

# Stone it was Stone it Remained

*The Evolution of Architecture on the Azores island of Pico*

by  
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## AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis.

This is a true copy of this thesis, including any required final revisions, as accepted as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

## ABSTRACT

The culture of building with volcanic stone on the Portuguese Azorean Island of Pico represents the resilience of human creativity. The original settlers of this isolated Atlantic Island were faced with an adverse environment, nonetheless they were able to overcome nature itself and transform the local abundant volcanic stone into vineyards and shelters so that they may survive. The resulting architecture is an intrinsic part of local culture, landscape, and history. This traditional architecture continued to evolve into modern and postmodern typologies that reflected the changing conditions on the island throughout the twentieth and twenty-first centuries. While these new buildings employed modern materials and construction methods, they have always maintained a respect for historic materials and methods. The result is a built landscape that evolved from a singular culture over time. However, conservation efforts of this culture are threatening the authentic condition of the landscape by prioritizing the preservation of traditional architecture in a state of disuse and stagnation to support tourism over the current needs of the people. This is most true in the policies outlined for the UNESCO world heritage site on the island that sees local explorations of material, design and construction methods; which took place as part of a modern and postmodern era of construction on the island, as too dissonant from the historic structures to be allowed, citing them as imported models. This fails to acknowledge that the North American or European migrant is an ever-present figure on the island and the new constructions are equally representative of the local history. As the island enters a new generation with the introduction of the role of the architect there must be a careful consideration of not only what to build but how and for whom. This project seeks to first, tell the story of the creativity of the people that constructed the vernacular, modern, and postmodern buildings on the island of Pico. Then to layout a path for continued evolution of local building tradition that considers the singular historic context, the changing needs of the people, the limited material palette, and the intangible resilient spirit of the local people who created a home in the most inhospitable of places.



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It was my passion sparked by the buildings of the island that propelled me to the University of Waterloo and the School of Architecture many years ago. Within this academic community I have had so many amazing experiences and opportunities. These memories I will take with me for the rest of my life. So, I would also like to thank all the staff, instructors and fellow students at the University of Waterloo's School of Architecture who taught me or helped me in both my undergrad and graduate careers at the school. This includes my committee members who helped me across the finish line. Val Rynnimeri and Tara Bissett.

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## DEDICATION

*This thesis is dedicated to my father, Luis Matos*

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**Introduction:**  
**The Mountain and Sea**

## The Mountain and the Sea

In the middle of the North Atlantic Ocean a black mountain rises against the horizon like an unlit lighthouse. The mountain is a part of the island of Pico, one of nine islands that make up part of the Azorean archipelago.

The Azores were settled by the Portuguese throughout the fifteenth and sixteenth century, and to this day remains isolated by the surrounding sea. In the centuries since its settlement, the Azorean people have developed a unique culture, including the tradition of building out of the local volcanic stone.

*“Once visitors to the Azores recover from the initial stunning impact of the grandeur and alien landscapes of volcanic terrains, their minds naturally fill with numerous questions about the geologic processes that could have produced such exotic landforms.”<sup>1</sup>*

My first memories of Pico island are of the two astounding expansions: the mountain and the sea. As it was described by Brazilian traveler Raul Brandão who travelled to Pico in 1926 and took handwritten notes later published: *As Ilhas Desconhecidas* or *The Unknown Islands*:

*“The biggest impression with which I left these lands, is of a people stuck between volcanoes, with the mountain behind and the sea in front of them...”<sup>2</sup>*

Unlike Brandão who recorded his musing as he sailed into the port of the island, I arrived by air. However, the presence of Pico Mountain reaching into the clouds on one side of me and the ocean on the other, made an undeniable impression. Upon leaving the airport I took the main road that encircles the island and headed west to the village of Madalena. It was on this drive from the backseat of my grandfather’s pickup truck that I first observed the wave of black volcanic stone, dark paths, and lava labyrinths still present from the island’s genesis which exists between the mountain and the sea. As the road passed through small clusters of buildings, I identified homes, churches, walls, and fields of carefully constructed black stone all rising from the equally black earth (See Fig.0.2). Brandão described his own encounter with the scene I found myself:

*“... the black volcanic stone of which the island is made up and which grows everywhere, being used for the dividing walls of vineyards and other cultures and for all types of constructions, including houses that, even when they are whitewashed, they show the blackness in the corners, the bands or in the window frames: it is black to the guts.”<sup>3</sup>*

The colour and texture give the earth and the buildings a homogeneous appearance so that the buildings appear to have risen from the landscape. This feeling that the architecture is something naturally occurring on the Azores is echoed by local historian Tomas Durate who, when describing the way human settlement altered the landscape of Pico, claims: *“Stone it was and Stone it remained.”* Durate does not see the landscape as changed by the people of the island and in many ways he is right.<sup>4</sup> What was there was stone and what presently remains centuries later is still stone, however many things have changed.

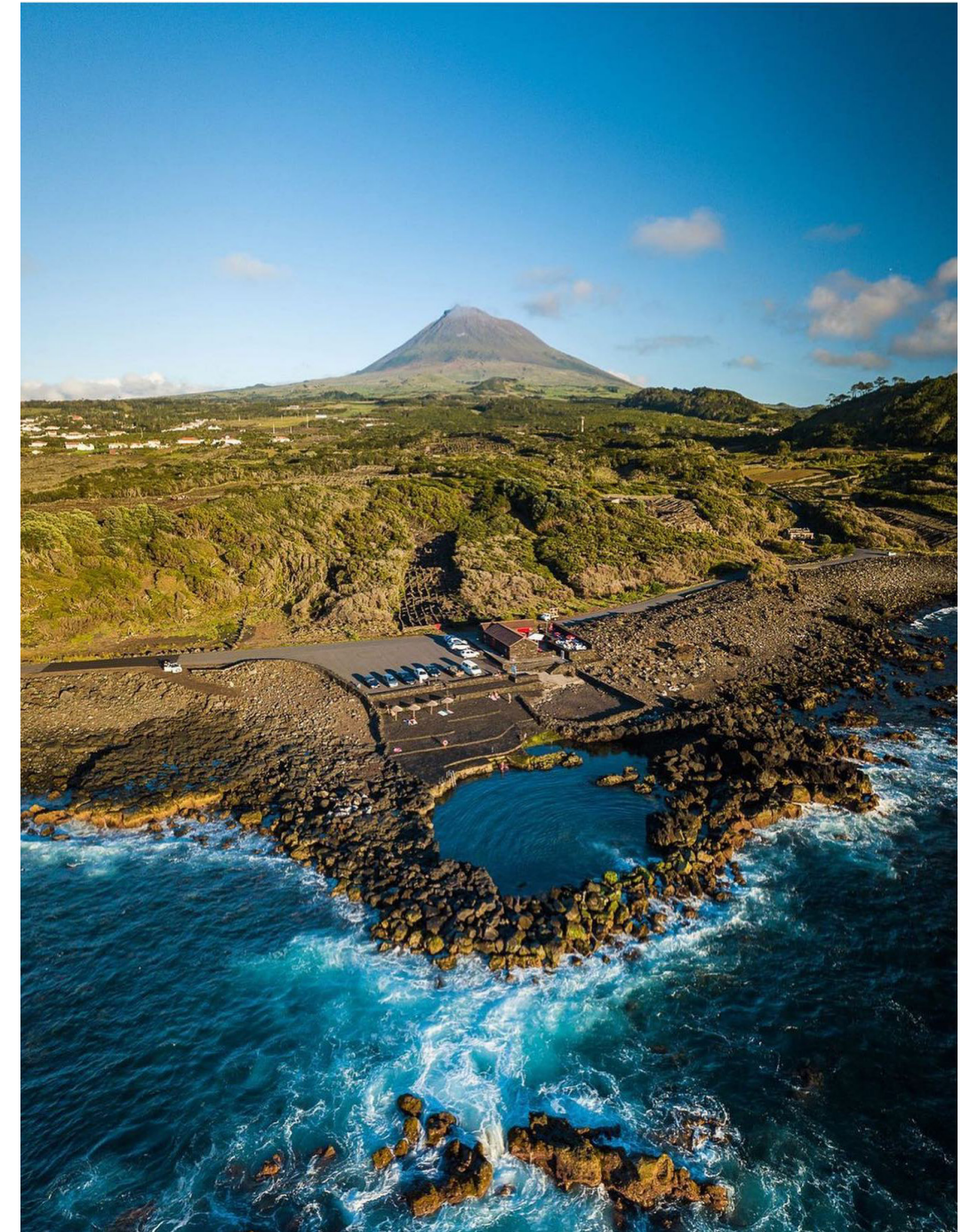


Figure 0.1 : Landscape of Pico Island from the sea





*Figure 0.2: Drawing from memory of my first visit to the island*



*Figure 0.3: Island of Pico Coastline from the road*



*Figure 0.4: Pico Mountain from the road*



My maternal grandparents immigrated from Pico to British Columbia in the early 1960s. They were part of thousands that left the Azores in search of employment in the lumber industry in western Canada after decades of experiencing a lack of economic opportunities, and natural disasters on the island. They were also among the many Azoreans that moved back home after years abroad to the simple life afforded to them in their birthplace. These returning migrants like my grandparents brought with them new ideas of style, construction, and expectations of their homes. My summer visits to the island were largely spent watching my grandfather build a new home for himself, like his neighbours around him. These new constructions had elements of both the local vernacular but with the scale of Canadian suburbia. No longer were the homes part of the means of agriculture production rather they were now changed to support the life of leisure of the occupants. With many bedrooms to fit large families, terraces giving them the view of the remarkable landscape, and big lawn spaces with well tended gardens instead of agriculture fields. These visits were formative experiences, and it was witnessing the ingenuity of the local people who were themselves the client, architect and builder of their own homes that was the catalyst to my interest in pursuing an education in architecture. The local ideas of how to design in the singular context was only just beginning to be explored by the time of my visit in 2004. However, a year later these explorations would become much more regulated with the introduction of new conservation laws and the designation of large swatches of land as a UNESCO world heritage site. Over the years I witnessed a discrepancy between the growth of the island and the conservation efforts that seek to preserve a large stock of the vernacular buildings for tourism without recognizing the creativity and legitimacy of newer constructions of the twentieth century, which are in themselves now a historic reference to the islands past.

### Thesis Methodology

The following thesis research *Stone it was and Stone it remained*, will seek to address the issues in five parts. Part one will establish the context of the island's geography, climate, geology, and history through research collected from a series of published sources. Part two explores the evolution of architecture through three eras of construction, the historic, the modern and the postmodern. Through text and diagrams the construction of each of these eras is explored in detail presenting a linear narrative of the evolution of the built landscape of the island. Part three presents the history of conservation on the island, outlines how the UNESCO designation emerged, how it functions today and the current tensions that the landscape has created on the island with builders and architects. This research was gathered from interviews with locals that have a stake in the site. In part four I will explore the issue by presenting a proposal for a public building within the UNESCO heritage site that provides a response to the issues. Finally, in part five the research concludes how the questions surrounding conservation that is currently being faced on the island, are also questions that come up across the world and discusses the careful approaches that can be taken to balance memory and development.

*"The future of the past is entrusted to our custody."*<sup>5</sup>



Figure 0.5: Part of the UNESCO world heritage site that seeks to protect the vineyard walls and surrounding architecture





*Figure 0.6 : My grandparents in 1982 eating a meal in the doorway of a house made of volcanic stone*



*Figure 0.7 : Me during my first visit to the island in 2004 at age six in front of the same house*





*Figure 0.8: Protected traditional architecture*



*Figure 0.9 : The home my grandfather designed and built*



**Part One:**  
**Context**



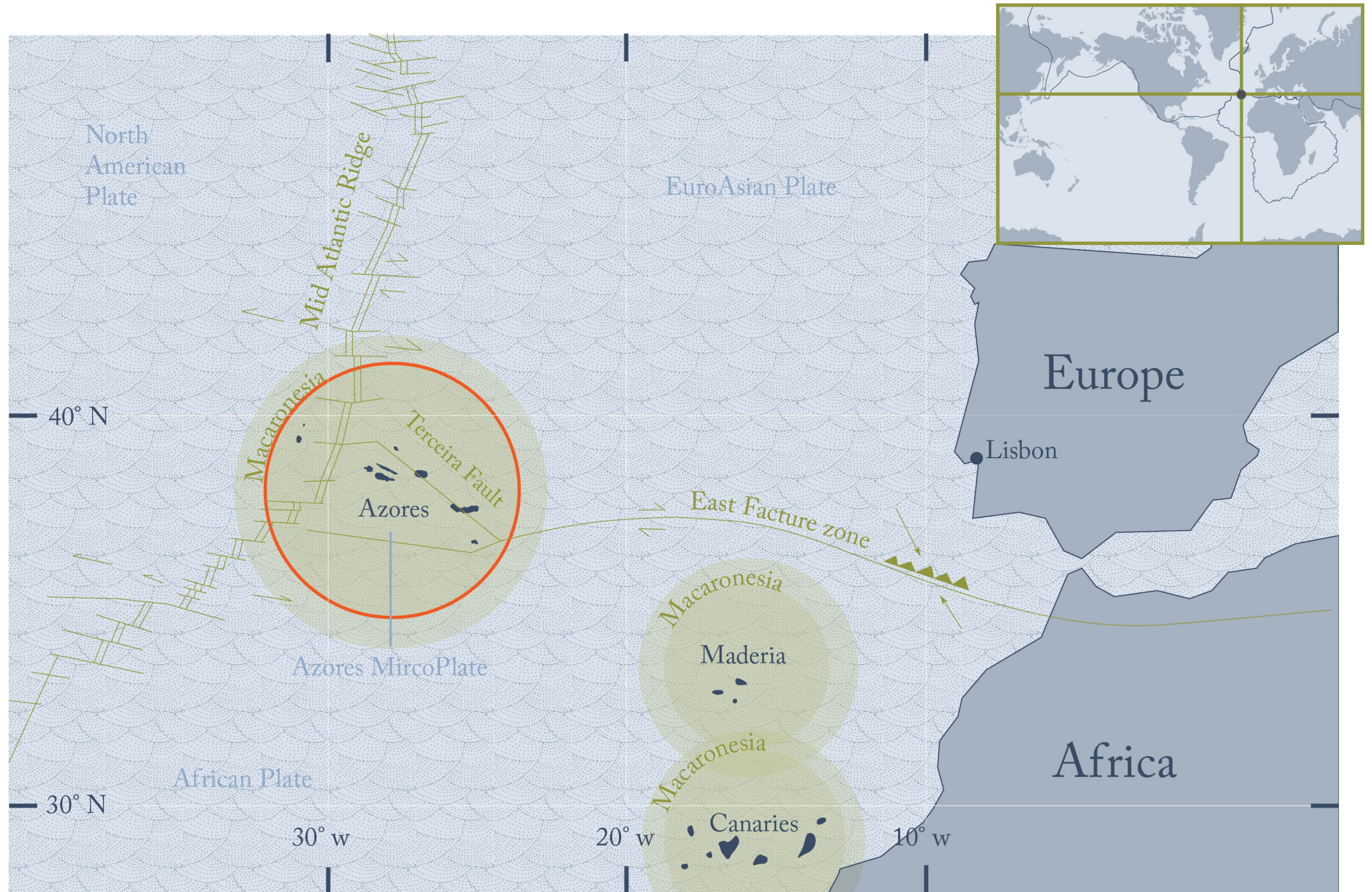


Figure 1.1 : Global position of the Azores Islands In the North Atlantic: Macaronesia



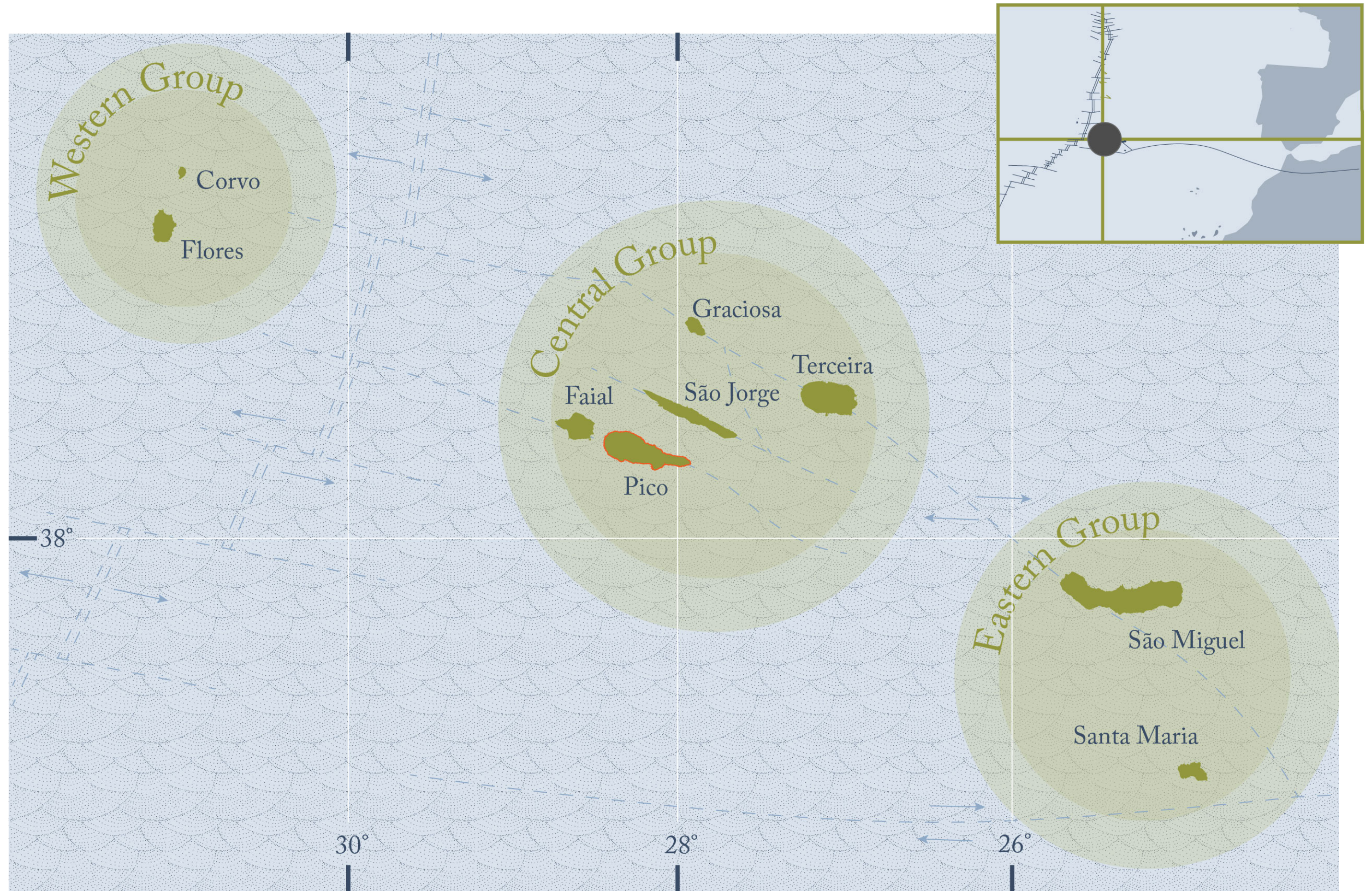


Figure 1.2 : Azores Island Groups



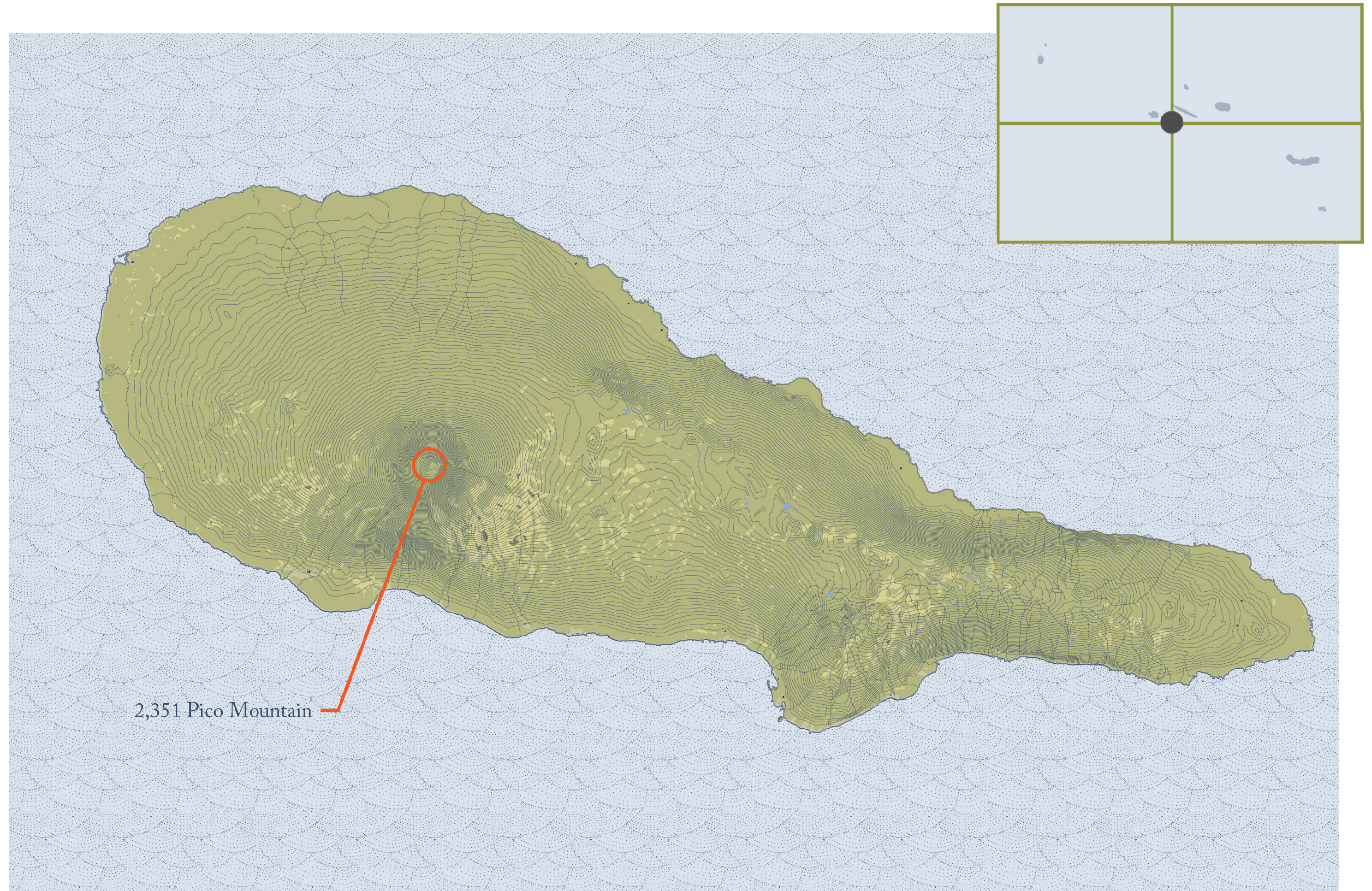


Figure 1.3 : Topographic map of the Island of Pico



## Part One: Context

Part One, explores the geographical, climatic, geological, and historic formations of the archipelago and the island of Pico, up to present day. In doing so part one seeks to establish the foundational elements that created the architecture found on the island.

### 1.1 Geography

*“As men we are historically soldiers to the people we came from and rooted in the habitat to piles of lava that release a substance from our entrails that penetrates. Geography, for us, is worth as much as history”<sup>1</sup>*

#### Azores Geography

The Autonomous Region of the Azores is an archipelago composed of nine islands of volcanic origin, located in the center of the North Atlantic Ocean. The Azores is one of three archipelagos that make up the Macaronesia region. The other archipelagos that make up the region are Madeira of Portugal and the Canaries of Spain (See Fig.1.1).<sup>2</sup> The Azores cover a total area of 610 km, an area that extends in the East-West direction, with a slight Northwest-Southeast slope.<sup>3</sup> Situated in between 37° and 40° N latitude and longitudes 25° and 31° W, approximately 1500 km from the western coast of the European continent and 3900 km from the nearest coastal point of North America. The archipelago is organized based on the relative proximity of the islands; they are divided into three groups, the Western Group which includes the islands of Flores and Corvo; the Central Group is composed of the islands of Terceira, Graciosa, São Jorge, Pico and Faial, and the Eastern Group which includes the islands of São Miguel and Santa Maria (See Fig.1.2).<sup>4</sup>

#### Pico Geography

As part of the central group Pico Island is in the middle of the archipelago at longitude 28° W and the latitude 38° N. Pico is the second largest island of the Azores with an area of 447 km<sup>2</sup>. The island is named after the Pico Mountain that takes up the west side of island and reaches a maximum altitude of 2,351 m. The mountain is not only the highest point of the Azores but also of Portugal (See Fig.1.3).<sup>5</sup>

#### Azores Climate

The climate of the Azores is a result from the islands geographical position. The North Atlantic, is a transition zone between hot and humid air masses, with subtropical origin, and air masses with cooler/drier characteristics of subpolar origin.<sup>6</sup> These intersecting air masses create a weather phenomenon known as the Azores anticyclone. The anticyclone encompasses the archipelago in slowly circulating clockwise air. At the center of this rotation is an area of high pressure which in turn surrounds the islands in a relatively calm climate zone. However, the Azores anticyclone oscillates its position, leading to mixed periods of calm and active weather.<sup>7</sup> The geographic position of the archipelago in the center of the Atlantic also means it is exposed to strong winds blowing from all directions. These elements; meeting subtropic, northern arctic air, the anticyclone and the strong winds, create a climate characterised by; ocean humidity, mild temperatures through out the year, and lots of rainfall.<sup>8</sup> Thus, the islands generally see two seasons the first between September and March which is predominantly rainy, with the frequent passage of cold air coming from the northern polar front. The second season consists of the remaining months from April to August which is less rainy and warmer though remaining relatively mild. However, rain and fog are constant on the islands, especially in the highlands.<sup>9</sup>



Figure 1.4 : Top of the mountain



### Pico Climate

On the island of Pico, the climate is characterized by drastic variations depending on the altitude which ranges from the sea level to the top of Pico Mountain (2,351 meters above sea level). The island has general mild temperatures, however, it is not uncommon to have snowfall on the mountain (See Fig.1.4). The island sees a fair amount of precipitation and wind. The temperatures, precipitation and wind mean that climate conditions become adverse at 400 meters above sea level.<sup>10</sup>

### 1.2 Geology

#### Geological Formation of the Azores

As França Zilda et.al observes in, Volcanic History of Pico and Faial Islands, Azores an Overview:

*Once visitors to the Azores recover from the initial stunning impact of the grandeur and alien landscape of volcanic terrains their minds naturally fill with numerous questions about the geologic processes that could have produced such exotic landforms.<sup>11</sup>*

The geological formations of the islands are critical to any attempt to understand the built traditions of the Azorean and Pico Island people.

The archipelago of the Azores is in a convergence zone of a series of geological factors, whose dynamics is responsible for the seismicity and volcanic activity in the archipelago, as well as the characteristics of the lavas or stones emitted. The first of these factors is the phenomena of a thicker oceanic crust in the region of the North Atlantic that the Azores are located in. The thick crust as well as the observed intense movement of magma, suggest the existence of a hot spot or potentially the existence of a column of hot magma that rises from the earth's core to the crust, otherwise known as a mantle plume. The second geological reason for the volcanic activity is the consequences of the region being located at the meeting point of the North American, Eurasian and African tectonic plates.<sup>12</sup> This unique geological position is also known as the Azores Triple Junction, Azores Microplate or "Platform" of the Azores. The movement of the tectonic plates against one another has formed a system of fractures on the ocean floor. The most significant of these fracture systems is the middle ridge that crosses the Atlantic known as the Middle Atlantic Crest and is the border between the Eurasian and African plates.<sup>13</sup> The other fracture systems at play in the region are the East Fracture Zones (initially called Azores-Gibraltar Fracture Zone or the Gloria Fault), the Rift da Terceira, the West Fracture Zone of the Azores and the North Fracture Zone. Thus, the presence of magma coming directly from the earth cores as well as numerous fractures provided the material for the volcanic islands to form (See Fig.1.1).

All nine islands of the archipelago formed in different locations and times. The first island to form was Santa Maria over six million years ago, since then the archipelago's volcanic activity has resulted in the formation of countless cones, calderas, bays, lagoons and eight other islands across two tectonic plates. The western group of islands are located on the American plate while the Central Group, and the Eastern Group are located on the Eurasian plate. The islands are incredible varied in size. The largest island São Miguel is 44 times bigger than the smallest island of Corvo, with areas that measure 746 km<sup>2</sup> and 17.13 km<sup>2</sup> respectively. This is true for elevations as well, where Pico is distinguished by being the highest point in Portugal. Graciosa, on the other hand, does not exceed the height of 402 meters above the water.<sup>14</sup>

#### Geological Formation of Pico

Pico islands is the youngest's island in the archipelago whose geological formation occurred only 40,000 years ago and was a result of a volcanism of the fissural type triggered in a fracture zone of general direction WNW-ESE.<sup>15</sup> The island of Pico developed in three distinct geological formations (See Fig.1.7). The oldest of these formations can be found on the south of the island and is known as the topo shield volcano (See Fig.1.5). This formation is believed to have begun over 300,000 years ago with successive lava flows from a sea level volcano, that over time created a layer of harden lava several hundreds of meters thick. The Topo or sometimes referred to the as the Lajes Volcanic Complex is located in present day Lajes. The formation is 1022 meters tall and covers an area of 18 kilometers squared and has a concave shape due to erosion. In parallel to the formation of the south of the island about 230,000 years ago the eastern part of the island



Figure 1.5: Topo Volcano Formation





Figure 1.6 : Geological formations that make up Pico





*Figure 1.7: The Achada Plateau formation*



*Figure 1.8: Stratovolcano*



began to form due to many eruption points and numerous lava flows. The result is what is known as the Planaloto Achada or the São Roque, Piedade Volcanic Complex, because a large part of the formation can be found in the municipality of Sao Roque. The formation consists of a flat top area, bounded by very steep slopes and with altitudes that decrease towards most easterly point of the island to the mountain (See Fig.1.8). The western part of the island is dominated by the stratovolcano of the Pico Mountain form which the island gets its name. Pico Mountain is believed by researchers to have formed in three phases. The first phase created the main mass of the mountain and ended at a crater 2,050 meters above sea level, this lower section, has an average slope is in the order of 16°. The volcano then continued to grow in its second phase but now is a more Northeast direction at a steeper slope that varies between 30° and 35°, although in some places it is higher than 60°. This change in slope gives the mountain its appearance (See Fig.1.9). The final stage of formation created a 125-meter smaller volcano cone at its top known to the locals as Piquinho (meaning small Pico) (See Fig.4). The resulting mountain dominates the landscape. Thus, the three structures for the Topo Volcano, Planaloto Achada and the Stratovolcano of Pico Mountain form the island at a total area of 448 km squared, a maximum length of about 50 km and a width of approximately 16 km.<sup>16</sup>

*“The height of this peak is so great, they say that from its shore all these islands of the Azores can be seen...”<sup>17</sup>*

### Geological Landscape

Volcanic eruptions built on the original three formations to create the current geological landscape of the islands. In fact, the island is covered by huge volumes of very recent lavas, emitted either by the great Pico volcano or by the cones of the eastern half of the island. The volumes of lava create varied forms in the Pico landscape.

There are two types of lava flows that formed Pico Island. The first is referred to by geologists by the Hawaiian name of pahoehoe. This lava is very fluid and fast moving. Pahoehoe lava flows created areas of expansive lava fields known locally as “lajidos”. The areas of lajidos are covered by shallow horizontal layers of volcanic stone that form as the lava flowed over itself and cooled over a duration of weeks, months, or years of active lava flow. Some of these layers can be as thin as 8.5 cm. The result of this fast-moving lava are areas of beautiful ropy lavas where the lava has folded into ridges given the appearance of wrinkles in the surface (See Fig.1.11). The surface of this lava also has the presence of tree molds where the fluid lava flowed around trunks and left imprints. However, the second type of lava is thicker and viscous lava due to its chemical composition and gases, it is known as lavas aa. Because it is slower moving this lava type makes much deeper deposit sometimes up to 10 meters and layers vertically. This lava created cliffs that establish the physical boundary between land and sea (See Fig.1.12).

Thus, the 126km long seafront is made of cliffs of both types of lava with a western section of low cliffs between 10 to 20 meters on average of pahoehoe lava while on the eastern part of the island the lava aa cliffs are rugged and reach altitudes of 400m.<sup>18</sup>

This volcanic geological landscape also includes the presence of several grottos locally known as the *frumas*, and bolders (See Fig.1.10).<sup>19</sup>

### Stone Types

The volcanic activity that formed the island left distinct and varied types of volcanic stone behind. The type of stone dependent on where and when the stone formation occurred. Basalts are the most common on the island accounting for 78 % of all stone.<sup>20</sup>

Basalt stones found on the island are igneous rocks or volcanic rocks that have formed from molten lava cooling underground and erupting to the Earth's surface. Basalt is characterised by its formation on the ocean floor, its low in silica content, its dark colour, and being comparatively rich in iron and magnesium.<sup>21</sup> The stone often has holes left by gas bubbles which can give basalt a coarsely porous and fine-grained texture. Basalt is an excellent thermal insulator, experiences a good amount of friction, has excellent UV resistance, is extremely hard and has the special property of the ability to sequester carbon. In Pico, basalts come in three forms: Sideromelana which are basalts with volcanic glass film (See Fig.1.13), Ancaramite with contain the minerals green mineral Olivine and the black mineral Piroxena (See Fig.1.14), and Phenocrystals which are identified by the addition of the mineral plagioclase which appears as



Figure 1.9: Grotto that forms the geological landscape





*Figure 1.10: Pahoehoe Lava Type*



*Figure 1.11: AA Lava Type*





Figure 1.12: Sideromelana basalts with volcanic glass film

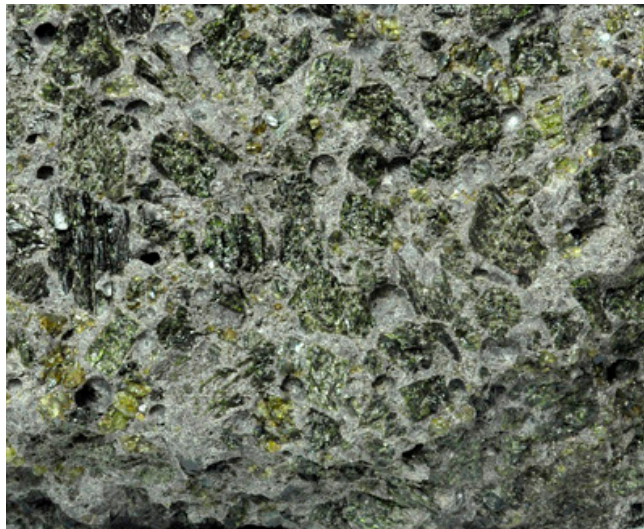


Figure 1.13: Anacaramite with olivine (green) and Poroxena (black)



Figure 1.14: Phenocrystals with mineral plagioclase (white stars)

white stars on the basalt stone (See Fig.1.15).<sup>22</sup>

Of the other non basalt stone on Pico, 21% is trachybasalt, a type of volcanic stone with a composition between trachyte and basalt. Trachytes are in general light, grayish rocks, although they may have a flaky appearance, with dark gray streak and contain higher amount of alkali metals. They are formed due to rapidly cooling magma on the surface.<sup>23</sup> However, within this general classification of types of stone each different lava flow results in unique characteristics and properties for the stone that forms.<sup>24</sup>

In summary, the archipelago, and the island of Pico have unique geographic conditions combined with a singular geology that resulted in a specific volcanic landscape. This landscape was what people first encountered when they arrived to the island.

### 1.3 History

#### Discovery of the Azores

The Azores islands were lost to history several times before they were settled, hence the official date of discovery of the archipelago remains uncertain. Their isolated position in-between Europe and the Americas means that the sea journey has always been harrowing. Some oral tradition, tell of a Greek sailor, caught by a storm, who reached the Island of S. Miguel in 1370. However, historians officially identify the Azores to first appear on the Medici-Laurentian Atlas in 1351. They then appear again on a Catalan Atlas from 1375 and in Gabriel de Valsequa's 1439 chart.<sup>25</sup> However, despite the three previous recordings a 1435 map from the Genovese Battista Beccario refers to the Azores islands as the islands "once again found".<sup>26</sup> This fact of rediscovery is further confirmed by archeology on both Corvo and Terceira. In Corvo, remnants of an ancient Chinese statue, pottery and Carthaginian coins have been found.<sup>27</sup> While on Terceira the recent discovery of a megalithic structure with a form like an Irish wedge tomb suggest bronze age activity. Thus, although the islands were certainly known to exist in the North Atlantic the recorded "discovery" date for the islands is not said to have occurred until the fifteenth century. This historical hypothesis attributes Diogo de Silves the discovery of the first seven islands in 1427 and twenty-five years later in 1452 the two most western Flores and Corvo are said to be discovered by Diogo de Teive. These discoveries, done at the behest of Infante D. Henrique known as Prince Henry the Navigator who started the Portuguese era of expansion aligns the islands discovery at the start of the princes great Portuguese expansion trips.<sup>28</sup>

#### Settlement of the Azores

The earliest evidence of organized settlement is from a 1439 letter that asks for sheep to be sent to the seven islands of the Azores.<sup>29</sup> This letter though does not confirm that settlement was indeed happening in 1439 as the process of occupation of new lands is known to take place in three phases: the first of reconnaissance; the second to drop animals and, eventually, leave seeds to test the fertility of the land; and only the third would correspond to an effective human colonization. It is known, however, that Santa Maria was the first to be populated, followed by São Miguel, then islands of the Central Group. The western island of Flores and Corvo would only be settled one hundred years after Santa Maria.<sup>30</sup> Broadly speaking, the first phase of occupation of the Azores lasted from its discovery by the Portuguese in 1427 (when it was uninhabited) until the restoration of the archipelago's independence in 1642.<sup>31</sup> In this first phase the land was donated (doutary land) from the king to captains who oversaw their division of land. The captains were the civil and criminal head of the land. Their main purpose was to populate the land. When the land was well enough settled the captaincies were resolved and parcels of land were given or sold. These parcels were often long and narrow and have a relationship with the contours of the land and the shoreline. The donatry system ended in 1495 with King Manuel's accession.<sup>32</sup>

The settlers of the Azores came largely from Portugal. There is evidence that regions that may have experienced greater influence, from people from the north or south of the country. For example, in the island of Santa Maria a type of chimney can be observed that signifies a larger influence from the south of Portugal in the regions of Algarve and Alentejo known as the "Algarve-type chimney".<sup>33</sup>

However, there is also evidence of non-Portuguese early settlers including a large group of Flemish people in the Central group and some settlement from North Africa due to trading routes.<sup>34</sup>



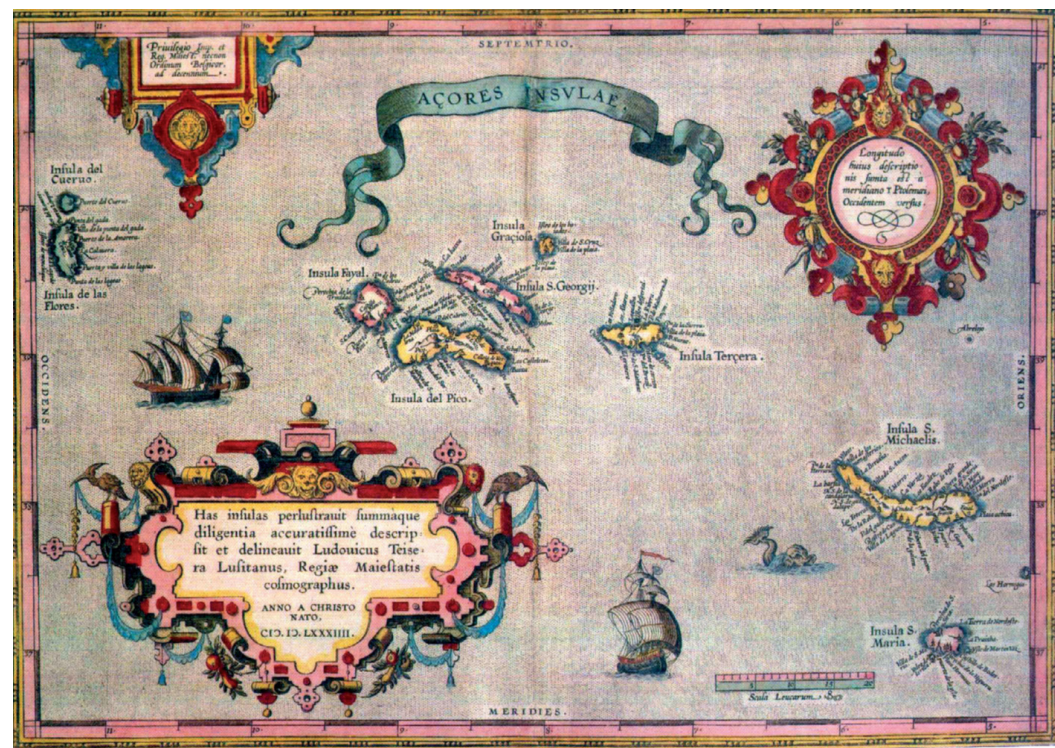


Figure 1.15: Map from the age of discovery

Regardless of where they came from the people began settling on the coast, along beaches and pleasant coves. Remaining close to the waterline and slowly exploring the land inwards. The desire to move inwards was driven by the settler's fear of the sea and pirates but also the search for suitable agricultural land. The access points to the sea remained important for the entire history of human settlement. These competing desires of access to the sea and the protection of inland along with the difficulty of penetration due to the dense forests resulted in a settlement pattern known as "cordão". Translated to "cord" or "rosary", this settlement pattern is where villages were connected by a route (either by land or water) along the coast so that they formed a "cord" shape wrapping around each island. The position of the village became neither too coastal nor too inland. It was in this way that the Azores began to develop.<sup>35</sup>

### 1.3.1 Historic Era

*"The island of Pico, so called for a very high peak, whose summit sometimes appears above the clouds, its discovery is not known for sure."*<sup>36</sup>

The specific history of the island of Pico is much like the rest of the Azores islands. Pico Island was officially "discovered" by Diogo de Silves along with the other islands of the Central Group in 1427. Pico island was called São Dinis Island or Pombos (Pigeon) Island, in the earliest maps from this discovery period. However, the settlement of Pico did not happen at the same time as the other Azores islands not even those of the central group including Faial only 7.5 km away.<sup>37</sup> The geological landscape, thick vegetation, lack of water and the difficult climate that first settlers found on Pico proved more difficult than the other eight islands. Thus, even though the captaincy or leadership of Pico was initially given to Alvaro de Ornelas from Maderia, the position was shortly afterwards given to the Flemish Jos d'Utra, who was already in possession of the captaincy of Faial, due to Ornelas perceived negligence regarding the population of the island. When the men of Jos d'Utra arrived at Pico, judging it to be deserted, they found it was already inhabited by people.<sup>38</sup> It is likely the case that people from established settlements on other islands saw the chance to make a home for themselves on Pico Island. These first settlers had arrived in a place they named "Lajes" which roughly translates to "slab" named after the black stone lava delta located there. Recall that this stone is part of the oldest formation of the volcano found on the south side of the island. On the north side of the island other settlers had also founded the settlement of São Roque.<sup>39</sup> These two settlements were made possible by the existence of nearby streams and access to water. In the eastern part of the island there were many streams that would fill with rain and early settlers built wells to capture this water as well as made use of the water in freshwater springs. However, the western part of the island had no water and was instead a dry volcanic landscape that remained unsettled for nearly three centuries after the foundation of the eastern villages.<sup>40</sup>

When the people arrived in 1460, they brought with them seeds and stakes (branches of trees and plants that can take root and grow). The people began to cultivate the land, growing cereals, fruits, vegetables, and legumes.<sup>41</sup> Outside of agriculture these early settlers also relied heavily on fishing as a resource and cleared highland pastures for grazing cattle. The formation of villages developed much like the other Azores islands always maintaining contact to the sea and moving inward as lands were cleared, yet remaining near fresh water sources. By 1580 the villages of Santa Cruz das Ribeiras, São Mateus, Prainha do Norte and Ribeirinha and the sites of Calheta de Nesquim, Criação Velha and Santo Amaro were recorded as settlements.<sup>42</sup>

While the land was being settled, the local people were also faced with many earthquakes, volcanic eruptions, and unexpected changes in relief. These present unpredictable dangers created a collective psychology of fear. These fears were present in all islands but most acutely in Pico where the volcano loomed as an ever-present threat and reminder of the uncertainty. Since settlement the volcano has erupted three times; the historic eruption of 1562-1564 which took place in the Mistery of Prainha, the eruptions of 1718 in Santa Luzia/São João and the most recent magma activity recorded 3 years later, 1720 in Silveira.<sup>43</sup> It is therefore these fears that manifested in a culture of intense religiosity. From beginning the church took on the role of protecting populations and confronting nature. They did this by building religious buildings that stand out strongly in the landscape, often presenting their facades towards the sea as if defying nature's destructive power.<sup>44</sup> In fact, the designation of "village" does not exist in the Azorean vocabulary, which identifies the inhabitants of an area or a place by the name of the parish or "freguesia" to which they belong, thus reinforcing the feeling of protection under the umbrella of a territorial circumscription directly identifiable with the church.<sup>45</sup> In addition to the religious manifestations directly linked to





*Figure 1.16: Cableta church defiantly facing the sea*



*Figure 1.17: Festival of the Holy Spirit*





Figure 1.18: Settlements ports and historic eruptions





Figure 1.19: Man working in the vineyard

Catholic, Apostolic, and Roman worship, the most rooted and widespread ritual throughout the archipelago is the feast of the Holy Spirit.

The cult of the Divine Holy Spirit is a celebration of parties with a charitable spirit, which has, over the centuries, taken root in the Azores, and in Pico, in particular. Even the smallest parishes take part in the festivals and every parish gets their own day to celebrate. The traditions remain today with a few changes to the buildings used. This includes new purpose built spaces to hold the festivities and most significantly the serving of the charitable soup lunch, traditionally called the “dinner of the Holy Spirit”, that takes place in each parish. Before these purpose-built buildings the meals took place at makeshift spaces: the philharmonic headquarters, people’s houses, parish and recreational halls.<sup>46</sup> The church would also be a key element in developing the characteristic vineyards of the island.

### Vineyards

The first priest to arrive in Pico was known as Friar Pedro Gigante.<sup>47</sup> At the time of his arrival only the east side of the island was being settled and the west side, under the volcano was considered uninhabitable. Friar Pedro Gigante was the first person to try and plant vines in this desolate landscape, he discovered that rainwater easily infiltrated the porous volcanic stone and not only was it possible to grow vines, but the quality of the wine was excellent. This was an incredible surprise to the inhabitants who viewed any crop managing to survive in the cracks of stone as a miracle. This implication of the successful crop was incredibly important because while grapes and wine did not make an impressive diet for the people of the island it did provide a lucrative income. The market value of wine has always been high, even to this day. However, this was incredibly true in a post medieval Europe that had seen many wars and diseases. People had come to trust the quality of wine over water. Due to the celebration of the eucharists, christian religious orders held the knowledge and experience in the best ways of producing wine. These orders made great profit in this work. Therefore, upon Friar Pedro Gigante discovery, priests began arriving from different religious orders precisely to exploit the large vineyard properties that could be made on the west side of the island where no land for other crops existed. Among these orders were the Jesuits, the Franciscans, and the religious order of Nossa Senhora do Carmo, otherwise known as the Carmelitas. These orders already had a presence in the archipelago and alongside other wealthy men from Faial claimed large areas of desolate black volcanic land. They then hired local people to begin the hard work of planting vines. It was discovered that the best way to do this was to break the thin layers of stone, (recall the pahoehoe type lavas) place soil in the hole, and plant the vine.<sup>48</sup> The problem with this method was the great amount of loose stone that would be kicked up in the process. The solution was simple and ingenious. The local people used the loose stones to build small walls known as corrals, canadas or cunhais.<sup>49</sup> These walls served the purpose of removing the loose stone from the ground (allowing people who were largely barefoot to walk around), while also providing protection to the vine plants from the salt ocean air that would kill them, and further allowing for one to orient themselves in the vast black landscape. This back breaking work was done for the promise of profit and soon these vineyards began to take over the landscape. However, it was decided by the vineyard owners that their properties would remain within five miles of the coast to preserve the forest and trees further inland were the main source of fuel on the island that at the time.<sup>50</sup>

Along with the wine production it was also discovered that fig trees could manage to grow among the stone. These trees had a semicircle wall of their own built higher to protect them from the salt and prevailing winds. The figs produced were used in the creation of spirits known as Agua dente, which was further used to fortify the wine.<sup>51</sup>

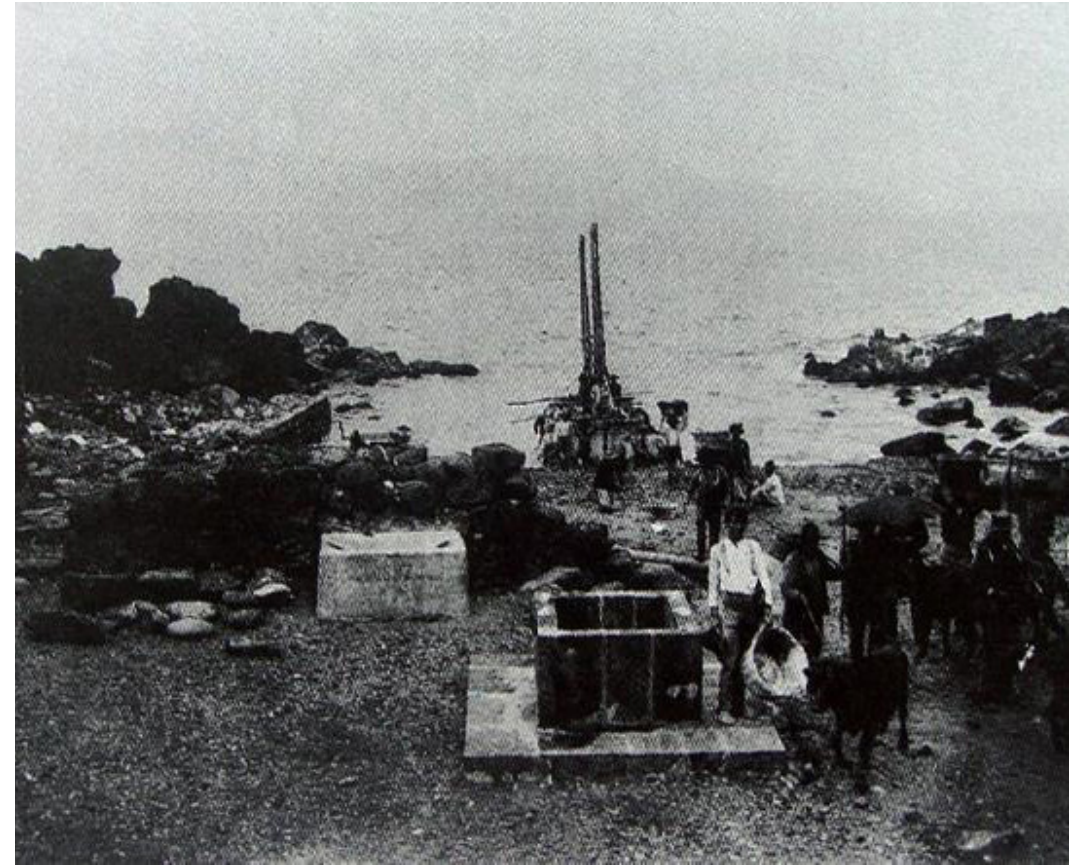
With the economic activity on the west side of the island people now needed to live in this landscape previously deemed uncondusive for life. This was achieved with two types of constructions. The first was deep tidal wells cut by hand from the stone to access water below the layers of lava. This was necessary for the function of the distilleries that use steam in the process, but it also gave people a nearby water source for drinking and cooking. The second was the construction of numerous little harbors. These little harbors allowed for boats to be the main method of transportation around the island. Boats were preferred to walking or horseback because the volcanic landscape made the creation of good roads nearly impossible until the 20<sup>th</sup> century. The harbors were also used to export wine for sale abroad.<sup>52</sup>

Around these harbors, little nucleus or buildings formed. Including cellars, warehouses, distilleries, and large manor homes for the landowners. These buildings like the walls of the vineyards were all constructed in the abundant basalt stone. Thus, the landscape on the west side





*Figure 1.20: Aerial of the Vineyards*



*Figure 1.21: Historic photo of the little ports that supported the vineyards*



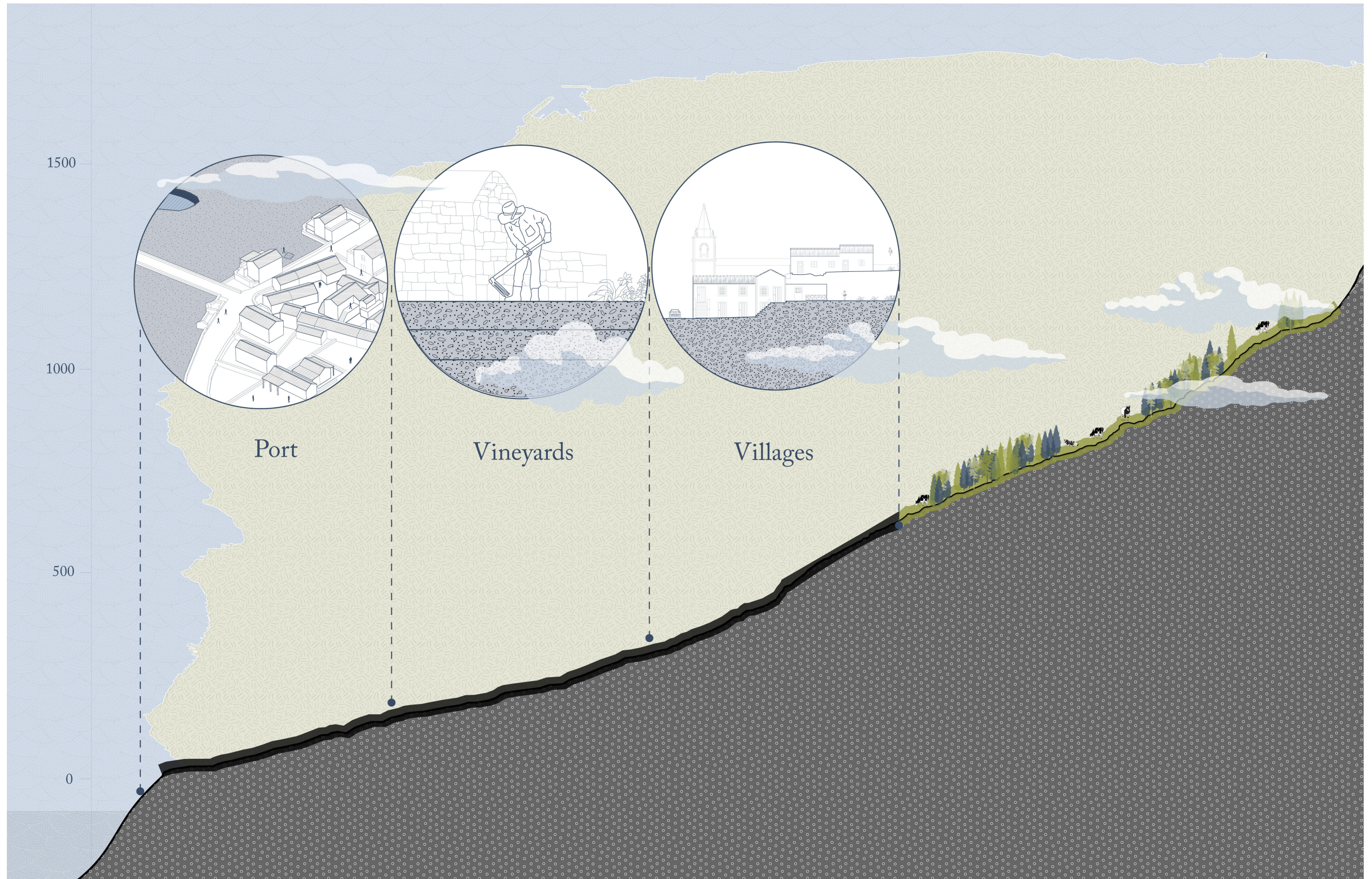


Figure 1.22: Landscape Section



of the island developed this way, with harbors at the coast surrounded by a cluster of buildings to support wine production, large vineyards properties with stone walls organizing everything into rectangular maze behind them and north of the vineyards communities of local people who worked during the day in the landscape. Above the communities were dense forests for grazing and Pico Mountain above it all.<sup>53</sup>

### Economic Peak

In 1867, the wine production was at its peak. Pico was producing 12,000 to 15,000 barrels per year and exporting to Brazil, the West Indies, Germany, England, Russia, and other countries. The wine was a particular favorite of the Russian Czars.<sup>54</sup> This intense economic activity corresponds with a growth in population. The established municipalities of Lajes and Sao Roque saw booms in population while in 1712 the village of Madalena was made a third municipality. Throughout the 19th century the wine industry allowed the island population to jump from 3000 people at the start of the century to the population peak in 1849, with 31,246 inhabitants, with a demographic density of 70 inhabitants per km squared. During this time the parish of São Mateus was among the most populated parishes in the entire archipelago being one of only seven villages in the Azores that had more than 4000 residents.<sup>55</sup>

As more settlements were made, more earth was cleared of stones for agriculture, and when the stones were not needed for the vineyards or construction people began to arrange these left-over stones in pyramid style piles known as “maroiços” (meaning pile of stones). According to tradition, based on popular memory the stone was laid out in layers, forming steps, which, acting as ramps, allowed the stone to be loaded to successively higher levels.<sup>56</sup>

### The End of the Vineyards

The appearance of the powdery mildew in 1852 and phylloxera in 1872 infected the vines and put an end to the flourishing economic activity of wine. In 1866, only 100 barrels of wine were produced.<sup>57</sup> Without the prosperity of the wine exports, the island entered the 20<sup>th</sup> century in a state of transformation.

#### 1.3.2 Modern Era

The modern era of the island occurred during the 20<sup>th</sup> century. Although Pico Island was disconnected from the mainland it is important context that during much of this time Portugal was under a fascist government, the Estado Novo (1926-1974). This political influence on the island was characterized by infrastructure improvements and controlled development.

However, the island's largest driver for change at the time was the immediate aftermath of the vine diseases. Three social changes occurred on the island that dramatically altered the landscape and the built environment.

### Land Division

The first was that without the large-scale economic activity of the wine industry the Faial landowners sought to sell their vines properties to recoup some of their losses and swiftly leave the island. Vineyards were subsequently broken up into smaller parcels and sold to the local inhabitants who had once worked the land. The new owners converted the lands by either planting pest-resistant American grape varieties and continuing small scale wine production or planting fruit trees.<sup>58</sup>

The buildings that were sold were also divided. Parts of a single building sold to different families that converted warehouses, cellars, and distilleries into homes by the sea. These seaside homes acted often as “vacation homes” for people on the island because the grape harvest season coincided with the summer months.<sup>59</sup>

### Migration

The second change brought on by the end of large-scale wine production was that those who could afford to left in search of new economic opportunities. By 1864, twelve years after the first sign of disease amongst the vineyards, over 3,000 people had left the island, dropping the population to 27,721 inhabitants.<sup>60</sup>



Figure 1.23: A pile of stone known as maroiços



Figure 1.24: Whaling on Pico Island

This trend only increased throughout the 20<sup>th</sup> century as transportation to the islands became less dangerous with naval and aviation advances. These advances strengthened the connection the Azores had with the Americas. This relationship had existing for centuries due to the Azores location as part of the main sailing routes between America and Europe, however it was not until the 1950s that both America and Canada allowed for Portuguese emigration.<sup>61</sup> In America this legislation was approved at the initiative of Senator John Kennedy. By the 1970s, 83,000 Azorean emigrated to North America about 27 percent of the archipelagos population at the time. Today of the 410, 850 Portuguese immigrants estimated to be living in Canada, 70 percent are Azorean.

There were many factors that inspired this migration, in the decades after the initial loss due to the end of the wine industry. Among the most clear was the mass migration that followed each earthquake. Unlike the early days of settlement residents did not have a need to be resilient and rebuilt, they could instead choose to move their families to safer places. Which is what happened on Pico Island after the 1957 eruption that impacted both the island of Pico and the neighboring island of Faial. Then once again after the 1963 earthquake that hit the island of São Jorge. Days after the earthquake hit the island, a ship specially chartered for the purpose, took Azoreans to North America, in search for a better life. The ship carried people, agricultural implements, and animals.<sup>62</sup>

However, the main reason for migration to North America was the search for better economic opportunities. Early Azorean immigrants to North America worked as fishermen and, whalers. Later more Azoreans found work in textile mills, as seamstresses, rail workers, in forestry, and as farmers. Many of the Azoreans that moved to North America maintained strong ties to the homeland, establishing churches and communities to maintain their traditions. This includes yearly festivals and celebrations (see fig 1.25). While also keeping in touch with relatives and former neighbors through frequent visits to the islands. In fact, a trend developed of emigrants returning to visit on an average every five or six years depending on finances. Much of these visits were planned around local festivals. In 1978 the local newspapers estimated that 25-30,000 tourists of Azorean descent to attend the Festa do Santo Cristo, a church celebration that happens in the summer.<sup>63</sup>

Outside of festivals emigrant tourists describe the purpose of their visits as either visiting family or to see the island (split 62% versus 38% respectively based on 29 respondents in 1978). Of these visitors about 1 percent would permanently move back to their homeland (as recorded in 1976).<sup>64</sup> In his research geographer Pedro Miguel Melo interviewed 15 migrants about their life in the Azores before migrating, while in Canada and after returning. He finds that like the emigrant tourists the connection the returning people have to the islands is strong. He observes in some cases people maintain ownership of property through the decades they spend in North America, with the intention of improving their financial situation and returning.<sup>65</sup>

The permanent or temporary move to North America not only allowed for people to improve their financial situation, but it also allowed young people to get a better education. Further changing the society on the island. It is estimated today that 1 in 5 Azorean people have familial connections to North America making North America a center of culture for the Azores.<sup>66</sup>

Therefore, through this modern era returning emigrants and emigrating tourists are key actors in the process of change. Bringing with them improve socioeconomic conditions, a better education and consequential a shift in ideology.

### Whaling

The third change in this modern era brought over via the returning migrants from the east coast of America and Canada was whaling. Whaling took over as the most important economic activity at the same time the wine industry ended. Whalers established large communities in both Lajes and São Roque. Light weight boats, harpoons, and large parties of men were used to complete the dangerous but lucrative work.

Whaling ended in the Azores in 1985 due to the Brighton convention, which was rectified by Portugal, accepting the ban on this activity.<sup>67</sup>





*Figure 1.25: Azorean Immigrants in Oakville, Ontario celebrating the festa do Bon Jesus keeping close ties to the homeland*

### 1.3.3 Post Modern Era

After the end of the whaling, Pico's economy became a mix of agriculture, dairy farming (artisanal cheese is very popular), livestock, fishing, and tourism. The government also employs a large amount of people.

Tourism has evolved and while tourists of Azorean descent are still common there is now a growing number of international visitors. These visitors are attracted to the adventurous volcanic landscape: taking tours of the vineyards, climbing the mountain and charting whale watching trips. The post-modern era is marked by the construction of museums, new hotels, restaurants, clubs, and bars, and, consequently, the increase of new projects and services in the scope of ecotourism, rural and nautical tourism, all of which are responsible for the progressive economic growth of the municipalities.<sup>68</sup>

With tourism taking on a new priority, conservation of the historic structures also has gained new importance. As part of this initiative in 2004 a large area of vineyard was made a UNESCO world heritage site. The story of this site and the history of conservation will be explored further in part three.

As of 2021 the population of the island is 13,883, with a density of 31/km<sup>2</sup>. The population is generally aging with 50 percent of the population between 25 and 64 years of age. Madalena is the most populated area followed by Lajes and Sao Roque. Madalena has seen growth of 4.7%, from 6,049 residents to 6,332. This has immense significance as this means it is the only region in the whole archipelago to be experiencing any growth. Madalena was also the municipality in the country that registered the largest increase in the number of accommodations for housing (13.5%). This growth comes with a greater number of global influences. In 2020, the island saw its first global fast-food restaurant open (a burger king in Madalena).<sup>69</sup>



**Part Two:**  
**Architectural Evolution**



## Part Two: Evolution of Architecture

The building traditions on Pico Island can be classified into three eras, that match the economic and social shifts on the island outlined in part one. They are namely the historic era from settlement in 1483 to the fall of the wine industry in the late nineteenth century, the modern era in the twentieth century and the postmodern era roughly in the twenty-first century. This chapter describes the architecture evolution with typological and construction detail.

### 2.1 Historic Architecture

The architecture of the early days of settlement had a primordial quality. These constructions recall Vitruvius primitive hut, appearing to be architecture built of instinct and for the requirement of shelter more than anything else.<sup>1</sup> New settlers began by making homes, with a rectangular plan, built in local volcanic stones with a two pitched sloped roof, covered in half cane tile and supported by a rudimentary wooden structure. The partitions are simple wooden studs.<sup>2</sup> The techniques used saw some evolution over time to fit the personal and economic needs of the people; for example, there is some evidence of thatched roofs in the early days of settlement, as this would have been a cheaper and more readily available material than clay roof tiles, as there was no clay on the island (this would be later be imported from Santa Maria).<sup>3</sup> However, despite these small modifications the vernacular remained the same throughout the nearly four centuries of its construction.

#### Historic Residential Architecture

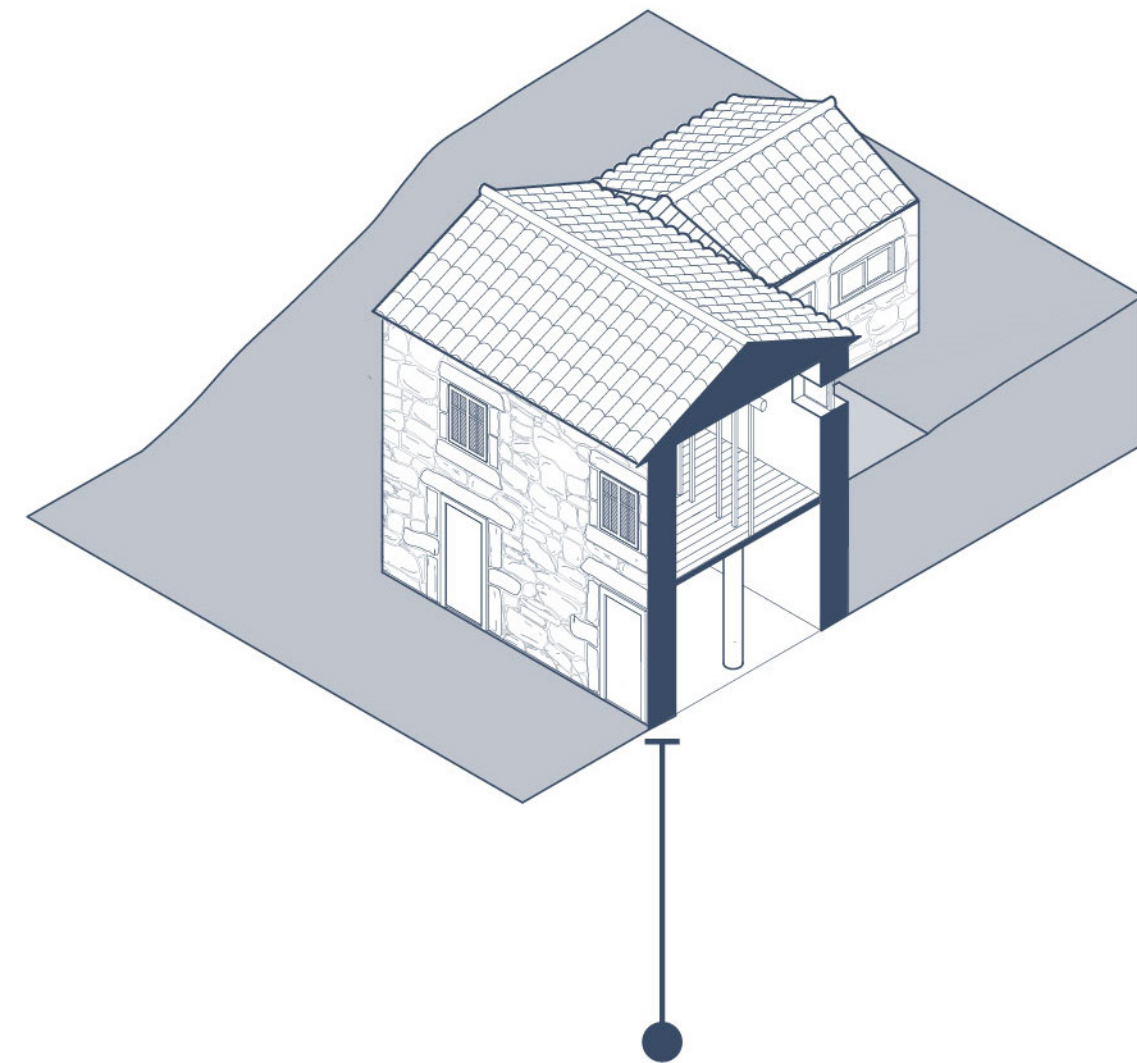
For the purposes of this work, I will refer to the most rudimentary structure that all construction on the island of Pico has evolved from as the “traditional home”.

#### Stone

The choice of volcanic stone is dependant on the location of the traditional home as well as the wealth of the owners. The stones used as masonry are basalt, and trachyte basalt. Recall from 1.2, that basalt is a black or grey in color and is reasonably workable stone yet due to its compact and vacuolar texture is also the toughest, densest and most weather resistant volcanic stone on the island.<sup>4</sup> These characteristics make the material not only popular in the construction of homes but also in the paving roads and streets. While trachytes basalts, as described in part one are gray or dark gray in color, with varying tones between greenish, whitish, and sometimes brown. They are typically softer than basalts however both stones face a high likelihood of weathering given the environment of the island. This is due to the high humidity, strong winds and salty ocean conditions. It became a common practice to apply a coating to the stone annually. The coating was made of natural products, usually oil, sometimes hot-rolled (eg whale or flax oil cooked). It was then common to apply a whitewash on top of the coating for protection. The whitewash is composed of a mixture of clay and lime, about 2 cm in thickness, over which a fine lime and sand mortar is applied. The addition of volcanic ash is also common.<sup>5</sup> The lime and day used in these mixtures were largely imported from the island of Santa Maria.<sup>6</sup> Any colour applied to the painting of the wall was done using natural pigments such as, hematite a common iron oxide compound which sometimes occur near basalt stones that was used to create a red pigment when mixed with lime.<sup>7</sup>

#### Exterior walls

The construction of the wall itself may be done in one of four methods (See Fig.2.1). The first method uses stone and place the units with alternation of corridors or aids, parallel to the wall and cross-sections perpendicular to the wall, this is known as a single-leaf stone wall.<sup>8</sup> This wall type can either be constructed using regular cut stones or irregular stone masonry. When made with irregular stones, the placement and treatment are done with greater or lesser care, depending a lot on the master who executed it. For good behavior it is essential to guarantee a perfect intermingling between stones, filling the voids with finer particle size and sometimes clay. Even



### Historic Wall Types

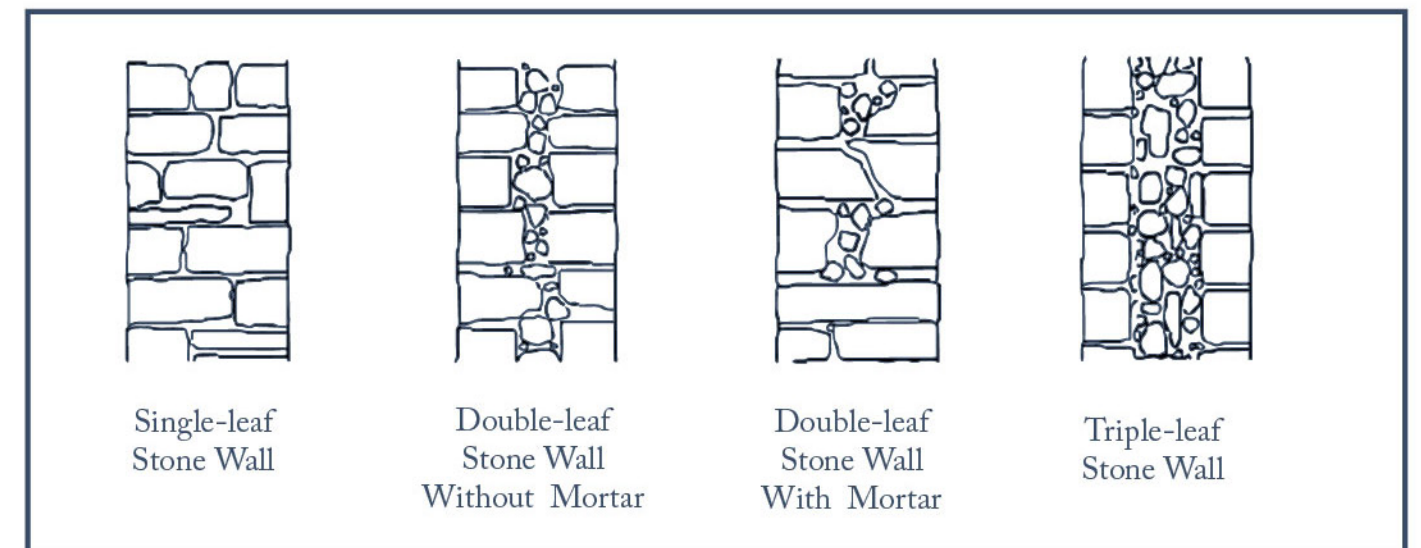


Figure 2.1: Historic Wall Types



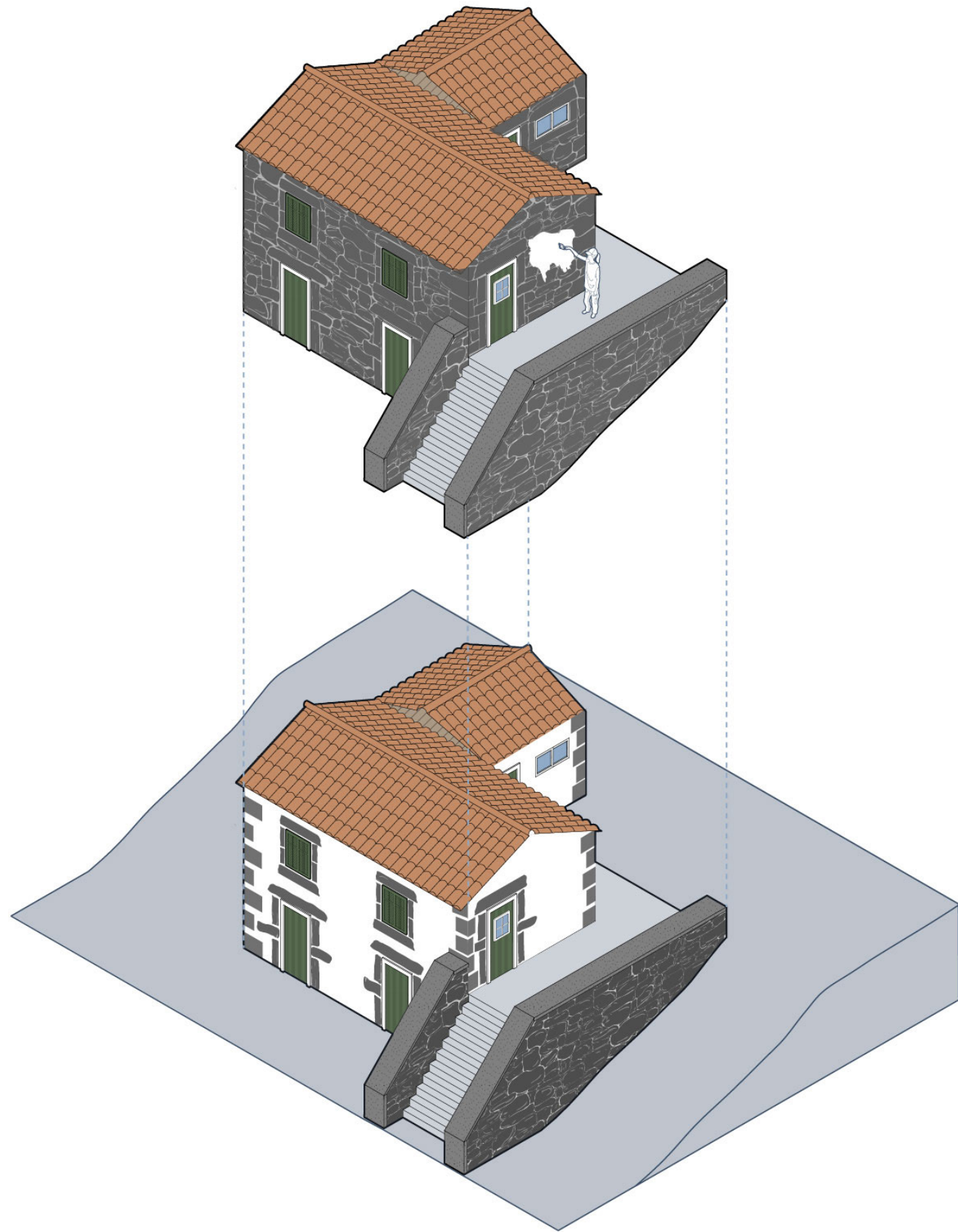


Figure 2.2: Exterior Stone and Coverings



Figure 2.3: Traditional Home with fading cover



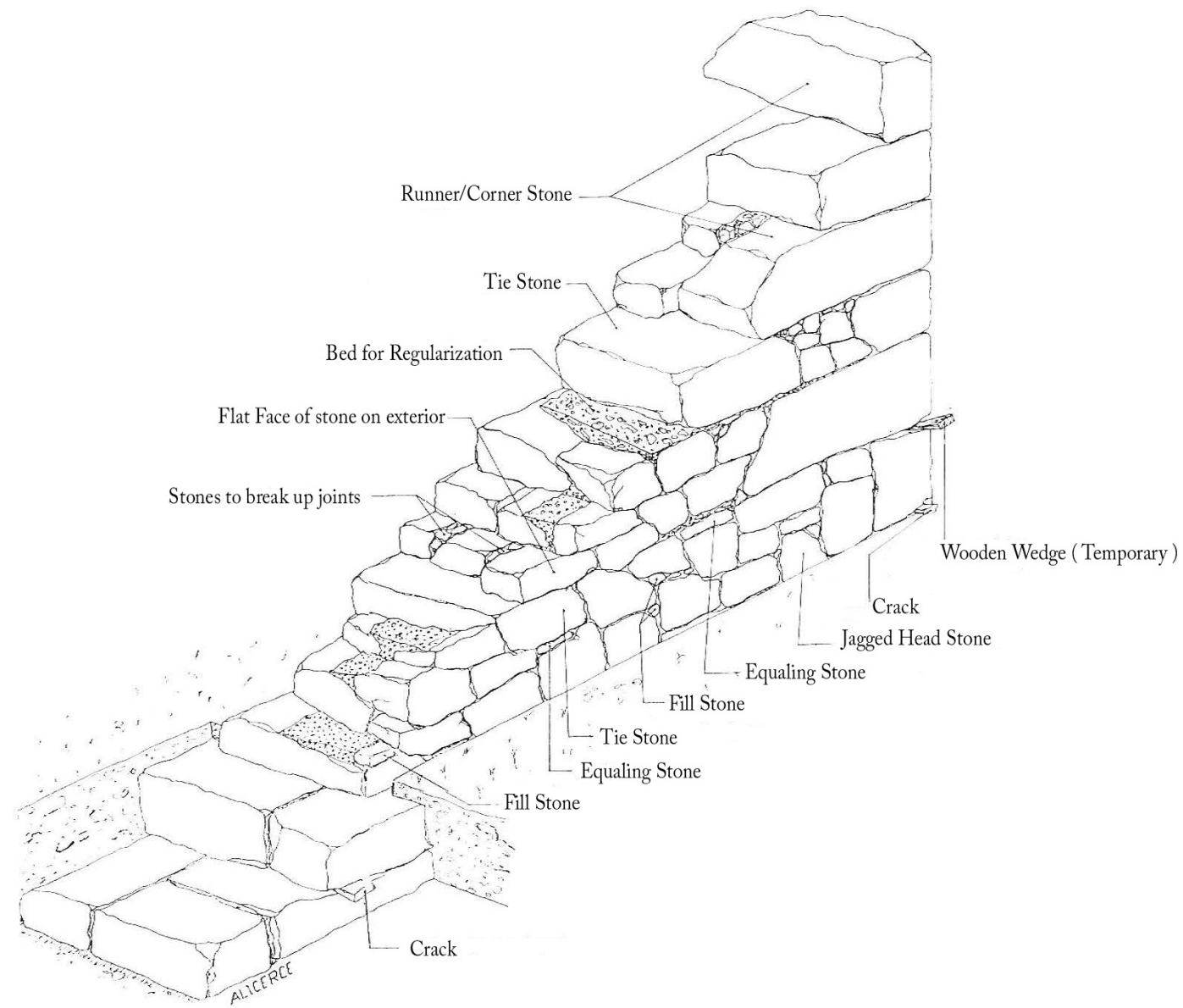


Figure 2.4: Stone Wall Sketch



Figure 2.5: Two men carrying a large stone for traditional construction



well executed, this masonry generally present poor behavior under earthquakes. The next type of wall is the two-leaf masonry, made with stones chosen slightly longer than 1/2 wall thickness, so that they are well interwoven. The gap between the two-leaves is filled with volcanic rubble known as Bagacinas or Biscuit stone.<sup>9</sup> This is a gravel like volcanic stone (slag and lapilli basalt) often black Bagacina infill may be further supported by mixing it with mud and lime mortar to fill the walls.<sup>10</sup> The last wall type is called the three-leaf masonry wall. These walls are usually thicker, and its interior leaf is constituted of small stones and clay.

Bonding mortars were not used in the earliest of stone constructions. Later, there were two types of bonding mortars used. The first and most common is a mixture of clay, earth sand and water. This mixture was then crushed under the feet of oxen or humans. The mortar could or could not be mixed with slaked lime depending on access to the imported limestone from Santa Maria.<sup>11</sup> The second type of mortars are known as fatty mortars which consisted of the same materials as the first with the addition of oil that could be whale, linseed or even olive oil when available. These have a slow setting, sometimes taking years but they acquire a great resistance once set.<sup>12</sup>

No matter the composition of the wall, these rural homes will always have a main façade, characterized by wide opening for windows and doors. Openings can also be found on at least one other side elevation. These openings are always articulated with single stone lintels and framed with simple wooden doors and windows, often covered in shutters.<sup>13</sup> The walls themselves attempt to maintain a consistent 66 cm in width, equivalent to 1 “côvado”—an ancient Azorean measure of length, but can be found in practice to have an average thickness from 65 to 70 cm.<sup>14</sup>

### Wood

In the traditional home, wood is the building material for most floors, ceilings, roof structure, finishes, doors, jambs, baseboards, and staircases. Since the time of settlement, the forest on the island of Pico was abundant, and due to its importance for fuel was maintained through regulation (recall in 1.3 when Faial property owners agreed to not cut trees miles away from the coast). There was a great abundance of species in the island’s forest and of great quality, namely laurel, cedar, acacia (although this is considered invasive), and pine.<sup>15</sup>

### Interior Walls

The interior walls always constructed of timber planks and posts on both sides, at a spacing of 0.50 to 0.70m. Timber strips are nailed to the planks which are covered with lime or clay mortar, and occasionally with the addition of animal hair.<sup>16</sup> The partitions walls also have a structural function. Even with lower stiffness and strength, they contribute to the bracing and overall resistance of the building contributing to a greater shear resistance of the building.<sup>17</sup>

### Roof Structure

The roof structure is typically a two sloped pitched timber structure.<sup>18</sup> The “scissor” roof truss type is more common in rural buildings. The roof rafters vary in dimensions between 0.14×0.05m and 0.19×0.07 m, spaced at 0.35 to 0.40 m, which supports the ceiling. The rafters are connected to the ridge beam at the top, and at the bottom are supported by a wall plate, usually with a transverse section of 0.10 × 0.10 m, which is connected to the inner leaf of the masonry wall.<sup>19</sup> This wall plate runs throughout the perimeter of the wall, constituting a type of ring-beam. The ceiling joists are spaced from 2 to 2.5m. Over the rafter beams the tile battens are fixed over which regional ceramic tiling is laid. The tile battens contribute to the overall stiffness of the roof and promotes the consolidation of the structure.<sup>20</sup>

On top of the battens the roof tile is placed. The traditional tile is a handmade clay tile. These tiles are rectangular in shape and curved to create overlap, and thus requires about 35 units per square meter of coverage. The local clay sourced either from the island or imported from Santa Maria Island is characterized by extreme porosity. This means that in the main the tiles become fragile and heavy.<sup>21</sup> This weight gain, although normally considered a disadvantage, appear to work on the island because it improves the roofs performance with strong wind. This material quality also gives the roof a better ability to adapt to the warps of the wooden structure of the roof and give it characteristics of greater thermal comfort.<sup>22</sup>

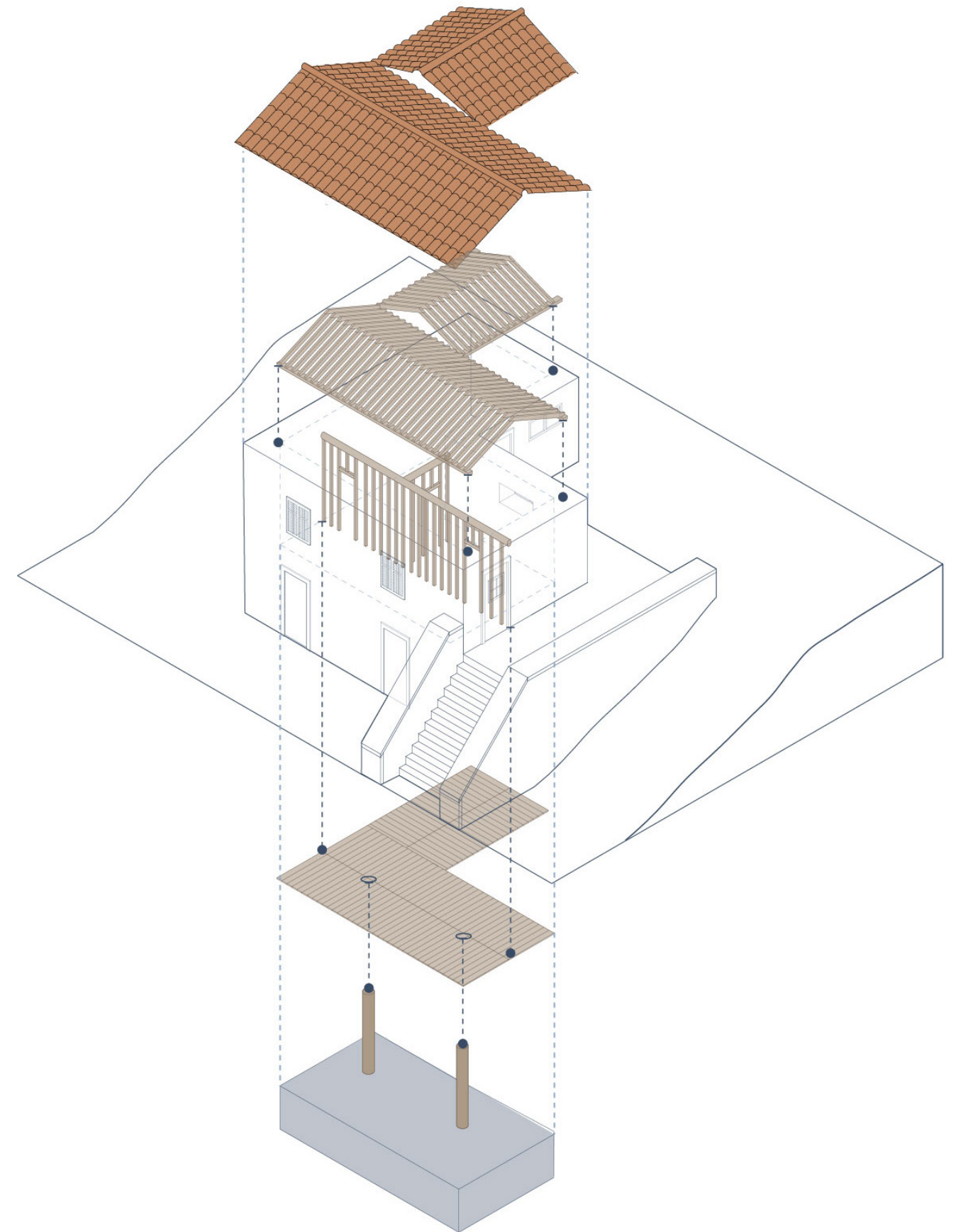


Figure 2.6: Wooden Frame System in Traditional Home



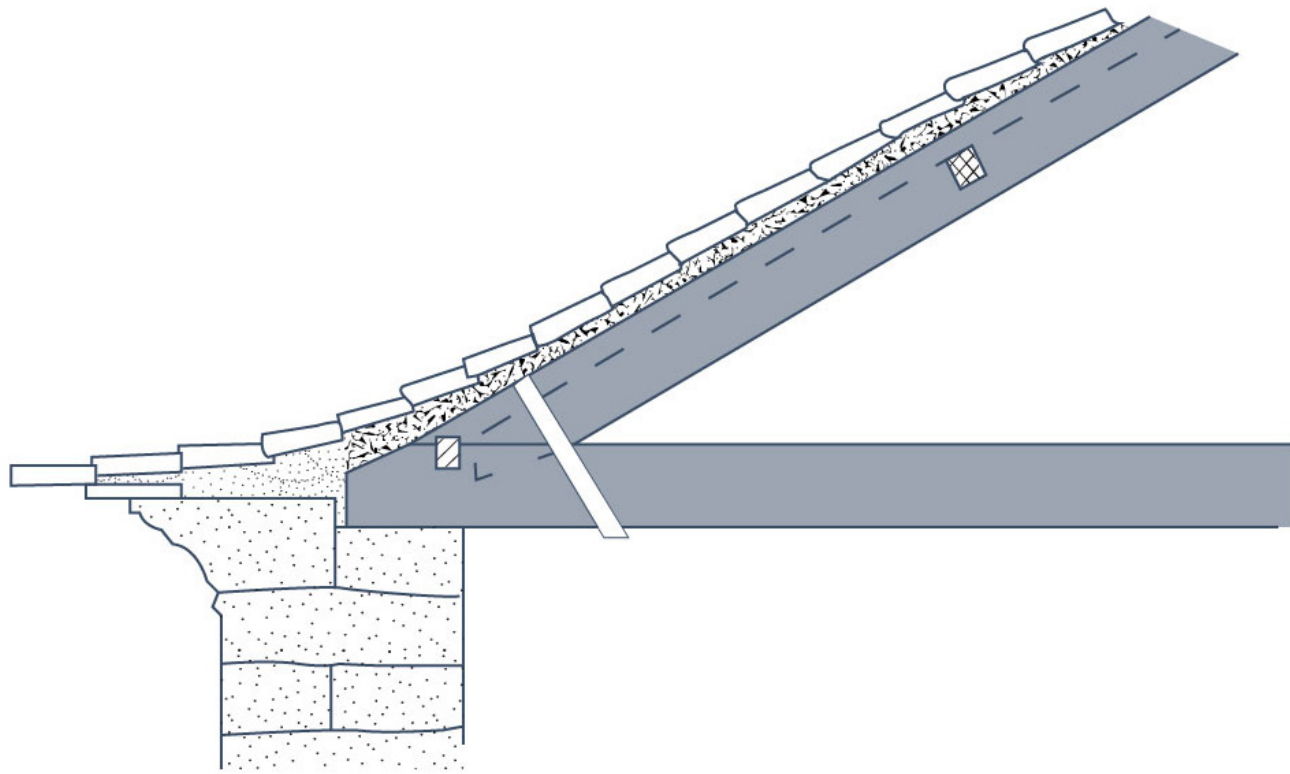


Figure 2.7: Scissor Truss Section used in historic construction



Figure 2.8: Scissor Truss Roof





*Figure 2.9: Roof Tiles*



*Figure 2.10: Construction Crew building traditional home*



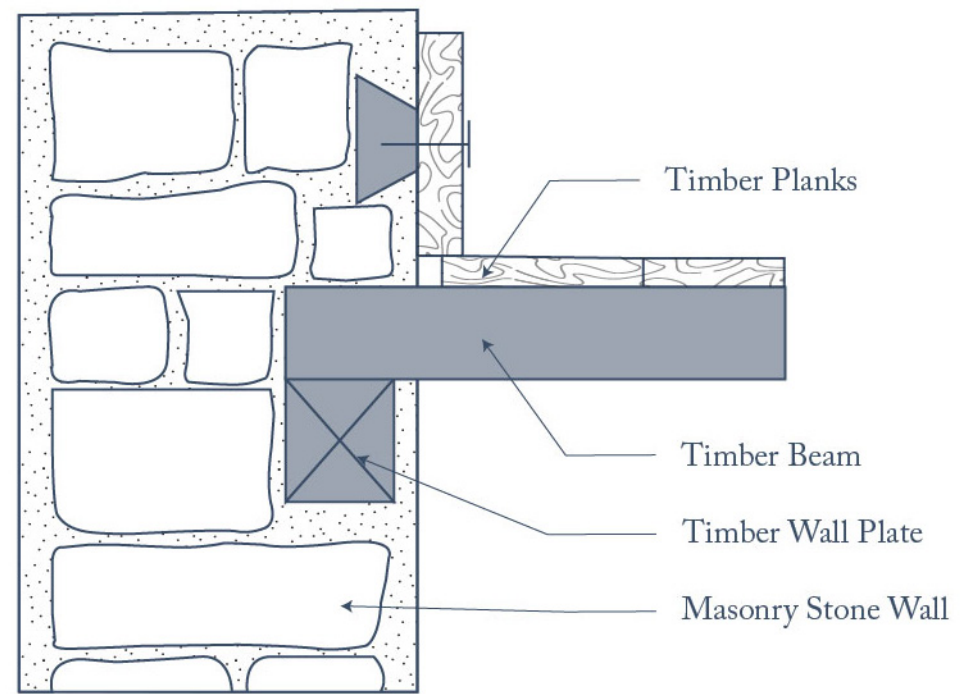


Figure 2.11: Floor System



Figure 2.12: Beams in a traditional home



# Historic Typology

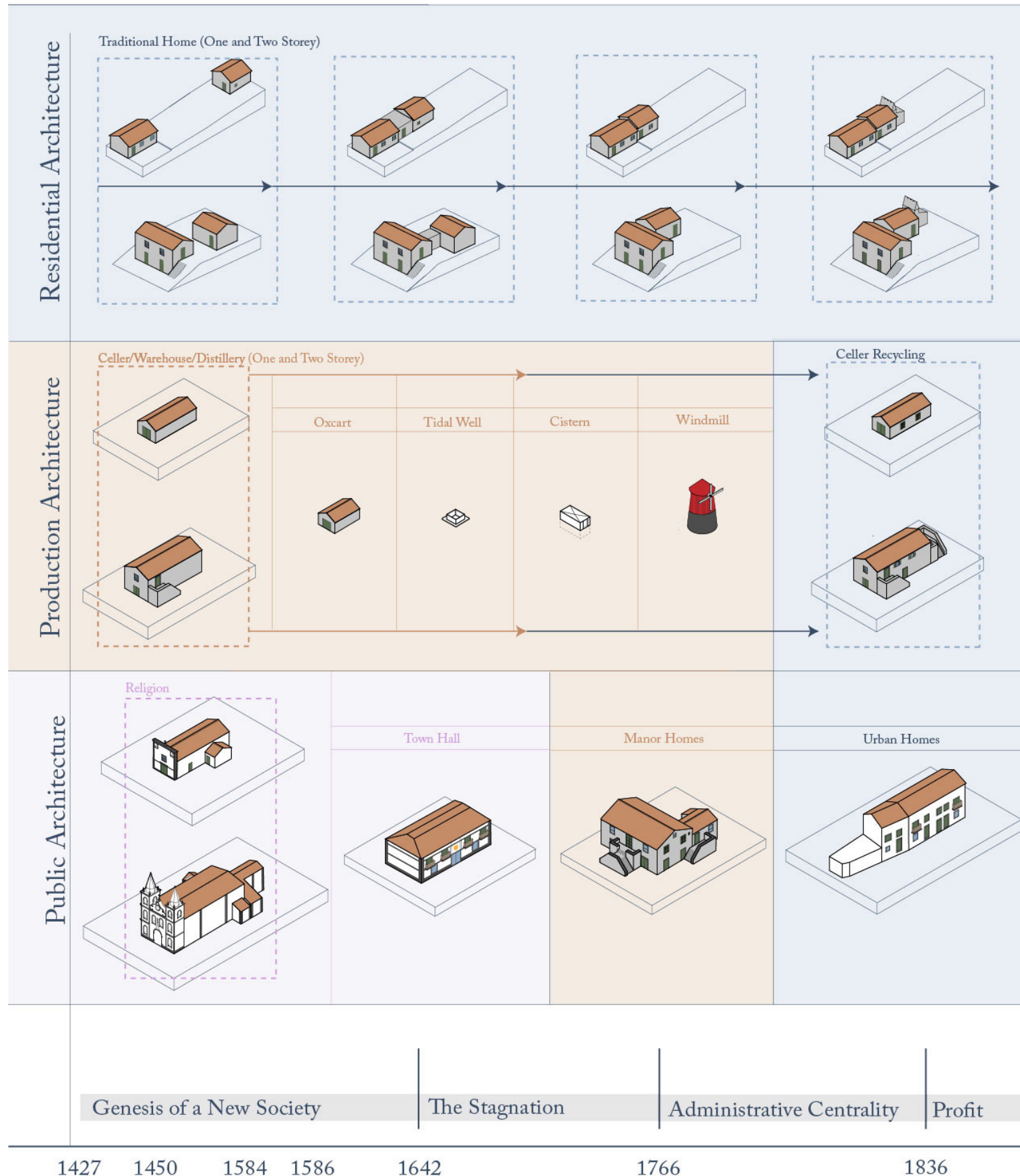


Figure 2.13: Historic Typology Evolution Diagram

## Floor Structure

The floor structures constituted of timber planks and timber beams. The timber beams are spaced at 0.40m and are supported over the stone masonry walls spanning from 3.5 to 4.0m.<sup>23</sup> This wall plate allows a better distribution of the dead and live loads along the wall length, also allowing a better in-plane structural stiffness and strength distribution. The timber flooring is constituted of timber planks with a thickness varying between 2.2 and 2.5 cm, nailed to the timber framework.<sup>24</sup> In some buildings at the ground floor level the beams are laid over mudsills with a 0.10x0.10m cross-section.<sup>25</sup>

The traditional rural constructions are usually single storey or two-storey buildings. Single storey buildings are more modestly built and located in areas of flat terrain. Two storey buildings usually take advantage of the natural slope of the terrain, and include a basement (or, more commonly, a half basement).<sup>26</sup>

These elements created the basic building blocks of all construction on the island during the historic era. With changes only made to accommodate different programs thus establishing a clear and rigid typological style throughout the island.

### 2.1.1 Traditional Home Typology

In Pico, the traditional homes evolution of typologies is defined by the position of the kitchen to the rest of the home.<sup>27</sup> It is theorised that as the oldest homes on Pico began with the kitchen as a separate structure away from the home. The construction of the kitchen as an autonomous body and away from the rooms was intended, according to local tradition, to prevent the frequent fires that broke out in that compartment from spreading to the rest of the house. However, over time the kitchen began to move closer to the home first by connecting to the home through a precarious wooden passage or a masonry compartment and then finally the inclusion of the kitchen in the body of the home.<sup>28</sup> Although this evolution of the kitchen creeping closer to the home may not have been linear, the idea of the separated kitchen being the oldest type is supported by the fact that this type is only found today on the eastern part of the island where the oldest settlements are.<sup>29</sup>

Of these three types of housing the joined kitchen is the most common on the island and more specifically the most common arrangement is the one in which the kitchen touches directly and perpendicularly to the back of the rooms, forming an L-shape. This type of housing, given its frequency, varies more than any other in terms of formal treatment and dimensions, more so as the same distribution scheme is used both in the most rudimentary rustic house, as in the most elaborate urban house.<sup>30</sup>

This importance of the kitchen created another distinct feature of the rural home. All dwellings have two exterior doors, one in the kitchen and another in the body of the house. These means of egress are often connected to one another on the exterior of the house through either a stair way or a balcony. Thus, when a home has two floors they exist without internal communication: the upper floor with the housing, and the lower floor with storage. The dimension of the ground floor, however, varies according to the type of housing and the relief of the land on which it is located, as the storage fill in the depressions to level the floor above and adapt the construction to the topography. The entire area of the building is only occupied on the lower level when the implantation land is flat.<sup>31</sup>

Another shared characteristic of the traditional home is in the interior of the kitchen itself. Inside the kitchen corner, occupying a good part of the useful area, is always a large stone oven. When the kitchen is attached to the home there appears to be no discomfort that the smoke could pass into the other rooms, the ovens were built without a chimney and “smoked” through the kitchen roof tiles. This is done through a height difference between the kitchen and the rest of the house so smoke can escape through these tiles. The custom has taken root to such an extent that, even in single-volume houses, indoor ovens without a chimney are common. The oven is placed on a solid mass, and the cavity has a vault made of raw clay, with the opening facing the chamber above which is the chimney.<sup>32</sup>

As the regional ring road and its offshoots became a more common use of transportation, rural houses would sometimes be lined up together along the roadside, this created a semi urban situation. In this condition it was possible to use the lower levels that ran along the road as shops.<sup>33</sup>





Figure 2.14: Raised Kitchen Roof Slates

The traditional homes are the first structures on the island, and they would continue to be built until the nineteenth century.

### 2.1.2 Historic Production Typology

In the historic era of construction, the production building typologies all supported the vineyards, this includes cellars, canadas, ox cart sheds, mills, tidal wells and cisterns.

#### Cellars

The most rudimentary structure referred to by locals as Adegas can have different scales depending on its intended function. All cellars resemble the traditional home in construction with stone walls, wood roof structure, clay tiles and a gable roof. However, in a cellar there is often only a single door and, rarely, a window. The interior may house a wine press (with a wooden tank or stone masonry), barrels and other utensils to support the production of wine. They can be single story or two stories. In a two-storey scenario, each level will have a different function. On the ground floor is the cellar itself, while on the upper floor there is a room with one or two tiny compartments and the essential furniture to organize domestic life. Some of these larger cellars, are internally prepared for the manufacture of grape or fig brandy, for which the presses and tools necessary for the preparation of wine were replaced by a series of stills with their respective furnaces, boilers, arranged along the wall. In this arrangement the cellars take on the name of distillery or “allembic houses”.<sup>34</sup>

#### Vineyard Walls

These are the loose stone walls that were made to organize the vineyards (Recall 1.3. vineyard construction) These walls are often no higher than hip height and are made with less care than a building often using brute force to make a strong friction connection between the stones.<sup>35</sup>

#### Ox Cart

The need to house the ox cart is at the origin of one of the most distinctive buildings in Pico. These single level loose stone buildings with exposed stone masonry that was wide enough to hold the ox carts used in farming to transport crops.<sup>36</sup>

#### Mills

There are many mills all over Pico, believed to have been a custom brought with the early Flemish settlers.<sup>37</sup> Mills were mounted approximately in the middle of the single ground compartment, so that the draft animal (ox, almost always, but also donkeys or horses) could walk around the mill at a constant speed. The same compartment still served as a corral, with one or two stalls in one corner. From time to time, manual mills are also seen in operation. They are like animal-propelled mills, but smaller and mounted on a kind of table that allows them to be moved at arm's length.<sup>38</sup>

#### Tidal Well

In a territory where water courses are scarce and the concentration of heat in the black of the volcanic rock is felt particularly intensely, the need to capture and store fresh water has led to a development of resources unparalleled in other parts of the archipelago. Recall the invention of tide wells in section 1.3.1 that exist in all parishes they are fundamental structures for the water supply to people and the farms.<sup>39</sup>

The well, with a quadrangular or approximately circular section, is excavated in the rock (with or without interior finishing in stone masonry) by hand, seeking to capture the water veins that run in underground galleries with a slope towards the sea. This type of construction, detectable through its protective wall in large blocks of stone, is found mainly on the outcrops of slabs of the north coast, next to areas with a strong wine-growing tendency. Due to its proximity to the sea, the accumulated water suffers from the influence of the tides and sometimes has an appreciable degree of salinity. This does not, however, prevent it from being used mainly in agriculture.<sup>40</sup>





*Figure 2.15: Cellar*



*Figure 2.16: Vineyard Walls*





*Figure 2.17: Windmill*



*Figure 2.18: Tidal Well*



### Cisterns

The cisterns are very common in the landscape of Pico. They appear throughout the island in different aspects: as an isolated building, as a construction leaning against another, as an integral part of the volume of a building supporting agriculture or even housing itself. All are built in stone masonry and, just like the houses, they are sometimes plastered and whitewashed. Only the upper surface is systematically mortared so that rainwater flows into the tank hole and does not seep into the rest of the building. As an autonomous building, the cistern is generally designed according to a quadrangular plan, although it often appears with irregular shapes.<sup>41</sup>

### Historic Urban Typology

During the historic era of construction all three towns on the island developed an urban condition that surrounded a central square. The following section will explore the typology of the Mother Church, town council, urban homes, and the proto urban conditions of the manor home.

### Religious Architecture

Religion took an important role in the Azores society. This is evident in the grand mother churches throughout the island. These churches are the only buildings of the historic era that display careful design. The style of the mother churches borrowed from baroque with original, inventive, and decorative solutions that create an Azorean vernacular of the style referred to as "Azorean baroque".<sup>42</sup> On Pico these churches include the church of in Madalena, S. Maria da Madalena, the church in Criação Velha, Nossa Senhora das Dores and the church in São Roque, Nossa Senhora da Ajuda.<sup>43</sup> However, most religious buildings on the island are not churches but small single-room temple buildings with benches and an altar that can be found in every parish.

Outside of places of worship the religious buildings on the island include convents. The convents on the island are among some of the more monumental buildings. The Franciscan built cloisters with simple façades in the vicinity of urban centers linked to wine growing spaces.<sup>44</sup> As connection with nature is a central theme of this order. These buildings include the old Casa Conventual dos Jesuítas, in Toledos da Madalena, with its splendid (though ruined) complex built around a courtyard, where the Baroque portal is located.<sup>45</sup> The building itself is imposing in its black and white stone, between the green of the vine and the strong blue of the sky. In São Roque, the convent of São Pedro de Alcântara, also has a facade of simple design and arcade. In this case, however, its visual dimension must be emphasized, in an intense landscape relationship with the ocean and the north coast.<sup>46</sup>

### City Councils

The city councils are notable typologies on the island. The traditional programs of these buildings include a combination of a town hall and a jail. The buildings themselves are compact and organized on two floors with symmetrical double staircase in the middle of the façade.<sup>47</sup> The example of these buildings include the town council of Madalena do Pico (1723), and The Casa dos Morgados das Lajes, (1794).<sup>48</sup>

### Urban Home

The oldest urban homes on the island of Pico originally date from the 19th century. The traditional urban home is part of a building aggregate, usually two to three storeys in height, rarely exceeding four stories. This construction, although having a more complex internal organisation with a main area of the house where the rooms, and the services are located, normally has a secondary compartment where the kitchen is located, perpendicular to the main construction with an oven chamber and chimney.<sup>49</sup>

Unlike rural houses they tend to have internal stairs. The main façade has many doors, window openings, and balconied all aligning in a grid. These balconies have a wooden or cast-iron guard. The bottom floor is occupied by stores in the front and storage in the back.<sup>50</sup>

Structurally the urban house is very similar to the rural. Some differences include the urban house tendency to use a French or Horse type truss over the Scissor truss (See Fig.2.22).<sup>51</sup>



Figure 2.19: Cistern in front of home





*Figure 2.20: Mother Church of Madalena*



*Figure 2.21: Baroque interior of Mother Church in Madalena*





*Figure 2.22: Single Room Village Chapel in the village of laijdo*

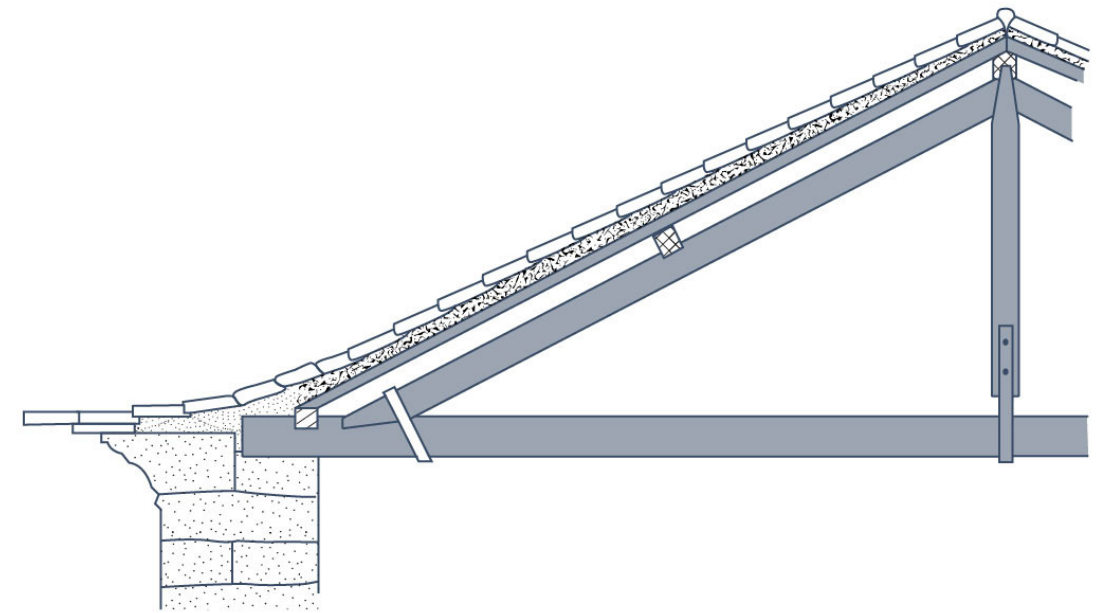


*Figure 2.23: São Pedro de Alcântara Convent*

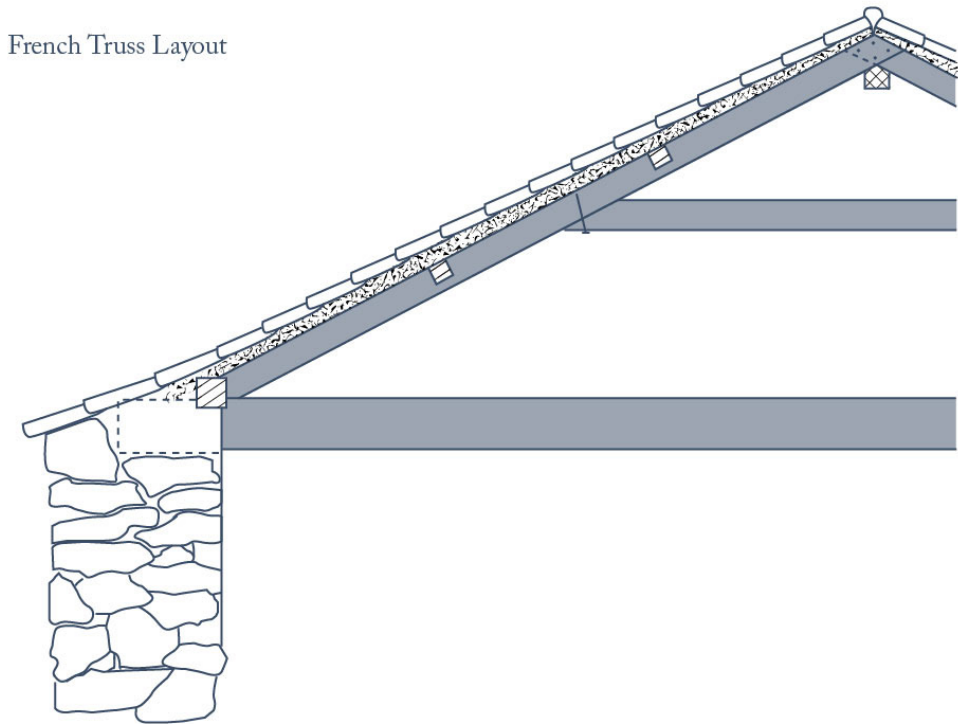




Figure 2.24: City Council of Madalena



French Truss Layout



Horseback Truss Layout

Figure 2.25: Urban House Truss Types





Figure 2.26: Urban Street with Homes in Madalena

## Manor Homes

The manor homes are found in agglomerations with more urban or proto-urban characteristics. These homes were built in the center of vineyard as a “headquarters” for the Faial based owners to organize the wine production and business.<sup>52</sup> They also served as a summer home for the vineyard owners’ family. These homes usually have ample indoor and outdoor spaces, large balconies, and viewpoints. The kitchen like in the rural home is visually detached from the main volume. They have, at best, a chapel and minimal common living space. In this arrangement only the mills and the cellars are located on the ground floor and the upper floors are the family’s residence. The manor home includes a walled enclosure that includes the annexes to support agriculture.<sup>53</sup>

## 2.2 Modern Architecture 20<sup>th</sup> Century

*Robert Venturi had suggested – that an important part of modern architecture has never ceased to be vernacular and – in that sense – now quoting Bruno Latour (2004) – has never been as modern as it would like to present itself.<sup>54</sup>*

As outlined in section 1.3.2, at the beginning of the twentieth century significant changes occurred on the island. The end of the wine industry years before caused land to be divided into smaller properties and sold to locals, safer cross Atlantic transportation meant for the first meaningful exchange between the Azores and the rest of the world and the economy shifted to be reliant on the whaling industry.

The architecture that appears on the island during this time is in line with the global modern movement. Modernism’s aim was to respond with an appropriate formalization to a certain functional problem, using new materials produced industrially. This process developed on the islands, although in a more subdued way, tempered, by the weight of the ever present and strong traditional values of the island society.<sup>55</sup>

### Modern Construction Methods

Beginning in the twentieth century, construction on the islands no longer had to rely on local materials. Improved travel meant that materials could be reliably imported. The most significant of these was concrete which was first introduced on the islands in 1950. Concrete was manufactured on the island using bagacina as aggregate. The aggregate, cement and sand mixture, was then often formed into blocks for construction. These block walls also used the newly accessible metal reinforcing rods. This revolutionized construction because it was cheaper and required less labour than building a basalt wall.

By 1958, regulation was made which required the use of reinforced concrete elements because it was found that this type of construction performed significantly better in seismic events.<sup>56</sup> For these reasons concrete became used nearly exclusively. Basalt stone was not in demand and entire stone houses became cheap to buy.<sup>57</sup> Therefore, 1950 is a pivotal year between the boundary of traditional architecture and new construction technology.

Modern buildings have 1, 2 or 3 floors with a reinforced concrete frame with concrete blocks walls, sitting on floor slabs and roof structure in reinforced concrete.<sup>58</sup> The concrete block walls consist of reinforcing in the blocks ridged insulation a draining membrane and then plaster to finish.<sup>59</sup> On the interior of this type of construction, partition walls are made of concrete blocks and in some cases gypsum plaster board.<sup>60</sup>

From here there was a level of experimenting with the finishings. These experiments played with concrete, exposed concrete, and inserts of dark volcanic stone materials. Experiments in materials included vinyl mosaic, laminates for cladding, and less traditional mosaics. They also experimented with bright colours or the absence of them, as white became fundamental to the definition of this era of construction architecture.<sup>61</sup>



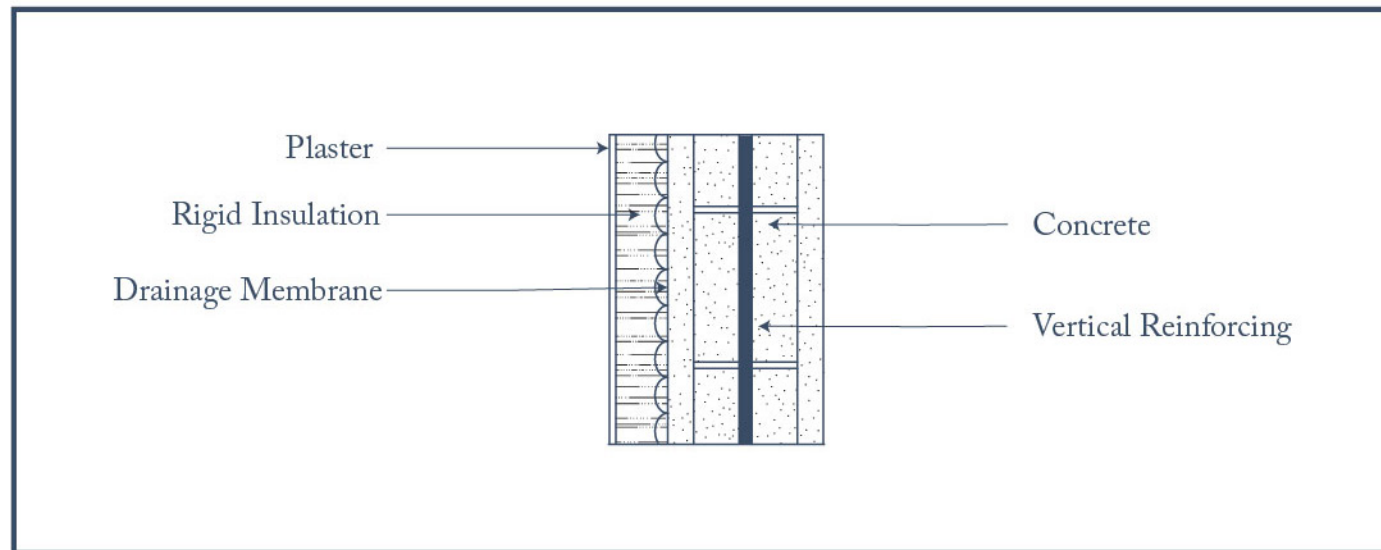
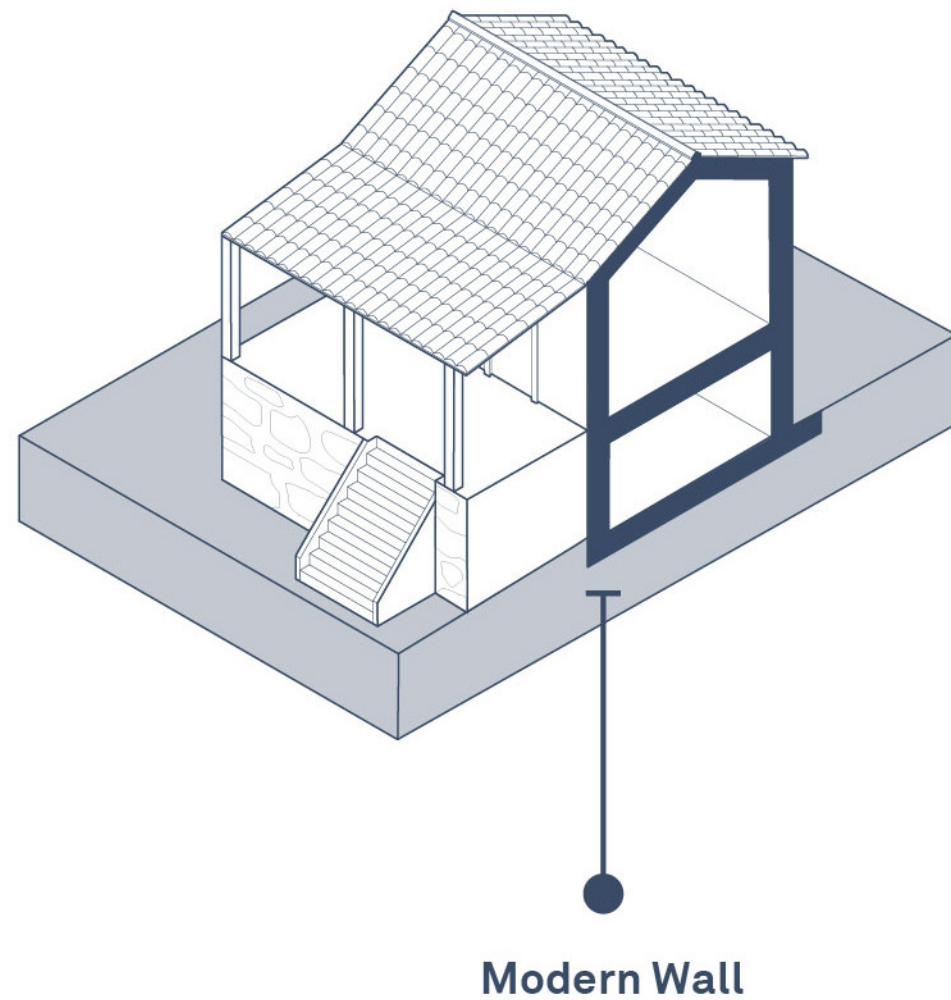


Figure 2.27: Modern Wall Type

While the new construction made building easier and cheaper it also led to increased level of unemployment as the former master masonry builders had their role reduced in the construction process. The loss of jobs led to the loss of craftsmen knowledge that had been used on the island for centuries prior. The only traditional techniques that did not become less common was the laying process of roofs, that continued to be implemented using non-mortared straw tile. So that the roof is not damaged due to the force of the wind, each water is carefully bordered with volcanic boulders of constant dimensions.<sup>62</sup>

### 2.2.1 Modern Residential Architecture

*“In the past, the Atlantic islands were a kind of “experimental laboratory” for the expansion of Portuguese culture, (...) as sampling of some trends in current production, the Azores can become an instrument of analysis...”*

- José Manuel Fernandes<sup>63</sup>

There were broadly two types of residential housing during this era. The first was using the new construction method to mimic the traditional. These houses used concrete structure but in appearance attempted to look like the old homes, consisting of a sloped roof, covered in clay tile, 1 or 2 storeys and a plastered exterior. These new constructions differed in appearance from the traditional in two ways. Formally this type of house often included a porch, this reflected the more leisurely life of its inhabitants who now wanted to take advantage of the views. Some of these new homes were even constructed by the sea among the former vineyard nuclei and were intended as summer homes for people who lived elsewhere on the island. The second visual difference was the common use of basalt stone as a decoration either as stuck to the white stucco walls to create black borders around windows and doors, recalling the structural keystones of the traditional architecture or as patterns against the white plaster. These patterns gave the appearance of a cow hide that recalled the fading coating given to basalt in the historic architecture. However, they no longer served a practical purpose, but only an aesthetic one.

The second type of house in this time are houses made with concrete block construction that did not attempt to recreate the old architecture but instead drew upon global references to create homes of a new scale. These global references often included North American suburbia as many of the local people had, at some time moved, or had family move, to North America for employment.<sup>64</sup> This category of homes is broad as they follow no rules except for the common appearance of porches, upper-level terraces and a larger scale meant to accommodate growing families. These homes may also use basalt decoration often on the lower levels, exterior staircases and windows and doors. This home is currently the most common type of development on the island.

Within the second category we also see the homes built by whaling families. These homes were larger and more decorative often borrowing elements from American east coast architecture, notably the use of wood panelling.

*“With the money made at sea, wonderful wooden houses are built decorated with beautiful details, executed by talented artisans. It is in these beautiful buildings that the Azorean carpenters will be inspired, when they return to expand their homes.”<sup>65</sup>*

These whaling homes also occasional had the addition of decorative towers or dormers. Oral histories suggest these towers had the purpose of watching for fishing boats and whales from the shore. However, they may also be for lighting and expansion of attics.<sup>66</sup>

It is also important to note that these new residential constructions did not replace the vernacular however, the decreasing population and changing expectations of the population meant that stone buildings fell out of favour and large number of stone buildings were left abandoned and subsequently fell.

### 2.2.2 Modern Production Typology

Modern production typology is heavily influenced by the fascist regime that held power in Portugal from 1926 to 1974. Like other fascist regimes, concrete was employed to create structures with clean, geometric lines. In the years of the dictatorship in the 1940s and 50s this



# Modern Typology

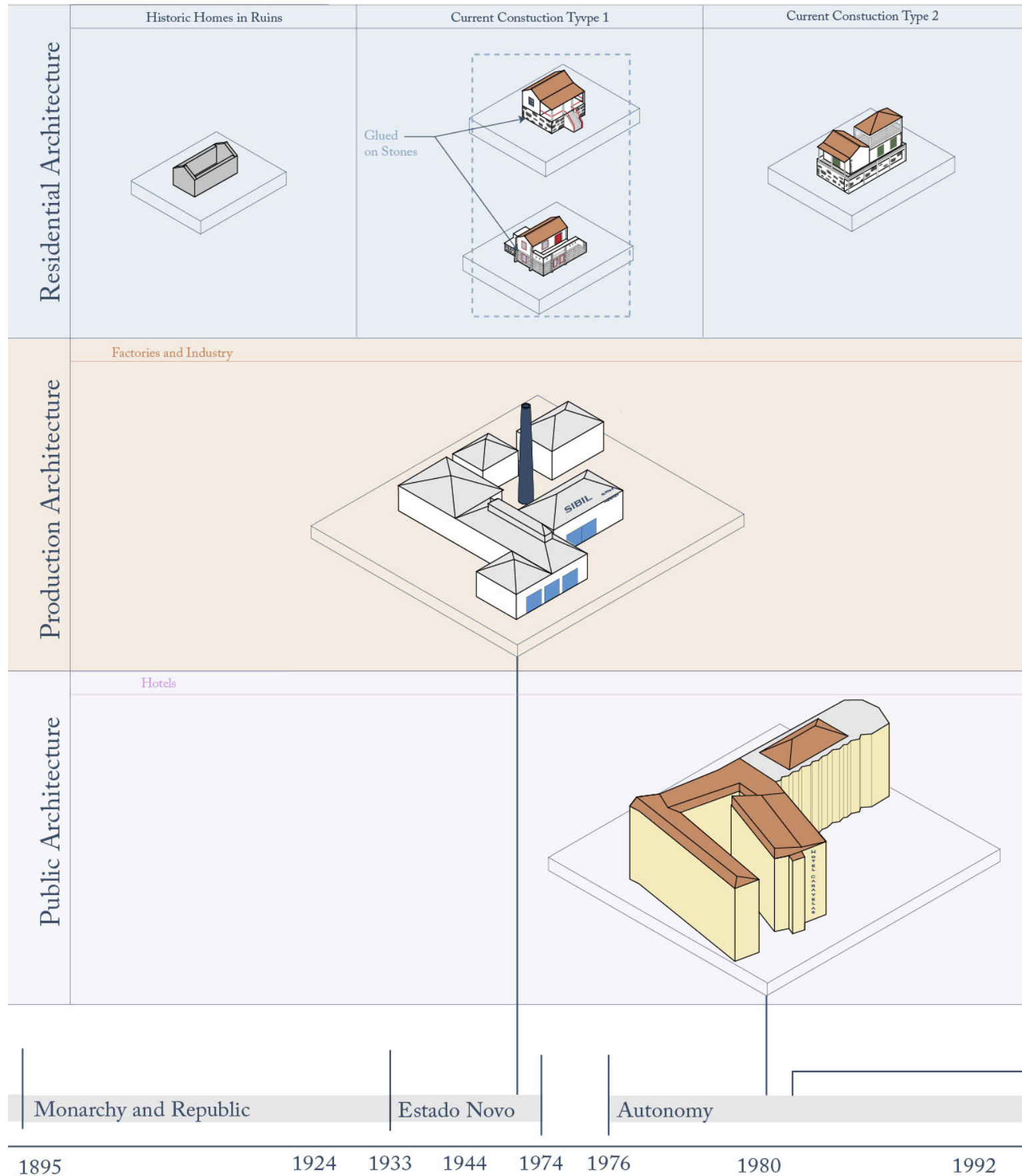


Figure 2.28: Modern Typology Evolution Diagram



Figure 2.29: Modern Home Type 1





Figure 2.30: Modern Home type 2



Figure 2.31: Whalers home with tower and wood siding





*Figure 2.32: SIBIL Factory*



*Figure 2.33: Lighthouse in the Português Suave Style*





*Figure 2.34: Hotel Caravelas*



*Figure 2.35: Hotel do Pico*



mandate also included the desire for a sense of homogeneity in the built form.<sup>67</sup> This style became known as the Estado Novo or “Português Suave” style.<sup>68</sup>

### Factories

Among these Português Suave typologies on the island of Pico are several factories to support the now large-scale fishing, agriculture, and whaling practices taking place. Some of these industrial works include the Cooperativa Vitivinícola da Ilha do Pico (wine factory 1950’s) and dating from the beginning of the 20th century, the old factory SIBIL, (whale oils and flours).<sup>69</sup>

### Infrastructure

This time on the island saw the modernizing of road network, the execution of new port docks, the supply networks (of water and later electricity), and the effective signaling of the coasts. Some of the most notable modern structures include bridges, and lighthouses.<sup>70</sup> On Pico, the lighthouse in Manhenga at the eastern tip of the island and the lighthouse in Piedade, São Roque stands as two perfect examples of this infrastructure typology.

### 2.2.3 Modern Public Architecture

As more visitors started to arrive on Pico, buildings were built to accommodate tourists for the first time in the island’s history. The 1980s tourist architecture is perhaps the most in line with modern architecture as recognized around the world.

This includes the notable example of the Hotel Caravelas, with a figurative design, almost kitsch, evoking the draperies of the ships in the Madalena harbour it faces. Entirely made on concrete and painted yellow, the hotel in scale and style is unlike anything else in the village.

Other modern tourists’ architecture includes the now dealbated Pico Hotel, and the passenger terminal at the islands airport Madalena. This terminal was designed by Jorge Kol de Carvalho, in 1990, and consist of a discreet parallelepiped volume.<sup>71</sup>

### 2.3 Post Modern Architecture

Post modernisms refers to the aesthetic response to modernism. The movement took the stance that modernism lacked ornament and emotion. Postmodernism defends an architecture full of signs and symbols that can communicate cultural values and is sensitive to the context within which they are built. The postmodern buildings on Pico like the modern ones take on a very reserved notion of these ideas. These set of buildings seek to return to the vernacular aesthetic using modern construction methods mixed with the traditional to create a new type of architecture all together.

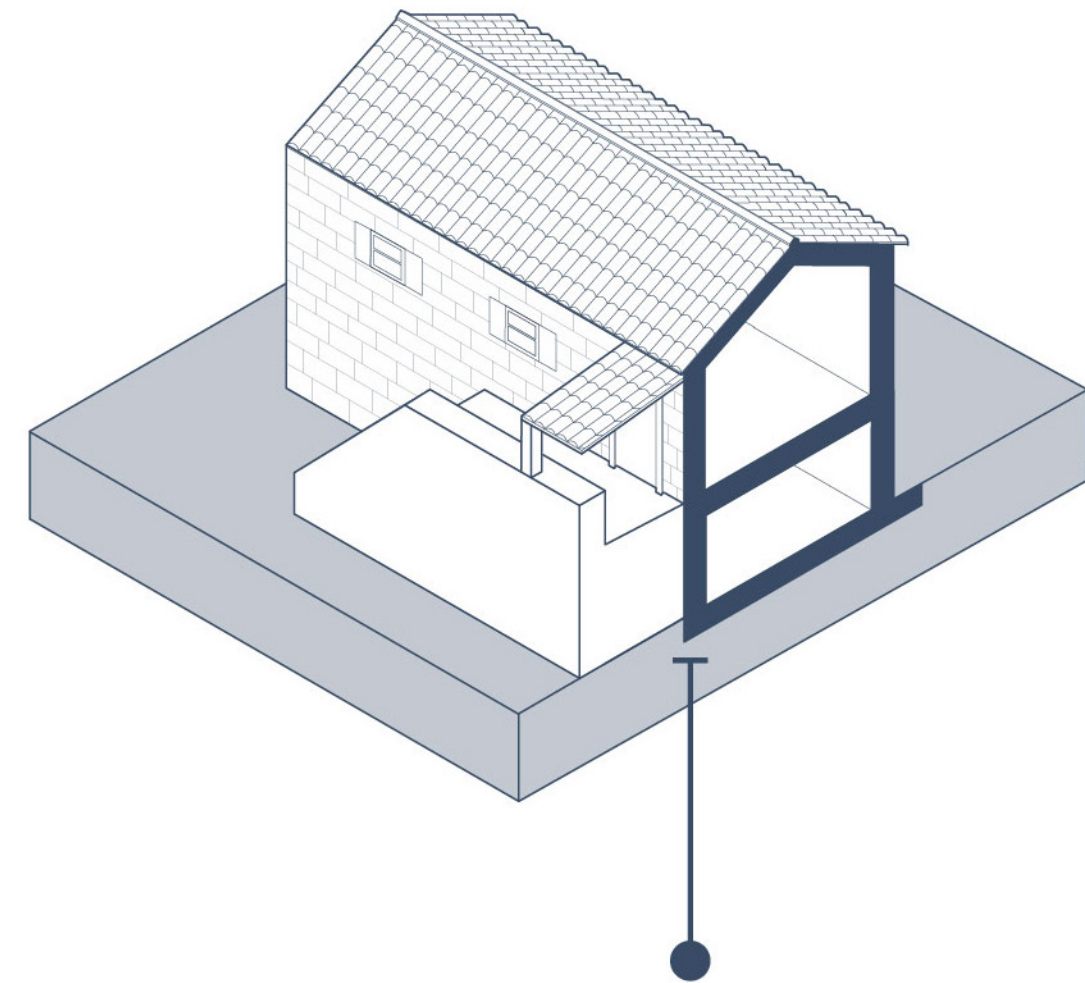
This desire for symbols of the vernacular can be attributed to two factors. The first is the end of the fascist government in 1974 that popularized the modern style. Now that the government no longer required uniformity people could build civil buildings as they saw fit. The second reason for the push to postmodern styles on the island was the increased conservation efforts by the government as a way of attracting tourism. People of the island began to examine their unique history and take pride in the built landscape that it created. Local people wanted to use the stone as a symbol of the resiliency of their forefathers. This reinvigoration of history culminated in the 2004 UNESCO designation of large areas of the former vineyards as a world heritage landscape. This site now legally required an attempt to recreate the aesthetics of the past.

### Post Modern Construction Methods

These post-modern buildings are achieved using a mix of new materials (concrete and rebar) and traditional ones (basalt, clay tile and wood), not only for new buildings but also for renovations of traditional homes.

Three types of mixed construction can be identified on Pico.

The first type of altered traditional construction, is a renovation to an existing traditional stone structure into a comfortable contemporary home. This is done differently case by case however, the most common renovations include a replacement of the plank and timber beams floor into a reinforced concrete slab. This is sometimes done by pouring a slender reinforced



Post Modern Wall

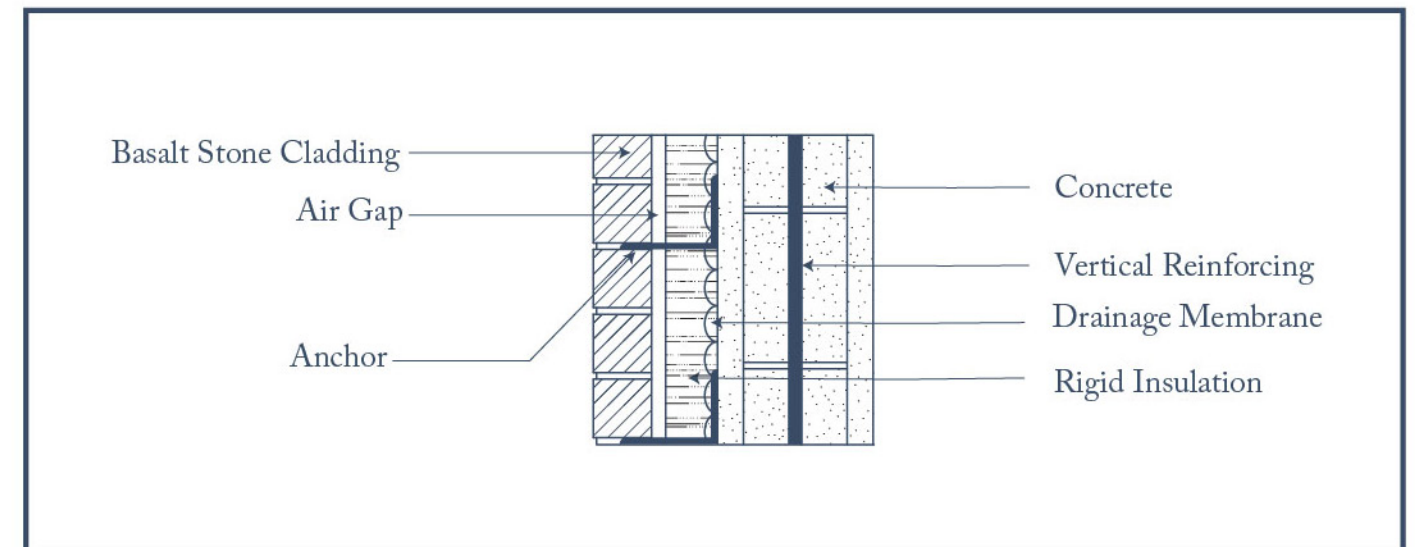


Figure 2.36: Post Modern Wall Type



concrete slab over the timber structure, using the old floor as formwork. This type of renovation was popular in the service areas of the house like the kitchen and bathroom or in response to seismic damage.<sup>72</sup> When renovating a traditional home, it is common to reinforce the existing and unreliable stone walls by spraying an outer layer of concrete on top. When this is done, a draining membrane and insulation are added to the interior, sealing the inside from the elements. Lastly, the existing interior wooden structure (floor joists, beams columns and roof trusses) can be maintained or replaced depending on their condition.<sup>73</sup>

The second type of mixed construction is characterised by a new extension that is an entirely reinforced concrete structure (columns, beams and slabs) with a concrete block infill. The structural elements of the original construction (roof, floors, and walls) are preserved.<sup>74</sup>

Finally, the third mixed construction type is new concrete structure that uses historic or newly quarried stone as a finishing element and not as structural element.<sup>75</sup> This wall is much like the modern concrete wall however instead of plaster finish, metal masonry ties are installed in the concrete and then a 10 cm gap is left before the basalt stones are secured to them from the ground up.<sup>76</sup>

This increase in the use of basalt has created more jobs for stone masons, however a scarcity of skilled laborers remain.<sup>77</sup>

### Post Modern Materials

#### Natural Stone

The use of stone in these new or renovated post modern buildings means that basalt has gained a new value on the island. Only a few years before stones were cheap the now rising demand coupled with the difficulty of cutting basalt mean that the stones are now expensive.<sup>78</sup>

Even though new extraction and cutting methods have been introduced on the island with two quarries; Pedra do Pico in Santo Maro and newer quarry in practice in Criacao Velha, the work of extracting and cutting stone can still be extensive.<sup>79</sup> This is due to the fragile nature of basalt, that is a porous and brittle stone that can be difficult to remove. Even with today's equipment, basalt cannot be removed in blocks instead it is removed in in homogeneous "potatoes" as referred to by stone cutters. The basalt is then processed through up to seven stages depending on its final use. This process can include the use of diamond wires or cobalt discs that cut slowly through the hard stone, or hours of working by hand to shape or polish the stones.<sup>80</sup>

These new quarries remove stone from lava deposits as deep as 10 meters, the basalt becoming more compact and homogeneous the deeper it is excavated. The issue with these stones is that because they have been below the surface, unexposed to external environmental conditions, they are grey instead of black (See Fig.2.32 and 2.33). Builders searching for the authentic black basalt for their project have two options. They may choose to look for historic stone that is not within the protected zone and buy the material from the landowner or alternatively stone excavators can dye the stones using sand and attempt to recreate the colour.<sup>81</sup>

#### Wood

More recently in the reconstruction works, cryptomeria wood is widely used for its local character and authentic appearance. More exotic imports used today include resinous pine, flanders pine, and brazilwood.<sup>82</sup>

#### 2.3.1 Post Modern Residential Architecture

There are broadly three types of housing that emerge when examining the postmodern. These typologies correspond to the wall construction types renovations, extensions, and new stone homes.

#### Renovated Cellars

Since the end of the wine industry people have been acquiring the abandoned historic wine cellars and transforming them into family homes. This cellar recycling took on a greater earnest in the 21<sup>st</sup> century.<sup>83</sup> These small structures were expanded and reshaped to accommodate daily modern life. With the reconstruction, many of these traditional ovens were demolished

## Post Modern Typology

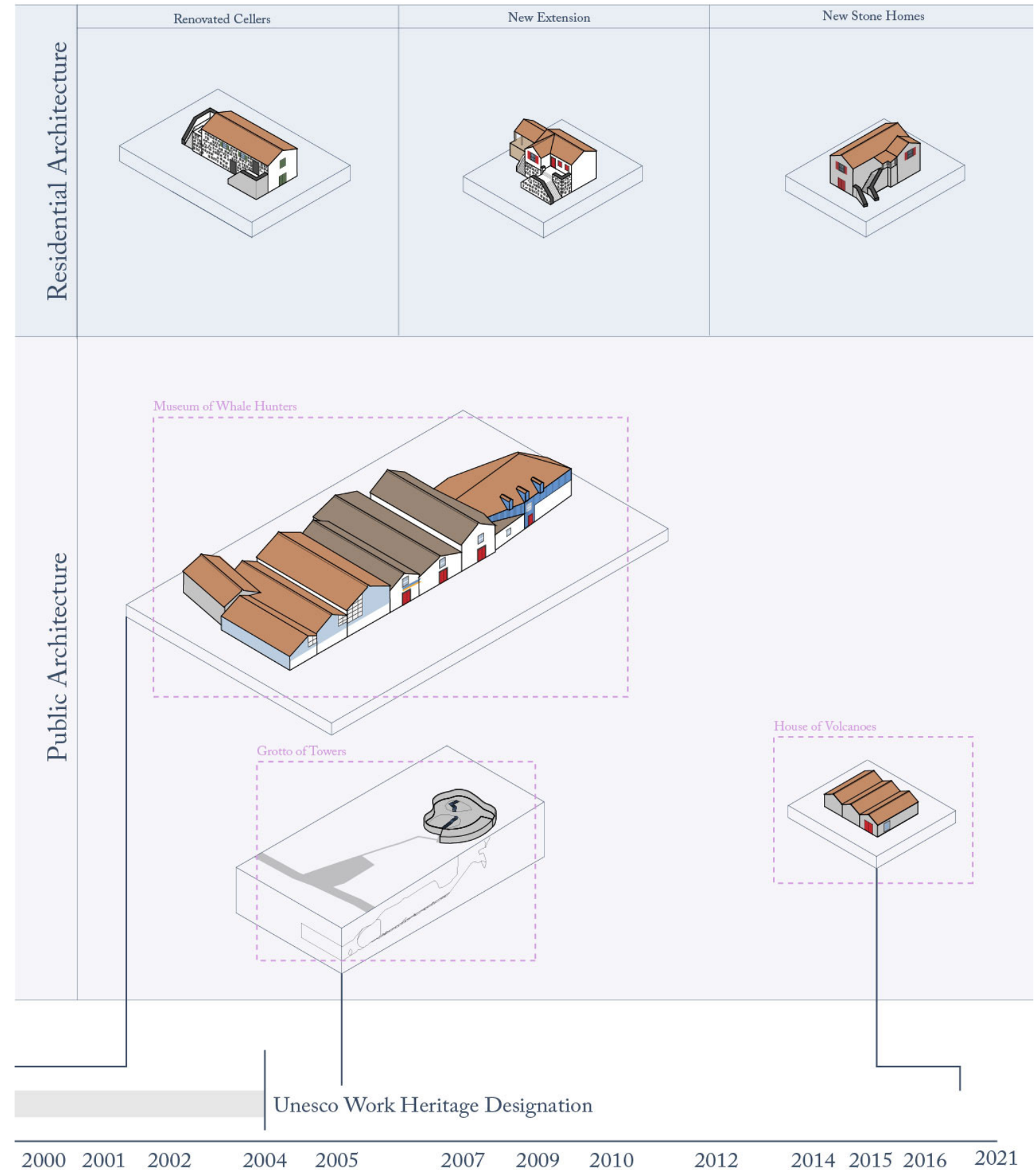


Figure 2.37: Post Modern Typology Evolution Diagram





*Figure 2.38: New Stone Wall with Grey endstones*



*Figure 2.39: New Home with one stone wall*





Figure 2.40: Renovation of Cellar

and if replaced would use the common finger chimneys seen throughout the Mediterranean. Bathrooms that were previously outside were moved indoors. The kitchen was expanded, and sunrooms built.<sup>84</sup> In terms of style these recycled cellars often were plastered to stabilize the structure, leaving the corners and span frames, so the stone was visible. These recycled cellars also used bright colours like reds, blues, and yellows on the wooden frames.<sup>85</sup>

### Extensions

The second category of postmodern residential home are cellars or other traditional stone homes that have a part of the home extended using concrete structure. This extension can be added to the front side or on top of the cellar. They often have one exterior wall clad with historic or new stone. These extended homes take on a very specific aesthetic quality as they mix the historic and the modern to create a new style.

### New Stone Homes

The last type of post-modern housing are homes built of entirely newly quarried stones. These new stones are mechanically and precisely cut as opposed to the rough finish of the old. They are not covered or whitewashed, instead the home is grey from the cut stones or dyed black. These new stone homes mimic the traditional double frame windowpanes painted green, red or white.

### 2.3.2 Post Modern Public Architecture

Post Modern public architecture on the island of Pico is always built to support tourism. These museums, learning centers and accommodations seek to often renovate falling historic architecture and give them new programs. There is a notable difference between the buildings built during this era, depending on whether they were constructed before, or outside the UNESCO world heritage site compared to those built after and within the site. Buildings built before took a nuanced understanding of the island context including an understanding of the modern era. Buildings after the heritage designation blindly follow a set of aesthetic rules. This divergence will be explored by a comparison of three building, two built without the enforcement of the conservation rules the museum of whale hunters and the grotto of towers information center; compared to a museum built within the conservation rules, the house of volcanoes.

#### Museu do Baleeiro

The first postmodern public building on the island was built by Pico born architect Paulo Gouveia ahead of its time in the 1980s. The Museu do Baleeiro or the Museum of whale hunters sought to renovate a set of warehouses in the village of Lajes once used to store the whaling boats.<sup>86</sup> The original structures are variations of the traditional cellar. Gouveia design was able to look at the vernacular architecture and reflected it into something new. The result is a “small building, in the center of the village that uses a neo-vernacular language, with a taste and sense of proportion and balance, small masonry constructions, simple gabled roofs, textures and exterior coatings in painted wood to a certain evocation of the Anglo-Saxon architecture of the East Coast of the United States.” This merging of vernacular building was coined by Gouveia as “torna-viagem” “becomes-travel” architecture. This style is particularly appropriate in the Azores where migration is a constant part of the reality of the place.

Notable in Gouveia’s work on the museum is the way the architect recognizes the importance of his close collaboration with “mestre” or Master Janeiro, a highly skilled carpenter who worked on the project. During the first phase of construction of the Museum, the carpenter and the architect worked together to look for the best constructive solution for each issue, and many decisions were made on site. The close connection to the local masters created a work that has undeniable authenticity and has been accepted by locals since its completion.<sup>87</sup>

#### Gruta das Torres Visitors Center

Gruta das Torres or the Grotto of towers is a volcanic cave located on the island of Pico. In 2004 the site was classified as a natural monument (separate for the UNESCO heritage landscape). This designation was made due to its high geological value and unmatched dimensions.





*Figure 2.41: New Extension on top of a cellar*



*Figure 2.42: New Stone House*





Figure 2.43: Museum of Whalers



Figure 2.44: Museum of Whalers interior





Figure 2.45: Grotto of Towers

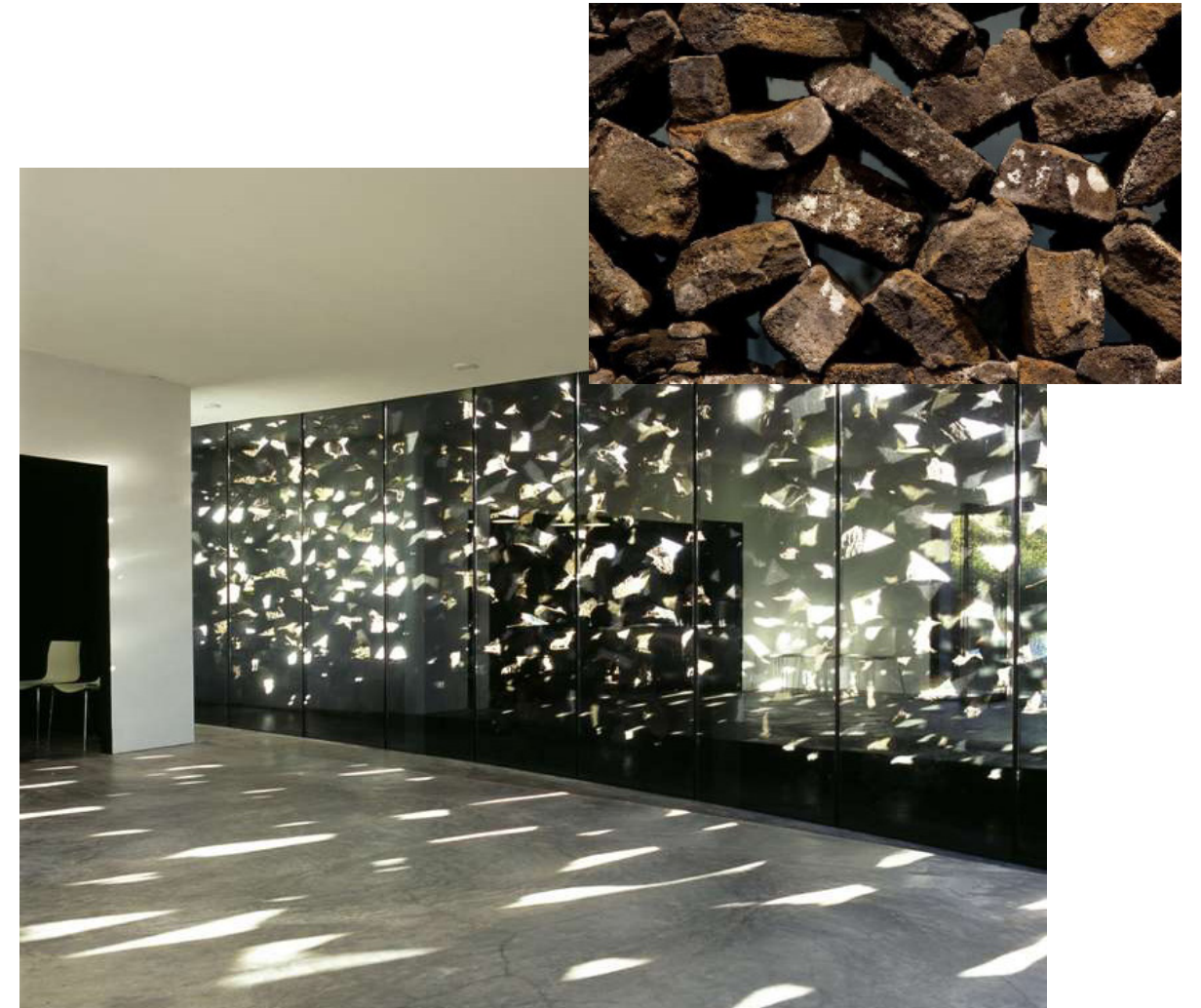


Figure 2.46: interior of the grotto of towers



The cave is approximately 17m high, at its highest point, and 5km long, along its entire length.<sup>88</sup> It was the desire of the regional government to create a safe entrance and a learning center about the magnificent geology of the cave. The resulting project was designed by Inês Vieira da Silva and Miguel Vieira, of SAMI architects, 2003-2005, opened in 2005.

The building is an undulating 1.8-meter-tall wall, which protects the entrance to the cave and flows into a tube-shaped building mirroring the cave below. Most of the building reproduces the volcanic stone structures of the historic era however on the curved wall of the tube building the stones are pulled apart to create a lattice of stone and light.<sup>89</sup> This simple solution of materials was achieved through collaboration between the architect and local stone masters and creates a beautiful and unique building that fits in the local context while simultaneously being contemporary.

#### Volcano House

The last and most recent project in this category is the Volcano house located in the parish of Lajido completed in 2020. The project is a geology museum within the UNESCO heritage site and is indicative of similar tourist construction built within the conservation laws. The building attempts to mimic the cellars nearby with three 2 sloped roofs, with clay tile covering the width of the building sitting on the road. The exterior walls are clad in newly quarried stones that have been carefully made to look irregular to match the surrounding historic buildings. Inside the building surfaces and structure is concrete and houses several exhibits to display the unique geology of the island. The building while from its exterior fits into the landscape, has a level of inauthenticity. The three roofs are meant to give the illusion that this museum was at some point in the past three cellars in a row when in fact the site was empty before the museum's construction. Instead, the stone and the form are attempting to place the building in a time it does not belong and ignores the reality of the place.



*Figure 2.47: House of Volcanoes Front Elevation*





Figure 2.48: House of Volcanoes from the road

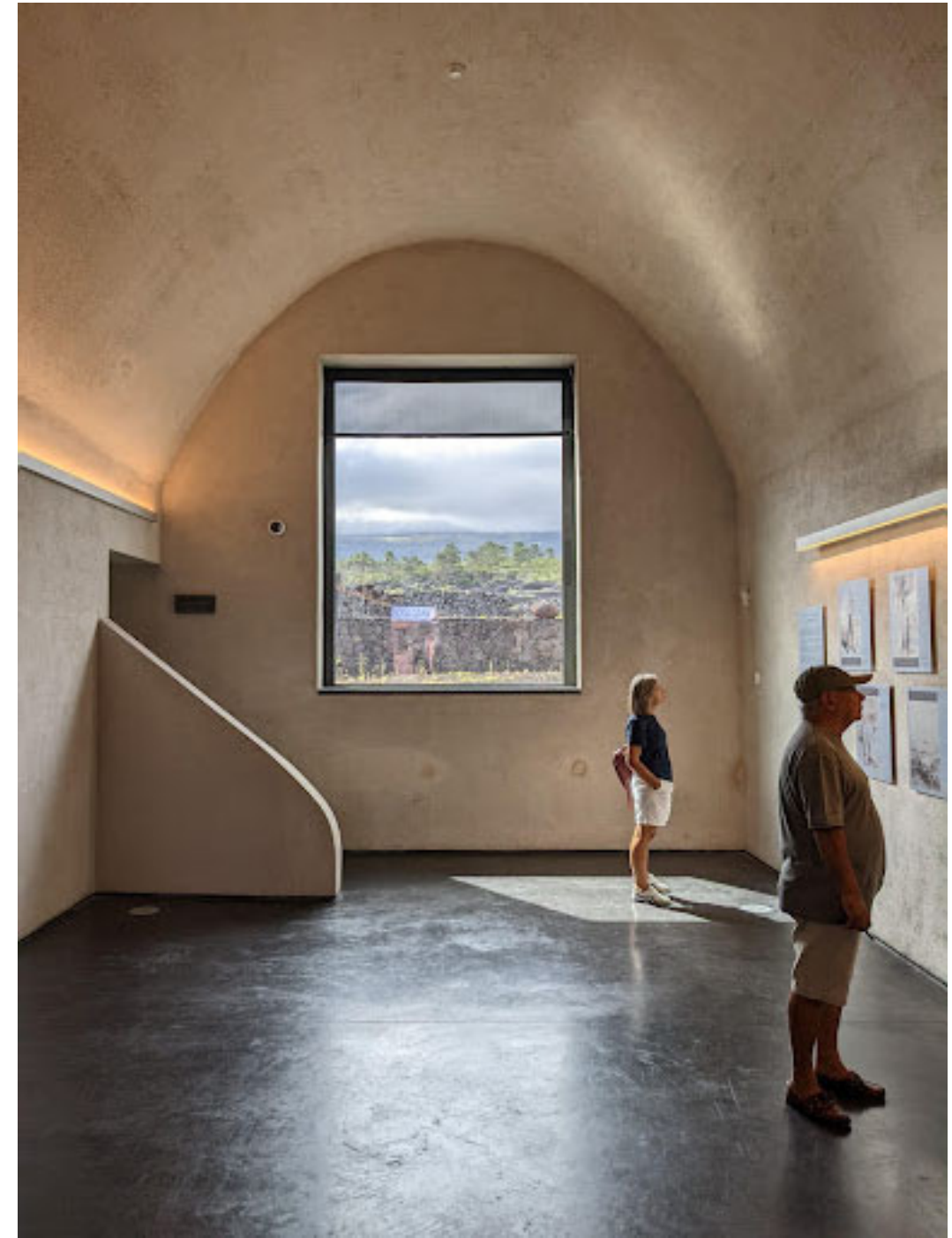


Figure 2.49: House of Volcanoes interior



**Part Three:**  
**The Issue**



## Part Three: The Issue

### 3.1 Conservation

*A people without a past, also have no future ... and in our architectural heritage- in the majestic sobriety of churches and convents, in the proud beauty of palaces and houses noble, in the simplicity of rural buildings - is the memory of our island life multiseccular, the mark of the generations that preceded us and whose genes in us persist, much of the Azorean personality, of our soul<sup>1</sup>*



Fig. 2 — Casa-tipo rural de dois pisos: perspectiva esquemática

Figure 3.1: Pages from the report made 10 years after the 1980 Earthquake

### Timeline of Conservation

The history of conservation of the island begins in the 1950s when locals began to take interest in their own history. At the time: *“Multiply measures were developed to preserve the extremely rich cultural and natural heritage.”* Including the in 1951 when the *“Adega Cooperativa Vitivinícola do Pico”*<sup>2</sup>

The purpose of these actions from the municipality, was to protect vines and recover some of the wine production. Practically this meant that some of the vineyards were cleared of the vegetation that had grown in the landscape when they ceased were abandoned and once again used for wine production. While the wine industry would never fully be restored to its previous heights, the conservation efforts that began in the 1950s meant that in 1977, the Pico Island Wine Cooperative had a processing capacity of 5800 hectoliters.<sup>3</sup> More conservation efforts would not be taken for the next few decades as the islands faced several catastrophic earthquakes.

After the 1957 and 1963 earthquakes Pico Islands population dropped as inhabitants left in search of safer places to live.<sup>4</sup> The island and the entire archipelago were quickly losing not only people but, memory. However, this pattern would be broken by the 1980 Earthquake.<sup>5</sup>

The 1980 earthquake was the largest to hit the region in 200 years. It caused profound damage to the center group and more specifically the islands of Terceira, São Jorge, and Graciosa. The housing was severely affected displacing tens of thousands of people.<sup>6</sup> The people of Terceira did not wish to see the same migration that the other islands had seen. Two options were posed to the government: rebuild again, forgetting what has previously there or rebuild while preserving as much as possible of what had once existed; the latter was chosen. People began rebuilding immediately. Technical support was needed to avoid constructive errors. Thus, technicians inspected each house and provided materials (cement, iron, gravel and sand) needed to consolidate or rebuild the damaged homes. These materials were provided and distributed free of charge door to door. Pamphlets and television programs were made to inform homeowners undergoing their own reconstruction of the importance of preserving local character and history. Over the next years the fallen architecture was studied and rebuilt using proper methods. Ten years after the earthquake, most of the housing stock and heritage was rebuilt.<sup>7</sup> In a speech by the regional secretary of the housing and public works the regional government acknowledges that: *“It took only a few seconds to destroy what, by force of arms, for centuries, if he went up with what he had and even what he did not have, but always with faith in the future.”*<sup>8</sup>

This marks a truly historic turning point in the archipelago. Studies were commissioned to understand the previous historic buildings for the first time across the Azores. Including a study commissioned by the Association of Portuguese Architects who, with the support of the Regional Government of the Azores, started field research, to study the architecture of the Azores. This research would be published in the book *Popular Architecture in the Azores* in 2000.<sup>9</sup> After the 1980 earthquake on Terceira more conservations steps were taken on the island of Pico including the creation of the wine museum in 1982. In 1986, the first laws were established with the intention of protecting the traditional architecture nucleus by the sea. This included restrictions against the use of machinery in coastal zones.<sup>10</sup>

These efforts were tested in 1988 when a large earthquake hit Pico Island. For the first time in the island’s history, much like 8 years prior in Terceira an organized rebuilding program took place. As a result, when a 2002, management plan for conservation was conducted it was found that: *“most things remained in good condition partly due to rebuilding efforts that took place after the damage of the 1998 earthquake.”*<sup>11</sup>

However, they call out *“a few modern architectural buildings [that] threaten the landscape since they do not agree with traditional patterns.”*<sup>12</sup>

The next step in conservation was taken in 2004 when the regional government was seeking a way to promote the culture and increase tourism to the island. The first attempt was to make the vineyard landscape a world recognized *“natural”* landscape however, the landscape of the vineyards is not natural.<sup>13</sup> The second attempt was to apply for a cultural landscape to be designated by UNESCO. For this attempt, a book was created that detailed the importance of the site.<sup>14</sup>



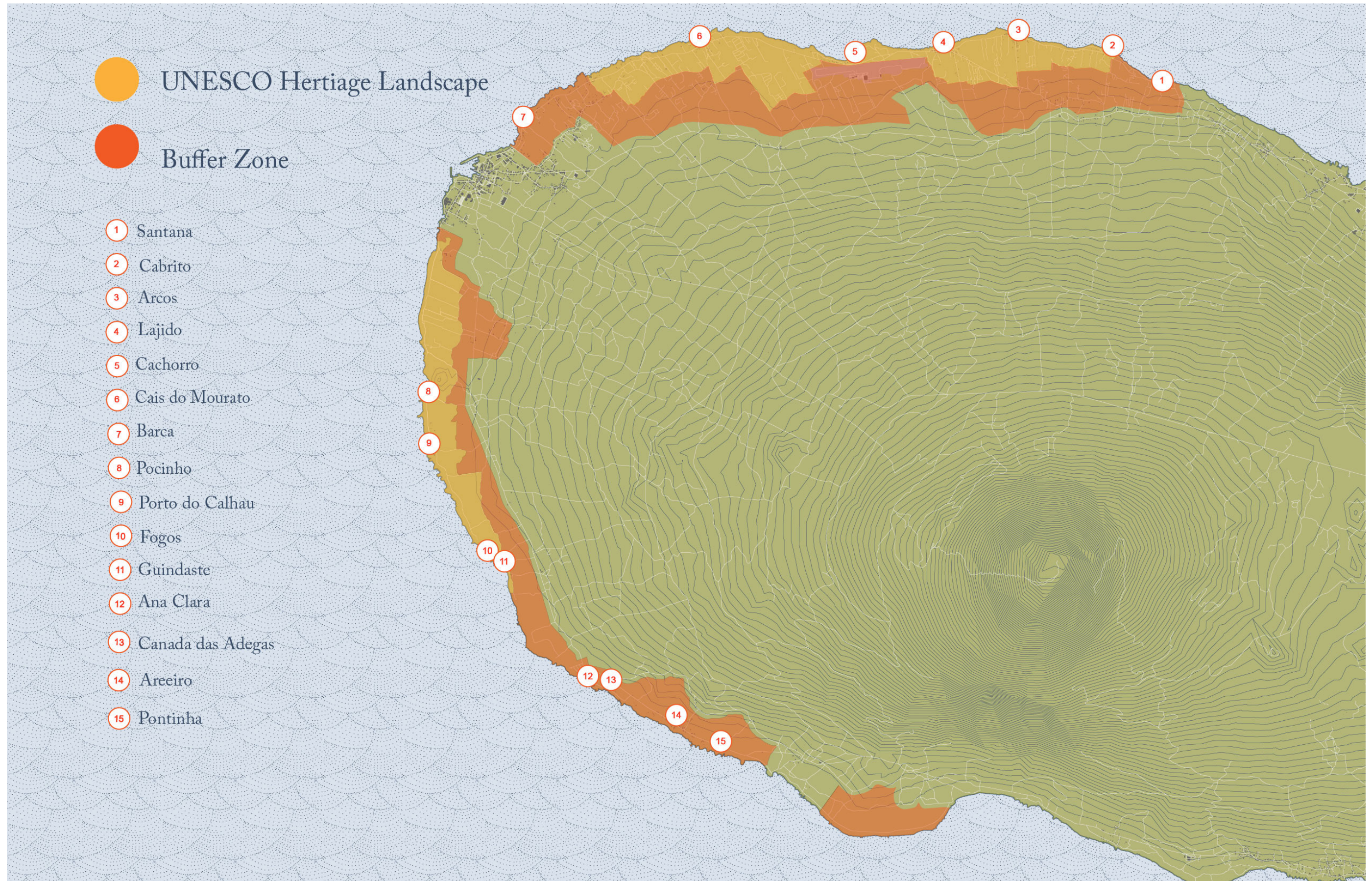


Figure 3.2: Conservation Area



## UNESCO Report

This document written in both Portuguese and English makes a justification for the world heritage designation. The document begins by identifying the large site on the west side of the island already under some conservation protections that would be fortified by UNESCO's support. The second part justifies this choice of site citing the unique character of the vineyard and the "pride" locals still feel about the landscape and the wines that are produced. They then go on to give a description of the site along with a geological understanding and a detailed breakdown of the historic structures (i.e. the cellars, distilleries, manor homes, etc.) built in stone as well as the natural wildlife that is found there.<sup>15</sup> Next the document layout the way in which the site will be managed and the goals of the management plan:

"to preserve and re-qualify the proposed area to World Heritage, to uphold and promote Island of Pico wine, to improve and recover rural agglomerates, to promote tourism of quality as well as preserve existing patrimony, to uphold and safeguard natural patrimony to divulge the island's identity and its natural value, to stimulate the upcoming of qualified labour."<sup>16</sup>

The report then outlines what it views as the identified risks: pressures of development, environmental threats, natural catastrophes, tourism and visitors, and inhabitants. With pressures of development, tourism, and inhabitants being of particular interest concerning the architecture of the site.

### 1. Pressures of Development

This is described as the "main threat" and clarifies this is not due to population growth but instead the "appearance of new habitats resulting from improved socioeconomical conditions, by importing inapplicable models, which reflect an alteration in the structure and volumetric condition, and in the materials used in traditional homes and their relationship with the [site]."<sup>17</sup> This issue is being addressed through "correctional mechanisms were recently implemented together with existing legislation that disciplines and prohibits the continuation of these practices." This measure is then praised for diminishing the "negative visual impact on the landscape" and "placing restrictions on these types of explorations."<sup>18</sup>

The widening of paths near the coast is also seen as a threat caused by development and calls for this "to be stopped".<sup>19</sup>

The shifting economy to industry over agriculture is blamed from "further aggravate[ing] by the emigration phenomenon". Causing abandoned properties and the destruction of the vineyard walls.<sup>20</sup>

### 2. Tourism and Visitors

The document recognized that there has been an increase of visitors in the previous years and then determines that: "tourists do not represent a threat to the integrity of the island, because it is a very specific type of tourism that explores principally the landscaping...there is a strong conscience that the viability of this type of tourism passes only for the conservation and management of the natural and cultural resources of the island."<sup>21</sup> And predicts the designation will draw more tourists and more renovations in the site.<sup>22</sup>

### 3. Inhabitants

Finally, the report identifies the inhabitants in the area as a threat identifying "608 inhabitants according to the 2001 census."<sup>23</sup>

And finally ends with the plan for the site to undergo periodic revaluations.

With the help of this document in 2004 the site became a UNESCO world cultural landscape site. The designated areas included 987 ha. of a protected site, with almost a double area of "buffer zone" (See Fig. 3.2), The area is covered by an extensive system of hand-made viticulture of grape growing.<sup>24</sup>

Shortly after this in 2006 the POPPVIP Plan (Plano de Ordenamento da Paisagem Protegida de Interesse Regional da Cultura da Vinha da Ilha do Pico) was approved, a special plan designed for the purpose of managing the site and the rules and laws that it must be followed within its boundaries. This plan is meant to address the issues of development and is enforced by

the Technical Office of the vineyards of Pico. The POPPVIP plan was last reevaluated in 2014, seven years after it was first put into effect.<sup>25</sup>

## POPPVIP Plan

Currently, the POPPVIP plans identifies three levels of regulations. The first one applies to land planning, and the territorial planning based on different defined landscapes. Then these landscapes are further defined according to characteristics into different zones, these different zones then have rules that guide how development should occur.<sup>26</sup>

The POPPVIP applies whenever a person intends to renovate within the site or build a new building within the UNESCO-listed landscape and its protection zone. When a landowner or other party wishes to construct on the site, they must first find an architect, who must then contact the technical office and determine the legality of the project on the site, after the design of the building is made, they must apply for a building licence from the municipality who will send the project for approval from the technical office once more. Once a conservation architect will determine if the project is in line with the POPPVIP plan. Once it is determined that it does the project can move forward.<sup>27</sup>

This office seeks to start development or programs that will rehabilitate the vineyards and maintain their ability to produce wine.<sup>28</sup>

### 3.2 Conflict

The UNESCO designation and the POPPVIP Plan have fundamentally changed the island by creating a tension between genuine development that reflects the current needs of the locals and manufactured static landscapes that prioritize tourists. The UNESCO report states that one of their mandates is: "to promote tourism of quality" and goes on to explain that tourism is not a risk however the locals that live on the site are seen as an identified risk. Furthermore, the document sees the social economic improvement of the locals as a detriment to the site and calls out modern buildings which are a legitimate typology that evolved from the conditions of the island (as established in Part 2) as "inapplicable models" and calls for their destruction.

This disconnect on the site is something I observed myself on the island and in the documentation above. However, to further understand the realities of the world heritage site I spoke to several stakeholders about their experience working within the conservation rules.

## Interviews

I spoke with two architects one that was raised on the island and currently has a local operating business and another that is based in Lisbon and has created multiple projects within the UNESCO heritage site.

As stakeholders in the development of the heritage site the architects spoke about the difficulty they faced when attempting to design in the site. Both designers were critical at the extent of control that was exhibited over the entire 987 ha. site (excluding the additional buffer zone). They expressed to me the conservation rules create a narrowly tailored set of options, that control all aspects of the exterior of a building, everything from exterior materials, requiring stone, window dimension/arrangement, colours, volume and all other visual elements.<sup>29</sup> These rules supposedly aim at maintaining the original architecture as genuine as possible. However, in discussion with local architects it can also be determined that some of the regulations can feel arbitrary in practice. This is true in the laws that mandate the use of basalt stone as a cladding material to fit into the site. What was once an ingenious solution to shelter in a hostile environment are in the reconstructed work reduced to an aesthetic. The knowledge of building with stone as structure is being lost and the difficulty in addition to the expense of stone means that unless mandated stone is not chosen often as a building material. Meaning the condition of basalt cladding almost exclusively exists on the UNESCO site and does correlate with the conditions on the island.<sup>30</sup> Other arbitrary rules recognized by the working architects include requiring new buildings of a determined length to break up the length with a raised roof, intended to mimic the kitchen ventilation system, however plenty of historic warehouses were constructed without this double roof condition and the requirement to have wood window frames even though wood by the coast degrades quickly in the salt and wind.<sup>31</sup>





Figure 3.3: Render for rejected hotel project

While the rules are extensive and strict for most projects both architects also acknowledge the ways that the laws have expectations for tourism projects. A project with the intention of servicing tourists is typically allowed a bigger site to build and has potential access to funding. This difference in approved site development can be as large as 5% for non-tourism projects compared to 25% for tourism projects in the region of Madalena.<sup>32</sup> This expectation caused a controversy when a group of entrepreneurs presented a project to build a new hotel in the middle of the Vineyard Culture Landscape. The project was estimated at 6 million euros and intended to be a 4-star hotel with 83 rooms, a SPA, a commercial area and a room for conferences and events. Immediately the project had unfavorable opinions due to its contemporary design and disruptive location. A public petition entitled “The island of Pico is not to be destroyed” was made in response.<sup>33</sup> In the petition the issue raised is that the hotel would destroy the very thing that it is set to draw tourists to. This building of course did not get approved by the technical office for violation of the conservation rules. However, it does demonstrate the threat that allowing expectation for tourism can have.

The other exception observed by the architects is when it comes to what is allowed to change for the care of the active vineyards. In this case it is observed by local architects that the municipality and managing offices allow for the landscape to be changed in whatever way, for example, making holes or changing walls, as long as the changes support the production of wine.<sup>34</sup>

The architects call for the possibility to explore new solutions to the conditions of the traditional architecture. Noting the way, the real stone structures often had cracks that allowed daylight and ventilation. Ventilation being key in the humid environment, and something not addressed in contemporary concrete structures that very rarely have mechanical air systems.<sup>35</sup> They warn that without the ability to develop the desired projects with the full contemporary context in mind the site risks becoming a massive open-air museum instead of a cultural significant and living site.<sup>36</sup>

I spoke with two professionals involved in the construction industry. An engineer with his own company and the owner of a quarry and stone business on the island known as “Pedro do Pico”.

These professionals were key to explain the current material and labour issues the facing the island and in turn the heritage site.

In the contemporary context the material of basalt stone has challenges. For one it has become expensive due the high demand placed on the resource when the heritage site mandated its use. Moreover, basalt has become hard to source. Large areas of potentially quarriable stone are protected under the landscape. When one can excavate basalt, it is a labour-intensive process. The stone is prone to cracking hence to get large pieces excavators cannot use explosives but instead must use a mix new and old tools remove each stone. These excavated basalts are then processed with machinery or by hand. After, expending the labour to excavate the stones they may still not be approved by the conservation rules because newly quarried stones are “too smooth” and grey not black like the historic basalt. This is because until the historic basalt were exposed to the elements for centuries unlike the new stones under the surface. Sometimes these stones are then made to look rough and dyed black with sand, turning an already difficult process a little absurd.<sup>37</sup>

If one were to attempt to avoid the quarry process or guarantee a black stone one might choose to reuse, abandoned stones from the golden age of the vineyards. Ironically, conservation laws prevent large areas of unused stone to be collected. The builders describe the potential of finding stone sources as getting more and more difficult as more is used.<sup>38</sup>

When it comes to wood currently the local wood is cut to order and thus requires 2 to 3 months to dry. This means that some projects will choose to import wood.<sup>39</sup> Imported woods may also be chosen for their properties as the local wood, *Cyrtomedia* is also a very soft wood (is likened to balsa wood).<sup>40</sup>

Furthermore, both professionals describe a depleting number of master masons, carpenters, and other skilled tradesmen on the island. One describes having lost two of his three master masons he employs in the last year.<sup>41</sup> Those that are employed find themselves very busy and unable to complete all the work requested of them.<sup>42</sup>

Lastly, I spoke with a conservation architect who is employed at the technical office that



manages the day to day of the site. They were able to offer a different perspective on the current operations within the heritage landscape. The technical office recognizes that the site cannot exist in a “bubble” and that some level of development must occur but without allowing anything that would “destroy or distort” so that the site can be passed on to future generations.<sup>43</sup>

The conservation architect describes the choices made as of what is allowed as making sure not to “impose on the main protagonist” and to achieve a “homogeneous” landscape.<sup>44</sup> However, the landscape as it is already is a mix of styles and typologies from different eras and the notable “historic” centers (also the most restrictive zones) like Lajido and Canada das Adegas also have a significant amount of modern buildings (See Fig.3.4).

They also understand that the restrictions are largely not well received because the site is made up of private properties and when proposals are not approved its clear owners do not understand why the laws are imposed on them. They describe the many proposals that are denied demonstrating the disconnect between the goals of the conservation and the people living inside. The office suggest that information is key to this change in attitude yet that sometimes it is a struggle to motivated people to keep within the regulations as fines are rarely enforced. This may be due to the municipal political situation, where election support is valued over the issuing of fines.<sup>45</sup>

All stakeholders speak of the way the clientele for their respective services is changing. In the beginning of the site’s designation the largest number of applications for development came from local people or returning North American immigrants who wanted to make vacation homes for their families. However, for most of the sites history tourism projects have been the most common project this includes accommodation for visitors, museums, and education centers. Yet, all speak of a shift in the last few years (roughly since 2017) and exaggerated by covid, of locals, both naturalized and new permanent emigrants, wanting to reinvest in their homes.

This discourse will be furthered explode by zooming in on a single site withing the UNESCO world heritage site, the coastal village of Lajido.

### 3.3 Site

#### Lajido

Located on the north side of the island the village of Lajido (translate to lava fields) is on the border between the municipality of Madalena and Sao Roque, but formally withing the latter. Despite being referred to by the UNESCO report as: “is in a near perfect state of preservation.”<sup>46</sup> The village has been growing since settlement and contains within it built evidence of all types of construction making it an ideal site to explore the issues facing the island and its conflicts of conservation.

#### Dissonant Buildings

The village has several recognized notable heritage sites. This includes: an 18<sup>th</sup> century large construction fireplace-furnace-chimney, an ancient path in stone slabs; Ox-pulled cart tracks (“rilheiras”) can be seen in some places; old cellars, located near the coast, surrounded by land used for vineyard planting, tidal wells from the 18<sup>th</sup>/19<sup>th</sup> century, one-storey rectangular distilleries, Chapel of Our Lady Pureza and two manor homes with a vast vine and fig property These buildings are noted to be “without dissonance” in the UNESCO report (See Fig.3.8).<sup>47</sup>

Interwoven in this historic fabric is both modern and post-modern buildings built during the respective era (outlined in part 2) The UNESCO report calls these buildings “*significantly dissonant*” and “*less significantly dissonant*”.<sup>48</sup>

The buildings labeled less significant dissonance seems to be attributed to the post-modern buildings, built under the UNESCO laws using stone cladding and attempting to recreate the historic (See Fig.3.13).

The buildings labeled significant dissonance seems to be attributed to the modern buildings, built with glued on stone, balconies, and terraces (See Fig.3.18).



Figure 3.4: The historical cellars on the west side of the street in Canada das Adegas (Top) Modern homes on the east side of the street (bottom)





Figure 3.5: The Village of Lajido





Figure 3.6: Historic Typologies and Public Buildings in Lajido



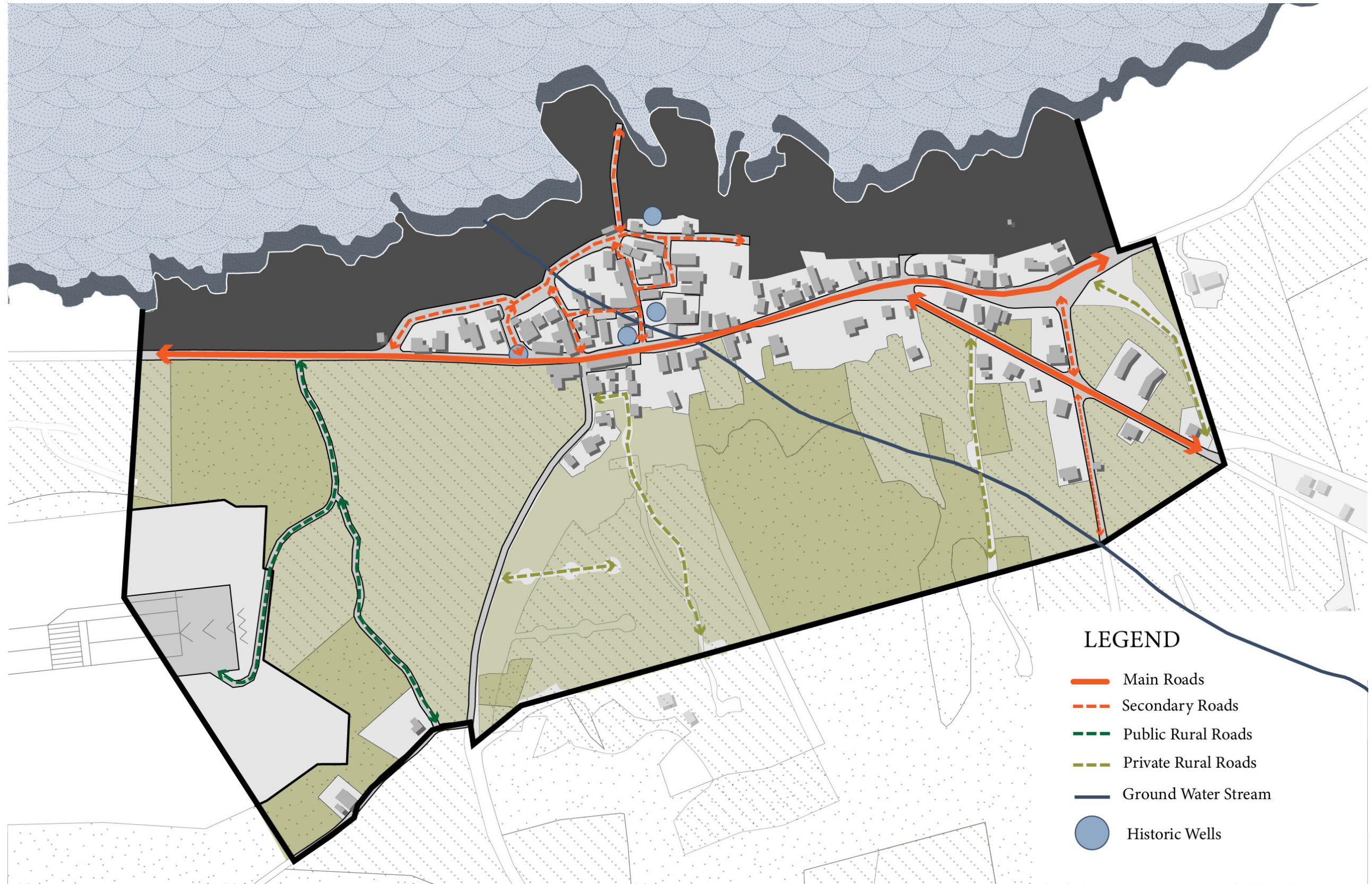


Figure 3.7: Circulation and Water in Lajido



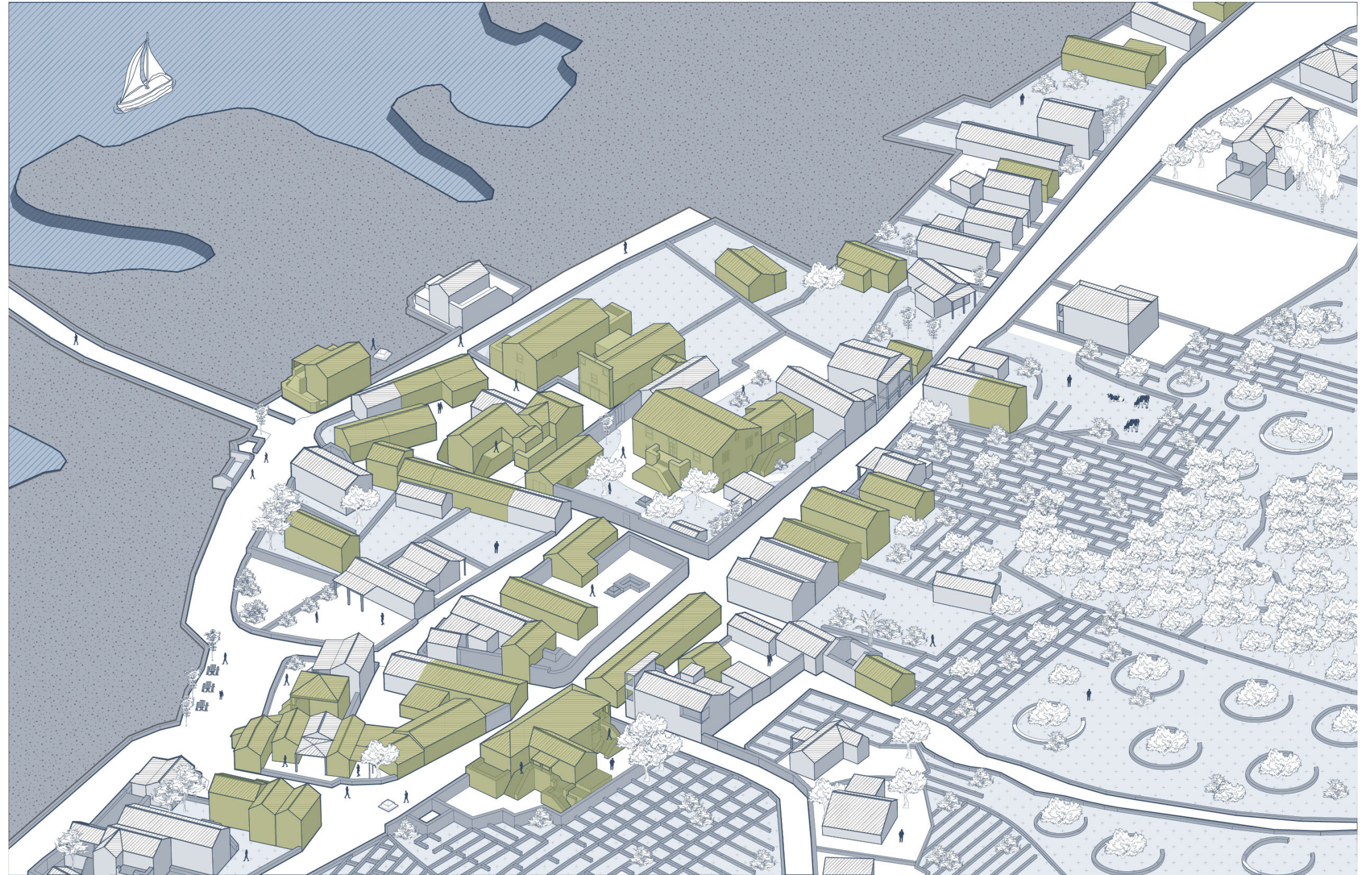


Figure 3.8: The village of lajido with identified buildings without dissonance





*Figure 3.9: 2 floor celler considered to be without dissonance*



*Figure 3.10: 1 floor celler considered to be without dissonance*





*Figure 3.11: A modern construction home with porch somehow labeled as without dissonance despite not being historical*



*Figure 3.12: 2 floor renovated celler considered to be without dissonance*



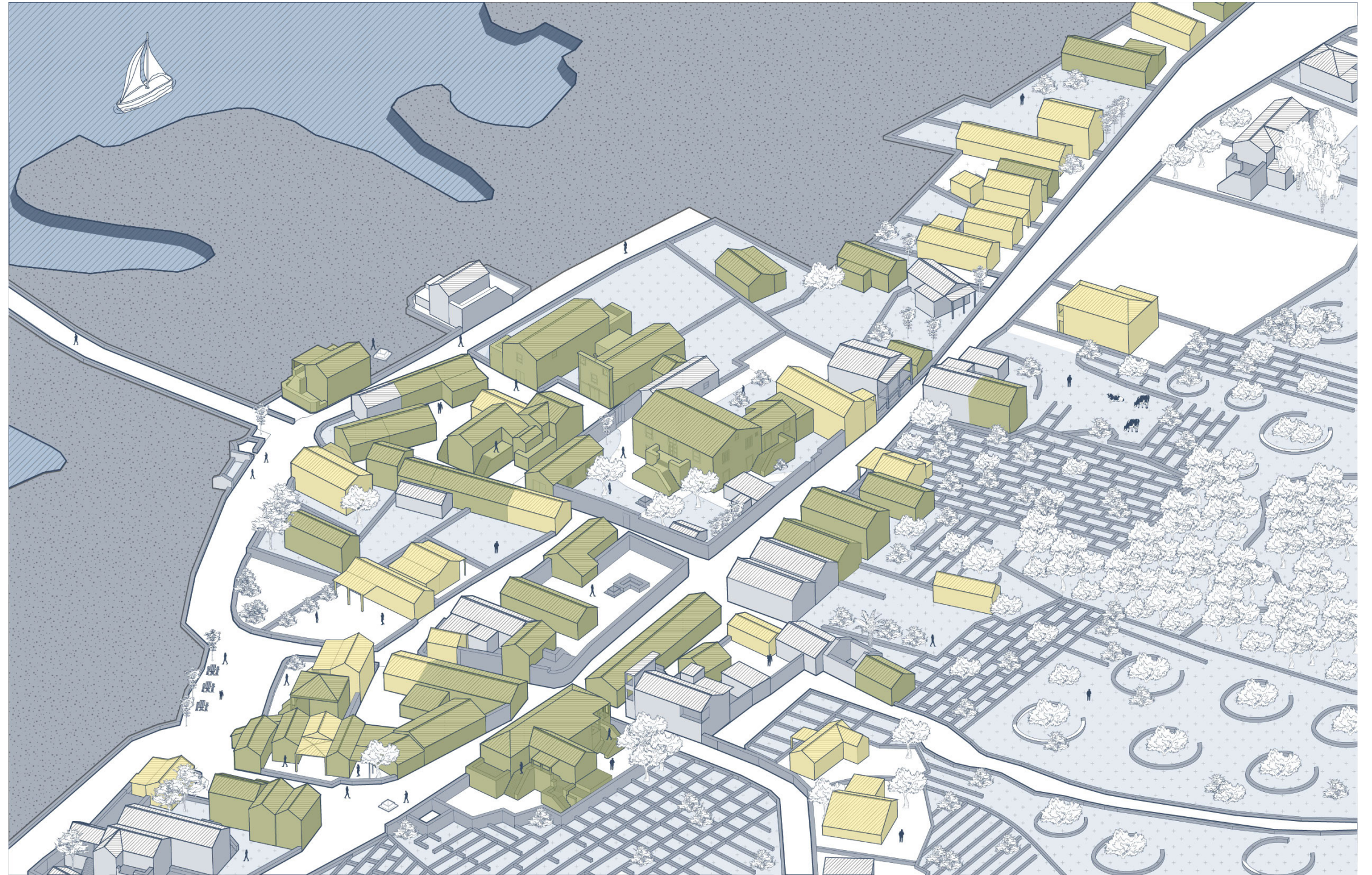


Figure 3.13: The village of lajido with identified buildings with less disonance





*Figure 3.14: Renovated cellars that likely use some concrete considered less significantly dissonant*



*Figure 3.15: New home built with terraces, at a large scale with the potential use of a concrete frame and stone cladding considered less significantly dissonant*





*Figure 3.16: New concrete structure modern home built at the scale of traditional architecture with porch considered less significantly dissonant*



*Figure 3.17: Home with porch considered less significantly dissonant*





Figure 3.18: The village of lajido with identified buildings with significant and very significant dissonance





*Figure 3.19: New home decorated with stone considered significantly dissonant*



*Figure 3.20: New home decorated with stone considered significantly dissonant*





*Figure 3.21: New home decorated with stone considered significantly dissonant*



*Figure 3.22: Stone Details*



**Conclusion**

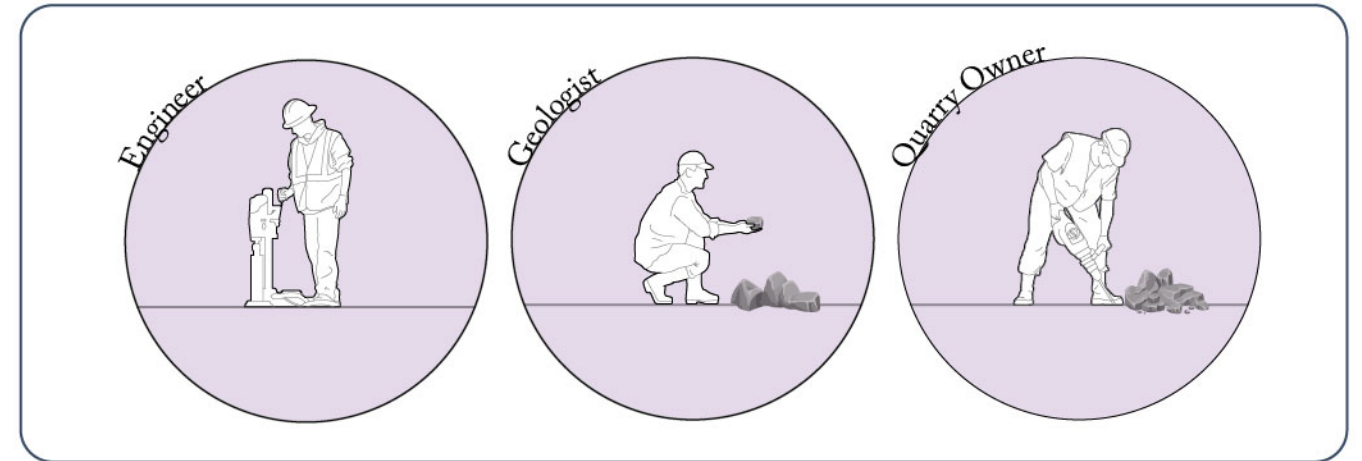
The current landscape on the island of Pico is like the village of Lajido. Although outside of the conservation area one will find a majority of buildings are modern as opposed to Lajido which has maintained its historical fabric. It remains that across the whole island there is a weaving of different eras of construction in different quantities depending on the history of each region. All of these different constructions contributed to an evolution of the vernacular building that is still genuine to the local character and history.

When the conservation attempts try to discourage or remove these genuine evolutions, they threaten to create a stagnation in construction that will ultimately create a history without keepers, a perfectly preserved and unused land, an open-air museum. Therefore, it is important that the island find a way to build that continues this evolution to encourage the development of culture and conscious growth.

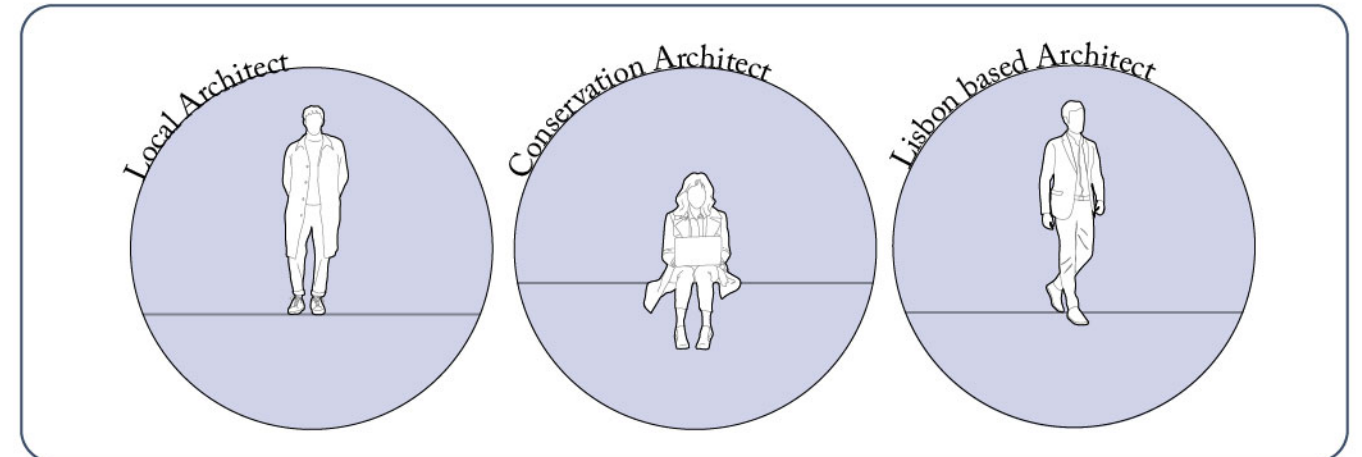
Recall in part one that the 2021 census, shows the municipality of Madalena is the only region in the entire Azorean archipelago to be growing, which means that at this moment the island is experiencing the first growth it has seen since 1872 along with newly invigorated local participation in development.<sup>49</sup> The site thus is approaching a critical point of transformation and there is a need for new discourse about its development and management.

There is a next level of complexity to be had in the conservation efforts, one that is adaptive and in keeping with the spirit of the culture, something that employs the creativity of locals, within the limited materials of the island and that create spaces that lives with the culture. An important part of this change will need to be the voice and consideration of a different set of stakeholders. Where at the moment tourists and winemaker are largest voices when it comes to change the site will need to consider local residents, professionals and architects in the next phase of its management (see fig.3.23). The next part will propose a design for a public building in the UNESCO site that will explore the possibilities of what regulations could be expanded to allow.

**Professionals**



**Architects**



**Residents**

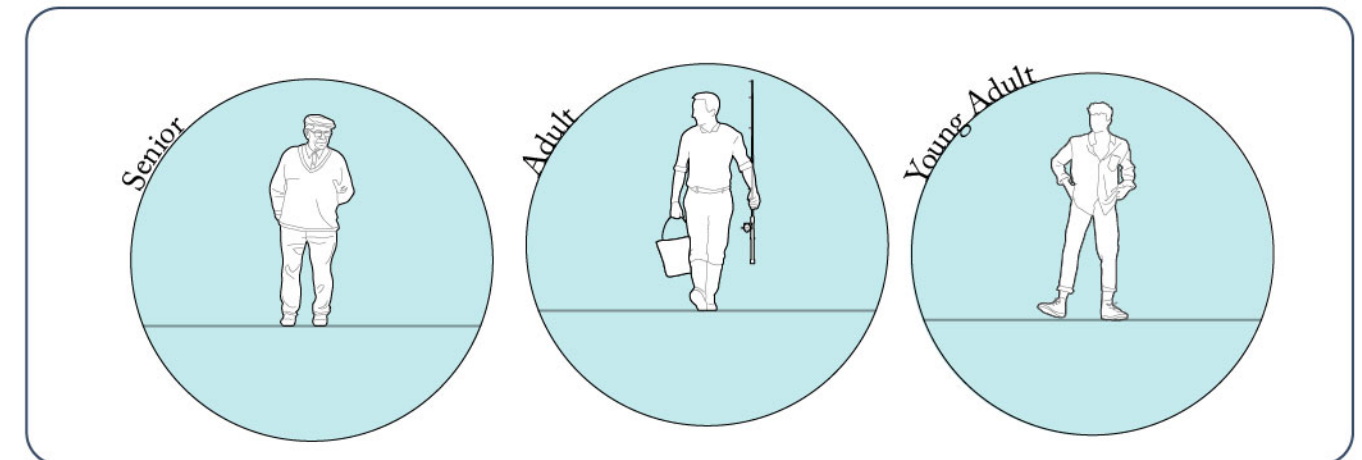


Figure 3.23: Stakeholders in the UNESCO world heritage site



**Part Four:**  
**Design**



## Part Four: Design

### 4.1 Design site

Within the village of Lajido I have chosen the manor home at the center called the Solar dos Salgueiros. The word “solar” in Portuguese refers to the manorial home typology that was popular during the time of this home’s construction in the 18<sup>th</sup> century. It was named after the use of large openings in the façade to allow for a sun filled spaces inside, while Salgueiros translates to willow tree. Hence the property is named manor home of the willows. Willows referring to the number of willow trees on the site. The entire site consists of a two-story home, which is surrounded by leisure places, a cellar, other small construction built for storage, an outhouse and tidal well, all encompassed by a stone wall of considerable height.<sup>5</sup>

The manor home has characteristics that express a very pure form of the solar style. This includes the appearance of the front façade which is completely symmetrical with two windows on either side of a centered door on the top level. In front of the door is a balcony and a double symmetric staircase. The structure is built of stone and the excellent quality of the stoned cyma, windowsills and smocks stands out.<sup>6</sup>

While there is nothing unusual in this style, it is important to note that it is the second of its kind in a very small village. It was the practice during wine cultivation for the owners from Faial to build a home with a direct path, and in proximity to the vines.<sup>7</sup> This is the case for the other manor home in the village however, the Solar dos Salgueiros is walled, central to the village but off axis from port and vineyard access. Moreover, the home’s position in the village, central and facing both the sea and the volcanoes, is one that is normally reserved for the church or chapel in the village. In fact, the actual chapel that is found directly beside the manor home is one of the very few that do not face the ocean due to tradition. Instead, it is on a small path that forms a modest village square. These changes in organization point to the Solar dos Salgueiros was built after the first Solar in the village. A further examination of the home can conclude that the kitchen was most certainly added at a later stage which is typical of the manor home typology.

The existing built fabric takes up about 25% of the ground plane with the rest being garden and exterior space.

The home has been abandoned for some time and currently belongs to the municipality of Sao Roque. The site has been made a heritage or culturally significant property.<sup>8</sup>

When considering a public building in the village of Lajido it is important to consider that the area has become a small cultural hub over the last decade. The other manor home was rehabilitated into: “the museum of the viticulture landscape”. And next door to this is the newly constructed house of volcanoes, geology museum.



Figure 4.1: Willow trees in the front of the manor home for which the home gets its name





*Figure 4.2: View from road*



*Figure 4.3: South elevation*





*Figure 4.4: North elevation in line with the profile of the mountain*



*Figure 4.5: West elevation outside the wall*



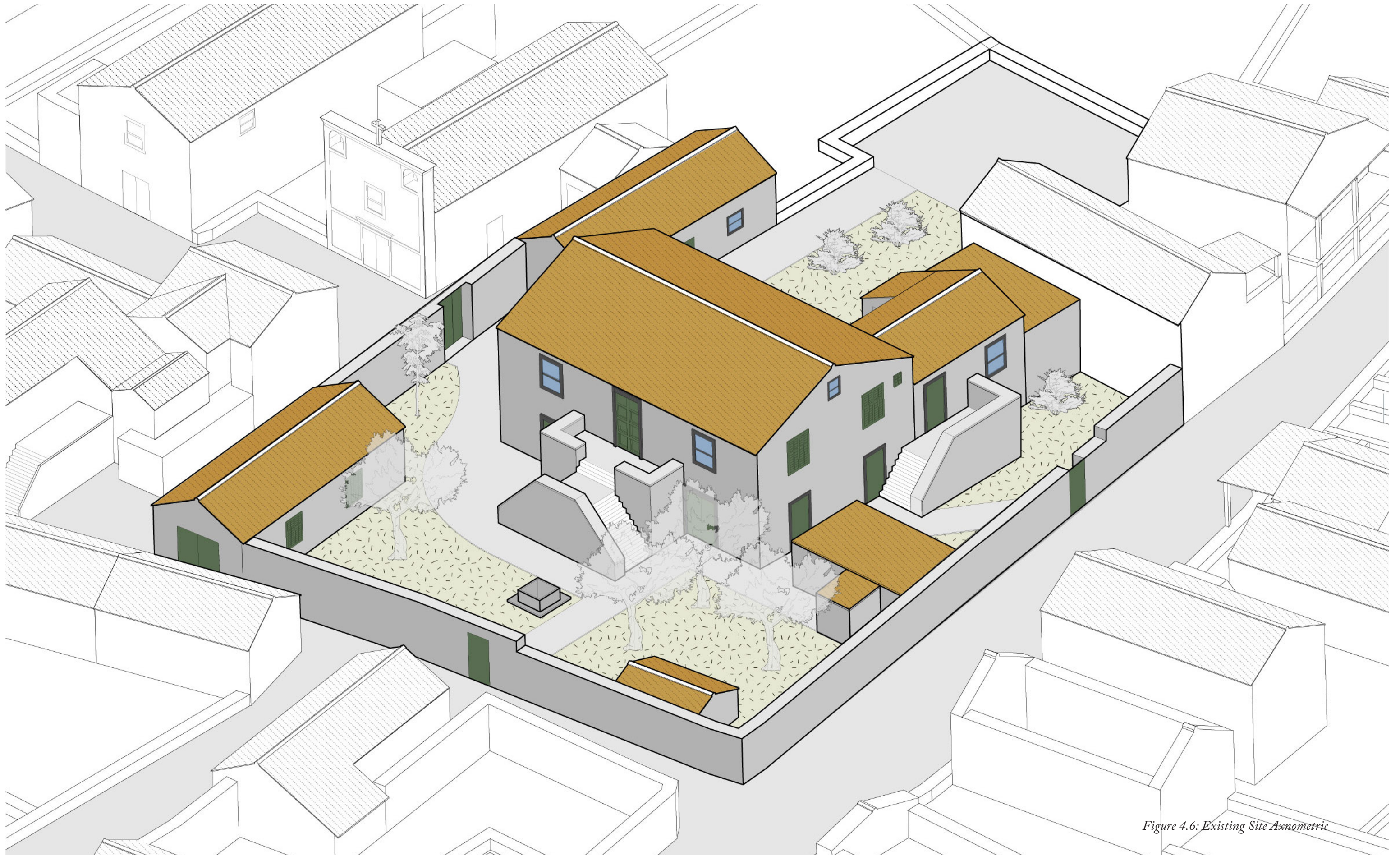


Figure 4.6: Existing Site Axonometric





Figure 4.7 : Plan of Existing Site





Figure 4.8 : West elevation



Figure 4.10 : South elevation

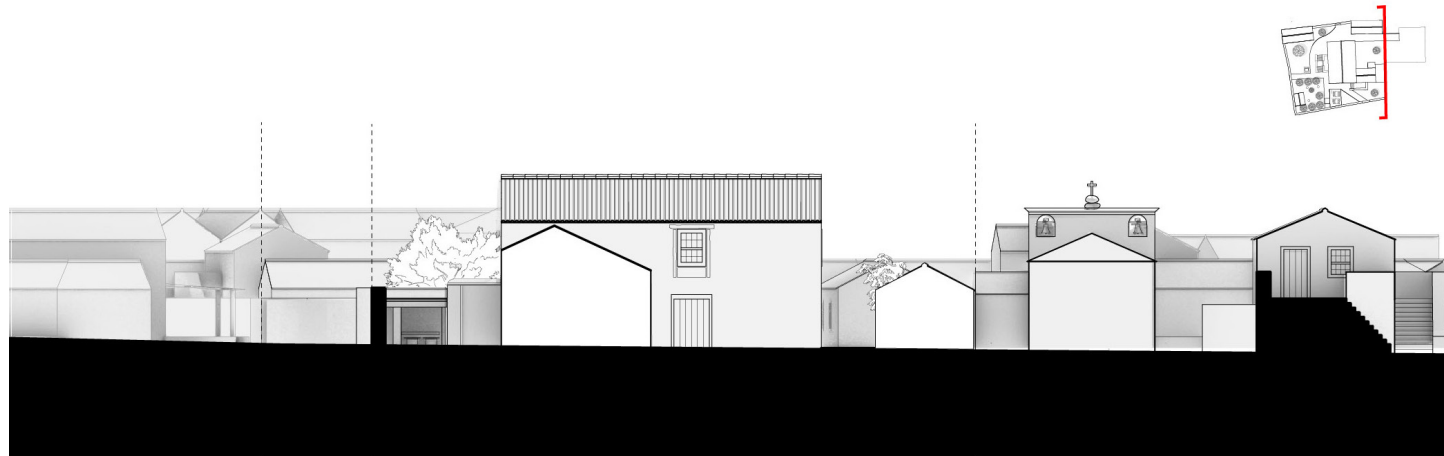


Figure 4.9 : East elevation

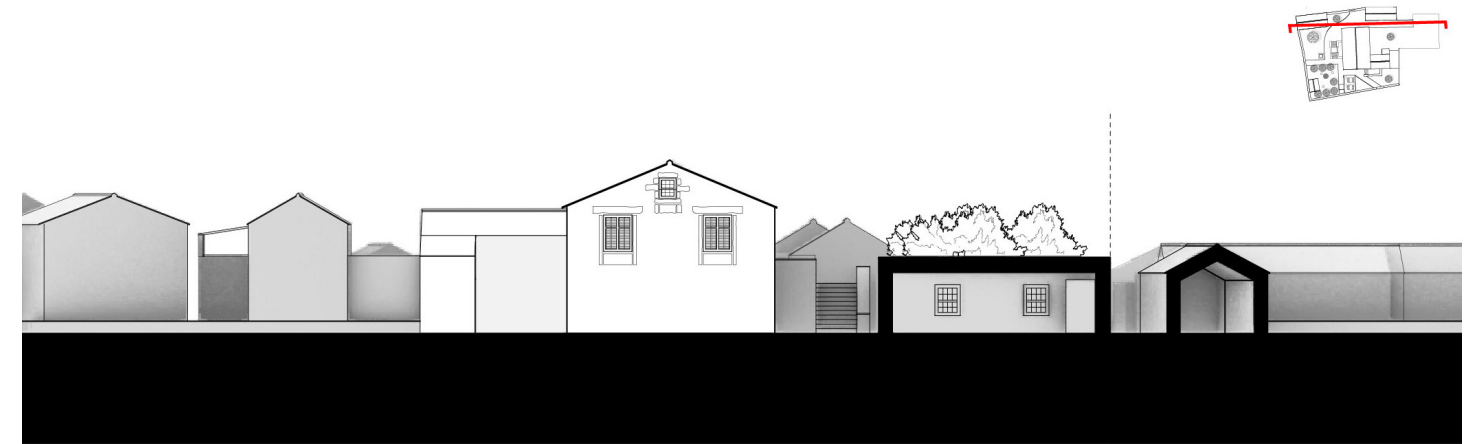


Figure 4.11 : North elevation



#### 4.2 Program

The program of the project thus should reflect this motivation for engaging local participation and creative solutions to material problems. When it comes to local tradition for the visual arts one can see an increase of interest in recent years.

Visual art on the island has not had great significance in the development of culture. This is primarily due to being a largely rural society. The art that has been created started in the 18th and 19th century and entirely consisted of pottery which was either functional or consisted of the red clay pots or plates decorated with minimal often white painted designs. Other art was made for tourists; these were often versions of the pottery or small figures of an “island man and women” that depicted primitive states of the islanders for people to collect.<sup>14</sup>

Today the island has a substantial population that are not rural, hence the need and desire for art is growing. This is evident in the spaces that do exist for art being used to host many programs for local and visitors. This includes an attempt to start the island’s first artist residency (a company filed a request with the city of Madalena in March 2022 and were approved for these shipping crate type residencies).<sup>15</sup>

Therefore, there is a desire for visual artists exploration on the island. This type of exploration aligns with the motivation to create a building that is indicative of local creativity.

The desire to engage with locals means that the program should also provide communal gathering spaces. In particular, space for the holy spirit festivals that occur in the village twice a year (Feast of Our Lady of Purity on the second weekend of September and the Pilgrimage to Our Lady of Miracles, on the 2<sup>nd</sup> day of February).<sup>16</sup> Spaces to support these festivals would include area for dancing, group meals, and live music.

Outside of these two festivals, locals should be encouraged to interact with the site daily. This could be achieved with a café space, as they are traditionally the most social spaces on the island.

Therefore, the desing research proposes an art gallery space with supporting makerspace studios and two artist residences on site. The interior programing will be accompanied by a café space. The exterior must support the festivals of the holy spirit and provide support spaces for those festivals including food preparation and performance space.



Figure 4.12: Recent Architecture Program hosted on the island demonstrate the desire for art and culture spaces





Figure 4.13: Map showing the spread of cultural and art spaces on the island view and far apart



### 4.3 Design

The idea of the site is to remove the supportive buildings, kitchen, and a large part of the perimeter wall. Thus, opening the site up to the street while also reducing its historic structures to the main volume of the house which is the most original and historically significant part of the site. The proposal then seeks to extend the building to the street and meet the remaining perimeter wall which now becomes part of the facade thus maintaining the street presence as is. This extension will be done in concrete to create a genuine reflection of the materials. This is consistent with many of the surrounding buildings. However, to recall the other influences on the site and to further utilize local materials the concrete will be board formed. This creates a nod to wooden siding used in American east coast architecture without risking the wood rot. This volume will then contain the cafe, art gallery and maker spaces (See Fig.4.14).

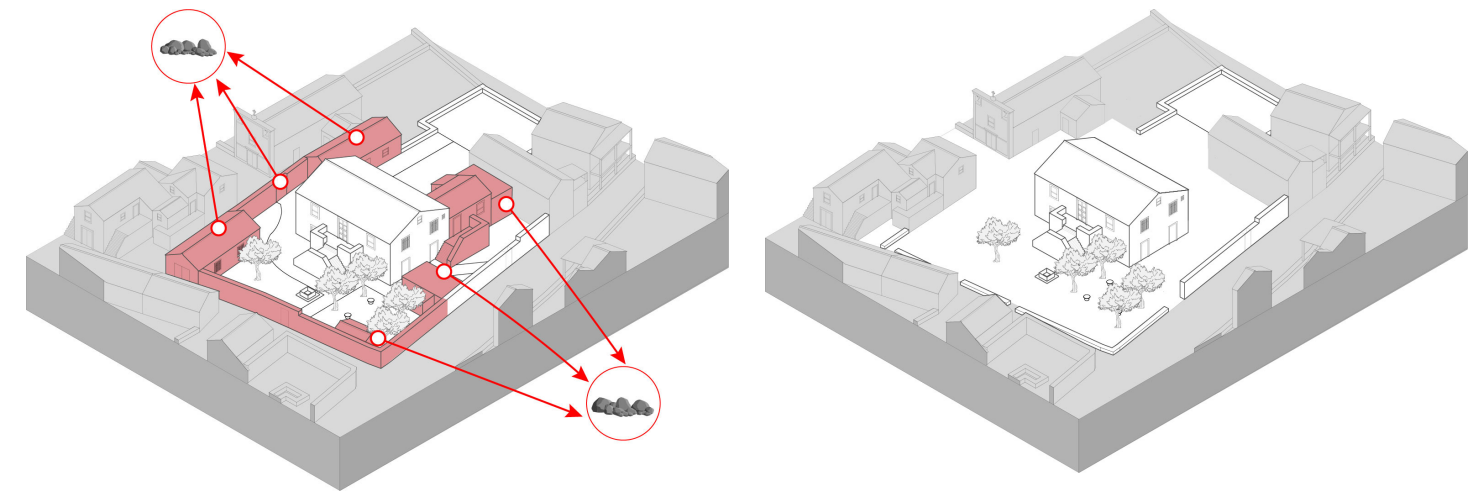
Then the building is further extended upwards to create a tower lookout point. This borrows from the many other terraces in the village that attempt to get both the ocean and mountain views. This tower will always be accessible for locals and tourists to have constant and direct access to the view. This is achieved via a circulation core at the back of the project that is clad with glass.

Outside of this volume in the back spaces, the previously removed stones are used to create a public outdoor kitchen to be used by the community in daily life as well as during festivals.

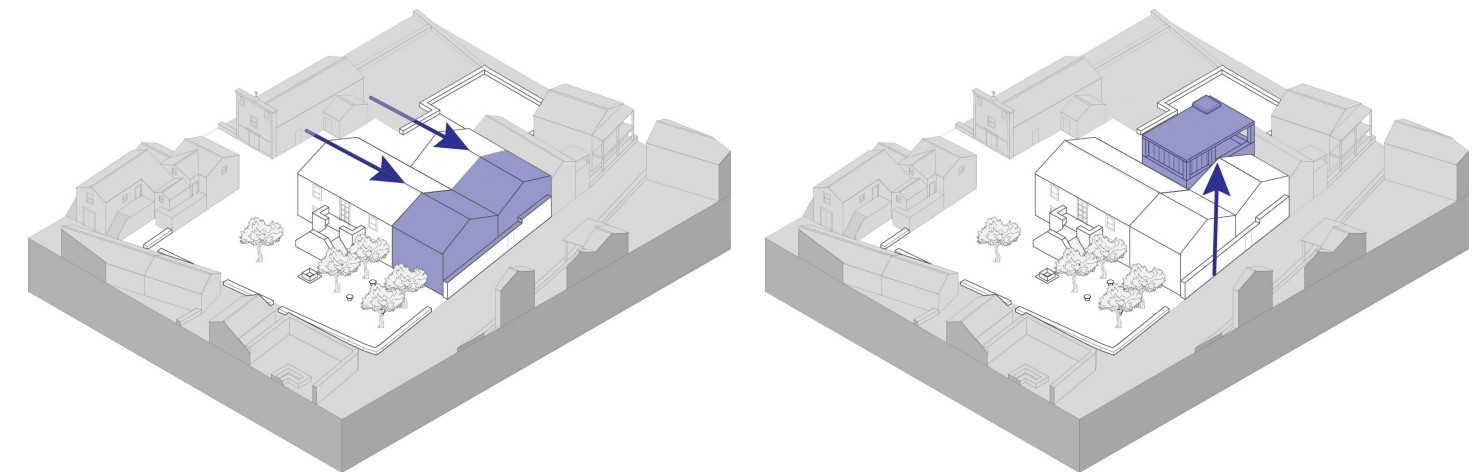
On what was previously a cistern, two artist residents will be built in concrete and clad in plaster. with the potential for artists to use stones, shells, murals, or mosaics to decorate the structures, recalling the modern architecture of the village.

Finally, the proposal maintains a large part of the site for outdoor gathering space, keeping all trees for which, the home is named in place adding seating and Portuguese tiling to create a useable landscape.

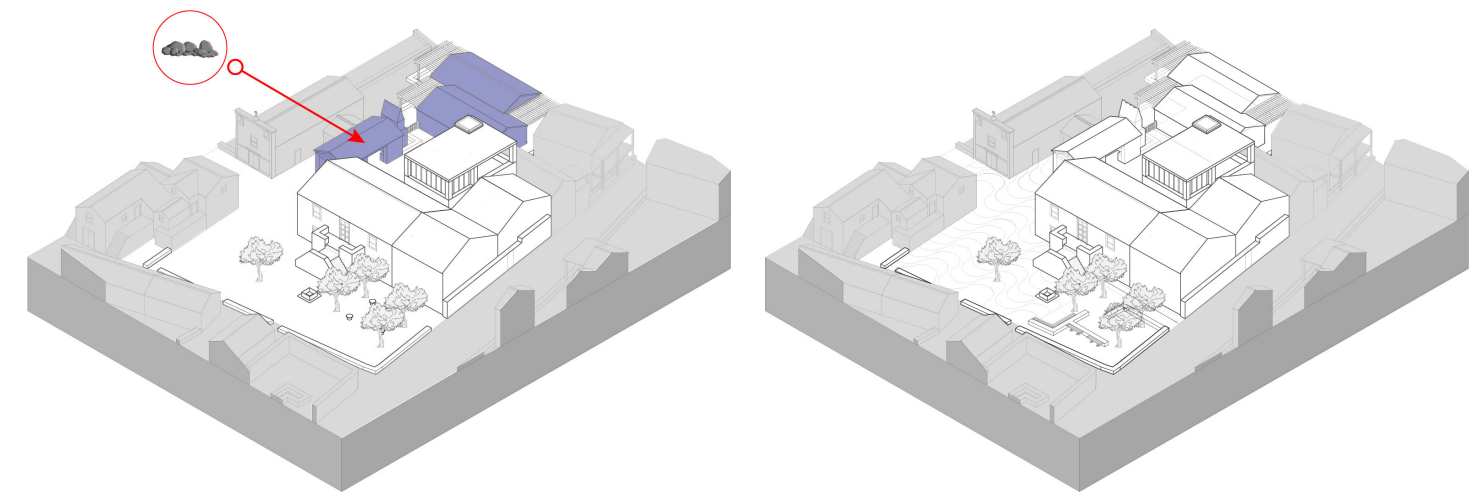
The proposal does not call for a radical change in the rules but instead attempts to respect the historic while expanding the references of the village.



*Step 1: Remove large part of property wall and all supporting buildings including kitchen leaving only main volume of the home and a roadside curb wall*



*Step 2: Extend building to meet remaining perimeter wall to accommodate new program and extend upwards to create a look out point*



*Step 3: Use stones removed from other parts to create an outdoor kitchen space for festivals and add two artists residence on previous cistern space*

*Figure 4.14: Design Parti Diagram*





Figure 4.15: Front Entrance Render

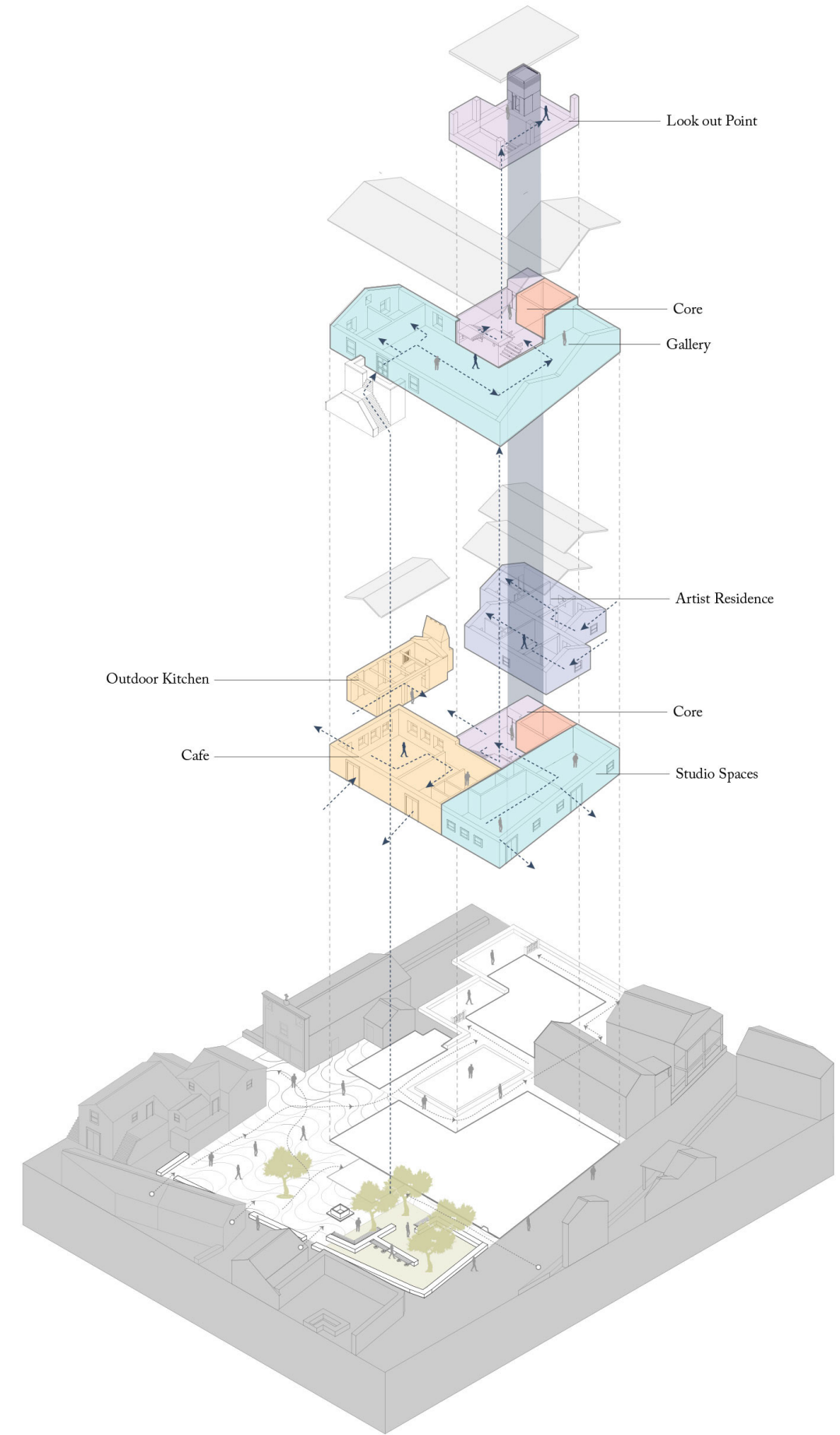


Figure 4.16: Exploded Program and Circulation Diagram





Figure 4.17: Street View Render



Figure 4.18: Artists Residence Render



#### 4.4 Art on display

The art currently on display in the images comes from an exhibition that was open from January 18th to March 15th, 2020, curated by Bernardo Rodrigues within the scope of the Creative Industry Platform of the Azores (PICA) of the Regional Government of the Azores. The show was called: How to build an island – Uterus Azorica. It is part of *Use and Abuse* contest; the goal is to reinvent and re-imagine the resources of the Azores such as rocks, fibers, sole and wood, while ensuring their sustainable use and shaping them into something beyond the obvious so they can add more value to the archipelago.<sup>19</sup> The pieces created for it include a line of urban furniture, made of basalt, by the French designer Sam Baron, which will soon be placed at several viewpoints on the islands of the Azores. Pictured in the foreground of Fig.4.16.<sup>20</sup>



Figure 4.19: Gallery Render



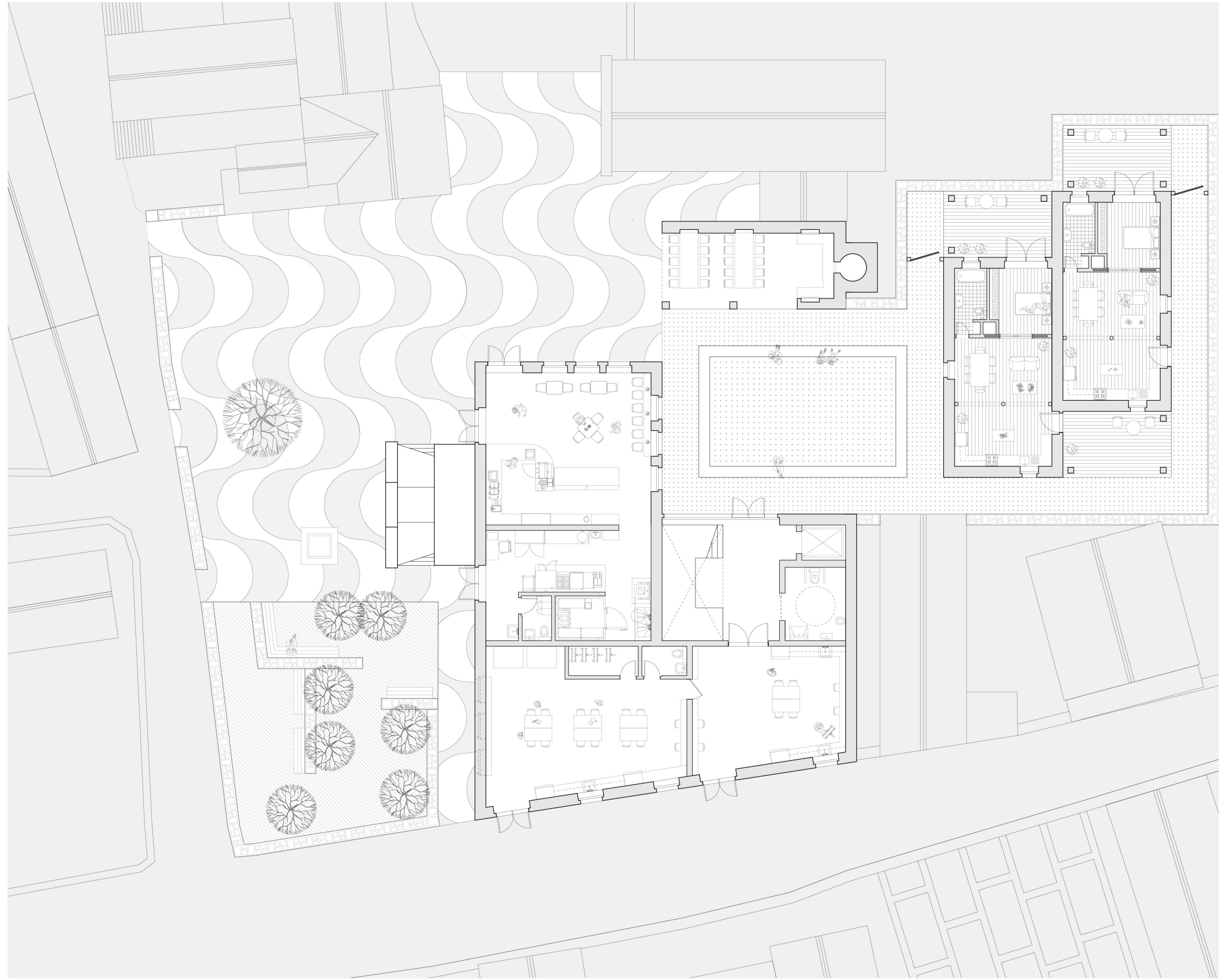


Figure 4.20: Ground Floor Plan



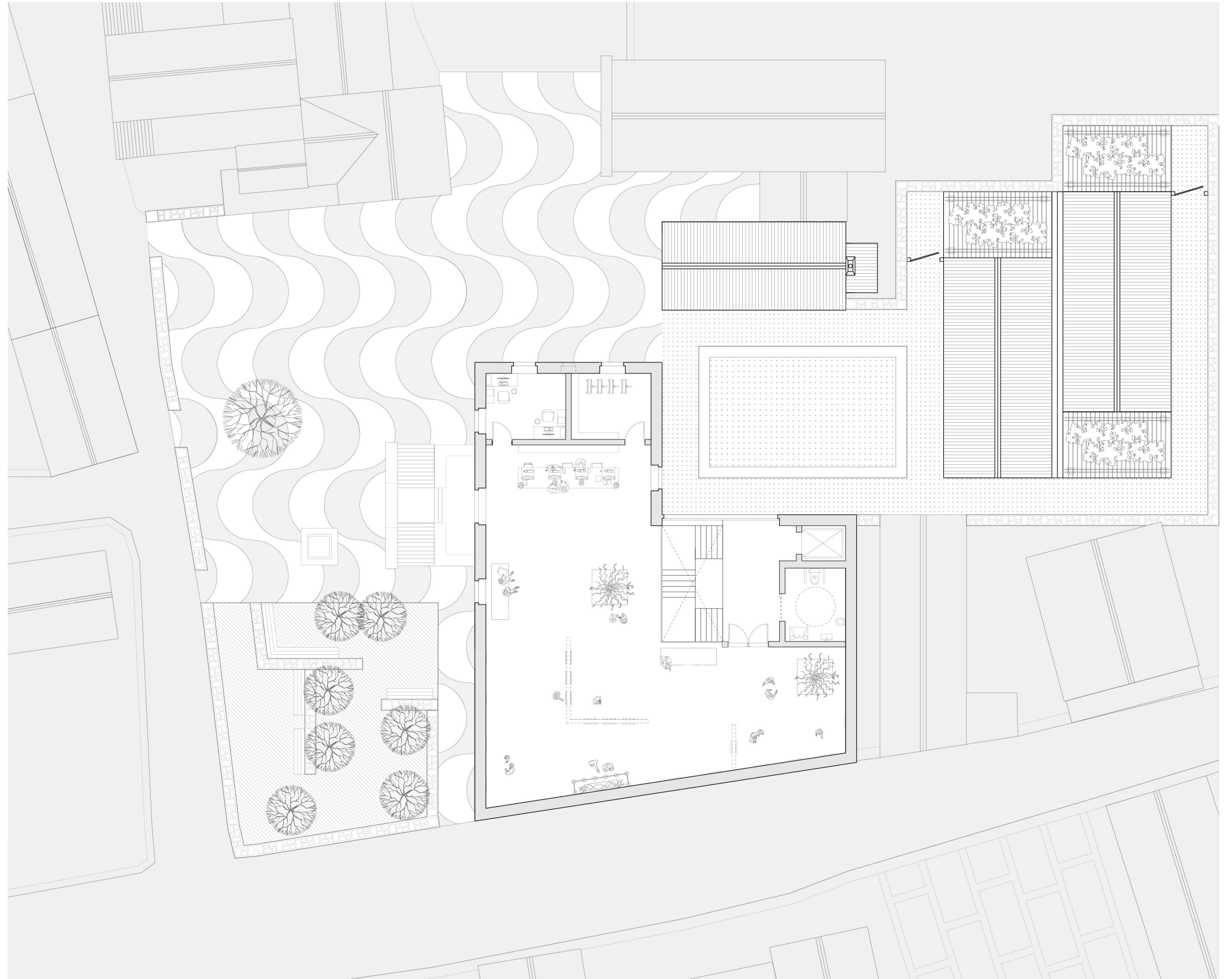


Figure 4.21: Second Floor Plan





Figure 4.22: Third Floor Plan





*Figure 4.23: Cross section through cafe and courtyard space*



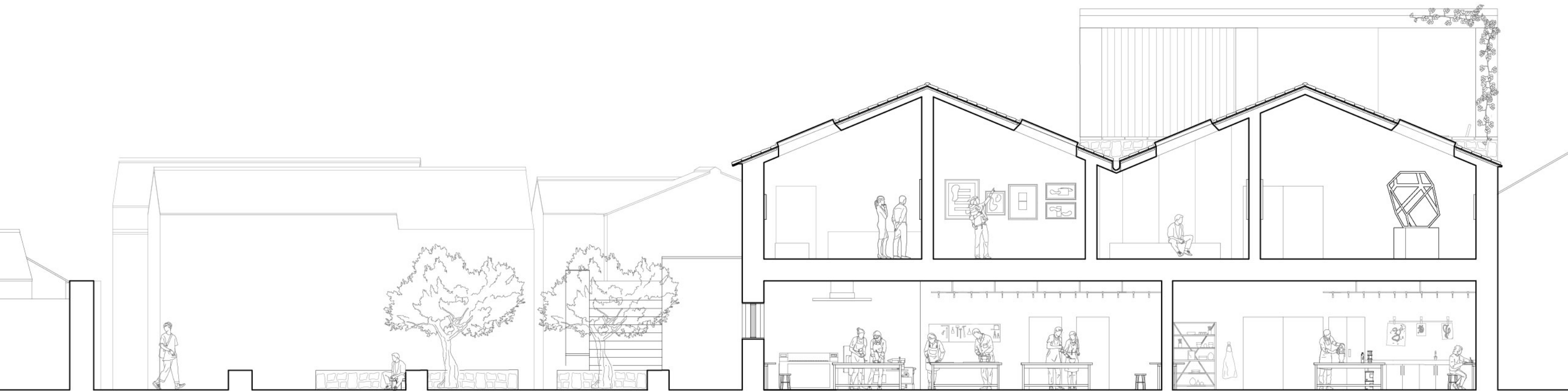


Figure 4.24: Cross Section Through Gallery and makers spaces



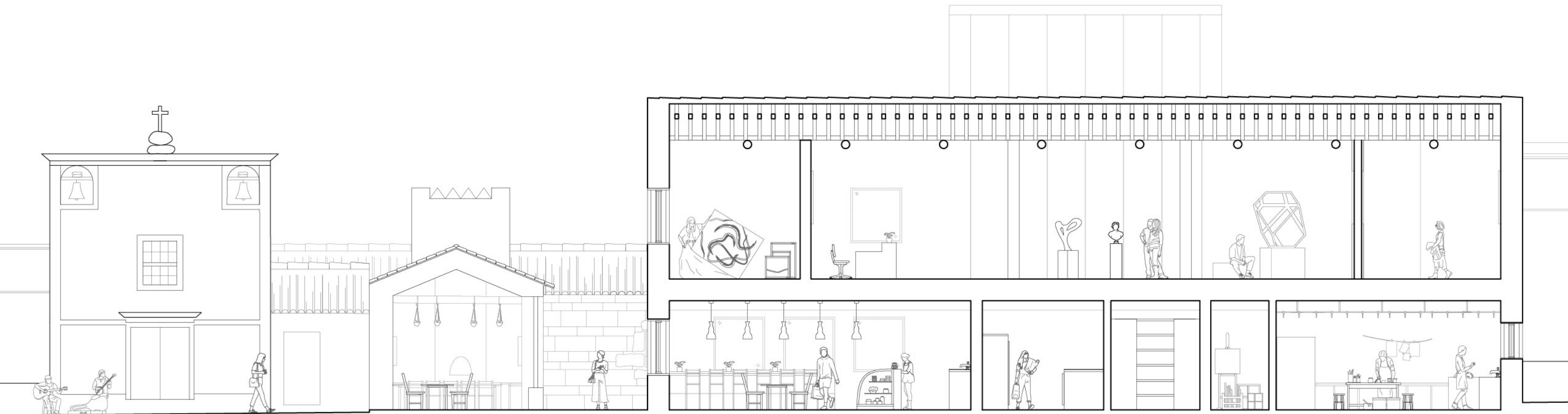


Figure 4.25: Long Section



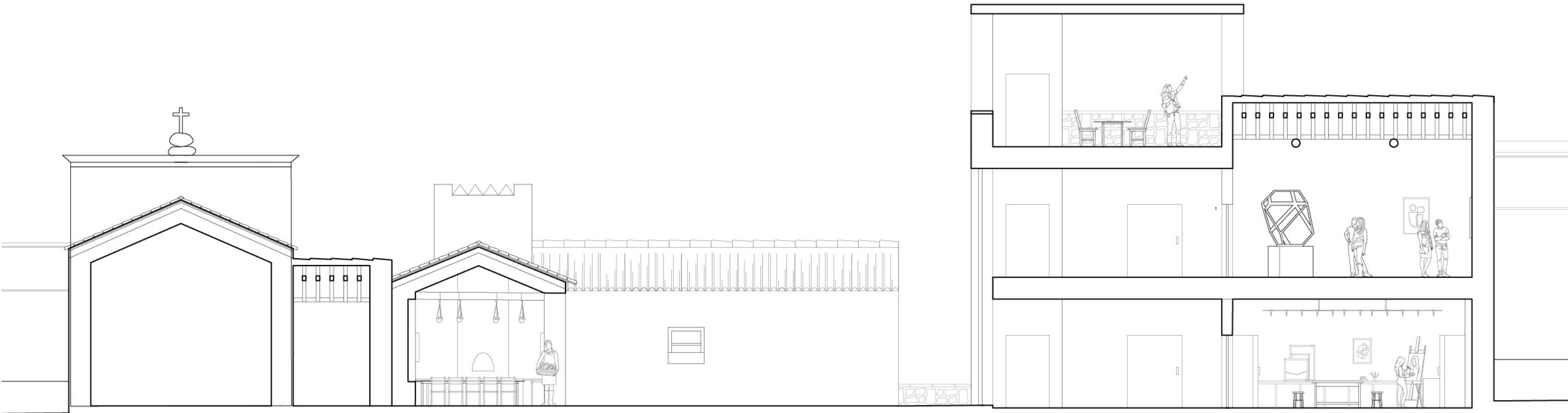


Figure 4.26: Long section through tower



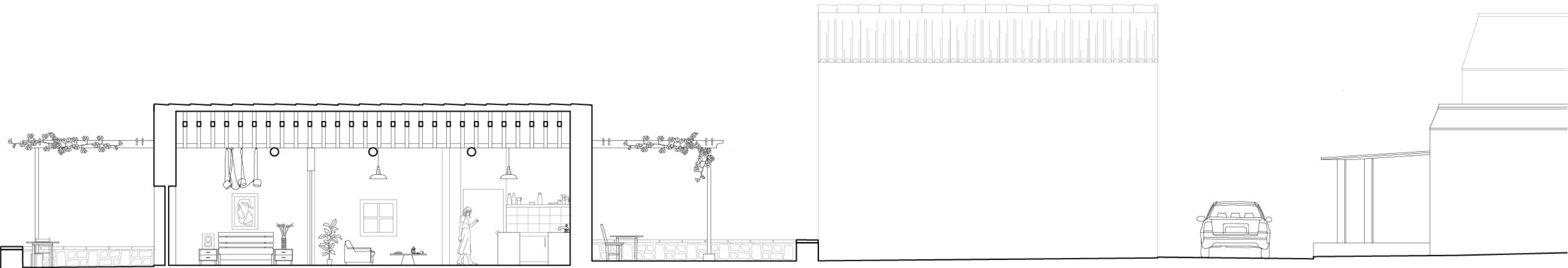


Figure 4.27 : Residential Section



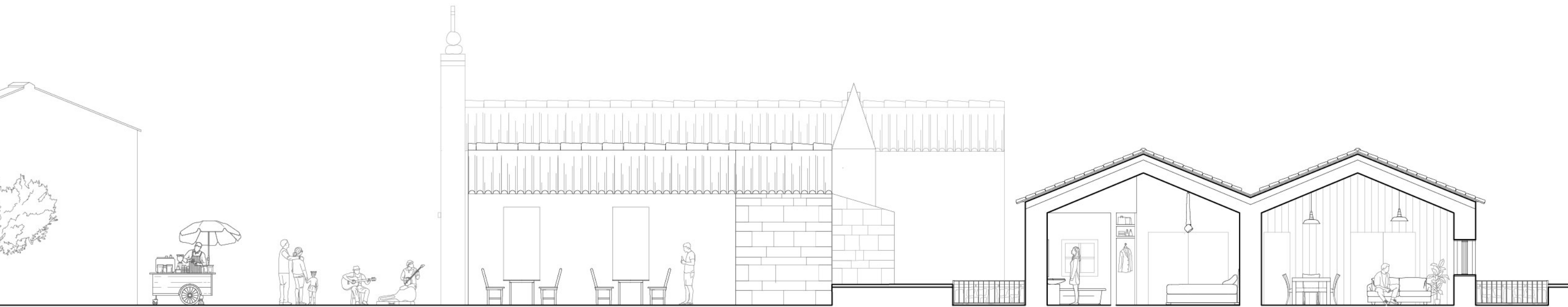


Figure 4.28: Residential section and outdoor kitchen space



**Part Five:**  
**Conculsion**





Figure 5.1: Tableau of the changes that occurred on the island as a result of human occupation



## Conclusion

I began this project with my own memories of the island and the overwhelming expansions of the mountain and the sea. I propose that while the conservation efforts established by the UNESCO world heritage site seek to protect and maintain the mountain and land, they also seek to forget the influence of the sea. The sea throughout the island's history has connected it to two communities on either side. Pico island is an important place of relevance to the mediation in both directions, Europe, and America. It has always been a meeting of diverse cultures and contributions. The built fabric on the island has integrated various sources of influence, at different times, while also adapting to the unique challenges of its own environment. This has given rise to its own models that express through innovation and creativity the intercontinental dimension of Pico Island.

By not celebrating these other influences while simultaneously allowing for the interpreted mimicry of traditional buildings, the site threatens to remove any chance of thoughtful interactions with the local people. A local people that are growing and showing new interest in developing their home. While the site does not encompass the whole island, its cultural significance means that and if cut off from the citizens that give it life, it will cease to be the special place it is now.

Instead, new buildings can invoke the collective memory of the local people while paying tribute to the main protagonists of the past. As recognized in Paulo Gouveia "becomes-travel" architecture, these protagonists must include those imported styles that have naturalized themselves on the island. Just as the animal, plant life and people on the island have all come from other places across the sea and become naturalized themselves to what was previously not much more than a volcano in the middle of the Atlantic.

The artisan character must also be pursued in new development so that new technological, material and spatial solutions are achieved through proximity to the site and local knowledge, creating jobs and keeping critical living memory. Any less thoughtful intervention is likely to upset the balance and authenticity of the place.

Therefore, I propose that in the next renewal of the UNESO designation four revisions are made:

1. Modern architecture and other imported models are recognized as legitimate constructions critical to the narrative of the site.
2. New development can be evaluated in this context allowing architects to borrow from all buildings in the surrounding site
3. Material and spatial solutions are encouraged to be explored with the help of local artisans.
4. Projects with resident focus programs are encouraged to populate the site

## Global Implications

Pico island is not the only heritage site in the world facing the question of how to develop with regulation. The choice of what to preserve, how and why is something that is being discussed in heritage sites across the globe.

I have worked in heritage focused architecture firms in New York, Lisbon, and Toronto. My experiences in these cities have led me to believe that the example of Pico is an important reference for Canadians to understand. This is due to the similarities of the nature of the heritage in both places. Canada was being settled in the 16<sup>th</sup> and 17<sup>th</sup> century, much like the islands meaning neither place has ancient buildings. Instead, there is a relatively recent history of construction (I specify construction because Canada of course does have an ancient past and culture that belongs to the aboriginal people however much of that history has been erased from the current built fabric). Therefore, unlike conservation efforts in places like New York and Lisbon

the attitude of what is important to maintain is not as clear. There are few notable examples of grand architecture from early settlement and much of what is traditional is quite domestic.

Secondly, the comparison is relevant because like Pico society, in Canada immigration is a critical part of the culture. Canada of course having a more diverse global immigration compared to the (until more recently) limited tradition of immigration on Pico.

For both these reasons the question of what is legitimate becomes a necessary discourse. Perhaps, Canadian conservationist can learn from the comparatively controlled example of Pico and see the investigation of this thesis as an argument to value their own "dissonate" architecture as legitimate productions of the social and economic conditions of a time and rather address development to innovate within these elements.

## Risks

*"Cities tend to die in three ways: when a ruthless enemy destroys them (like Carthage, which Rome razed in 146 BCE); when foreign invaders violently colonize them, driving out the indigenous inhabitants and their gods (in the case of Tenochtitlan, the capital of the Aztecs, when the Spanish conquistadors destroyed it in 1521 to build Mexico City atop its ruins); or, finally when their citizens forget who they are and become strangers to themselves and thereby their own worst enemies without even realizing it."*<sup>1</sup>

In his book, *If Venice dies*, Salvatore Settis, details the way in which this last fate, of citizens forgetting themselves, is the fate that occurred in Athens and is currently threatening Venice. I would argue that the eclipse of memory hangs over all modern society imposing a threat to the future of the world's most cherished cultural sites. Venice of course is the absolute example of this decline because it is a supreme symbol of a site with a unique set of historical events, urban form, architectural styles, materials, and a unique landscape it was built into. However, every site of human occupation can say to have their own unique set of conditions and therefore each site has a unique relationship to its people. Every site should therefore build on the foundations of its own heritage and all the choices made over time to create the successful interwoven landscape, further this landscape should continue to evolve so that each successive generation may add to it.

However, in Venice this process of addition by successive generations was intervened in two major ways. The first is when around the 1970s the citizens of the historically center became outnumbered by foreigners who owned accommodations on the streets and canals. This imbalance meant that citizens were no longer significant stakeholders in their own city. Outnumbered and unable to elect their own politicians coupled with the nearly 8 million tourists that visit the city yearly created a tourist monoculture where nothing of any significance is built only hotels, restaurants, souvenir shops and real estate agencies. To this day the number of Venetians continues to diminish, and one can only wonder what the fate of the city will be without those that give the city its lifeblood.<sup>2</sup>

Pico Island is not yet anywhere close to the fate of Venice, but tourism has already been shown priority on the island. As more investments and people come to the island it is not hard to imagine the consequences if like Venice, Pico became largely owned and managed by people who were not part of the tapestry of the site. This then raises the question as to who these keepers of memory are. Do new residences born elsewhere become part of the site?

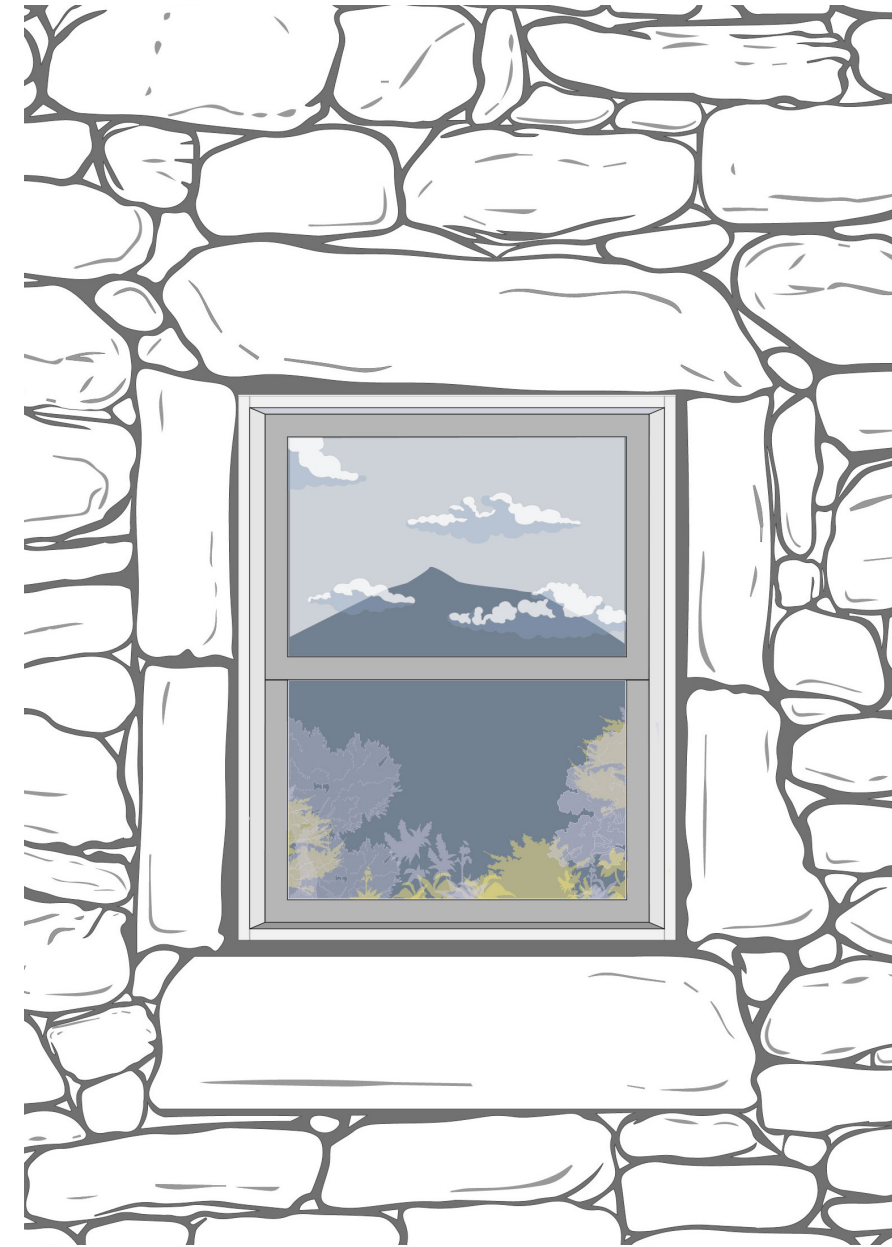
This makes me recall an early photo in this book one of me standing outside my grandparents' cellar. Do I, a Canadian born to Azorean parents have authority to be part of this site?

I think like the imported architecture, the diaspora of the Azores must be one of the stakeholders of the site. Because we are part of the story of how the specifics of the site came to be, even if that contribution is not appreciated by conservationist, it is genuine.

Therefore, reutilization of the site cannot limit itself to tourism. Instead, it must address the paradox of conservation, where nothing can ever be truly preserved nor handed down if it remains static and stagnant, memory needs life and growth. However, it needs growth that respects the DNA of the site.



In the words of Plutarch: “like a living thing...a united and continuous whole [which] does not cease to be itself as it changes in growing older, nor does it become one thing after another with the lapse of time.” If it will remain “at one with its former self in feeling identity and must take all blame or credit for what it does or has done in its public character” so that “the community, in which is held together by operational links, retains its unity.”<sup>3</sup>



*Figure 5.2: Sketch of Pico Mountain throgub a traditional stone window*



## References

### *Introduction*

- 1 França, Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.
- 2 Raul, Brandão. 2009. As Ilhas Desconhecidas: Notas e paisagens. Translated by Laura Sousa Matos. Ponta Delgada: Artes e Letras.
- 3 Raul, Brandão. 2009. As Ilhas Desconhecidas: Notas e paisagens. Translated by Laura Sousa Matos. Ponta Delgada: Artes e Letras.
- 4 Tomaz Jr, Duarte. 2001. O vinho do Pico. Villa do Madalena.
- 5 (Helena Roseta president to the order of Architects in Portugal in her introduction to “The Popular Architecture of the Azores”) Joao Vieira, Caldas. 2007. *Arquitectura Popular Dos Acores*. 2. Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa

### *Part One*

- 1 Nemésio, Vitorino. 1944. *Mau Tempo no Canal*. Lisbon: Bertrand.
- 2 Fernandes, Jose Manuel. 1992. *Cidades e Casas da Macaronesia*. Lisboa : Universidade Tecnica de Lisboa .
- 3 Leite, L.E.M. *Concepção de um Sistema de Alvenaria à Base de Blocos de Betão com Bagacina Vocacionado para a Construção nos Açores*. Dissertação de Mestrado, Faculdade de Engenharia da Universidade do Porto, 2008.
- 4 Freitas, Jamie. *Introducao Geografica a 1. Versao nao publicada da. Architectura Popular dos Acores*. Lisboa.1985.
- 5 Freitas, Jamie. *Introducao Geografica a 1. Versao nao publicada da. Architectura Popular dos Acores*. Lisboa.1985.
- 6 Francisco Mota Vieira Rodrigues da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 7 National Weather Service. “Glossary: Anticyclone”. Archived from the original on June 29, 2011. Retrieved January 19, 2010.
- 8 Francisco Mota Vieira Rodrigues da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 9 França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores an Overview. Lisbon: Nova Gráfica, Lda.
- 10 Nunes, João Carlos Carreiro, 1999. *A Actividade Vulcânica na Ilha do Pico do Plistocénico Superior ao Holocénico: Mecanismo Eruptivo e Hazard Vulcânico*. Ponta Delgada, Universidade dos Açores. Tese de doutoramento policopiada.
- 11 França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.
- 12 Pacheco, J. M., Ferreira, T., Queiroz, G., Wallenstein, N., Coutinho, R., Cruz, J. V., Pimentel, . 2013. Notas sobre a geologia do arquipelago dos Acores. Vol. 2, in *Geologia de Portugal*, by A. Araújo, P. Terrinha, J.C. Kullberg R. Dias, 595-690. Escolar Editora.
- 13 Franca, Zilda, Jose Virgilio Cruz, Joao Carlos Nunes, and Victor Hugo Forjaz. 2003. “Geologia dos Açores: uma perspectiva actual.” *Açoreana (Universidade Dos Açores)* 10: 11-140.
- 14 Franca, Zilda, Jose Virgilio Cruz, Joao Carlos Nunes, and Victor Hugo Forjaz. 2003. “Geologia dos Açores: uma perspectiva actual.” *Açoreana (Universidade Dos Açores)* 10: 11-140.
- 15 França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.
- 16 Pacheco, J. M., T. Ferreira, G. Queiroz, N. Wallenstein, R Coutinho, J. V. Cruz, and Pimentel. 2013. Notas sobre a geologia do arquipelago dos Acores. Vol. 2, in *Geologia de Portugal*, by A. Araújo, P. Terrinha, J.C. Kullberg R. Dias, 595-690. Escolar Editora. Translated by Laura Sousa Matos.
- 17 Gaspar, Frutuoso. 1873. *As Saudades da Terra* . Funchal . Universidade de Coimbra.
- 18 Francisco Mota Vieira Rodrigues Da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 19 Francisco Mota Vieira Rodrigues Da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 20 França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.
- 21 Francisco Mota Vieira Rodrigues Da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 22 França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.



- 23** França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.
- 24** França Zilda, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, and Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Lisbon: Nova Gráfica, Lda.
- 25** Rodrigues, Félix & Martins, Nuno & Ribeiro, Nuno & Joaquinito, Anabela. (2015). Early Atlantic Navigation: Pre-Portuguese Presence in the Azores Islands. *Archaeological Discovery*. 03. 104-113. 10.4236/ad.2015.33010.
- 26** Rodrigues, Félix & Martins, Nuno & Ribeiro, Nuno & Joaquinito, Anabela. (2015). Early Atlantic Navigation: Pre-Portuguese Presence in the Azores Islands. *Archaeological Discovery*. 03. 104-113. 10.4236/ad.2015.33010.
- 27** Rodrigues, Félix & Martins, Nuno & Ribeiro, Nuno & Joaquinito, Anabela. (2015). Early Atlantic Navigation: Pre-Portuguese Presence in the Azores Islands. *Archaeological Discovery*. 03. 104-113. 10.4236/ad.2015.33010.
- 28** Rodrigues, Félix & Martins, Nuno & Ribeiro, Nuno & Joaquinito, Anabela. (2015). Early Atlantic Navigation: Pre-Portuguese Presence in the Azores Islands. *Archaeological Discovery*. 03. 104-113. 10.4236/ad.2015.33010.
- 29** Leite, Antonieta Reis. “Acores, cidade e território : quatro vilas estruturante” Instituto Açoriano de Cultura, 2014.
- 30** Leite, Antonieta Reis. “Acores, cidade e território : quatro vilas estruturante” Instituto Açoriano de Cultura, 2014.
- 31** Leite, Antonieta Reis. “Acores, cidade e território : quatro vilas estruturante” Instituto Açoriano de Cultura, 2014.
- 32** Leite, Antonieta Reis. “Acores, cidade e território : quatro vilas estruturante” Instituto Açoriano de Cultura, 2014.
- 33** Ordem Dos Arquitectos. *Arquitectura Popular Dos Açores*. 2nd ed. Lisbon: Printer Portuguesa, 2007.
- 34** Leite, Antonieta Reis. “Acores, cidade e território : quatro vilas estruturante” Instituto Açoriano de Cultura, 2014.
- 35** Ordem Dos Arquitectos. *Arquitectura Popular Dos Açores*. 2nd ed. Lisbon: Printer Portuguesa, 2007. **36** Frutuoso, Gaspar. 1873 . *As Saudades da Terra* . Funchal : Universidade de Coimbra .
- 37** Madalena. 2016. Plano Integrado de Regeneracao Urbana Sustentavel da Madalena. Sustainable Urban Regeneration Plan, Madalena: Quaternaire Portugal.
- 38** Leite, Antonieta Reis. “Acores, cidade e território : quatro vilas estruturante” Instituto Açoriano de Cultura, 2014.
- 39** Zilda França, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Nova Gráfica, Lda.
- 40** Sociedade Portuguesa de Inovacao. 2018. Delimitação de 6 Áreas de Reabilitação Urbana (ARU) no concelho: Madalena, Bandeiras, Candelária, Criação Velha, São Caetano e São Mateus. Área de Reabilitação Urbana da Madalena, Villa da Madalena: Camera do Madalena.
- 41** Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 42** Frutuoso, Gaspar. 1873 . *As Saudades da Terra* . Funchal : Universidade de Coimbra .
- 43** Pacheco, J. M., Ferreira, T., Queiroz, G., Wallenstein, N., Coutinho, R., Cruz, J. V., Pimentel, 2013. Notas sobre a geologia do arquipelago dos Acores. Vol. 2, in *Geologia de Portugal*, by A. Araújo, P. Terrinha, J.C. Kullberg R. Dias, 595-690. Escolar Editora.
- 44** Morais, Olegário Manuel Goulart. 2015. *O Culto do Divino Espirito Santo e a Organizacao do Espaco Fisico e Ritual da Ilha do Pico-Acores* . Lisboa : Universitario de Lisboa: Departamento de Arquitectura e Urbanismo .
- 45** Morais, Olegário Manuel Goulart. 2015. *O Culto do Divino Espirito Santo e a Organizacao do Espaco Fisico e Ritual da Ilha do Pico-Acores* . Lisboa : Universitario de Lisboa: Departamento de Arquitectura e Urbanismo .
- 46** Morais, Olegário Manuel Goulart. 2015. *O Culto do Divino Espirito Santo e a Organizacao do Espaco Fisico e Ritual da Ilha do Pico-Acores* . Lisboa : Universitario de Lisboa: Departamento de Arquitectura e Urbanismo .
- 47** Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidate for World Heritage.
- 48** Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 49** Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidate for World Heritage.
- 50** Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 51** Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 52** Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 53** Goulart, Monica, interview by Laura Matos. 2021. (September 14)



- 54 Zilda França, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Nova Gráfica, Lda.
- 55 ROCHA, Gilberta Pavão Nunes and RODRIGUES, Vítor Luís Gaspar, 1983. The population of the Azores in the year 1849. Archipelago. Ponta Delgada, Special No., pp. 333-385.
- 56 Nuno Ribeiro, Anabela Joaquinip, Fernando Pimenta, Romeo Hristov. 2018. Estudo Historico Arqueologico sobre as Construcoes Piramidais Existentes no Concelho da Madalena ilha do Pico. Villa do Madalena: Vereadora da Camara Municipal da Madalena.
- 57 Zilda França, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Nova Gráfica, Lda.
- 58 Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 59 Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 60 Morais, Olegário Manuel Goulart. 2015. O Culto do Divino Espirito Santo e a Organizacao do Espaco Fisico e Ritual da Ilha do Pico-Acores. Lisboa : Universitario de Lisboa: Departamento de Arquitectura e Urbanismo .
- 61 Chapin, Frances W. "Channels for Change: Emigrant Tourists and the Class Structure of Azorean Migration." *Human Organization* 51, no. 1 (1992): 44-52. <http://www.jstor.org/stable/44126197>.
- 62 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 1. Lisboa: Secretaria Regional da Habitacao e Obras Publicas.
- 63 Chapin, Frances W. "Channels for Change: Emigrant Tourists and the Class Structure of Azorean Migration." *Human Organization* 51, no. 1 (1992): 44-52. <http://www.jstor.org/stable/44126197>.
- 64 Chapin, Frances W. "Channels for Change: Emigrant Tourists and the Class Structure of Azorean Migration." *Human Organization* 51, no. 1 (1992): 44-52. <http://www.jstor.org/stable/44126197>.
- 65 Melo, Pedro Miguel. "The life history of Portuguese Return Migrants: A Canadian-Azorean Case Study." PhD diss., York University, 1997.
- 66 Chapin, Frances W. "Channels for Change: Emigrant Tourists and the Class Structure of Azorean Migration." *Human Organization* 51, no. 1 (1992): 44-52. <http://www.jstor.org/stable/44126197>.
- 67 Zilda França, Victor Forjaz, Robert Tilling, David Kuentz, Elisabeth Widom, Marceliano Lago. 2009. Volcanic History of Pico and Faial Islands, Azores An Overview. Nova Gráfica, Lda.
- 68 Câmara Municipal Da Madalena. n.d. —. n.d. *História E Geografia*. Accessed Month 08, 2021. <https://www.cm-madalena.pt/pt/concelho/historia-e-geografia>.
- 69 Câmara Municipal Da Madalena. Accessed Month 08, 2021. <https://www.cm-madalena.pt>

## Part Two

- 1 Rodrigues, Paulo Simões. 2016. "Das origens da arquitectura popular em Portugal no século XIX: Arqueologia de uma ideia." In *Arquitectura Popular. Tradição e Vanguarda*, by Carlos Sambricio Paula Andre, 19-49. Lisboa: Instituto Universitário de Lisboa.
- 2 Goulart, Monica, interview by Laura Matos. 2021. (September 14)
- 3 Madalena. 2016. Plano Integrado de Regeneracao Urbana Sustentavel da Madalena. Sustainable Urban Regeneration Plan, Madalena: Quatenaire Portugal.
- 4 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 5 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 6 Francisco Mota Vieira Rodrigues Da Câmara. 2010. Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica. Open Access. <https://hdl.handle.net/10216/58571> (While lime-stone is completely non-existent on the other islands. In the context of the archipelago, Santa Maria was the central supplier of these raw materials, although regarding lime, some were imported from the Portuguese continent. Lime was used in a wide range of application from laying mortars and coatings, to finishes and paintings.)
- 7 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 8 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 9 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 10 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 11 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.



- 12 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 13 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 14 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 15 Morais, Olegário Manuel Goulart. 2015. O Culto do Divino Espirito Santo e a Organizacao do Espaco Fisico e Ritual da Ilha do Pico-Acores. Lisboa : Universitario de Lisboa: Departamento de Arquitectura e Urbanismo .
- 16 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 17 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 18 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 19 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 20 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 21 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 22 Francisco Mota Vieira Rodrigues Da Câmara. 2010. Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica. Open Access. <https://hdl.handle.net/10216/58571>
- 23 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 24 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 25 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 26 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." Bullentin of Earthquake Engineering 27-44. doi:10.1007/s10518-011-9276-0.
- 27 Caldas, Joao Vieira. 2007. *Arquitectura Popular Dos Acores. 2.* Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa.
- 28 Caldas, Joao Vieira. 2007. *Arquitectura Popular Dos Acores. 2.* Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa.
- 29 Caldas, Joao Vieira. 2007. *Arquitectura Popular Dos Acores. 2.* Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa.
- 30 Caldas, Joao Vieira. 2007. *Arquitectura Popular Dos Acores. 2.* Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa.
- 31 Caldas, Joao Vieira. 2007. *Arquitectura Popular Dos Acores. 2.* Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa.
- 32 Francisco Mota Vieira Rodrigues Da Câmara. 2010. Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica. Open Access. <https://hdl.handle.net/10216/58571>
- 33 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 34 Garcia, Susana Catarina Silveira. 2012 . The Alambiques of the Island of Pico, Azores . Ponta Delgada : University of the Azores Department of History, Philosophy and Social Sciences.
- 35 Câmara Municipal Da Madalena. n.d. História E Geografia. Accessed Month 08, 2021. <https://www.cm-madalena.pt/pt/concelho/historia-e-geografia>.
- 36 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 37 Leite, Antonieta Reis. "Acores, cidade e território : quatro vilas estruturante" Instituto Açoriano de Cultu-ra, 2014.



- 38 Bettencourt, Luis. 2005 . The Inventory of Windmills in the Azores . August 03 . Accessed March 31, 2021. <http://siaram.azores.gov.pt/patrimonio-cultural/moinho-vento/CD-IMoinhosVento/pico/fichas/indice.html>.
- 39 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 40 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 41 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 42 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 43 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 44 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 45 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 46 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 47 Fernandes, Jose Manuel, and Ana Janeiro. 2009. *Arquitectura Contemporanea nos Acores*. Translated by Laura Sousa Matos. Lisbon: Presidencia de Governo Regional dos Acores.
- 48 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 49 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 50 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 51 Francisco Mota Vieira Rodrigues Da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 52 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 53 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 54 Leal, Joao. 2011. *Entre o vernáculo e o híbrido: a partir do inquérito à arquitectura popular em Portugal*. Combría : Editorial do departamento de Arquitectura.
- 55 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 56 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 57 Medeiros, Hugo, interview by Laura Matos. 2021. (August 24).
- 58 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 59 Jorge, Andre, interview by Laura Matos. 2021 . (July 24).
- 60 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 61 Tostões, Ana. João Correia Rebelo : um arquitecto moderno nos Açores Angra do Heroísmo: In-stituto Acoriano de Cultura, 2002.
- 62 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 63 Silva, Ruben Fernando Neves Da. 2015. *Museu Does Baleeiros*. Porto : Universidade do Porto.
- 64 Leal, Joao. 2011. *Entre o vernáculo e o híbrido: a partir do inquérito à arquitectura popular em Portugal*. Combría : Editorial do departamento de Arquitectura.
- 65 Silva, Ruben Fernando Neves Da. 2015. *Museu Does Baleeiros*. Porto : Universidade do Porto.
- 66 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. 10 anos apos o sismo dos acores de 1 de janeiro de 1980. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 67 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 68 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.



- 69 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 70 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 71 Fernandes, José Manuel, and Ana Janeiro. *Arquitectura Contemporanea nos Acores*. Acores: Presidencia de Governo Regional dos Acores, 2009.
- 72 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 73 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 74 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 75 Filipe Neves, Anibal Costa, Romeu Vicente, C. Sousa Oliveria, Humberto Varum. 2012. "Seismic vulnerability assessment and characterisation of the building on Faial Island, Azores." *Bullentin of Earthquake Engineering* 27-44. doi:10.1007/s10518-011-9276-0.
- 76 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 77 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 78 Medeiros, Hugo, interview by Laura Matos. 2021. (August 24).
- 79 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 80 Medeiros, Hugo, interview by Laura Matos. 2021. (August 24).
- 81 Medeiros, Hugo, interview by Laura Matos. 2021. (August 24).
- 82 Francisco Mota Vieira Rodrigues Da Câmara. 2010. *Evolução das Soluções de Reabilitação Recente nos Açores Motivada pela Actividade Sísmica*. Open Access. <https://hdl.handle.net/10216/58571>
- 83 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 84 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 85 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 86 Silva, Ruben Fernando Neves Da. 2015. *Museu Does Baleeiros*. Porto : Universidade do Porto.
- 87 Silva, Ruben Fernando Neves Da. 2015. *Museu Does Baleeiros*. Porto : Universidade do Porto.
- 88 Ines Vieira da silva and Miguel Vieira, *Premio Nacional Tektonica: Centro De Visitantes Da Gruta Das Torres (Ilha do Pico: SAMI-arquitectos, 2009)*
- 89 Ines Vieira da silva and Miguel Vieira, *Premio Nacional Tektonica: Centro De Visitantes Da Gruta Das Torres (Ilha do Pico: SAMI-arquitectos, 2009)*

### *Part Three*

- 1 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 1. Lisboa: Secretaria Regional da Habitacao e Obras Publicas.
- 2 Secretaria Regional do Ambiente. 2004. *Landscape of the Pico Island Vineyard Culture*. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 3 Secretaria Regional do Ambiente. 2004. *Landscape of the Pico Island Vineyard Culture*. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 4 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 5 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 6 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 7 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 8 Carlos Sousa Oliveria, Arcindo R. A. Lucas, J.H Correia Guedes. 1992. *10 anos apos o sismo dos acores de 1 de janeiro de 1980*. Vol. 2. Lisboa : Secretaria Regional da Habitacao e Obras Publicas.
- 9 Caldas, Joao Vieira. 2007. *Arquitectura Popular Dos Acores*. 2. Translated by Laura Sousa Matos. Lisbon: Printer Portuguesa.
- 10 Secretaria Regional do Ambiente. 2004. *Landscape of the Pico Island Vineyard Culture*. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 11 Secretaria Regional do Ambiente. 2004. *Landscape of the Pico Island Vineyard Culture*. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.



- 12 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 13 Avilia, Joao, interview by Laura Matos. 2021. (September 6).
- 14 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 15 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 16 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 17 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 18 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 19 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 20 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 21 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 22 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 23 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 24 Florentino, R., M. Correia, G. Sousa, and G. Carlos. 2020. "Vernacular Architecture and Traditional Urbanism in the World Heritage Cultural Landscape Property of Pico, in Azores (portugal)." ISPRS International Archives of the Photogrammetry (Remote Sensing and Spatial Information Sciences) XLIV-M-1-2020: pp.159-165. doi:10.5194/isprs-archives-XLIV-M-1-2020-159-2020.
- 25 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 26 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 27 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 28 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 29 Mega, Diogo, interview by Laura Matos. 2021. (September 20).
- 30 Avilia, Joao, interview by Laura Matos. 2021. (September 6).
- 31 Avilia, Joao, interview by Laura Matos. 2021. (September 6).
- 32 Avilia, Joao, interview by Laura Matos. 2021. (September 6).
- 33 Sousa, Ivo. 2017. Parecer sobre projeto de novo hotel no Pico. February 13. Accessed March 30, 2021. <https://www.caisdopicopico.pt/2017/02/parecer-sobre-projeto-de-novo-hotel-no.html>.
- 34 Avilia, Joao, interview by Laura Matos. 2021. (September 6).
- 35 Mega, Diogo, interview by Laura Matos. 2021. (September 20).
- 36 Avilia, Joao, interview by Laura Matos. 2021. (September 6).
- 37 Medeiros, Hugo, interview by Laura Matos. 2021. (August 24).
- 38 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 39 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 40 Mega, Diogo, interview by Laura Matos. 2021. (September 20).
- 41 Jorge, Andre, interview by Laura Matos. 2021. (July 24).
- 42 Mega, Diogo, interview by Laura Matos. 2021. (September 20).
- 43 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 44 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 45 Goulart, Monica, interview by Laura Matos. 2021. (September 7).
- 46 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 47 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 48 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 49 Acores, Estatística dos. 2021. Censos 2021. Resultados Preliminares, SREA.



## Part Four

- 1 Câmara Municipal Da Madalena. Accessed Month 08, 2021. <https://www.cm-madalena.pt/pt/concelho/historia-e-geografia>.
- 2 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 3 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 4 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 5 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 6 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 7 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 8 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 9 Martina, Rui de Sousa. 2005. “Representações Dos Costumes Populares Na Escultura Cerâmica Dos Açores.” *Arquipelago and Historia* 409-464.
- 10 Câmara Municipal Da Madalena. Accessed Month 08, 2021. <https://www.cm-madalena.pt/pt/concelho/historia-e-geografia>.
- 11 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 12 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 13 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 14 Martina, Rui de Sousa. 2005. “Representações Dos Costumes Populares Na Escultura Cerâmica Dos Açores.” *Arquipelago and Historia* 409-464.
- 15 Câmara Municipal Da Madalena. Accessed Month 08, 2021. <https://www.cm-madalena.pt/pt/concelho/historia-e-geografia>.
- 16 Secretaria Regional do Ambiente. 2004. Landscape of the Pico Island Vineyard Culture. Excerpt from the Report of the 28th Session of the World Heritage Committee, Horta: Candidature for World Heritage.
- 17 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 18 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 19 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.
- 20 Rodrigues, Bernardo. 2020. How to Build an Island Uterus Azorica . January 25. Accessed March 22, 2021. <http://arquipelagocentrodeartes.azores.gov.pt/en/programacao/useabuse/>.

## Part Five

- 1 Settis, Salvatore. 2015 . *If Venice Dies* . Translated by Andre Naffia-Sabely. New York : New Vessel Press.
- 2 Settis, Salvatore. 2015 . *If Venice Dies* . Translated by Andre Naffia-Sabely. New York : New Vessel Press .
- 3 Settis, Salvatore. 2015 . *If Venice Dies* . Translated by Andre Naffia-Sabely. New York : New Vessel Press .