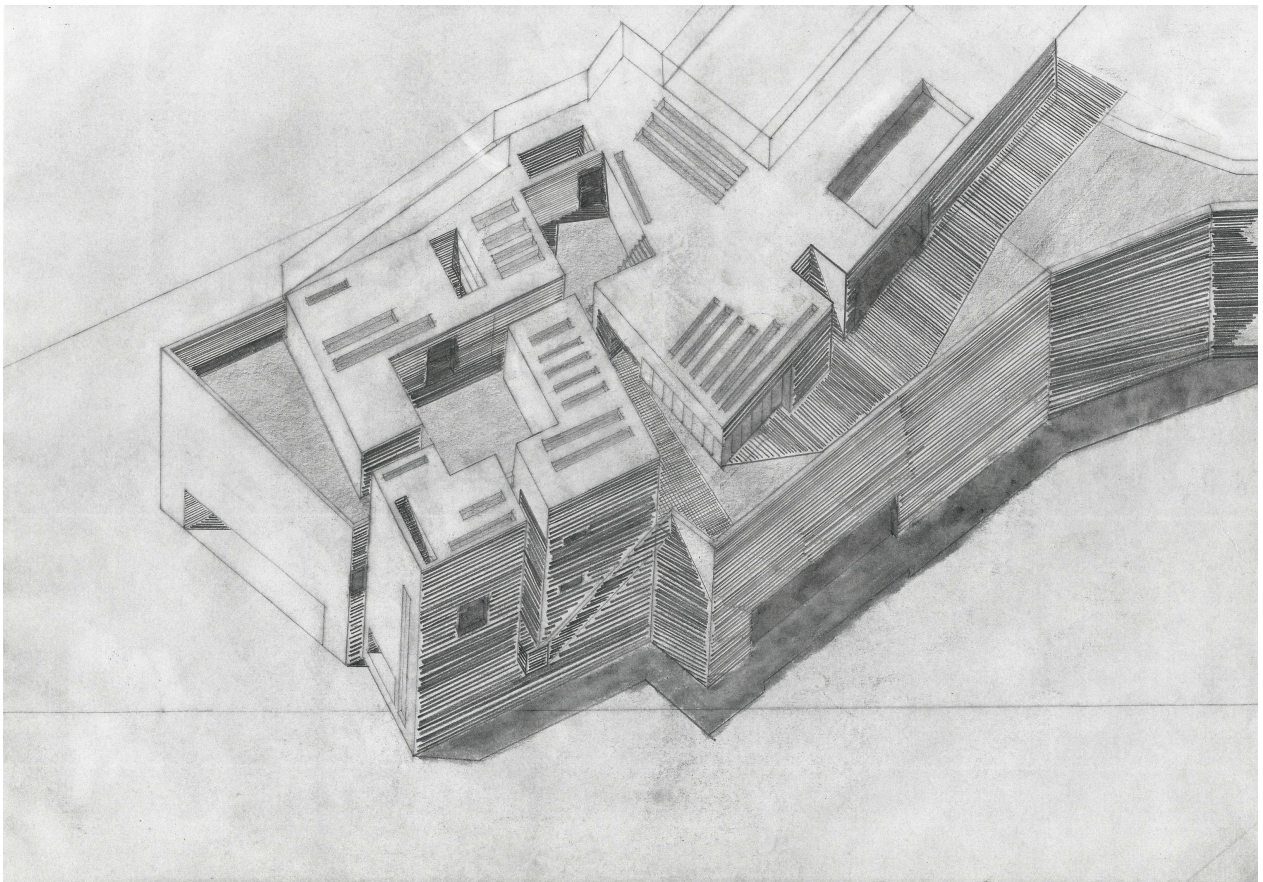
This space also has an interior mezzanine overlooking the double-height space of the exhibition. This deep balcony/mezzanine is a long and rectangular slab that faces the eastern façade and it provides a wide view to the land and the steep topography of the cliff. Because it's a double height space, the subsequent elevation facing it opens the double-height space to the wide horizontal views that frame the landscape in front of the steep cliff acting as a buttress for the building to rest and hold on to it.

The mezzanine is physically connected by a short corridor to the previous exhibition space near it that is aligned parallel to the direction of the courtyard. This small linear corridor is aligned right under the direction of the interior balcony that is located right on top of it on the above floor.

The architect managed to integrate the entire compound's various functional spaces together in a harmonious composition. The functional spaces are connected to each other via a subtle complex network of circulation spaces. They include corridors, alcoves, terraces, staircases, mezzanines and interior and exterior balconies and courtyards.

Some circulation routes are vertical connections from floor to floor, and others are horizontal connections from space to space. Through this method of keeping all the museum's functions interconnected both physically and spatially, the architect applies this circulation network, to provide the people visiting this project with accessibility, from any space located in the building to another nearby space. That way the visitor can transition and explore on foot from one space to another nearby space with ease and access of movement. Each and every functional space can be accessed for the one near it, or above it, or below it easily because of the design of the circulation and multiple paths and points of entry that lead to the same space at different positions and at different angles. From each one can view another position that was previously visited from a different angle or vantage point. This is the ingenuity of the design of the building's architecture, that it is simple yet varied, complex but not complicated, and provides the visitor with ease of access and circulation throughout the entire project.

The building placed on the corner of the steep rocky cliff in Madeira, as a pure geometric box, is designed in such a way that it appears chiseled from the rocks it stands on, as if it is an abstract sculpture carved out of the cliff. It continues the topography's language in an abrupt, abstract way.



Yet in reality, the building is constructed on the cliff as a separate entity, from the natural topography, as an architectural object using traditional construction methods and linear design schemes.

The planning of the spaces and walls has a language similar to that of modernist buildings. Using techniques such as linear perspective, long blind walls, right angled corners with openings cut through them in relation to the walls facing them, and shifted asymmetrical composition of space.

The architect creates fluid complex spatial relationships, while using simple geometry and simple architectural design concepts.

The building is designed as a pattern of multiple spaces placed in a sequential manner, one after the other. Circulation spaces never lead to dead ends, and allow the visitor to move throughout the art center, experiencing the exhibitions in sequential loops, and returning to the starting point easily and smoothly.

References:

<https://www.archdaily.com/179031/flashback-arts-centre-casa-das-mudas-paulo-david>

<https://eumiesaward.com/work/210>

<https://divisare.com/projects/-17750paulo-david-fernando-guerra-fg-sg-arts-centre-casa-das-mudas>

https://www.researchgate.net/figure/Paulo-David-s-Art-Centre-at-Casa-da-Mudas-The-Island-of-Madeira_fig295703853_30

