Sculpting the void
The House of Wine in Oia

Explore Lab 15
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The islands with all their minimum and lampblack
the islands with the vertebra of Zeus
the islands with their boat yards so deserted
the islands with their drinkable blue volcanoes

Axion Esti, Odysseus Elytis
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1. Introduction

This document is the result of the research study executed before the initiation of the master thesis project carried at Delft University of Technology in the Netherlands. The aim of this research consists in thoroughly understanding the project’s guidelines and correctly placing it in the cultural, architectural and topographic context in which the construction will be laid. The project consists in designing a winery on the exact same location where old quarries once were placed on the outskirts of the village Oia, situated north of the Greek island Santorini. But before drawing lines and erecting walls it is of paramount importance to get acquainted with some key characteristics of the area and region and most importantly with the legacy of the local architecture.

Chapter 2 is dedicated to the very characteristic and peculiar architecture of the island. This vernacular architecture has evolved throughout the centuries to fulfill the housing needs of a region, on one hand, rich in tradition, but on the other hand, very poor in construction materials. Santorini is one of the Cycladic islands in the Aegean Sea and alike the others it is characterized by an arid landscape over which strong winds do not permit the growth of trees and long vegetation. In addition to that, and unlike the other islands, Santorini is the remnants of an ancient Volcano exploding in the mid second millennium BC. All this ingredients make Santorini a rough and hostile place in which the population had to device shelters out of rooms half dug in the surrounding pumice and constructed of local stones and whitewash. As a consequence, the rooms are well isolated from the scorching summer temperatures as well as the cold winter ones. Because the winery will be erected on this island it is important to explore thoroughly this architecture in such a way to fully understand the hosting surrounding. Therefore, in Chapter 2, the vernacular architecture in general but more specifically of
Santorini is researched and its most dominant characteristics and elements are discovered. Nowadays, this unique type of architecture has gained great value on the eyes of people and as a consequence many attempts have been made to mime and reproduce it. This attempt gave birth to the neo-vernacular style which is also covered in the same chapter.

Once the general architecture of the island is covered, I feel that it is also important to get acquainted with the location over which the building will be placed. As aforementioned, the winery will be constructed over an area where old quarries used to exist; therefore, to retain and not forget the history of the location, a brief study is performed on the underground architecture primarily focusing on the philosophical thoughts behind it and substantiated by a number of famous examples. This study is presented in Chapter 3.

Furthermore, the queries are positioned right next of the town Oia and, as a consequence, they strongly demark a boundary between the town and the remaining surroundings. This separation has a strong impact on the local landscape and for this reason Chapter 4 discusses the boundary as an architectural concept. In addition to that, as explained further down, the boundary is a recurring theme on different scales even in the vernacular architecture of the island: from interior design all the way to city planning one can notice this marked separations.

Finally, Chapter 5 presents the research model used to draft the beginning of this master project while Chapter 6 provides the conclusions drawn for this research study.
2. Vernacular and Neo-Vernacular Architecture

2.1. Vernacular architecture

2.1.1. Tunisia

2.1.2. Cappadocia

2.1.3. Santorini

> the 4 elements of Santorini Architecture:

- sun
- water
- earth
- wind

> Dominant characteristics of Santorini Architecture:

- boundary
- imperfection
- fragment | whole
- the core | monad

2.2. Neo-Vernacular architecture

2.3. Conclusions
2.1. Vernacular Architecture

Vernacular architecture (or ecological architecture) is universal and close to nature. It is not reliant to artificial forms restricted by style, it follows no fashions, but instead it evolves through time. Its longevity is owed to the constant redistribution of knowledge and reactions to the outer world.

Vernacular architecture has no intention of dominating the environment, but rather to co-exist and work together with it.

It is tailored to human dimensions and needs, instead of the ambitions of the architect. Moreover it is distinguished by its organic and concise quality as well as by its social and cultural coherence. With vernacular architecture each building attempts to respond to the 4 elements:

sun | wind | water | earth.
Vernacular architecture has to do with relationships.

The most important relationships are those between:

- nature– architecture
- landscape - buildings
- human - human
- human - nature

"Architecture ought to be art, poetry and music"

Bernard Rudofsky
2.1.1. Vernacular Architecture: Tunisia

Tunisia is a small country between Libya and Algeria. In the northern part of the country there is temperate climate due to its contact with the Mediterranean Sea but the southern part of the country being part of the Sahara desert is very dry with temperatures exceeding the 40 °C. In an attempt to respond not only to this inhospitable climate but also to the predatory raids of nomadic tribes, the locals of Matmâta developed very unique underground vernacular architecture.

At first a large crater, a cavity, a void, was created in the depth of about three storeys and then there were opened “man caves” in the internal facades of this cavity. These man caves become the houses of the locals. In some occasions, in the middle of this cavity a cistern could also be found. All these craters, the neighborhoods, were connected underground through tunnels. These dug settlements are almost invisible from far to the visitor, or the enemy in the past. Moreover, the climate within the cavity is much better because the temperature stays steady more or less, as it has the temperature of the earth.

Unfortunately, the extensive spread of dwellings irrelevant with the architecture developed in the area, along with the ‘modernization’ of the living conditions and the status of the owners, are threatening the conservation of this unique traditional architecture.
Cappadocia is a region in Turkey, where Minor Asia and Anatolia meet. The climate is continental, with great differences in temperature. Located on a rocky plateau, enclosed by land in an altitude of 1000–1500 m, there are geological formations result of volcanic activity and perpetual erosion caused by the weather elements.

The Hittites appeared in the region since 2000 BC, and in the 6th century BC it became the satrapy of the Achaemenids. Later it changed dominant and got accepted the Hellenistic influence, when it was when the first tombs appeared. From the 1st century AD, the Greek–Christian influence continued throughout the duration of Byzantium. On the 6th century the first hermitages and churches of the region appeared, particularly in Korama (Göreme). The range was wide: from ossuaries and pigeonholes the vertical and inaccessible rocks, simple houses with small openings to elaborate monumental church facade with very valuable illustrations. In the 7th and 9th century, because of the invasions of Arabs and later the Seljuks in the region, there was a development of the famous underground cities of Cappadocia, serving as shelters in the raids of the conquerors.

The first Western observer, who rediscovered Cappadocia, was Abbot Paul Lucas, who described the natural formations that were carved as residences, as monolithic pyramids crowned with carved heads. Now the area has been recognized by Unesco as a World Heritage Site. Of particular interest are the aforementioned underground cities, which reach the number of 200. Characteristic are the Kaymakl and Derinkuyu, which are the largest in size. It is essentially a complex, multi–level complex of rooms, connected by extensive corridors, interior wells, stables, warehouses, multiple workshops, churches and ventilation systems. Auxiliary functions such as stables located at the upper levels, while going down, the corridors were becoming narrower to prevent the access of the Arab invaders. The entrance
is all underground cities, could be secured with a millstone halting the attackers. The storage spaces were spacious, which demonstrates the robustness, while also allowing their residents to cope with lengthy sieges. Characteristically Kaymakl reached a depth of 30 m while Derinkuyu, eleven levels, 85 m and had the ability to host 3,000 to 50,000 inhabitants.

The danger of attacks became the reason for such an interesting architecture to be developed. The local materials and the climate of the area were used in the most efficient ways, in favor of the locals.
2.1.3. Vernacular Architecture: Santorini

Site – Topos

Santorini is an island in the centre of Aegean Sea, on the south of Cyclades, with a surface of 75 sq. km and is part of a volcanic basin composed by three islands (Thera, Therassia and Aspronissi).

Santorini is volcanic, the remnants of a prehistoric eruption which reduced the originally cone-shaped island to its present form. Towards the crater there are rock cliffs up to 400 meters high whereas on the outer side low hills are formed. Even though it has been periodically devastated by earthquakes, volcanic eruptions and pirates it has never been abandoned.

The basic factor in the creation of the built-up space on the island until late 18th century had always been that of safety. Living under circumstances of turmoil and being exposed to pirate raids, the inhabitants were forced to an incessant defensive struggle. Therefore, architecture ought to have had a defensive character, that is to provide security above all. A vernacular architecture was developed, and spread over the centuries, showing an uninterrupted procedure.
The landscape of the site is the most dominant element. So the integration of the landscape to architecture becomes of significant importance. It is matter of sculpturing the mass and void of the existing landscape. At the same time the goal is to make the borders between the organic-inorganic, built - unbuilt, natural - artificial, to become blurred. The landscape and the built environment should not come in contrast, but rather one become part of the other. In that sculptural approach the connection of those two will be the goal, in order to reach the point of connection that there was in the past.

The landscape of Santorini can be identified as Cultural Landscape.

Cultural landscape is defined as the human-modified environment and it is the combination of nature and human.

It is a landscape representing the combined works of nature and of man.

The link of the settlements and vineyards with the natural landscape is really strong and adds spectacularity to both the natural and cultural elements; in particular the setting of the settlements on the cliffs makes the views unique in the world.

This deserted country lane is far superior to the thoroughfares of the large modern city, for all its twists and curves and infinite changes of perspective show us the divine hypostasis of singularity when submitted to the harmony of the whole.

The logic of construction was of the measure and achievable: nothing will be thrown away, but also it will not stand inappropriate in the whole. It will become whole and be matched to wholeness. The field will be cleared from the stones, but also it will be made of stones. This enabled the construction of a particular philosophy, not construction, but mastery. The Craftsman was the architect of the place, since he was structuring it with wisdom, with his inspiration, with his dexterity, setting the principles and ideas. With his work, he was also making places, landscapes, environments, destinations. All solid, because he had a certain and purpose: to give wholeness.
"As part of the Aegean style, traditional Santorini architecture exhibits an unusual freedom of expression as it incorporates the particularities of the island into the structured environment. The peculiarity of the ground allows for the creation of subterranean buildings under cultivated fields, buildings so closely connected to each other that you cannot tell where one property ends and where the other begins...".

M. Danezis, 1939, "The Theraic Common Law in the 18th century".

Special characteristics that shaped and keep shaping the architecture of Santorini:
- Location
- Volcano
- Quality of ground-soil
- Designing of ships
- Inhabitants' works
- Climate
- Earthquakes
- Cliffs – Landscape
- Traditional food
- Tourism
- Pirates – defense
- Society

There are many similarities between the pre-historic houses and the houses of today. Many considered Mediterranean architecture to be a precursor to modern architecture.

Bernard Rudofsky
Organic urban & building forms, evolving through a long response to the climatic conditions skillfully using the locally available resources, and at the same time imprinting the social evolution through time.

Climate, earthquakes, materials, and topography had been the primary design parameters, and were respected with admirable honesty & ingenuity.

The architecture of the island is based on the use of local volcanic materials and generally falls into three main categories: 1. cliff-face buildings, 2. half-dug on a slope (yposkafa) and 3. free standing houses built on level ground.

Because of the terrain's formation and the materials used, the local architecture is characterized by tightly packed clusters of building, where property lines are usually confused since the courtyard of one unit may partially cover the roof of another at a lower level. Houses, windmills, wineries or churches mix into a uniform pattern of built form. Solid volumes, thick masonry walls lead to the creation and composition of an organic urban fabric through continuous repetition that almost resembles a stair like urban structure.

Man's handiwork blends into the natural setting, thereby achieving a synthesis of the vernacular and organic forms.

The archetypal cave-dwellings and primeval unique ecological system are two of the main characteristics of the vernacular architecture of Santorini.

The architecture of Santorini concentrates all the fundamental features of a "human" architecture as it arises emotive and therapeutic emotions through spatial plasticity.
> the 4 elements of Santorini Architecture
With vernacular architecture each building attempts to respond to the 4 elements:

sun

water

earth

wind

So does the Vernacular architecture of Santorini.
All buildings are whitewashed on the outside so that they can reflect the sun's scorching heat. The whitewash also distributes light, allowing for smaller windows, while regular whitewashing actually acts as a disinfectant in an area that gets little rain.

The small openings are sufficient for summer daylight and some clerestories admit daylight more deeply. The bedrooms are quite deeply, so that plenty of light will not reach the space.
Rainwater collection was absolutely vital, affecting building layout & form.

The precious liquid was directed from roofs & terraces to cisterns via welled routes.

The typical dwelling includes at least one cistern where the precious rainwater is collected via elaborate drainage systems. In many cases the care to collect even the last drop of rain has been a decisive factor in the form of a building.

Limestone was used for disinfecting the cistern and the water route –that had to remain free of droppings.
In Santorini there are four types of available materials/stones and as a sequence those 4 materials are the ones used as construction materials.

1. **black andesite** | an extremely strong stone hard to be processed, is used in bearing walls and fences

2. **red haematite** | a material mostly used in lintels, wall facades and the filling of walls

3. **pumice stone** | a material easily processed, is used mainly for the construction of domes

4. **aspa_ terra theraic** | a strong mortar that is easily mined, with excellent hydraulic properties. The hard, cohesive soil is consisted of layered volcanic materials – ash, lava, pumice, and scoria and can be used for the construction of dug buildings.
Detail of masonry with volcanic materials. The blackstone and the redstone can be distinguished. The mortar used, have as its basis theraic earth.
The exclusive use of vaults in order to cover spaces derived from the lack of timber for producing wooden framework and from the ingenious exploitation of the local volcanic materials.

For the floors they used a mixture of theraic earth and mortar to which they added sand in order to increase durability and resistance to friction. The ground floor of yards was decorated either whit black stone, or with patterns from colorful volcanic stones or sea pebbles which they called "shells" (hohlidia). Doors and windows always bore frames made of chiseled red stone arranged symmetrically. The doors were always double and the doors of the kanaves (wineries) were arched.
A major construction difficulty is the transport of materials. The only available means to the areas not accessible by vehicles are the donkeys. For these reasons the materials used for a new constructions were the ones that were found there, on a previous construction or the materials excavated by the specific area. So we can say that the majority of the materials are recycled again and again, treated and used in a different way each time.
The island of Santorini is exposed to strong north and north-east winds. The need for protection from the wind is of vital importance.
The aerodynamic shapes of the architectural elements and their details reduce the strength of the wind and enhance the resistance of the buildings to the strong winds. Moreover, the multiple parallel layers of elements, stairs, bearing walls, pavements, etc., all on the same direction, protect from the strong winds, creating a strong "shield" against wind.
The matter of boundary arises as a very important issue in the vernacular architecture of Santorini. An observer can see that the boundaries, on all scales are quite diffused. The public is not strictly separated from the private. A public stair might become the entrance of a house on a lower level. Even if it seems as a chaotic complex, the locals always throughout the years managed to organise their lives around this built environment and make it as efficient as it could be. The scales that the (absence of the )boundary can be identified are:

1. the architectural scale
2. the urban scale
3. the city scale

1. Each one of the architectural components is an individual element and a part of a composition at the same time. The roof, the wall, the stairs, the terrace, the floor, the courtyard, the road, all are related to each other and the boundaries between them are quite diffused. The synthesis is complex and simple at the same time.

The boundary between the architectural elements is blurred and diffused.

2. Each building and each architectural component is an individual element and a part of a composition at the same time. The fabric consists of interconnected and interdependent parts, each of which contributes to the composition of the whole. The composition of each individual component influences the properties of the other components as well as their totality.

The boundary between the private and the public is blurred and diffused.

3. The boundaries of the city itself become blurred as the complexes that are formed are characterized by freedom and complexity at the same time. The city is developed from this edge of the cliff into the inside, on a one way-direction.

The boundary of the city is diffused and not defined.
The vertical elements, [walls] are not just solid masses or a parapets.

Each wall is a facade, an inner or outer facade. Each space is not separated to the other space by a cold, dead wall, but from an element that also participates to everyday life, an element that does not just separates spaces but also brings them together.

The outer facade is repeated on the inner walls, the inner facades, creating multiple layers of facades.
The dry stone wall

Austere, but also human and free.

Beautiful.

The beautiness of the dry stone is based on the diversity. Signs of chips, rough texture, variation in colour, size and thickness are a part of the character of the material and are not imperfections.

Imperfection is a quality inseparable from any human effort, and what's more, imperfection has aesthetic worth in itself. By evincing the traces of its history, those who've crossed it over the years and eventually the decades, becomes a testament, not to inhuman perfection, but rather to imperfect humanity.
The urban fabric and the complexes of dwellings are quite similar and yet different at the same time. Each element is repeated but also adjusted to each situation. The "imperfection" of the collage-like elements make it possible to match one to the other. Diversity and imperfection bring in a way order to the composition. On a different situation, if everything was repeated unaltered, there would be no composition, but many self-standing wholes instead.

Unplanned community of repeated undesigned houses, achieve harmoniousness despite diversity or what might seem chaos to the architectural disciplinarian.
The patterns of the paving, the shaping of the gutters and benches, are the elements that form a composition which with the help of local materials is successfully adapted to the natural landscape and gives an impression of spontaneous naturalness. Through many different fragments, of different shape, materiality, history and importance, a harmonious synthesis is achieved. Such an arrangement allows the paving to relate sensitively to irregular boundaries, and derives its effect from the dynamic relationship between its independent forms.
Such a microenvironment, so rich in the little. It is important for completeness that gives the small, the little. Well, all crammed and appropriate to a minimum, the little. That is the importance of this existence: it becomes a whole, and its wholeness is the one examined, not its single element. The derogation of the fragment means an attack to the whole as well, that leads to decline, or even collapse of the whole.

The shape of the each one of the elements is unique. There is not even two similar stones. However, the binding between those completely different elements is very strong and the cohesion is one of the main characteristics of the composition.
The space left among the different elements become vital space, as it is the connecting element between all the monads. It is not just the leftovers of the mass, the void, but it is an inversed mass, an element itself.

The void, could also been seen as mass and the mass as the void. The connection and the dependance of those two become strong.
The different sizes of the stones create an interesting synthesis. It might be described even poetic as well.

The large, medium and small stones, all the sizes, are standing together one next to the other. The synthesis, characterized by different densities and repetitions, all together create a patchwork.
The visual connection of all the fragments, of all the different pieces, of small and bigger stones, compose a grid, that might seem random but is in fact disciplined. The grid that occurs from all different elements is characterized by the combination of short and longer lines, which are crossed in different angles, creating a harmonious "chaos".

The pattern that is created in such a microenvironment, even though it seems as if it is random, is quite coherent and strong at the same time.
Solid volumes, thick walls, small openings, unifying plaster, used into neighbourhoods via flexible repetition create a unique pattern.

The same kind of pattern that was identified on the stone wall, can also be observed in a much larger scale, in the scale of the city.
The basic type, the narrow, one-space building functions as the monad. All the variations of the basic unit are shaped by adding spaces to the main core, the central space, the monad. The typical excavated house has a narrow facade, and great depth. The front part of the house is always occupied by the “salon” while the bedroom is always at the back, behind the dividing wall, indirectly illuminated and aired through the salon. The spaces are developed around this area and usually host secondary facilities. The dividing wall repeats exactly the style and form of the facade, with a door in the middle, two symmetrical windows on either side of the door, and a window skylight above the door. W.C. is in the courtyard, detached from the main house. The central room and the courtyard give access to the majority of the secondary rooms and connect the whole building.
2.2. The neo-vernacular architecture of Santorini

In the beginning of 20th century traditional architecture of Santorini started altering. Although vernacular architecture is supposed to be continuous and un-interrupted, in the specific example of Santorini we can observe a discontinuity, like a missing last piece on the puzzle of the continuous vernacular architecture. The inability to understand the principles that led to the production of the traditional architecture has had disastrous sequences for its preservation and promotion. The contemporary architecture is entirely lacking, the traditional architecture is gradually altering, the geometry of the landscape is being degraded and the natural environment is disappearing. The spatial and social cohesion of the place is lost – destroyed. The local architecture is transferred as an imitation in the contemporary architecture, having lost its characteristics that make it so special. The landscape becomes disconnected from architecture and loses its power and importance it used to have. So we can say that during the last decades a new phenomenon has made it appearance: The "Consumption" of traditional architecture.

The two main factors that contributed to this alteration were the following two:

> earthquake of 1956

Several strong earthquakes in 1956, interrupted the continuity of Santorini’s architectural history, when half of the buildings were completely destroyed and suffered an extended damage. The need for immediate and fast reconstruction, redevelopment and re-habitation, led to the construction of buildings disconnected from its environment and the local architecture of Santorini.

> tourism industry | overdevelopment

On the last decades the island of Santorini became a famous point of destination world widely. This fact led to the spread of villas, apartments and luxurious hotels, all around the island, and especially on the edge of the cliffs. Isolated and self-standing buildings contributed to monstrous social stride which have shattered the spatial and social cohesion of the place.
scale |
1. architectural scale
2. urban scale
3. city scale
Each one of the architectural components is an individual element and a part of a composition at the same time. The roof, the wall, the stairs, the terrace, the floor, the courtyard, the road, all are related to each other and the boundaries between them are quite diffused. The synthesis is complex and simple at the same time.

The boundary between the architectural elements is blurred and diffused.

Each architectural part is not a part of the synthesis(of the whole) but an individual and self standing element. The cohesion between the different elements is missing. The courtyard is separated from the vital interior spaces, the stairs are not involved to the whole complex and the connection with the outer world is completely lacking.

The boundary between the architectural elements are strongly defined.
scale | 
1. architectural scale 
2. urban scale 
3. city scale
Each building and each architectural component is an individual element and a part of a composition at the same time. The fabric consists of interconnected and interdependent parts, each of which contributes to the composition of the whole. The composition of each individual component influences the properties of the other components as well as their totality.

The boundary between the private and the public is blurred and diffused.

Each part is not a part of the synthesis (of the whole) but an individual and self-standing element. The cohesion between the different elements is missing. The boundary between the private and the public is strongly defined.
scale |
1. architectural scale
2. urban scale
3. city scale
The development of the city is done on different layers, which are all distinguishable and all the phases can be read.

The boundary of the city is shaped and defined.

The boundaries of the city itself become blurred as the complexes that are formed are characterized by freedom and complexity at the same time. The city is developed from this edge of the cliff into the inside, on a one way-direction.

The boundary of the city is diffused and not defined.
The matter of "boundary" arises as a crucial issue on all different situations and examples.
The matter of "imperfection", "diversity", "repetition", the "whole" and the "fragment" arise as crucial issues on all different situations and examples.
Imperfection | Repetition

In the vernacular architecture of Santorini, the form and shapes are not just repeated, but rather repeated in an adjusted way. Adjusted to the topography, the circumstances, the information taken from the surrounding environment. On the other hand, in the neo-vernacular architecture of Santorini, all buildings are trying to resemble the other, in an identical way. It has only to do with the appearance and not the true meaning of creating a space. The goal is not to create identical buildings, but to use the existing knowledge of constructing as a guide, and alter it wherever it is necessary. The repetition of forms is unavoidable, but the way it is done becomes of great importance. The diversity and the repetition of shapes needs to be in a delicate balance. Not too much, not too little. Of course, the diversity arises the matter of imperfection. Can something that is not complete, be perfect? Does the repetition bring harmony and perfection, or the diversity is the one keeping things together in a synthesis?

Fragment | Wholeness

In the vernacular architecture, each one of the buildings, as fragments of a synthesis, create a complex grid that cannot be read separately, or individually. In the neo-vernacular architecture on the other hand, unities are created that are not part of a bigger system, but rather self-standing units. The importance of the fragment and the whole is neglected, even forgotten. Too many entities, too little fragments. No synthesis. Chaos
The basic guideline of the Neo-Vernacular architecture is to copy the form and only the form of the vernacular architecture.

The repetition of the same elements may lead to the same form but never in the same quality.

The magic, the poetry, has gone.
> Conclusions

Santorini today is being built up in the same way the rest of Greece is built up. The mass production of modern constructions demanded by and directed at a consumer-oriented public is absolutely alien to the architectural process itself. A quite barbarous repetition is reproduced at a very fast rate, and even worse, in the name of preserving tradition and under strict building legislation. Virtually the same type of building is applied, with the same vocabulary, that is limited to the repetition of architectural elements, the vault, the arch and the long narrow openings on the facades. On Santorini one sees in all its glory, the dead end into which a mechanical application of only morphological rules leads, in such a degraded system of building production. The devotion to pseudo-traditional morphology must be the result of tendencies which begin from the need to preserve the cultural past. Today however, the majority of these attempts, end in a nostalgic imitation of styles and image.

Today it seems as if time has stopped. Always obsessed with the same forms and shapes, always obsessed with the image, our built environment is lacking imagination and creative inspiration. We treat our buildings as something static, unchanging. Is this a way to express out fear and insecurity? Perhaps, the nostalgia for the rural landscape and try for the rebirth of the tradition is the result of our disconnection from nature and a desperate try to reconnect with it, to win it back.

We are only imitating, with no respect to the past, no respect to the tradition. The desire to return to another age leads to the rejection of the future. We idealize the past, reject the future and re-construct a present based on unstable foundations. We turn our back on the future and create a hermaphrodite present, incapable of expressing the meaning of our times.
Having first tried to analyze the reasons of the current way of building in Santorini I need to take a clear position about my design as well, and the way I handle all this fragile issues.

In a very “sensitive”, location, that can so easily be destroyed or blossom, issues concerning the relationship between building and landscape or contemporary construction methods and tradition are very crucial in my project.

Mass, corrosion, void, diversity, imperfection, contrasts. All these, are archetypal types that can be read and found in the island of Santorini. How does a contemporary intervention stand next to them? How does it become part of them?

An important characteristic of my site is its exposure to the strong winds, especially north winds that blow all year round and northeastern winds during the summer. The building must become a protection shield against the forces of nature, protecting the people, instead of something that needs to be protected with the help of people.

The sculpturing of the mass – which also refers to the local technique of cave houses – a process that happens from outside to inside can be parallelized with the traditional way of constructing, but using different methods and tools.

The open space will become unifying element, connecting the outdoor with the indoor area, accommodating public functions and use. The idea of “community” revives again, and my building becomes the medium for this.

To sum up, my attention will mostly focus on matters such as:

- Using methods and materials that do not exhaust but rather employ natural resources.
- Connecting history, tradition and vernacular –anonymous– architecture with contemporary way of designing, always through contemporary terms and vocabulary.
- Enriching the process of construction through expressing the identity of the natural and cultural landscape.
- Restore ties and relationships within society through architecture and built environment
- Reconnection of human with nature
3.1. The philosophical Underground

- Plato’s Underground
- Notes from Underground — Dostoyevsky

3.2. Examples of Underground Architecture

- sculpting the mass and the void
- the unexpected
- when the void is not empty
- framing the sky
- re-introducing the light
- the footprint of the pre-existing

3.3. My interpretation of the Underground
"Buildings replace the land. That is architecture’s original sin. A building makes something new, but does not do so in a void. What was once open land, filled with sunlight and air, with a distinct relationship to the horizon, becomes a building...In all cases, a building is one thing above all else: not the land."

Aaron Betsky
i
He stood, a point
on a sheet of green paper
proclaiming himself the centre,
with no walls, no borders
anywhere; the sky no height
above him, totally unenclosed
and shouted:
Let me out!

ii
He dug the soil in rows,
imposed himself with shovels
He asserted
into the furrows, I
am not random.

The ground replied with aphorisms:
a tree-sprout, a nameless
weed, words
he couldn’t understand.

iii
The house pitched
the plot staked
in the middle of nowhere.
At night the mind
inside, in the middle of nowhere.

The idea of an animal
patters across the roof.

In the darkness the fields
defend themselves with fences
in vain; everything
is getting in.

iv
By daylight he resisted.
He said, disgusted
with the swamp’s clamourings
and the outbursts of rocks,
this is not order.
He was wrong, the unanswering
forest implied:
It was
an ordered absence

v
For many years
he fished for a great vision,
dangling the hooks of sown
roots under the surface
of the shallow earth.

It was like
enticing whales with a bent
pin. Besides he thought
in that country
only the worms were biting.

vi
If he had known unstructured
space is a deluge
and stocked his log house—
boat with all the animals
even the wolves
he might have floated.

But obstinate he
stated, The land is solid
and stamped,
watching his foot sink
but the absence
of order, down through stone
up to the knee.

vii
Things
refused to name themselves; refused
to let him name them.
The wolves hunted
outside.

On his beaches, his clearings,
by the surf of under—
growth breaking
at his feet, he foresaw
disintegration
and in the end
through eyes
made ragged by his
effort, the tension
between subject and object,
the green
vision, the unnamed
whale invaded.

"The Progressive Insanities of a Pioneer"
3.1. The philosophical underground

_ Plato's Cave

A similar allegory for the illusion that feeds people and keeps them imprisoned at low spiritual levels, is most probably the one Plato describes in the "Allegory of the cave". It is a large, dark cave where, since their childhood, people are chained, unable to move, looking only a wall in front of them. Behind them there is a great fire, and their rulers are wandering, whose only shadow can be seen. Until one day, one of them manages to break the chains, and come to the surface when he realizes the great fraud. Why do we fear the underground? Because in the wet dark loneliness, we find the boundaries of ourselves. After all, we are born within them and our great achievement will be to try to get out.

_ Notes from Underground

Dostoyefsky’s novel "Notes from Underground", became a milestone in subsequent studies around the existential issues. In the novel, the hero is a man locked in a basement for forty years, who tells strange incidents from his life, searching for the meaning of true freedom that has nothing to do with the general perception of people on it. He is humiliated and humiliates, and finally manages to get out of the "basement", which of course, is allegorical and symbolizes our deeper self, the one we are afraid to look in the eyes because we grew up with the idea first, that there is not such self, and secondly, in case there is, it is surely unpleasant. According to Dostoyefksy however, this self is the only true.
Illustration of Plato’s underground cave
3.2. Examples of Underground Architecture
The essentiality of mass and the complexity of void
The trenches, used by the soldiers, on the World War I and II, are gaps, voids, cavities, within the earth. The mass is extracted and the void becomes space. The mass is standing in the place of the walls and the void becomes a vital space able to take within it all functions.

Instead of creating space by adding material, the space is created by the subtraction of it, the opposite process than is usually followed.

Although today we mostly work with structural forms – the solids, there is still the option of working with the empty space – the cavity – between the solids, the masses, and consider the forming of that space as the real meaning of architecture.

“We do not perceive everything as either mass or void.”

Rasmussen, S. E.
The Lalibela churches are eleven buildings located in three groupings and found in three types, the caves, the semi-monolithic. They are all freestanding stone structures, having been excavated from the ground down.

Designing the cavity, they started with the solid and excavated the site, which resulted in a cavity – the church.

> sculpting the mass and the void
The main church reveals itself on axis, from within the void, and the effort it took to make this place begins to set in. You’ve been taken away from the world above and deposited in this whole new world. A lot of attention is given to the process, or ceremony of getting to the church. The big picture is revealed instantly, but then you are taken away before being reintroduced, on axis and from within the mass. The weight of the place. Light, then dark, then light again, before heading back into the dark of the church itself.
Its spectacular setting, deep inside a narrow gorge is astonishing. To access the temple one must travel through a narrow path, the siq, with steep cliff walls -100 meters high - on your left and right.

At the end of the siq, without no previous hint, through a slim, vertical fissure, the temple appears. The mass is revealed, unexpectedly though the void.

The solid-carved stone temple stands there, strong and dominant, hidden in the earth, but always there.
The project «Double Negative» of Michael Heizer is a large-scale project, a dam of 1500 feet, that Heizer created on a plateau in the desert of Nevada. He wanted with this project to convert the landscape itself into a sculpture, by creating an empty space within an empty space, so that all visitors will notice.

So simple and so complex at the same time. The same spot that was usual, ordinary, becomes now so dominant, so different. Different and similar at the same time. This is where its importance lies.
A big scale example of Land art is the artistic program "The Roden Crater" of James Turrell in the extinct volcano crater in the desert of Sedona Arizona. Turrell has turned the inside of the crater into a "naked eye" observatory, to monitor solar and stellar phenomena. The artist was experimenting with very intense light, as a tool for his art, by creating spaces of enclosure where visitors can see the sky through slopes of the roof (he calls them skyspaces, although it is tunnel, dark rooms or in this case, volcanic crater).

“I want people to treasure light the way we treasure gold. It happens slowly. The space is made to arrest the light, to apprehend the light. You enter it and remain alert, but you also enter a contemplative state. It means a lot less talk and a lot more silence.”

James Turrell
The co-existence of the dark and light become essential. The dark becomes light and then dark again.
The solid rock walls which enclose the church hall are bathed in soft light. Moreover, the skylights that ring the entire roof allow the entry of soft light, reinforcing the feeling of a light and floating ceiling.

The initial feeling of a dark, gloomy space, when entering the church, becomes a feeling of uplifting.
In Utrecht, a visitor can find the footprint of the ruins of the Castellum, which used to stand where the Domplein is today. The design is based on the history and mystique of the place. A guardian line is marked with Corten steel elements at street level, directly above the original castellum walls. Its width -80 cm- is as wide as the wall, so that the visitor can really perceive the thickness of the walls of the building buried underneath him. Green light and wisps of mist emanate from the marking and the borders of the Roman Empire are engraved in the steel. The underground archaeological site becomes present through its absence. The trace of a past that no longer exists, connects the two different worlds.
"Buildings replace the land. That is architecture’s original sin. A building makes something new, but does not do so in a void. What was once open land, filled with sunlight and air, with a distinct relationship to the horizon, becomes a building...In all cases, a building is one thing above all else: not the land."

Aaron Betsky
If the underground symbolizes the connection with the soul and the ultimate form of freedom, why does it frighten us?

As pointed out, Aaron Betsky, argues that the original sin of architecture is that man replaces the earth by creating something new.

The issue of “underground” is quite a controversial issue, over the centuries. In an ongoing effort to balance the “above” with the “under”, this becomes an issue that frighten us, or even repels us. Therefore, the question is then how will each one manage everyone to find the answer and the balance of it.

In my opinion, it would be naive to suggest a logic of no intervention at all. The world’s population is growing rapidly and furthermore, today more than ever, we understand that almost no natural resources are inexhaustible. So we need attention as to how cities are expanding but also is very crucial the introduction of the third dimension of space in our urban- and not only- planning. The use of the underground should be done through planning and not only as a corrective solution.

A particular characteristic of my country is its long history. Our cities are a patchwork of different layers, a palimpsest. There is no point into believing that we can ignore what is underground. Our historical heritage is not an unfortunate obstacle or restriction but a tool of synthesis, just like the underground.
chapter 4 | The Boundary

- city planning
- urban design
- architectural design
- interior design
4. Boundary

development on the notion of the [Boundary] not a line or a closed shape BUT vital space

boundary orion threshold limit border
"The threshold, or in-between space is a discourse on the need for architecture to reconcile spatial polarities such as inside-outside."

Aldo Van Eyck

The boundary can be identified at all different scales:

1. city planning
2. urban designing
3. architectural design
4. interior design | objects

"Raum means a place cleared or freed for settlement and lodging. A space is something that has been made room for, something that—namely within a boundary. Greek peras. A boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something begins its presencing. That is why the concept is that of horismos, that is, the horizon, the boundary. Space is in essence that for which room has been made, that which is let into its bounds."

Martin Heidegger
Kyriakos Krokos, the architect of the measure and clear lines said: "When I make sometimes such thoughts, it relieves me the image of a dry stone, when my mind is resting in an architecture. The Greek landscape is characterized of these terraces, perfect writing on it the necessity of their existence. I think that ethos is required for the proper articulation of a wall, the rhythm imposed. One wall is a well-built architecture, meaning that is part of the landscape. Its form, with its tonicity, is harmonized with the environment and like a work of plasticity, in contrast to the surfaces of new buildings that look like dead. I am thinking of all the stone walls of the islands, as well as other anonymous buildings with all the real needs behind them, and from there I want to start my search through the shape of the new times with their materials require. I want there to support my efforts. Tradition teaches me to see the relationships and not the things themselves."
Architecture defines spatial boundaries.

The investigation of the meaning of boundaries, the whole process, is full of oppositions and similarities at the same time, with a continuous evolution, based on a common background: the constant human necessity to redefine the surrounding environment, the vital space of a human.

The clarity that characterized the structure and materiality of boundaries in past historical periods, established a more intense distinction between what is public and what is private. Mid-tones were rare. Contrary to the previous perception, the intense virtuality of the contemporary era, that is the constant transition from inside to outside, from actual to virtual and vice versa, disputes the meaning of public and private itself. The boundary between them is no longer carved in a definite way. This “irresolute” boundary must unstoppably be estimated and reconsidered.

The boundary is no longer encountered as a limit, confinement, beginning or ending of a procedure. It flows, folds, becomes a permanent transitional area, a place in-between, a threshold. A fissure, a vacuum in wedged installations that allows heterogenic meetings, crossings to escaping lines, liberate beings.

A boundary can be a solid wall, a tree, it can be water, mass, void or space.
4.1. Boundary city planning

A very strong and well-defined boundary encloses the city. There is a clear distinction between the inside and the outside, since these two are two completely different worlds, with no connection between them. The Boundary is the end of the city | the end of world and it is the one protecting the locals from the enemies. The boundary, seen as a thick line, a thick wall, a closed shape.

Such an example of city planning is the typical romaic city or cities found in the South of Morocco.
The boundary is the starting point for the development of the city going to the inside. There is only one way direction, since the boundary of the city is a physical boundary as well. The natural boundary, instead of functioning as an end, becomes the beginning of something, the beginning of life. It is transformed from an "end" to the "beginning, from "space" to "place".

Examples of cities that were developed on the edge of natural boundaries are Santorini and Cappadocia.
4.2. Boundary urban designing relationship of the settlements - neighborhoods

a | On the scale of urban designing, the boundary of each building encloses the building itself and the inside space of building is strongly disconnected from the outside. There is no connection with the surrounding buildings, and as a result, no social coherence.
On the other hand, there are examples on urban designing, where the boundary is becoming blurred and diffused, it cannot be read easily. There is formation of complexes – entities, characterized by freedom and complexity at the same time. All kind of boundaries are lacking.
On an architectural scale, the boundary of each space-room is blurred and diffused and as a result, one space invades the other space, and becomes one open plan. There is no separation, or very little, between the spaces. The rooms are not closed, defined boxed, there is no boundary between them.
Each space is well defined and individual, even though each one is separated from the other with a wall, the connection between the spaces is achieved by other means, and not the physical connection of them. Special emphasis is given on the unit / monad / human. Each space and room accessible differently from a common area (atrium, courtyard etc.)
a | The architectural and constructional elements (ceiling, walls, stairs, columns, floor etc) are all well defined. In most of the cases they are sharp geometrical shapes. Each element of construction, or even decoration is distinguished by the one next to it, the boundaries between the elements are more than obvious.
The boundaries of the architectural elements are not clear; they are diffused. The floor becomes the wall and then it becomes the roof for example. Many elements such as benches, fireplaces, storage rooms etc. are sculptured on the mass of the wall, so the boundary between what is wall, roof, bench or window cannot be found.
chapter 5

> Design process
> Research models
The choice of designing a house of wine creates an all-embracing relationship to the local source of wealth, wine, that has played a huge role for the island throughout the centuries.
Intervention at the old quarries

punctal interventions

House of Wine:
- vineyards
- a welcoming area for the guests of the winery
- all the spaces needed for the winery’s functioning
- cellars
- open public space.
site of intervention

VIEWS
processional route
experience the landscape
Knitting of different functions, atmospheres and spaces.

The mass and the void become the medium to express this knitting, sometimes by adding material and sometimes by extracting.
strong natural boundary of the site with the town

connection with the town

functional wall | reconnection with view of the cliffs

easy accessibility

strong natural boundary of the site with the town
Cultural landscape | product of human + nature

The landscape between the culture and the nature

The landscape is seen as a monument itself that needs to be preserved
The roof follows the topography of the existing ground.

The roof becomes the footprint, the trace of the ground, a reminder of it.

The line of the ground becomes the line of the roof.
The roof follows the topography of the existing ground. The roof becomes the footprint, the trace of the ground, a reminder of it. The line of the ground becomes the line of the roof.
The darkness and the light
The darkness and the light
arrangement of spaces
All the spaces are voids into the earth. The mass gives its place to void, in order to create space again.
All the spaces are voids into the earth. The mass gives its place to void, in order to create space again.
process of extracting | adding
waste making
THE PROCESS

GATHERING
SORTING
CRUSHING
THE WINERY
creation of masses inside the void
visitor's entrance
cellars
wine tasting rooms
the quarry
volume A
The bottle-case wall
interior views
Let's drink! Why are we waiting for the lamps? Only an inch of daylight left.
Lift down the large cups, my friends, the painted ones:
for wine was given to men by the son of Semele and Zeus
to help them forget their troubles. Mix one part of water to two of wine,
pour it in up to the brim, and let one cup push the other along.

Alcaeus
View towards the wine tasting rooms and the terrace
View from the terrace towards the wine tasting rooms
Research models
Continuous sculpting of the landscape.

The model becomes a tool that can be treated, can be sculpted and change through the process of the design.
Each one of the volumes becomes vital space.

The walls are not separating walls, but connecting elements. Elements that host within them many functions.

The space can be seen in many different layers. From the master plan to each one of the small vertical walls.
the screening room
All the spaces are sculpted within the mass of the volumes. The cavities that are created are the spaces to be used.

Each element is part of a synthesis.
the screening room and the bottling area
section of the screening room
section in the tanks area
The roof becomes the extension of the pre-existing ground.

The cultural landscape becomes a monument that is preserved.

The future embraces the past.
The future needs the past
The past needs the future.
- Building Dwelling Thinking: by Martin Heidegger
- Wine and Architecture: Heinz- Gert Woschek, Denis Duhme, Katrin Friedrichs
- Learning from Santorini: Efthymios Warlamis
- Greek traditional architecture: Santorini: Dimitrios Filippidis
- Critical Regionalism: Liane Lefaivre, Alexander Tzonis
- world of wine. Loisium: Steven Holl
- The prodigious builders: Bernard Rudofsky
- Lessons from Bernard Rudofsky: Bernard Rudofsky
- Architecture without architects, a short introduction to non-pedigreed architecture: Bernard Rudofsky
- Oia: Topos and History: Kadio Kolymva
- Traditional architecture: Dimitrios Filippidis