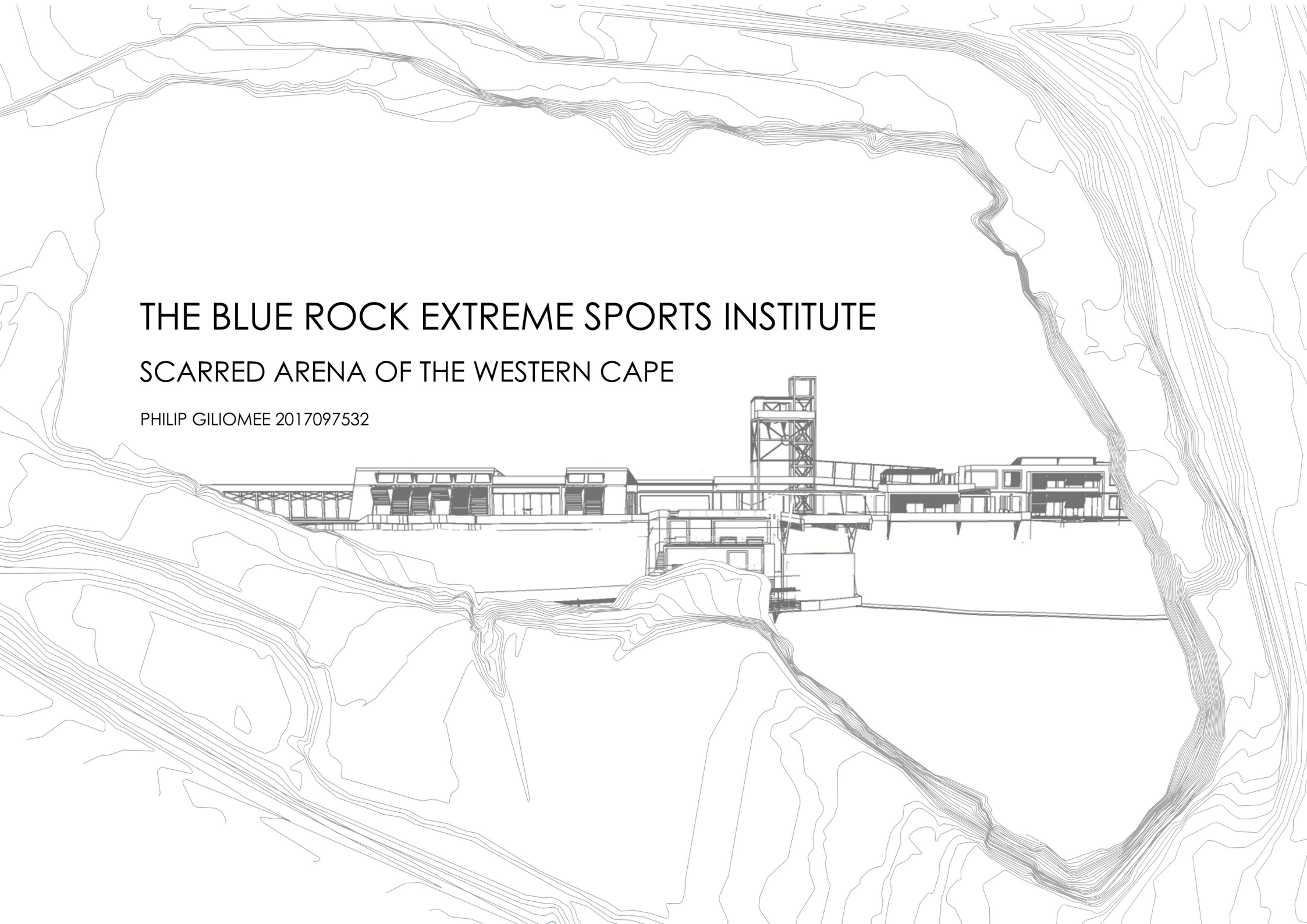
THE BLUE ROCK EXTREME SPORTS INSTITUTE

SCARRED ARENA OF THE WESTERN CAPE

PHILIP GILIOMEE 2017097532



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DECLARATION

Title of dissertation

Blue Rock Extreme Sport Eco Institute For The Western Cape, Sir Lowry's Pass
This dissertation is submitted in partial fulfilment of the requirements for the degree MArch. (Prof).
Department of Architecture, Faculty of Natural and Agricultural Sciences
University of the Free-State.

Candidate

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11 November 2022

Supervisors

Prof. J.D. Smit, Mrs. P. Smit, Mr. J.L. Du Preez, Mr. H. Raubenheimer

Declaration of original authorship



.....

The work contained in this document has not been previously submitted to meet requirements for an award at this or any other higher education institution.
To the best of my knowledge, this document contains no material previously published or written by another person except where due reference is made.

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PROJECT SUMMERY

Philip Giliomee - MArch (Prof.) Dissertation

Programme -	Blue Rock Extreme Sports Institute
Site Location -	Sir Lowry's Pass, Western Cape, South Africa. The existing Blue Rock quarry is located next to the N2 when driving from Somerset West to Grabouw.
GPS Coordinates -	S34°07.540' E18°54.137'
Site Description -	The site is located in and around a quarry where shale rock was mined in the past. The quarry is currently not used.
Client -	Red Bull Extreme Sport
Theoretical Approach -	Sport as a Ritual The liminallity of space and movement though the industrial past
Architectural Approach -	The effect of the sites industrial past and the influence of what has been left behind. How can we react to the scarred landscape while contributing to the natuaral surrounding environment through architecture?

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ABSTRACT

This dissertation was born through my fascination with the industrial archetype and the growing popularity thereof all over the world. The proposed project handles the growing popularity of extreme sport in South Africa and how a space can be created for those seeking a rush of adrenalin. By addressing the need for a natural environment where individual is allowed to break away from their daily routine, the Blue Rock Extreme Sports Institute assists in providing relief from the growing mental and physical health issues we are faced with.

The dissertation handles the opportunities for ecological and architectural development within a quarry, allowing the user to witness the beauty of the historical mining industry and not only see it as wasted space. Through the novel use of the scarred environment and manmade contours, the memory of industrial history will come back to life within the quarry. The levels and slopes left behind within the quarry walls will be used as a way of passage to the waters below through promenades, allowing all users to interact with one another.

Researching the different tensile forces used in the mining industry and observing the materials used I was able to develop a conceptual image of what could be possible within the given environment. The impact of the research done could hopefully open people's eyes to the endless architectural opportunities we are faced with, especially in the scars left behind from the distant and recent past.

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INTRODUCTION

A scar has been left behind in the landscape through industrial advances. The effect thereof causes the post-industrial environment to be made up of various typological forms of heritage. A scarred landscape is created within what once was natural and a transition takes place between the connections with the surroundings. These factors create spatial and architectural significance that contributes to the meaning and understanding of the site. The goal is for the proposed architectural influences to enhance the existing spatial identities of the site while contributing to its industrial past. The scar will be re-activated and re-imagined into a space of cultural and ritualistic significance, contributing to mental and physical healing. The main factor focused upon is the opportunity to develop the Blue Rock Quarry into 'the scarred arena of the Western Cape' through the insertion of extreme sport. This will help establish a relationship between the industrial heritage of the site and the visitor, helping to grow the realization that a quarry, or scarred environment, is not lost space. The form and function of the proposed will motivate one another through the spatial layout.

The purpose of this project is to develop the idea of re-imagining a space to be lost to the industry and developing the idea and beauty of industrial architecture. The document explores potential insertions into the landscape as well as proposes future development ideas to help with the formation of the Blue Rock Extreme Sports Institute.

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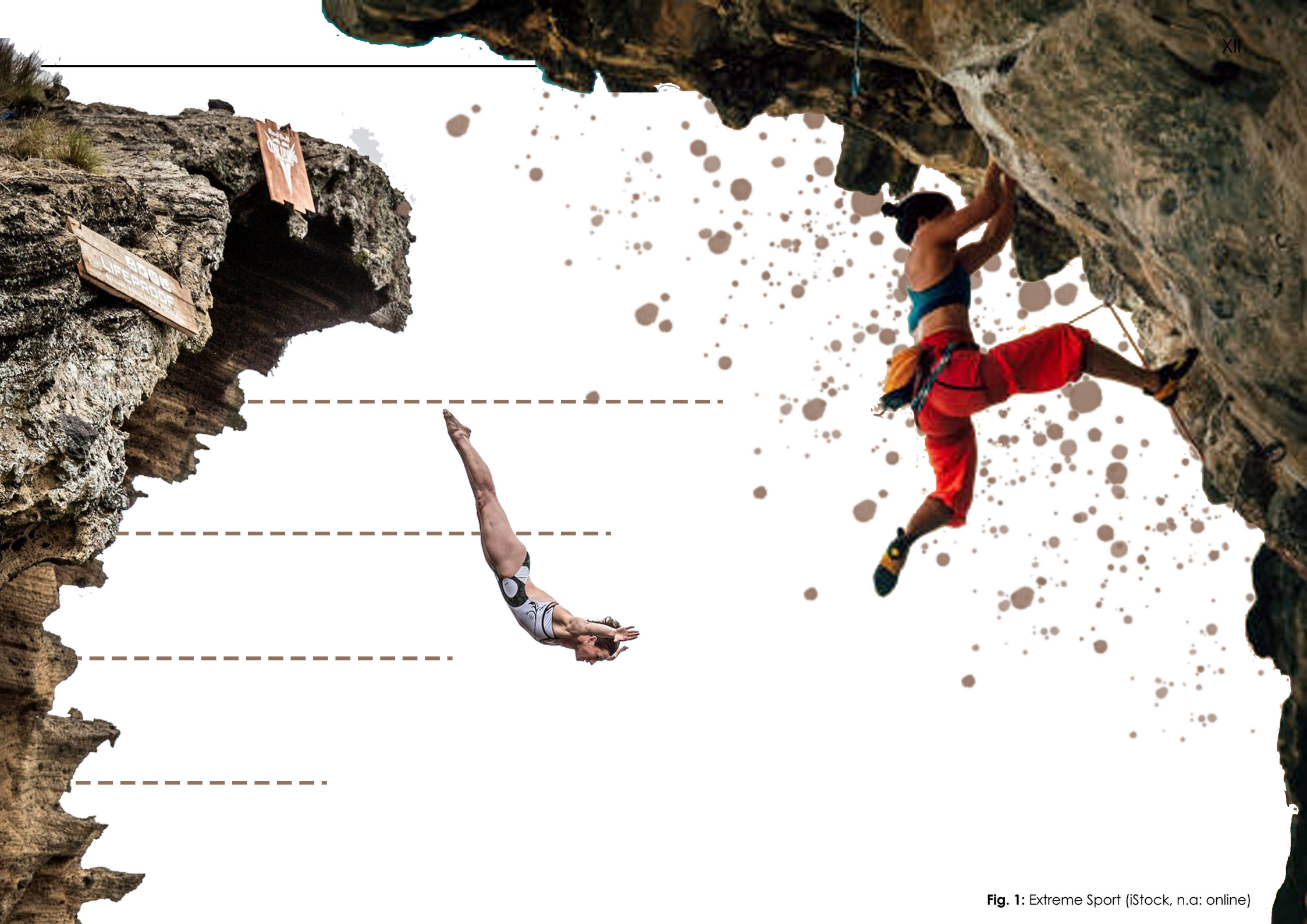


Fig. 1: Extreme Sport (iStock, n.a: online)



Fig. 2: Blue Rock Qurry (Author, 2022)

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CHAPTER 1

CONTEXT AND SITE ANALYSIS

INTRODUCTION

The existing post-industrial environment that has been scarred by the mining of blue rock building aggregate, is now simply seen as a quarry, or wasted space, as some may call it. This forms the context used for the dissertation document. In this chapter the historical aspects of the proposed location will be discussed and narrated through historical events. This will follow through, right up to the introduction of the new clients and their intended purpose of the site.

Elements such as the ecological and climate conditions will be analyzed as well as the natural and topological form of the land, also looking at the existing water mass. An architectural response will be formulated following the contextual analysis of the site.

CHAPTER 1 includes:
- site loction
- surrounding areas
- historical context
- timeline
- client
- physical and spatial context
- views and vistas
- access to site
- location on site

1. SITE LOCATION

1.1 SOUTH AFRICA

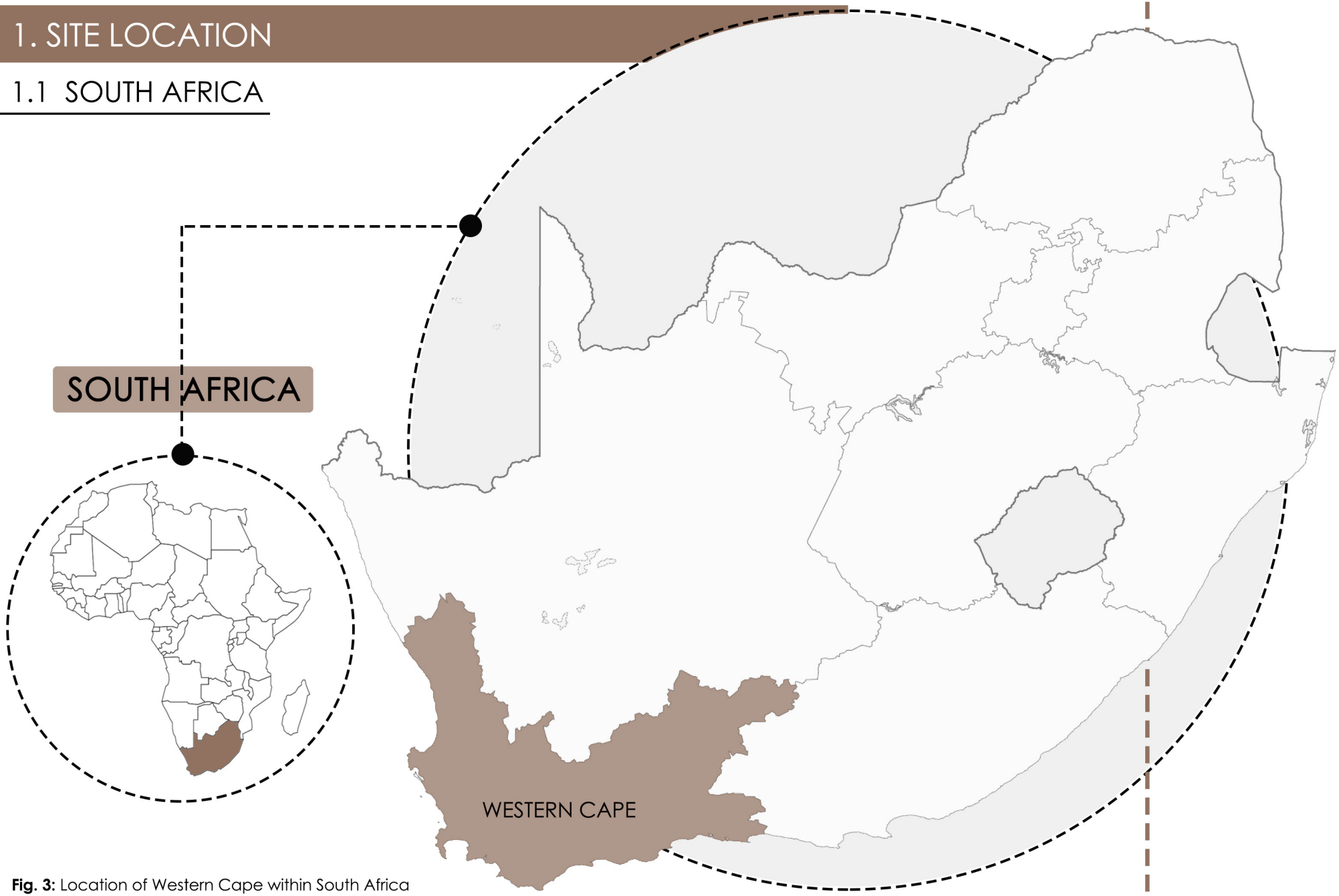


Fig. 3: Location of Western Cape within South Africa

1.2 WESTERN CAPE

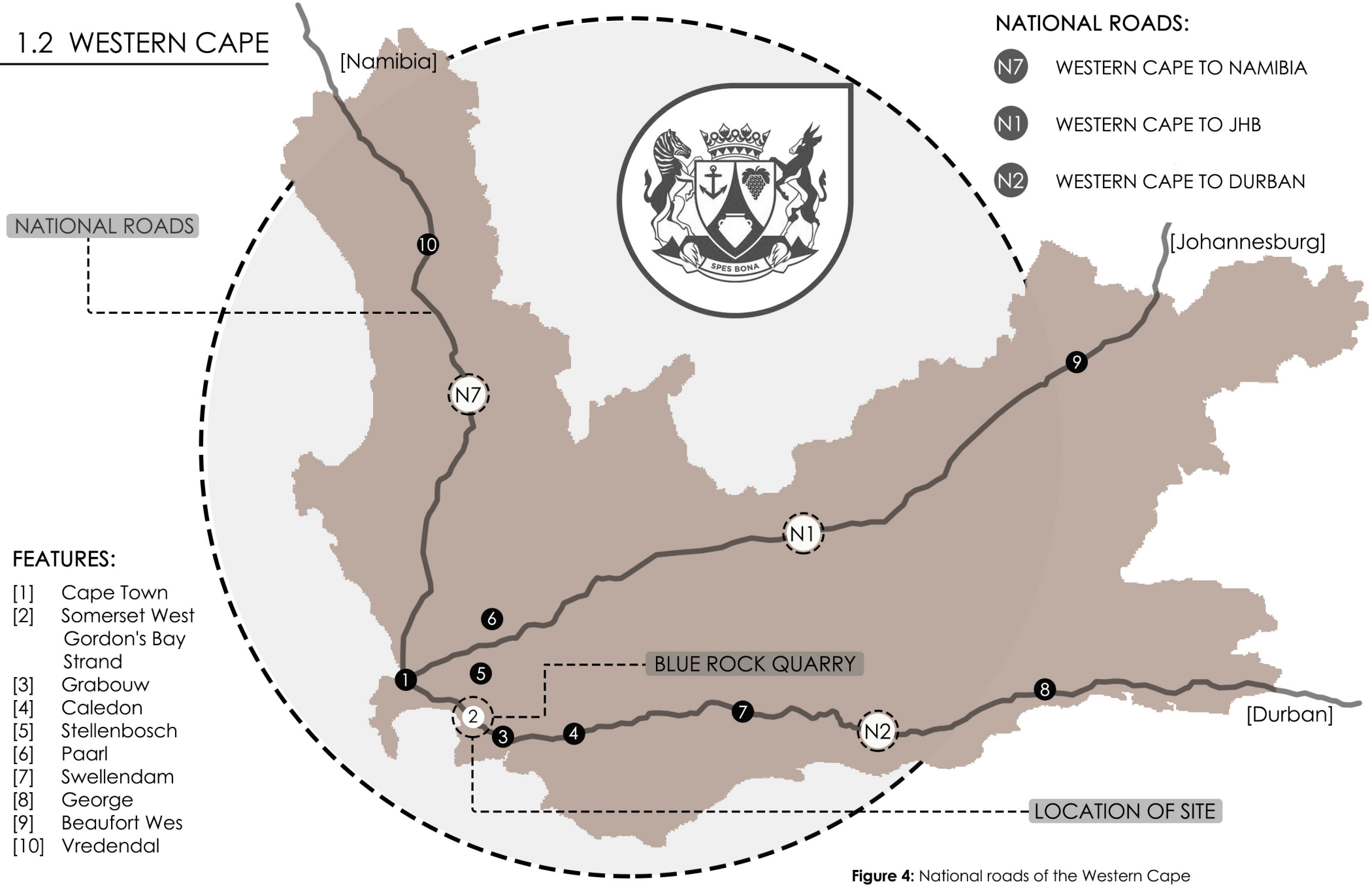


Figure 4: National roads of the Western Cape



Fig. 5: Blue Rock Quarry sunset (Author, 2022)

1.3 SURROUNDING AREAS

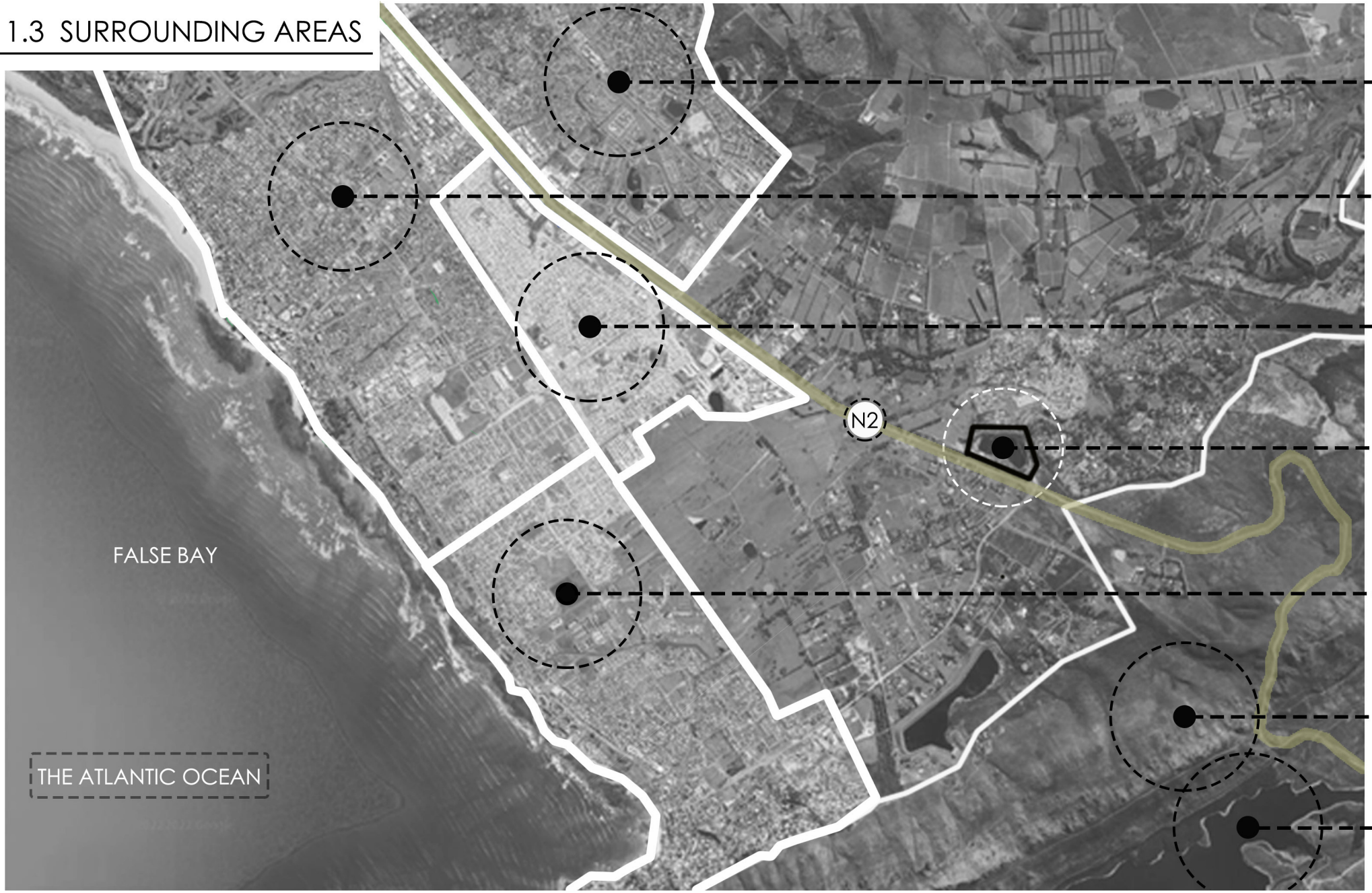
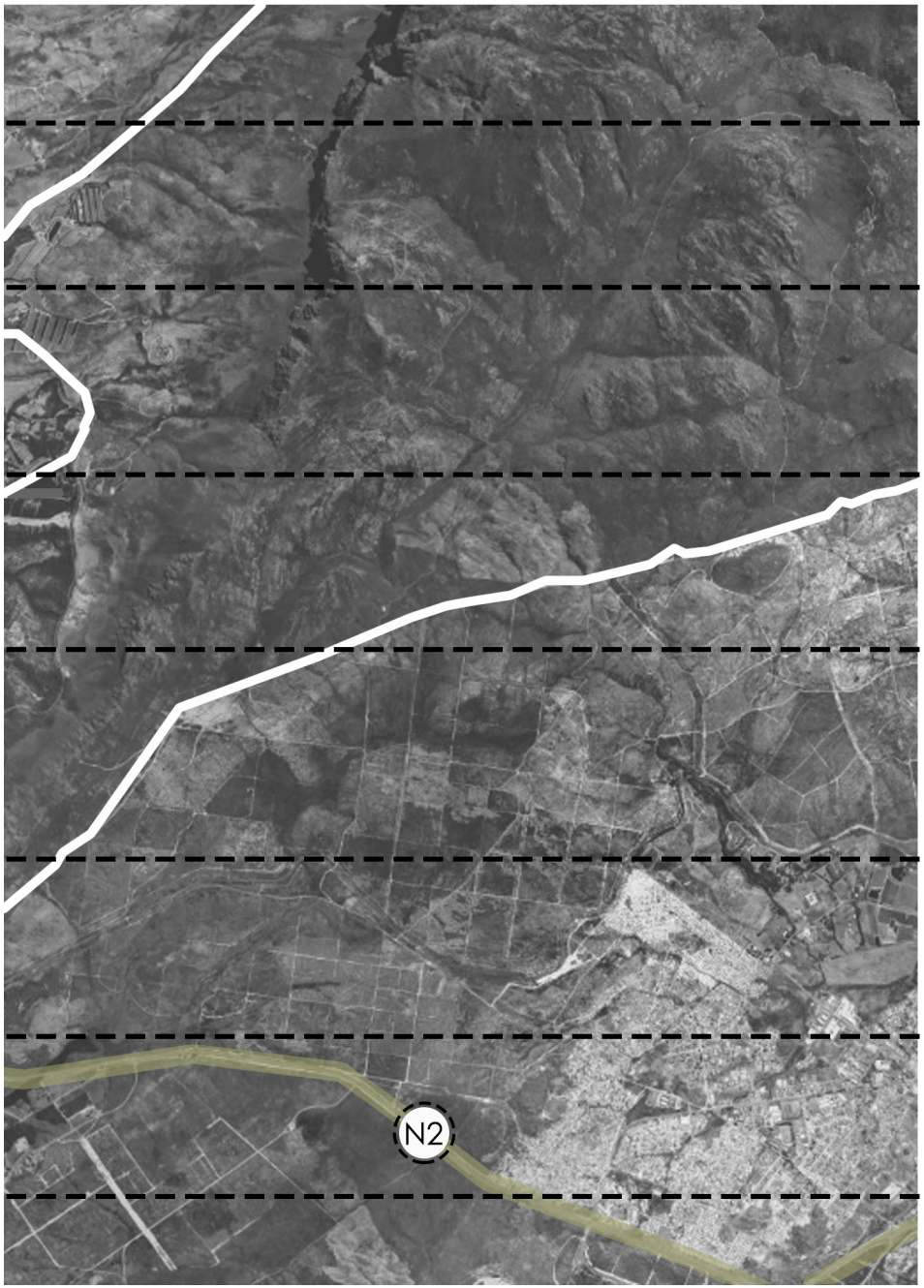


Fig. 6: Location of site and surroundings, Edited by Author (Google maps, 2022: online)



SOMERSET WEST

STRAND

LASANDA

Location of Site

GORDON'S BAY

HOTTENTOTS-HOLLAND MOUNTAIN RANGE

STEENBRAS DAM

The proposed site for the Blue Rock Eco Sports Institute is located in the Helderberg area and in close proximity to Sir Lowry's Pass. The site sits on the intersection between the N2 and Sir Lowry's Pass Road and shares its southern boundary with the N2, allowing for easy access to the national road. The site is connected to the Cape Town Metropole and Somerset West through the N2 and this serves as an advantage towards the envisioned socially motivated project.

The proposed site falls within the urban edge of Somerset West and according to the City of Cape Town Spacial Development Framework the proposed project will form part of an expansion of the urban area.



Fig. 7: Aerial view of False Bay connecting these surrounding areas neas site (Google maps, 2022: online).

2. HISTORICAL CONTEXT

2.1 HISTORY OF THE BLUE ROCK QUARRY

The site for the proposed Blue Rock Extreme Sports Institute came under attention during the 1950's when the site was used for the mining of rock for the local construction industry. Due to the lack of natural resources in the metropolitan area of Cape Town (with the exception of the Silica sand deposits at Philippi and the Kaolin deposits in the Fish Hoek / Kommetjie area) the materials used for construction at that time frequently had to be mined locally to save on transport costs. The minerals mined at the Cape Blue Rock Quarry, which it was known as at that that time, included rock, Malmesbury Shale, and produced crushed stone aggregate that would be used in the construction of roads (Swisatec, 2019: 5).

In January of 1974 permission was granted to allow the extension of the quarry located on the farm Naauwland through the purchase of Savage and Lovemore. In the year 1976 the quarry enlarged yet again through more land being bought. Workshops, offices and other similar buildings were erected on the Naauwland Farm and in 1980 the management and operations were put in place for mining under the company Darling and Hodgson, a named company on the Johannesburg Stock Exchange.

The operations inside of the quarry later had to be cease due to intruding urban fabric of the nearby coastal towns of Gordons Bay, Somerset West and Strand. Complaints became pouring in and a danger towards the residents were seen through the blasting that is necessary for the mining of rock, and thus the quarry fell into disuse. In 1991 the Blue Rock quarry was transformed into a Ready-Mix Materials Company, also forming part of Darling and Hodgson. This caused the quarry to become inactive and all surrounding buildings to become vacant and later derelict (Swisatec, 2019: 5).

In the 1990's there were efforts made to try and rehabilitate the Cape Blue Rock Quarry through various methods of rehabilitation programmes. By removing the polluted topsoil and overburden soil that was left over from the mining process the quarry could be cleaned. About a decade later the quarry slowly started filling with water due to the rain and the excavated edges and surroundings started to become green with plants and the quarry became regrown (Swisatec, 2019: 5).

The new and current owners took over in 2002 and decided upon utilizing the quarry lake by building and installing water-ski facilities and a restaurant, opening it up to the general public and making people aware of the Blue Rock Quarry. After further rehabilitation such as the removal of non-indigenous plants and trees and increasing the water level depth to around 62.5m to increase a natural overflow, the Blue Rock Quarry can be regarded as one of the cleanest and clearest in Cape Town (Swisatec, 2019, 5).

For more than 10 years the quarry has been operating under these functions, while utilizing the natural features and surrounding environment. The owners of the Blue Rock Quarry aims to develop and share the unique history and location with the people. This will be the focus of the proposed Extreme Sports Institution, giving back to the people.

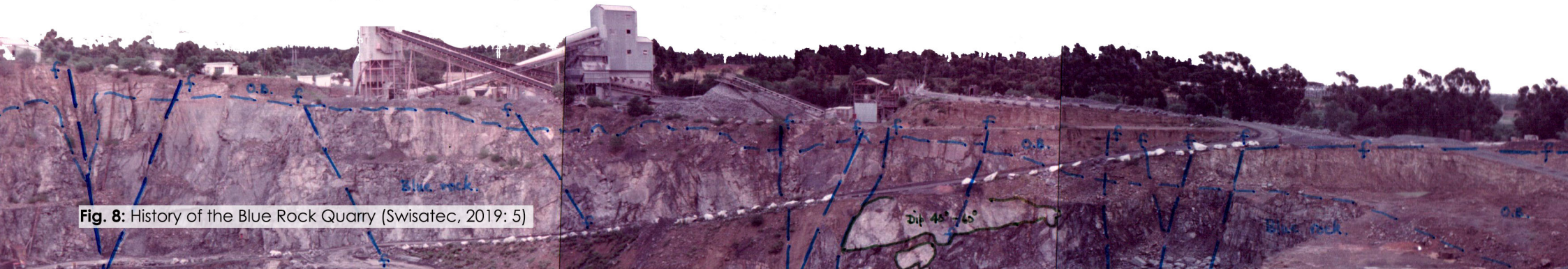


Fig. 8: History of the Blue Rock Quarry (Swisatec, 2019: 5)



Fig. 9: Levelled excavations (Swisatec, 2019: 6)



Fig. 10: View from entrance (Swisatec, 2019: 6)



Fig. 11: History of the Blue Rock Quarry (Swisatec, 2019: 5)



Fig. 12: View of mountain range (Swisatec, 2019: 5)



Fig. 13: History of the Blue Rock Quarry (Swisatec, 2019: 6)



Fig. 14: Excavation process (Swisatec, 2019: 6)



Fig. 15: History of the Blue Rock Quarry (Swisatec, 2019: 6)



Fig. 16: Excavation process (Swisatec, 2019: 6)

HISTORICAL CONTEXT

2.4 BLUE ROCK IN THE 1900'S

INFLUENCES ON THE QUARRY TODAY:

Through the past industrial uses of the space the Blue Rock Quarry allows for various functional opportunities . Most of the topography as it can be seen today leads to different activities and functions that can be implemented to help heal the scar and contribute to the surrounding environment. Situated on the bottom slope of the Hottentots Holland mountain range the slope over the quarry can be measured at about 1:20 to 1:30 across the site. Surrounding the quarry are multiple flat surfaces covered with shallow layers of filling materials, separated by steep cuttings into the rock with various degrees of weathering. Surrounding the south-western boundary of the quarry, along the N2, there are embankments of quarry fill that at some areas can reach as high as 15m. These embankments were created in the past as a way of shielding the quarry from the adjacent road once all mining operations had been ceased. The soil dump on the northern top corner covered an area of 90 000sqm with the dump fill about 25m thick. The original quarry site was situated on a small passing river stream which drains SE to NW and entered the Sir Lowry's Pass River to the east of the site. Currently this same stream forms the primary and sole water source towards the quarry (Swisatec, 2019, p. 5).



Fig. 17: History of the Blue Rock Quarry (Swisatec, 2019: 5)

3. TIMELINE

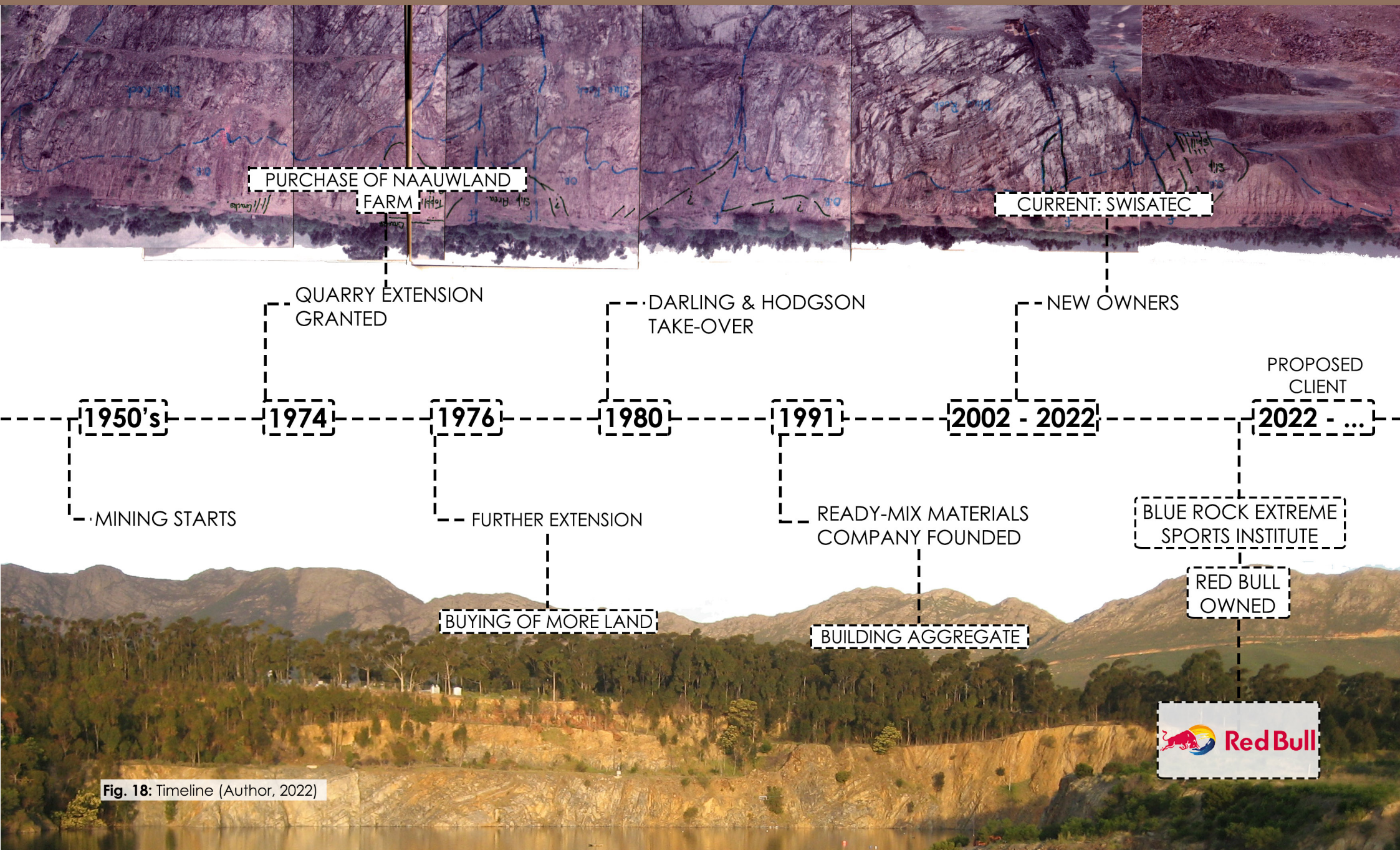


Fig. 18: Timeline (Author, 2022)

4. THE CLIENT

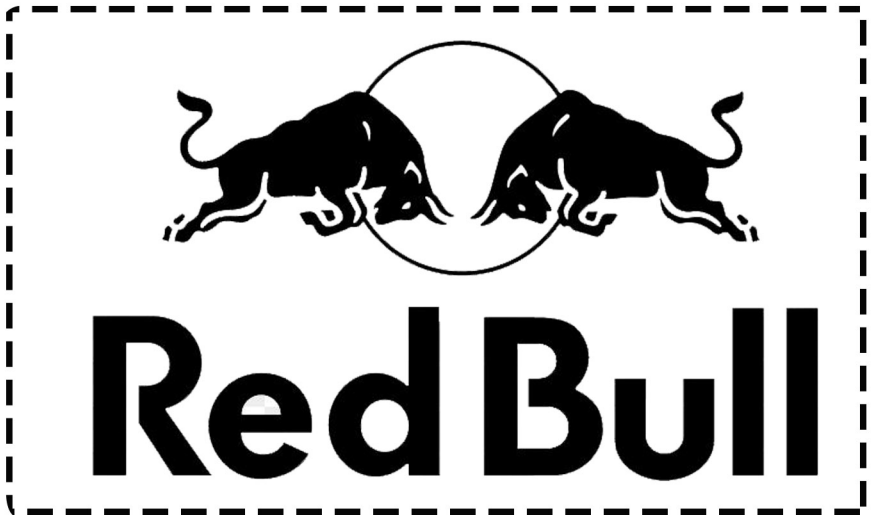


Fig. 19: Red Bull logo (Ambille, 2021: online)

History of **Red Bull**

Red Bull is an Austrian company that was created in 1987. The founder, Dietrich Mateshitz, achieved his inspiration through the tasting of drinks from the Far East and making his very own Red Bull energy drink. On the 1st of April 1987 the drink first became available in Austria and thereafter working its way towards the USA the brand began to take off and rise to fame. Today the brand is available in a total of 171 countries worldwide and there is no slowing down in sight (Ambille, 2021: online).

Product **Vision** Statement

Red Bull strives towards upholding the standards they have set for themselves while maintaining their leadership position by delivering superior customer service in a profitable manner. Through maintaining their personal standards, the company emphasizes their quality and leaves nothing to chance. Leadership in the company is displayed through the company's manufacturing sector allowing for undivided attention to both products and people.

Red Bull Core Values

The core values of Red Bull include "people, ideas and culture". The company's popularity has been mainly gained through its approach to doing business. Red Bull has proven time and again that it places people second to nothing else, displaying why it has one of the healthiest company cultures (Ambille, 2021: online).

Red Bull and Extreme Sport

Extreme sport can be described as being both of high risk and as a sport where one has to accept the possibility of severe injury or in some cases death as a part of the activity (Breivik, 1994: online). In the world of extreme sport there is notably not a more visible sponsor than Red Bull. Red Bull as an energy drink has cemented its name into the world of sports and sponsors thousands of sports events worldwide. The brand has been highly commended for their branding strategies and is known to not spare any expenses when promoting events .

Red Bull Wings for Life Foundation

Wings for Life is a Red Bull supported non-profit spinal cord research foundation. Their mission is to find a cure for spinal injuries as well as treat injuries sustained through various different reasons, one being the participation in extreme sports. The foundation strives towards the treatment of those not able to afford the procedure and also supports the use of sport in order to bring people together. There are thousands of untreated spinal cord defect in South Africa and Wings for Life aims to help decrease the numbers (Ambille, 2021: online).

Client **Brief**

Red Bull has seen the potential in South Africa as a country with a passion for sport. Due to the high amounts of tourists and visitors received each year and the close proximity to surrounding activities the Western Cape has been identified as being an ideal location for the client to broaden the horizons for extreme sport. Red Bull specializes in the extreme sport. Where better to put these factors into action than in and around the Blue Rock quarry? The site has been chosen for its natural beauty and surroundings as well as the vast amounts of opportunities it holds. The quarry falls perfectly in line with the vision and core values of the client, being able to create where there once was thought to be nothing. The strong environmental beliefs of Red Bull contribute to the ultimate goal of healing the manmade scar in the landscape and creating a space for all to enjoy and break away from their everyday working life to experience what nature has to offer. Red Bull will create one of the first ever extreme sports institutes in the world inside of a quarry.

The **User**

The ultimate goal of the proposed Blue Rock Eco Sports Institute aims to provide sports facilities to people wanting to compete professionally across the world. The quarry will facilitate a wide variety of professionals as well as being open to the public. Provision will be made for all in an attempt to showcase how a once scarred landscape can be revitalized a into a space of natural connection with your surroundings. Walkways will be open to the public at all times as well as sports facilities on allocated times. The quarry also provides the user with a restaurant and kayak clubs with swimming pools in order to relax and not having to do everything to the extreme. Blue Rock welcomes the public to enjoy what it has to offer with public and private spaces, also motivating interaction between users. The user is offered the chance to clear their mind and break away from daily surroundings. Spaces are created for people of all ages.



Fig. 20: Red Bull Cable Ski logo (Red Bull, 2021: online)

5. PHYSICAL AND SPATIAL CONTEXT

5.1 GROUNDWATER, SOIL + GEOLOGICAL STABILITY

All of the proposed areas where construction will take place consists of either Blue Shale or Brown Shale, both covered with shallow rock fills.

Blue Shale: The rock fill in these areas can be up to 5m deep, but at most parts less than 3m. Below the fill-breccia there is hard durable rock allowing for any building to be located on the quarry edge, yet preferably not closer than 5m (Swisatec, 2019, p. 11).

Brown Shale: The rock fill in these areas can be up to 5m deep, but at most parts less than 2m. Below the fill-breccia there is soft to medium hard, very closely fractured weathered shale rock causing careful constructional planning to be done. The buildings can be placed on the edges of the quarry, yet preferably not closer than 5m (Swisatec, 2019, p. 11).

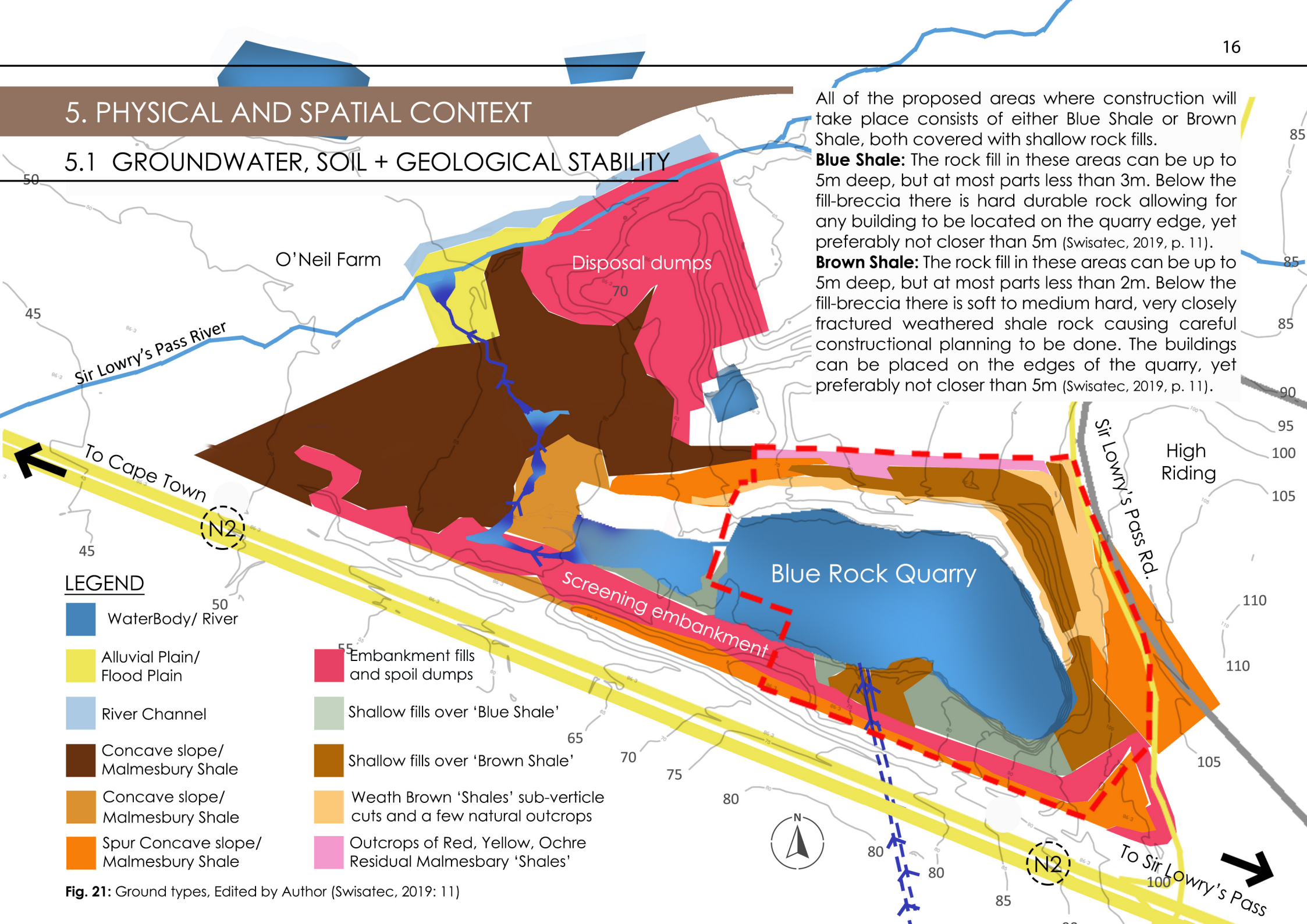


Fig. 21: Ground types, Edited by Author (Swisatec, 2019: 11)

5.2 SURFACE WATER

THE BLUE ROCK QUARRY:

The quarry is approximately 500m long east-to-west and up to 200m wide north-to-south with depths reaching up to 50m, yet only the top 0-20m of rock is visible, as the quarry is filled with water up to an elevation of 62m above sea level. The quarry is refilled by storm water runoff in the winter months which flows through a stream passing underneath the N2 highway. All excess water flows out at the western side of the quarry over the meadows and making its way towards the Sir Lowry's River (Swisatec, 2019: 17).

THE SIR LOWRY'S PASS RIVER:

The river flows in an East to West direction, between roughly 450m and 700m from the northern and eastern boundaries of the proposed site. The proposed development does not fall within the floodplain of the existing Sir Lowry's River. This helps because of the fact that no flood lines will be required (Swisatec, 2019: 17).

DETENTION PONDS:

At the moment the quarry runs a commercial cable-ski and water activities and this requires for the correct water level. For these functions to perform efficiently the water level should not exceed 62.5 m and this is done through the widening of quarry outlets in the winter months to make sure the water does not exceed the maximum level. The overflow water runs into a detention pond in order to obtain the correct flow and circulation of the quarry water into the Sir Lowry's River (Swisatec, 2019: 17).

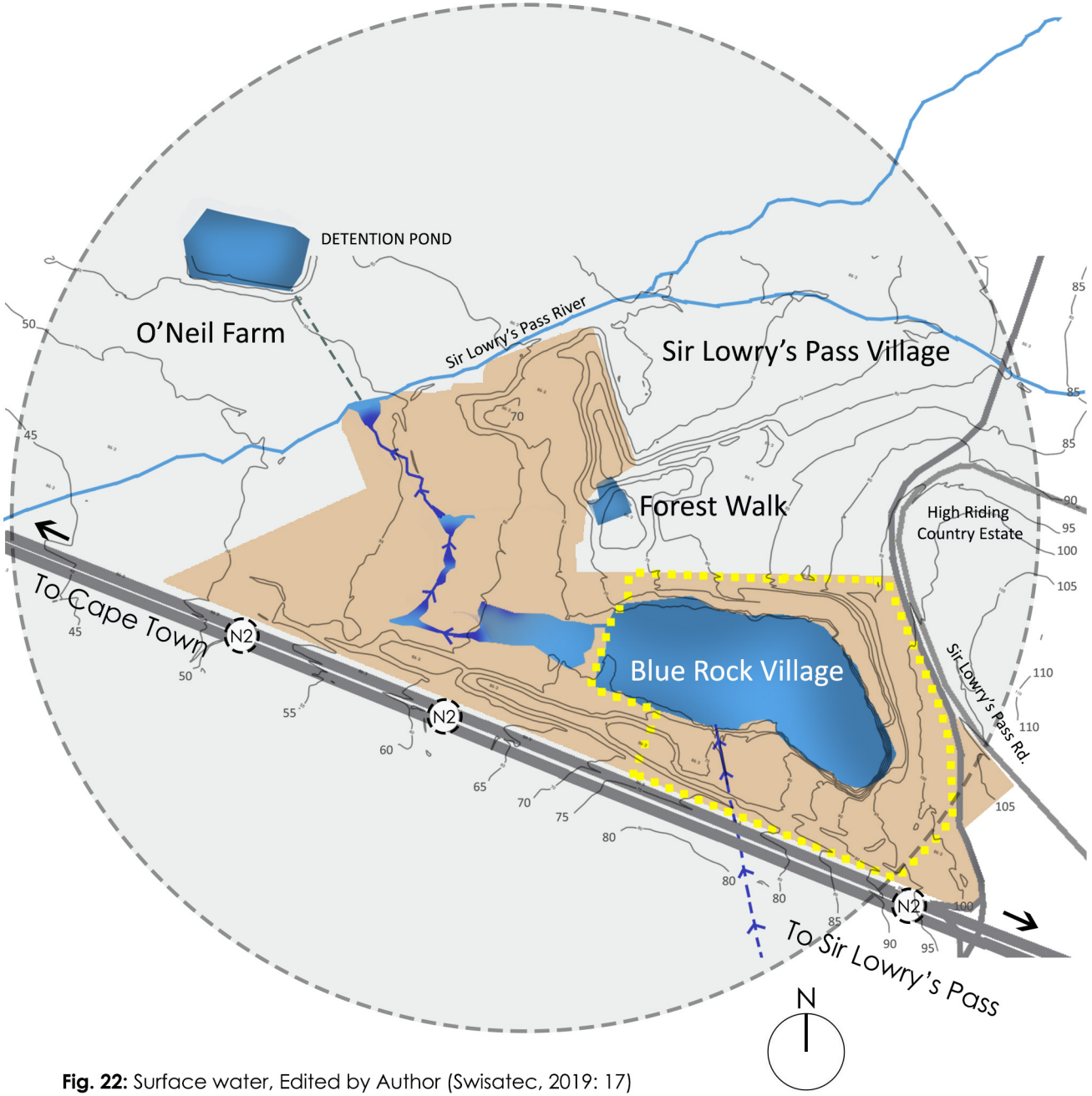


Fig. 22: Surface water, Edited by Author (Swisatec, 2019: 17)

5.3 WIND AND SUN MOVEMENT

Most of the winds taken into consideration when at the proposed site comes from either the north-easterly direction or the north-westerly direction. High wind speeds that could last for up to 5 hours per day could come from the north-easterly direction. From the Hottentots-Holland mountain range in the south-eastern direction cold air moves downwards towards the quarry, but is mostly not taken into account due to the natural coverage. The winds from the north-western angle should only be taken into account in the case of bad weather but is less frequent. The orientation of the quarry is mostly faced in a northern direction. This is a huge advantage due to the right amount of sunlight falling into the proposed structures, not receiving too much direct sunlight from the West, yet the glare from the water could become a problem when facing West.



Fig. 23: From the highest point of the quarry walls looking in a northern direction (Author, 2022)

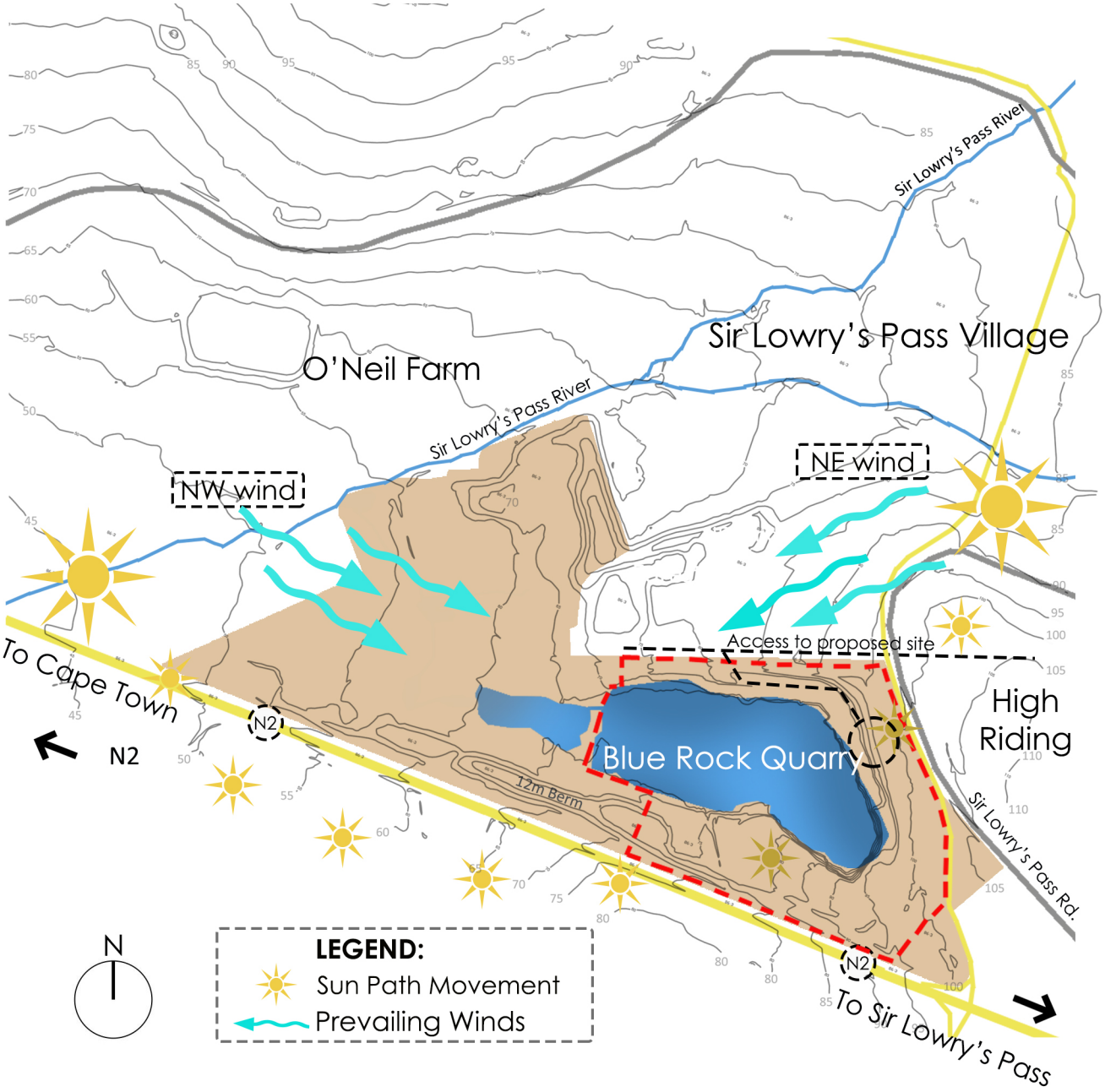


Fig. 24: Wind and sun movement, Edited by Author (Swisatec, 2019: 16)

6. VIEWS AND VISTAS

6.1 INTRODUCTION

Sitting on the slope of the Helderberg mountains the proposed site is located near Sir Lowry's Pass and the Hottentots-Holland mountain range. Both these features allow for a aesthetically pleasing view from almost all areas of the quarry. Views over Gordon's Bay and False Bay can also be seen as an experience on its own. With all visible features on site such as the scar in the landscape and the natural grow of vegetation in and around the quarry the user is drawn away from the urban environment. The ultimate aim of the proposed projects is to use all of these natural aspects as an advantage and take the lake and mountain range into account when designing.

Fig. 25: Existing on site features caused by the industrial man-made scar in the landscape contributes to the concept of levels. Seating and stepped spaces around the quarry walls are created for public use. These features are also focused upon when looking at the different uses of materiality for the proposed project.

Fig. 26: Floating walkways on the quarry water is used for circulation and allows for access to the aesthetical features surrounding the quarry. Aspects of these walkways will be incorporated into the proposed projects to help link all features in and around the quarry.

Fig. 27: The man-made layers created within the quarry makes for changes in depths and creates features such as rock walls and developing Eco-systems.



Fig. 28: Rock walls



Fig. 29: Floating walkways



Fig. 30: Levels



PHYSICAL AND SPATIAL CONTEXT

VIEWS & VISTAS: ON-SITE FEATURES



Fig. 31: Aerial map, Edited by Author (Google maps, 2022: online)













Fig. 32: Features on site (Author, 2022)

1. Access to Water

Current deep diving area sloping into the quarry water towards depths that can reach up to 60m. The connection between earth and water is focused upon and the way in which a transitional space is created.

2. Cable Ski Anchor

The structure used for the cable to be spun across the water and quarry edges makes use of a counter weight. The methods used in the existing structure can be implemented into the proposed constructional design. The cables link all sports motivated functions in and around the quarry.

3. Floating Walkways

Allows visitors to walk on the water and get closer to natural aspects within the quarry. These walkways contribute to the circulation within the quarry walls.

4. Quarry Levels

These manmade levels allowed access to the bottom of the quarry. They can now be seen as an aesthetical feature playing a role in the circulation and spatially motivated functions.

5. Rock Seating and Stairs

Manmade features around certain areas of the quarry have a strong conceptual connection towards the industrial features. These spaces can be used as seating or stairs allowing access into the water.

6. Levels and Features

Showing how the levels enable the user with different different experiences of colour.













Fig. 33: Features on site (Author, 2022)

7. Quarry Wall
The highest point of the quarry wall that faces North and contributes to most of the proposed site. The space focuses on where sky, nature, earth and water meets.

8. Existing Structure
The existing Blue Rock container building containing the information desk and restaurant, including all existing functions.

9. Existing Paintball Course
A open space that can be used for outdoor activities. The existing course contributes to the intended function of the quarry and supports the connection between man and nature.

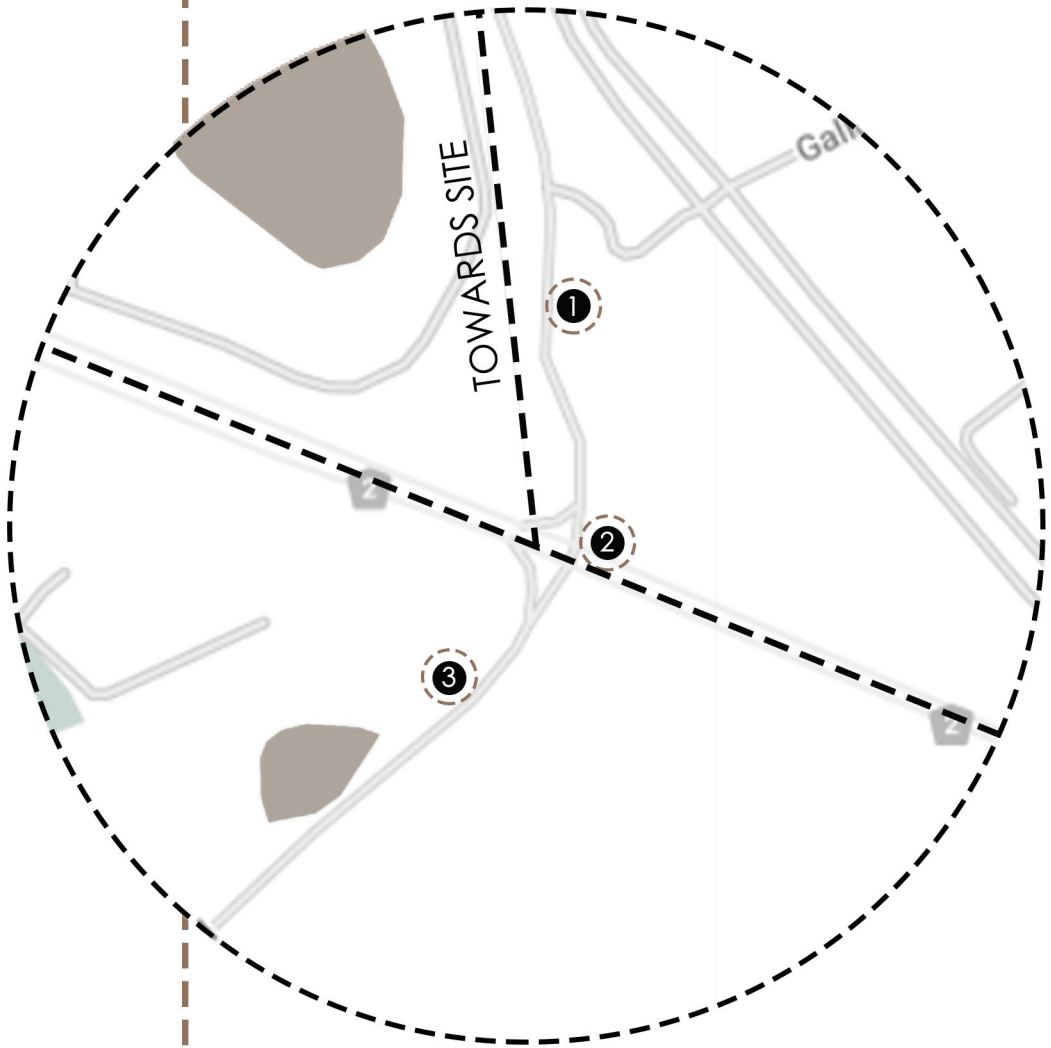
10. Conceptual Contribution
The quarry walls contributing to the existing functions focusses on the historical aspect of the levels left behind through the industrial influences.

11. View from Existing structure
Looking in an easterly direction towards the Hottentots Holland mountain range and the proposed site. The existing spaces created contributes to the opportunities yet to be created.

12. Floating Walkways
The walkways on the water contribute to the circulation within the quarry walls and connect functions. Experiences are create through the movement of the dweller

7. ACCESS TO SITE

FROM THE N2



Roads providing access to the proposed site



Fig 34: Sir Lowry's Pass Road towards entrance of site



Fig 35: N2 towards Sir Lowry's Pass and Grabouw



Fig 36: Sir Lowry's Pass Road towards Gordon's Bay

8. SURROUNDING ACCESS AREAS

8.1 SIR LOWRY'S PASS TOWN

The Sir Lowry's Pass Village is a small town on the base of Sir Lowry's Pass located 60km from Cape Town and walking distance from the proposed site, The Blue Rock Quarry. The Village was found and established in 1846 by a postmistress named Mrs Walters and the owners of six farms in the area.

In the early 1900s a main source of income towards the town was the selling of wild flowers growing on the mountain and surrounding fields. Today the Village has the potential to become an up-market environment with countless farms surrounding the area and providing job oppertunities for the residents in the lower income areas of the town. The proposed project in and around the Blue Rock Quarry will also ensure job oppertunities and work with the surrounding funding projects, getting involved with the areas surrounding the quarry. (SAV, 2022 online).

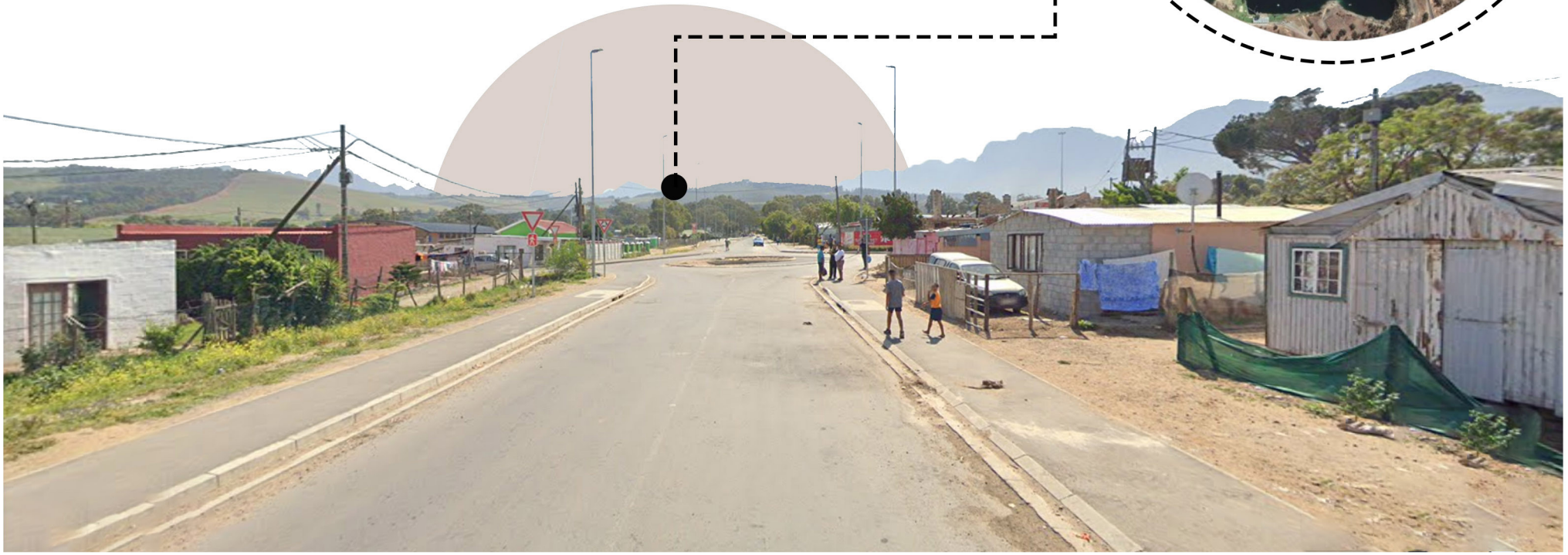


Fig. 37: Sir Lowry's Pass town (Google earth, 2022: online)

SURROUNDING ACCESS AREAS

8.2 SOMMERSET FORREST WALK ESTATE







Fig. 38: Sommerset Forrest Walk Estate (Google earth, 2022: online)

9. LOCATION ON SITE

9.1 CHARACTERISTICS OF PROPOSED LOCATION

The proposed location within the Blue Rock Quarry has been selected due to its unique features and orientation. The site is located on the eastern rock walls facing in a western direction on a relatively flat surface. The surrounding changes in levels compliment the intended purpose of the proposed building and contribute to the industrial past of the quarry. Facing in a western direction there will be focussed on sun direction during certain times of day as well as the reflection of the sun on the water below. This creates various architectural implementations to be inserted into the design in order to regulate natural lighting. The site is easy accessible and new proposed routes will be created in order to make circulation as effortless as possible. All needed tests have been done to ensure ground stability and this has it has been confirmed that the location on site is safe for the construction of the Blue Rock Extreme Sports Institute.



Fig. 39: Blue Rock Quarry (Author, 2022)

LOCATION ON SITE

DIAGRAMATIC LAYOUT

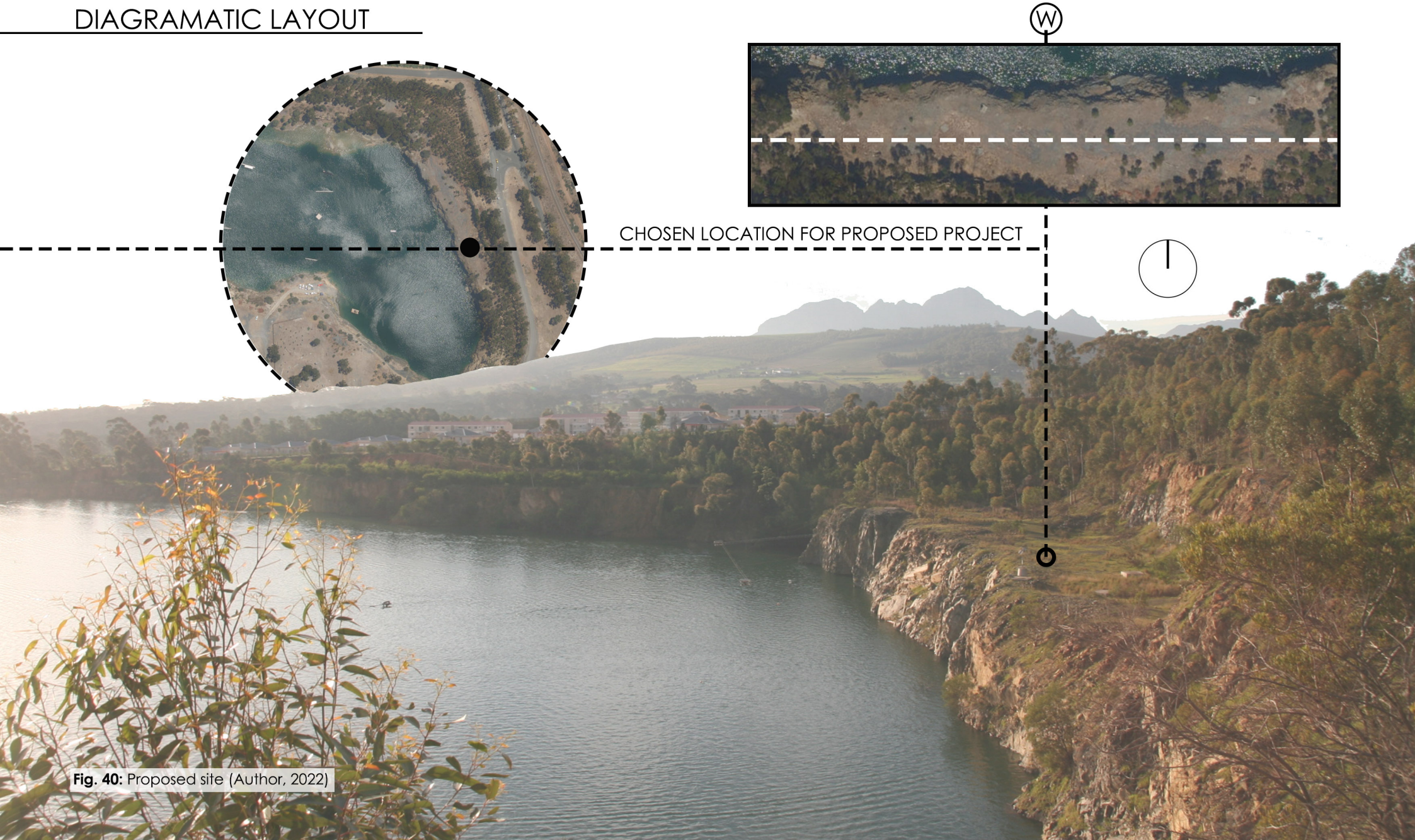


Fig. 40: Proposed site (Author, 2022)

CHAPTER 2

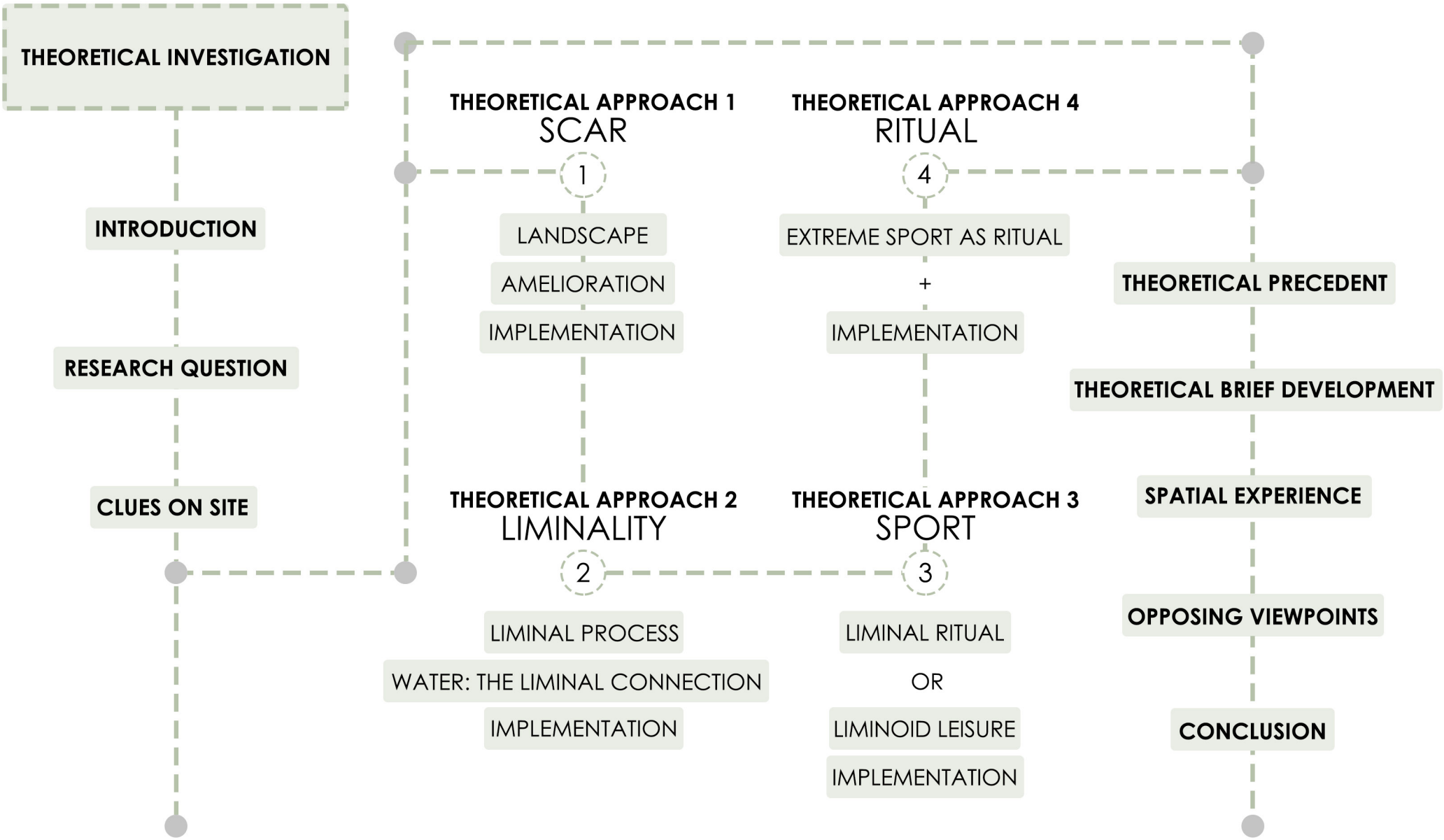
THEORETICAL STATEMENT

INTRODUCTION

Through various existing and non-existing theoretical influences on the proposed site certain spatial experiences could be focussed upon. By looking at the quarry as a scar in the landscape in need of healing the user finds himself surrounded by industrially motivated architectural features, giving praise to the history of the quarry instead of seeing it as wasted space. By focussing on the function of extreme sport this chapter will argue that sport can be seen as a form of ritual and contribute to the theoretical stance of liminality and the influences thereof.
This chapter will also look at existing features and the influences it has on the design, rather than trying to fix the scar the design will complement the scar and add to the rich industrial history of the site.

CHAPTER 2 includes:
- theoretical framework
- research question
- clues on site
- the scar theory
- liminality in architecture
- sport as a liminal or liminoid
- ritual
- theoretical precedent
- theoretical brief development
- spatial experience

1. THEORETICAL FRAMEWORK



2. RESEARCH QUESTION

How can architecture allow for a diversity of **sensory** and **spatial** experiences within the industrially **scarred landscape**?

SECONDARY RESEARCH QUESTION
How can architecture create a place of ritual in a scarred space forgotten by its industrial past?

HEALING THE SCAR



Fig 41: Quarry Excavation (Swisatec, 2019: 14)

3. EXISTING CLUES ON SITE

PAST **PRESENT**

CONNECTION WITH WATER



Fig. 42: What once was used as transportation paths within the quarry connecting levels, now form sloping access towards the water below. At various areas in and around the quarry water access is provided. This will help with the circulation and orientation of the proposed design, combining existing and proposed features on water level. These slopes are placed in such a manner that it contributes to the design and elevates the sports arena type effect that wants to be captured within the quarry (Swisatec, 2019: 6).



INDUSTRIAL RE-ACTIVATION

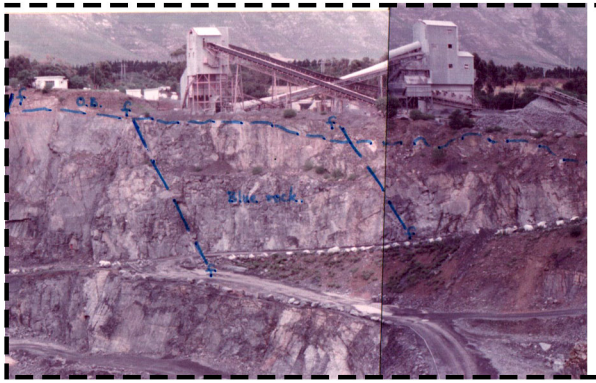


Fig. 43: Through the strong industrial past of the quarry a design concept and features can be re-invented and brought back to life. Rather than taking away the proposed project will aim to add to the history of the quarry through materiality and construction methods. Existing features on site gives a sense of the sites industrial past, yet this must be explored even more. In doing this the user will accept the space for the aesthetical features of the industry and not see it as wasted space (Swisatec, 2019: 5).



EXPERIENCE OF LEVELS



Fig. 44: Through mining and access pathways laid out within the quarry walls different levels were created, each containing their own unique features. Today the water level has risen to such extent that most of the levels cannot be seen, yet the existing still creates various theoretically influenced opportunities of exploration. As there can be see that some of the existing on site features has adapted to the introduction of levels through access walkways towards the water below (Swisatec, 2019: 6).



4. THE SCAR THEORY

4.1. THE SCARRED LANDSCAPE

Landscapes provide us with much more than we realize. We are given an informative impression regarding the economic and technical developments within our particular societies. In fact, they supply us with much more detailed informative and the precise account of the state of the environment than any museum could ever provide (Benjamin, 2012: online).

In order to understand the site and have a more knowledgeable approach towards the design, exploration should be done and information should be gathered regarding design possibilities. The industry almost always inflicts long-term environmental damage that is irreplaceable to the landscape and through these actions long term social problems are caused as a result of these types of exploitation. The landscape of the Blue Rock Quarry has significantly been altered through the excavation and disruption in the past in order to access and extract resources. The methods used have resulted in a scarred landscape which is seen as evidence that displays the destructive relationship between the industry and the environment, embodying the substantial heritage values. Iain Stuart, a Scottish geologist stated that: "Industry has a powerful, although often subtle impact on our environment over time. The identification and analysis of industrial landscapes is an important tool for understanding how industry worked, created and shaped our environment and in identifying the heritage values that flow from that activity (Stuart, 2012: 54)." Through the understanding of this and understanding the scarred landscape and how it was created, we become aware of how the quarry functioned in relation to the natural environment. These factors help us to understand the relations that existed between the industry and nature. Rather than comparing the one to the other, they should complete and compliment one-another through compromising the effecting differences.

4.2. AMELIORATION OF THE SCAR

Industrial and technological advances have proven through the years to scar the landscape. We tend to ignore or even hide the marks left behind, continuously advancing in our societies. Ruins and relics have been left behind by the industries of the past with the promise of production towards a better tomorrow. We see these scars left behind as failures of the past, yet the resources provided through the scar is used till this day. There will always be scars left behind in the world around us, the question is how do we live with it and re-awaken the part of the environment we see as a 'non-space'. We must be able to adapt and rethink the scar as rather an opportunity than a waste of space left behind by the industry, recognizing its beauty.

In order for us to understand the scar we must first obtain awareness of what caused it and the history thereof. In the case of the Blue Rock Quarry the scar left behind represents the N1 travelling over Sir Lowry's Pass. This can be seen as an experience on its own and links should be formed between those experiences and the quarry. Physical and emotional scars will always heal over time and where there is a scab, there will be a scar. Human tissue repairs itself leaving a scar and even till this day technology cannot eliminate the chances of a scar, much like the industry that surrounds us today. Scarring is seen as the natural healing process, yet on ourselves and in nature we see it as unnatural. We should accept the scar and not destroy it. Rather than trying to fix the scar in the natural landscape we should celebrate its past and embrace it. Scars from the industry should be appreciated for their contribution and the time it took to make it, as well as the time it takes to heal. To hide a scar is so denying the history that it holds. The Blue Rock Quarry will be rejuvenated and revitalized through its scarred past and celebrated for its contribution.

4.3 IMPLEMENTATION OF THE SCAR

In the proposed project the Blue Rock Quarry needs to be celebrated for what it is and the history behind it. In order for that to happen the existing "manmade scar" should be looked at as natural. Through this you are able to navigate through the different levels and slopes, working with the natural contours provided by the landscape. Also revealing layers and materials within the landscape that we would not have known if not for the quarry. The scar will not be covered, it will be used to provide an experience for the user and help work with the different levels gaining access to the water below.The quarry is the reason for the proposed functions of creating an environmentally friendly sports institute and embodied experience in nature. Because of the irregularities caused by the different excavation depths, every route taken leads to a different experience of mental and physical healing for the user. The scar will be used in various ways throughout the design through utilizing the different viewing points where the user can witness the sediment levels within the rock wall surroundings. The scar is seen as a sign of healing and strength, where the proposed functions provide mental and physical forms of healing. Through the different activities strength is gained in oneself and in the connection to others. These factors contribute to the theory behind the scarred landscape.

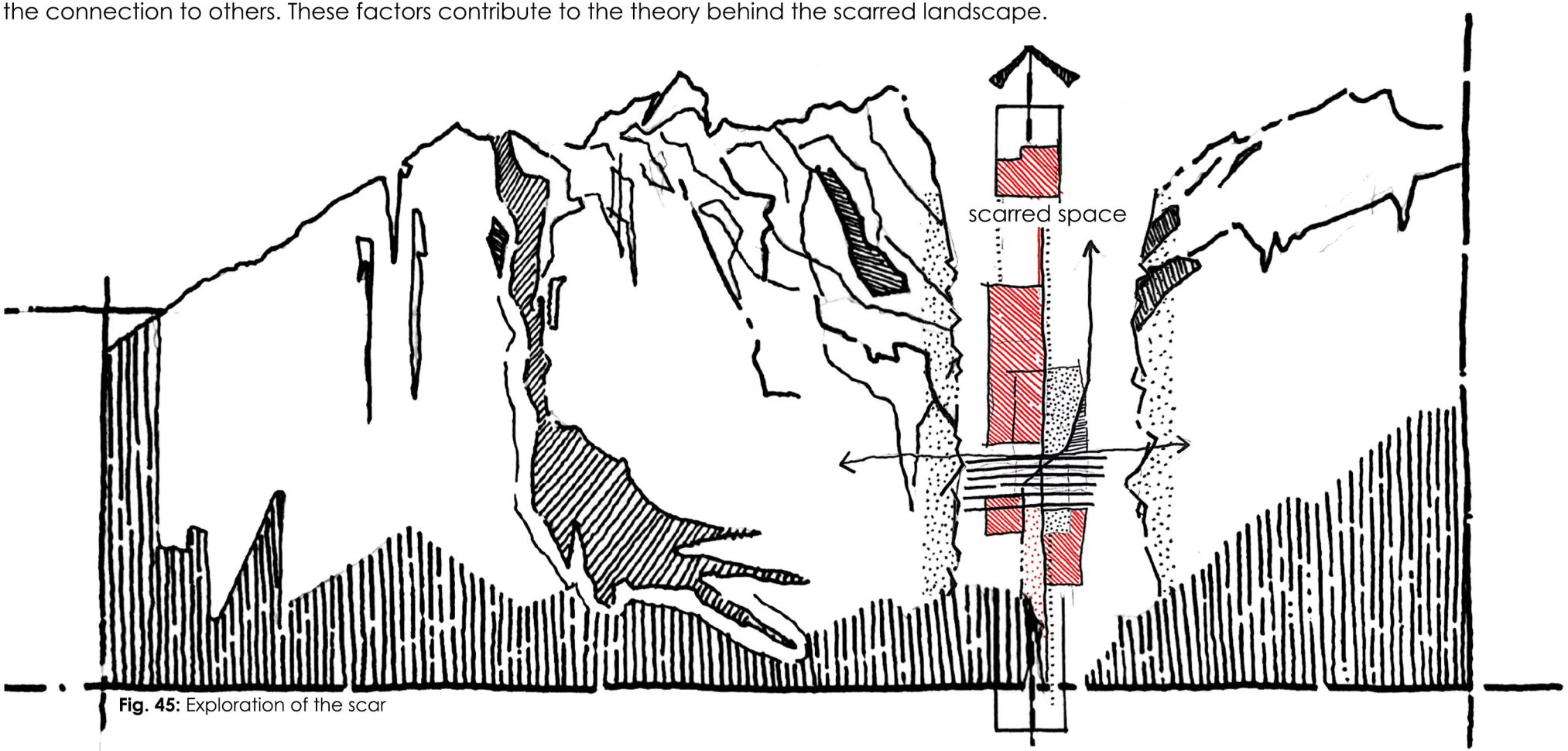


Fig. 45: Exploration of the scar

5. LIMINALITY

5.1. THE LIMINAL PROCESS

In order to understand liminality one has to know that there are multiple contexts in which it can be placed, ranging from social and cultural to spatial. Limen, the word of origin, is gathered from the Latin word meaning 'threshold', referring to an intermediate state or condition in all context (Alexander, 199: 31). In a cultural context liminal is seen as a personal experience, while in architecture it is seen as space.

An architectural design of liminal space is seen as a spatial experience that aims to lead to self-awareness of yourself as the dweller, the space that surrounds you and the environment. The adaptation of real-world architecture to the surrounding environment is shown in a manner of liminal spatial experiences also focussing on the effects of self-awareness in spaces such as the walkways connecting points of hierarchy (Thomassen, 2006: online). A liminal space exists at any time when there are two or more ideas that an individual contemplates between, bringing up certain thoughts of where you come from and where you are going. These factors could also relate to the intended purpose of the proposed project which is alternative healing through sport and the surrounding aspects of man made and natural influences. The process of design builds upon the factors identifying experiences such as **dissolution, abstraction, blurring, integration, layering and separation**. The journey followed includes most of these states contributing to the journey creating self-awareness and finding oneself in the natural environment. The structural assemblage of the walkways and pavilions against the quarry edges and rock walls enable the opportunity to provide these aspects. Through interconnecting functions and the routes travelled in order to reach them the user will become self-aware in the space and could have an effect on his mental and physical state of wellbeing (Thomassen, 2006: online).

5.2. WATER: THE LIMINAL CONNECTION

Liminality comes in this period where the initiate is a state not bound by social structures, adopting and leaving at the same time to form part of an ultimate whole. In the Xhosa culture a river is regarded as the liminal space between calm and chaotic or wild and ordered. It is believed that water can serve the purpose of good and bad, depending on the interpretation of the individual. The way in which a dweller sees water can differ from depending on the individuals past experiences or immediate surroundings. The in-between condition between earth and sky can be determined as liminality and this could be interpreted as the horizon where they meet and an exchange between the two takes place, also referring to the water and the quarry edge in the proposed project. The river, or in this case the water of the quarry, is seen as a non-space where there is no certain way in which to act as an individual. The user has no form of responsibility, yet is seen as the connection between physical and spiritual realms, helping to broaden the imagination of the user and the architecture proposed journey (Chidester, 2000: 13). Water and the liminal state could experientially be linked to the space of circulation and space of navigation before a main space is entered. In a conceptual manner the form of ritual can be expressed in architecture as a threshold. This is seen as the meeting point of two or even more separate realms. In this way the influence of architectural built work could form the liminal space where the two worlds meet and serve as the point of horizon. The built horizon allows the dweller to navigate and negotiate through space in the same way the rites of passage might facilitate transition in life. According to Pallasmaa (1996: 50) architecture is seen as the art of reconciliation between ourselves and the world, taking place through the mediation of our senses. Mediation is not only seen as a mental state of being, but also could be interpreted as geographical landscape finding its space through build form (Joubert, 2012: online).

5.3. IMPLEMENTATION OF WATER AS FORM OF LIMINALITY

In the quarry the water is seen as more than a fluid, it is seen as a transitional element that deals with orientation, connecting it with the significance of ritual in architecture. In the proposed project the water will serve as a directional element of functions. The water helps guide the dwellers on their path throughout the quarry, creating spaces and forming part of the journey. As a transitional element the water will be used as a form of circulation and be the horizontal exchange between private and public. The water serves as a method of clearing the mind and contributing to the mental and physical healing of the user. Because of the mostly high quarry walls the user will feel the sense of utopia when transitioning, both broadening the imagination and feeling connected to the sports activities taking place within. Certain moments on water level connect the user to the in-between and the liminal pathways, connecting these moments contribute to the feeling of self-awareness within an exagerated spatial experience.



Fig. 46: Site thresholds (Author, 2022)

LAYERING

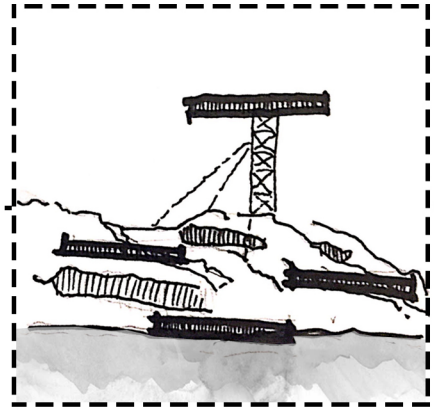


Fig. 47: Displaying the layers above water level that contributes to the activity within the water. The layers act as elements of space that form horizontal platforms with the water below.

SEPARATION

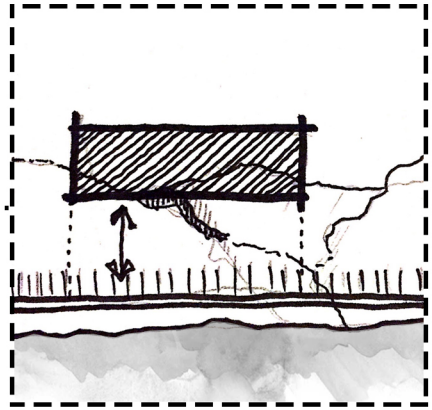


Fig. 48: The seperation of water and earth can be seen as a non -space and methods of connection must be used in order to fill the space. Seperation occurs between earth, water and built environment.

INTEGRATION

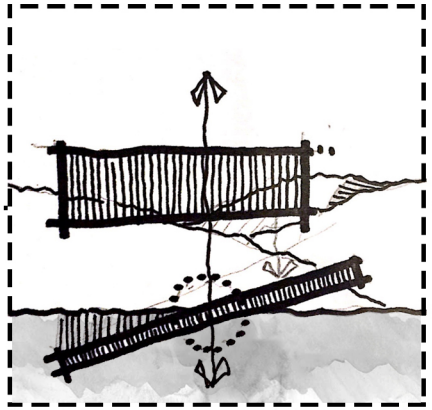


Fig. 49: Integration between elements is a main focus point within the quarry walls. Water forms a liminal connection which allows existing and new elements the oppertunity to integrate through connection.

ABSTRACTION

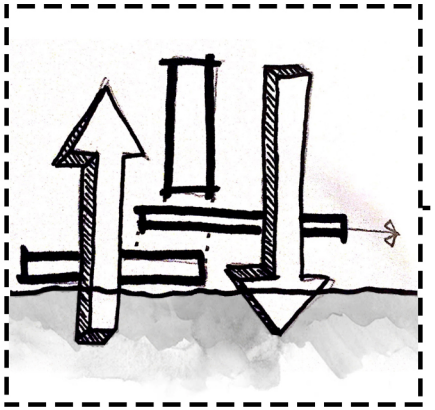


Fig. 50: Abstraction through the liminal process of water allows for different spatial element to be explored and helps with the design development of functions and features to be included.

6. SPORT AS A LIMINAL RITUAL OR LIMINOID LEISURE

Victor Turner, a British anthropologist, introduces a separate genuinely liminal phenomena defined as 'liminoid', also stating that modern sport is seen as a form of liminoid rather than liminality. In comparison liminality is seen as a more serious and formal manner of doing something, activating a more competitive nature within oneself. You normally do not have much control over the choices made or emotions felt in a liminal state. Liminoid comes from the same root yet has a deeper meaning of being optional and not forming part of a resolution or personal crisis. As I understand it the user has more control over a liminoid act and cannot be compared to a certain ritual that has to be followed. A liminoid experience tends to clear the mind and contribute to a freer way of living, whereas liminal is seen as more of a ritual (Turner, 1967: online).

Sports can be described as liminal or as a ritualized form of cultural performance depending on the setting and environment. Turner names sport in a category of "industrial-liminoid" phenomena focusing on performance including the full spectrum of modern art and entertainment. At first Turner excluded modern sport, yet it is believed that sport has a much stronger link to his conceptualization of genuine liminal performance than anticipated. Through all distinctions made between liminal and liminoid one thing can be confirmed through the information gathered, modern sport through a theoretical basis, can be seen as a genuinely liminal phenomenon and a modern day ritual. Liminality is described by Turner as, "the state and process which is betwixt-and-between the normal day to day cultural and social states and processes of getting and spending, preserving law and order and registering cultural status (Turner, 1967: online)." This can be confirmed to cultural rituals where tribes or groups of people needed to go through some ordeal of symbolic action, which could be compared to modern day sport. Also comparing the element of transitioning from one status to another, which is similar to the happenings in extreme sport when a higher level of performance and expectation is placed upon an individual.

The elements of play support the spirit of impulsiveness and creativity that brings certain aspects onto the 'field' of direct participants as well as onlookers. New expressions of being, self and social order is developed and experienced. These elements can be compared and help influence the architectural layout of the extreme sports facilities on the proposed site. Liminality can now be seen as a method of society to reveal itself to society and through this they continuously rejuvenate itself with new relational patterns and values. Sports have an influence on the social political processes that surround us and help direct our inner consciousness through its own language (Rowe, 1998: online). Liminal architecture is seen as a transitional threshold between two states of cultural rites or between two dissimilar spaces, while liminoid architecture refers to the same environment yet not involved by the resolution of a personal crisis.

KEY WORDS

.

LIMINAL	LIMINOID
RITUAL	LEISURE
PERSONAL	OPTIONAL
COMPETITIVE	IMPULSIVE
SYMBOLIC	NATUARAL
TRANSITIONAL	PLAY
RELIGIOUS RITES	INFORMAL
TENSION	OBVIOUS
PERCEPTIBLE	PROLONGING
SENSIBLE	TEMPORARILY

.

6.1. IMPLEMENTATION OF THE LIMINAL AND LIMINOID

The Blue Rock Extreme Sports Institution aims to combine the levels of seriousness between the liminal and liminoid as much as possible, contributing to all aspects of alternative healing and sport in a architecturally influenced manner. Against the quarry walls a more serious and private aspect of finding ones mental and physical healing aspects will be explored, leading towards an liminoid factor of decision making yet liminal aspects of self-awareness in the thresholds of space.

These factors take public walkways and connections between functions into account, thus also creating an audience for liminal sports activity taking place within the quarry. While on the quarry waters and against allocated rock walls, where competitive sporting rituals take place, a more public manner of liminality is explored, linking the fourfold of earth and water to one another. As explained the manner in which we see sport can be compared to ritual and thus compared to liminality and the experiences felt throughout the journey. The liminoid factors occur within the quarry at certain stages, providing for all visitors. A certain sense of leisure should be expected when entering the Blue Rock Quarry.

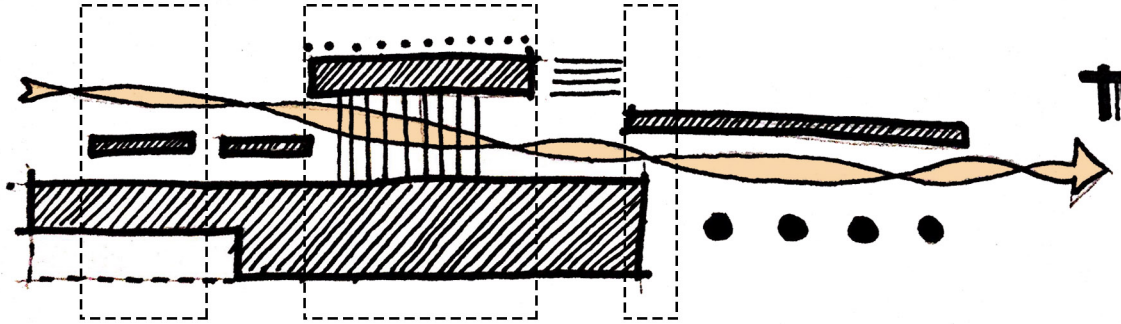


Fig. 51: Liminal Movement

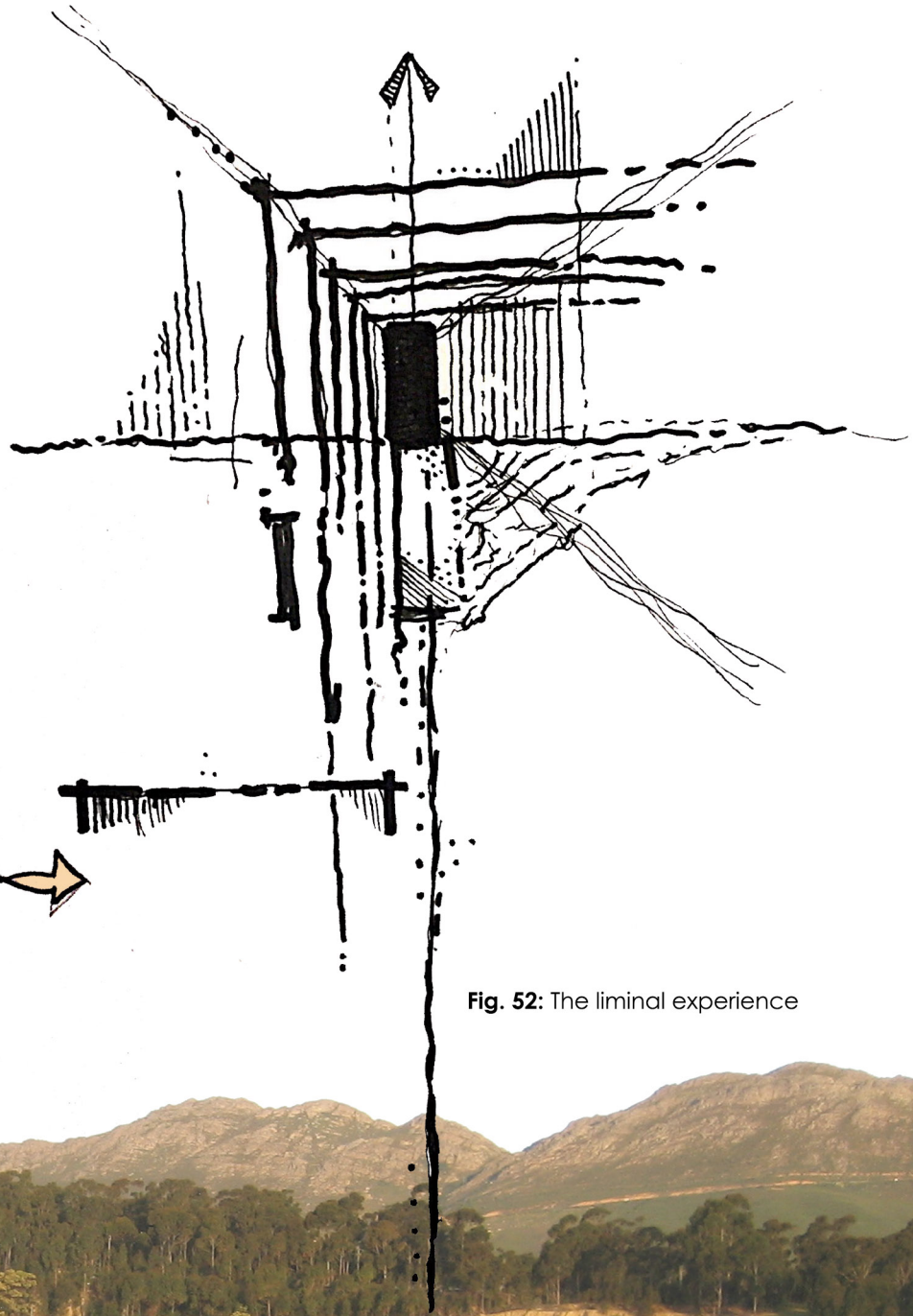


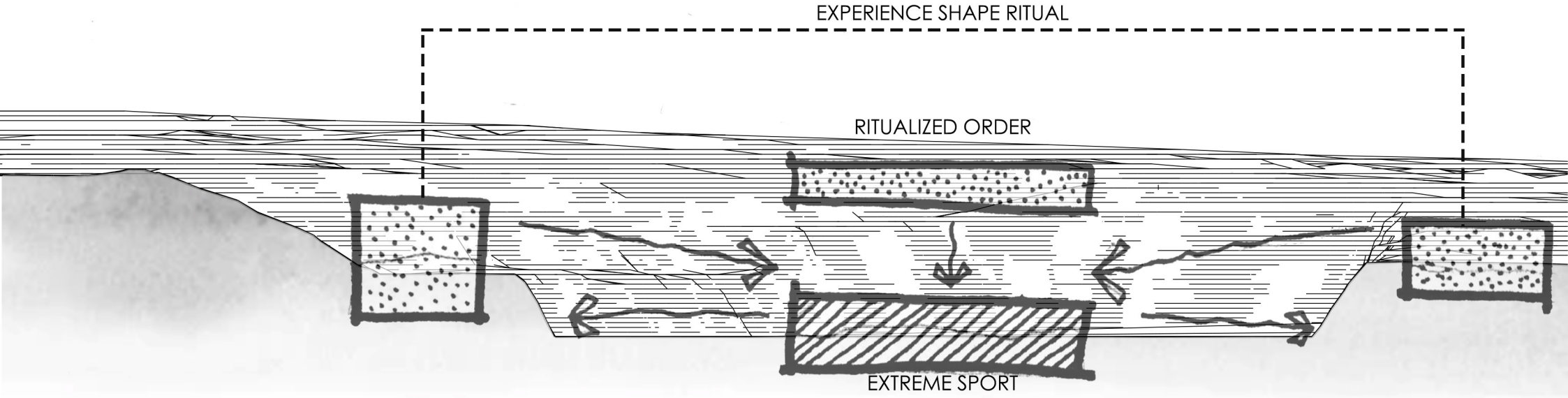
Fig. 52: The liminal experience



7. RITUAL

EXTREME SPORT AS A RITUAL

There is an opinion that sport hold a certain importance within societal phenomena because of its ritualistic connotations. The importance of sport as a ritual is seen as the athlete's role to mediate between individuals who conciliate the audience, and the ethical order of communities. Historians feel that the roots of modern day sport can be found in various ritualistic celebrations such as fertility festivals (Birelle, 1981: 354). In some way sport is then seen as an important legacy of ritual that has been lost over time, yet the form of the activities remains.
There are strong theoretical traditions contributing to the significance of the term 'ritual', existing in anthropological, sociological and social psychological manners. These help to generate the idea about the social significance of sport as a ritual. Victor Turner describes sport as "industrial-liminoid", yet when a more comprehensive definition of ritual by Dennis Rook is published one can clearly see how sport should be categorized as a liminal ritual. Rook states that, "rituals shall be taken to mean those culturally prescribed behaviour forms used by certain individuals or groups to cope with the pressures of reality (Rook, 1985: 251)." In this manner the ritual of sport is a way of coping with the real world, effectively supporting the meaning of liminality. Sports stars are worshiped as gods and a sports season gone past marks the passage of time relating to social processes associated with the calendar and even when not a supporter of sport you are still divided into certain cultural surrounding; as is also done in the case of ritual. Luckmann states that man is born in a social order and culture which has restrictions on the meanings he can manufacture for his own action and those of others (Luckmann, 1967: online). This indicates the ritualistic properties of sport, causing the supporters of these extreme sports taking place to be situated in a liminal space. The spatial aspect of the surrounding environment within the quarry enhances the experience of those attending. As previously explained in 'The Liminal Process', this effect could then have the potential to create a blurring between the surrounding cities and the Blue Rock Quarry. This will help elevate the intended motion of breaking away and contribute to mental and physical healing methods also helping to see the Blue Rock Quarry as a sports arena or dome of sorts.



8. THEORETICAL PRECEDENT

SHIMAO WONDERLAND INTERNATIONAL

Location: Songjiang, Shanghai, China
Architects: JADE + QA
Year: 2018



Fig 53: Shimao Wonderland Hotel (Walsh, 2019: online)





Fig 54: Shimao Wonderland Hotel (Walsh, 2019: online)

The Shimao Wonderland International is simply one of the many architectural masterpieces located inside of a quarry. It is described as the world's first quarry hotel and only has two levels located above ground with 17 levels going down within the quarry walls. Features such as the underwater restaurant and aquarium are set in place with the goal to minimize impact on the local environment. The structure has a low profile above ground with a vertical circulation core located within consisting of various observation lifts. Access is also granted through walkways elevated against the quarry walls with glass bottoms for the user to be able to witness as much as possible while walking to the hotel (Walsh, 2019: online).

Principles Identified:

- Circulation
- Connection of Spaces
- Functional Access
- Liminal Spaces
- Ritual

The hotel is seen as a liminal functioning space that focusses on the insertion of ritual. By observing the aspect of circulation this project can be compared to the proposed Blue Rock Extreme Sport Institute. The methods used in the elevated walkways and connections made between ground levels and water makes for a theoretically influenced design which contributes to all theories used. The hotel displays various opportunities to mend industrial scars in the future and encourages environmentally friendly design methods. In the proposed there will thus also be focused on the connection of spaces and the liminal journey taken within the quarry walls contributing to the effect of a ritual taking place.



Fig. 55: Glass walkways (Walsh, 2019: online)



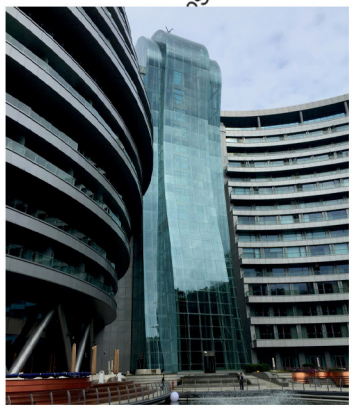


Fig. 56: Circulation spaces (Walsh, 2019: online)

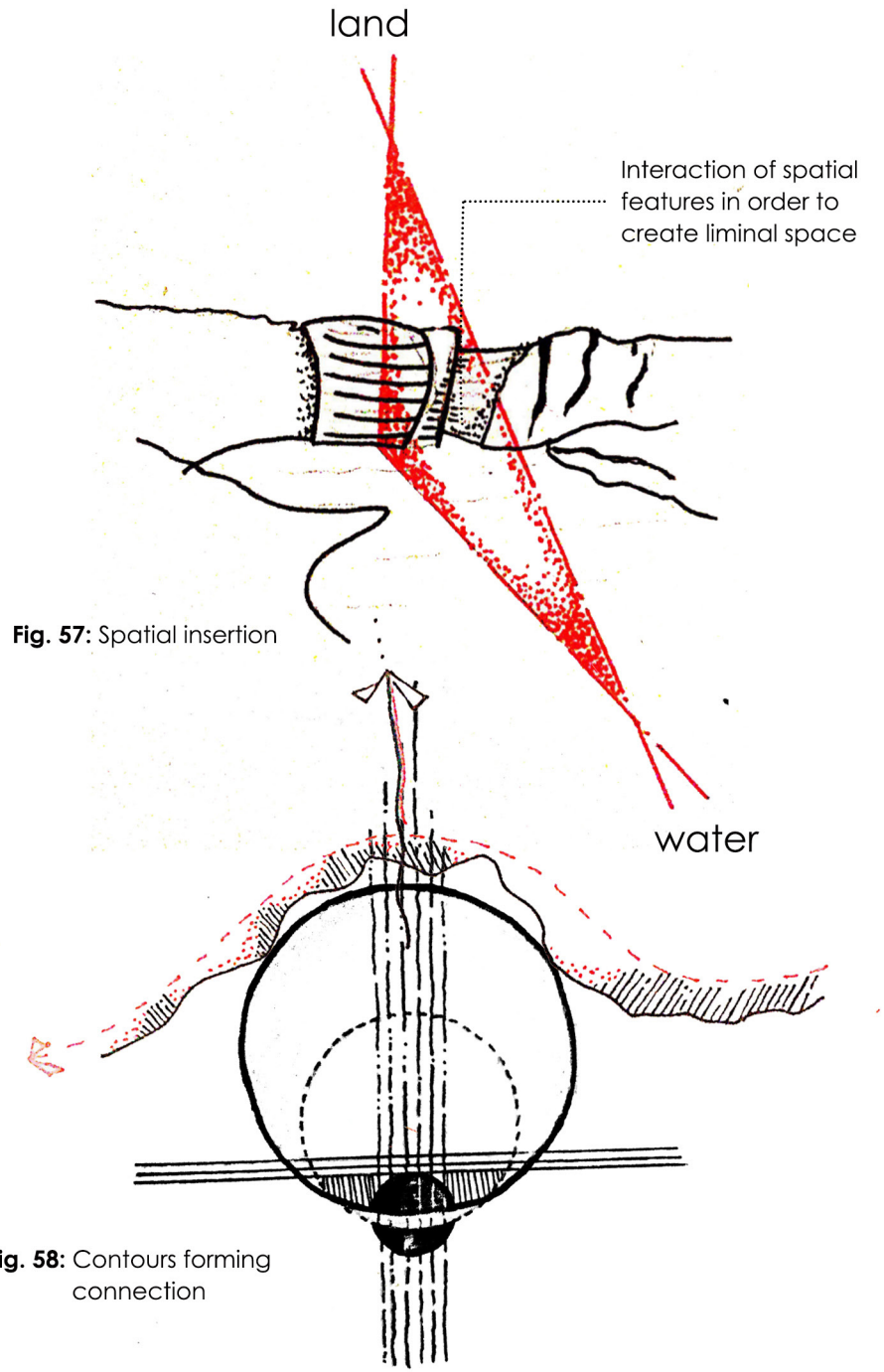


Fig. 57: Spatial insertion

Fig. 58: Contours forming connection

9. SPATIAL EXPERIENCE

THEORETICAL IMPACT ON DESIGN

Ritual serves as a way of bringing the public as well as those participating in sport together and a more symbolic meaning to the activity taking place inside the quarry. It describes the seriousness of some activities and influences the design to befocused on various viewing deck and walkways in order for the circulation of activities to take place and be celebrated. The supporters and users form part of this ritualistic experience, contributing to the arena-like goal.

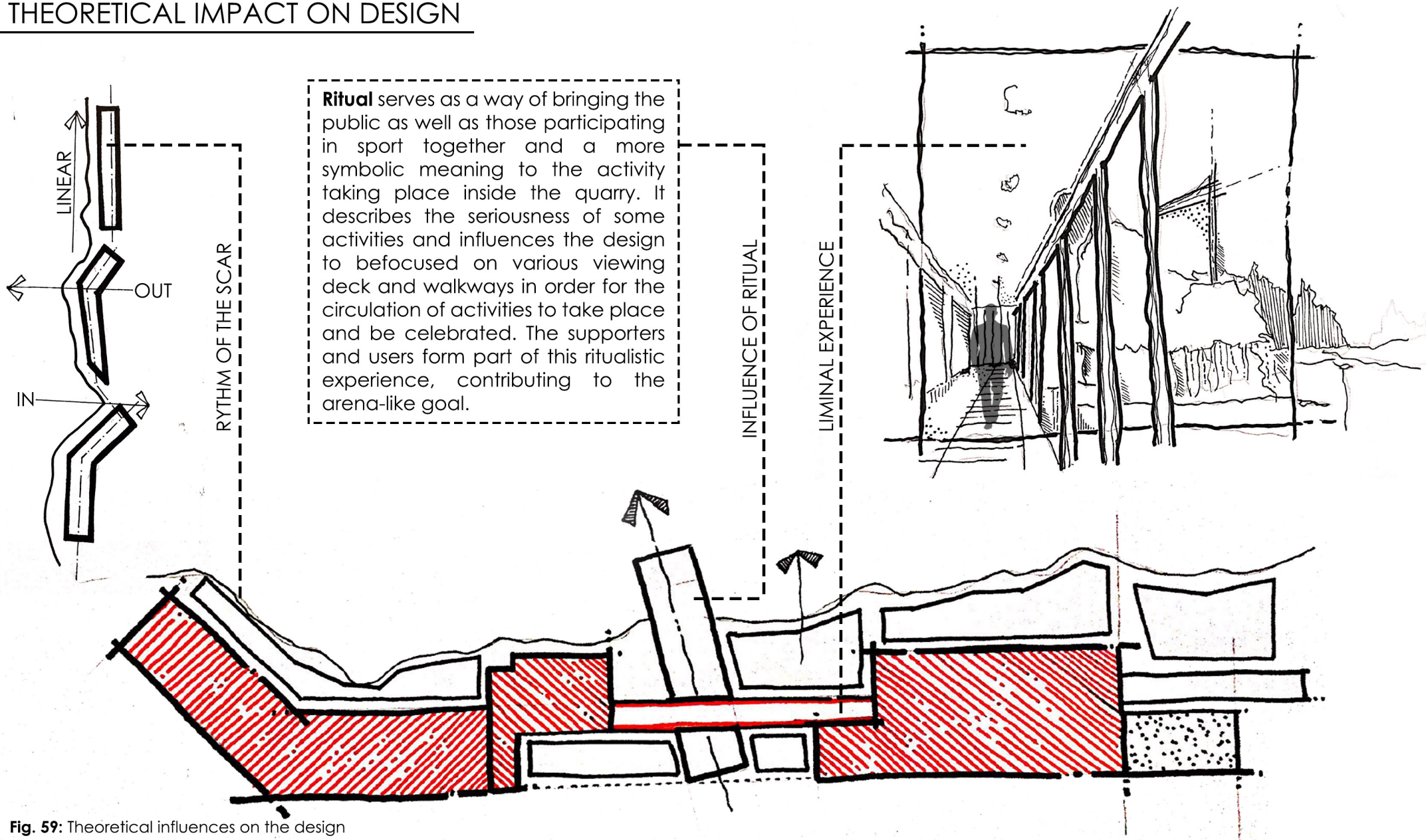


Fig. 59: Theoretical influences on the design



CHAPTER 3

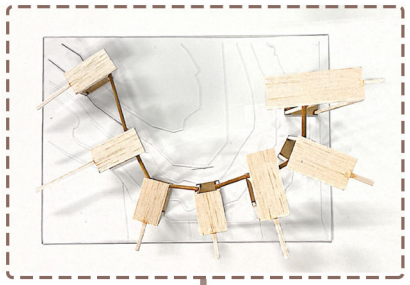
CONCEPTUAL APPROACH

1. CONCEPTUAL FRAMEWORK

CONCEPTUAL INVESTIGATION

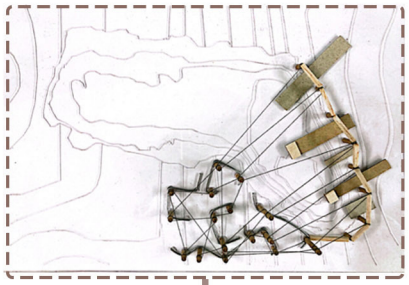
1 **DESIGN CONCEPT 1**

THE BIOPHILIC PAUSE



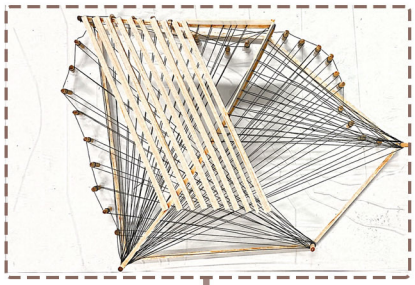
2 **DESIGN CONCEPT 2**

HOLISTIC REINSERTION



3 **DESIGN CONCEPT 3**

AMELIORATION OF THE SCAR



TOUCHSTONE



EXPLORATION OF THE SCAR

Fig. 60: Concept framework

2.1 DESIGN CONCEPT 1

THE BIOPHILIC PAUSE

[SHINRIN - YOKU] [MODULATE] [HEALING]

Biophilia can be defined as the distinctive human instinct to connect with nature and the natural surroundings, including all living beings. The Biophilic Pause refers to the spaces on site where the user feels most at peace with nature. These spaces can be located anywhere surrounding or inside the quarry and differs from each user, such as the experiences. The model describes these spaces as connections influencing each other in order to interact. It portrays the pavilions overlooking the quarry and connecting with the edges as well as the surrounding landscape. These connections cross over the quarry and activate the rock walls and water that was once seen as unused space.

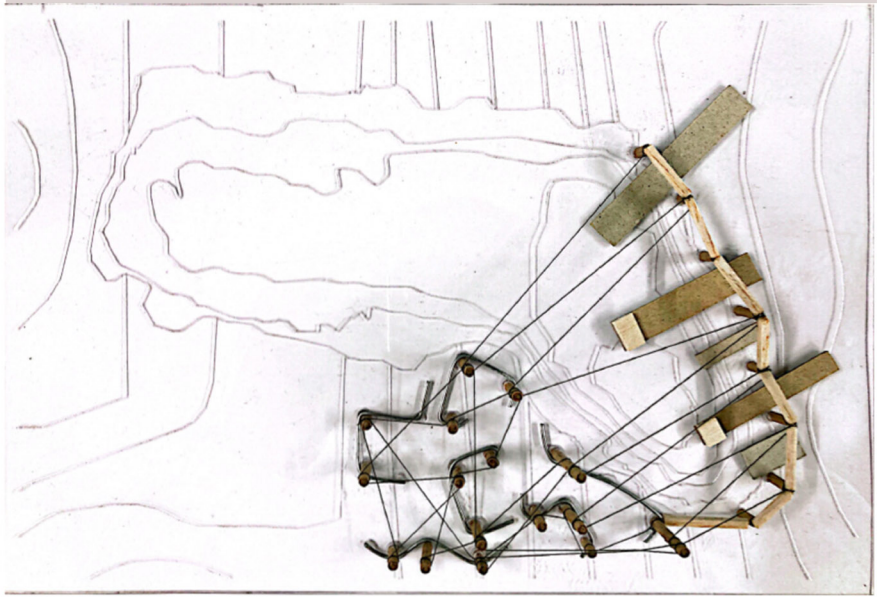


Fig. 61: The Biophillic Pause

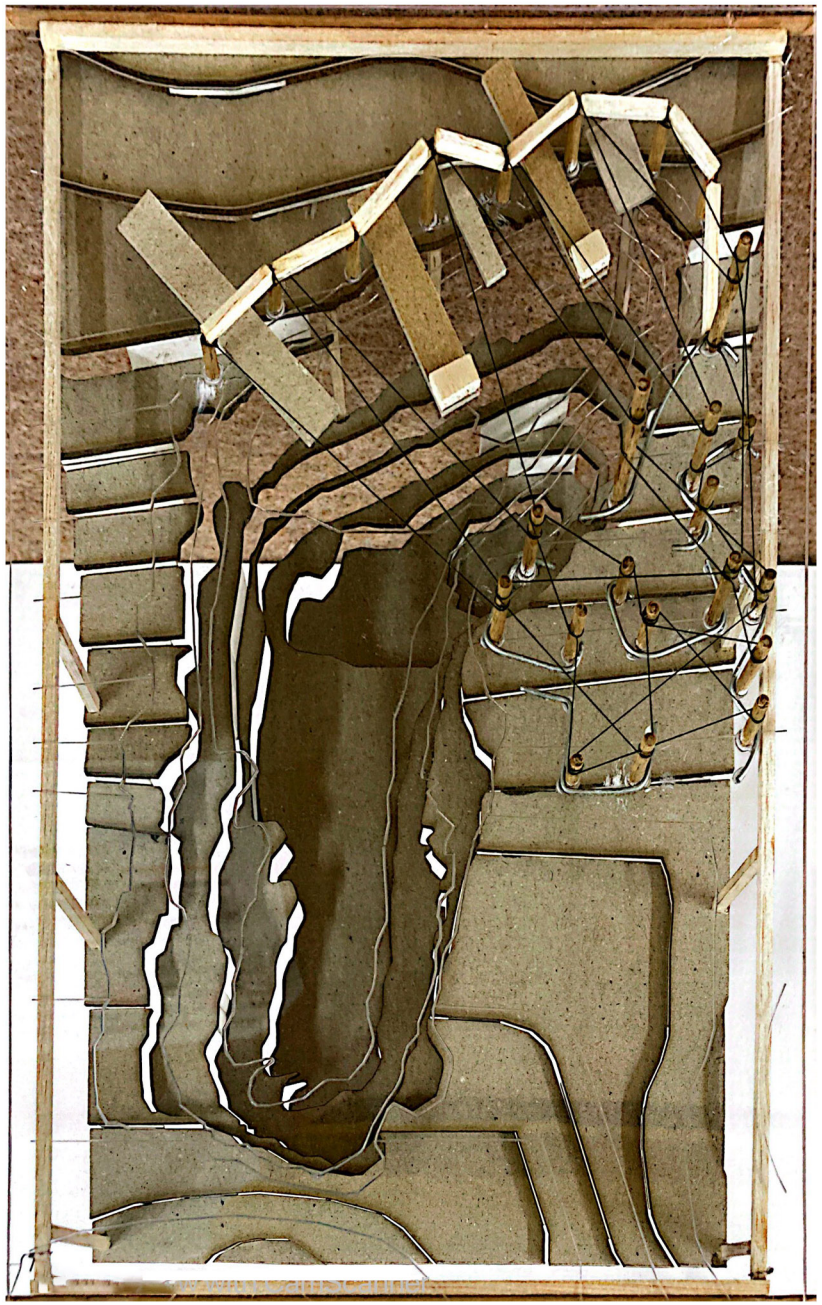
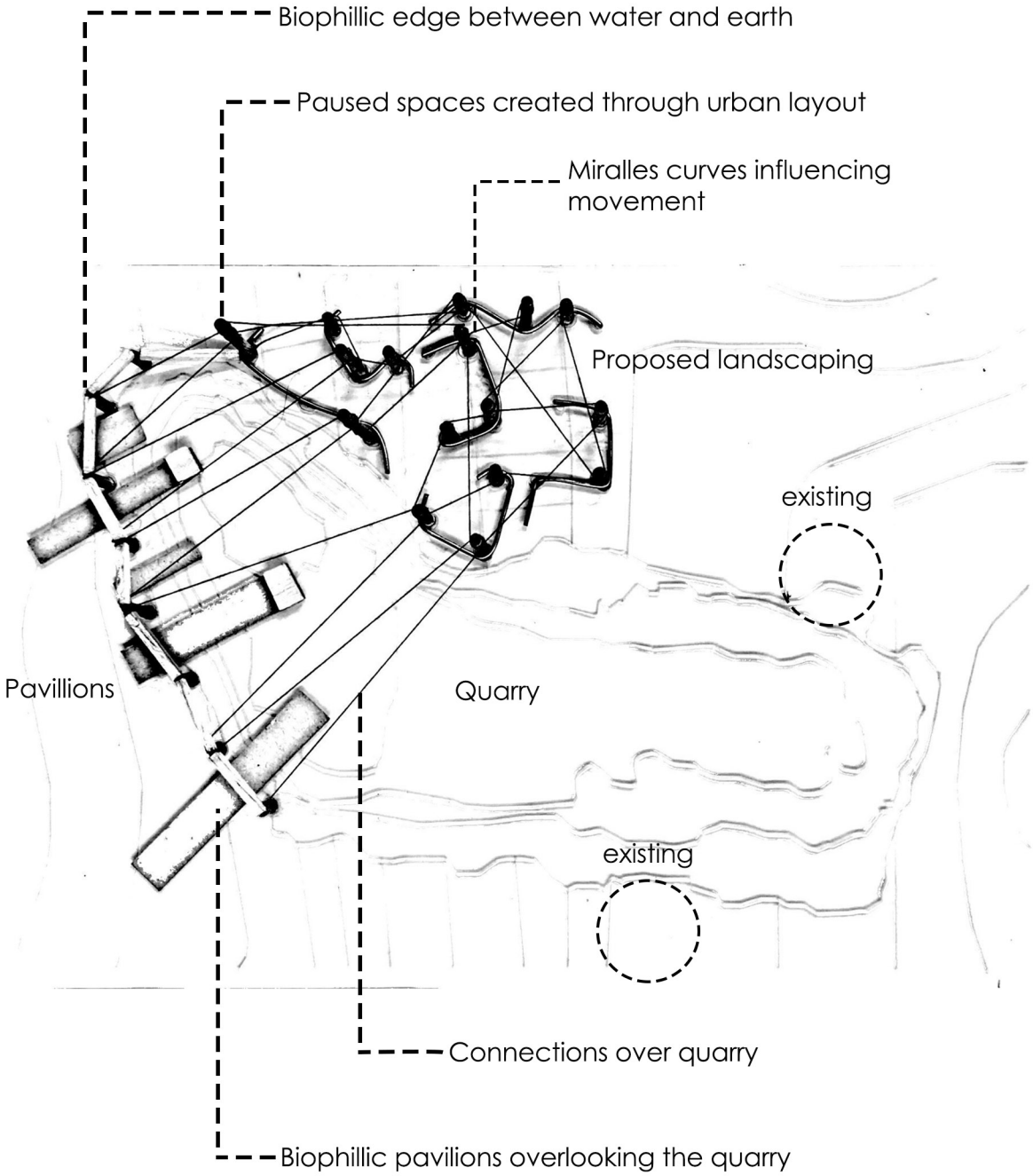


Fig. 62: The Biophillic Pause



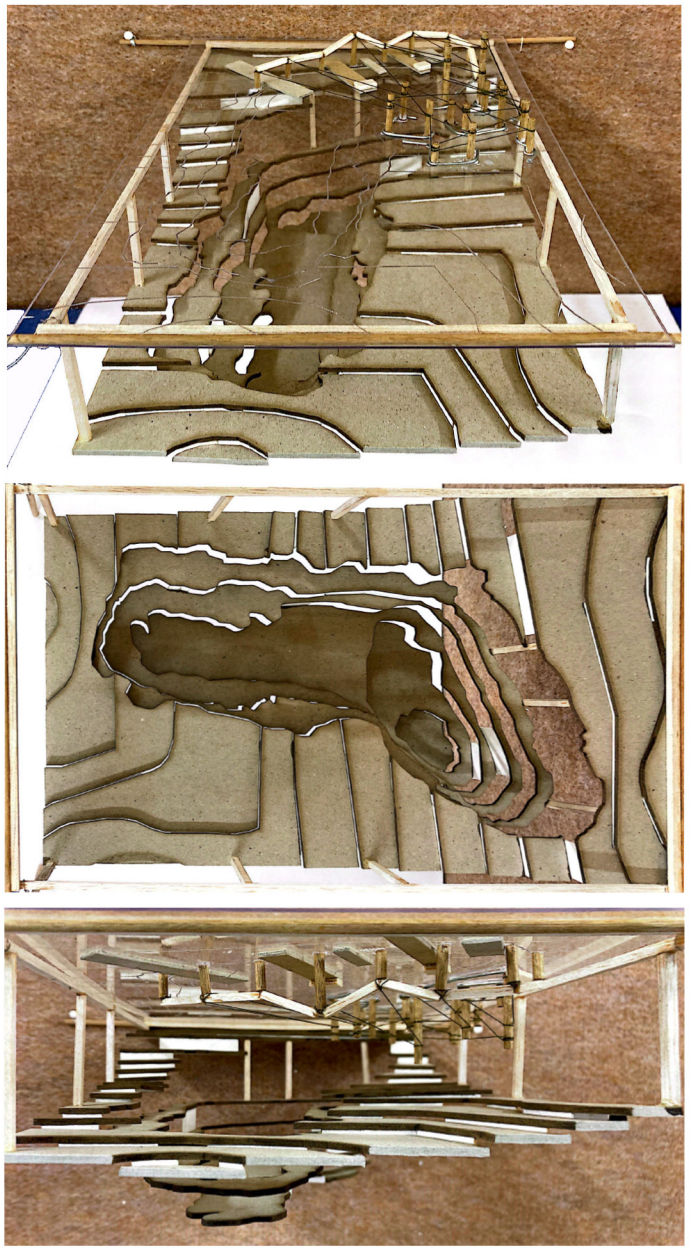


Fig. 63: The Biophillic Pause Model

2.2 DESIGN CONCEPT 2

HOLISTIC REINSERTION

[UTOPIA] [BIO - MIMICRY]

A holistic influence is characterized by the acceptance that different parts of something, in this case the site, are closely interconnected with one another and understandable only by the reference to the whole. All focussed upon aspects surrounding and inside of the site contributes to another and an interconnecting force draws these features towards each other, contributing to the tensile strengths. A holistic environment is re-awakened and reinserted within the quarry adding to the bio-mimicryal experience forming part of the whole. The model indicates how the edges are activated and connects across the quarry, building and forming experiences through layers of interconnection.

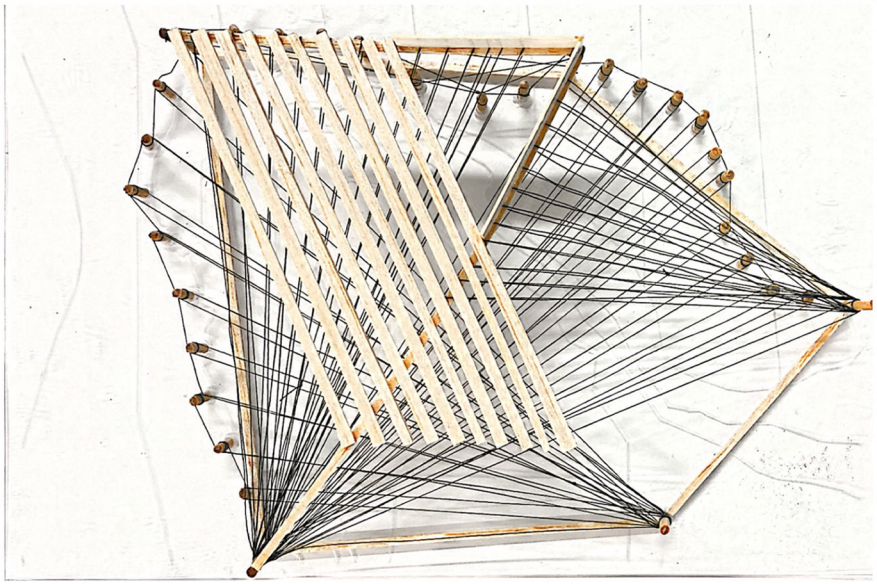


Fig. 64: Holistic Reinsertion

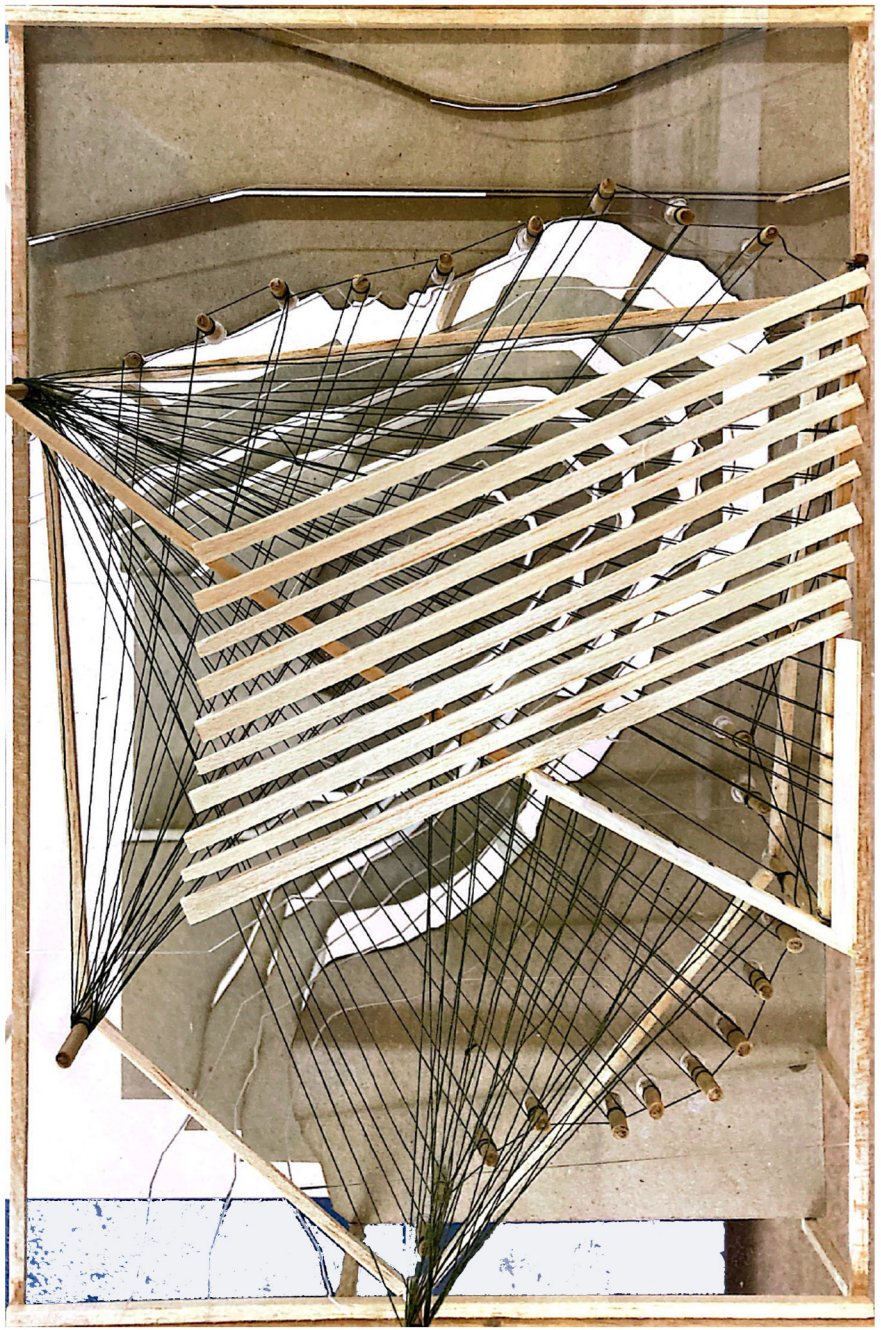
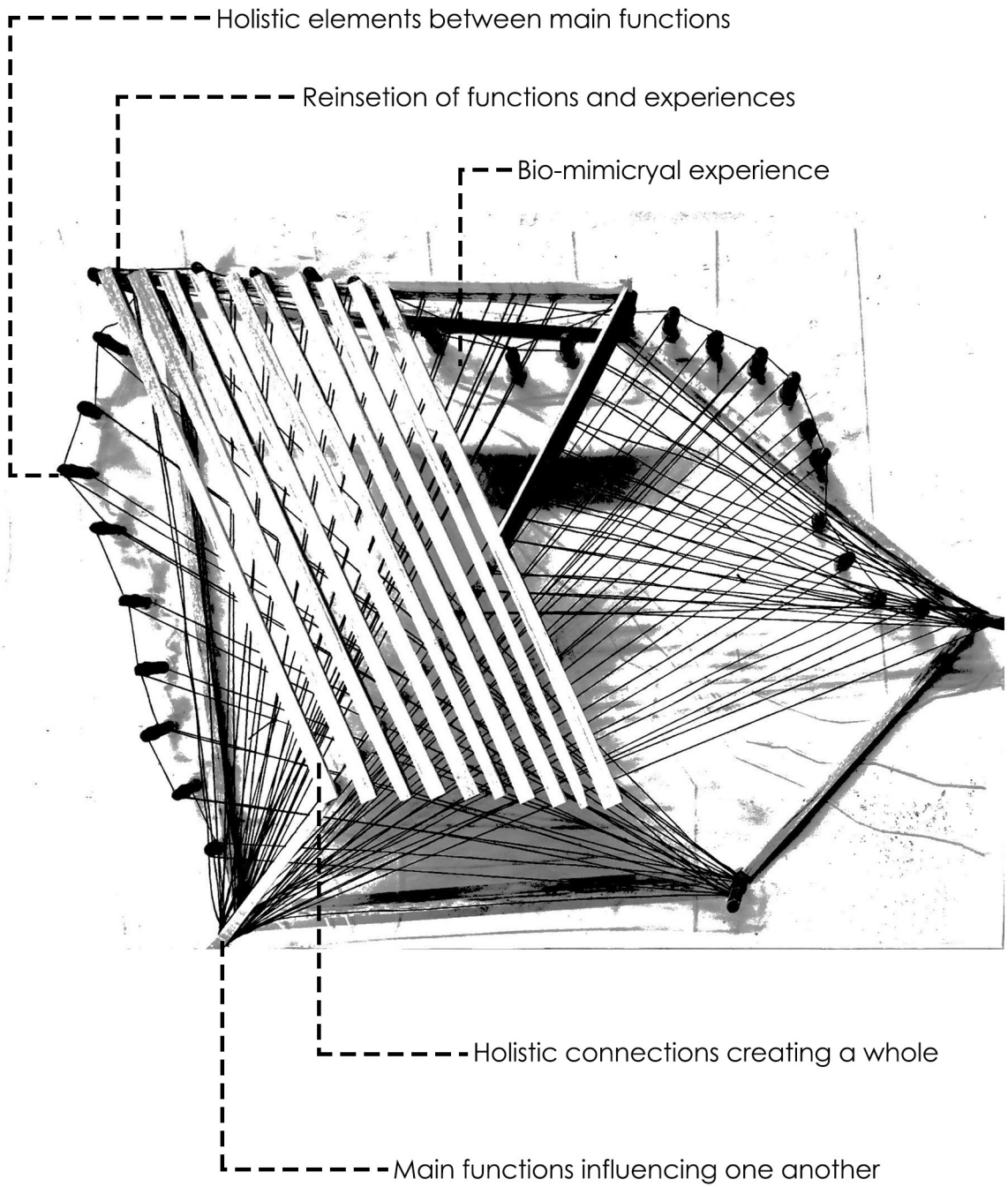


Fig. 65: Holistic Reinsertion model



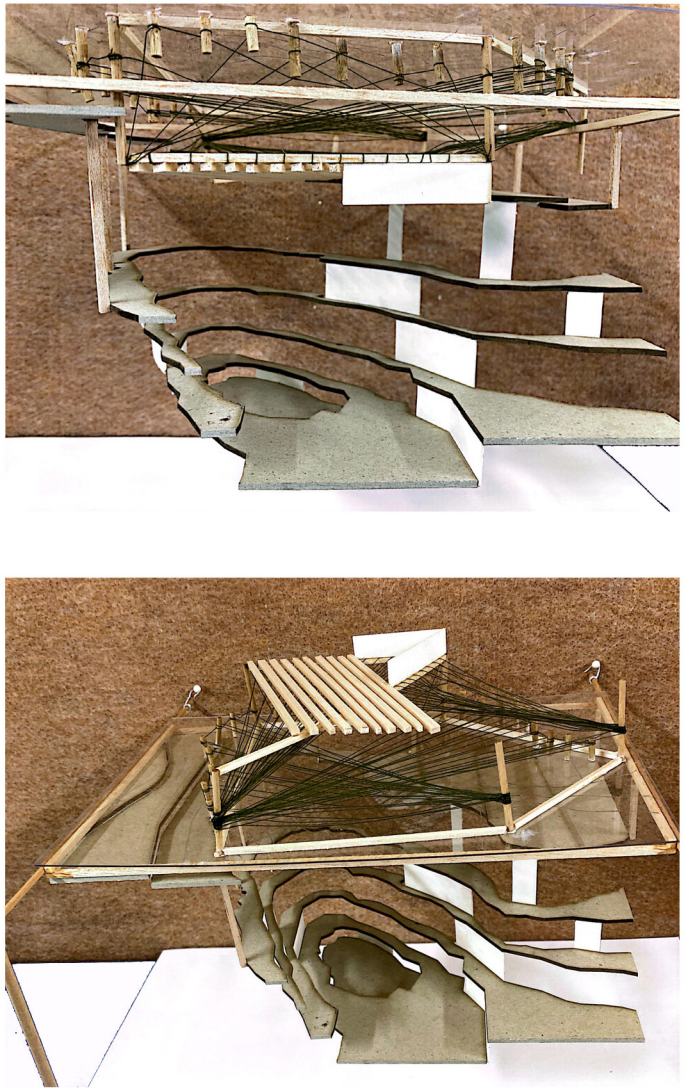


Fig. 66: Holistic Reinsertion model

2.3 DESIGN CONCEPT 3

AMELIORATION OF THE SCAR

[REGENERATE] [RESUSCITATE] [SCAB] [WOUND]

Amelioration can be seen as the act of improvement or making something better. Focussing on the conscious action of the user there is referred to how you find yourself in the space and the act of implementation. As stated the manmade scar is to be mended through the process of amelioration, giving back to the natural surroundings. The model aims to describe the way in which architectural aspects are used to 'better' the rock face and create opportunities for the dweller where there previously was none. The manmade scar is given the power of architectural formation, allowing the walkways and pavilions to be determined by manmade natural aspects.

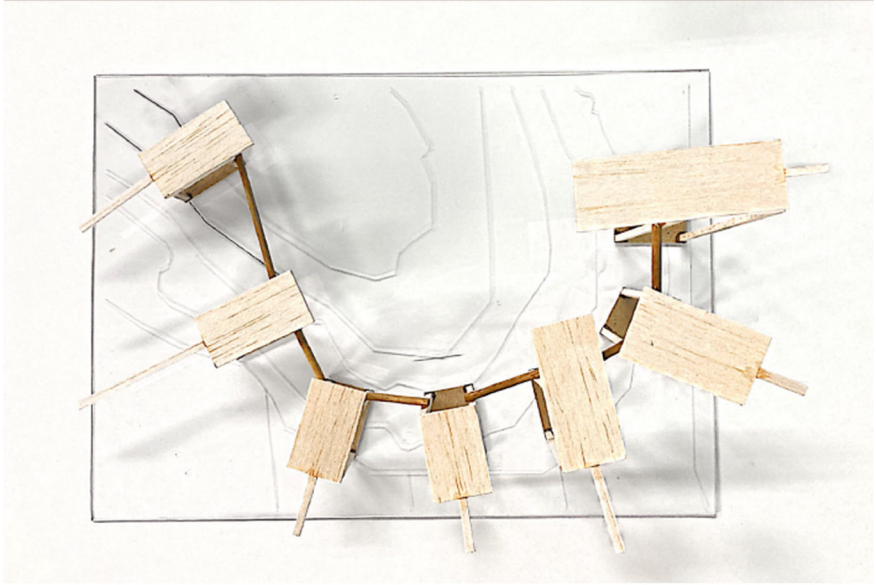
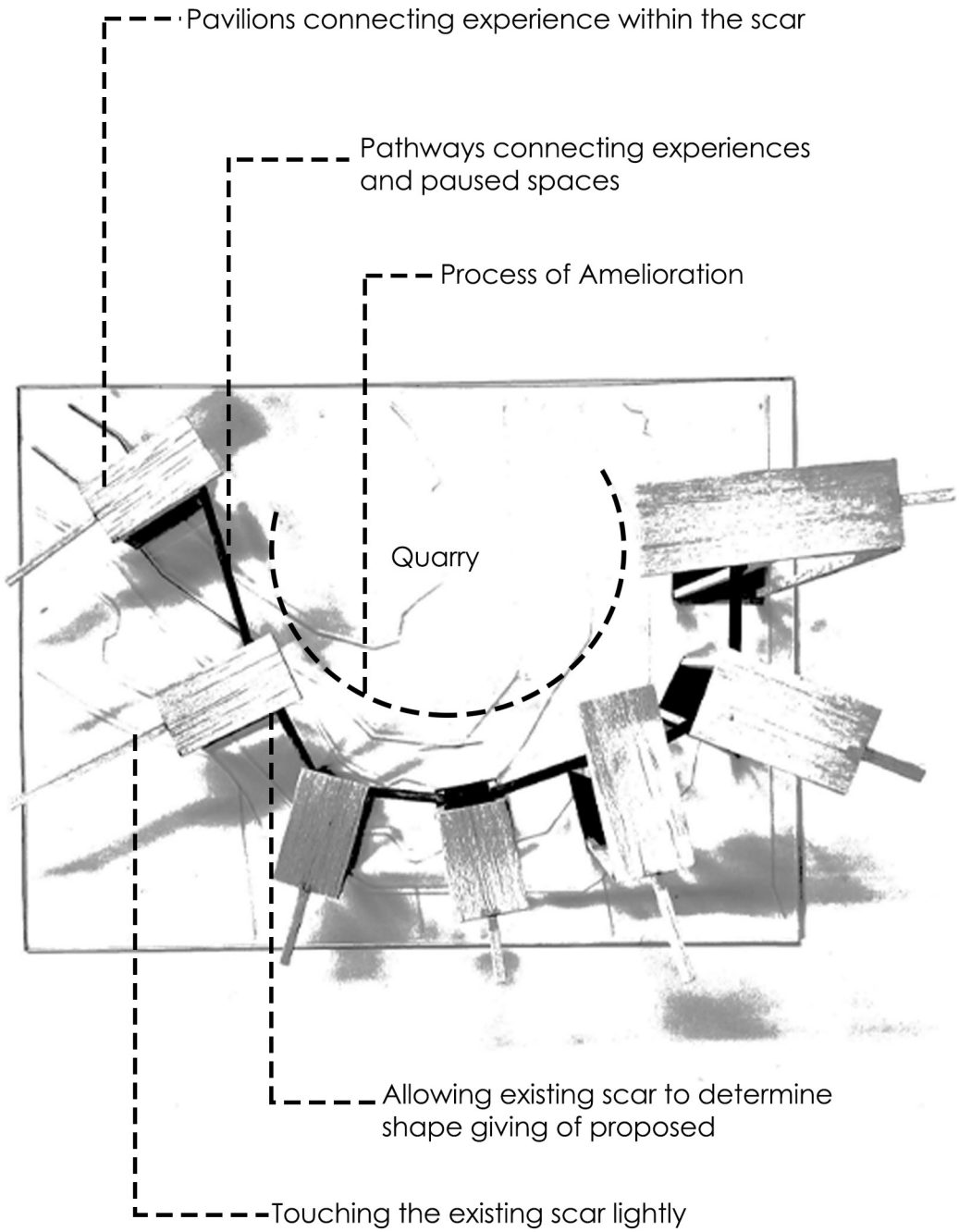
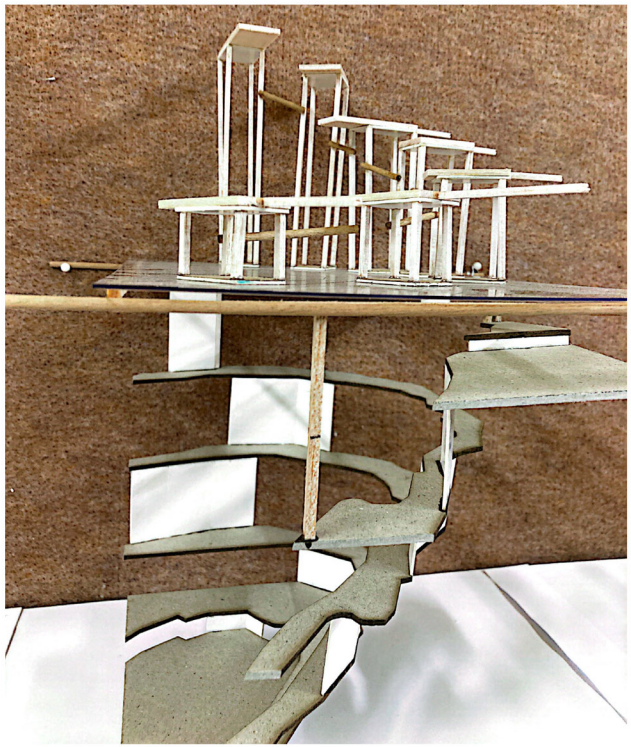


Fig 67: Amelioration of the Scar



Fig 68: Amelioration of the Scar model





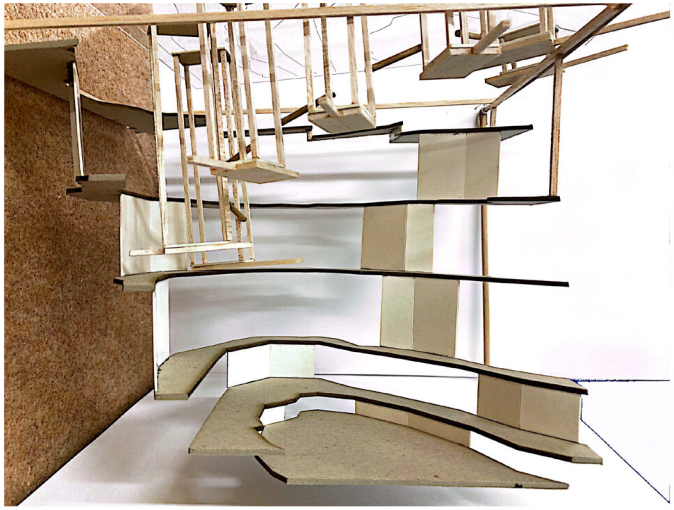


Fig. 69: Amelioration of the Scar

3. TOUCHSTONE

THE EXPLORATION OF THE SCARRED SPACE

"**The scab is a deeper level of reconstruction that fuses the new and the old**, reconcilling, coalescing then, **without compromising either one** in the name of some contexual form of unity. **The scar is a mark of pride and honour**, both for **what has been lost and what has been gained... To accept the scar is to accept existance** (Woods, 1997: online)."

- Lebbeus Woods

On the proposed site, the Blue Rock Quarry, the environment is thought to be lost to the industrial advancements of the past. The building aggregate mined has been used to construct the N2 and all surrounding roads, contributing to the surrounding environment by means of transportation. The goal of the proposed project aims to form circulating paths within the quarry walls and reactivating the scarred space, allowing for linear movement and connecting the earth to the water. The space will be revitalized and, through staying true to the concept of mining, the quarry will display forms of architectural innovation providing for an aesthetically pleasing environment.
The touchstone indicates different forms of activation contributing to the sensory experiences, while at the same time adding to the historical past of the quarry. In an alternative site such as a quarry one should approach methods of design in a different manner and focus on the way in which you want to approach the context. The design and construction methods needed to achieve these objectives are set out through different experiences and the touchstone helps to describe the aim of the design. Movement within the walls are explored and methods of liminal experience contributes to the theoretical impact that the design strives for.

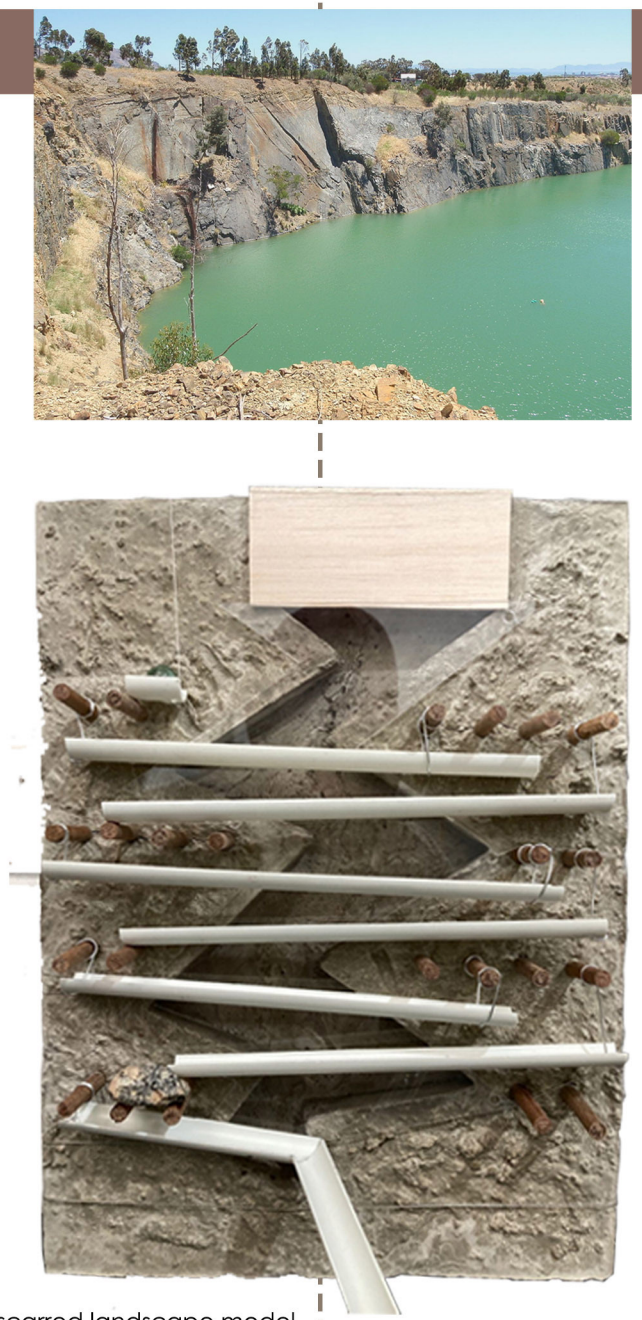


Fig. 70: The scarred landscape model

Lebbeus Woods, an American architect known for his experimental designs, used the scar metaphor for his architectural proposals.
He speciffically applied **seven principles** in the propositions for the reconstruction of Sarajevo.
- **The Scab:** Analysis of crisis
- **The Injection:** Reusing material
- **The Scar:** Relationship between old and new
- **Free Spaces:** Habitable spaces
- **Labyrinthine Wall:** Hierarchical order
- **High Houses:** Unity
- **The Aestetics:** The answer
(Bila, 2015: 12 - 17)
These principals are looked at in the construction of the touchstone and used at various other moments throughout the document to help organize the intended functions.
The connections made by the structure over the scar indicates the healing or mending process of turning the scar into a scab, also motivating the functions of alternative healing through nature and sport. These connections help motivate the goal of involvement by the user and the active surroundings that should be made use of. The ball rolling through the connected paths indicates the experience of each linear level until reaching the water, also indicating the routes taken between functions within the rock faces. The experience is one of mental and physical healing and the scar is used as a façade touching the earth lightly in order to tie activity and aesthetics together. Sports activity taking place within the quarry can be interpreted by the ball rolling through the overlooking scar creating a sensory space of embodied experience and also giving back to the environment while staying true to the site and the intended functions. By focusing on the rock walls the quarry could one day be seen as an area type setup which looks down on sporting events taking place below. The touchstone helps represent the industrial influence while focusing on contributions made through architecture in order to help heal the scarred landscape.

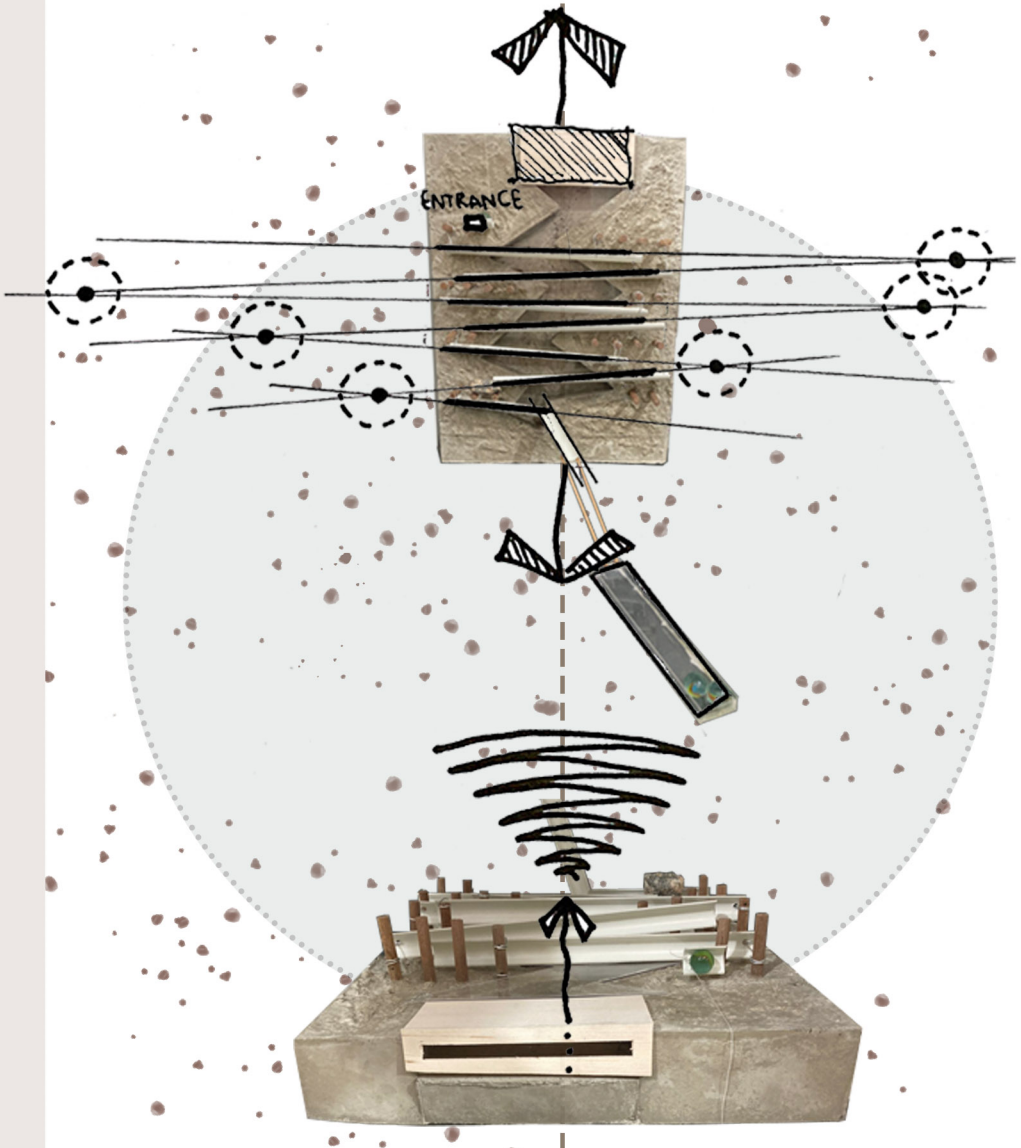


Fig. 71: Activation on the scar

4. TOUCHSTONE IN CONTEXT

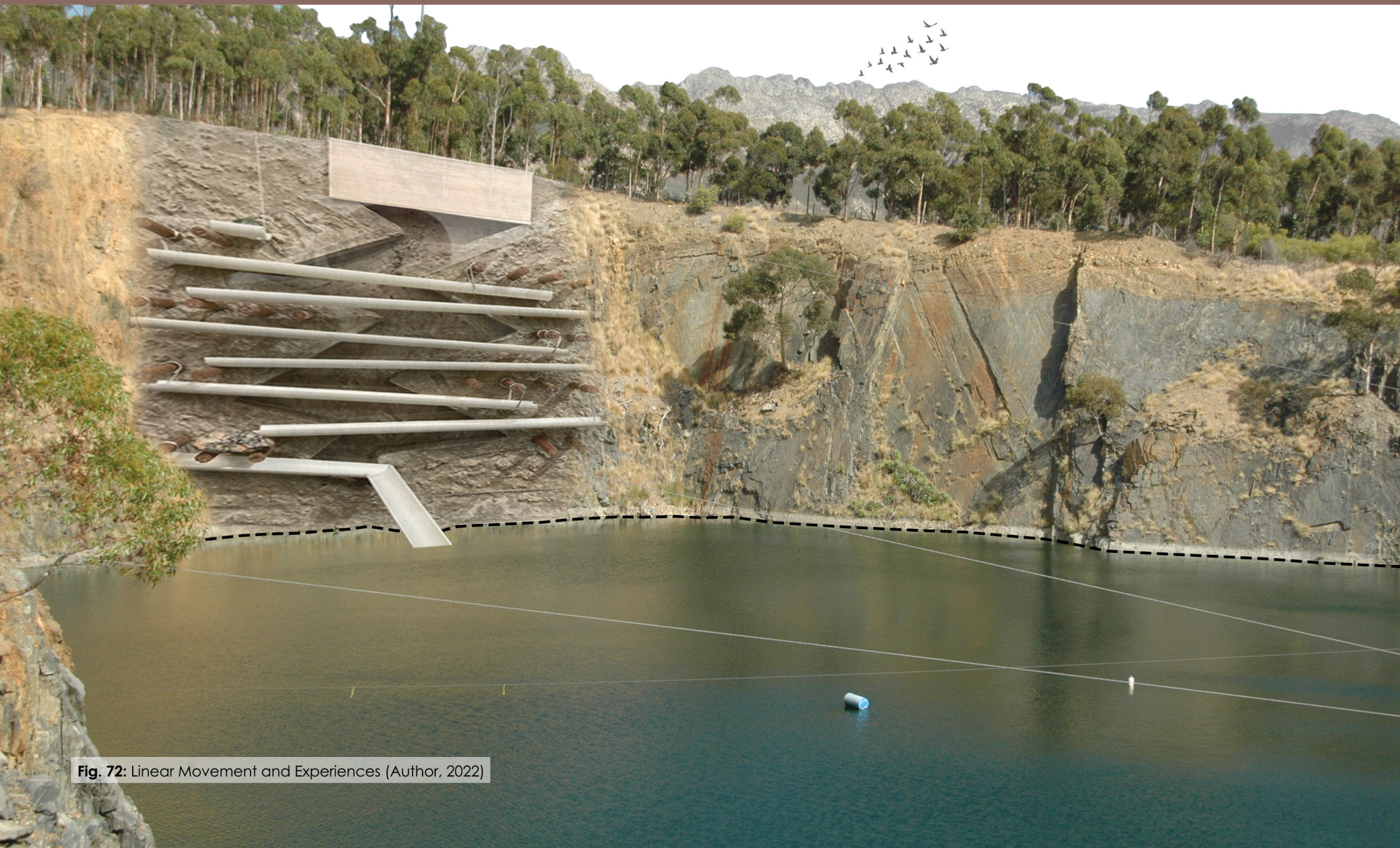


Fig. 72: Linear Movement and Experiences (Author, 2022)

CHAPTER 4

DESN + CONS PRECEDENTS

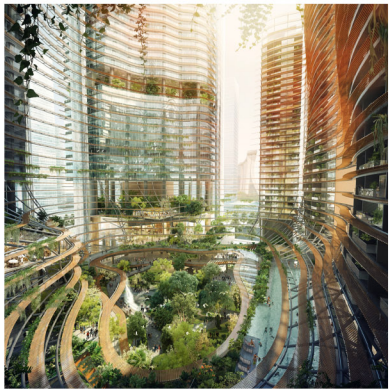
1.1 DESIGN PRECEDENT 1

GREEN HEART I MARINA ONE

Location: Singapore
Architects: Ingenhoven Architects
Year: 2017



Fig. 73: Green Heart building (HG Esch, 2017: online)



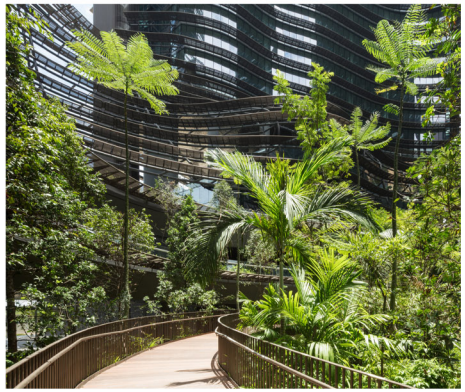


Fig. 74: Interactive spaces (HG Esch, 2017: online)

The Green Heart is a mixed use apartment building extending over 400 000 square meters and with its three dimensional oasis the building reflects the diversity of its surroundings. One of the core concepts of the Green Heart is the central space (figure 73) serving as the heart of the building and bringing the four high rise buildings together. The organic shape of the building and its circulation routes contributes to the increase of the biodiversity and microclimate of the surroundings. Social interaction is encouraged though various organically shaped walkways that extends over the building edges into the green heart of the building (HG Esch, 2017: online).

Principles Identified:
- Walkway Circulation
- Activated Edges
- Functional Access

The relevance of this project as a design precedent is seen when focusing upon these design principals. In The quarry the elevated walkways against the rock faces serve as the most important design aspect of the project as well as the main way of circulation. The organically shaped walkways seen in the Green Heart will be incorporated into the proposed project helping to activate the quarry edges and form the main way of access between functions. These walkways fall upon each other and where they cross over one another aesthetically pleasing moments are created depending on the level. These architectural aspects of layers being placed on each other in order to create functionally connecting moments within the quarry will be reinterpreted into the proposed project.



Fig. 75: Elevated walkway (HG Esch, 2017: online)

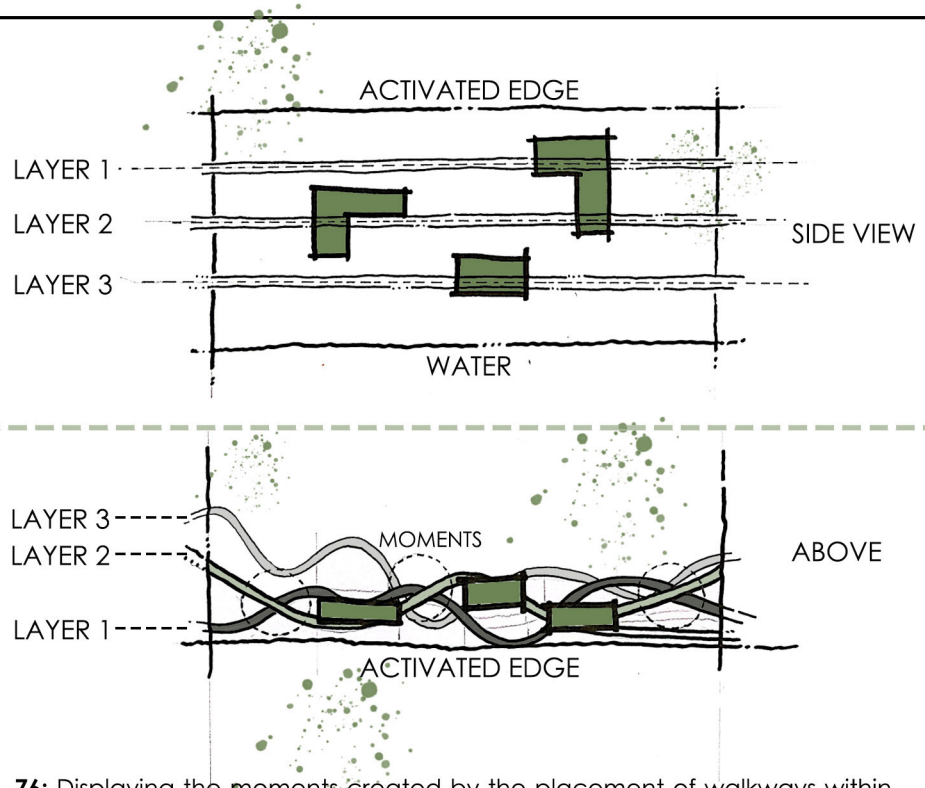


Fig. 76: Displaying the moments created by the placement of walkways within the different layers. The 'man made' natural layout of the quarry walls assist in the form giving of the different layers.

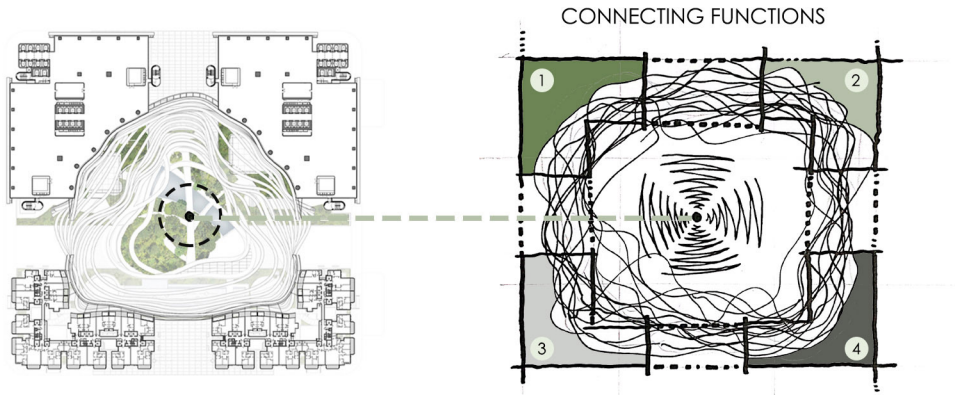


Fig. 77: Displaying the connection of functions through paths taken, interlinking with one another. The main walkways rotate around the main focus point yet apply an aestetically pleasing experience for the dweller

1.2 DESIGN PRECEDENT 2

HENDERSON WAVE BRIDGE

Location: Singapore
Architects: RSP Architects Planners & Engineers Ltd
Year: 2008



Fig. 78: Paused Spaces (RSP Architects, 2008: onine)



Fig. 79: Aerial view of bridge (RSP Architects, 2008: onine)

Through the constant change in cross sections and planes the Henderson Wave bridge is made up from complex mathematical geometries. The bridge offers the user the aesthetical experience of connection between allocated areas, also influenced by the surrounding factors on the ground. The 284m structure offers lookout areas as well as pause spaces where one can sit or even lie down. The main goal is to motivate interaction between users while fitting in with the surrounding landscape. A strong ecological message is presented through the design that sees the bridge as a landmark and a destination by itself (RSP Architects, 2008: onine).

Principles Identified:

- Pause Moments
- Connection of spaces
- Functional Access
- Interactive motivation

The relevance of the Wave bridge to the proposed project involves the design principals focusing on the connection of pause spaces where the user is able to relate to their surroundings and have a clear indication of the focused upon spaces on site. The organically emphasized spaces created through the formation of the bridge itself will contribute to the sensory experience of the quarry edges as well as providing relaxing spaces against the rock faces. A main focus point is also to motivate the interaction of users through architecture, combining private abd public functions in and around the quarry. The formation of the bridge will also motivate the theoretical impact on the site and the user, which will be discussed further throughout the book.

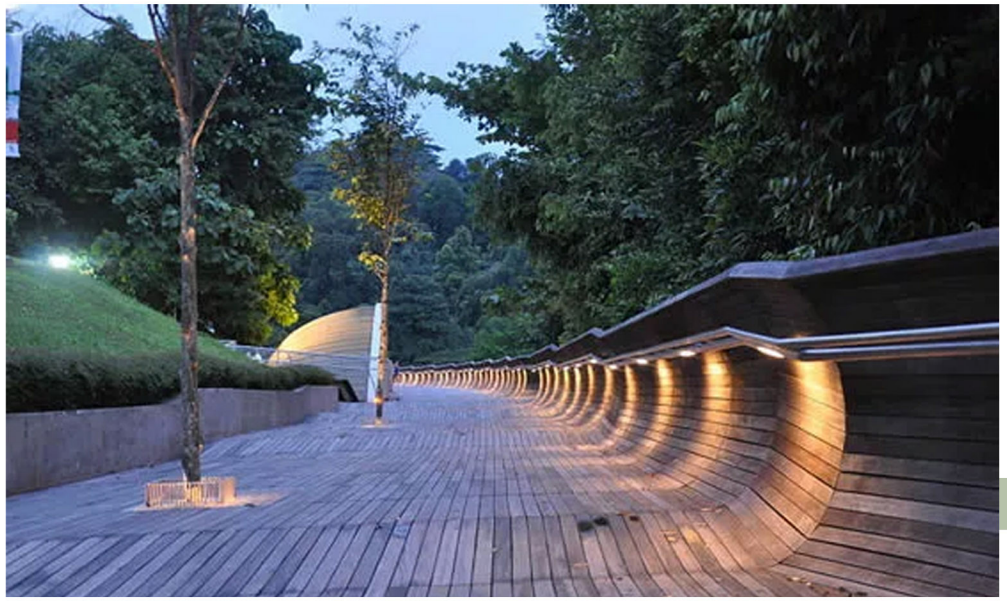


Fig. 80: Walkway (RSP Architects, 2008: onine)

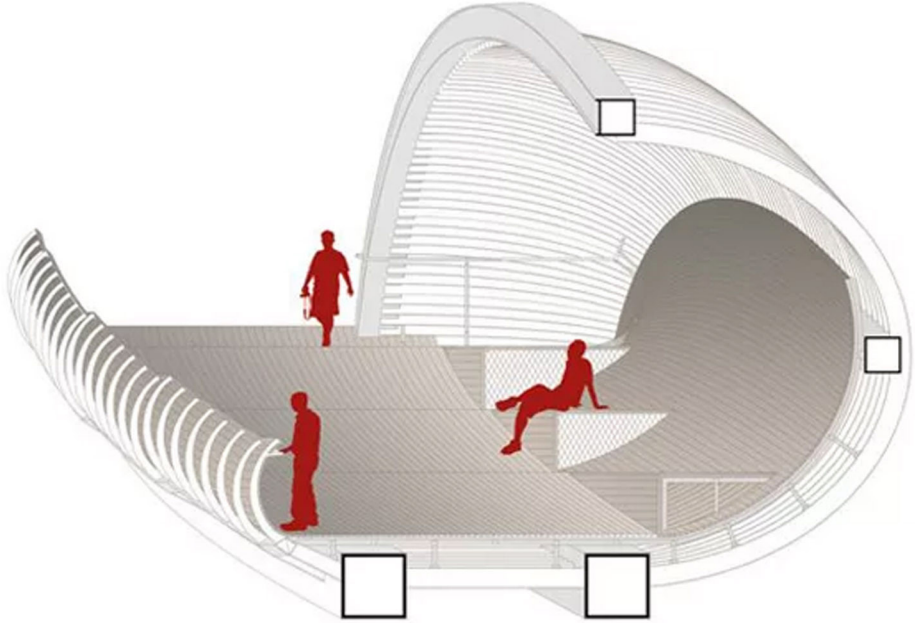


Fig. 82: Bridge section (RSP Architects, 2008: onine)

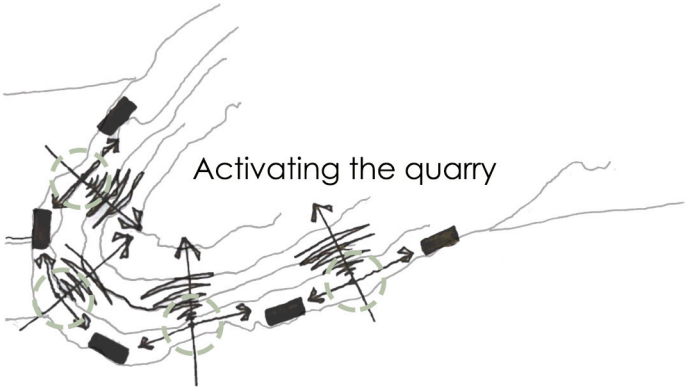


Fig. 83: The characteristics displayed in the Henderson Wave bridge as well as the design principals are used to activate the quarry edges. Between main functions paused spaces will allow the user to take in the natural surroundings and see activity taking place inside of the quarry.

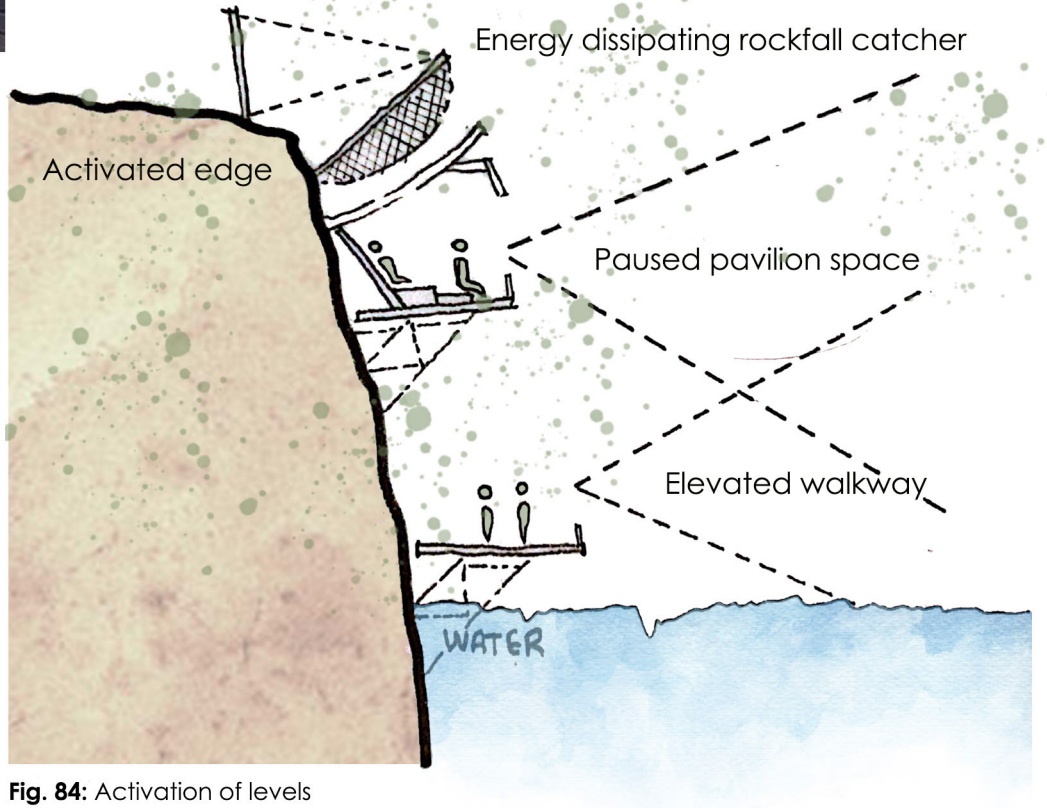


Fig. 84: Activation of levels

1.3 DESIGN PRECEDENT 3

ALLMANNAJUVET ZINC MINE MUSEUM

Location: Norway
Architects: Peter Zumthor
Year: 2016



Fig. 85: Zinc Mine Museum (Zumthor, 2016: online)



Fig. 86: Zinc Mine Museum (Zumthor, 2016: online)

The abandoned zinc mines in Sauda, Norway have inspired Peter Zumthor to create these National Art installations along tourist routes. Through the rich cultural history of the surrounding landscape Zumthor was inspired to create these structures, giving back to the surroundings and the old mining history. He focuses on the simplicity of the past as well as the drudgery and everyday lives of the workers, living in the landscape. The structures were per-fabricated and the exterior walls consists of 18mm plywood sheets, coated with a German acrylic material called PMMA (Zumthor, 2016: online).

Principles Identified:

- Embodiment
- Motivated interaction
- Functional Access
- Security

Similar structures placed along the quarry walls, welcoming visitors to walk inside and capture the surrounding landscape which every box focuses upon at different angles. These boxes will serve as a type of hallway point between main functions, providing a resting space and aesthetically pleasing architectural aspects along the elevated walkways. The structures will be anchored into the rock walls and emphasize the historical factors of the quarry, also helping to connect the three levels of walkways, providing access to the user from various areas to connect to the water below. The boxes provide a sense of safety and could be used in the case of unpleasant weather, providing shelter and shade. The size of the boxes fits to the goal of not disturbing the existing and working lightly with the rock walls.



Fig. 87: Zinc Mine Museum (Zumthor, 2016: Archdaily)



Fig. 88: Zinc Mine Museum (Zumthor, 2016: Archdaily)

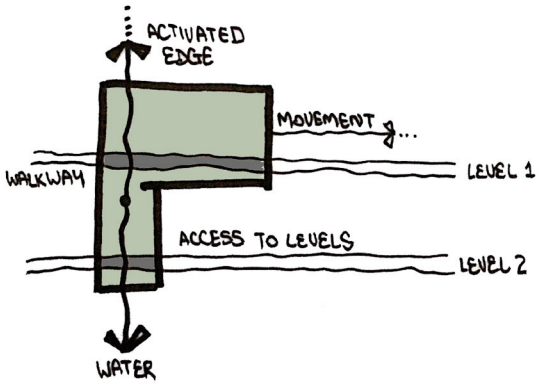


Fig. 89: Activated edges

Figure x: The structured boxes serve as access points between different leveled walkways while contributing to the aesthetically activated edges. The boxes is seen as the connection between water and the quarry edge displaying the vertical connections and movement against the rock wall.



Fig. 90: Zinc Mine Museum (Zumthor, 2016: Archdaily)

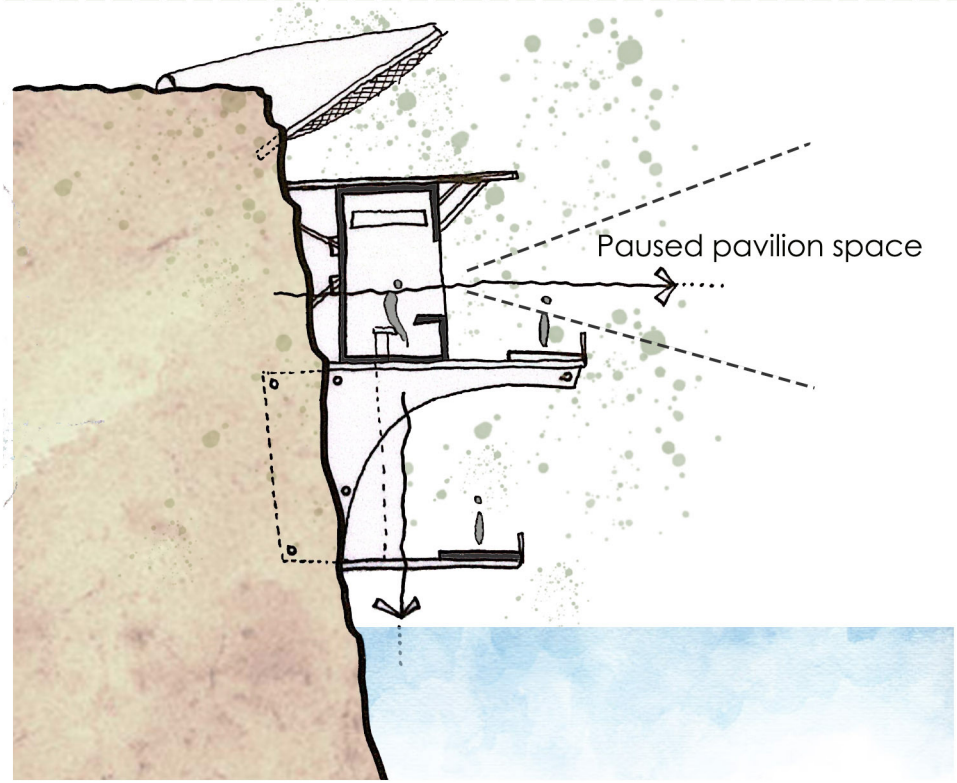


Fig. 91: Zinc Mine Museum (Zumthor, 2016: Archdaily)

2.1 CONSTRUCTION PRECEDENT 1

DUTCH FLOATING BRIDGE

Location: Netherlands
Architects: RO&AD Architecten
Year: 2014



Fig 92: Dutch floating bridge (O&AD, 2014: online)

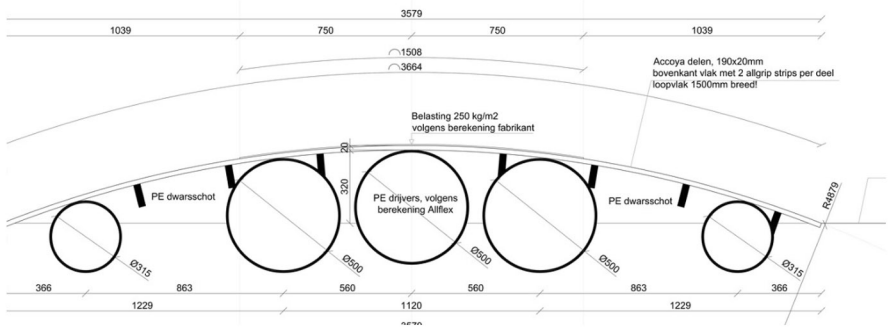


Fig 93: Construction detailing (O&AD, 2014: online)

Connecting to the Ravelijn op den Zoom fortress the Dutch floating bridge serves as a way of access to the island as well as contributing in the case of an emergency. The 80m bridge sits upon the water and is dedicated to the historical and usual route taken by boat to reach the island. The bridge is curved in a manner that fits the aesthetical goal as well as covering the polyethylene pipes filled with air (refer to figure 93). Complementing the history of the fortress the bridge is also treated to reduce the chance of shrinkage and swelling by 70% (O&AD, 2014: online).

Principles Identified:
- Water walkways
- Journey of experience
- Functional Access
- Connection

The construction methods and architectural design of the bridge is relevant to the proposed development inside of the Blue Rock quarry on the water. Access on water is of great importance for the user to be able to reach functions such as the sports institute, alternative healing space and all sports facilities. The bridges are low maintenance and provides the dweller with an experience of walking on water, contributing to the theoretical stances of the project. Methods of construction such as the manner in which the bridge connects to the quarries rock face and the weight distribution when water levels rise and fall are looked at. As one can see in figure x the bridge moves with the water level and interacts with the surroundings, allowing the dweller to be able to feel the movement of activity taking place within the quarry.

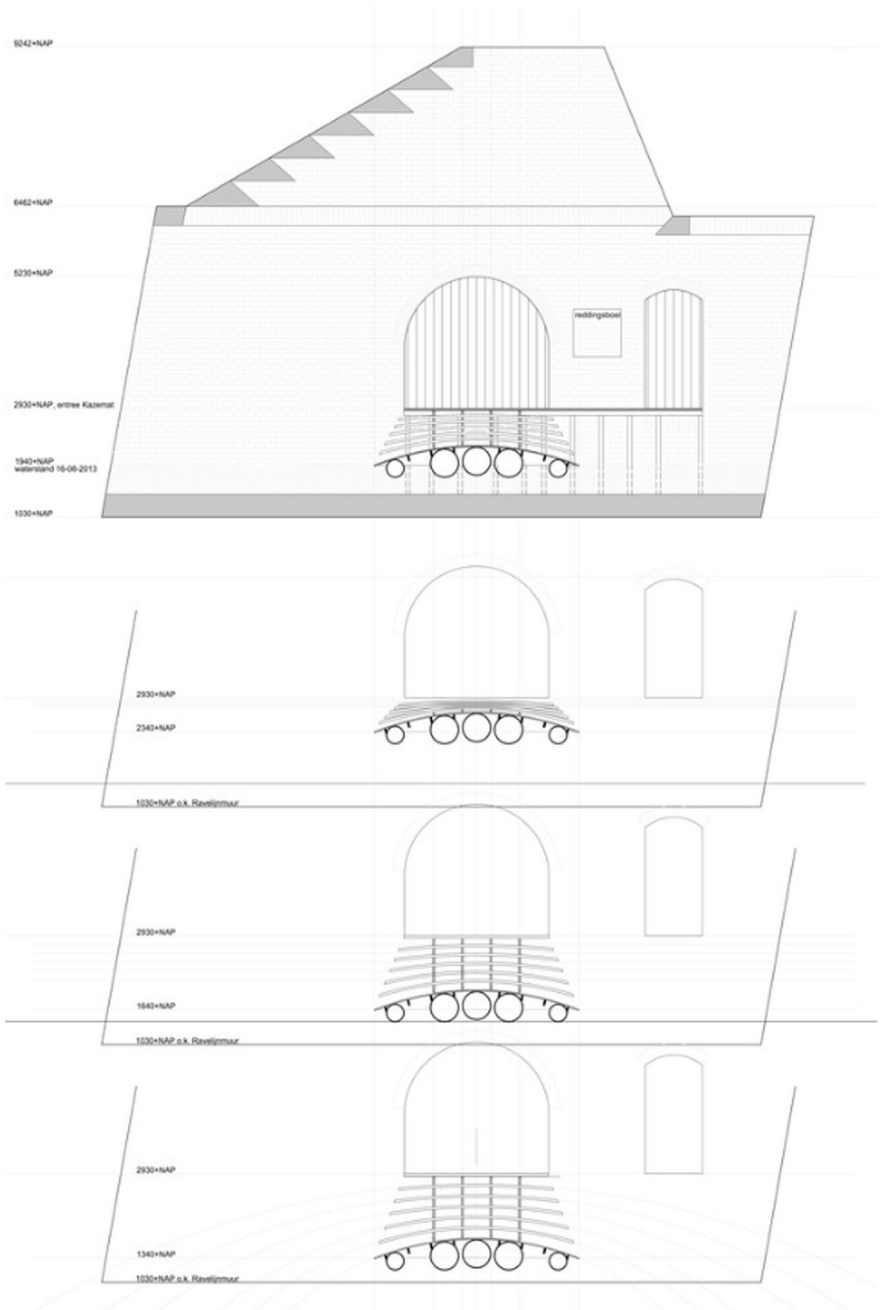


Fig. 94: Changing water levels (O&AD, 2014: online)



Fig. 95: Stairs (O&AD, 2014: online)

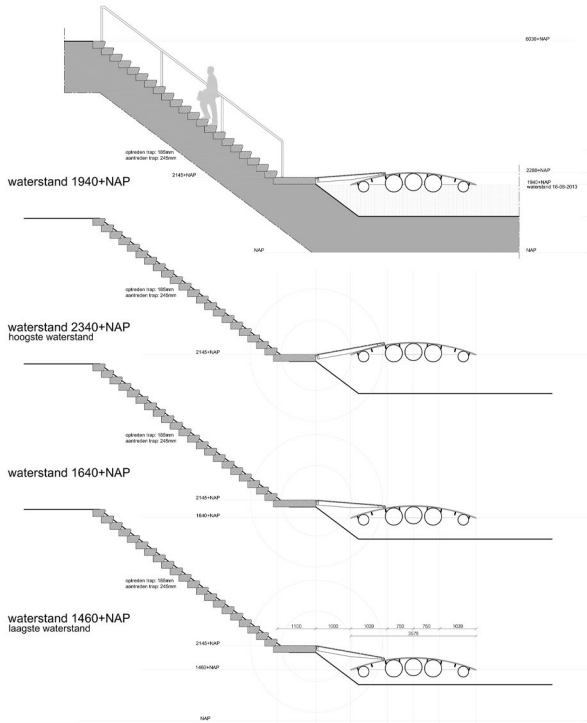


Fig. 96: Changing levels (O&AD, 2014: online)



Fig. 97: Displaying the manner in which the bridge rises and lowers with the water level allowing for the stability of the bridge to be kept and the user to safely cross the water (O&AD, 2014: online) .

2.2 CONSTRUCTION PRECEDENT 2

HOUSE OF BALLS

Location: India
Architects: Matharoo Associates
Year: 2010

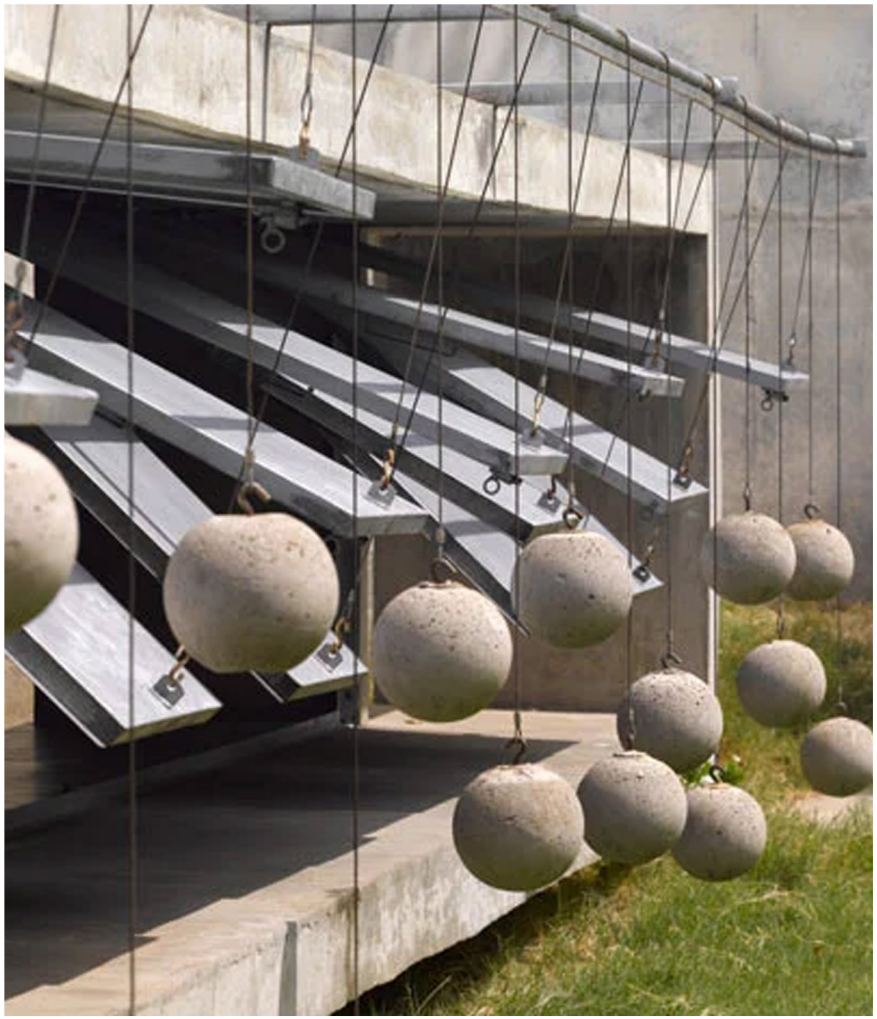


Fig. 98: Tensile forces (Mills, 2010: online)

Built around a giant fish tank the House of Balls is seen as a space of fantasy where the user can feed into. The narrow main room has counter weight shutters on both sides, opening up towards the garden space and over the fish tanks. On the side of the fish tanks the weights gently touch the water without disturbance when the shutter is open. This could be seen as a method of telling the user that the water keeps the balance between what needs to be seen and what remains a mystery. The spherical counterweights help open and close the façade in a random vertical movement suppling the dweller with the feel of excitement and the journey of tectonical experience (Mills, 2010: online).

Principles Identified:

- Tensile structures
- Counter weight
- Accessibility
- Tectonics

This constructional precedent is relevant to my design in the manner of counterweights and tensile structures helping to support the proposed structures. Existing features on site is the cable spun across the quarry, this will be brought to life in the design. Areas such as the main pavilion will use these architectural features to perform tectonically movements throughout the design to display an aesthetically pleasing display of natural lighting, also serving as tensile structures to support buildings on the waters below. The construction detail in this precedent will become the main structural force behind the movable objects against the rock faces. The tensile forces will also be required in the connection between the activated quarry edge and the water down below.



Fig. 99: Connection (Mills, 2010: online)



Fig. 100: Closed windows (Mills, 2010: online)

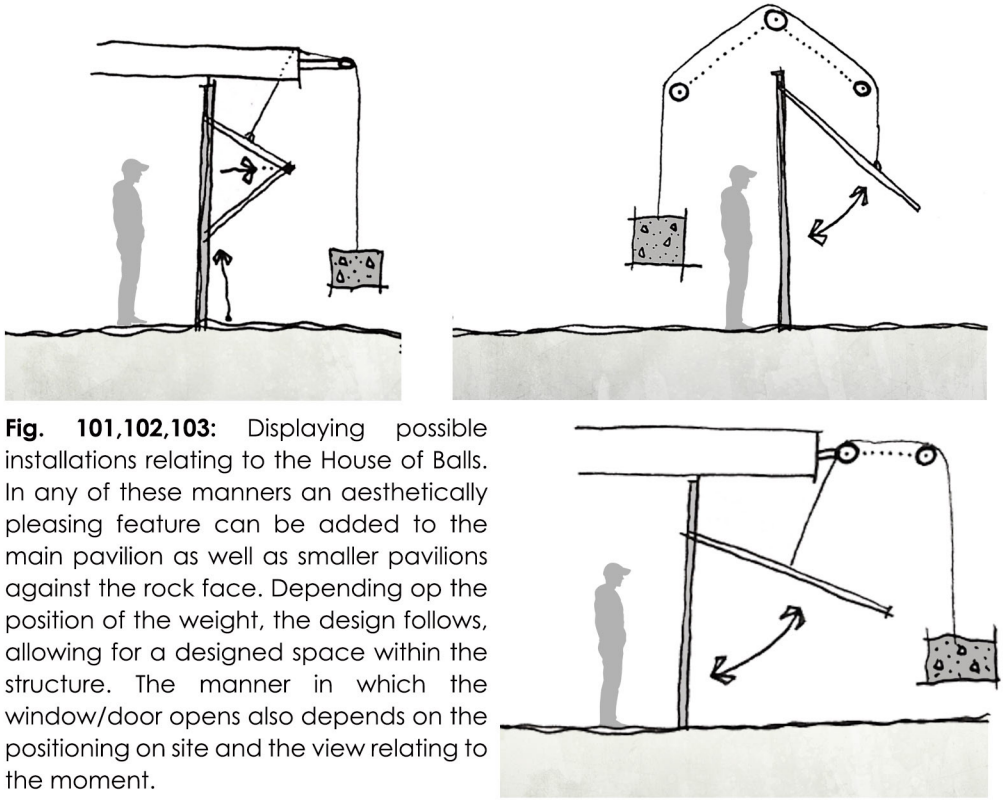


Fig. 101,102,103: Displaying possible installations relating to the House of Balls. In any of these manners an aesthetically pleasing feature can be added to the main pavilion as well as smaller pavilions against the rock face. Depending op the position of the weight, the design follows, allowing for a designed space within the structure. The manner in which the window/door opens also depends on the positioning on site and the view relating to the moment.





Fig. 104: Perspectives (Mills, 2010: online)



Fig. 105: Existing on site feature motivating precedents (Author, 2022)

CHAPTER 5

DESIGN DEVELOPMENT

INTRODUCTION

The design development of the Blue Rock Extreme Sports Institute focusses upon the development of on-site functions and spatial developments achieved through the investigation of different conceptual approaches (chapter 3) and different design and construction precedents (chapter 4).

The design development consists of layered ideas expressed through influential features on site to help express the stated design problem and find balance between the manmade and natural environment. The contextual, theoretical and historical analysis of the proposed site allows the design to frame the surrounding environment and allow for the community to form part of the expression of space. The scarred landscape which was once thought to be lost to the industry will become a re-imagined typology of the past and the present. The industrial style architecture has proven to be widely recognised and implemented, especially at locations with an industrial past. These aspects will provide an aesthetically pleasing experience for the fast growing tourist community in the Western Cape as well as the growing extreme sports community.

The design development aims to investigate forms, spaces and interaction between users and functions. There will be looked at different opportunities and intentions as well as the development of phase 1 and phase 2 of the project.

1. DIVIDING OF SITE

PHASE 1 AND 2

In the early stages of development of the entire quarry the site will be divided into two phases. These phases will contribute to one another in an interactive as well as architectural manner, yet has restrictions making them have certain targets in the case of visitors and users. The ultimate goal will still be for the entire quarry to operate as one in the future.

PHASE 1

Spaces allocated inside this phase will be mostly focussed on extreme sport and the professional sportsperson. This phase will include the proposed design and all constructional factors for the present. This area consists of high rock faces, deep water, levelled surfaces and access to the water. These are all the factors needed for the intended extreme sports taking place and focussed upon as well as elevated walkways for the everyday user that will be integrated.

PHASE 2

Seen as a more family friendly environment focussing more on the everyday user and allow for money to be brought into the quarry in the winter time when water sports are less often practiced.

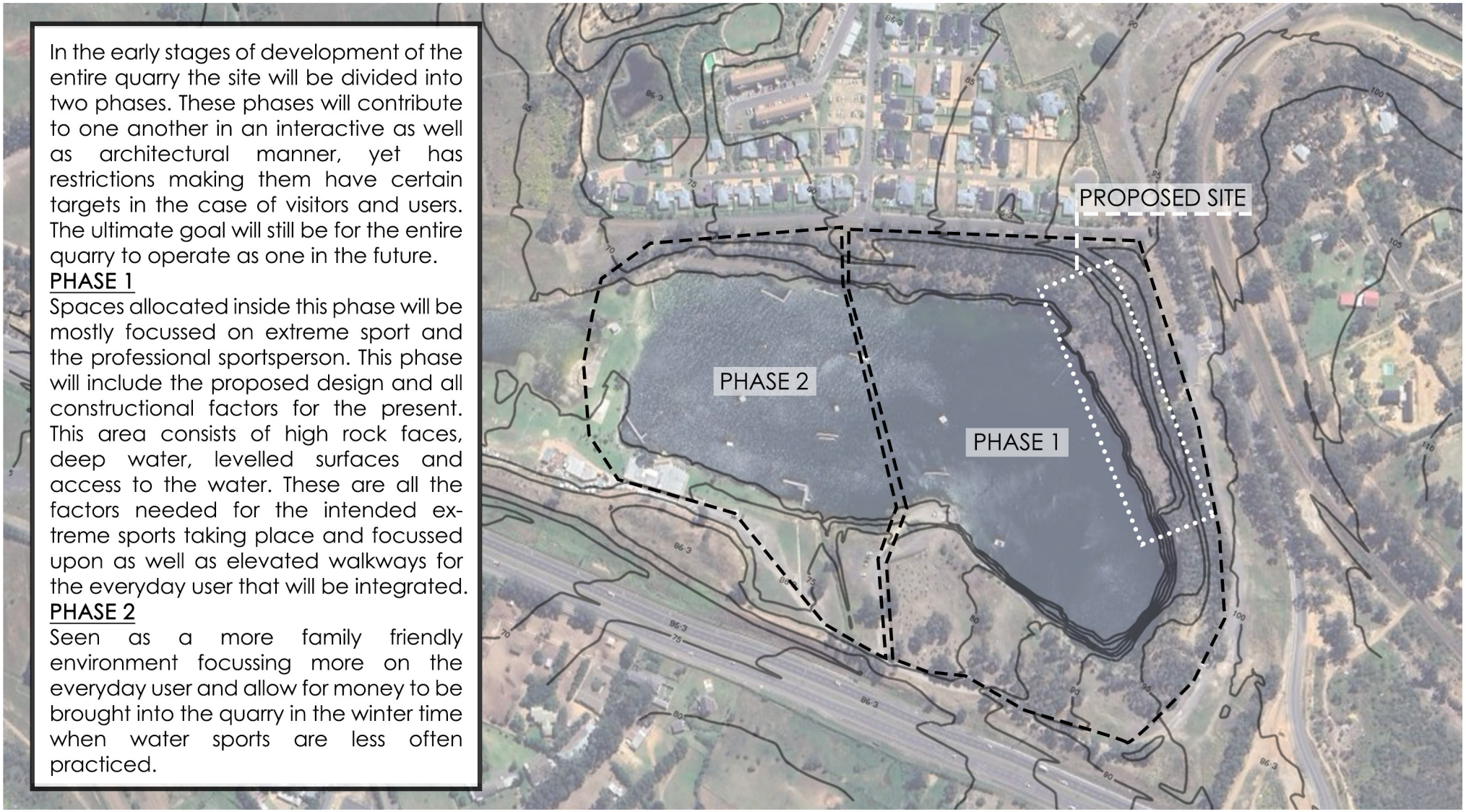


Fig. 106: Aerial view, Edited by Author (Google maps, 2022: online)

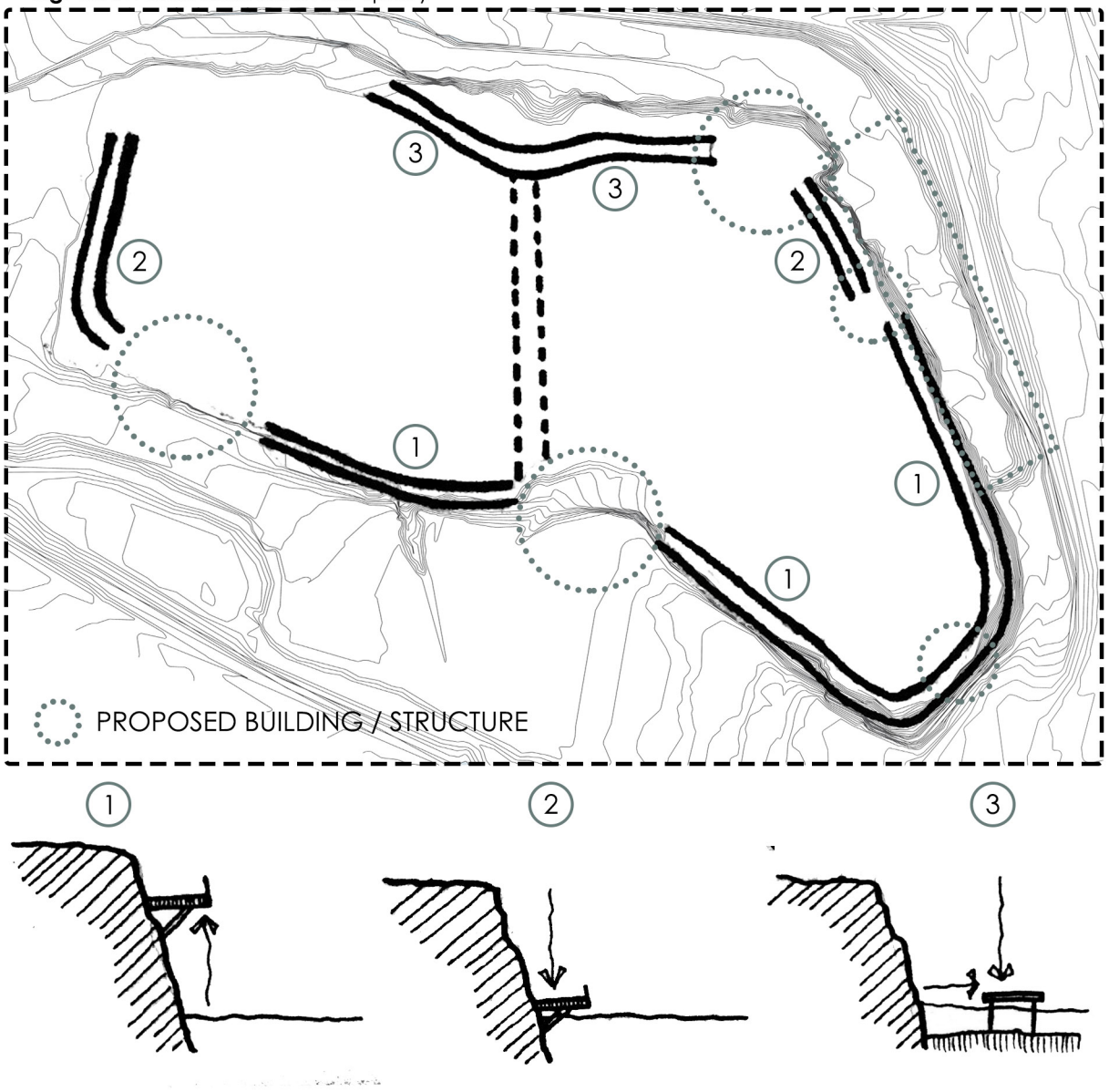
2. DESIGN INTENTION

INTENTION 1

ESTABLISHMENT OF A PROMENADE WITHIN THE BLUE ROCK QUARRY TO CELEBRATE THE SCAR

The current state of the proposed site 'lost' to the industry can be improved through the insertion of sensory experiences of space within the scarred environment. These spaces would strive to create new memories as well as allowing for meaningful reflections of past actions. The spatial diversities that is presented become beneficial to the formation of multiple experiences and interpretations when visiting the Blue Rock Quarry, while also re-establishing the connection of place. There is an existing connection between the industrial past of the site and the existing excavation. The site still displays networks of routes taken and excavations made in order to transport rock aggregate and machinery from the quarry. This connection will thus be re-established and re-imagined in order for the public to experience and understand the site and its past. Promenade-like walkways are proposed against the rock walls of the scarred landscape that help to establish a physical connection between the industrial heritage and the proposed project. The elevated walkways extend around the quarry and has various routes and access points with similar reinforcement as that of underground tunnels of industrial access routes. The promenade will allow the public to experience the industrial scar from all angles and form a connection to what was and what is.

Fig. 107: Promenade within the quarry



INTENTION 2

ESTABLISHING A RELATIONSHIP BETWEEN THE SCARRED LANDSCAPE AND MODERN INDUSTRIAL ARCHITECTURE

The scarred environment that has been kept exactly the same since 2000 when all excavation processes stopped has since been forgotten, yet the industrial heritage of the site still remains the same and needs to be re-awaken. The proposed architecture of the site will aim to establish a relationship between the scarred landscape, influenced by the industry, and the modern industrial style architecture. Many years apart there will always be a connotation towards the actions of the past and that will not simply be thrown away. The site has the potential and location to establish a modern form of architecture, yet still be able to take the visitor back in time. The spaces created will aim to establish a new relation with the surrounding landscape and the community through interaction with sensory experiences and mental and physical healing methods. The modern architecture proposed for the site will gradually slope out of the 'man-made' contours, forming part of the landscape instead of creating a boundary. The architecture will read as part of the quarry and display the potential that the scarred environment provides. The industrial typology will remain, but will be re-invented into an aesthetically pleasing space that will allow the visitor to become more interested in a space once thought to be ruined by the industry. This will help establish a relationship between the scarred landscape and modern industrial architecture.

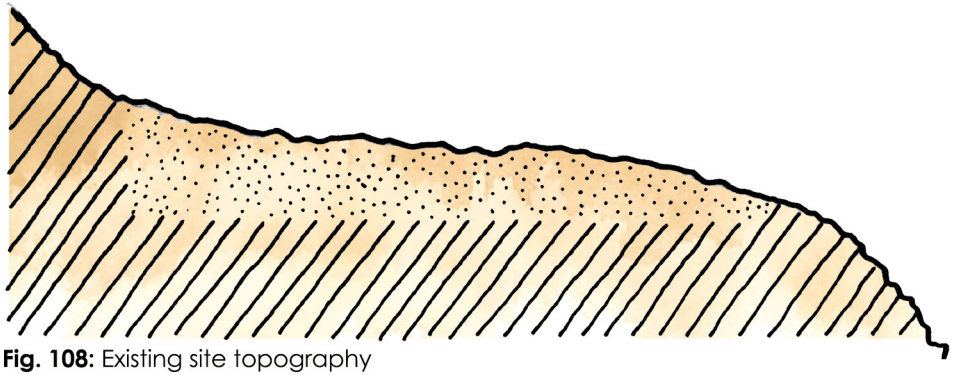


Fig. 108: Existing site topography

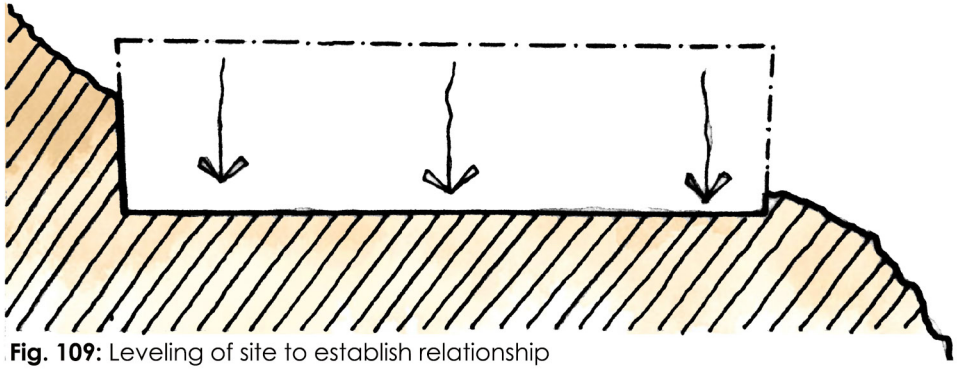


Fig. 109: Leveling of site to establish relationship

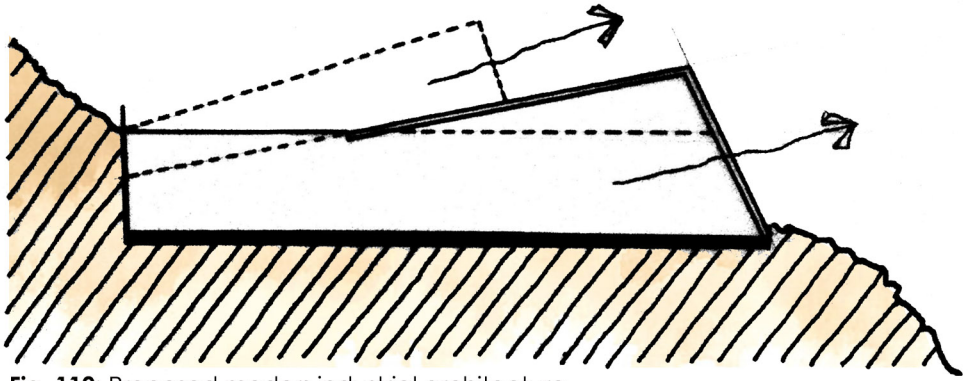


Fig. 110: Proposed moders industrial architecture

3. DESIGN AIM

ARCHITECTURAL STYLE

By understanding the site and understanding the industrial past that has given us the Blue Rock Quarry it is only fitted that the architectural style should be based upon a contemporary industrial design while still being influenced by the style of the Western Cape. In the past industrial type design was created simply to maximise efficiency and functionality. Today it is reimagined into an aesthetically pleasing design which is mostly used to relive the past in a manner combined with modern contemporary style architecture.
The aim of the proposed project is to give back to the site by making the user realize that not all is lost to the industry and a quarry cannot always be seen as wasted space. The design will mainly focus on steel construction while making use of the surrounding resources, shale rock, as a building aggregate as well as cladding. The building shall serve its purpose of being aesthetically pleasing while at the same time prioritising sustainability. Existing tensile factors on site should encourage the use of cantilevering walkways and bridges and connecting pathways embodying the typology of mining tracks laid out to enable movement and transportation.

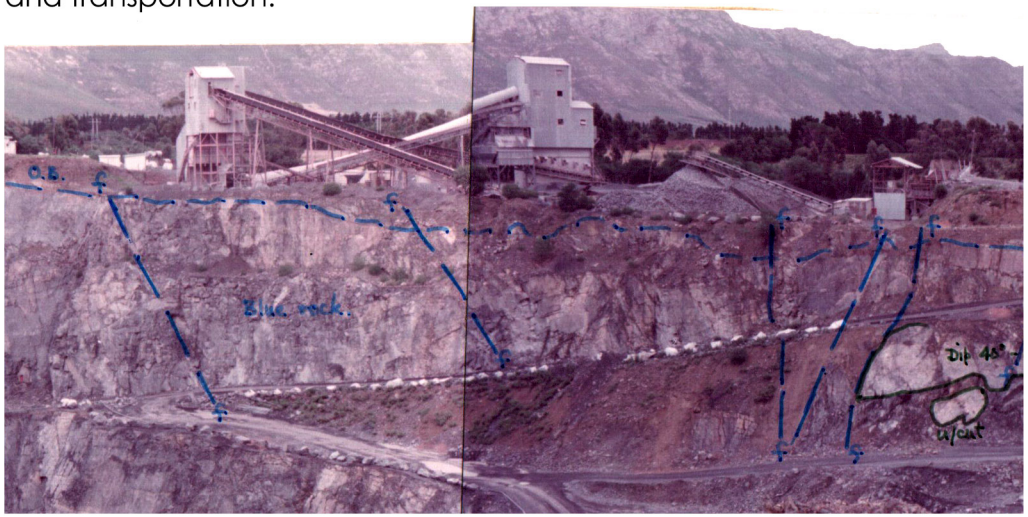
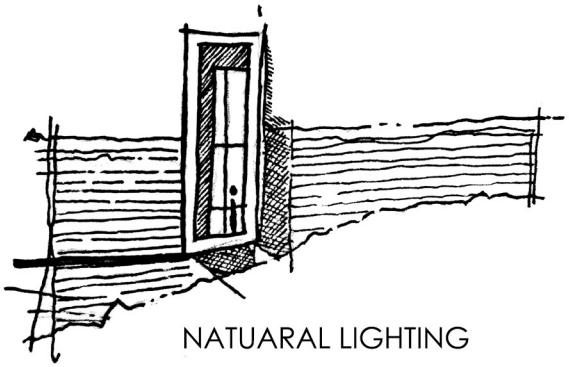
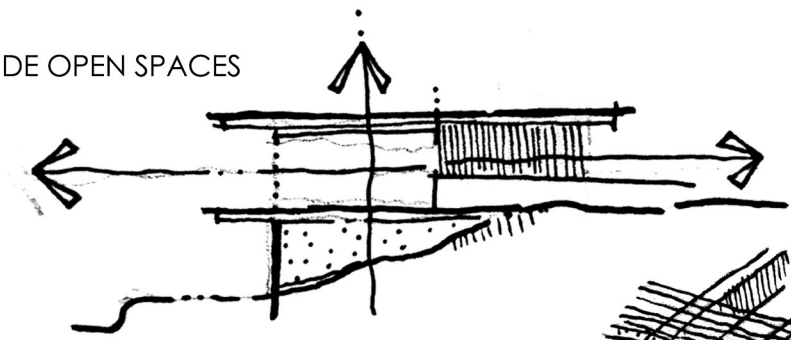


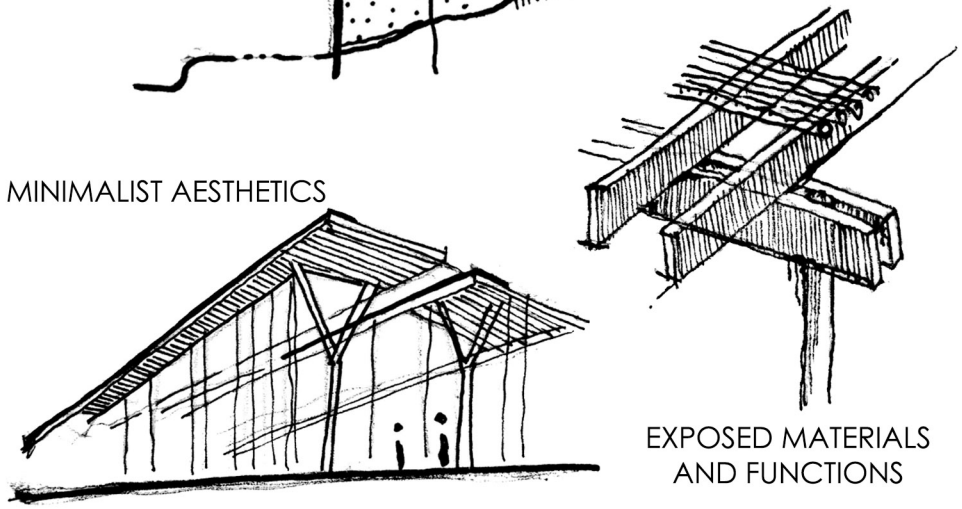
Fig. 102: Blue Rock Quarry (Swisatec, 2019: 6)

ELEMENTS OF INDUSTRIAL ARCHITECTURE

Fig. 103, 104, 105: Elements to be introduced into the final proposed design in order to reflect towards the industrial style architecture

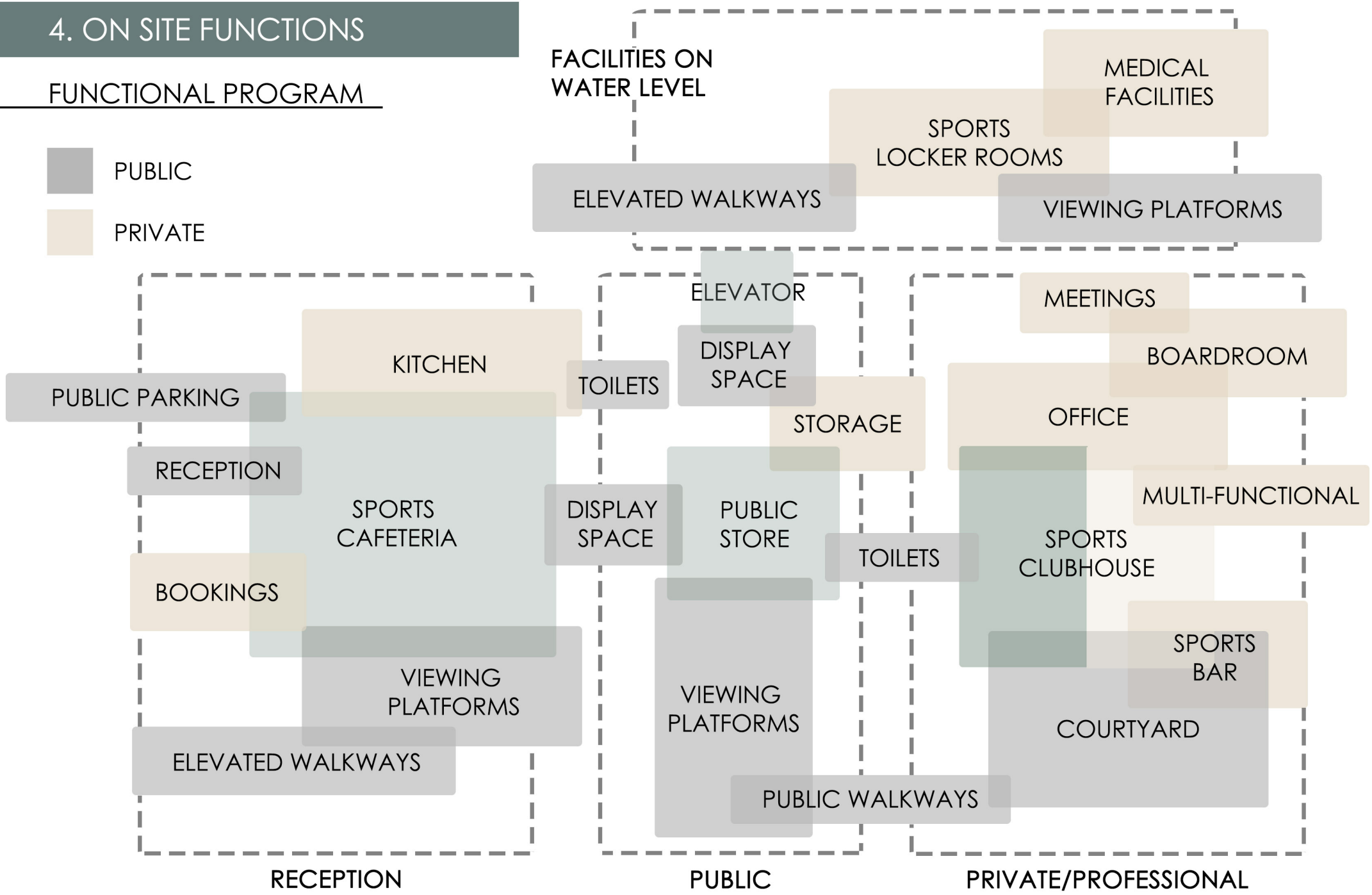






4. ON SITE FUNCTIONS

FUNCTIONAL PROGRAM



5. ASSEMBLAGE OF FRAGMENTS [SITE PLAN]

5.1 DIAGRAMATIC LAYOUT

The chosen area on site (see diagram 7, page X) has created various opportunities as well as threats in certain aspects of design. It had its concerns regarding the layout and spatial features given, yet contributed to the ultimate goal of the proposed project. The architectural influence had to respond to the manmade scar and the levels provided by the industry, as well as taking natural aspects into account. Through the topography of the space the project should be addressed in a linear manner, also contributing to the sport of cable-ski, done in a linear movement. This will allow for more viewing opportunities and a wider range of architectural insertion leading to the ultimate goal of extreme sports (see figure X). A strong horizontal vs vertical axis within the landscape needs to be addressed, influencing the orientation of functions. The diagram displays possible activation of space within the landscape contributing to the sport taking place within the quarry. The aim is to respond to the liminality of the linier process while contributing to the vertical aspect of surrounding levels.

ORIENTATION:

Facing in a linier western direction the viewing deck and allocated functions needs to be kept in mind. The building is exposed to an afternoon western sun. Reflections from the water surfaceand direct sunlight needs to be taken into account when looking atcourtyard spaces and public functions.

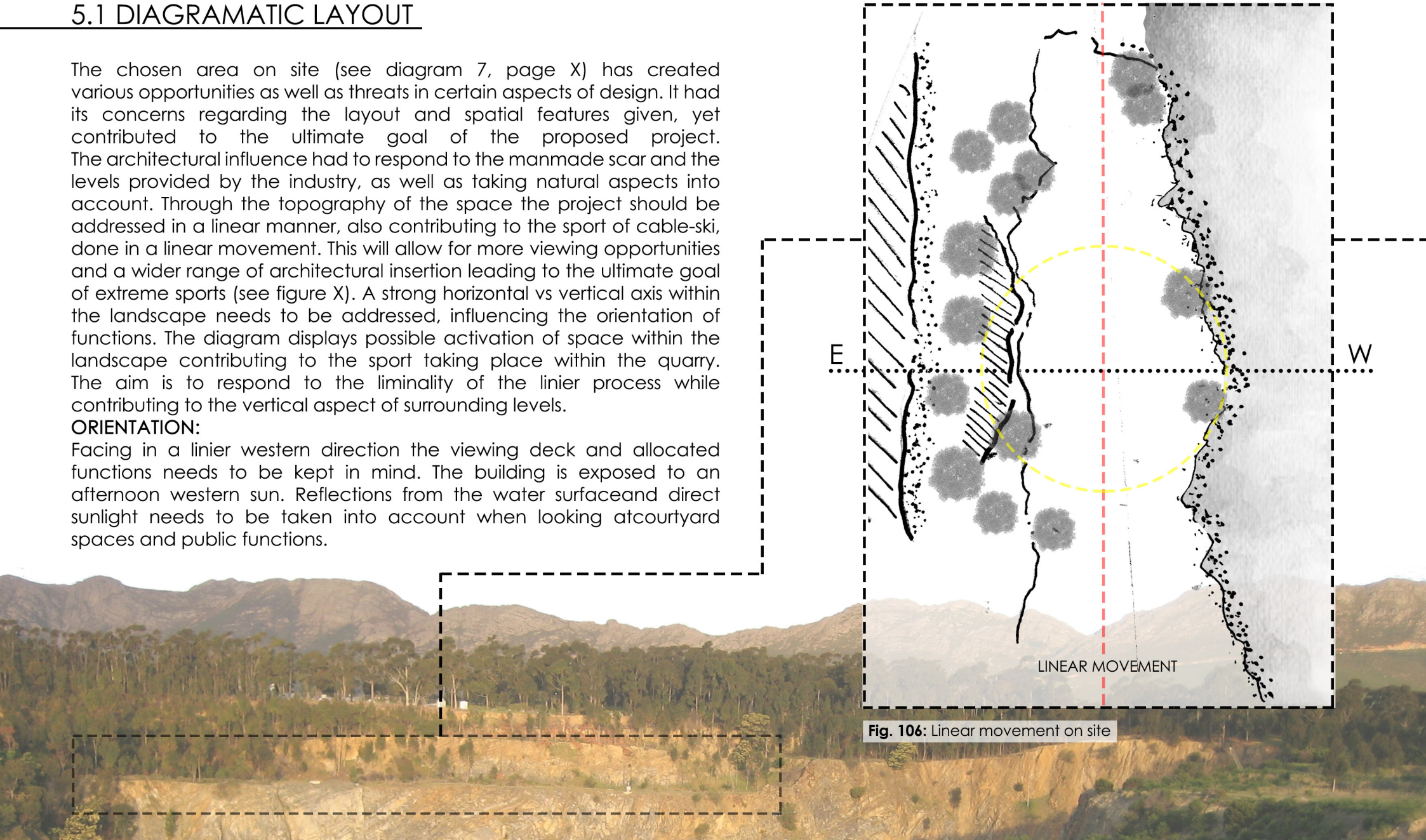


Fig. 106: Linear movement on site

5.2 ROUTES AND LEVELS

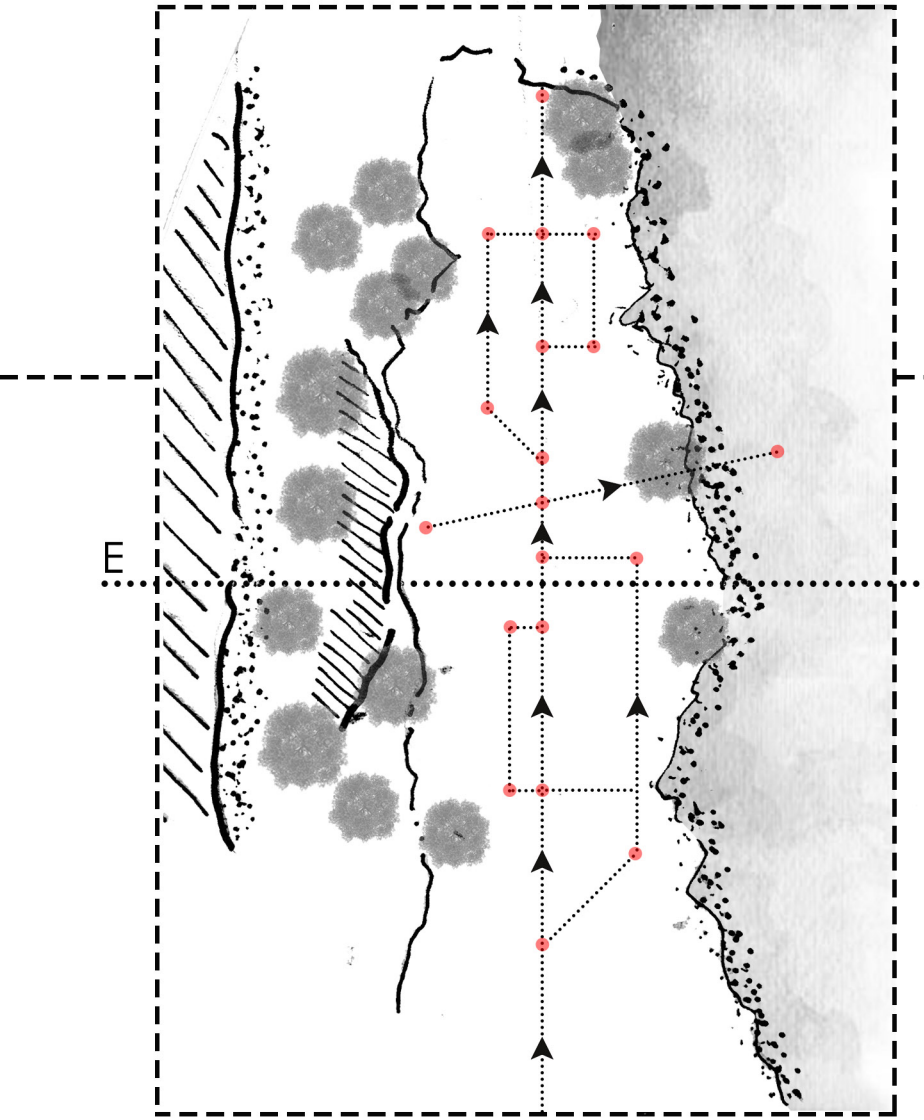


Fig. 107: PROPOSED TOURING ROUTES

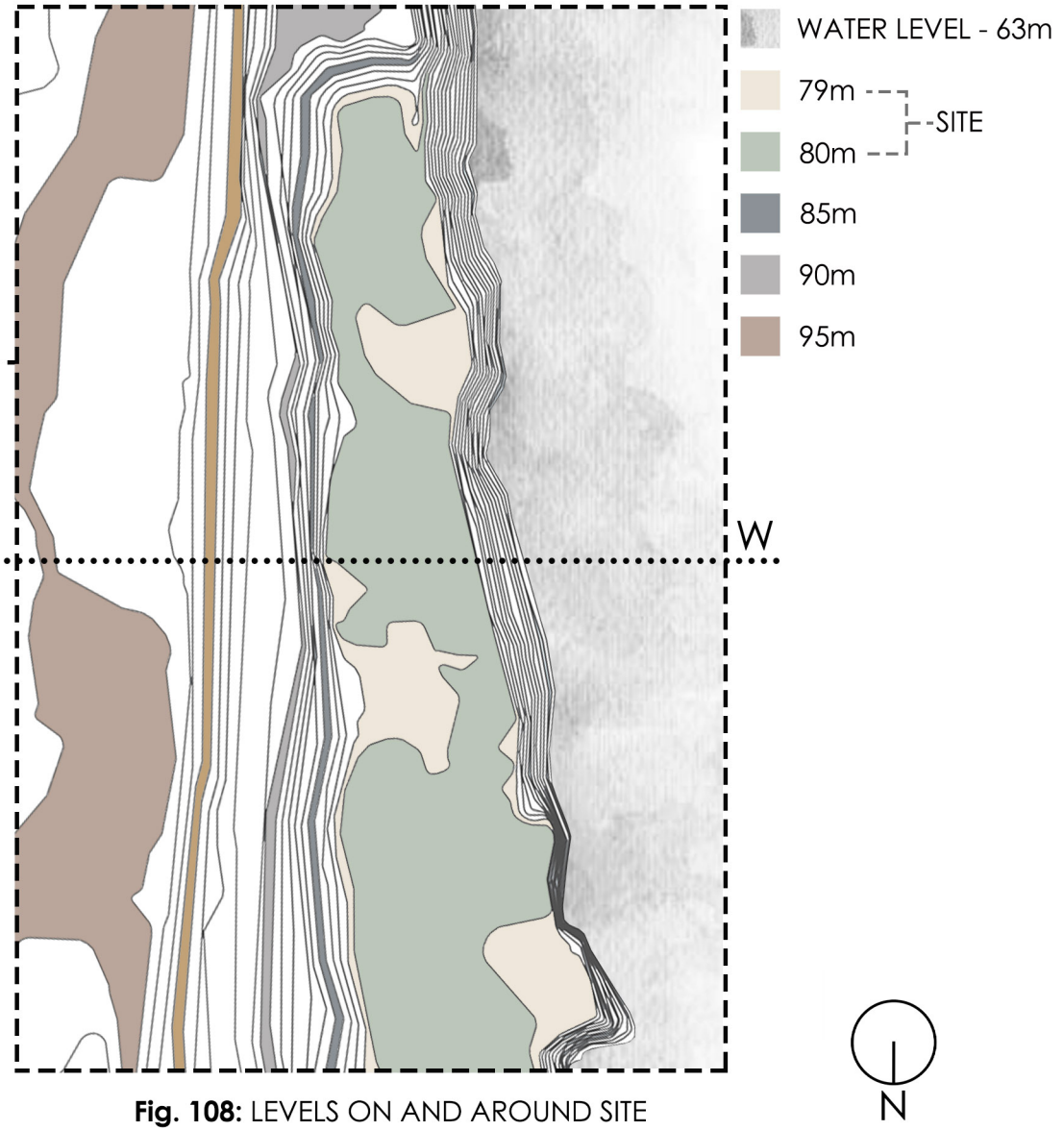


Fig. 108: LEVELS ON AND AROUND SITE

6. DESIGN DEVELOPMENT [SITE PLAN]

PHASE 1: EXTREME SPORTS



Fig. 109



Fig. 110



Fig. 111



Fig. 112

The area on site first chosen consists of a space which already has an existing function. The space has the opportunity for further development in future use, yet does not fit the intended purpose of the proposed design and functions. Diagram 1-4 consists of fragmented structures within the landscape, yet does not make use of the manmade scars as way of design intentions. The existing natural elements such as the trees and the water access point to the quarry proved to be a problem in the design and goes against the ultimate goal of allowing the manmade scar as well as natural elements to form and inspire the design. From stage 1 to 4 there is a clear indication that the buildings fragment and shift towards what will ultimately become the proposed position on site that suites the intended functions.

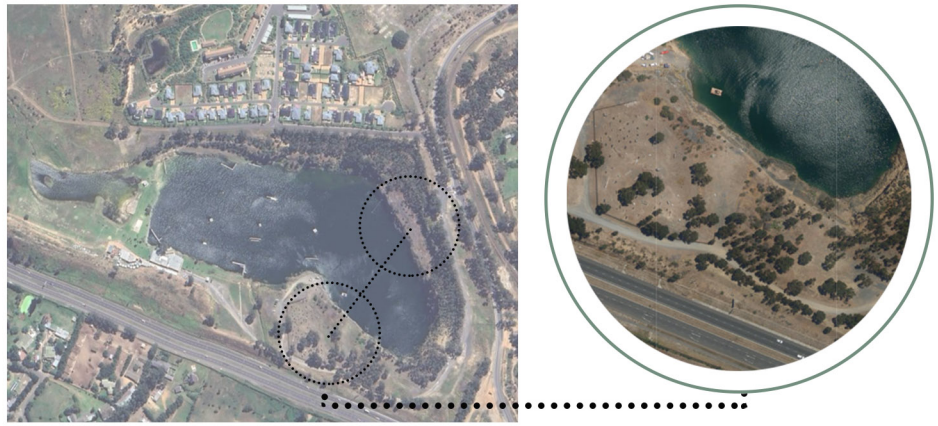


Fig. 113: Movement of design development

PHASE 1: EXTREME SPORTS

5



Fig. 114

6

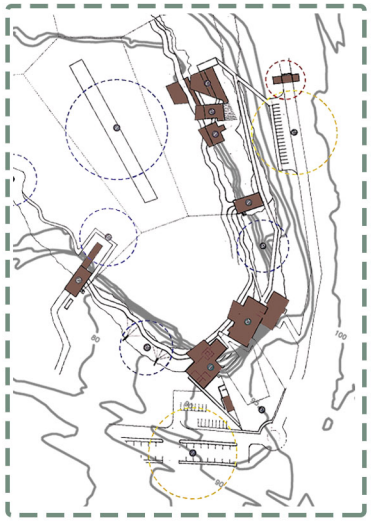


Fig. 115

The area on site chosen as the main focus point (diagram 7) has no existing functions and allows for all intended features to be displayed. The space has minimal natural elements such as trees and the change in levels creates the intended spatial features in the design that displays the scars created in the landscape. The only negative realized is that the site faces in a western direction and the sun could become a problem when faces with the glare from the water below. This could thus also serve as a constructional design opportunity to display the use of shading techniques. The space could be accessed by the northern side leading directly to the proposed structure. Through the fracturing of the building there can be designed with the manmade contours, keeping in mind the intended purpose of the proposed project while also connecting to the water below.

7

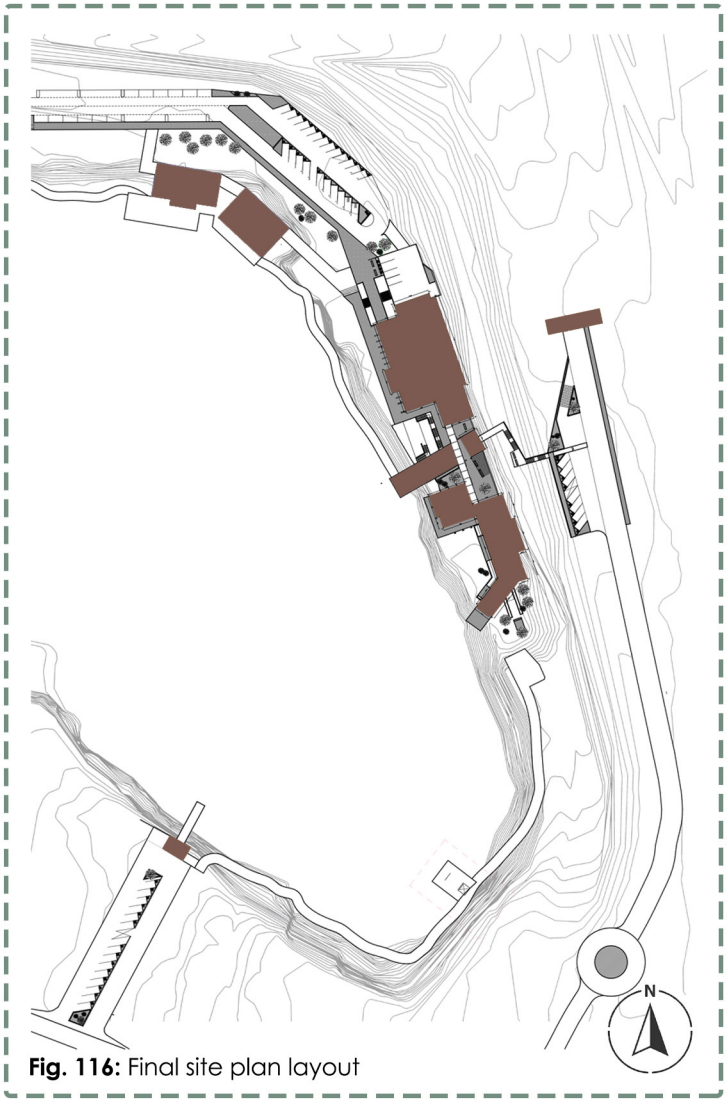
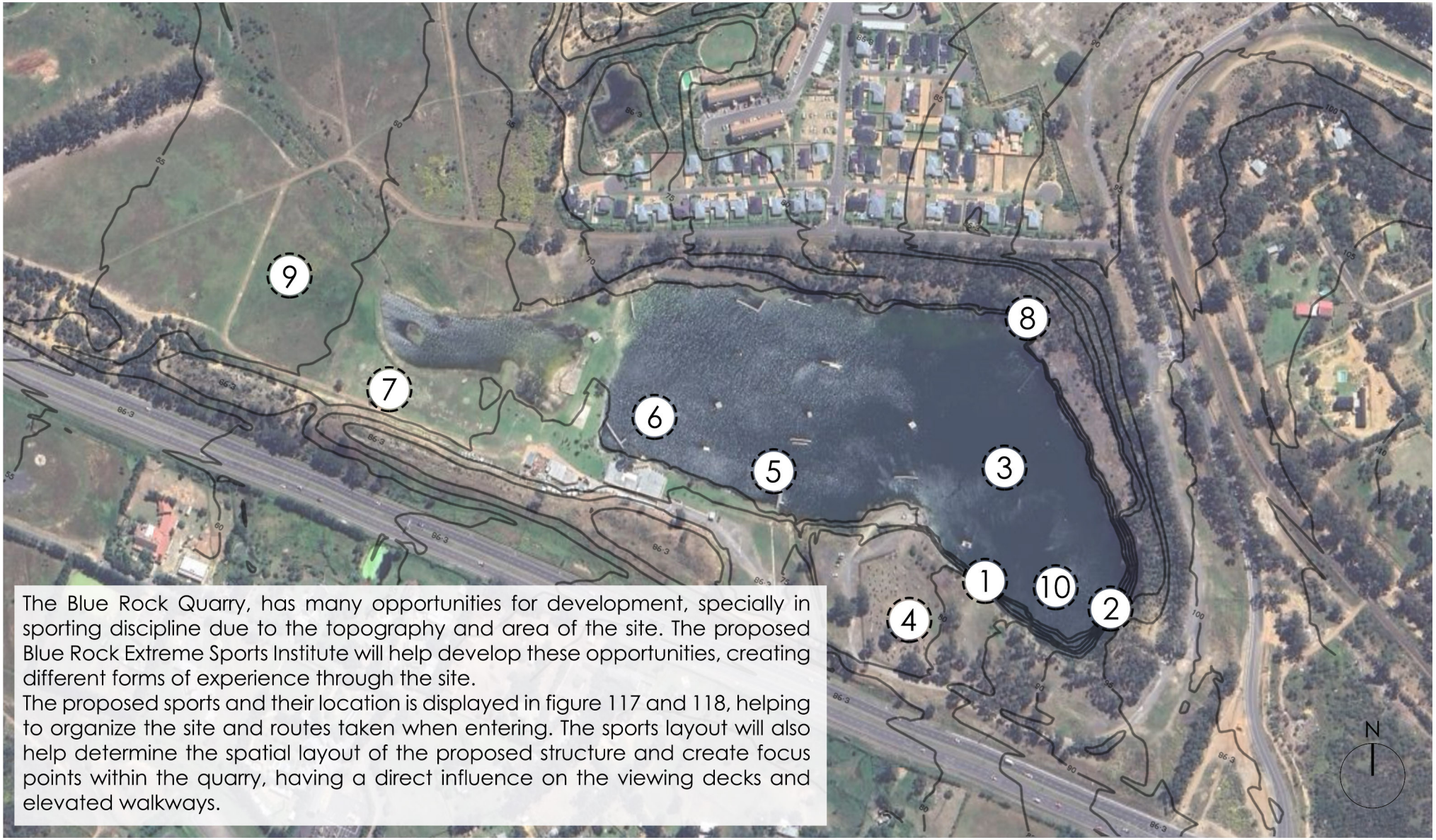


Fig. 116: Final site plan layout

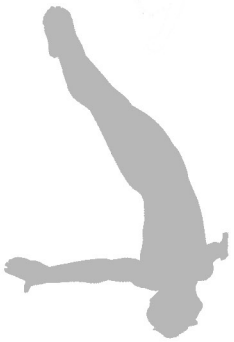
7. SPORTS FUNCTIONAL LAYOUT



The Blue Rock Quarry, has many opportunities for development, specially in sporting discipline due to the topography and area of the site. The proposed Blue Rock Extreme Sports Institute will help develop these opportunities, creating different forms of experience through the site.
The proposed sports and their location is displayed in figure 117 and 118, helping to organize the site and routes taken when entering. The sports layout will also help determine the spatial layout of the proposed structure and create focus points within the quarry, having a direct influence on the viewing decks and elevated walkways.

Fig. 117: Site, Edited by Author (Google maps, 2022: online)

1 CLIFF DIVING



2 ROCK CLIMBING



3 CABLE SKIING



4 PAINTBALL



5 CANOEING



6 SWIMMING



7 MOUNTAIN BIKING



8 BASKETBALL



9 MOTOCROSS



10 FREE DIVING



8. SPATIAL DEVELOPMENT

DIAGRAMATIC PLAN

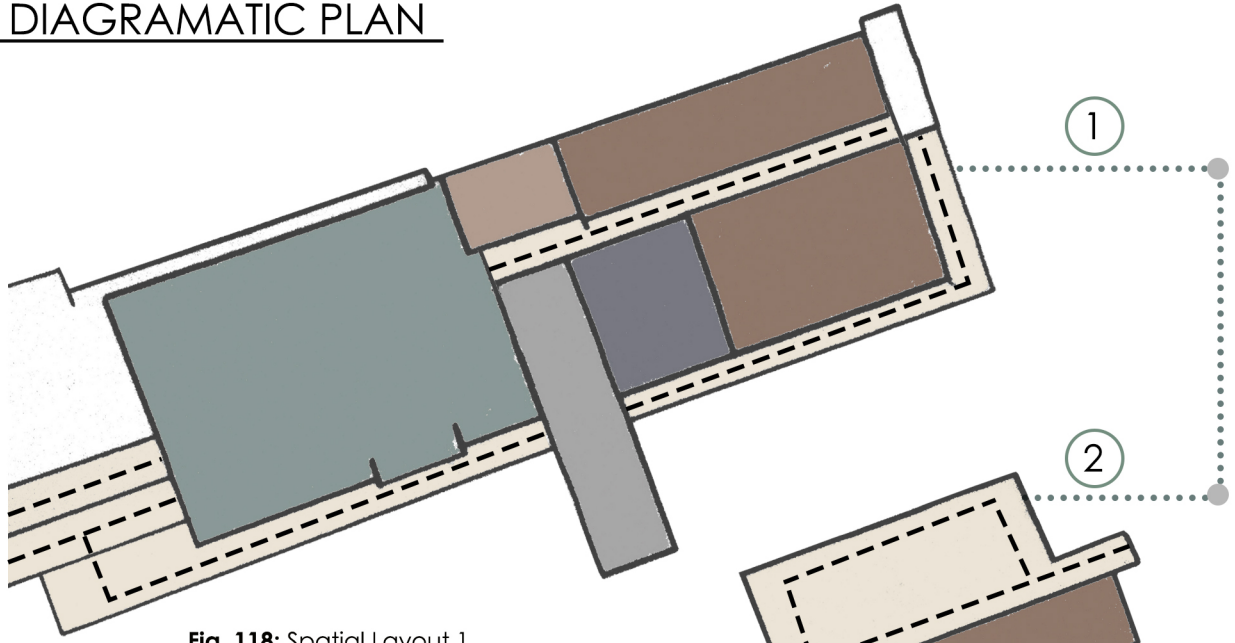


Fig. 118: Spatial Layout 1

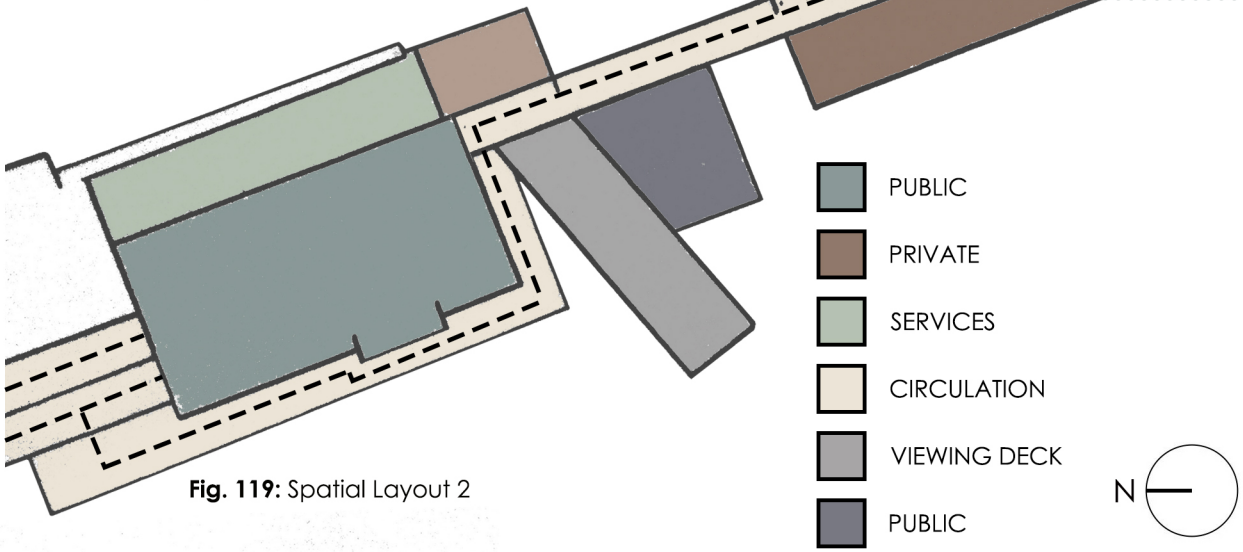


Fig. 119: Spatial Layout 2

DIAGRAM 1

Displaying a more compact spatial layout that focusses on the connection of functions. The distances between functions are shorter yet lack the liminal experiences and journey between spaces. There is a long, uninterrupted walkway against the quarry edge allowing for a linear path following the extreme sport taking place on the water. This layout is simple and more effective in a city or residential placing with limited space and strict boundary lines. There are much more opportunities to test boundaries and use the proposed site to its full potential. In the design layout going further there will be focused on the between spaces and the theoretical influences on the design.

DIAGRAM 2

In diagram 2 the focus is placed on design oppertunities and the theoretical influences that can be activated on site and whithin the quarry. The diagram displays more space between functions contributing to different experiences for the user, providing more space to breath and witness the scarred surroundings. Diagram 2 has less viewing decks on the quarry edge and this will be addressed and corrected in diagram 3 (see figure x). The viewing deck streching over the water is angled in a more favourable manner towards the sport taking place on water and is not orientated directly in a western direction.

DIAGRAMATIC PLAN

CIRCULATION

The circulation through the diagram plan creates datum which uses the walls to guide the user and form a whole within the proposed structure. All functions are linked and allow the user access through various means of passage. he linear movement throughout the structure symbolizes the movement of activity taking place on water level.

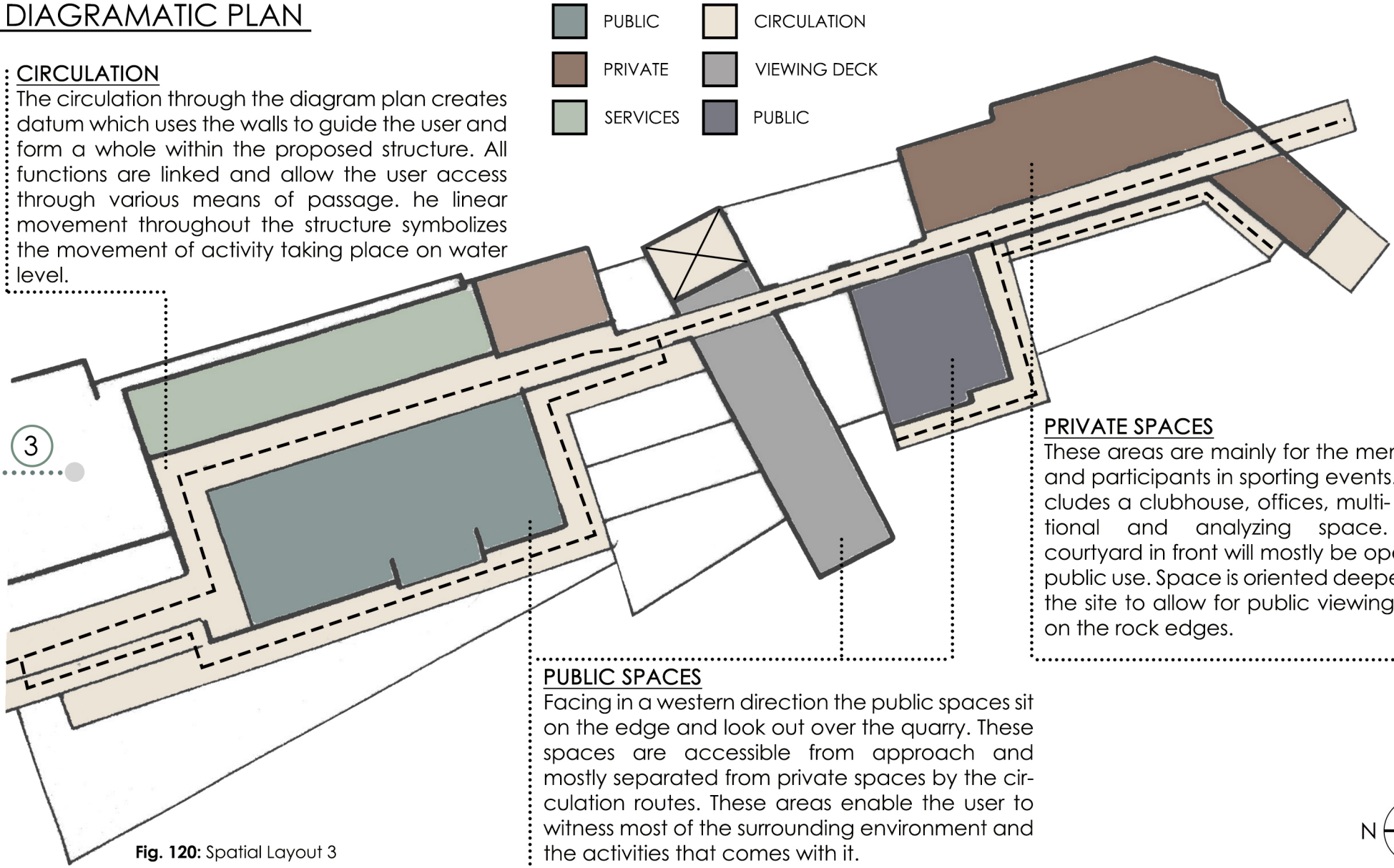


Fig. 120: Spatial Layout 3

PRIVATE SPACES

These areas are mainly for the members and participants in sporting events. It includes a clubhouse, offices, multi- functional and analyzing space. The courtyard in front will mostly be open for public use. Space is oriented deeper into the site to allow for public viewing area on the rock edges.

PUBLIC SPACES

Facing in a western direction the public spaces sit on the edge and look out over the quarry. These spaces are accessible from approach and mostly separated from private spaces by the circulation routes. These areas enable the user to witness most of the surrounding environment and the activities that comes with it.

9. CONCEPTUAL MODEL

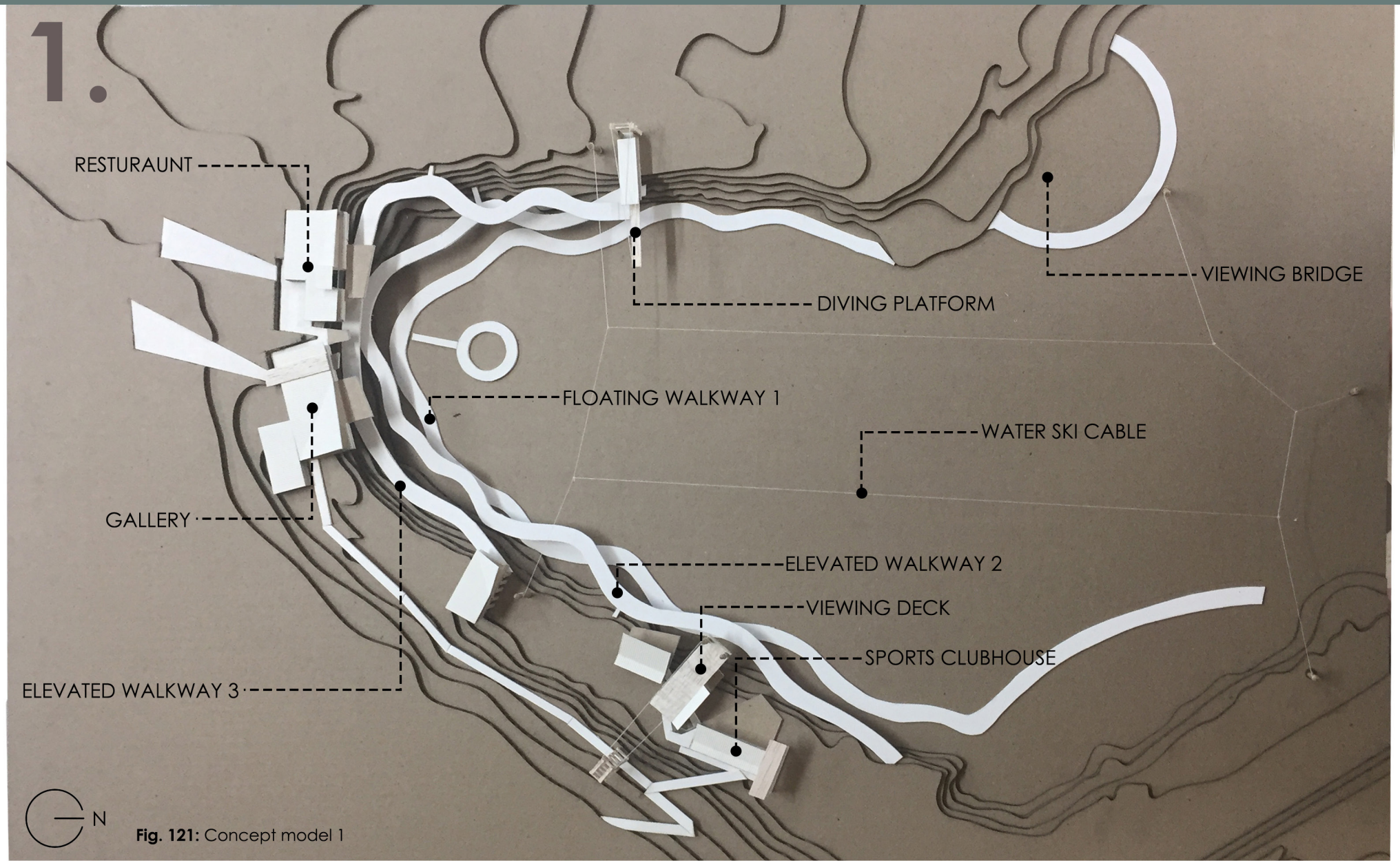


Fig. 121: Concept model 1

CONCEPTUAL MODEL

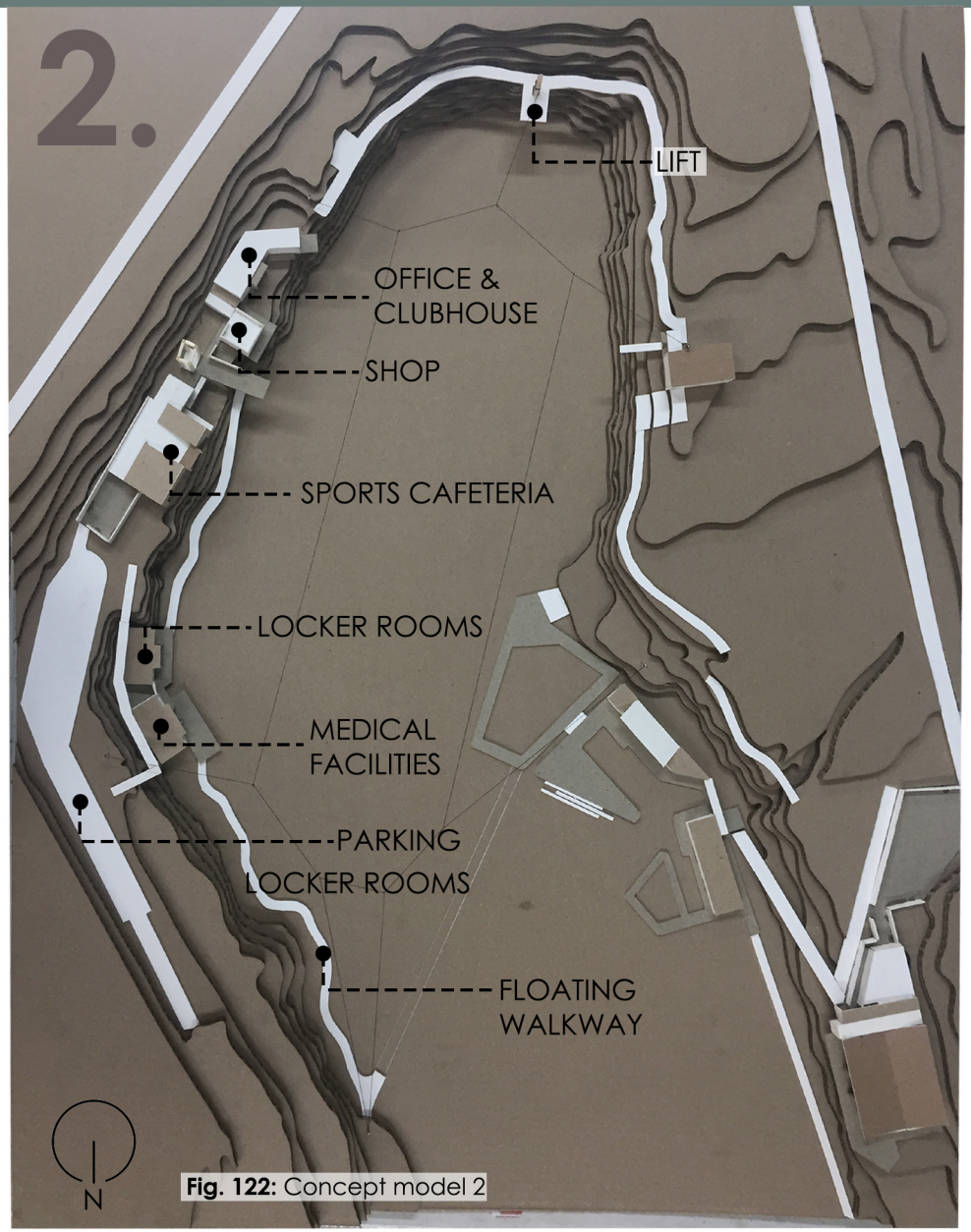


Fig. 122: Concept model 2

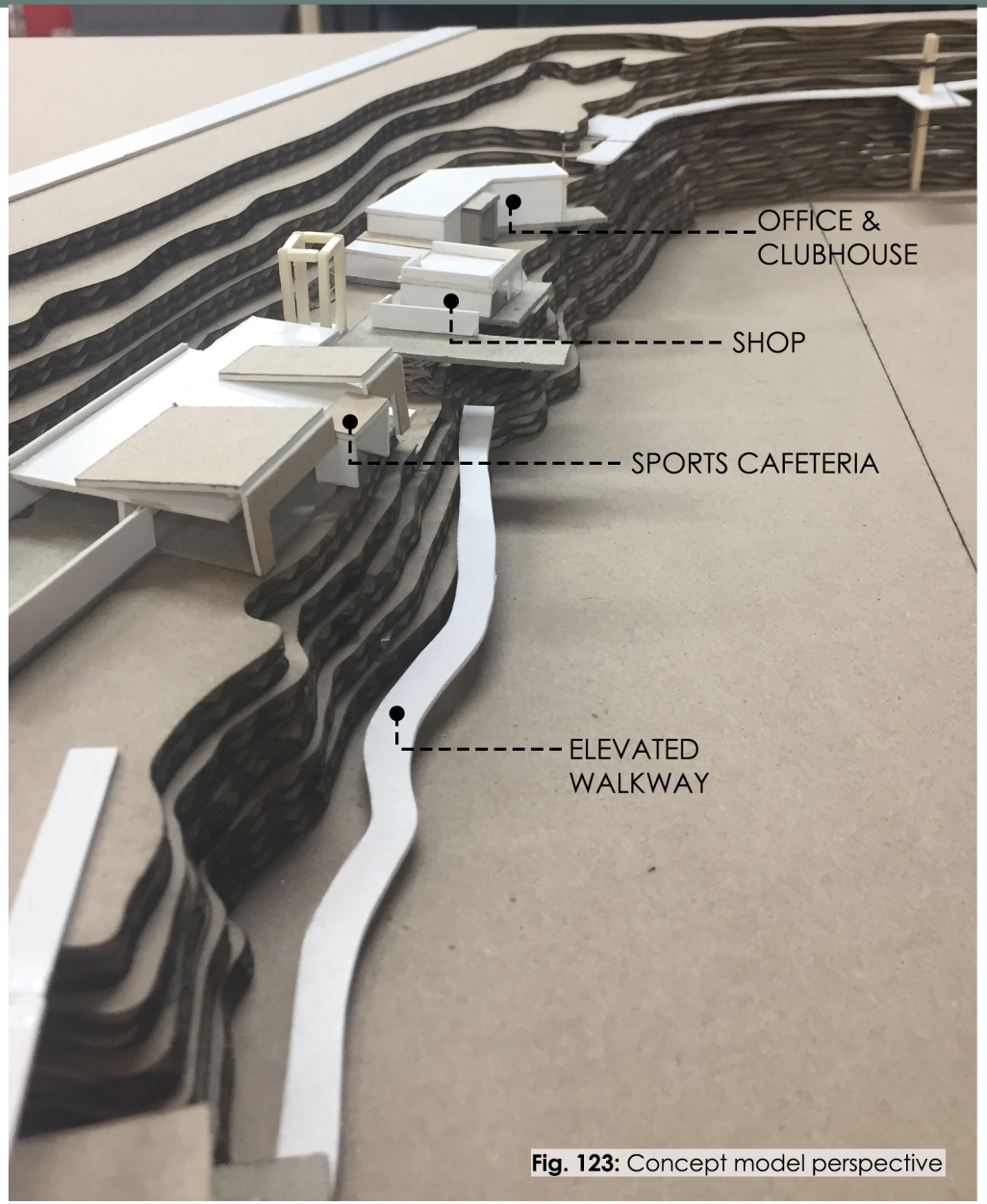


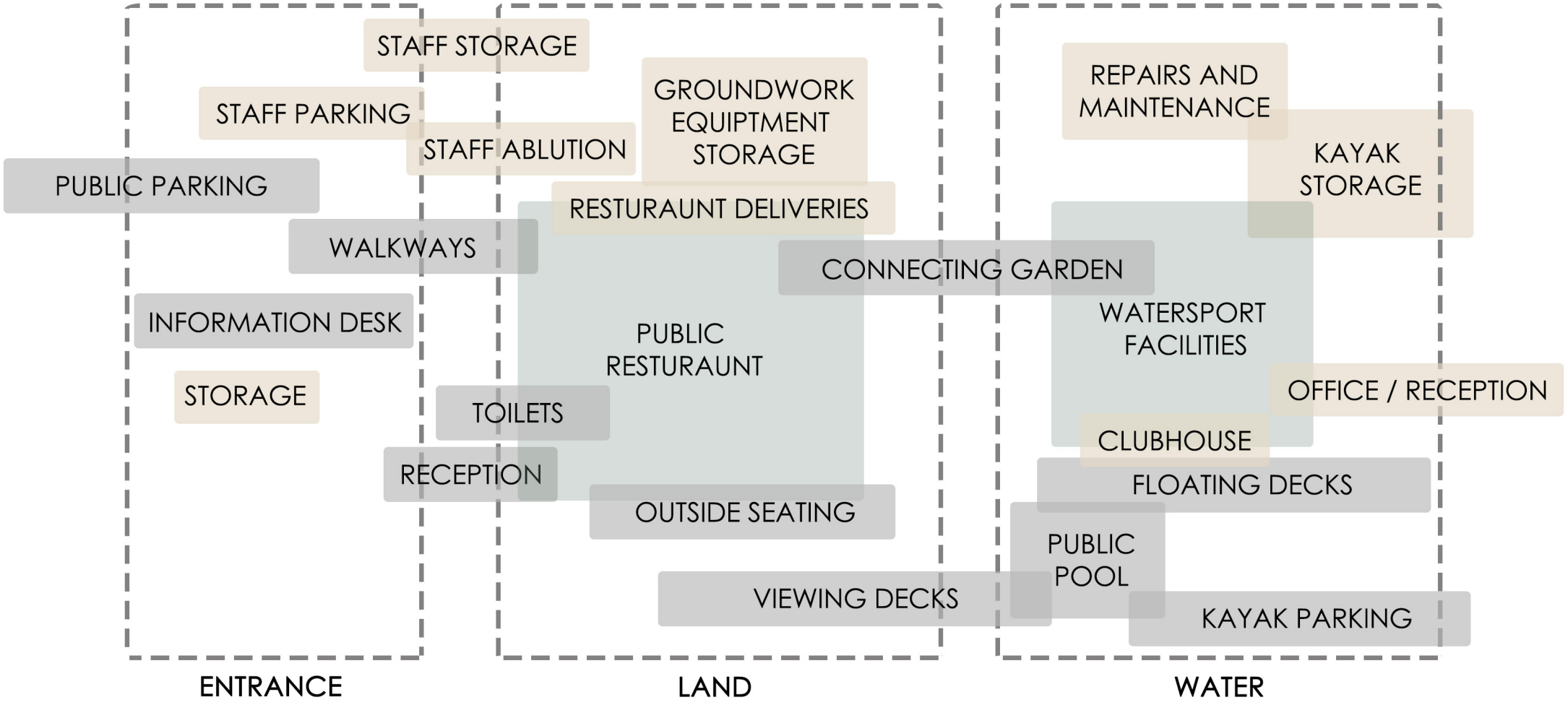
Fig. 123: Concept model perspective

10. PHASE 2: FUTURE DEVELOPMENT

PUBLIC

PRIVATE

In the proposed space allocated for phase 2 development there will be focused on future use and the contribution it brings to existing phase 1 functions. For the intended space provision will be made for the everyday public in an area not totally focused on extreme sport, but rather a more calming form of activity. The area located in phase 2 will be open throughout the year and certain allocated areas will be available for private functions and events, continuing with some of the existing features of the site. Phase 2 design proposals will be included in the design synthesis chapter and will feature proposed structural layouts and designs which fits phase 1. Phase 2 will allow for more circulation within the quarry walls and connect the elevated walkways making for a theoretical factor such as liminality and ritual to form a bond with the entire site.



CHAPTER 6

STRUCTURAL INVESTIGATION

1. REINSERTION

GIVING BACK TO THE SCAR

Fig. 124: The proposed roof structure sits within the scarred environment with a monopitched roof. The 90-degree angle gives indication towards the rock edge leading down to the quarry water and displays features of industrial-like architecture through minimalistic fea-

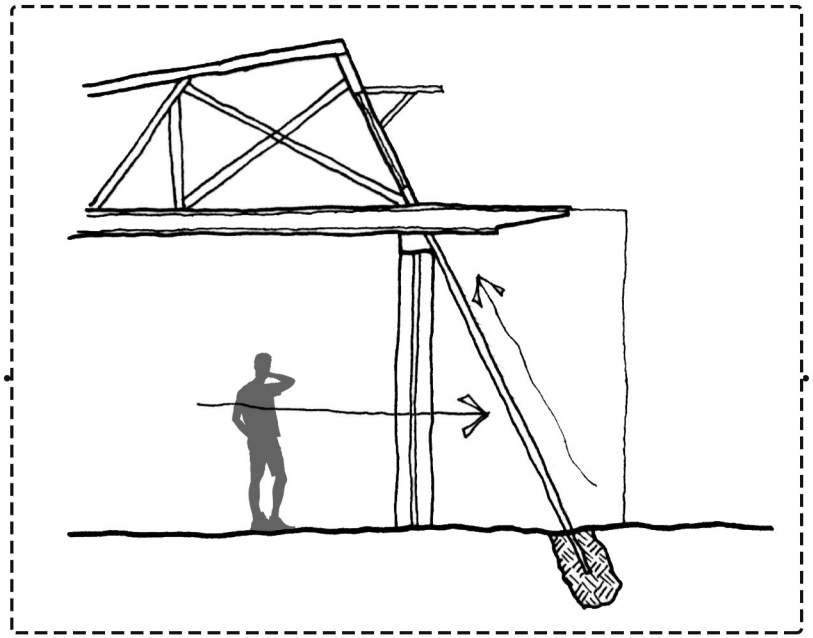
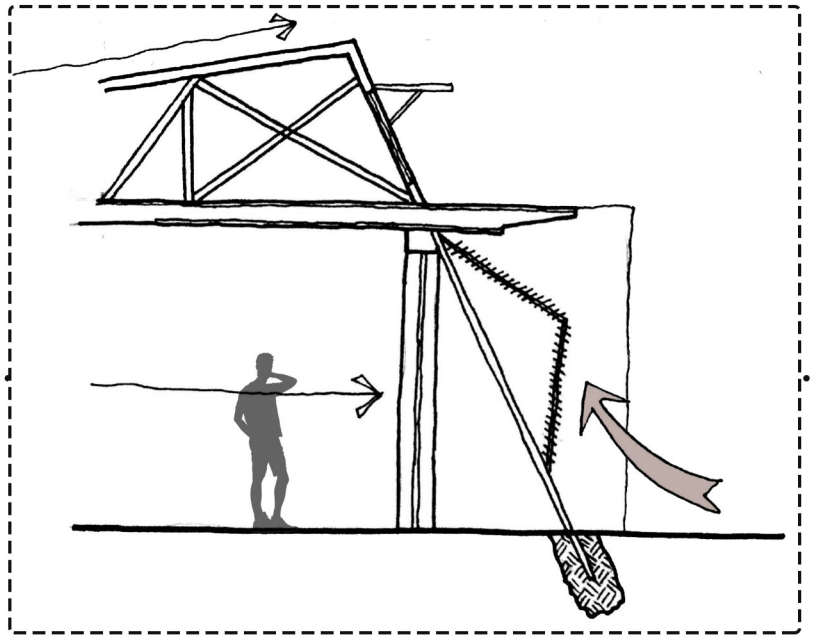


Fig. 125: The West facing orientation of the main building causes for direct sunlight to enter. This will be controlled through an angled louvre system that is able to adjust to fit the angle of the sun when needed. The framework forms part of the angled roof support.



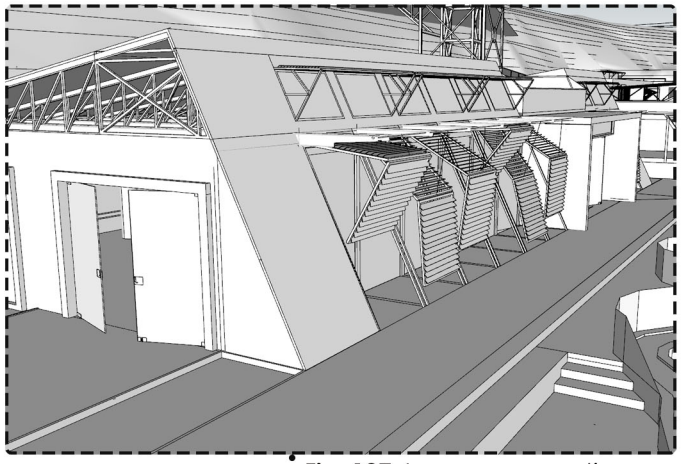


Fig. 127: Louvre perspective
(Author, 2022)

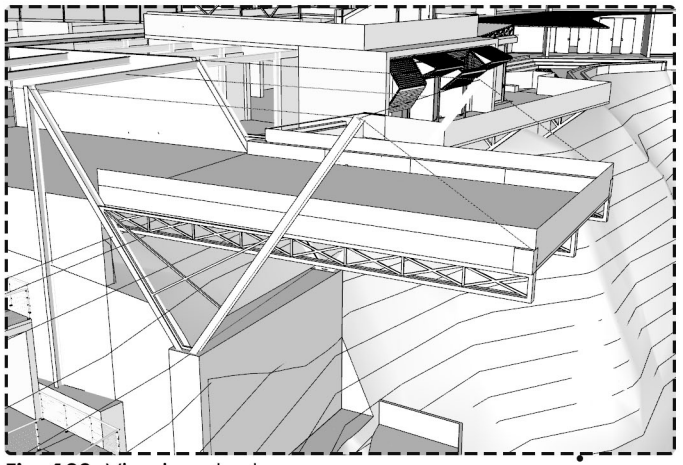


Fig. 128: Viewing deck
(Author, 2022)

Fig. 126: Staying true to the industrial past of the Blue Rock Quarry the steel constructed support tower with cantilevering bridge connect and support one another. A lift is located within the tower to present a mine-like concept and contribute to the overall circulation within.

2. TOUCHSTONE INVESTIGATION

2.1 THE OVERHANG

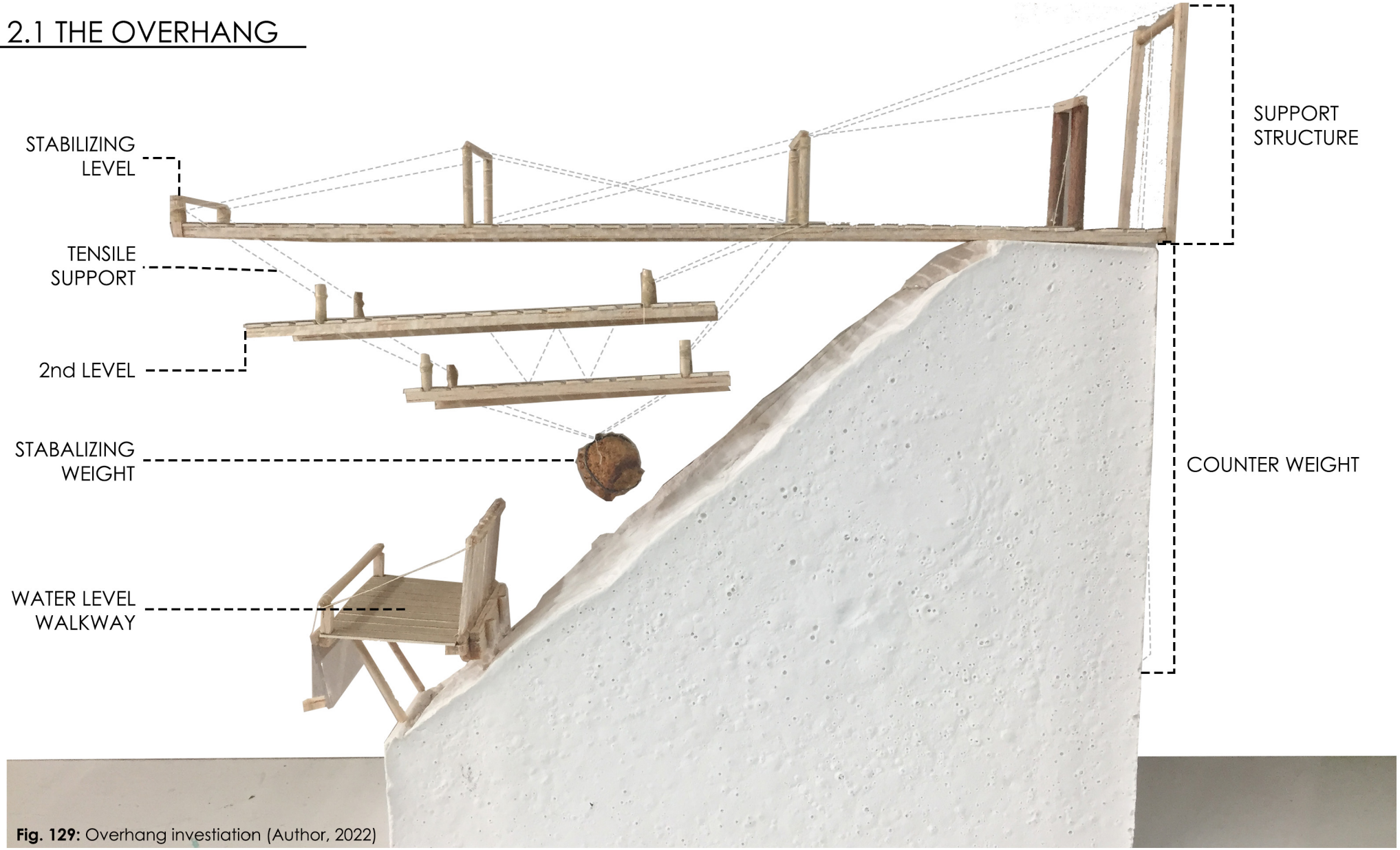


Fig. 129: Overhang investiation (Author, 2022)

2.2 ELEVATED WALKWAYS

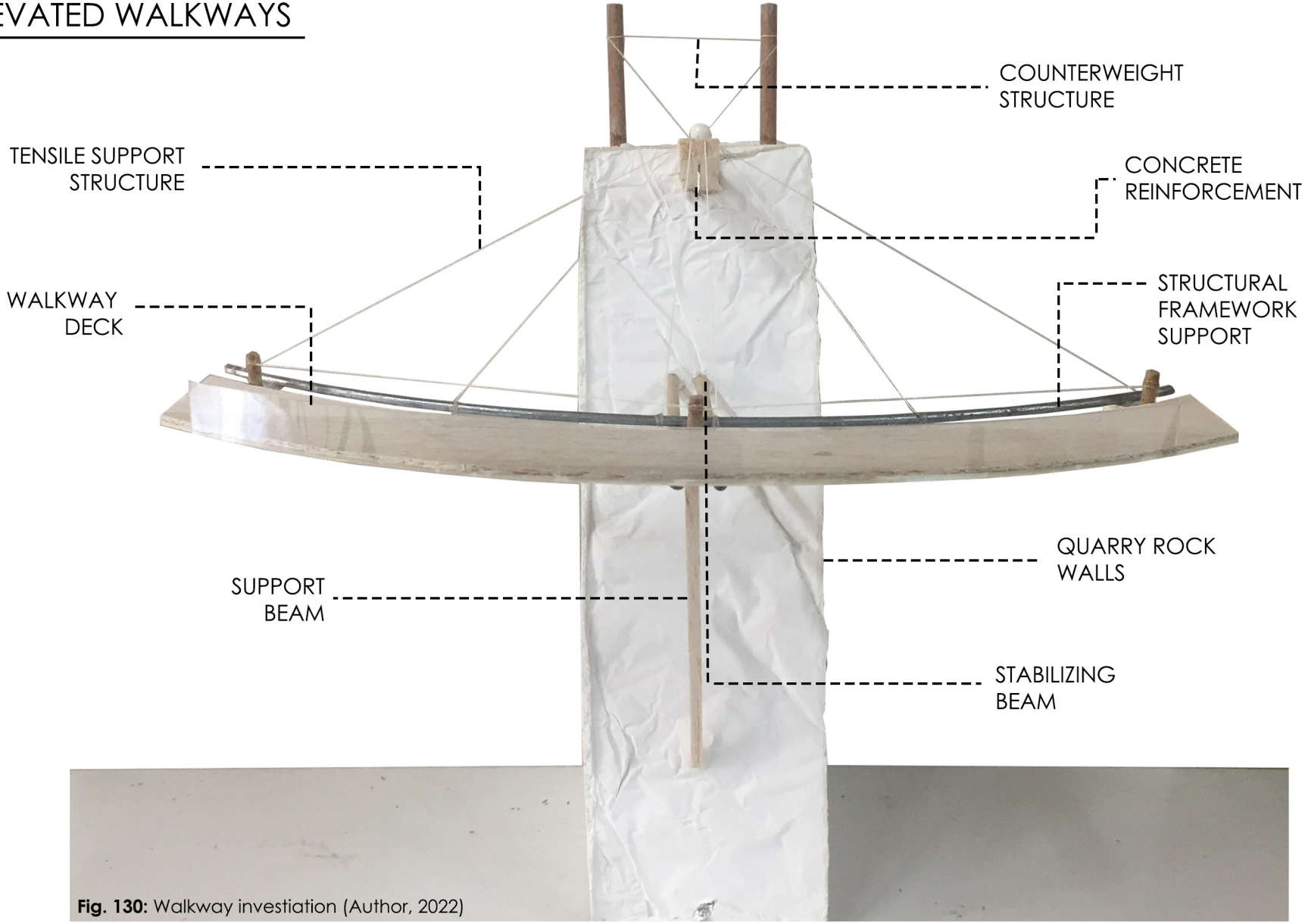


Fig. 130: Walkway investiation (Author, 2022)

3. STRUCTURAL DETAILING

INDUSTRIAL RE-AWAKENING

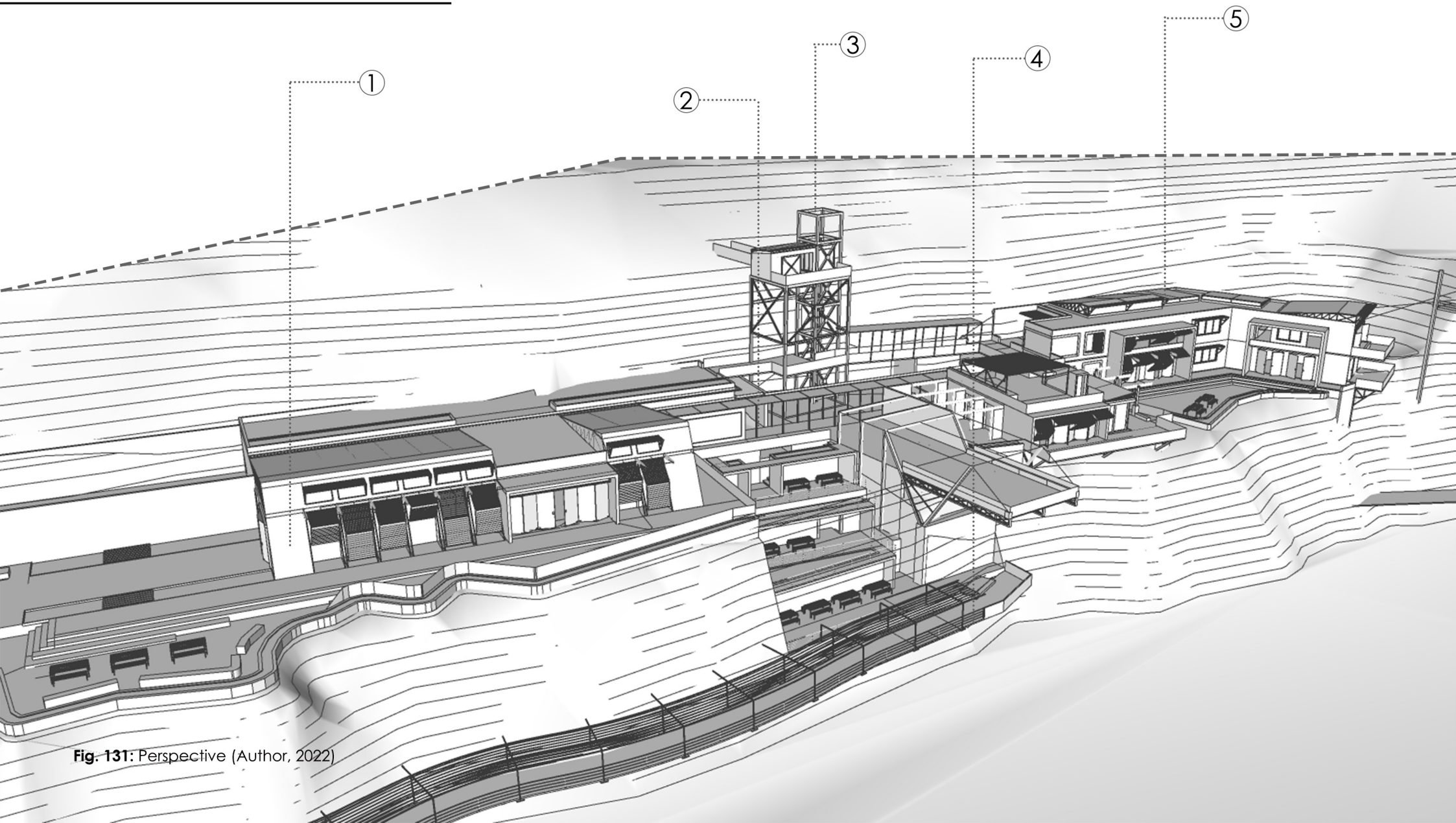


Fig. 131: Perspective (Author, 2022)

1.

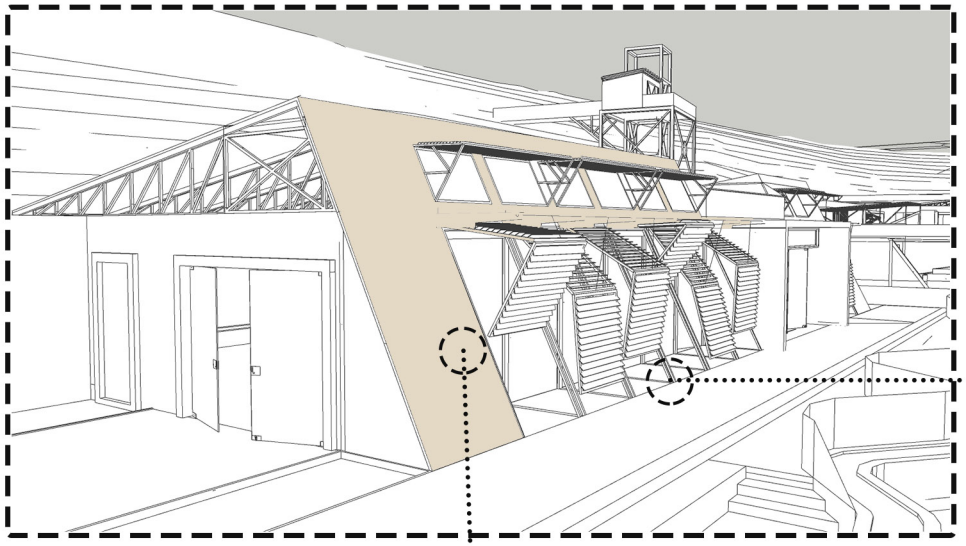


Fig. 132: Perspective of Structure (Author, 2022)

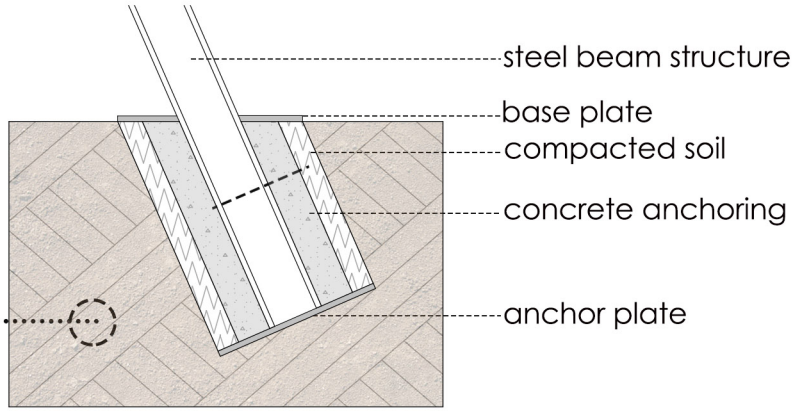


Fig. 134: Structural section (Author, 2022)

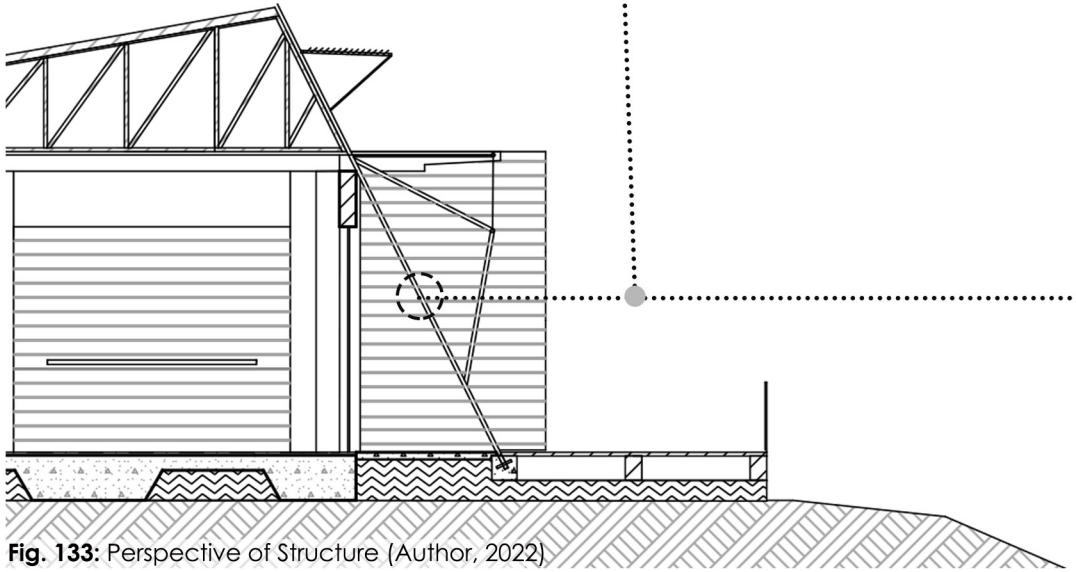


Fig. 133: Perspective of Structure (Author, 2022)

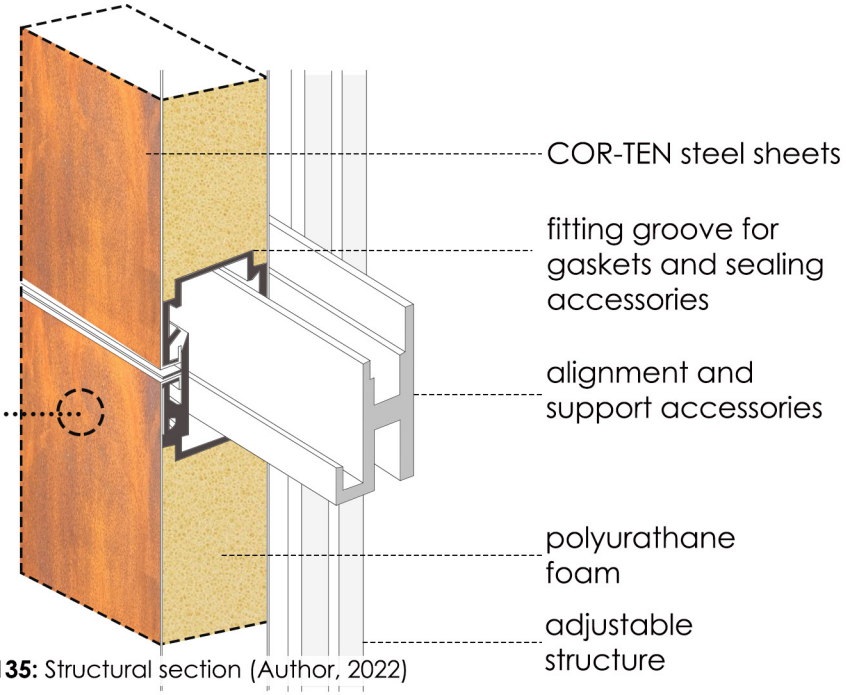


Fig. 135: Structural section (Author, 2022)

2.

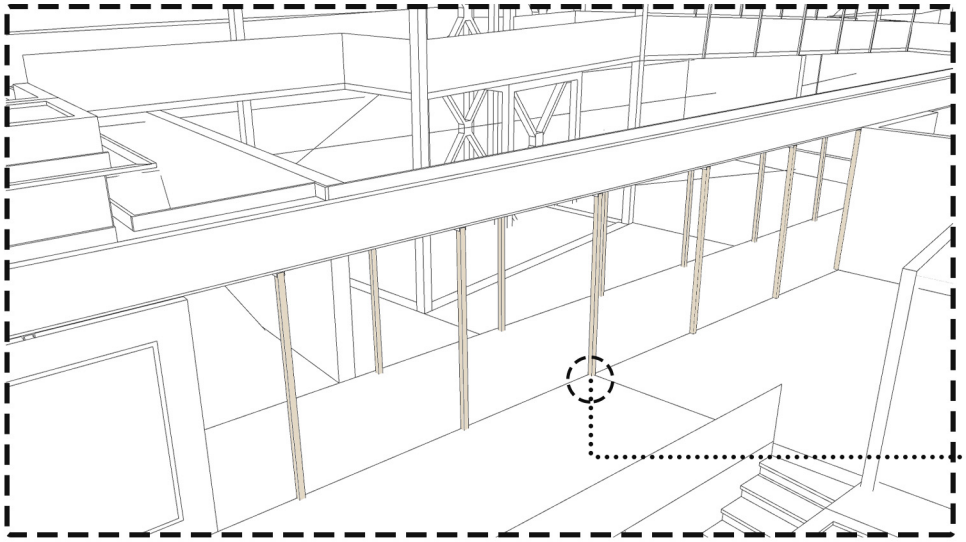


Fig. 136: Perspective of Structure (Author, 2022)

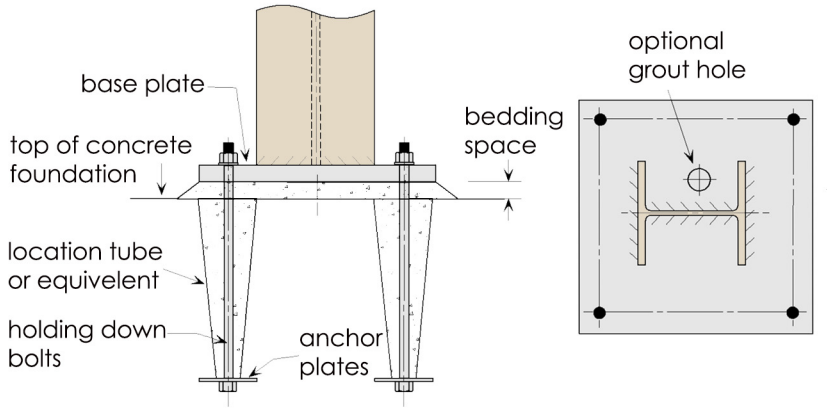


Fig. 138: Structural section, Edited by Author

3.

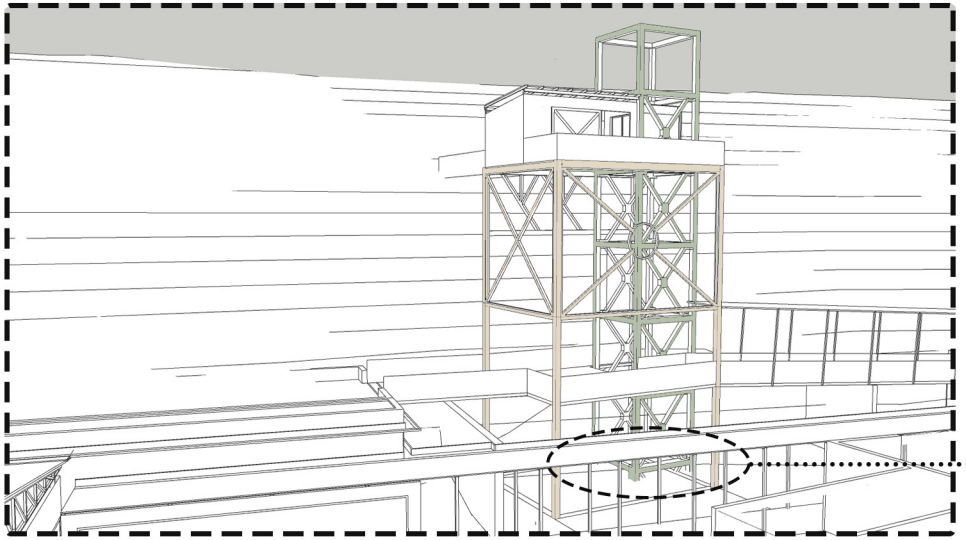


Fig. 137: Perspective of Structure (Author, 2022)

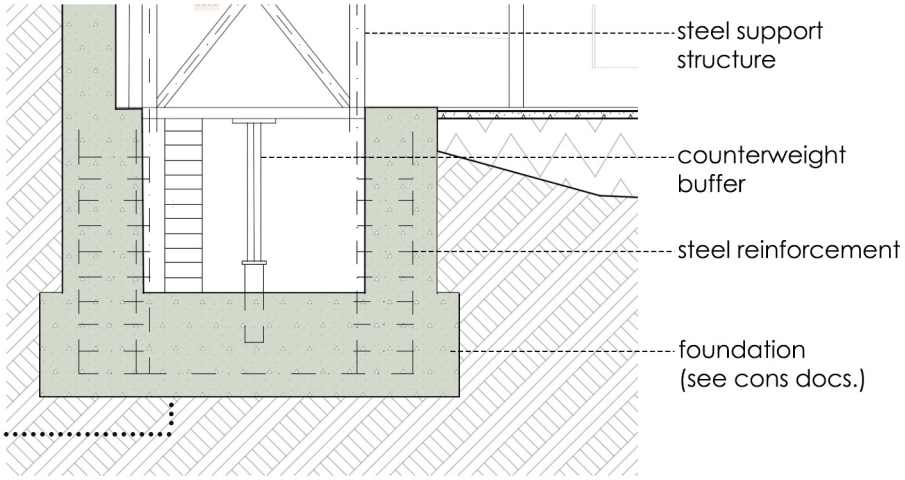


Fig. 139: Structural section (Author, 2022)

4.

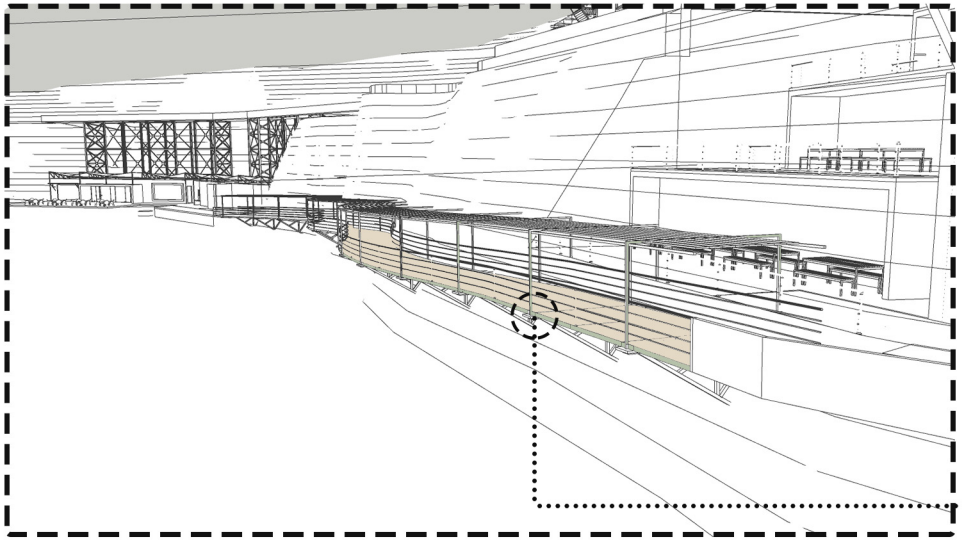


Fig. 140: Perspective of Structure (Author, 2022)

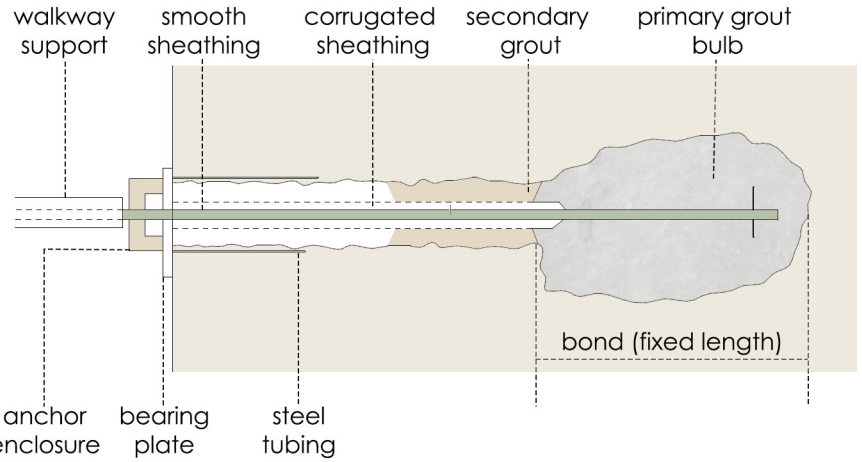


Fig. 142: Bridge anchored into rockwall of quarry (Author ,2022)

5.

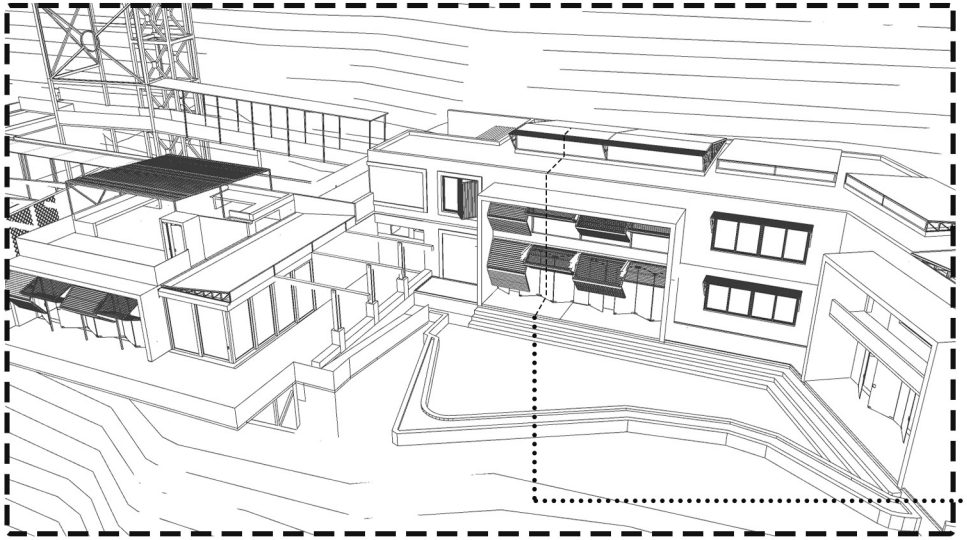


Fig. 141: Perspective of Structure (Author, 2022)

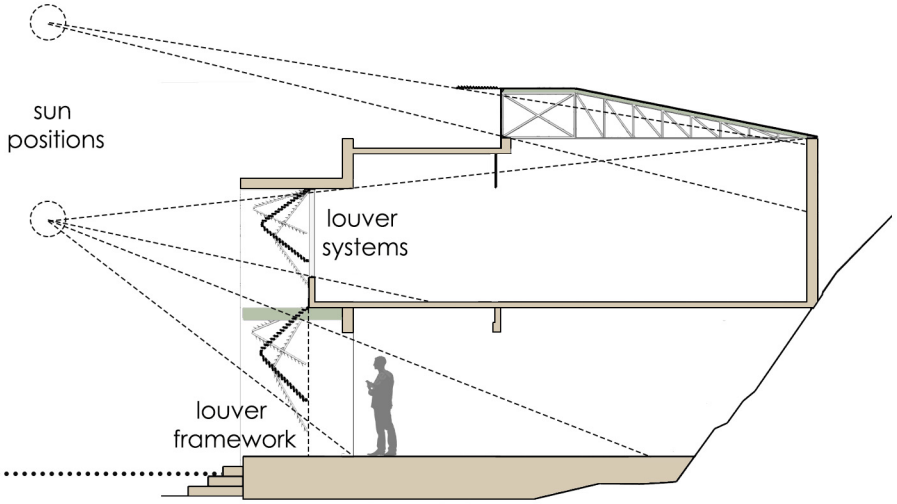


Fig. 143: Western sun positions and direct light (Author ,2022)

4. MATERIALITY

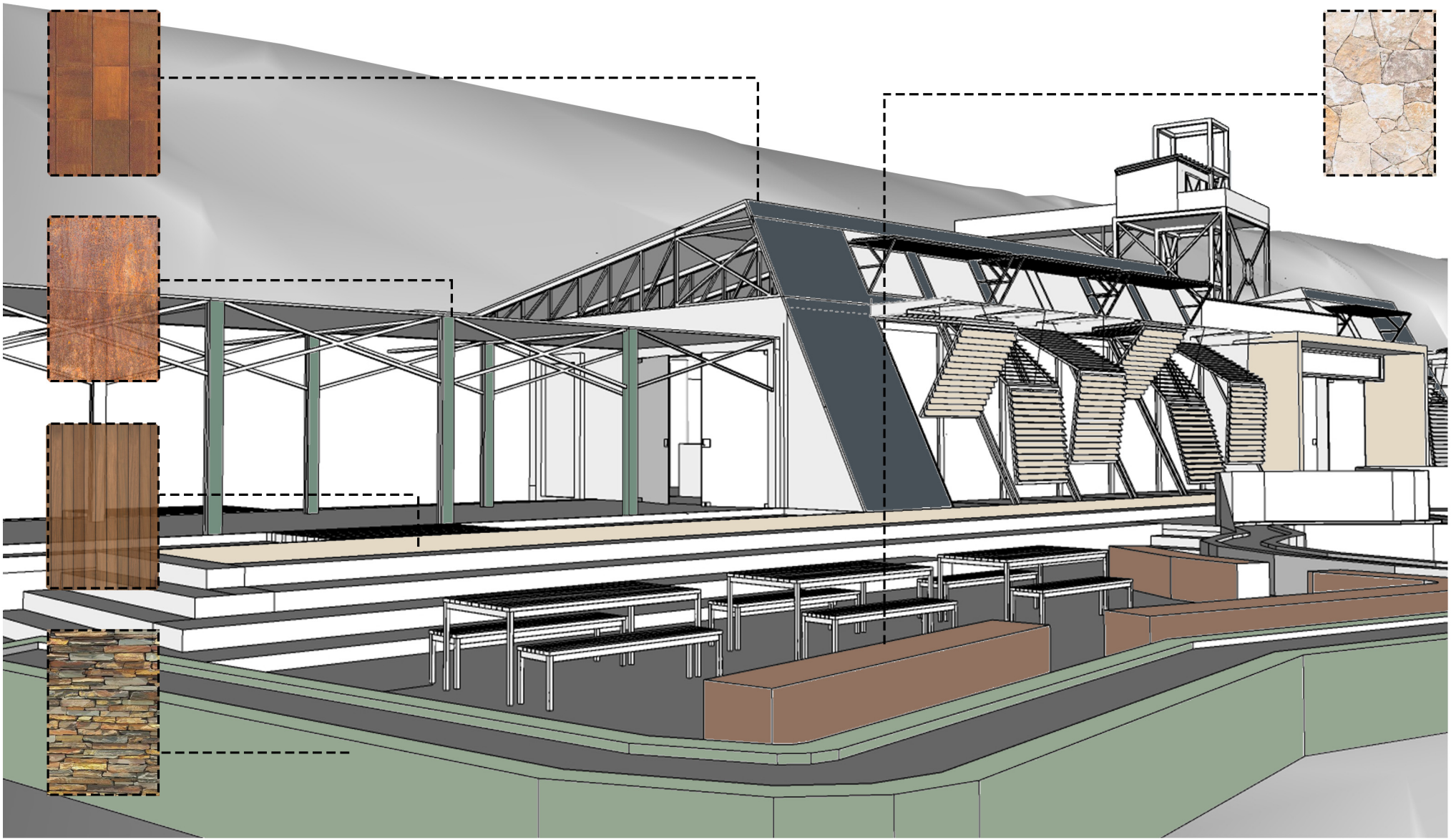


Fig. 144: Materiality perspective (Author ,2022)

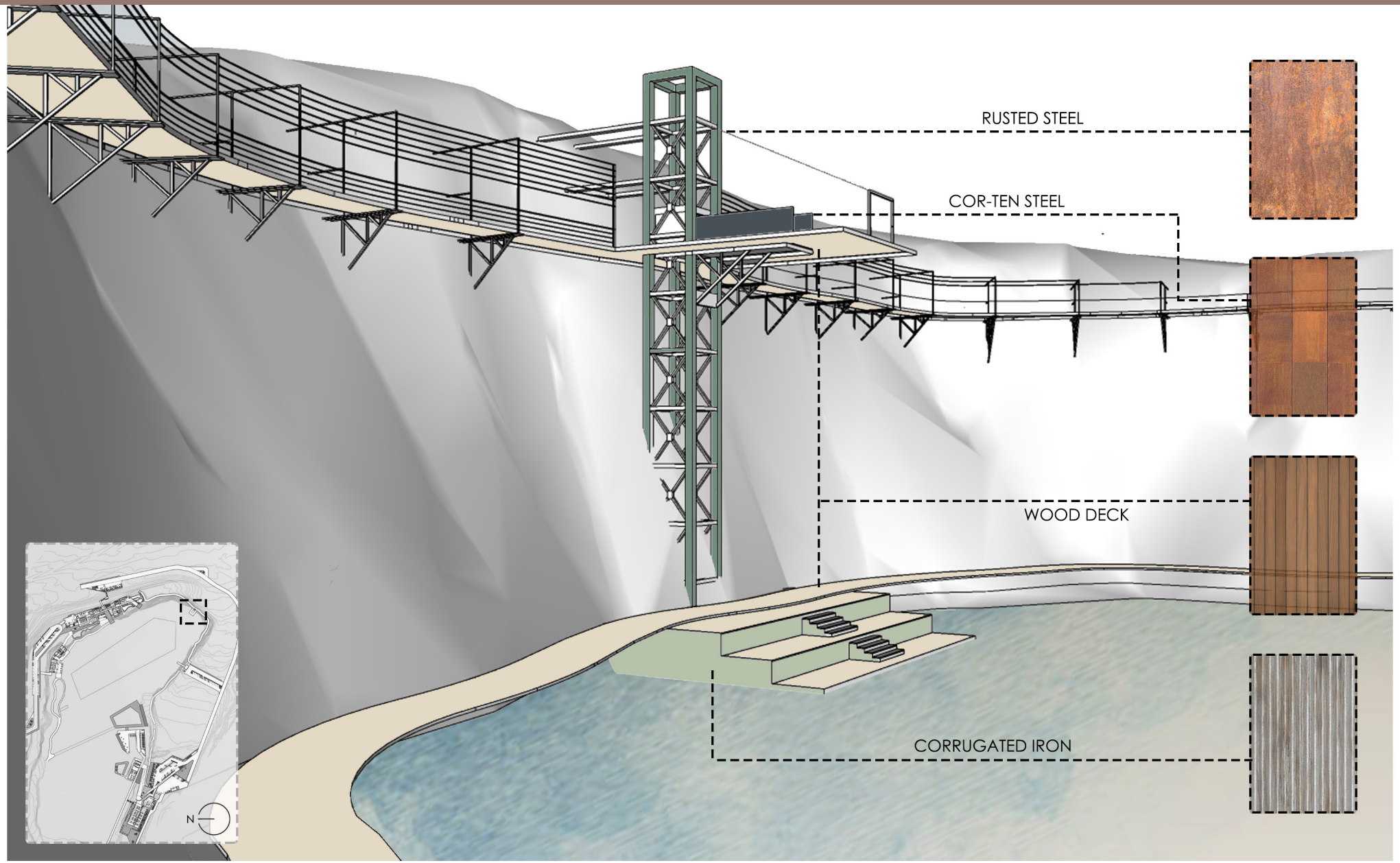


Fig. 145: Materiality perspective (Author ,2022)

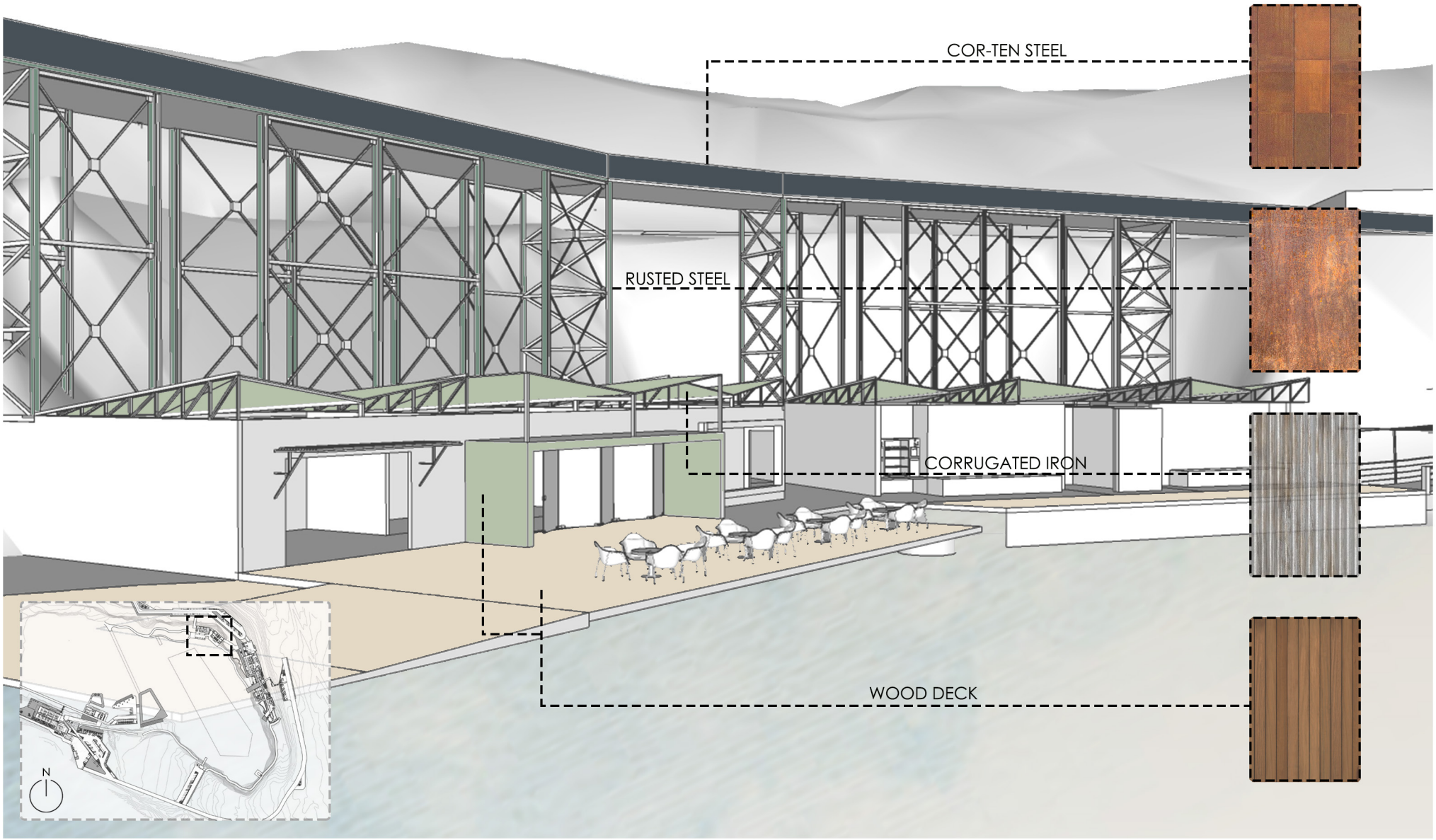
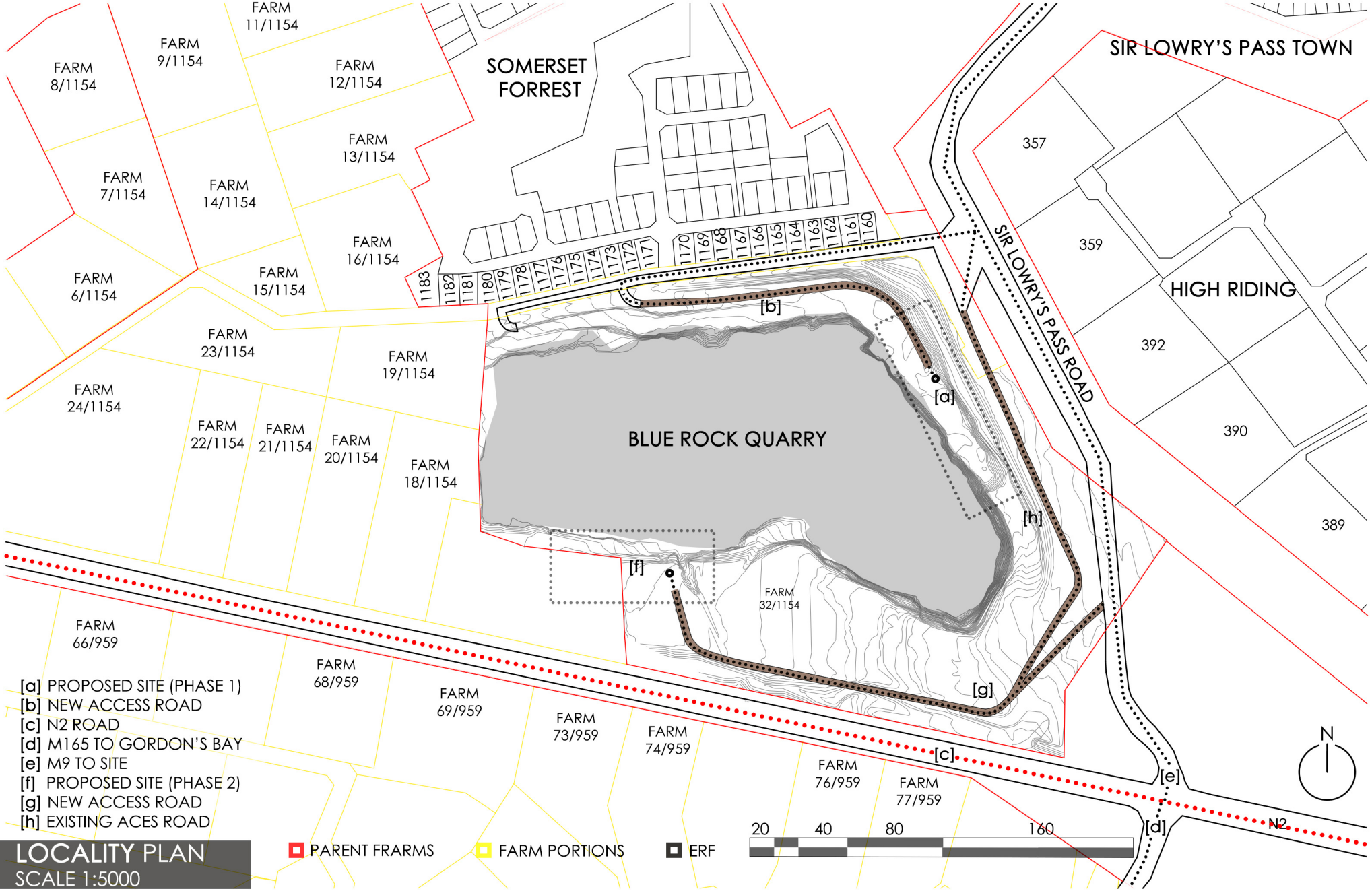


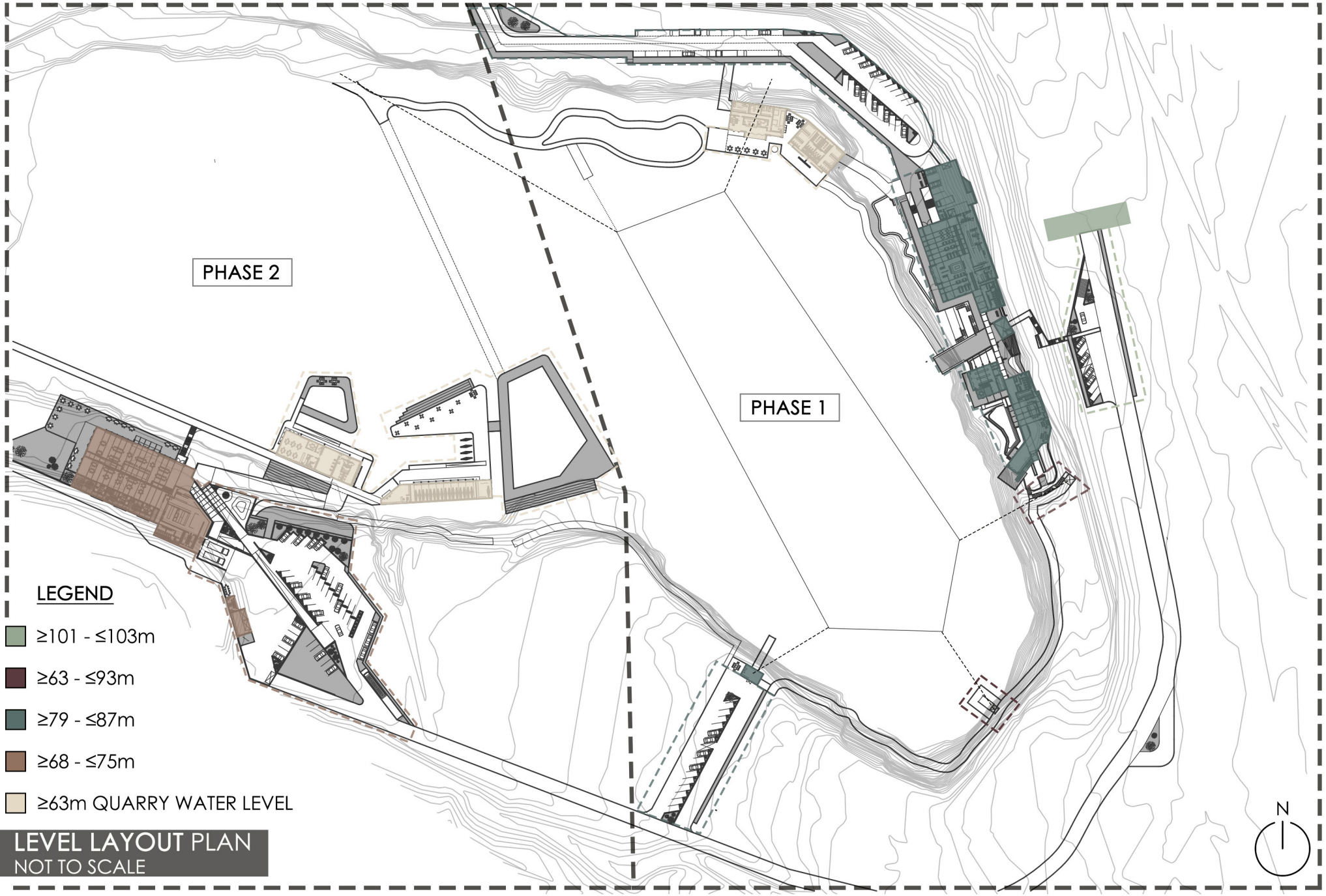
Fig. 146: Materiality perspective (Author ,2022)

CHAPTER 7

DESIGN SYNTHESIS
FINAL DESIGN

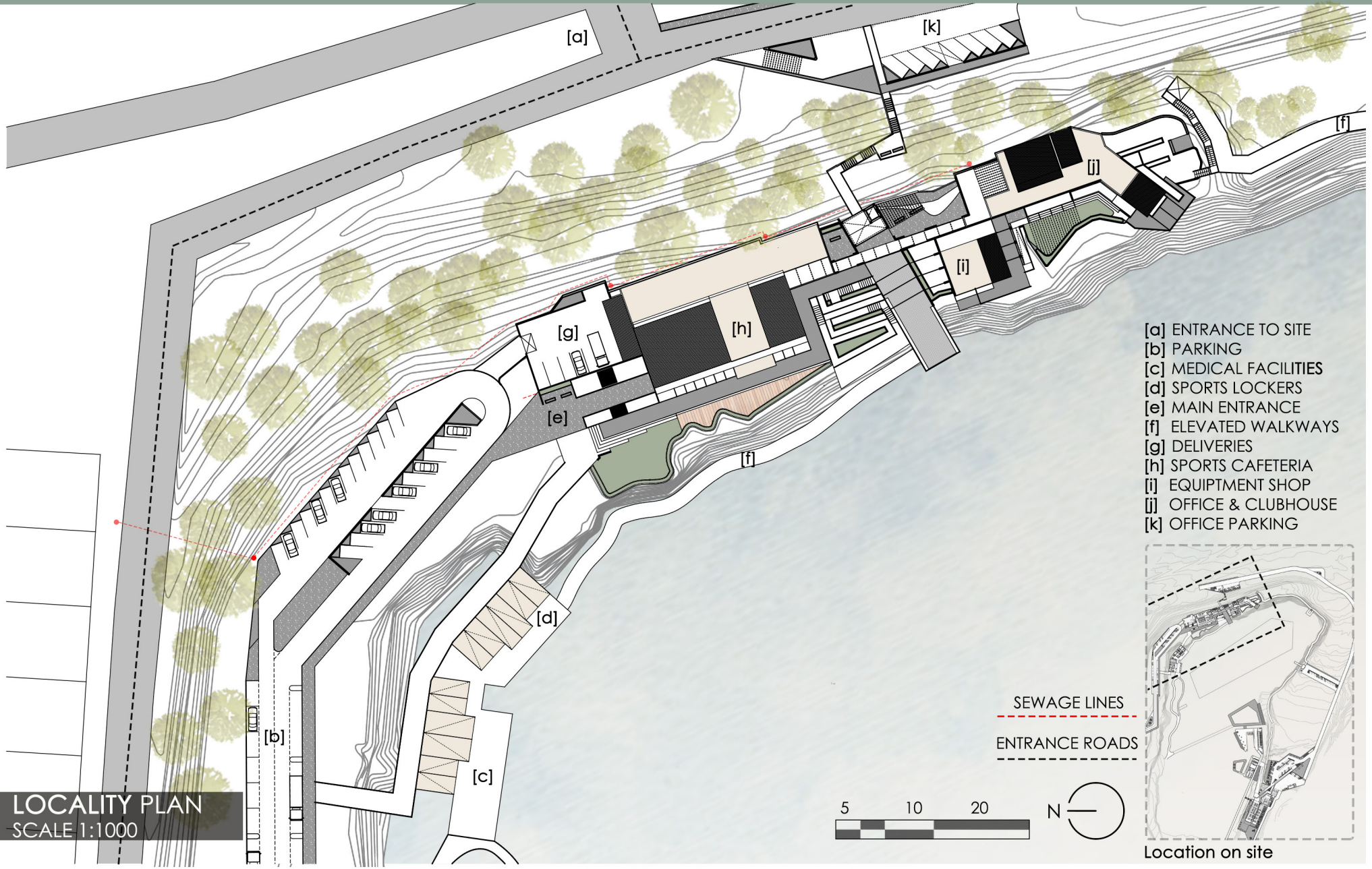


LOCALITY PLAN
SCALE 1:5000

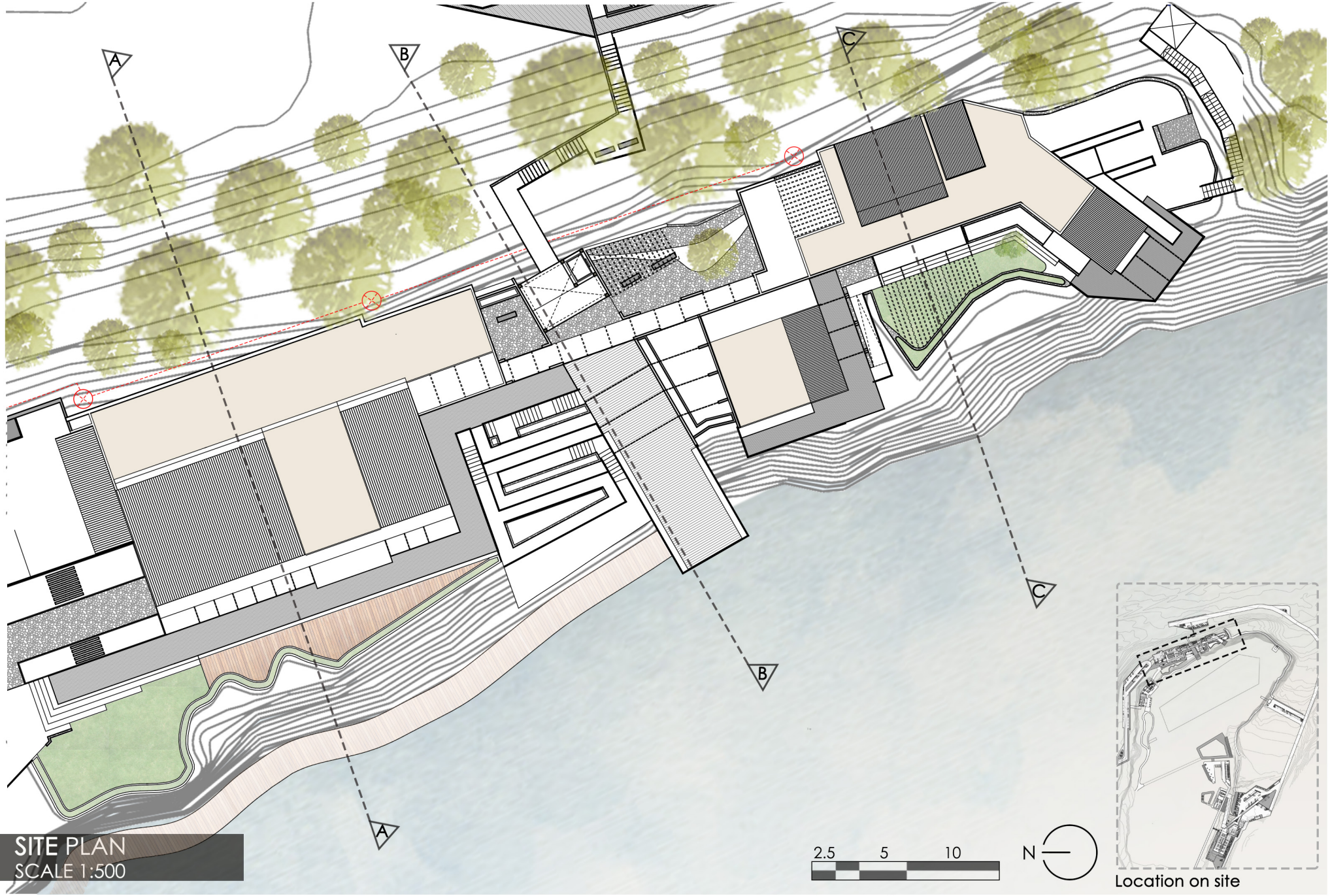


LEVEL LAYOUT PLAN
NOT TO SCALE

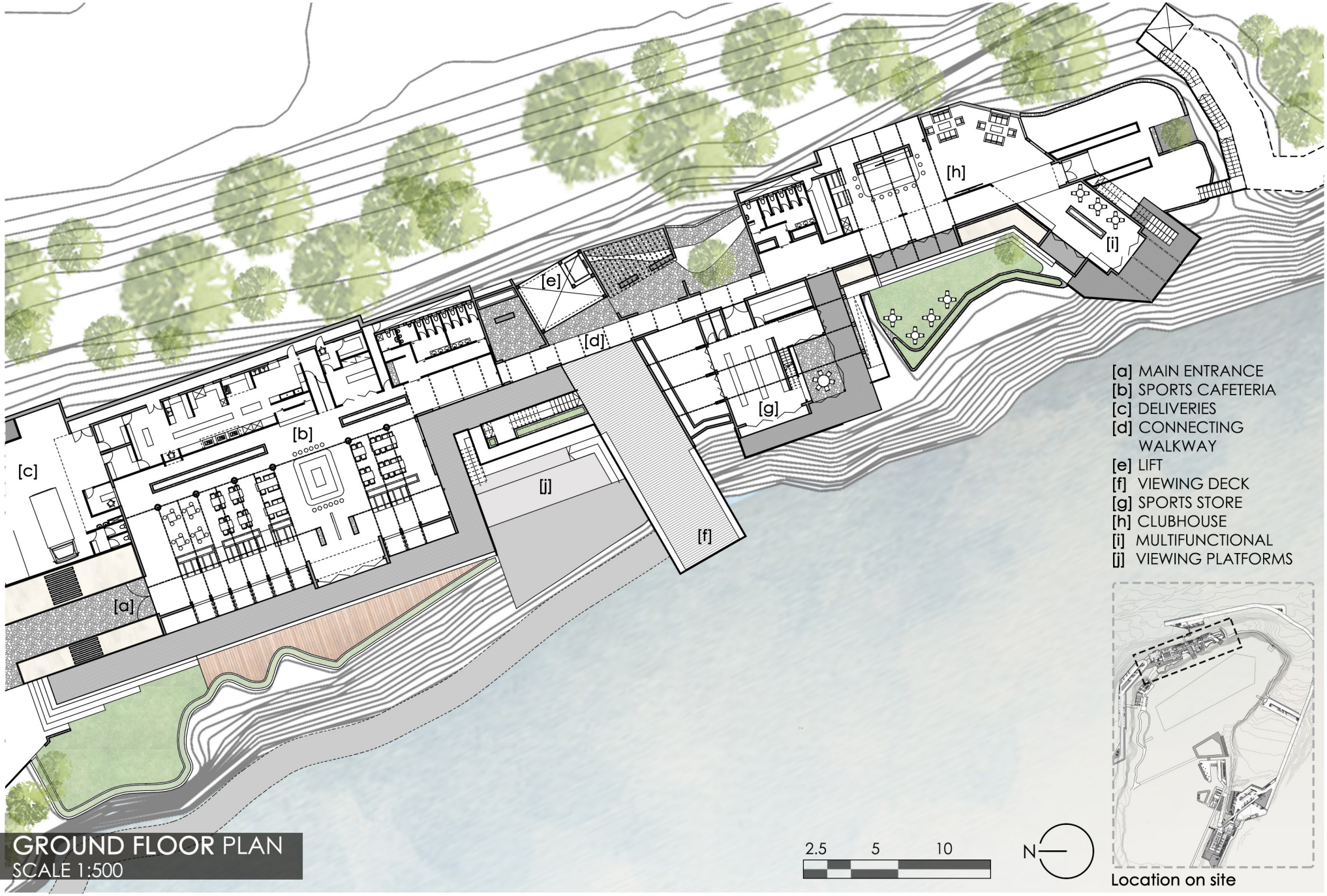
PHASE 1: EXTREME SPORTS PROPOSAL



LOCALITY PLAN
SCALE 1:1000



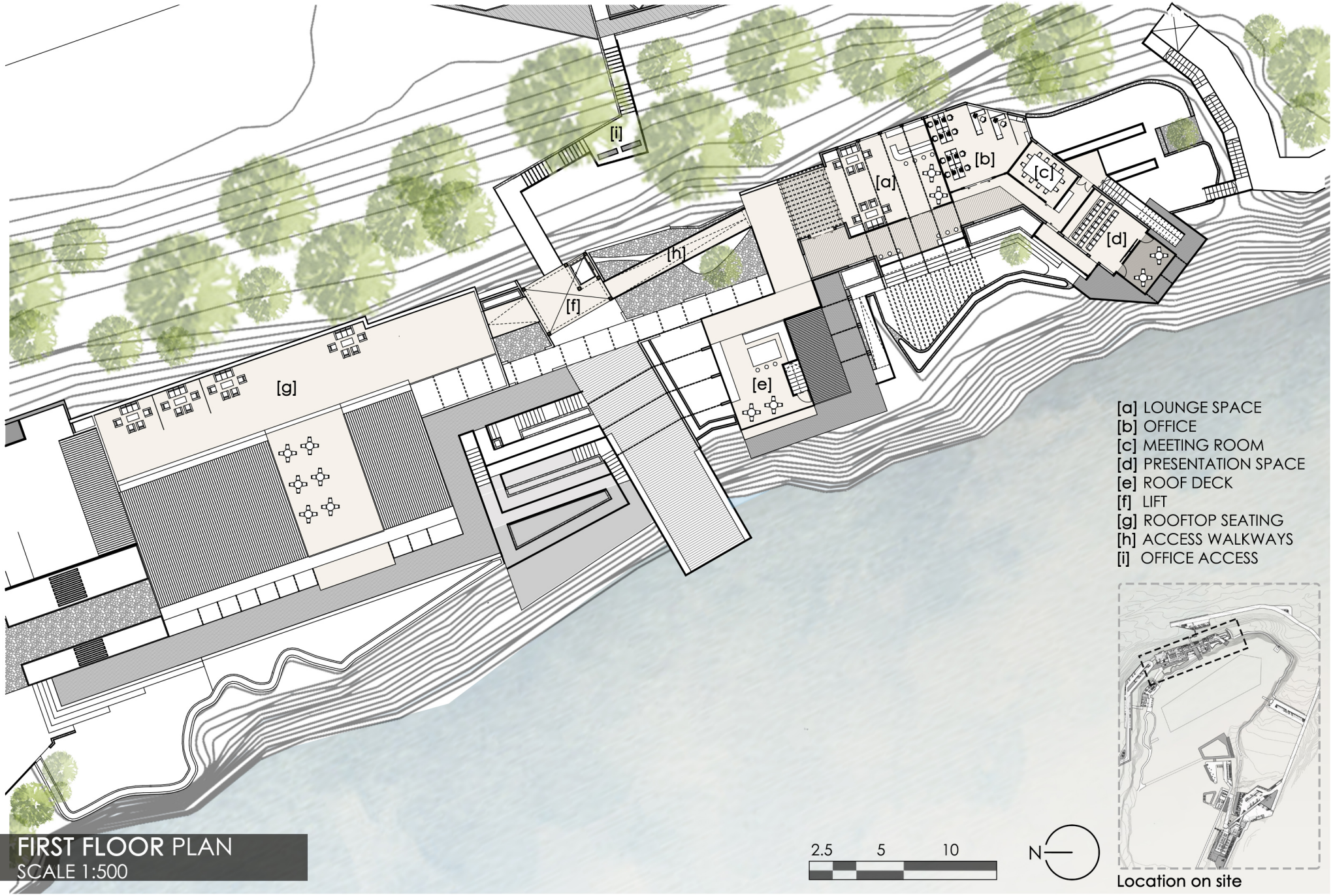
SITE PLAN
SCALE 1:500



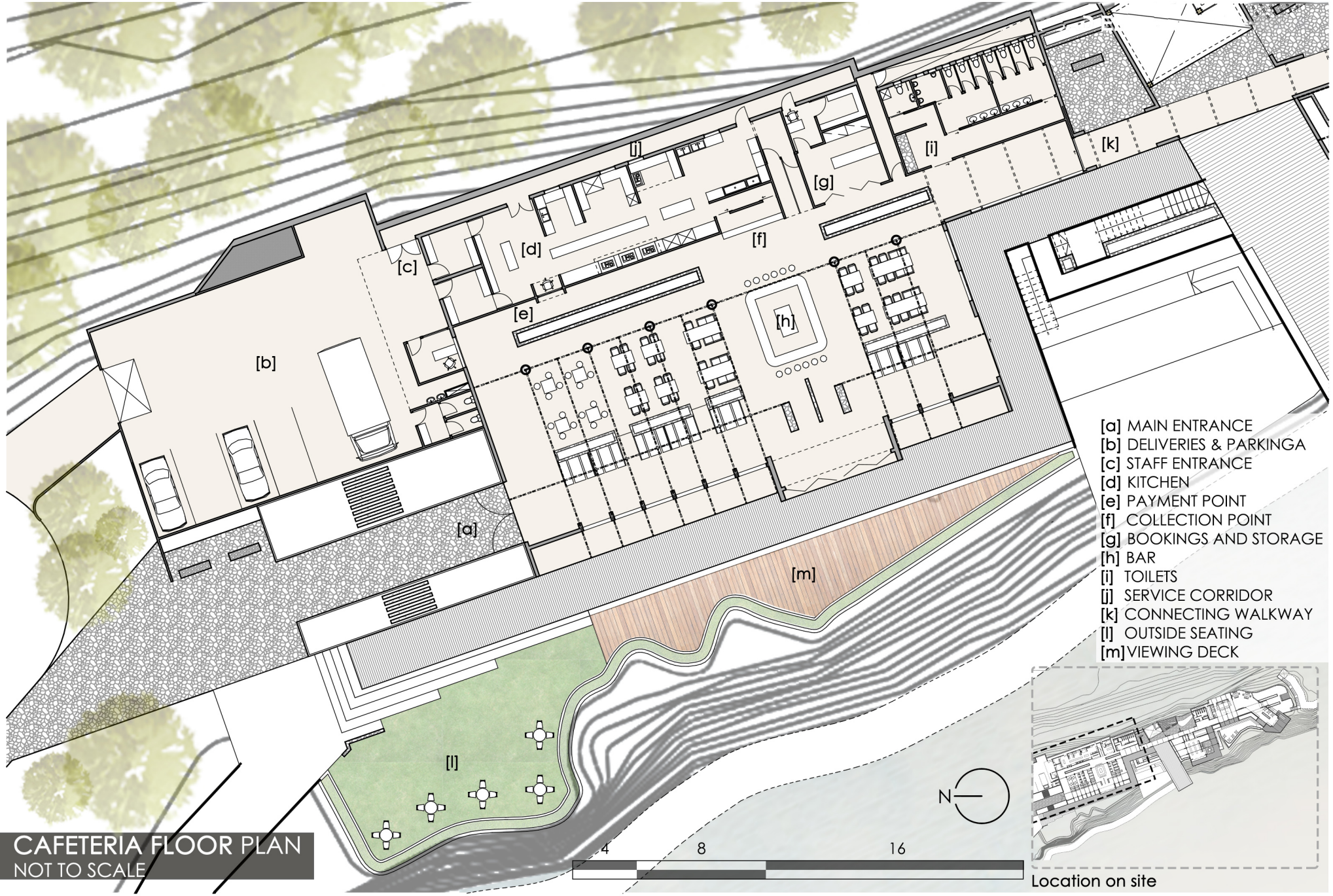
[a] MAIN ENTRANCE
[b] SPORTS CAFETERIA
[c] DELIVERIES
[d] CONNECTING WALKWAY
[e] LIFT
[f] VIEWING DECK
[g] SPORTS STORE
[h] CLUBHOUSE
[i] MULTIFUNCTIONAL
[j] VIEWING PLATFORMS

Location on site

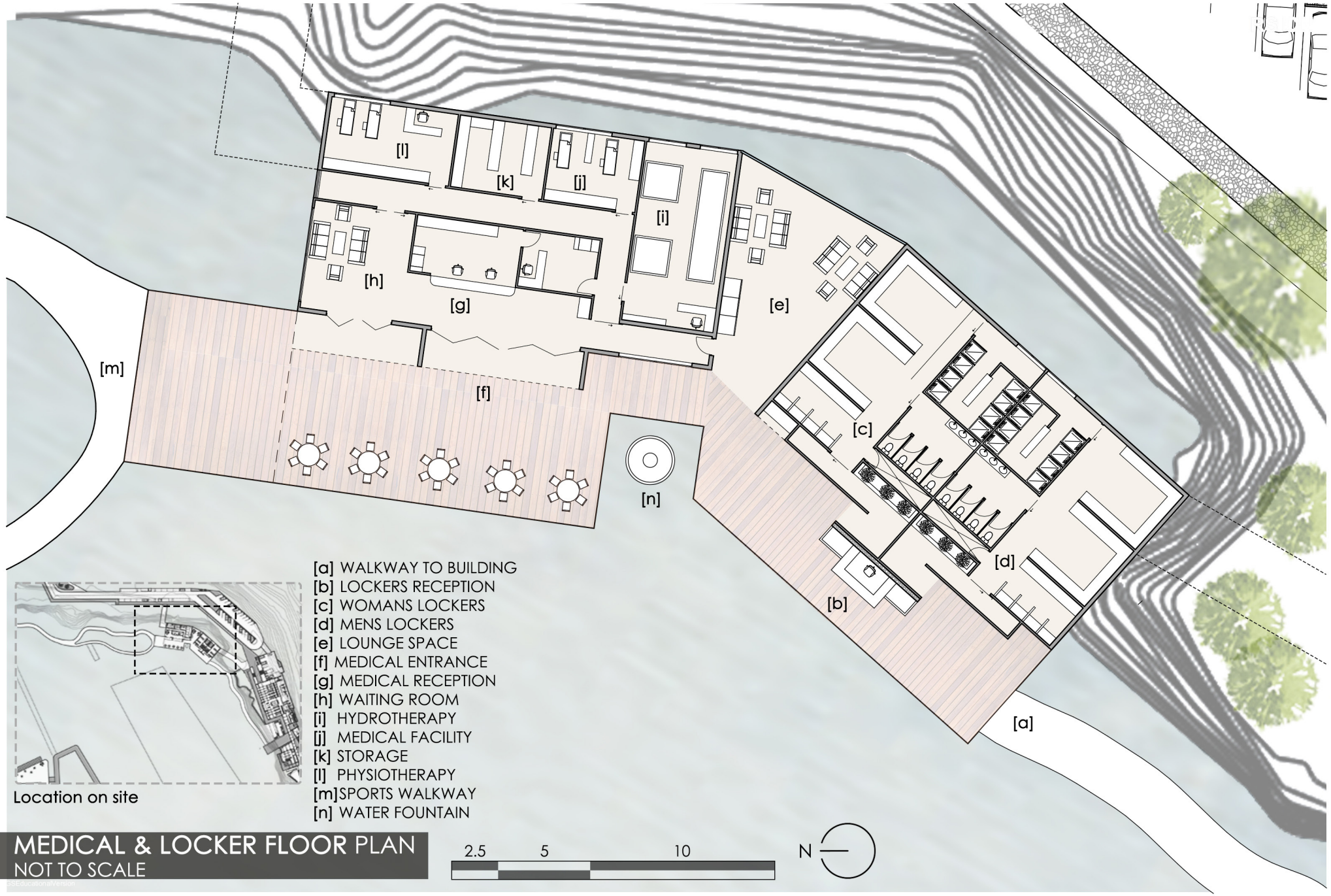
GROUND FLOOR PLAN
SCALE 1:500



FIRST FLOOR PLAN
SCALE 1:500



CAFETERIA FLOOR PLAN
NOT TO SCALE



Location on site

[a] WALKWAY TO BUILDING
[b] LOCKERS RECEPTION
[c] WOMANS LOCKERS
[d] MENS LOCKERS
[e] LOUNGE SPACE
[f] MEDICAL ENTRANCE
[g] MEDICAL RECEPTION
[h] WAITING ROOM
[i] HYDROTHERAPY
[j] MEDICAL FACILITY
[k] STORAGE
[l] PHYSIOTHERAPY
[m]SPORTS WALKWAY
[n] WATER FOUNTAIN

MEDICAL & LOCKER FLOOR PLAN

NOT TO SCALE

ELEVATIONS



NORTH ELEVATION
NOT TO SCALE

1m 2m 4m

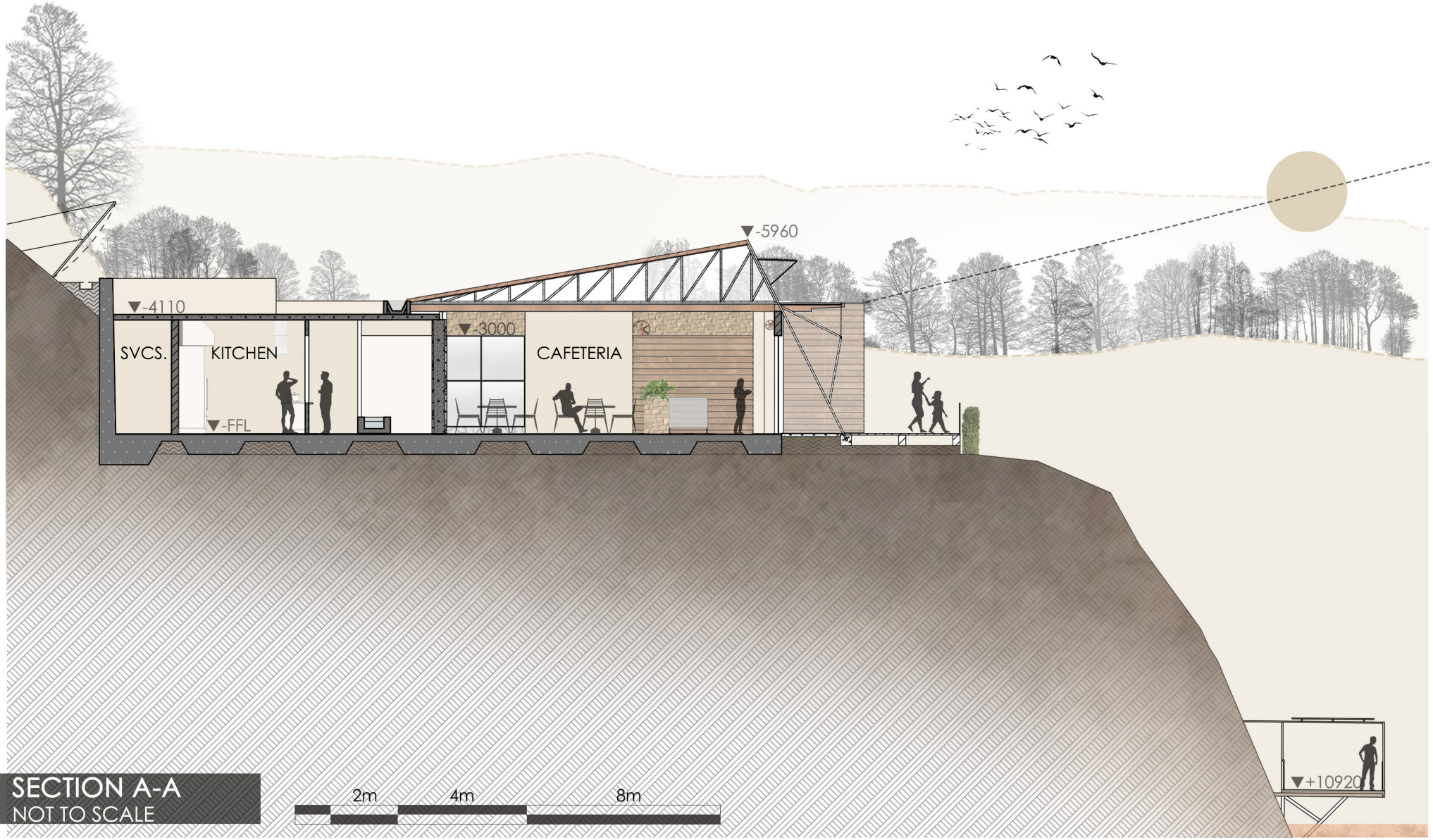


WEST ELEVATION
NOT TO SCALE

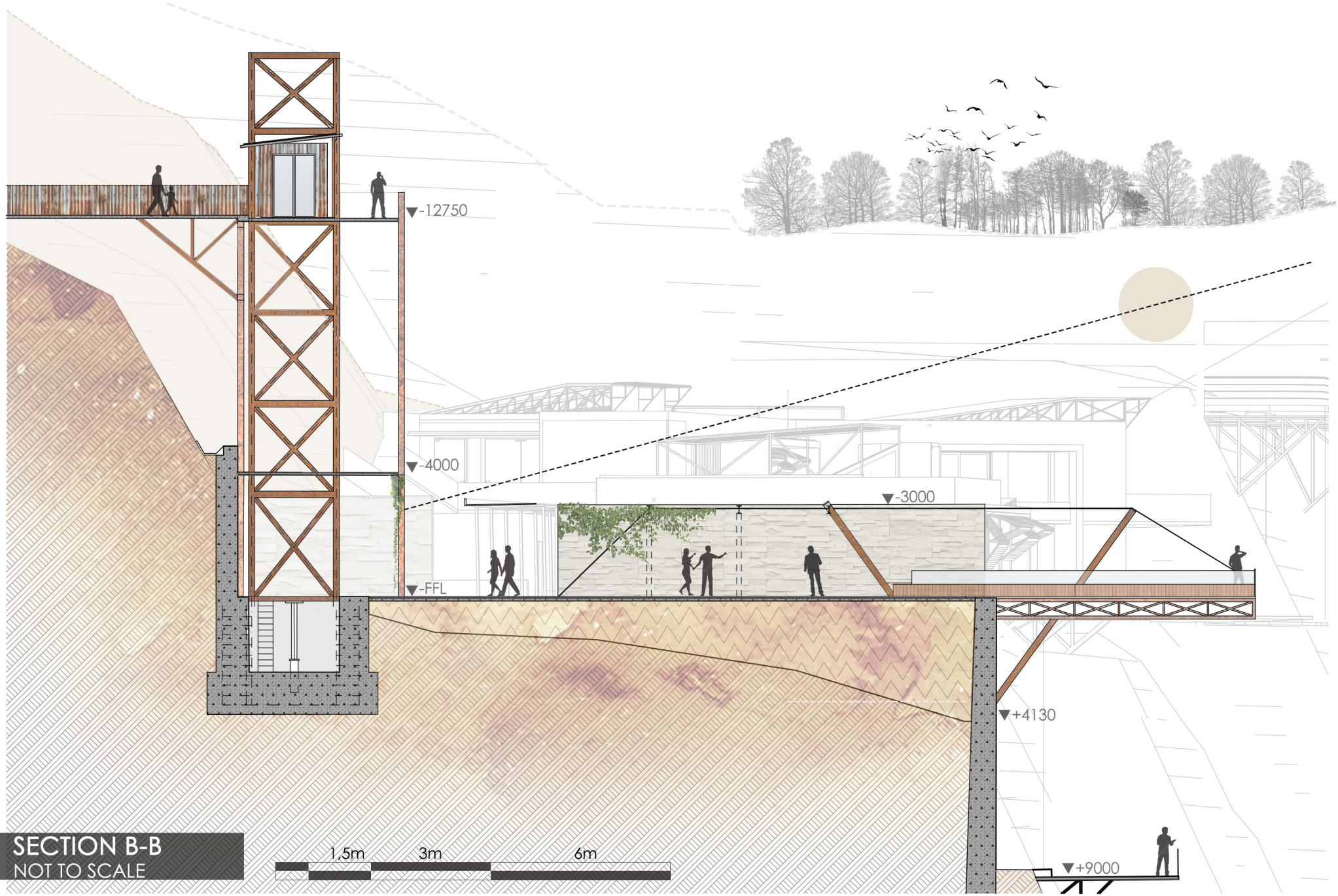
3,5m 7m 14m



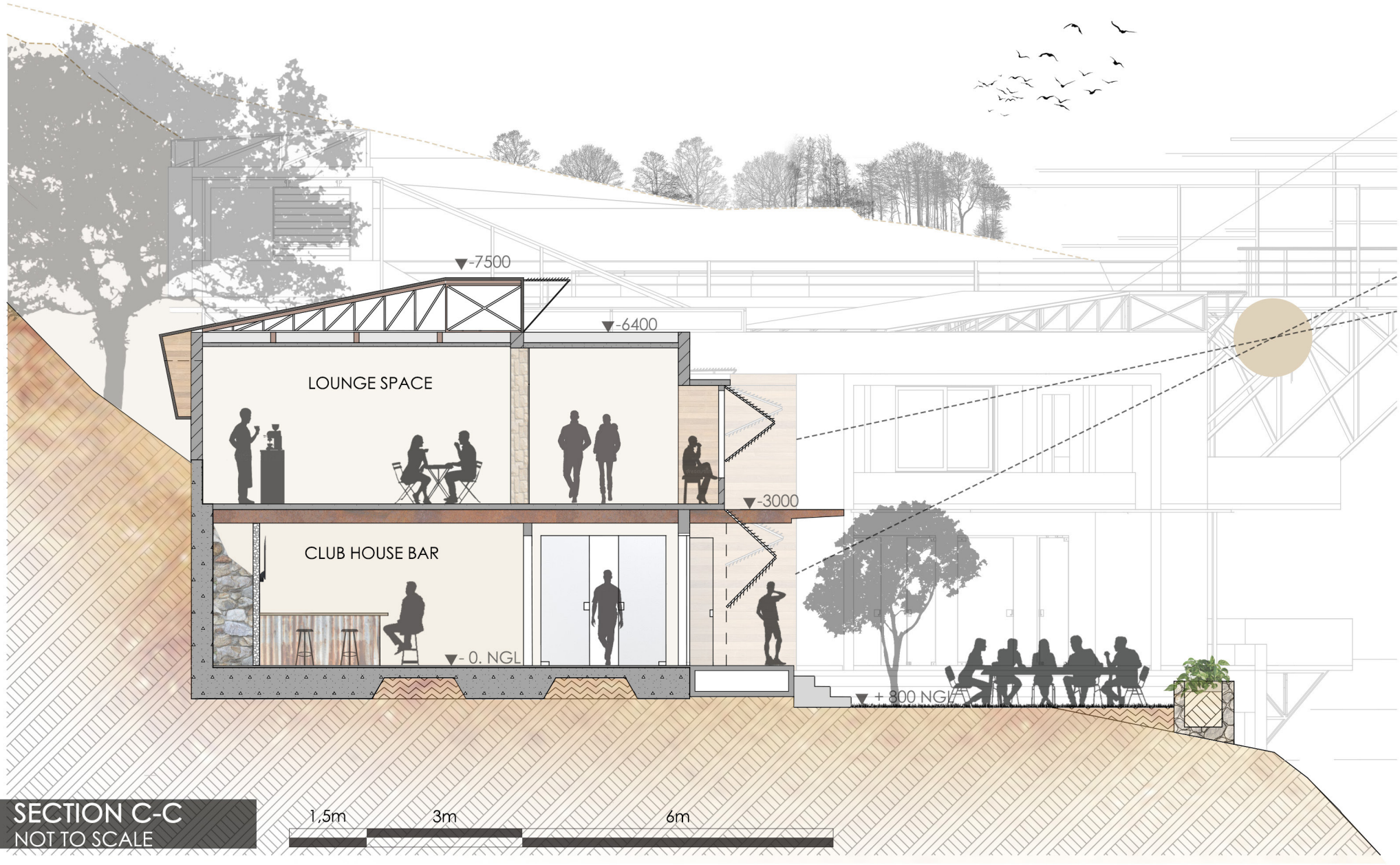
SECTIONS



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION C-C
NOT TO SCALE

PERSPECTIVES

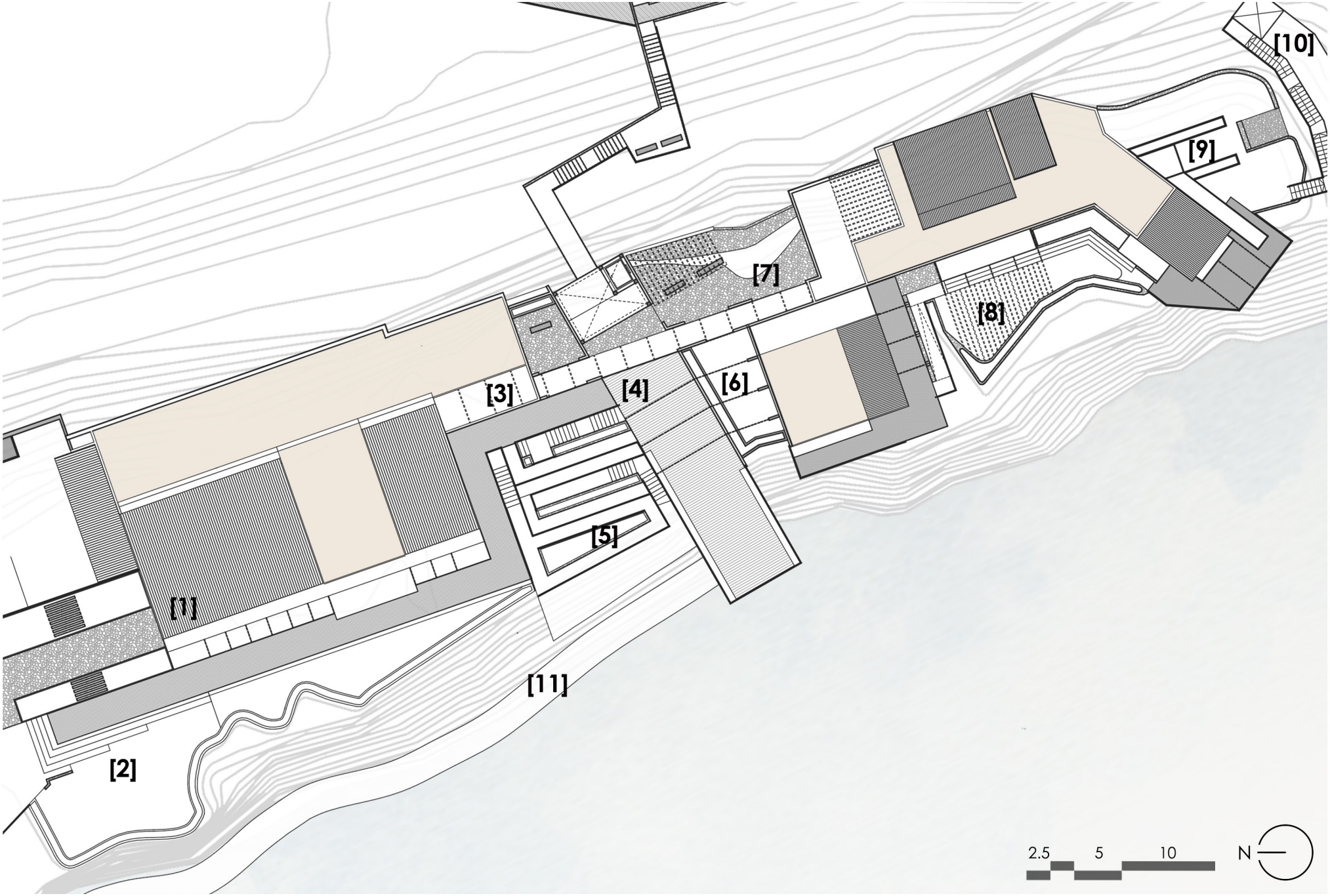


WESTERN PERSPECTIVE



NORTHERN PERSPECTIVE

RENDERS


[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]
[9]
[10]
[11]
2.5
5
10
N

1.



SPORTS CAFETERIA


2.
OUTSIDE SEATING

3.



CONNECTING WALKWAY

4.



VIEWING DECK

5.



EXCAVATED PAVILIONS

6.



COURTYARD

7.



COURTYARD

8.



OFFICE & CLUBHOUSE COURTYARD

9.



ACCESS TO LEVELS

10.



ELEVATED WALKWAYS

12.



CONNECTING WALKWAY

CONCLUSION

The intention for this dissertation document was to question the current use of quarries, or 'spaces lost to the industry', by looking at methods of rehabilitation while capturing the authentic heritage of the site. The role that architecture can play in a scarred landscape by looking at past influences and an industrial influenced design could help regenerate the Blue Rock Quarry.
The act of rehabilitation intends to look at the history of the site as well as the insertion of new lift through architecture. Because of the existing physical and spatial features of the site the concept of the proposed project led towards a space focussed upon extreme sport and the mental and physical healing of the human body through an active manner. Through the proposed functions the site and the visitor would be able to experience a sense of alternative healing through activation. By focussing on the main principals such as materiality and detailing of the existing landscape a new conceptual design approach was developed within the rock walls of the quarry. A connection is made between two contradicting elements, the environment and the industry, allowing for the history of the site to be re-imagined. The proposed architecture tells a story and rather than trying to fix the scar, it contributes and connects with it. The structures are set into the landscape and allows for the surrounding natural environment to form part of it, giving back to the site. Significant uses of on site features add to the connection of excavation and user, adding to the meaning of post-industrial architecture.
Because of the limitless area chosen to work with an area had to be found that could help express the intended purpose of the design while contributing to the function of extreme sport on site. Public experiences are created inside of a space once thought to be wasted by historical influences. A promenade is created within and against the quarry walls allowing the circulation to take place, motivating the sense to healing through activation. The walkways serve as viewing decks which contributes the quarry becoming an extreme sports arena, exploring the different liminal realms created through involvement within space.

The design, influenced by factors of the industry, looks at the use of steel and the element of rust to provide the sense of the aging process, connecting with the history of the site. Tensile elements help connect with the art of cable skiing of the quarry waters and existing on site functions. The shale rock provided by the quarry is used and inserted in multiple elements of design. This proposed space offers the potential for further development and serves as a example on how quarries could be dealt with in the future. In South Africa, with its rich mining background, there are various opportunities to revive spaces 'lost to the industry' through architecture and the multi=functional uses of the industrial architype.

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APPENDIX A

CONSTRUCTION DOCUMENTATION

ARCHICAD EDUCATION VERSION

PROJECT NUMBER: S001

CLIENT:

Red Bull

SWISHTEC ARCHITECTS & PROJECT MANAGEMENT
Green Building Environmentally Friendly European Style

BLUE ROCK VILLAGE

GENERAL NOTES:

AUTODESK

Revisions

No.	Description	Date

LEGEND:

- ERF
- FARM PORTIONS
- PARENT FARMS
- SEWAGE LINES
- ROADS
- PHASE BORDERS
- PROPOSED SITE
- PROPOSED NEW ROAD

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 32/1154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building:	PLAN

Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

This drawing is to be in conjunction with drawing number:

DRAWING NUMBER:

Project Nr:	Dicipline:	Series:	Drawing Nr:
As Indicated	25/10/2022	Author	Checker

SIR LOWRY'S PASS

SOMERSET FORREST

HIGH RIDING

BLUE ROCK QUARRY

FORREST VILLAGE DRIVE

SIR LOWRY'S PASS ROAD

PROPOSED ENTRANCE

PROPOSED SITE

EXISTING ENTRANCE

SITE BOUNDRY

PHASE BOUNDRY

PHASE 1

PHASE 2

N2 TOWARDS SOMERSET WEST

N2 TOWARDS GRABOUW

N2

M165

FARM 10/1154
FARM 11/1154
FARM 9/1154
FARM 8/1154
FARM 12/1154
FARM 13/1154
FARM 7/1154
FARM 14/1154
FARM 16/1154
FARM 6/1154
FARM 15/1154
FARM 5/1154
FARM 23/1154
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FARM 74/959
FARM 75/959
FARM 76/959
FARM 77/959
FARM 78/959

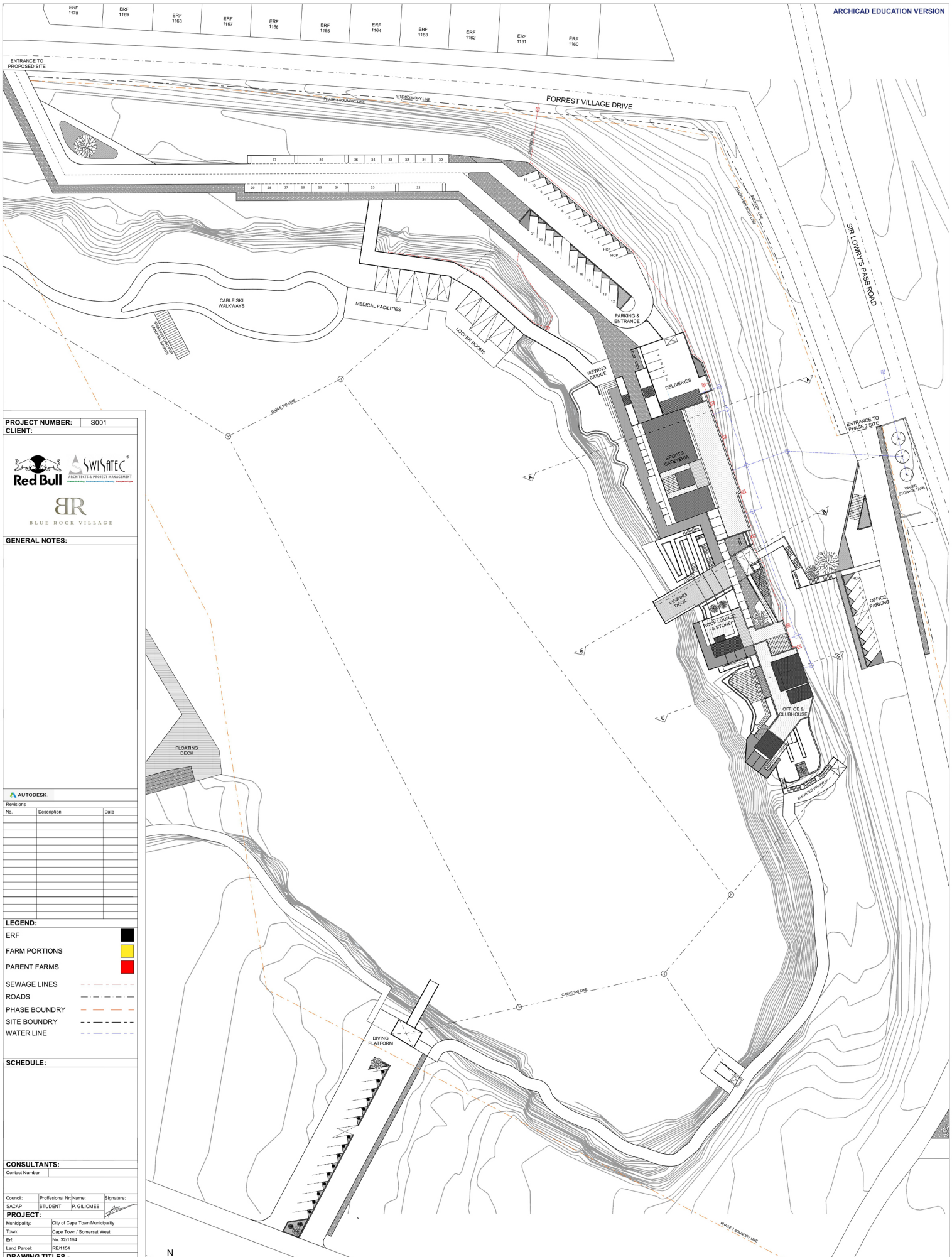
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357
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390
389
387

N

BLUE ROCK EXTREME SPORTS INSTRITUTE
LOCALITY PLAN
SCALE 1:2000

ARCHICAD EDUCATION VERSION



PROJECT NUMBER: S001

CLIENT:

Red Bull

SWISATEC ARCHITECTS & PROJECT MANAGEMENT

BLUE ROCK VILLAGE

GENERAL NOTES:

AUTODESK

Revisions

No.	Description	Date

LEGEND:

- ERF
- FARM PORTIONS
- PARENT FARMS
- SEWAGE LINES
- ROADS
- PHASE BOUNDRY
- SITE BOUNDRY
- WATER LINE

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 32/1154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building: PLAN

Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

This drawing is to be in conjunction with drawing number:

DRAWING NUMBER:

Project Nr:	Dicipline:	Series:	Drawing Nr:
As Indicated	25/10/2022	Author	Checker

BLUE ROCK EXTREME SPORTS INSTRITUTE
SITE PLAN
SCALE 1:500

ARCHICAD EDUCATION VERSION



PROJECT NUMBER: S001

CLIENT:

Red Bull | SWISSATEC ARCHITECTS & PROJECT MANAGEMENT | BLUE ROCK VILLAGE

GENERAL NOTES:

AUTODESK

Revisions

No.	Description	Date

LEGEND:

- ERF
- FARM PORTIONS
- PARENT FARMS
- SEWAGE LINES
- ROADS
- PHASE BOUNDRY
- SITE BOUNDRY
- WATER LINE

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 32/1154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building: PLAN

Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

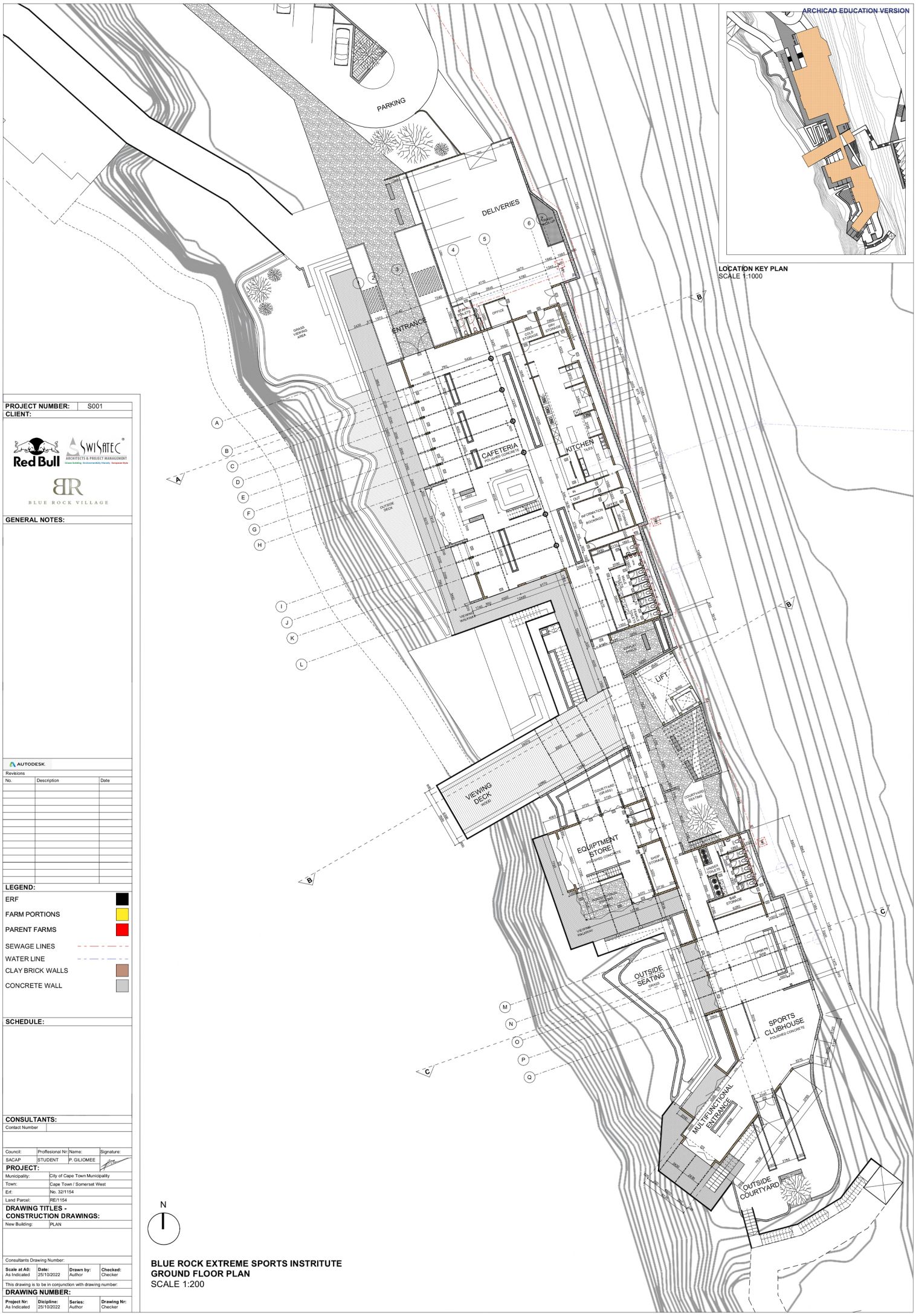
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DRAWING NUMBER:

Project Nr:	Dicipline:	Series:	Drawing Nr:
As Indicated	25/10/2022	Author	Checker

N

BLUE ROCK EXTREME SPORTS INSTRITUTE
ROOF PLAN
SCALE 1:200



ARCHICAD EDUCATION VERSION

LOCATION KEY PLAN
SCALE 1:1000

PROJECT NUMBER:	S001
CLIENT:	

Red Bull

SWISATEC ARCHITECTS & PROJECT MANAGEMENT
Green Building Environmentality Friendly European Style

BLUE ROCK VILLAGE

GENERAL NOTES:

AUTODESK

Revisions

No.	Description	Date

LEGEND:

- ERF
- FARM PORTIONS
- PARENT FARMS
- SEWAGE LINES
- WATER LINE
- CLAY BRICK WALLS
- CONCRETE WALL

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 32/1154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building:	PLAN

Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

This drawing is to be in conjunction with drawing number:

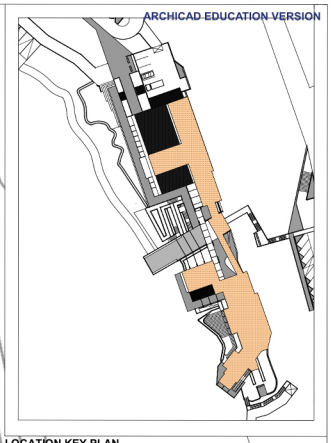
DRAWING NUMBER:

Project Nr:	Dicipline:	Series:	Drawing Nr:
As Indicated	25/10/2022	Author	Checker

N

BLUE ROCK EXTREME SPORTS INSTRITUTE
GROUND FLOOR PLAN
SCALE 1:200

ARCHICAD EDUCATION VERSION



LOCATION KEY PLAN
SCALE 1:1000

PROJECT NUMBER: S001

CLIENT:

Red Bull | SWISSATEC ARCHITECTS & PROJECT MANAGEMENT | BLUE ROCK VILLAGE

GENERAL NOTES:

AUTODESK

Revisions

No.	Description	Date

LEGEND:

- ERF
- FARM PORTIONS
- PARENT FARMS
- SEWAGE LINES
- ROADS
- CLAY BRICK WALLS
- CONCRETE WALL

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 32/1154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building:	PLAN

Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

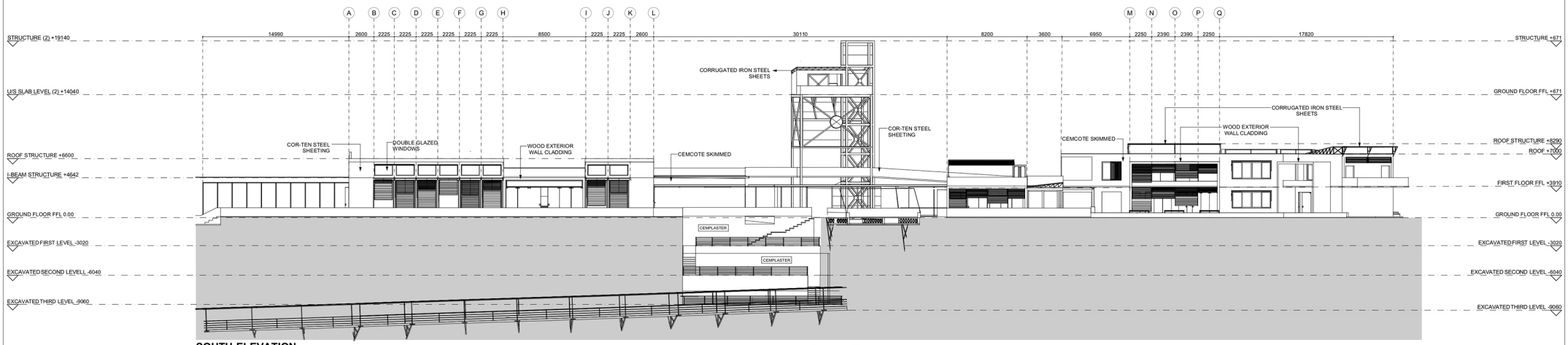
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DRAWING NUMBER:

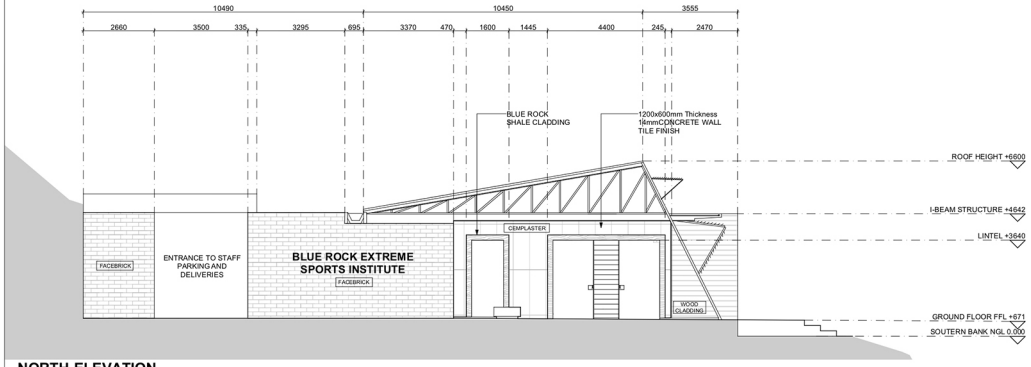
Project Nr:	Dicipline:	Series:	Drawing Nr:
As Indicated	25/10/2022	Author	Checker

BLUE ROCK EXTREME SPORTS INSTRITUTE
FIRST FLOOR PLAN
SCALE 1:200

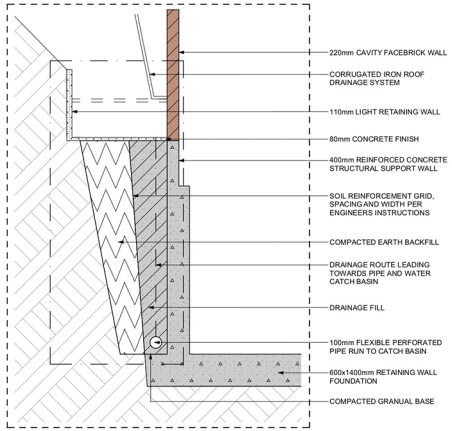
ARCHICAD EDUCATION VERSION



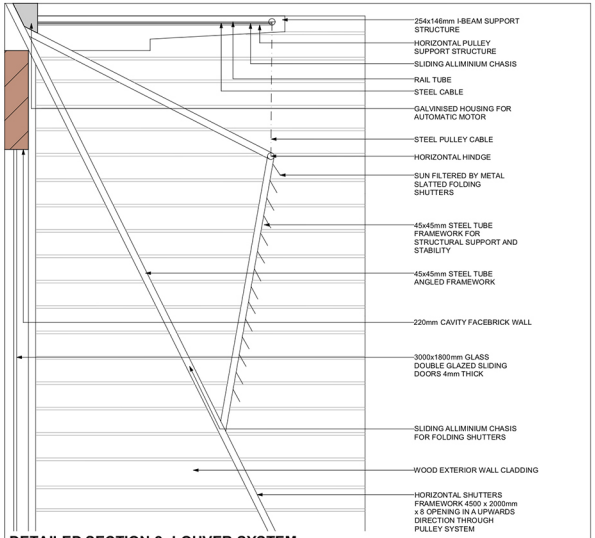
SOUTH ELEVATION
SCALE 1:200



NORTH ELEVATION
SCALE 1:100



DETAILED SECTION 1: RETAINING WALL
SCALE 1:50



DETAILED SECTION 2: LOUVER SYSTEM
SCALE 1:20

PROJECT NUMBER: S001
CLIENT:

Red Bull | SWISHTEC ARCHITECTS & PROJECT MANAGEMENT | BLUE ROCK VILLAGE

GENERAL NOTES:

AUTODESK.

Revisions

No.	Description	Date

LEGEND:

- CLAY FACEBRICK
- CONCRETE
- COMPACTED EARTH

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 321154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building: PLAN

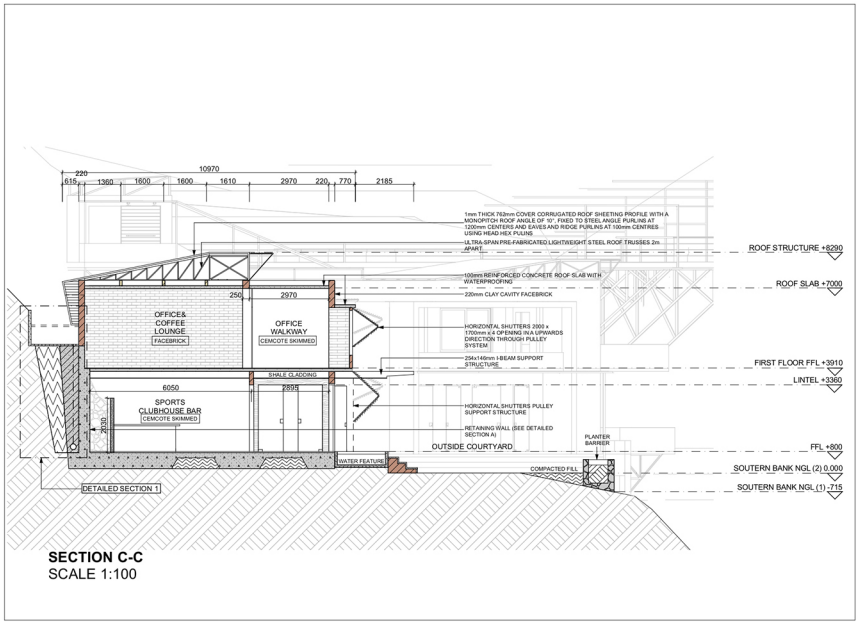
Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

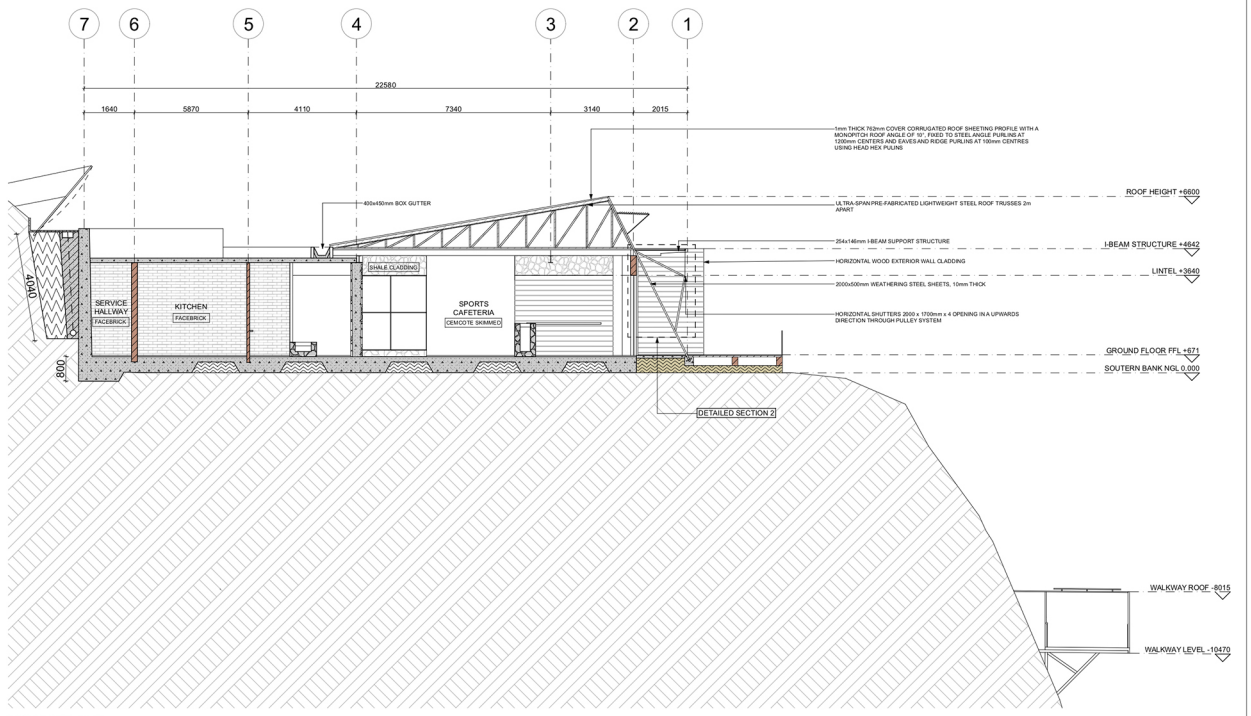
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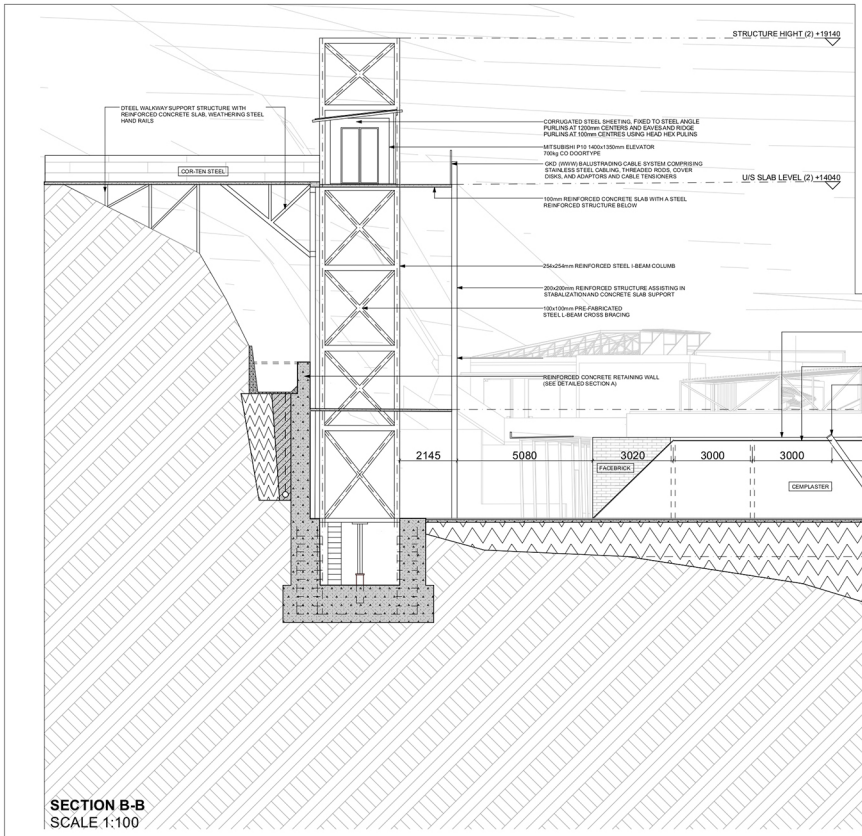
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As Indicated	25/10/2022	Author	Checker



SECTION C-C
SCALE 1:100



SECTION A-A
SCALE 1:100



SECTION B-B
SCALE 1:100

GENERAL NOTES:

PROJECT NUMBER: S001

CLIENT:

Red Bull

SWISATEC ARCHITECTS & PROJECT MANAGEMENT
Green Building. Environmentally Friendly. Sustainable Style.

BLUE ROCK VILLAGE

LEGEND:

CLAY FACEBRICK	
CONCRETE	
COMPACTED EARTH	

AUTODESK.

Revisions

No.	Description	Date

SCHEDULE:

CONSULTANTS:

Contact Number

Council:	Proffesional Nr:	Name:	Signature:
SACAP	STUDENT	P. GILIOMEE	

PROJECT:

Municipality:	City of Cape Town Municipality
Town:	Cape Town / Somerset West
Erf:	No. 32/1154
Land Parcel:	RE/1154

DRAWING TITLES - CONSTRUCTION DRAWINGS:

New Building:	PLAN

Consultants Drawing Number:

Scale at A0:	Date:	Drawn by:	Checked:
As Indicated	25/10/2022	Author	Checker

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DRAWING NUMBER:

Project Nr:	Dicipline:	Series:	Drawing Nr:
As Indicated	25/10/2022	Author	Checker

SafeAssign Originality Report

ATRE7904 MAIN On • Document Final Submission

Philip Giliomee

Total Score: Low risk 1 %

Submission UUID: 7f673b4f-97bf-8522-55d0-cf33bc215fdb

Total Number of Reports	Highest Match	Average Match	Submitted on	Average Word Count
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Attachment 1 1 %

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