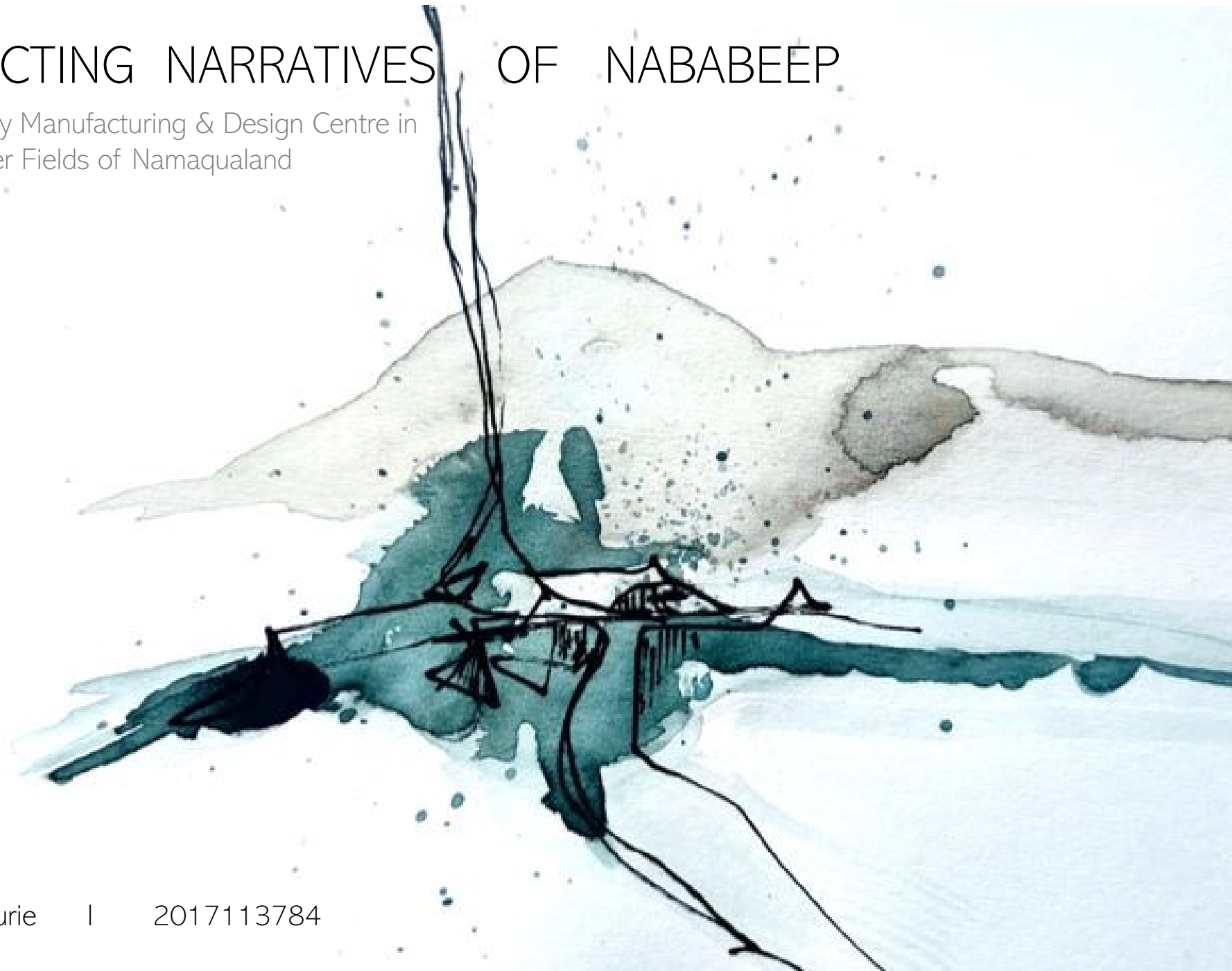


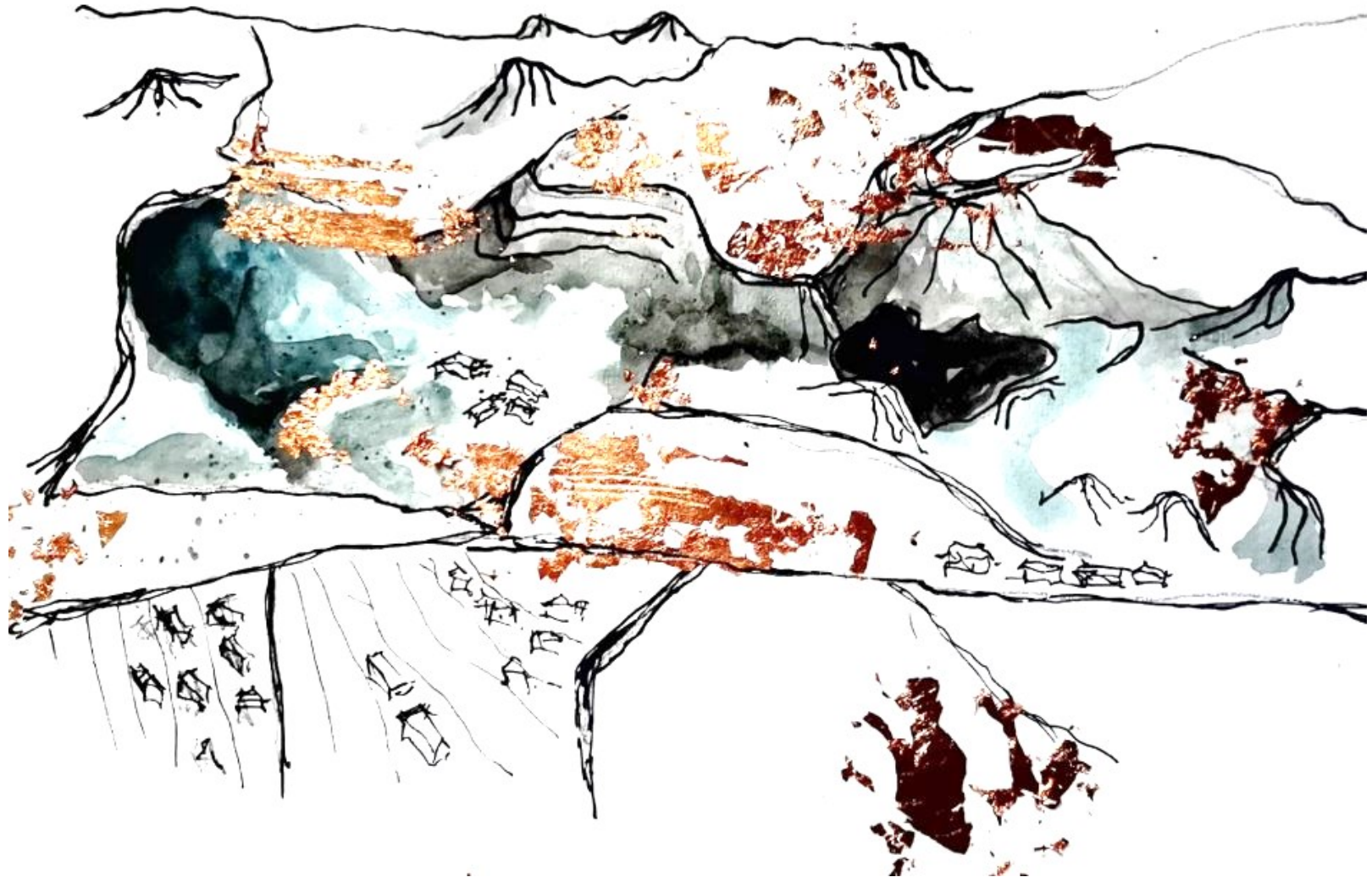
# EXTRACTING NARRATIVES OF NABABEEP

A Jewellery Manufacturing & Design Centre in  
the Copper Fields of Namaqualand



# Narratives of Nababeep

A Land Upended



EXTRACTING NARRATIVES OF NABABEEP  
A Jewellery Manufacturing & Design Centre in  
the Copper Fields of Namaqualand

By

MERLIN FOURIE

Dissertation submitted in fulfilment of the requirements for the degree  
Masters of Architecture Professional  
(MArch Prof)

in the

DEPARTMENT OF ARCHITECTURE  
FACULTY OF NATURAL AND AGRICULTURAL SCIENCES  
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Figure 1: The scarred landscape and explorations of new architectural interventions as a poetic layer over the site (author, 2022)

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# 1. ABSTRACT

The story of NababEEP begins as a tale of dissolution. Over the years the landscape have been broken up into fragments by mining activity. Confronted by its wounds, the dissertation will investigate ways of extracting beauty from the scarred. By looking at the art of engraving for inspiration, the dissertation will further investigate how the scars of the site can be re-interpreted as possibilities of capturing stories.

The site suffers from past trauma. In order to heal the landscape, it is believed that design can only emerge from the great depth of its painful, private and collective experiences. The disseration looks at ways how the ongoing traces and scars of the derelict site can contribute actively to the narrative of the site.

In trying to understand the site, the three concepts explore ways of exposing the richness of the site, understanding its fragments and interrogating its remaining witnesses. Explorations are also done in finding ways of healing its wounds and stitching together a new identity from the scabs of the site. Taking a closer look at the site and its trauma, and uncovering all of its layers, new voices can start to emerge- a palimpsest of stories of place. It is ultimately the embedded layers of place that allows the story of place to reveal itself.

The devastating imprints of mining will forever shape the town of NababEEP, it is important to form a new relationship between the mine, its scars and the people.





# CHAPTER 1

## INTRODUCTION

1.1 Site and Location

1.2 Theoretical Stance: Redeeming Leftover Space

1.3 Client & Brief

1.4 Finding an Appropriate Client

1.5 Aims & Structure

1.6 Conclusion

Research Question

## 1.1 Site and Location

The dissertation investigates at the copper wonder of Namaqualand, specifically around the town of NababEEP, an old copper mining town. Due to the discovery of copper a mine germinated which led to the founding of this town and the influx of miners. However, when the mine closed in 2004, the people of NababEEP were left to fend for themselves and ventured to other parts of the area to find work. The town is now a sad, leftover space with an unemployment rate of 75%.

The town of NababEEP is nestled between giant age-old granite outcrops. The mine is located on the slope of a mountain and overlooks the town. Located in the Kamiesberge, the area consists of arid landscapes with unique vegetation adjusted to the climatic constraints. NababEEP is located in a semi-desert area with big open skies and harsh light. There are however several granite outcrops surrounding the town and the landscape is therefore classified as complex - a mixture between cosmic and classical (Norberg-Schulz 1980).

Figure 2: The town sits between the giant granite outcrops (google.images, 2022: online)



## 1.2 Theoretical Stance: Redeeming Leftover Space

One of the main problems identified from the site was the environmental devastation caused by the mining industry. Over the years, industrial action carved away the landscape in an attempt to extract its treasures. After many years of lying dormant, the wounds of the landscape are now exposed, and the residents are confronted by them daily.

Another problem encountered was that the identity of the town seems to be lost. For years the story of place was dominated by the mine and all of its glories. Since the mine closed, the story of NababEEP has become lost in between decades. The place-identity is defined by fragmentation, it is a tale of dissolution.

The narrative of NababEEP is woven in conflict and is in desperate need of intervention. It has a story to tell, but until now it seems to be lost.

The dissertation is ultimately about re-invigorating the town and healing its scars to tell the story of place. It also touches on the vulnerability of the landscape and its people and how both have been damaged by the mining activities but also again through the closure of the mine. An identity of place needs to be re-scripted. Looking at what it once was, the dissertation will explore what it now needs to become. By focusing on the reclamation of leftover space, and the redemption of wastelands, an attempt is made to heal them, and explore how to breathe new life into the town.

Figure 3: The vulnerable landscape of NababEEP still reeling from the impacts of environmental devastation (google.images, 2022: online)



### 1.3 Client and Brief

The ultimate users and beneficiaries of this project is the community of NababEEP to whom the copper fields of Namaqualand have belonged to for centuries. The people of this area are unique and have their own ways and rituals. In trying to re-script their stories, it is important to first understand their daily lives and their unique rituals. A sensitive and appropriate approach is needed when considering the needs of the town. The slow-living lifestyle of the people as well as the atmosphere of the place needs to be the key to the design approach.

The idea is to reinvigorate the town and to uplift the community to break the cycle of poverty. This process of revitalisation will begin with stimulating different parts of the town. These nodes within the town act as catalysts and aim to inspire new approaches of reclaiming parts of the leftover space.

The main focus of the project is a Jewellery Manufacturing and Design Centre where people of the community are given the

opportunity to work along each other and make a living for themselves. Through utilizing copper from the mine and gemstones found in the area, the community can transform these treasures into jewellery with a story to tell. The opportunity exists to export these jewellery pieces to other parts of the country, spreading the story of this unique town in the Namaqua copper fields. The Jewellery Manufacturing and Design Centre will act as a catalyst on the periphery of the town- a point of urban acupuncture which will hopefully set in motion a series of new opportunities within the town.

In search of an appropriate client for the design, Imfundiso Skills Development was identified. It is a project focused on the upliftment of impoverished youth. With many training projects around the country focusing on jewellery making, Imfundiso can provide funding and training programmes for the proposed design.

Figure 4: The intriguing landscape of NababEEP (author, 2022).



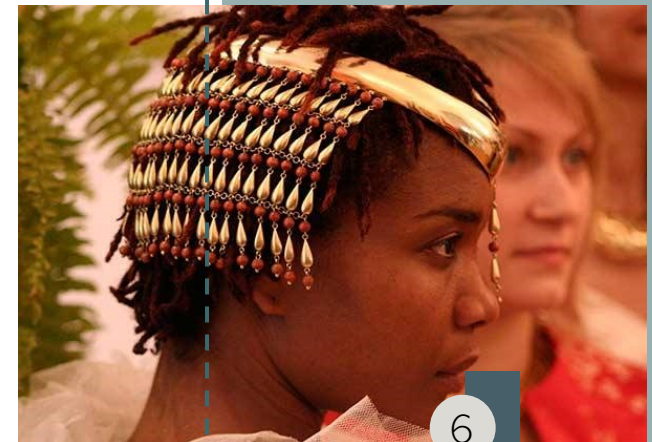
## 1.4 Finding an Appropriate Client

The main goal of the proposed design is to serve the people of Nababep and to take a step in the war against poverty. Imfundiso Skills Development (ISD) is a non-government organization that provides skills development programs, specifically in the field of jewellery design and manufacturing, to the historically disadvantaged and unemployed youth of South Africa. Imfundiso encourages and promotes the abundant creative potential of the youth by teaching jewellery design skills. This links with the country's most important export goods of gold, platinum and diamonds. The word 'Imfundiso' means 'to teach'. ISD considers the idea of teaching as a way of empowering someone to take their future into their own hands (O'Reilly, 2010: online). ISD first began as a small jewellery-making project on rented space at the De Beers Cullinan mines in Gauteng and has since grown into a jewellery school empire for Isaac Nkwe, founder of ISD (O'Reilly, 2010: online). In partnership with De Beers, the Department of Minerals and Energy and the Tshwane University of Technology, the Imfundiso project was founded, and continued to grow at the mine in Cullinan (O'Reilly, 2010: online). In his own words, Nkwe explains the vision of the project as follows:

*"There's an influx of people from rural areas coming to the mines every year, so the initial idea was to train the children of the mineworkers so that they could have a future, Today we have expanded to schools in Gauteng and Limpopo and KwaZulu-Natal teaching just about anyone who want to learn about jewellery making"* (O'Reilly, 2010: online).

ISD is in charge of four training projects at different areas in the country, namely at the Cullinan Diamond Mine in Gauteng, Sekhukhune Education Multi Purpose Centre in Limpopo, South West Gauteng College's George tabor Campus in Soweto, and lastly at the Thabamooop Education Multi Purpose Centre also in Soweto (O'Reilly, 2010: online). The curriculum that is taught consists of theoretical and practical skills, as well as marketing skills and entrepreneurship and the programme is taught over a period of two years (O'Reilly, 2010: online). Imfundiso's training allows students to incorporate indigenous jewellery making techniques into more contemporary styles. Their goal, according to Nkwe, is to make South Africa a jewellery-making hub because South Africa is a country abundant in resources and there exists an opportunity to export jewellery. Nkwe further explains that *"by encouraging young jewellers to take part in the economic mainstream of the country, they can also contribute to the local economic development through community tourism"* (O'Reilly, 2010: online).

Figure 5: The Imfundiso Skills Development foundation (O'Reilly, 2010: online).



## 1.4 Aims & Structure

Approaching the dissertation, an in-depth reading of the site is required, because the site essentially becomes the main focus of the project. The sub-themes of the research will therefore focus on exploring the richness of the site.

### (1) The art of engraving:

The touchstone enables the idea of looking at the site as a deeply scratched copper plate with stories to tell. The touchstone is an allegorical model of the site where the damage at NababEEP has been caused by deep scratches made to the surface, scarring the site so severely that there is no going back. Parallels are drawn between the deeply scratched mining site and a scratched copper engraving plate.

### (2) Documenting the different layers of the site

NababEEP, like many other mining towns, is filled with much richness and history. This sub-theme investigates the rich strata of place by delving into its historic ore, and documenting its different contexts, architectural narratives, past echoes and ghosts that have influenced the site and made it what it is today.

### (3) Interrogating the remaining witnesses on site

When one approaches the town and all of its remnants, it seems overwhelming. In an attempt to make sense of the landscape, this sub-theme will first focus on understanding the characters on site and what each of them has to offer, before deciding on how to redeem and capture the story of the place.

### (4) Redeeming Wastelands

By looking at the idea of leftover space or No-Man's Land (Woods, 1996: online), this sub-theme will investigate ways of redeeming wastelands and rescripting the identity of the town.

### (5) Healing

By further looking at the scarred and fragmented site, this sub-theme will investigate how parts of the site and community can be healed to form a new relationship between place and narratives, and place and architecture. By investigating the idea of the patina layer that forms over copper that becomes a protective layer, inspiration can be drawn with regards to healing the site.

### Limitations

Because the site for the proposed design is filled with such richness, it may be impossible to document all of its layers and history. Through choosing a few layers to work with, the study became more focused. Another way will also be to focus on just a few characters of the site and exploring them as miners would focus on a specific seam or strata to excavate.

### Relevance & Benefits

Upon arrival at the site, one cannot immediately find a solution for the apparent problems or immediately intervene. The story of the place first needs to be captured before trying to re-script a new place-identity. In trying to understand the site, all of its layers and influences must first be investigated and documented. The research will mainly be focused on making sense of the site, capturing its different narratives and its scars. Only then can a new story emerge, woven in conflict.

## 1.5 Conclusion

The dissertation will specifically attempt to stitch together a new place-identity in order to form new connections between the people of NababEEP and the past trauma. New design interventions will need to look at the past occupancies of the site, not removing the scars but extracting the beauty from it. To make sense of the damaged landscape, the different layers embedded within the site will need to be uncovered and revealed. The art of engraving forms the golden thread throughout the project, inspiring new responses of engagement with the derelict site. The theme of the project is captured in the research question:

**HOW CAN THE ART OF ENGRAVING INSPIRE  
NEW APPROACHES OF ENGAGING WITH A  
DERELICT SITE, TO ULTIMATELY STITCH  
TOGETHER A NEW PLACE-IDENTITY ANCHORED  
IN THE LESSONS OF THE PAST?**



Figure 6: Engravings on the derelict site (author, 2022)

# CHAPTER 2

## PALIMPSEST OF PLACE

2.1 Introduction

2.2 Understanding Place: The Copper Wonder of Namaqualand

2.3 Surrounding Towns

2.4 Documenting the Layers of Place

2.4.1 Vegetation

2.4.2 Vernacular of the Region

2.4.3 Story of Place

2.4.4 The People of Nababeep

2.4.5 The Indeterminate Landscape

2.4.6 Leftover Space

2.4.7 Wounds of the Landscape

2.4.8 Analysing the Site

2.5 Conclusion



## 2.1 Introduction

The word 'palimpsest' is derived from the Greek word *Epalimpsestos*, meaning 'scraped again'. In the book *Landscape Archeology*, written by M. Aston and T. Rowley, the 'landscape' is described as a *palimpsest "on to which each generation inscribes its own impressions and removes some of the marks of earlier generations"* (Aston & Rowley cited by Porter, 2004: 105).

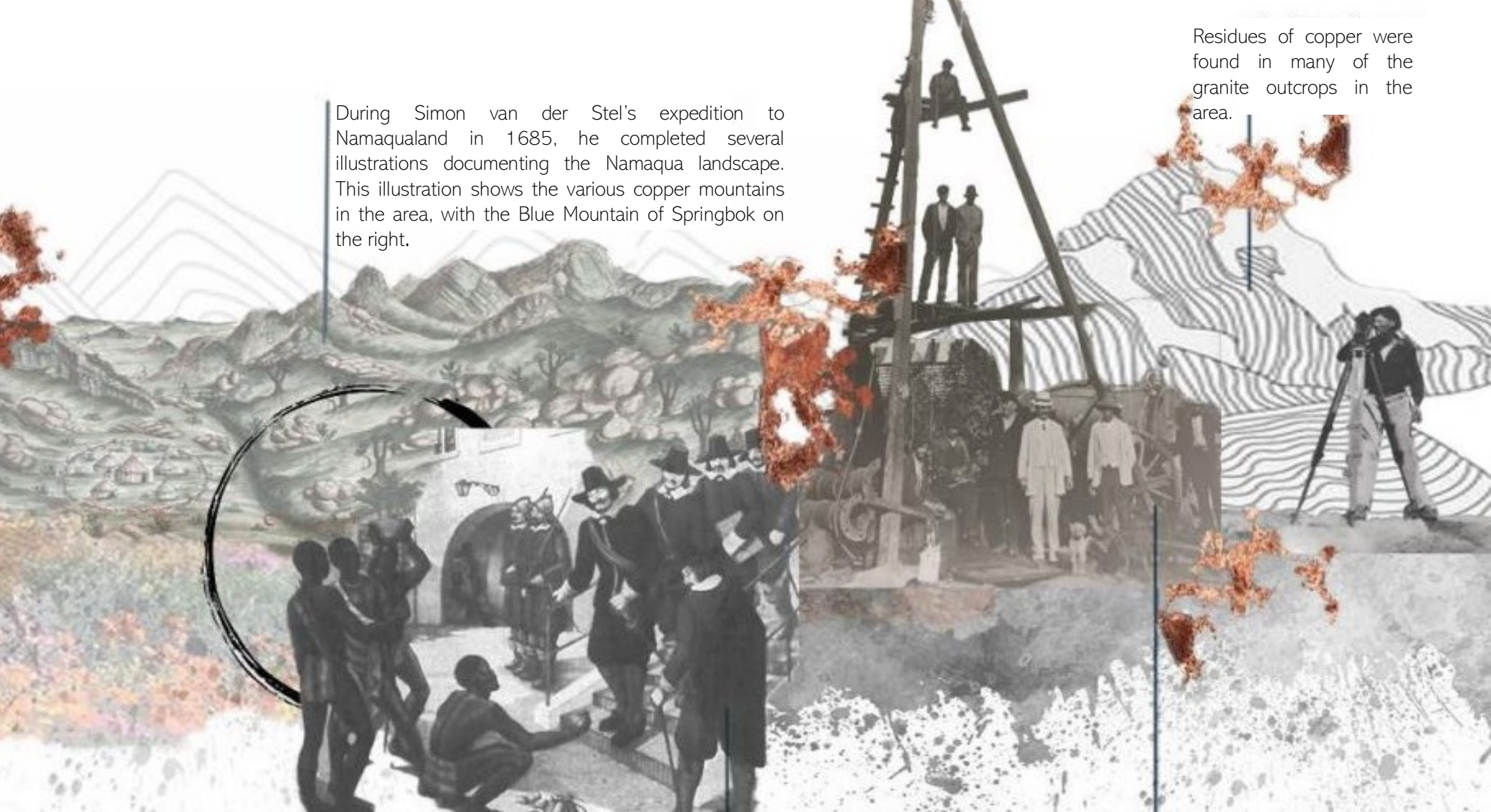
The landscape of NababEEP can be seen as a palimpsest, a layering of different contexts, architectural narratives, past echoes, glories, scandals and ghosts of the site. This chapter tries to make sense of the palimpsestuous nature of place, a term introduced by Jason Phillips in his article *Palimpsestuous Behaviour: Democracy, Resistance, DOWntowns, and Skateboards or, How to Read Culture* (Phillips, 2022: online). The richness of the proposed design lies in the different embedded layers of the town of NababEEP. Through documenting the different influences of the site, the designer can formulate different responses to each layer. This chapter is a deep reading into the town of NababEEP, its history and all of the stories associated with it.

## 2.2 Understanding Place: The Copper Wonder of Namaqualand

While Namaqualand is mostly known for its flower season, there are many more hidden gems in the area. Namaqualand is a vast, barren area in the Northern Cape of not more than 120 000 souls, a place that gets a total of 50mm of rain per year. Although the area seems secluded and hidden away, copper was already discovered centuries ago. Upon a meeting between the local Nama people and Dutch explorers, the local Nama's were seen with copper bands on their arms and ankles, and this prompted the first expeditions to the area in 1685 led by Simon van der Stel. When the first mine opened in 1852, life was breathed into the area and people from far and wide gathered with their wives and children to settle in the newly built mining towns such as Concordia and O'Kiep. Labourers included British workers, local Namaqua people, the KhoiKhoi, and people of Damara, Namibia. A contemporary traveller described the copper wonder as follows: *"there is a perpetual clatter which, to a stranger, is very disturbing but which is not noticed by those resident, unless there is a stoppage, when everyone looks up to see what is the matter"* (Fleminger, n.d.: online).

Figure 7: A collage of photos take at the NababEEP mine (O'Kiep Country Hotel archive, 2021).





During Simon van der Stel's expedition to Namaqualand in 1685, he completed several illustrations documenting the Namaqua landscape. This illustration shows the various copper mountains in the area, with the Blue Mountain of Springbok on the right.

Residues of copper were found in many of the granite outcrops in the area.

Figure 8: The history of the copper fields of Namaqualand (google.images adapted by author, 2022: online)

Simon van der Stel receiving a party of Khoi San who is presenting him with copper ore samples from the "Copper Mountain".

The first copper mine in South Africa was opened in 1852 by Europeans. The O'Kiep mine in the Namaqualand was once ranked the richest copper mine in the world.

## 2.3 Surrounding Towns

### The Diamond Coast

Copper is not the only mining industry in Namaqualand. Along the remote and wild coastline that stretches to the border of Namibia, alluvial diamonds were discovered in 1925 (Marais, 2017: online). Alexander Bay, which sits at the mouth of the Orange River, has something of an illustrious history- it was in the thick of the 'diamond rush' that gripped this part of the country, The Namas, Khoi San and *Strandlopers* who walked its shores centuries ago used to pick up diamonds glinting in the sands and gave them to their children as presents to play with (Marais, 2017: online). Today, the people of Alexander Bay, Port Nolloth and Kleinzee still trawl the seas in search of diamonds. It is an unforgiving task in this barren landscape. There is an old Namaqualand philosophy that reads: 'God didn't give us rain- He gave us diamonds'.

Hondeklip Bay is a town that time forgot. Once an important harbour from where copper ore was transported to Europe, old copper tracks are still visible at the jetty, now fallen into disrepair.

### Namaqua Copper Fields

The discovery of copper and other minerals in the Namaqua region lead to a copper boom between 1854 to 2004. With the arrival of many European labourers, towns such as Concordia, O'Kiep and Nababeep were formed. Although they were mining towns, it was glorious days.

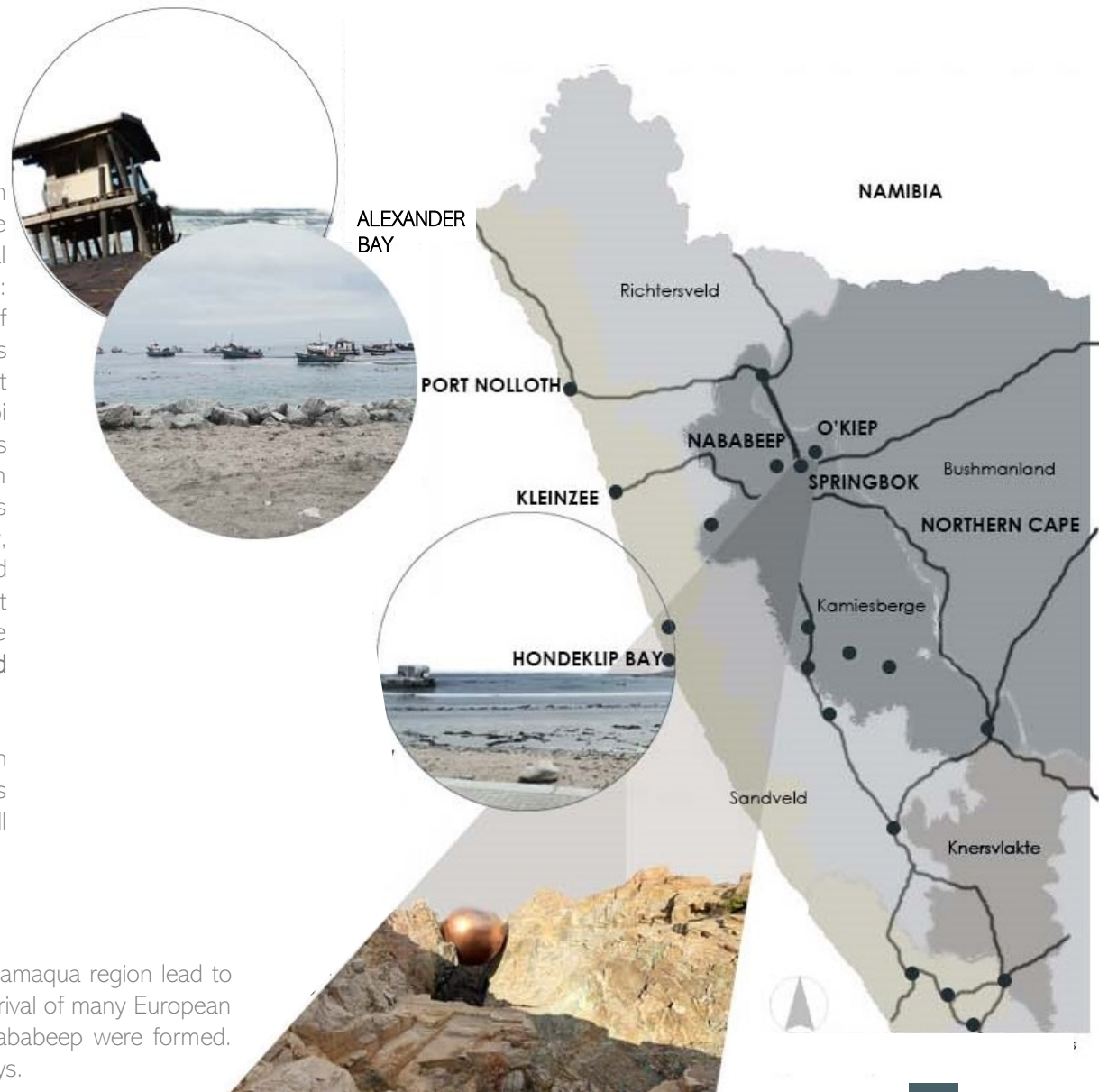


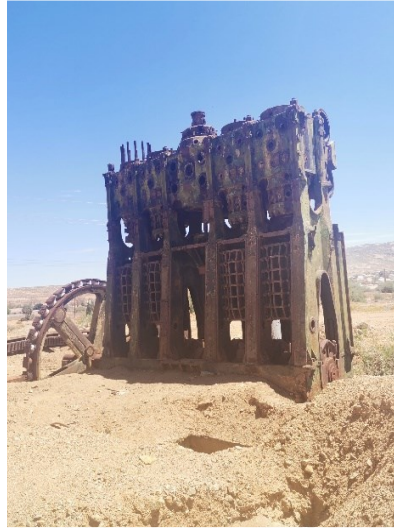
Figure 9: Surrounding towns in Namaqualand (google.images adapted by author, 2022: online)

## SURROUNDING TOWNS: THE SMALL MINING TOWN OF O'KIEP



In the neighbouring copper mining town, O'Kiep, many residues of an old mining era can be found scattered throughout.

Figure 10: Mine relics (author, 2022)..



Another relic from the bygone mining area stands abandoned at the O'Kiep mine.

Figure 11: Mine relics (author, 2022)..



The beautiful and well-kept church in the arid and harsh landscape of O'Kiep speaks of the type of lifestyle the people here lead.

Figure 12: The church of O'Kiep, a surrounding town (author, 2022).



Mine dumps at O'Kiep. Dark green ore glistening in the sun-one of the few remainders of a once flourishing mine which is now closed down.

Figure 13: Copper ore glistening in the sun (author, 2022)..

## SURROUNDING TOWNS: PORT NOLLOTH & HONDEKLIP BAY



Leaving the small copper mining towns and driving towards the coast, the landscape becomes more monotonous with less vegetation, the towering Kamiesberge still visible in the distant.

Figure 14: The monotonous arid landscape (author, 2022)..



Port Nolloth, or Aukwatowa meaning 'where the water took away the old man', is a small coastal town where alluvial diamonds were found, Diamond divers still trawl the seas.

Figure 15: Diamond boats at Port Nolloth (author, 2022)..



A resident of Port Nolloth standing on his porch and looking out onto the various diamond boats floating at sea.

Figure 16: The houses of Port Nolloth (author, 2022)..



Remnants of the old harbour at Hondeklip Bay from where the copper ore was transported to Europe.

Figure 17: The old Hondeklip Bay harbour (author, 2022).

## 2.4 Documenting the Layers of Place

### 2.4.1 Vegetation

Namaqualand is home to many unique plant species. The area is most famous for its flower season where, after the winter's rains, wildflowers bloom in a spectacular fashion over hundreds of square kilometres. About 4000 plant species grow in this area and there are more than 1000 types of flowers that do not grow anywhere else in the world (Rundel, 2013: 487).

Taking a closer look at the giant granite outcrops, a unique diversity of plant life makes itself known. These bright coloured shrubs, adjusted to the dry climate, bring the mountains to life. Fifty seven endemic plant species are known to the Kamiesberg (Rundel, 2013: 490). The plant life can be categorised into three main vegetation types, namely a dry form of Mountain Fynbos on the upper slopes, Renosterveld found on the plateau, and Upland Succulent Karoo on the lower hills. What makes the plant life so unique is the way they are adjusted to retain moisture to withstand the dry seasons of the year (Rundel, 2013: 490).

Figure 18: The granite outcrops are brought to life by colourful shrubs (author, 2022).

### Conservation Effort: Namaqualand Restoration Initiative- Bringing Mining, Biodiversity, and Local Communities Together

Mining is one of the biggest threats for the long term sustainability of the unique and sensitive ecosystem of Namaqualand. Namaqualand falls within the Succulent Karoo, which is part of the world's 34 biodiversity hotspots, defined by Rundel (2013:490) as "*areas highlighted because of the richness of their biodiversity, the uniqueness of the plant life and the threat it faces*". Between 2005 and 2008, the Namaqualand Restoration Initiative (NRI) has been actively involved in restoring areas damaged by mining (Rundel, 2013: 490).

The NRI's goal was to create a joint opportunity to promote employment and restore the environment at the same time. The problem with some basic rehabilitation efforts done by mines, was that it involved merely shoving back the earth that has been mined, "*irrespective of the indigenous perennials crucial for ecological recovery which stand little chance of re-establishing themselves without assistance*" (Rundel, 2013: 490).





### 'Botterbome'

Also known as a Butter Tree, grows on rocky slopes in sheltered ravines or valleys but also in sandy loam with quartz along the coast.

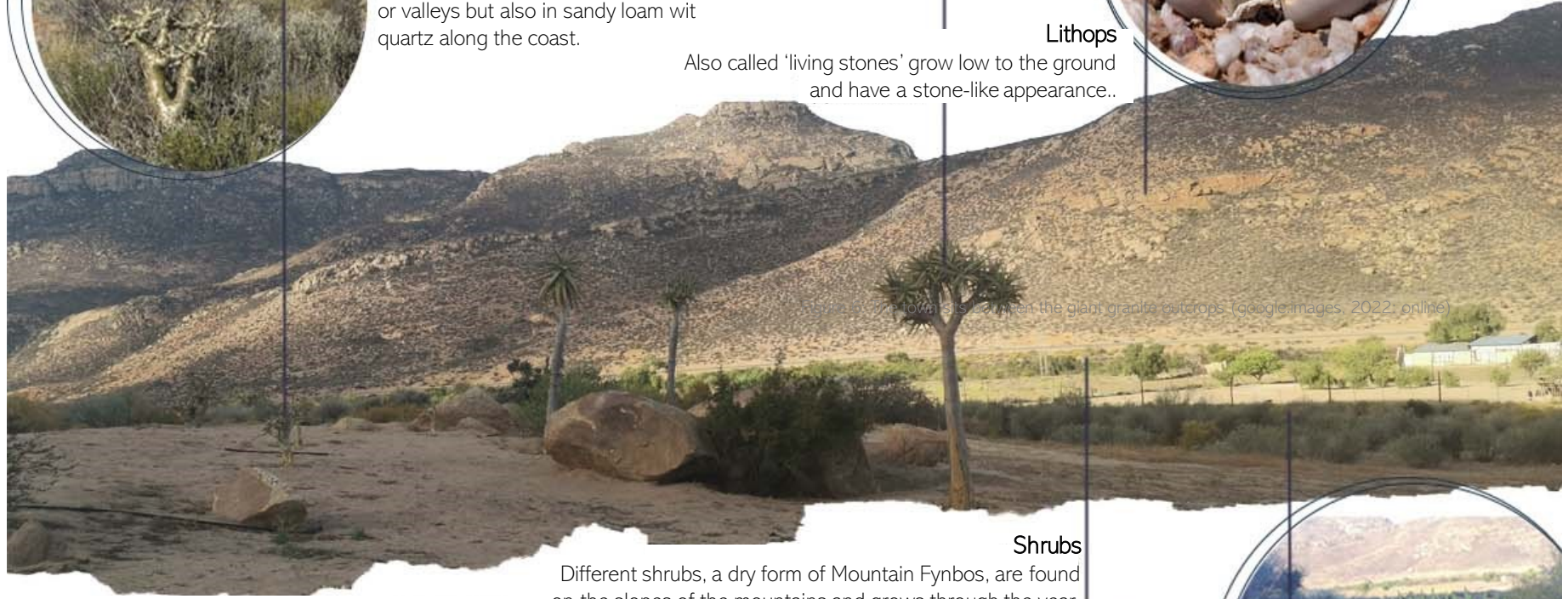
### Quiver Tree

The Quiver Tree stores water in its trunk and only needs about a cup of water per month.



### Lithops

Also called 'living stones' grow low to the ground and have a stone-like appearance..



As seen by the tourists when the giant granite outcrops (google images, 2022; online)

### Shrubs

Different shrubs, a dry form of Mountain Fynbos, are found on the slopes of the mountains and grows through the year.

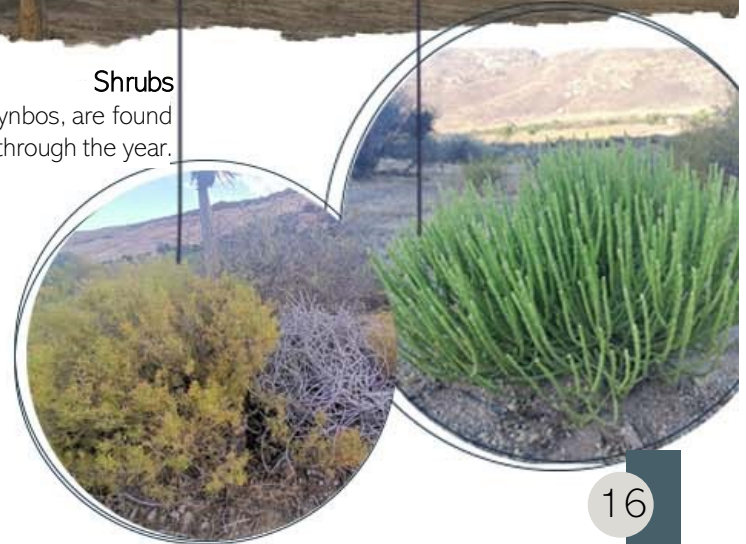


Figure 19: The different indigenous plant life found on the slopes of the granite hills (author, 2022).

Once a year the ruggedness of the age-old mountains are flooded with bright and colourful flowers. This fleeting colour explosion makes for quite a spectacle with thousands of tourists rushing to the area. Namaqualand is a unique place, its hard rock mountains seem to hide away secrets of the past. Every year the Namaqua Daisies amazes thousands of people, and never ceases to attract people from all over the country,

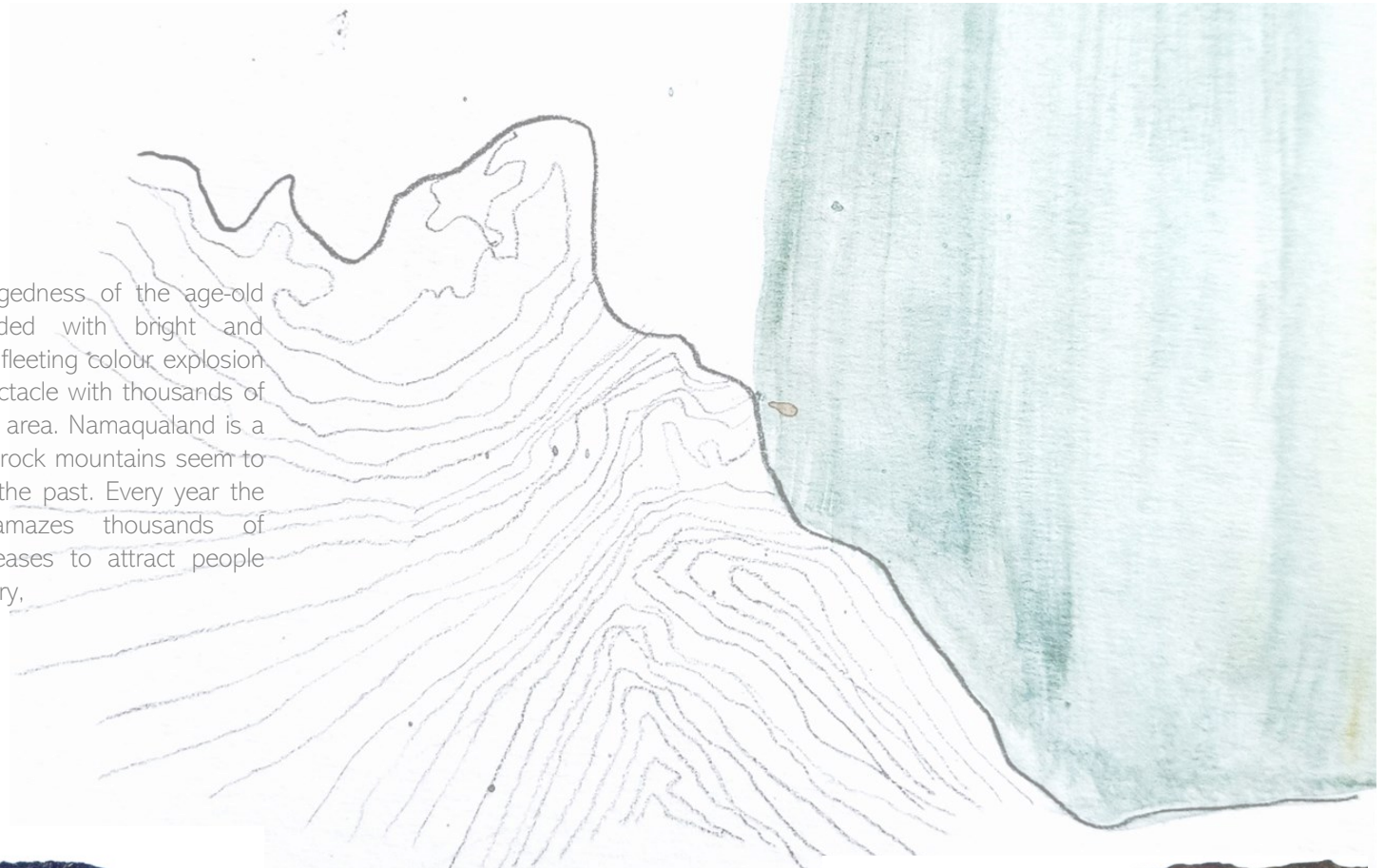


Figure 20-23: The granite outcrops are brought to life by colourful shrubs (author, 2022).

## 2.4.2 Vernacular of the Region

Namaqualand is home to the Nama people and the well-known Nama huts are scattered throughout the region. These huts have become tourist attractions.

The influence of European labourers can also be seen in the area. As specialised Cornish miners and their families moved to the area, other mining apparatus was imported from Cornwall (Fleminger, n.d.: online). Some of these derelict and abandoned relics can be seen in the area. Cornish architecture can also be seen in many of the mining towns, like the church in Concordia. The blue-painted roof of the church reminds one of the patina-covered copper roofs of catholic churches in Europe.

The typology of residential architecture in the area also consists of typical mine houses. As many of the mines have closed, some of these structures have been repurposed as shops or converted into guesthouses.



Figure 25: Example of Cornish architecture in the area- the Cornish pumphouse is one of the few reminders of a bygone mining era(author, 2022).

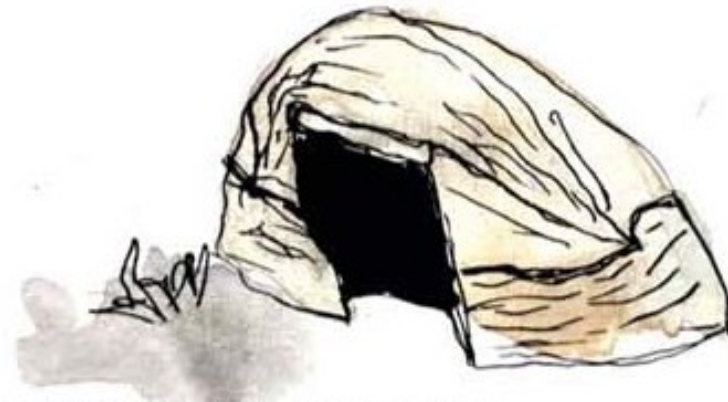


Figure 24: Nama huts in the area (author, 2022).



Figure 26: Another example of Cornish architecture- Concordia church (author, 2022).

### 2.4.3 Story of Place

NababEEP is one of the towns previously under the administration of O'Kiep Copper Company. The last active mining stopped in 2004 and the mine shut down. Since then, many residents have lived their daily lives in search of small jobs and when they have enough money or the rains are good, locals return to their farms.

There is a certain sense of vulnerability and fragility about the town and its surrounding slopes. Despite being scarred severely by years of mining activity, the dry and arid landscape manages to transform itself into an explosion of colour when the September rains come. When the flowers arrive, all guesthouses, farm cottages and hotels are occupied by people from all over the country, marvelling at the fleeting flower wonder of such a forgotten place. However, the beauty doesn't last long and when the landscape returns to its old self, the tourists fade away and the struggle continues to find various ways of making a living.



Figure 27: The stark contrasts between the different seasons (author, 2022).

Known as the blue copper mountains of Namaqualand, the age-old mountains of NababEEP contains copper oxide which has been extracted since 1852. The O'Kiep Copper Company mine has flourished over the years, attracting many workers to the small copper mining town. Copper ore was also transported from NababEEP with a steam train to Hondeklip Bay, from where it was shipped to Europe. NababEEP also had its own smelter where copper ore was smelted to produce pure copper plates.

Copper was extracted through deep shaft mining. While the men of the town worked in the mine or at the smelter, the women were employed to sort through copper ore rocks. Copper became a lifeline in the area.

The town of NababEEP became an important centre point of the region and people from all races and origins lived together in the town.

FROM ABOVE:

- Mine shafts at NababEEP
- A rock crushing plant
- Women and children sorting copper rocks

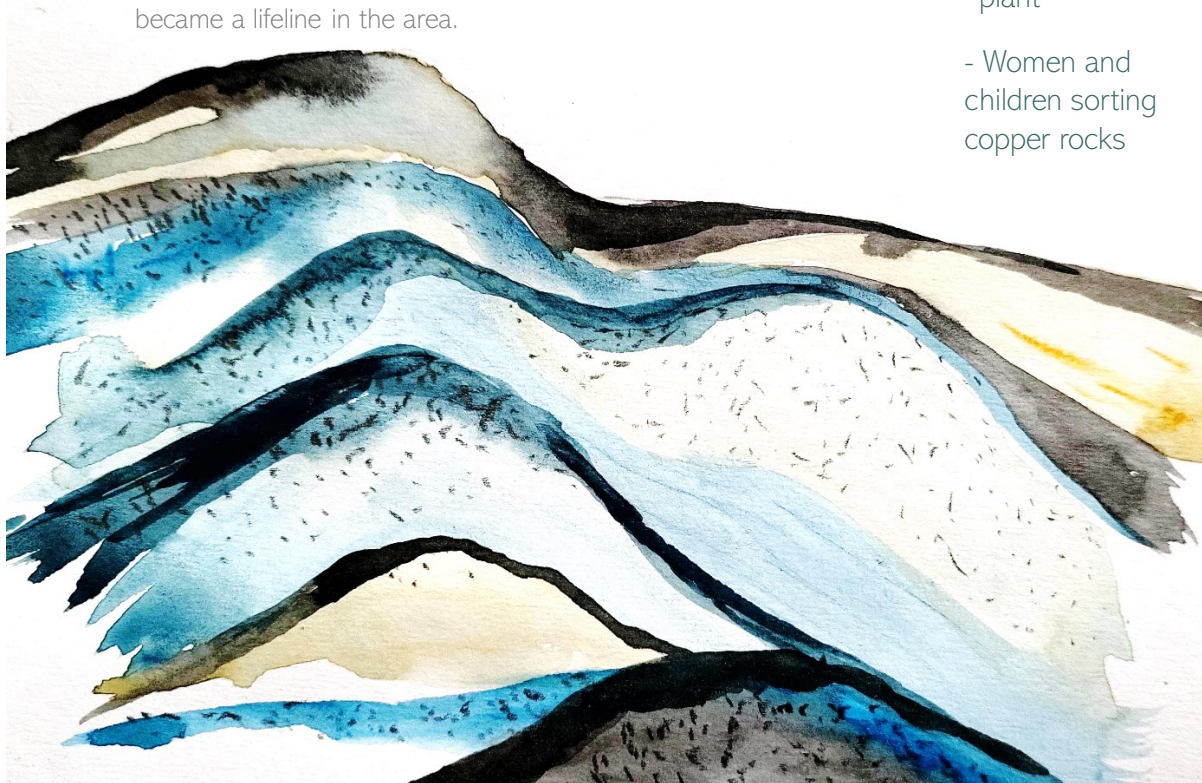


Figure 28: The blue copper mountains of Namaqualand (author, 2022).

Figure 29-31: Photo series of the old NababEEP exhibited in the O'Kiep Country Hotel (author, 2022).

Since the closure of the mine, the previously mine-owned farms were divided into plots and sold to locals, where they could build houses. Some of the plots were recently sold to Orion Minerals and others to Nama Copper.

In an interview with Francois Hopkins (June, 2022), an employee at the mine, he elaborated that Orion Minerals, an Australian company, bought the mine and mineral rights but haven't started with active mining yet since they are still awaiting mining licenses. Hopkins further explained that Orion also doesn't have sole ownership of the town, and that unlike in the past, anyone who has a mining license can now buy a piece of land in NababEEP and mine its deposits. This can also provide new possibilities for the town in the future.

A second company, Nama Copper Resources, also bought plots of land and is busy reworking old mine heaps as part of the rehabilitation of the mine. According to Hopkins, the black heaps that are seen at the edges of town are the remains of a chemical bath in which copper is extracted from the rocks. The black dust is a non-toxic mixture of Silica and other minerals which are sold to sandblasting companies to be reworked into paint.

There are several remnants of the old mine that can still be seen in the town, a reminder of the glory it once possessed. NababEEP is slowly becoming active again with groups of workers rehabilitating the mine and getting ready to start mining again once the mining licenses are obtained. The opportunity exists to employ previous employees of O'Kiep. The future of NababEEP once again shines bright as locals hope to find work at the mine.

Figure 32 (left): Nama Copper Resources are busy reworking old mine heaps. In the background visual reminders of the old mine still dominates over the town. Old reminders of the mine are still scattered throughout the town (author, 2022)..





The town of Nababeep is a small town with one school and three different churches. The mine sits at the edge of the mountain looking down onto the town. Apart from being the centre point of the town, the mine is locked away behind wire fences.

Figure 33: The old mine remnants towers above the town, a constant reminder of the past (author, 2022)..

## 2.4.4 The People of NababEEP

The people of Namaqualand are generally known to be storytellers. Many myths and legends are told amongst each other and by the end of the day residents of NababEEP often come together to tell stories, worship and pray together. NababEEP is a close-knit community joined together through their circumstances. The lifestyle of the people is a humble one; the slow-living atmosphere of the town is evident from people walking through the streets, sitting at corners, and stopping along the sidewalks to talk. The people are as vulnerable as the landscape.

Most of the people of NababEEP are employed in surrounding towns. After many people were interviewed, it became clear that a transportation company, *Van Wyk Vervoer*, provides daily buses to and from NababEEP which enables the residents to work in nearby towns such as Springbok and Concordia. Springbok is a small but lively town with many industrial companies, such as tyre manufacturers that export their products to the southern parts of Namibia.

In an interview with one of the locals, Gerhard de Klerk (June, 2022), it was said that they are very excited for the mine to open again and that he has hope for the town's future. When the mine was still operational, he and many of the other residents worked at the smelter where they had to remove and replace conveyor belts. He further elaborated on their daily lives and the struggles they face and said that it is very difficult to go to sleep hungry and that most of them sit at the corner of the shop daily waiting for someone who may need their help.

He explained that everyone knows everyone in the town and when a job has to be done at the mine, the employers know whom to call to help as everyone in the town's skills are also known. According to De Klerk the mine sometimes employs residents of the town to replace conveyer belts which is about a two-week job and they usually receive R60 per day.



Figure 34: The town of NababEEP (author, 2022)..

## 2.4.5 The Indeterminate Landscape

Namaqualand and the town of NababEEP possess many jewels that still need to be discovered. Apart from copper, many other minerals, crystals and semi-precious stones are also found at NababEEP. According to Francois Hopkins (June, 2022), semi-precious stones were however never mined at NababEEP. The stones can be found on the surrounding slopes, lying above ground, waiting for someone lucky enough to find these treasures. Hopkins further explains that some of the residents of the town have their own holes in the fields surrounding the town where they mine for these gemstones and then sell it to passing tourists:

In contrast to the scars and deep wounds of the landscape, these gems are a welcome beauty. The sketch shows the beauty as opposed to the evident scars in the town as the land has been turned upside down, exposing its treasures to the world. The town is in a state of conflict, lying dormant, and almost awaiting intervention. Its fate needs to be decided - beautiful or scarred?



Figure 35: The stark contrasts between the different seasons (author, 2022).

## 2.4.6 Leftover Space

The town becomes a leftover piece of land- a wasteland, neglected and abandoned. Although the Nama people of the area have worked hard in the mines for centuries, they haven't gained any profit from it and were left unemployed.

A possibility exists to involve the residents in small-scale mining for their own profit and to show off the hidden gems to the rest of the world.

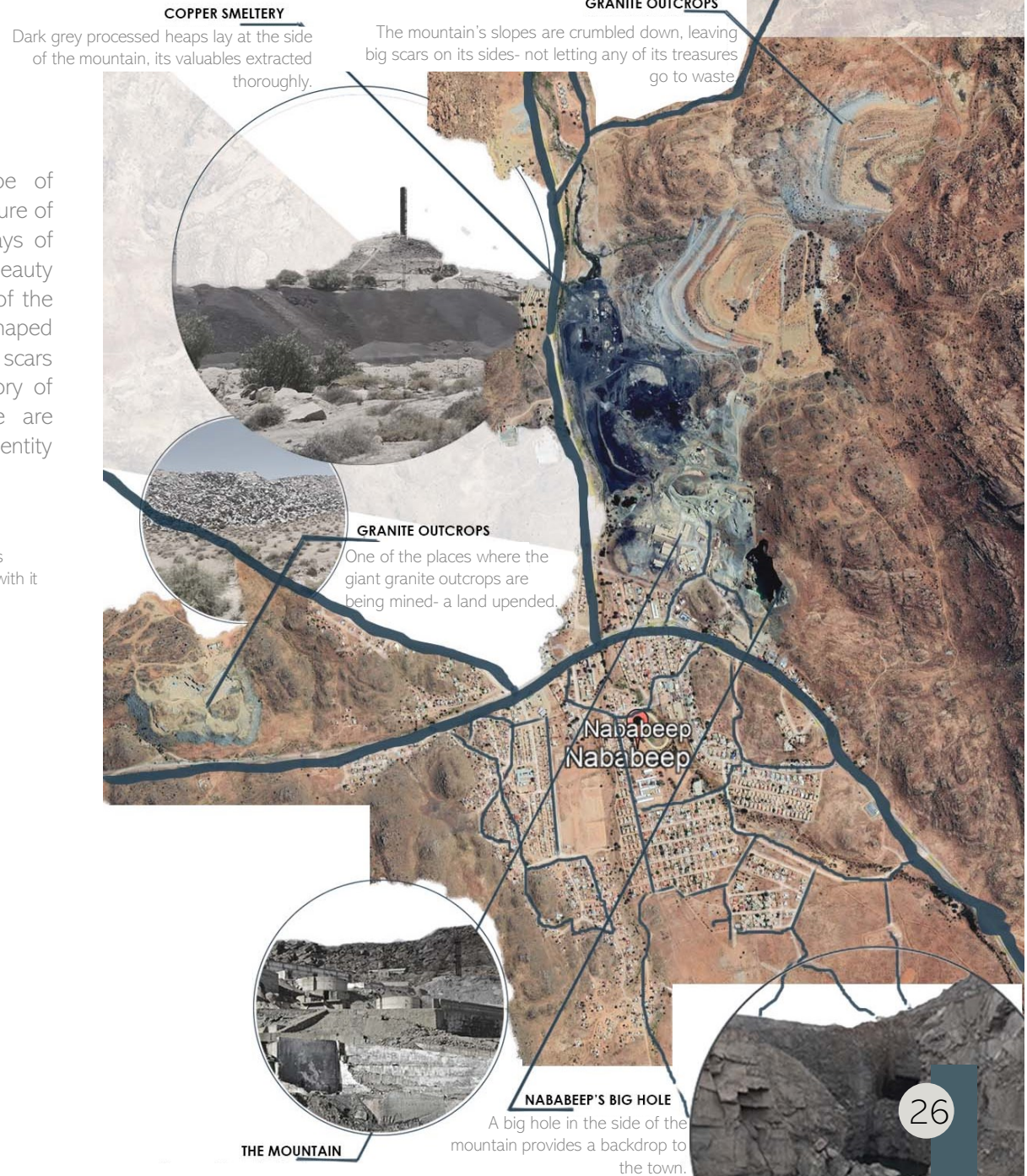


Figure 36: The town is a wasteland, the mine is left in ruins while the scars still lies exposed and residents confronted with it on a daily basis (author, 2022).

## 2.4.7 Wounds of the Landscape

Many wounds are left on the landscape of NababEEP, a reminder of the destructive nature of mining. The dissertation will investigate ways of responding to these scars and extracting beauty from it. The scars essentially tell the story of the place and is a reminder of the events that shaped the town of NababEEP; to take away the scars would mean to take away a piece of history of the site. The wounds of the landscape are embedded as a layer of the site, forming identity of place along with other layers.

Figure 37: The town is a wasteland, the mine is left in ruins while the scars still lies exposed and residents confronted with it on a daily basis (author, 2022).



## 2.4.8 Analysing the Site

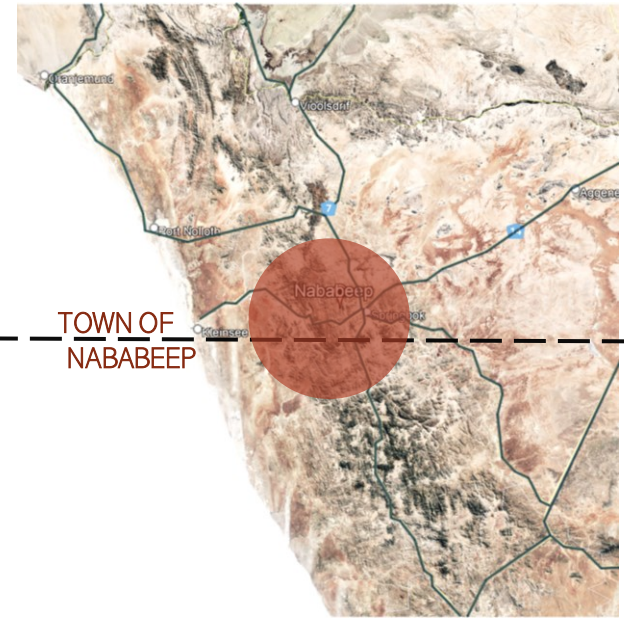
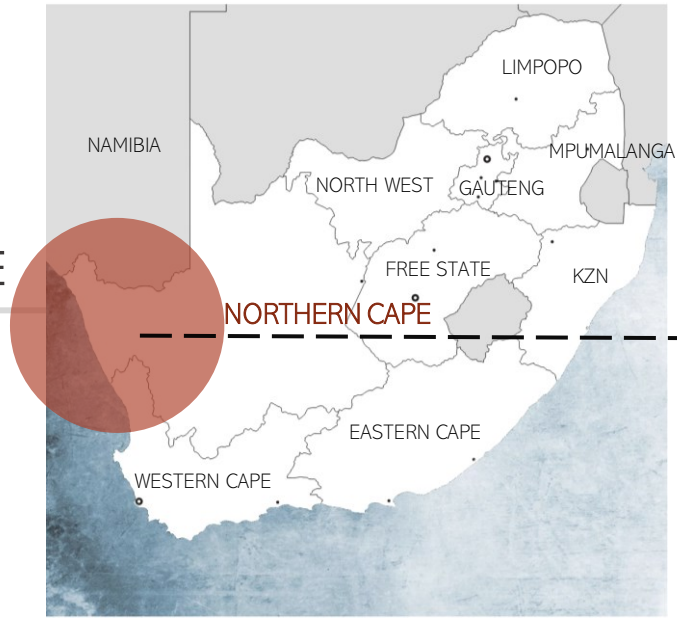
The site that is chosen for the project is a site previously owned by the mine, located next to the road leading into the town. With different mining remnants and mine dumps as the backdrop, The site has exposure to both the mine as well as the town of NababEEP.

On the opposite side of the road is a series of small rocky hills that serves as a gathering space for the people of NababEEP. After a day's work, residents often come together at this spot and socialise until late at night.



Figure 38: The location of the site (author, 2022).

# LOCATION OF SITE



TOWN OF  
NABABEEP

NABABEEP



PROPOSED SITE

Figure 39: The location of the site (author, 2022).

A macro site analysis map of the town of NababEEP. The map features a brown background with white lines representing the street network and building footprints. The layout shows a mix of grid-like street patterns and more irregular, organic street arrangements. The text "[MACRO SITE ANALYSIS]" is centered in large, bold, black capital letters, with "THE TOWN OF NABABEEP" centered below it in smaller, black capital letters.

[MACRO SITE ANALYSIS]  
THE TOWN OF NABABEEP

The Northern Cape is a vast expanse of land that stretches to the borders of Namibia. Scattered across the large semi-desert landscape are hundreds of small characterful towns separated by kilometres of road. Nababeep is one such town characterised by its complex landscape. The mine is the centre point of the town and influenced its layout. The spatial organisation of the town

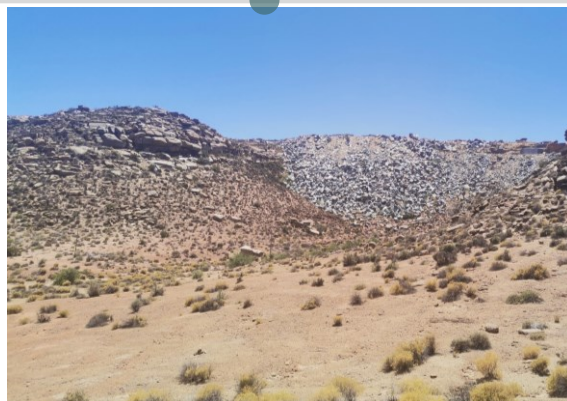
consists of a rigid, modernist planned layout of mining houses, as well as informal settlements scattered around the slopes of the mountains as the town expanded. Many of the old mining houses have been transformed into retail spaces or guesthouses. The following pages will investigate the layout of the town as well as its most important landmarks.

Figure 40: The location of the site (author, 2022).





The beautiful and well-kept church in the town of NababEEP speaks of the type of lifestyle the people here lead.



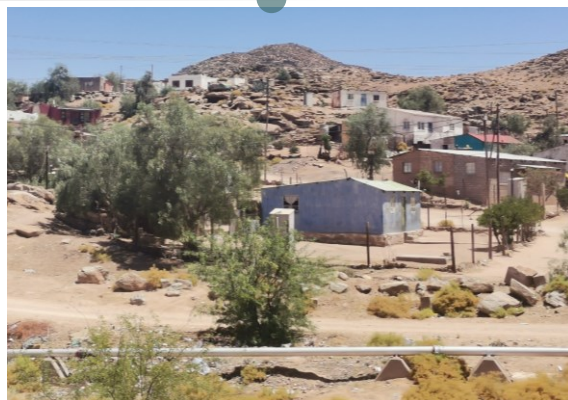
One of the various places around the area where granite outcrops are being mined on the outskirts of town- the landscape turned upside down.



An example of one of the old mine houses transformed into a retail shop. This building is a gathering space of many.



A line of broken wooden posts marks the entrance into the copper mining town, speaking of its once glorious and proud days.



Small colourful houses sit on top of the slopes, each with their own yard and bit of privacy, yet still exposed to each other- a symbol of the humble living of the people of NababEEP.



The houses in the town are neatly painted in various different colours, each with their own garden. This pink house's porch serves as a place of informal worship when the day has gone.

Figure 41-46: Photo series of the town (author, 2022).



Figure 47: Analysis of the town and important nodes (author, 2022).



Figure 48: Analysis of mining related sites (author, 2022).

The town of Nababeep has continuously changed over the years, its land turned upside down. Gouged from the hills, the ore was processed through a process of sorting and smelting. What is left, is the discarded rocks, creating barren mounds that still mar the landscape to this day.

Figure 49: Discarded tailings at the entrance of the mine (author, 2022).



The town plays second fiddle to the landscape which is something of a wilderness presided over by a merciless sun. The hard dry mountains that surround the town are starkly beautiful. There is a certain sense of layering visible when looking at the mountains- the landscape also becomes a palimpsest, its hills documenting years of transformation. Different residues are layered over one another- a damaged flesh. The following sketches are artistic interpretations of the palimpsestuous landscape.

Figure 50: Discarded tailings at the entrance of the mine (author, 2022).



A map showing a proposed site for micro site analysis. The map features a grid of streets and building footprints, with a central area highlighted in a darker brown color. The text "[MICRO SITE ANALYSIS]" is overlaid on the map.

[MICRO SITE ANALYSIS]

PROPOSED SITE

## LOCATION OF SITE

The chosen site is located along the road that leads to town and therefore allows for easy access to and from the site. Entering the town, one is immediately confronted by the big hole in the mountain and mining remnants scattered on its slopes. The chosen site possesses many traces of past occupancy. The ruins on the site dates back to the 1800's and provides insight into the mining processes used back then, which is now outdated. The damaged landscape consists of several heaps of discarded ore, big rocks and concrete remnants. Bright coloured vegetation covers the bare landscape at some places.

Figure 51: The location of the site (author, 2022).



On the opposite side of the road is a series of small rock hills that serves as a gathering space for the people of NababEEP. After a day's work, residents often come together at this spot and socialise until late at night. The semi-desert terrain are further covered with indigenous shrubs and occasional quiver trees on the rocky slopes.

Figure 52: The location of the site (author, 2022).



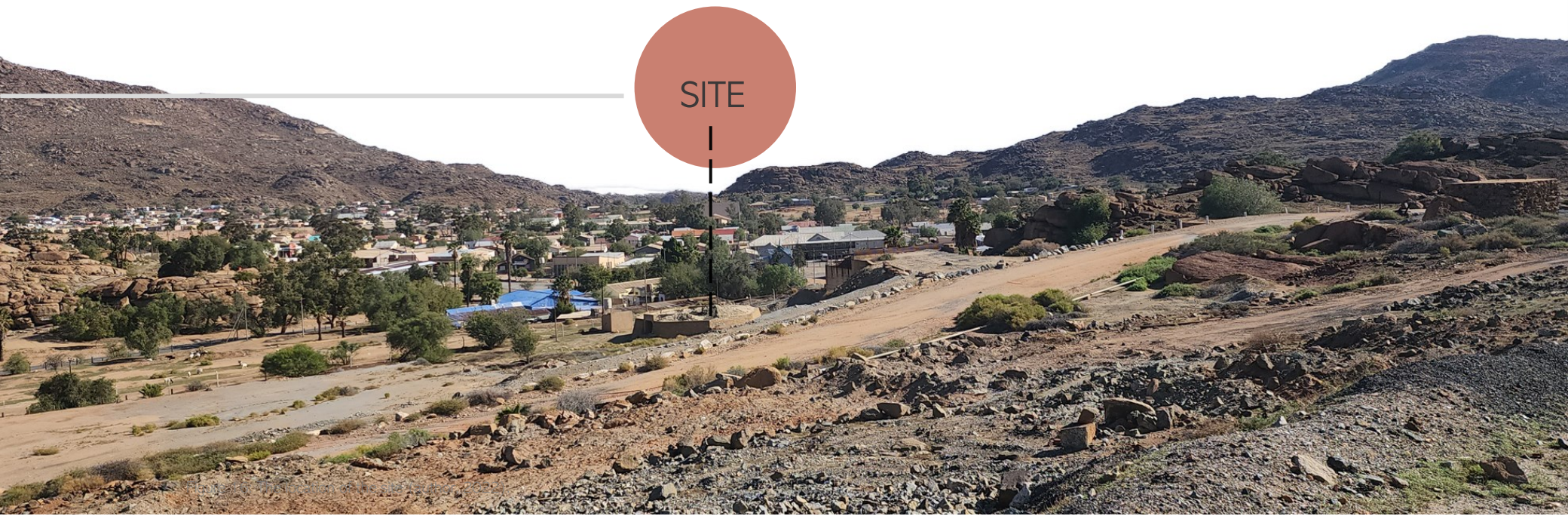


Figure 53 (above): Site located next to the road with exposure to mining remnants (author, 2022).

Figure 54 (below): Site located across the road where residents gather (author, 2022).



## Mining Remnants

The site can be described as a piece of no-man's land within the town which has long been abandoned. There are certain remnants of old mining infrastructure on the site. These concrete remnants serve as past echoes and make for an intriguing sight. With the big hole and mine heaps in the background of the site, the rugged and damaged landscape is experienced in full. There is much to be uncovered and many untold secrets.

Figure 55: The town is a wasteland, the mine is left in ruins while the scars still lies exposed and residents confronted with it on a daily basis (author, 2022).



## Mining Remnants

By taking a closer look at the different remnants on site, there are several fragmented pieces left in ruins that are visible. These fragments become important characters of the site.

When each of these characters are interrogated on its own, they can become important contextual drivers for the ongoing story of the site.



Figure 56: A collage of different moments of the site (author, 2022).

The big hole of NababEEP provides a scenic backdrop to the town. What was once a tourist attraction called 'NababEEP's Glory Hole' has now been closed off to the public, and tourists are not allowed to tour the site anymore. After years of mining activity deep underground, one of the mining shafts collapsed forming a big hole on the side of the mountain. Seen only from afar, the hole in the mountain is a painful reminder of the past.



Figure 57: A closer look at NababEEP's big hole (author, 2022).

As already mentioned, the site was previously owned by O'Kiep Copper Company and served as an introduction into the town. As a reminder of the town's once glamorous existence, concrete canals run along the site and finally lead to a water fountain, a remnant of the once neatly designed landscaping.



Figure 58-59: Remnants of NababEEP's landscaping (author, 2022).

## Landscape

Between the ruggedness of the age old mountains and the remnants of an old copper mine, the landscape of NababEEP is a complex and intriguing one. Scattered throughout the site are various different rocks, some being quartz and others, copper ore.



## 2.5 Conclusion

The palimpsestuous nature of the landscape is uncovered through investigating and excavating each of the layers that make up the place. The dissertation is an investigation of how each of the embedded layers provide meaning to the place-identity and will experiment with different architectural responses to each of the layers.



Figures 60-61: Rocks found on the site (author, 2022).

# CHAPTER 3

## BRIEF DEVELOPMENT & PROGRAM

3.1 Introduction

3.2 Program

3.2.1 Exposure to the mine

2.4.3 Jewellery Manufacturing & Design

2.4.4 Designing for the Community

3.3 Jewellery Manufacturing & Design Centre

3.4 The Namibian Jewellery Industry

3.5 Case Study- Valentino Jewellery Studio &

Goldsmith Academy

3.5.1 Studio Requirements

3.6 Jewellery Explorations

3.7 Plan Development Inspired by Program

3.8 Conclusion



### 3.1 Introduction

After exploring and documenting the different layers of the site, it has become clear that it is not only the landscape of Nababeep that is vulnerable, but the people have also been deeply scarred and is in a fragile state. This chapter will focus on ways of reinvigorating the leftover space of Nababeep and formulating a program that fits the needs of the people. The story of the people needs to be told.

In trying to re-script their tales, it is important to first understand the residents' daily lives and rituals. The chapter will take a closer look at their way of life.

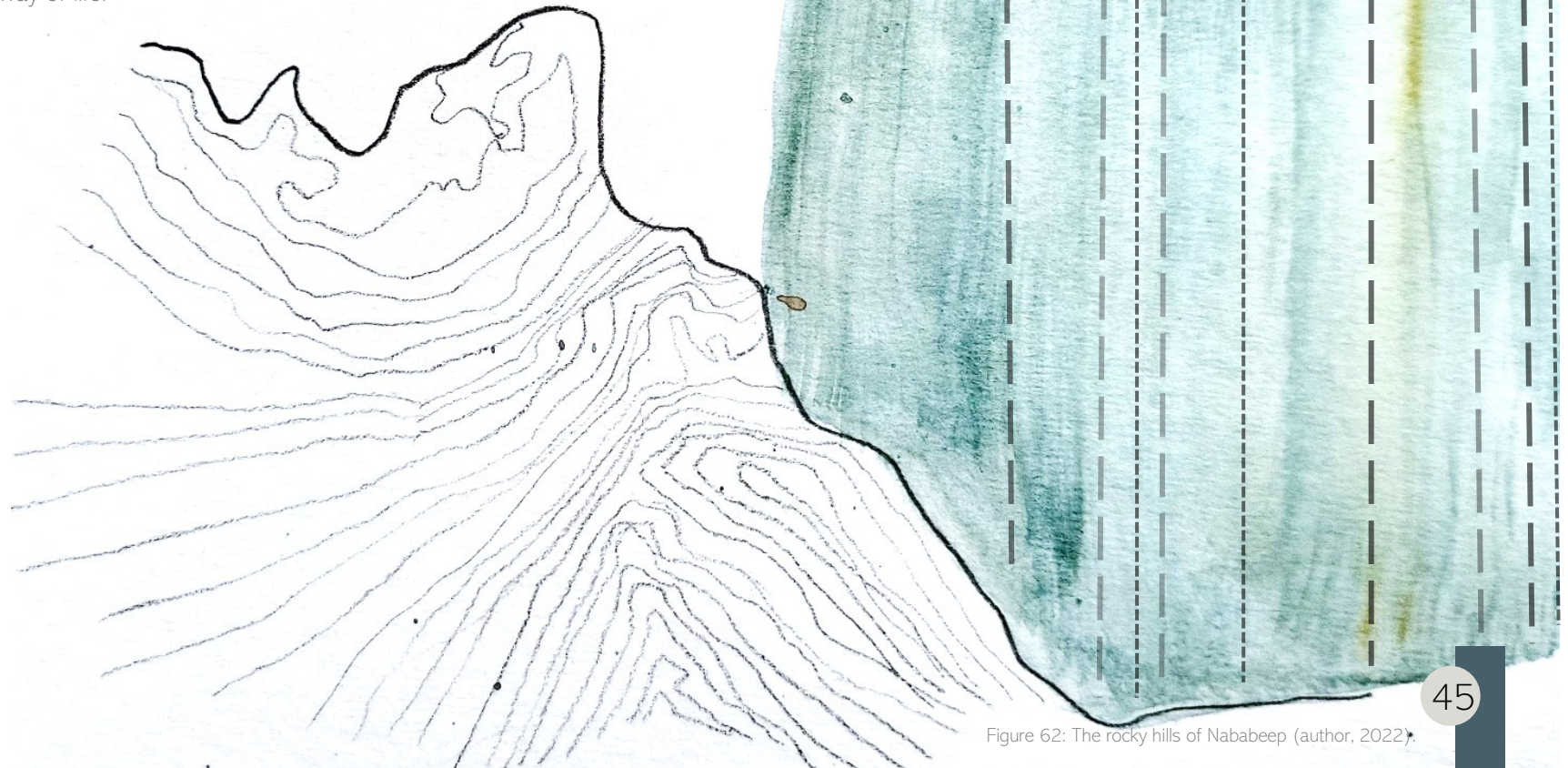


Figure 62: The rocky hills of Nababeep (author, 2022).

## 3.2 Program

The idea to reinvigorate the town and lifting the community out of a cycle of poverty begins with stimulating different parts of the town. These nodes will act as catalysts. Designing for the people of Nababeep, the program will look at three ways of breathing life into the area.

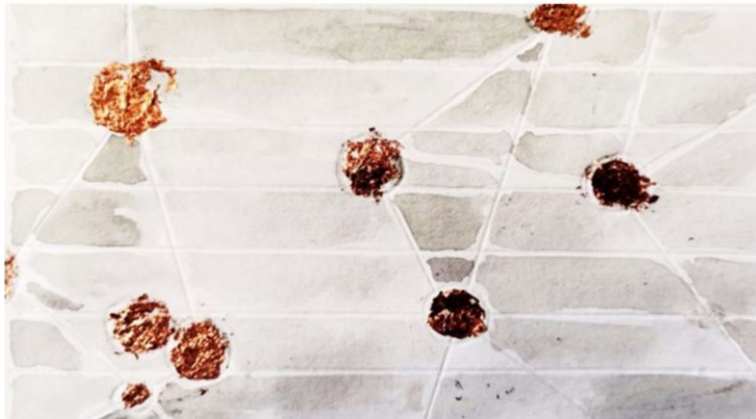


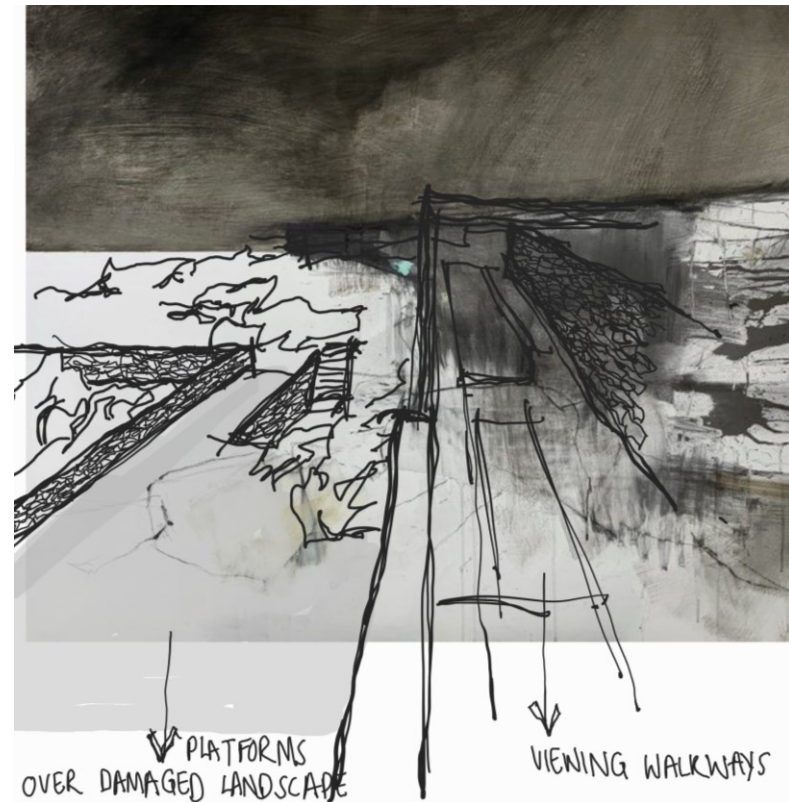
Figure 63: Different nodes act as catalysts to stimulate the town and to ultimately redeem the wasteland (author, 2022).

### 3.2.1 Exposure to the mine

As a tourist attraction, the history of the area can be exhibited through developing specific areas in the town to portray the different layers of history embedded here. Relating to the jewellery manufacturing & design centre, visitors would likely want to know the origins of these beautiful stones and gems. Tours through the mine and viewing walkways over the

Figure 64: Explorations of viewing walkways over the scarred landscape (author, 2022).

damaged and scarred landscape can provide an insight into the different mining sites as well as the glory and the destruction of mining. The landscape of the town and surrounding area can be described as a land upended. During the flower season the town becomes a tourist attraction which creates the opportunity for development.



### 3.2.2 Jewellery Manufacturing & Design Centre

The second part of the program is a proposed Jewellery Manufacturing and Design Centre with the purpose of providing employment. By making use of pure copper plates from the mine, as well as gemstones from the area, the idea is for the residents to make a living for themselves by creating beautiful jewellery pieces. In this way, giving back to the people what is theirs and extracting beauty from the scars.

The centre not only focuses on bringing together the community, but also offers skills development courses for citizens of the area and surrounding towns and schools. The centre is an alternative response to jewellery design and is different from other jewellery stores in the world that speak of glamour and grandeur. In contrast to this, it rather promotes a small-scale, low-key, yet sophisticated jewellery design centre. The building becomes a representative of the local as well as the damaged landscape and the treasures it hides away.

The site chosen, is an erf currently owned by the municipality along the main road that enters the town. Previously owned by the mine, the chosen site provides a connection with the mine and can serve as an introduction into the town.

There is also a lack of visitors' centres in the area that can communicate the history. The centre can serve a double purpose of also exhibiting the history of the area. Along with a jewellery manufacturing & design centre, the following functions are also accommodated:

- Skills development centre
- Information centre
- Informal trader's market



Figure 65: Explorations of how the building can tell the story of the place and act as an introduction into the town and its history (author, 2022).

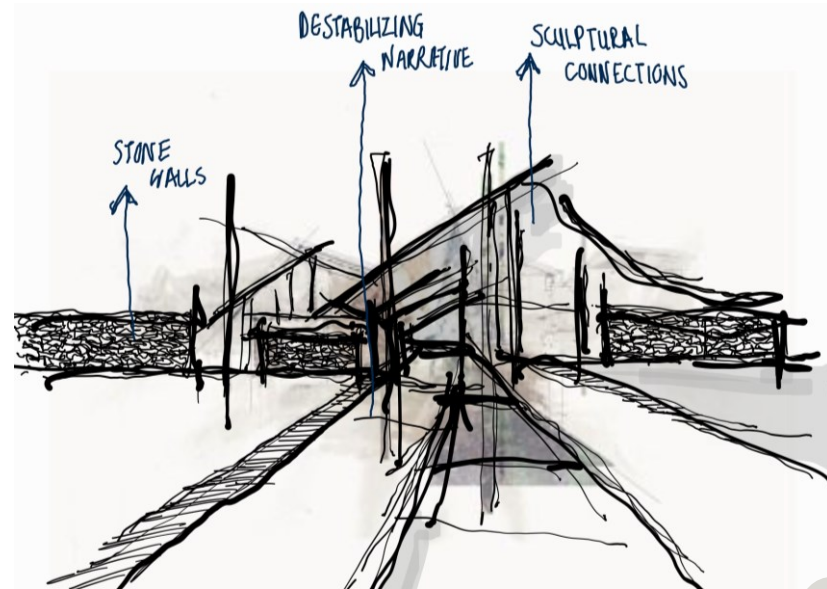


Figure 66: Explorations of how the building can incorporate a destabilizing narrative to tell the story of the site and have sculptural connections inspired by jewellery (author, 2022).

### 3.2.3 Designing for the community

The community of Nababeep is a closely integrated one. This part of the program involves catering for the needs of the community.

#### - Social aspect

As already mentioned, the residents often come together at various specific places. Making space for the existing rituals, the program can provide spaces scattered throughout the town for socialization.

#### - Informal Market

The creation of an informal market space where residents can sell their crafts, and gemstones found around the area, to visitors adds an additional economic boost. The informal market will be located along the road into town so that easy access is available to tourists.



Figure 67: Explorations of an informal market adjacent to the road leading into town (author, 2022).

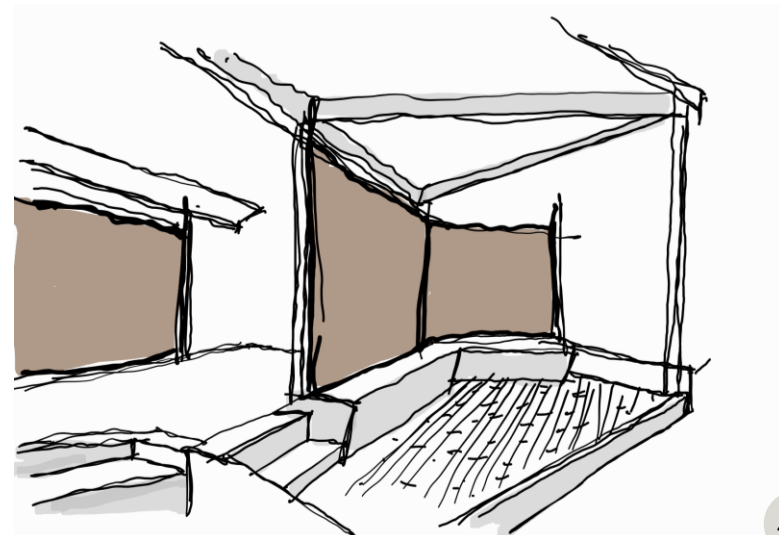


Figure 68: Explorations of informal seating areas where the people of Nababeep can gather after a day of work (author, 2022).

### 3.3 Jewellery Manufacturing & Design Centre

The centre for jewellery manufacturing & design requires a special and unique approach that accommodates the people of NababEEP and all of their rituals. The small-scale, yet sophisticated design works with the community and their way of living to create jewellery with a unique narrative.

Inspiration was found from several practises in Namibia where the local people are involved in the finding and making of materials. The problem that emerged in this project, was:

- (1) firstly, how to obtain the stones, gem stones and copper, and
- (2) how to make the jewellery, and lastly,
- (3) how to sell these products.

The accommodation list and program is an attempt to find alternative ways to address these issues, while looking at inspiration of practises in Namibia.

#### (1) Receiving of Materials

The program involves receiving the copper plates directly from the copper smelter that is already in place, and receiving stones and crystals from the locals. They are known to venture out into the fields surrounding NababEEP to look for gemstones and beautiful stones and then selling them to tourists. The program therefore accommodates these rituals by buying these semi-precious stones and other stones and gems from the people, and ultimately using them to create jewellery pieces.

Figure 69 : Explorations of jewellery design and intricate connections (author, 2022).

#### (2) Making the Jewellery

The program further accommodates the rituals of the people by accepting and buying handmade jewellery pieces and other crafts from the residents. The handmade jewellery is ultimately exhibited in the centre or exported to different retail shops around the country. There are also facilities available where tools and machines are provided for jewellery-making. Locals are welcomed into the facility and can make use of the machinery and leftover materials at the outdoor workspace to make and sell their own jewellery.

#### (3) Selling the Jewellery

The locals can either sell their handmade crafts, and other semi-precious stones themselves at the informal market space or it can be bought from them and exported to other parts of the countries. Export facilities as well as packaging and branding facilities are part of the program, allowing the centre to market and export the products.



Looking at jewellery design as inspiration, the different techniques of jewellery manufacturing are used to organise the facilities of the building. The following are techniques:

1. Design
2. Cutting/forming metal
3. Soldering
4. Casting
5. Stone-setting
6. Enamelling
7. Polishing
8. Digital technologies

#### Public

- Informal market
- Courtyard (insight into process of making jewellery)
- Receiving of handmade jewellery
- Exhibition of history / Information centre
- Public workshops for skills development
- Exposure to mine and its remnants

#### Private/ Semi-private

- (1) Sorting of stones
  - receiving stones from mine and copper from smeltery
  - receiving and storage of materials

- (2) Designing
  - studios
  - library
  - computer room

- (4) Refinement
  - enamelling
  - polishing
  - engraving
  - cleaning

- (3) Manufacturing
  - smeltery
  - cutting/ forming
  - casting
  - stone-setting
  - soldering

- (5) Exhibit/ Export
  - packaging & branding
  - offices
  - marketing offices
  - transport facilities

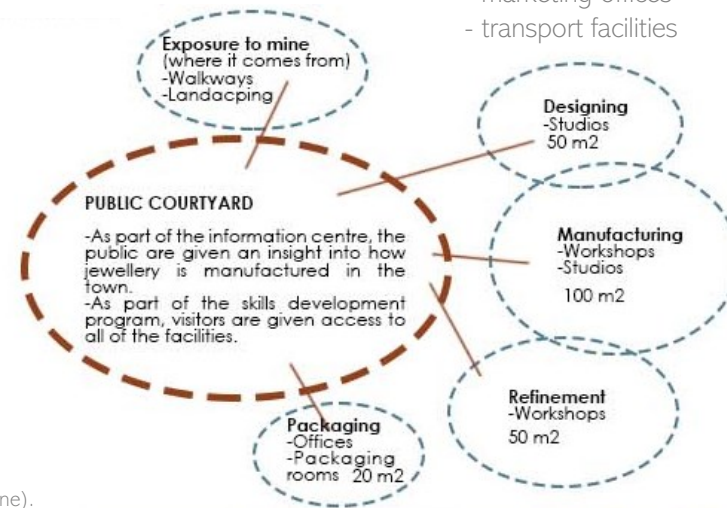
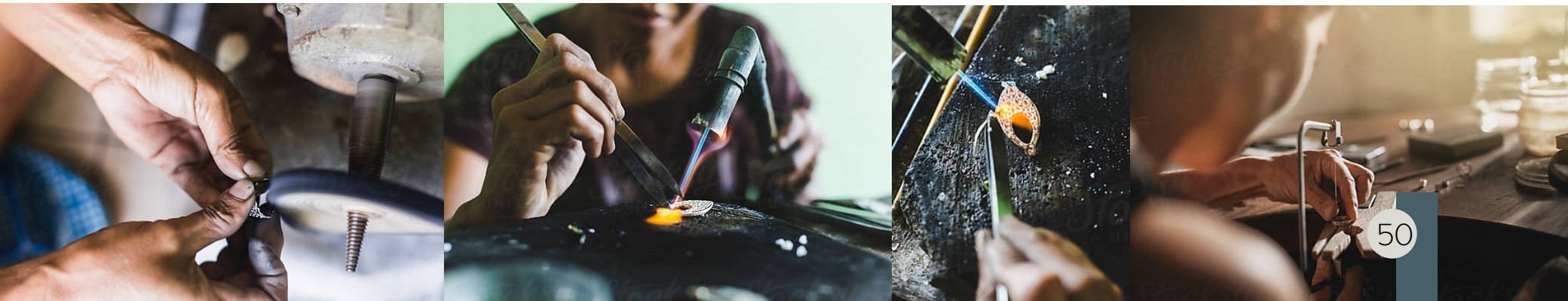


Figure 70-73 : The intimate character of a jewellery workshop (The Early Hour, 2015: online).



The building tries to accommodate a variety of functions, focusing on the local people, as well as catering for people from other towns in the skill development program. The building is therefore organised in such a way to accommodate this variety of people by separating different parts of the building from each other.

Tourists are enticed towards the building through a traders market along the road where jewellery from the centre, as well as other crafts and products by local vendors, is sold.

The building is situated near the centre of town near the shops, and also provides facilities for locals to make their own jewellery and sell it on their own terms to passing tourists at the informal traders market, in this way the proposed project is embedded in the fabric of the context.

Visitors to the skills development program are accommodated by being offered insight into the process of jewellery design through a sequence of different spaces and a walkway that leads through a series of remnants of the mine.



Figure 74: The intimate character of a jewellery workshop (The Early Hour, 2015: online).

### 3.4 The Namibian Jewellery Industry

Namibia as a country is known for its coloured gemstones, the most famous being tourmaline, with the beryl varieties and topaz (Ministry of Industrialisation, Trade and SME Development, 2016: online). With its unconventional approach to the jewellery industry, much can be learned from their value-chain and its participants. With an Industry Growth Programme in place, the aim is to become a highly competitive, industrialised nation. The programme is also an important step in the war against poverty.

To understand the interactive process of the Namibian Jewellery Industry, the value-chain should be analysed. The gemstone industry started as a by-product of other mining operations and is therefore not thoroughly documented. The value-chain of gemstone mining also differs significantly from other operations such as diamond mining. The gemstone industry remains highly fragmented at all levels, from exploration and mining to prospecting, mining, manufacturing and ultimately trade (Ministry of Industrialisation, Trade and SME Development, 2016: online).

Figure 75: An unpolished and polished gemstone (Ministry of Industrialisation, Trade and SME Development, 2016: online).

There are three different actors in the value chain, namely:

- *Informal, unregistered entrepreneurs*
- *Formally registered small-scale enterprises*
- *Formally registered mechanised operations*

(Ministry of Industrialisation, Trade and SME Development, 2016: online)



## Primary Production (Prospecting and Mining of Rough Gems)

The gemstone mining industry is mainly worked by independent, small-scale miners. There are however also a small group of larger mechanised mining operations in the primary production segment (Ministry of Industrialisation, Trade and SME Development, 2016: online). The following are examples of the types of mining licenses that are available in Namibia:

- **Non-exclusive prospecting license (NEPL)**

This type of license is suitable for small-scale miners

- **Mining claim license (MCL)**

This is for Namibian small-scale operators. The license includes “pegging”, which can be defined as registering an area containing deposit and the operator can sell and dispose minerals within the boundary.

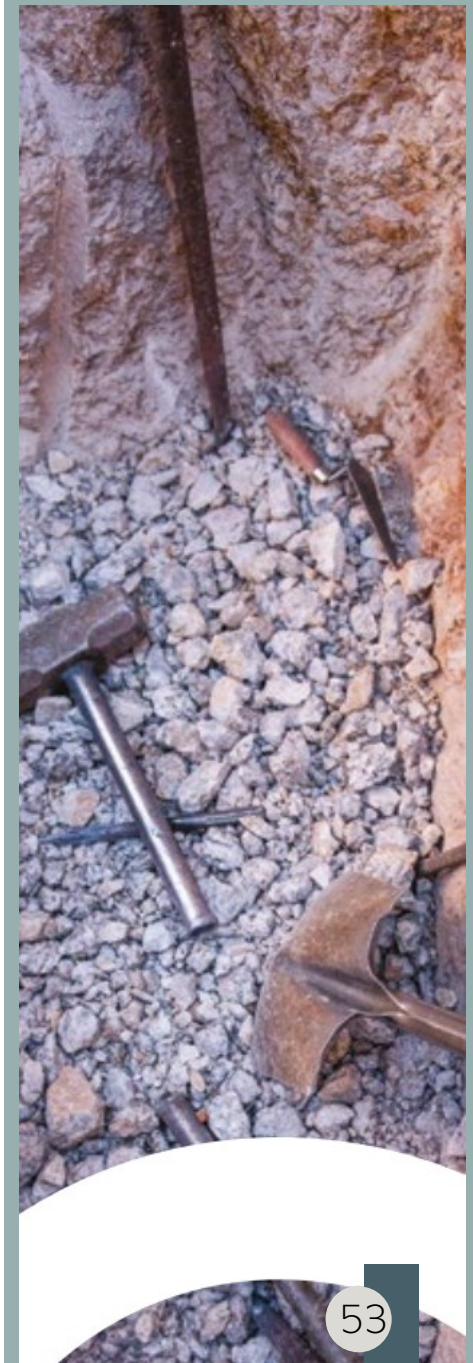
- **Exclusive prospecting license (EPL)**

This type of license is generally for commercial entities and not suitable for small-scale operators.

- **Mining license (ML)**

A Mining Licence can be a consequence of an existing deposit as a business asset and is not suitable for small-scale miners.

Figure 76: Mining for gemstones (Ministry of Industrialisation, Trade and SME Development, 2016: online).



Based on the type of license, scale of prospecting and the kind of equipment available, the following three types of value-chain actors can be identified:

- Informal, Unregistered Entrepreneurs

This group is made up of artisanal small-scale miners and prospectors which according to Ministry of Mines and Energy (MME) estimates from 2012, is calculated to be around 5000 informal miners in Namibia. Mining provides a livelihood to these people and is an important economic element in alleviating poverty (Ministry of Industrialisation, Trade and SME Development, 2016: online).

- Formally Registered Small-Scale Enterprises

This group of miners generally operates with non-exclusive prospecting licences (NEPL) and mining claim licences. In 2015, the MME documented 744 semi-precious stone-mining claims across Namibia (Ministry of Industrialisation, Trade and SME Development, 2016: online).

Figure 77-78: Traders with their gemstone exhibitions alongside the road (Ministry of Industrialisation, Trade and SME Development, 2016: online).



- Formally Registered Small-Scale Enterprises

This category includes companies with modern mining technology and a larger capacity. For instance, they make use of excavators and blasting methods. These companies operate under exclusive prospecting licences and mining licences. They are also required by law to submit production reports to the MME with details of their production volumes and values (Ministry of Industrialisation, Trade and SME Development, 2016: online).

It is also important to understand the other part of the value chain, namely trade. The following actors were identified (Ministry of Industrialisation, Trade and SME Development, 2016: online):

- Direct sales by miners

Informal small-scale miners generally sell a portion of their raw stones directly to local customers or passing tourists. Only to a very limited extent do miners sell their stones to local gemstone processors and jewellery manufacturers. Another form of trade also includes paying equipment suppliers a substantial portion of the mined output for the renting of their equipment (Ministry of Industrialisation, Trade and SME Development, 2016: online).

- Unregistered informal traders and retailers

Small-scale miners are also generally known to sell their rough stones informally to international buyers. These buyers are normally from India, Thailand, or China, and the miners often have well-established business linkages with these foreign gemstone traders. Once a sufficient amount of stones have been mined, the miners contact these traders that offer cash on the spot.

- Local formal traders and retailers

There are about 20 local gemstone retailers in Namibia, and the majority are collectors. An example is Windhoek-based *House of Gems* which combines in-store sales with online services to also accommodate the international economy. These retailers sell rough and polished gemstones, crafted jewellery, adornments and home decorations.



Figure 79: An unpolished and polished gemstone (Ministry of Industrialisation, Trade and SME Development, 2016: online).

## Examples of Namibian Gemstone Mining Operations

Namibia's unconventional approach to the gemstone industry can offer much insight into the proposed design program. Although formally registered, the gemstone mines in Namibia are small-scale and make use of a very limited range of equipment. A few noteworthy examples are mentioned below.

### - The White House Guest Farm

This well-known guesthouse manages a rose quartz quarry and along with it, a small jewellery retail shop which produces various items made from imported stone products (including rose quartz) from South Africa.

### - The Green Dragon Mine

This mine located in the Erongo region of Namibia is currently the world's biggest and only commercial mine for demantoid garnets. Extending over more than 100,000 hectares, the Green Dragon Mine is an open pit mine where, according to the MME, *"one of the most precious and valuable coloured stones are mined using earthmoving equipment in combination with conveyer belts, crushing plants and sorting facilities"* (Ministry of Industrialisation, Trade and SME Development, 2016: online).

### - Ysterputz Farm

Light blue, greyish-blue and white agate has been mined since 1964 at the Ysterputz mine. The method used is open pit mining. The equipment consists of a front-end loader and only three bakkies. The output is marketed as blue lace agate through Cape Town and transported there.

### - The Omaue Mine

The Omaue Mine is known for its copper sulphide mineralisation in quartz veins within limestones. Secondary copper minerals are also mined at the open-pit mine, including world-famous diopside specimens. Although diopside is too soft to be faceted, single crystals and clusters are also mined which is known to be used in jewellery manufacturing (Ministry of Industrialisation, Trade and SME Development, 2016: online).

Figure 80 (top): The White House Guest Farm rose quartz mine (Ministry of Industrialisation, Trade and SME Development, 2016: online).

Figure 81 (bottom): Layers of copper oxidation at the Omaue Mine (Ministry of Industrialisation, Trade and SME Development, 2016: online).



### 3.5 Precedent Study - Ûiba-Ôas Crystal Market

**Architects-** Nina Maritz Architects

**Location-** Usakos, Erongo Region in Namibia

**Year-** 2009

As already mentioned, Namibia is a geological haven rich in minerals and various semi-precious stones. The lives of many small-scale miners is a tough existence as they try to make a living from the earth. In the Erongo Region especially, are various mining communities that earn their livelihood from the sale of their stones. Most of them live in poverty despite their highly valued finds. Having a very limited knowledge of the value of their stones, they sell them to any passing tourist who makes an offer. Many wealthy tourists and gemstone experts have unfortunately taken advantage of the ignorance of the small miners and have capitalised on their sales (SAFARI2GO, 2019: online).

Miners in the Erongo Region have previously settled along the main tourist roads, selling their goods at makeshift stalls. Although there is a big local and international demand for gemstones, the lack of formalized market place and marketing of product has affected the livelihood of these miners negatively (SAFARI2GO, 2019: online). There exists an opportunity for small-scale miners to actively contribute to the economic growth of the country if the market conditions could be improved (Maritz, 2019: online).

The aim of the Ûiba-Ôas Crystal Market project was to provide a more functional and organized market place for these miners (Maritz, 2019: online). Designed by Nina Maritz Architects, the name of the market 'Ûiba-Ôas' means 'Searching for Life' in Damara Nama.

Figure 82: Traders with their gemstone exhibitions alongside the road (Maritz, 2019: online).



The lives of the people of Erongo have been influenced by the gemstones for decades. One of the long-time gemstone traders, Susana Skoppelitus, said in an interview (SAFARI2GO, 2019: online) that she has been selling stones for thirty years at the Spitzkoppe junction and has supported herself ever since her husband died. Another miner described his livelihood in the words, *"I was born in stones, I grew up in stones and will die in stones."* (SAFARI2GO, 2019: online). To many, the Ūiba-Ôas Crystal Market have provided a space where they can sell their stones in a safe and controlled environment.

The market consists of a small office for the founder, 3 separated sales areas with covered areas, male and female ablutions, a store room and a kiosk for selling cool drinks to the tourists. (Maritz, 2019: online). The market space provides a space where the tourist can explore the different types of stones and possibly contribute to the economical growth of Namibia by buying some of the precious gemstones. According to the architect, Nina Maritz, there exists a possibility to expand the facilities in the future by including an area where the tourist is introduced into the process of polishing these gemstones (Maritz, 2019: online).

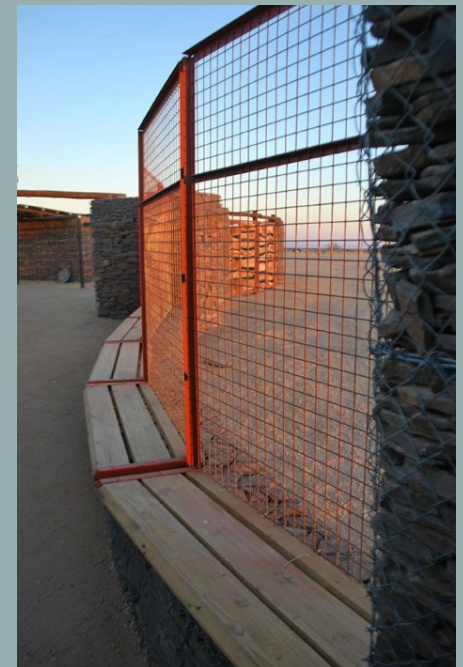
Figure 83-84: Examples of the gemstones and jewellery exhibited at the market (Maritz, 2019: online).



The market was designed to fit seamlessly into the landscape. The materials were carefully chosen to ensure as less as possible maintenance in the future. Gabion walls were constructed with rocks salvaged from the nearby Spitskoppe area (Maritz, 2019: online). Salvaged material was also used to minimise the environmental impact of the building. The entrance gates were constructed with a steel frame with infill panels made of reused oil drum sheeting.

Figure 85-86 (right): The robust materials blending into the landscape (Maritz, 2019: online).

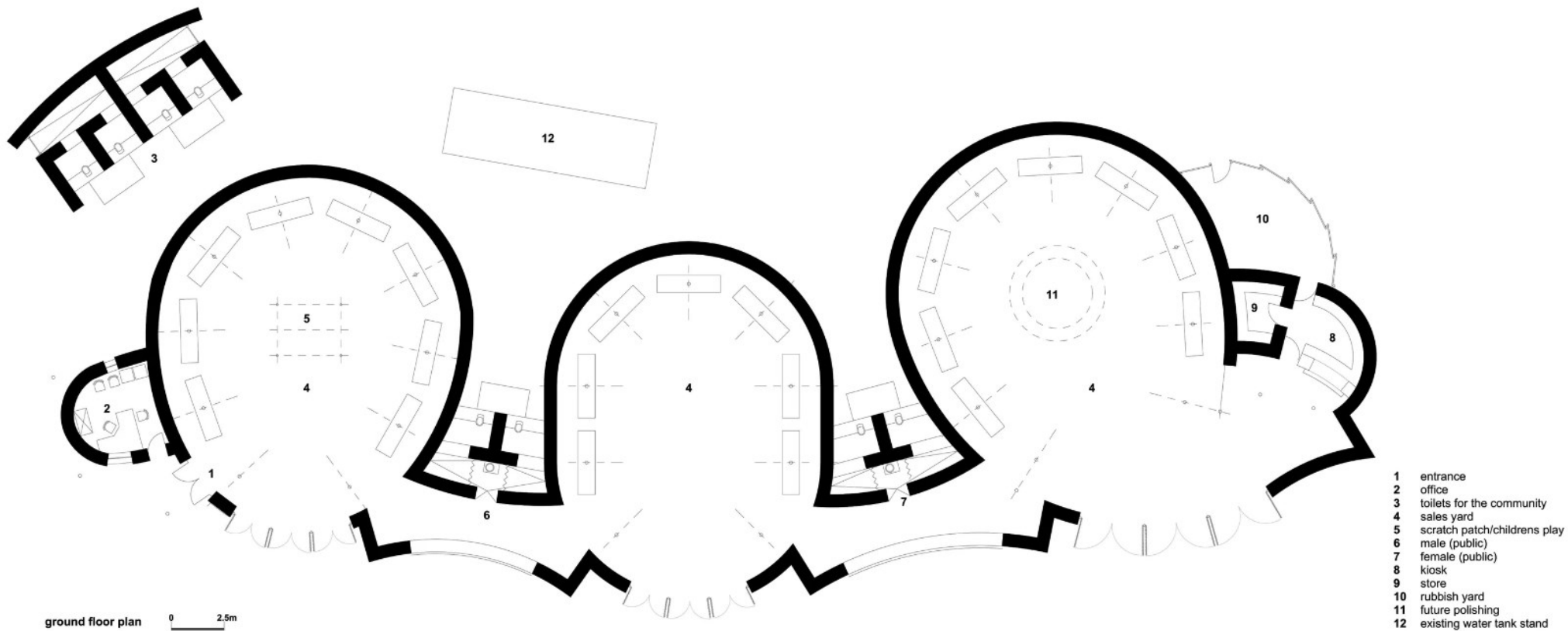
Figure 87 (bottom): The sales market with exhibition spaces (Maritz, 2019: online).



The organic gabion walls also shelters the interior market from the harsh Namibian sun. The market spaces are organised along these walls with seating opportunities along the edge., The interior market space is sheltered by canopies of IBR sheets.

The sales tables are organised along the edges of the stone walls creating a centralised space in the middle. The traders are arranged informally and each has their own table to exhibit their finds.

Figure 88 (bottom): The floor plan of the crystal market (Maritz, 2019: online).



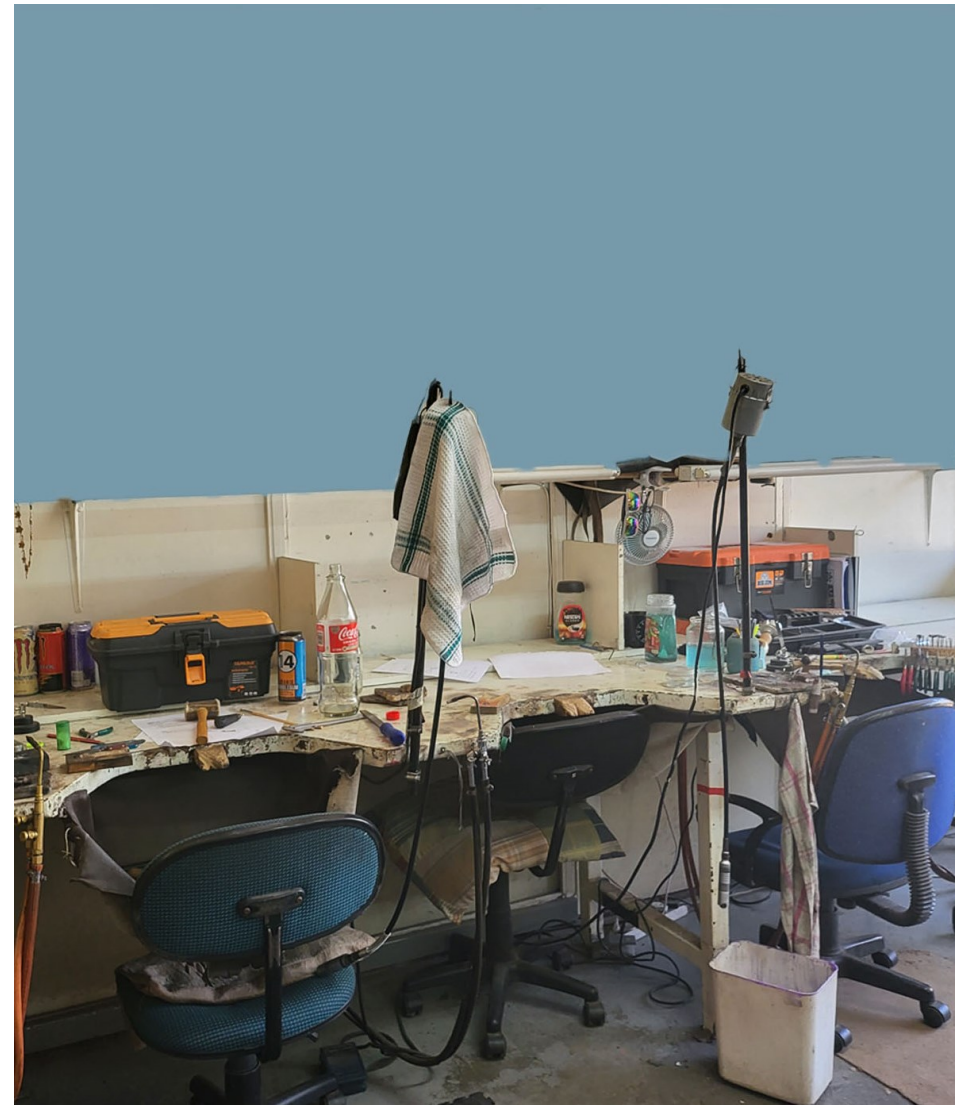
### 3.6 Case Study - Valentino Jewellery Studio & Goldsmith Academy

In trying to understand the process of jewellery manufacturing, I visited a local jewellery academy in Gauteng to get an insight into the space required for a jeweller. Valentino Jewellery Studio & Goldsmith Academy provides part-time and full-time courses, the latter of which consists of a series of modules over a period of three years that provide mainly hands-on practical training on all the skills that are needed in the manufacturing of fine jewellery (Vjewellerystudio.com, 2022: online). The modules of the syllabus range from beginners to advanced and the following processes are taught at the school:

- Basic manufacturing
- Advanced manufacturing
- Basic wax carving and casting
- Setting

An interview was conducted with one of the studio instructors, Retha Minnie (August, 2022), who provided insight into the jewellery manufacturing process and the space requirements for a jewellery school. She pointed out that the layout of their workshop is not ideal, but a lot can still be learned from the process they follow.

Figure 89: Student desks organised in a row, each with their own toolbox, pin and torch (author, 2022).



Accommodating about 18 students in a communal workspace, the workshop is equipped with one furnace, and 18 jewellers' benches each equipped with its own pin, the centre point of creation in a jeweller's studio, as well as its own hand tools and blow torches.

Larger equipment is arranged along the edges of the space which is shared by everyone in the studio. The studio instructors work in the same space as the students in order to observe them and to follow safety protocols. Organised along a long window, the workshop gets enough natural light and sufficient ventilation.



Figure 90: The Jewellers' Bench (author, 2022).

The workshop also has its own safe with compartments for each student where they must store their materials and unfinished pieces at the end of the day. No student is allowed to take any materials home.

Careful attention must also be paid to fire protection. According to the studio instructor, in a class of 26 students, 6 fire extinguishers are needed along with fire blankets and emergency kits at specified points.



Figure 91: The interior layout of the studio (author, 2022).

The jeweller's bench and its bench pin are the two most important things needed in a jeweller's studio. Without these two objects, it is nearly impossible to create jewellery. It is therefore the centre point of creation in a jewellery studio.

It is important for the jeweller's bench to be sturdy and to have enough space for a variety of hand tools. The jewellers' pin is attached to the bench and can be moved or replaced if it becomes too damaged.

According to Retha Minnie (August, 2022), the studio instructor, movements within a jewellery studio consist of constant to-and-fro between the jeweller's bench and all other equipment in the studio, such as the furnace and form-giving tools. It is therefore important that the studio is organised in a way that allows jewellers to effortlessly move around in the studio without colliding.

### SUFFICIENT LIGHTING ABOVE DESK

Lighting also plays an important role in the creation of Jewellery. Lighting must either be a direct source from above, or can be specific task lighting attached to the bench which can be controlled and moved accordingly.

### BENCH PIN AS THE CENTRE POINT OF CREATION

### STORAGE

### WOODEN STUMP FOR HAMMERING



Figure 92: The jewellers' bench in detail (author, 2022).

### 3.6.1 Studio Requirements

#### (A) Jewellers' Bench



The jewellers' bench is made to be sat in with all tools needed within an arm's reach of the artist. The jewellers' pin is meant to be at the artist's eye level to make intricate work easier. Each desk should also have a fire-retardant skin that catches all debris from the bench while the jeweller is working. This is to ensure that precious materials do not get wasted.

Sufficient storage is also needed and enough space for hand tools is required. The desk of a jeweller is an intimate space where the jeweller works on their own to create intricate joints and connections.

Figure 93: The jeweller is meant to sit in the jewellers' bench (author, 2022).

## (B) Furnace



Figure 94: The smelting station (author, 2022).

The furnace is where the casting process takes place. The hard material is thrown into round melting crucibles (figure 88) and is then melted with a gas torch. After it is fully melted, the liquid is thrown into moulds, and it hardens almost immediately. There are many essential safety precautions during the smelting process. Personal protective gear is needed as well as a fire extinguisher nearby. Extractor fans are also needed at this point as well as a wash basin within reach.

The smelting station also needs to have sufficient storage for tongs and crucibles. Oxygen tanks must be placed outside the building in metal cages for safety reasons. It is important to have the furnace near the jewellers' benches as well as form-giving machinery because metals harden quickly and needs to be shaped before it solidifies.



Figure 95: Melting crucibles and moulds needed (author, 2022).

### (C) Wash basin

The washbasin needs to have a recycle bin built in underneath to catch all debris to avoid wasting valuable materials. Once a year the jewellery studio empties the bin and takes the debris to a refinery to have it smelted.



Figure 96: The wash basin (author, 2022).

### (D) Sufficient Storage

The jewellery studio currently struggles with storage as it is a re-purposed building. Storage is an important requirement for a jewellery studio. Preferably, each student should have their own storage built-in at their workstation.

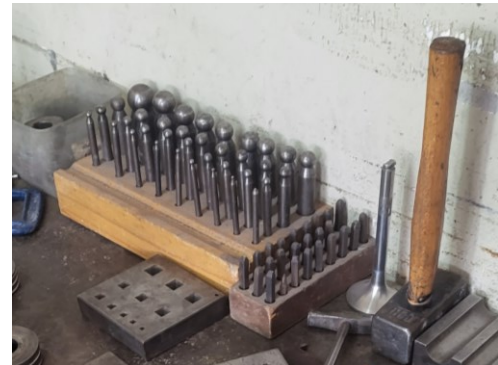


Figure 97: The studio struggles with insufficient storage (author, 2022).



Figure 98: The wash basin (author, 2022).

(E) Required Hand Tools



Melting Crucibles

Centre Punch



Pliers



Grinding Bowl



Stamping Machine



Small Bench Vice



Butane Torch



Tongs



Planishing Hammer, Buff Rake

Figure 99: Collage of hand held tools needed (author, 2022).

## (F) Required Larger Tools

The following machinery is needed in a jewellery studio. According to the studio instructor, in a class of 26 students, approximately 4 rollers are needed as well as 6 bench presses. It is important that all machinery is easily accessible and not far away from the jewellers' bench, making to-and-fro movements easier.



A metal working bench provides an area with form giving equipment, for instance a bench press and a hammering stump with various hand tools.

Figure 100 (above): A metal working station (author, 2022).

Figure 101 (right): Collage of various bigger equipment required (author, 2022).



Vacuum Cast



Bench Grinder



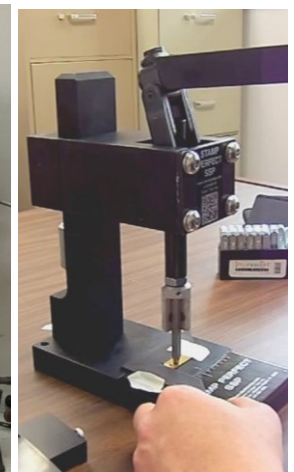
Rolling Mills



Polishers



Drill Press



Stamping Machine



Band Saw Machine

### 3.7 Jewellery Explorations

Jewellery design is an intimate craft that requires intricate details. Copper is a timeless material that can change over time. The proposed design, too, will have to change to suit the needs of the community. With limited resources, the town won't be able to revamp the building every few years. For this reason, the building will have to be designed in such a way that it can change with the people. Inspiration is drawn from copper as a material to create timeless connections that will be able to change with the building. Well crafted with good materials, these connections will have to be intricately designed. As an exploration of these types of connections, several jewellery connections were crafted to explore the different techniques of fastening and connecting jewellery. The exploration hopes to inspire intricate structural connections in the building, well crafted and able to transform itself over time. Inspiration was taken from the complex and detailed joints and connections of Carlo Scarpa at the Castelvecchio Museum.



Figure 102: Collage of different jewellery explorations (author, 2022).

### 3.8 Plan Development Inspired by Program

The program involves placing the building along the side of the road that leads into town to make use of the passing traffic. An informal market along the road can be used by the centre as well as informal traders. The project will also have to have a certain sense of exposure towards the mine, where the raw materials are sourced. The following sketch acts as an exploration of the spatial organisation of the building, with one side opening up towards the road, and the other towards the mine.

### 3.9 Conclusion

The program focuses on redeeming the town as a discarded space, as well as creating a building that fits the needs of the community and its established rituals. The following chapter will take a closer look at the scars of the damaged landscape and investigate ways to respond to it.

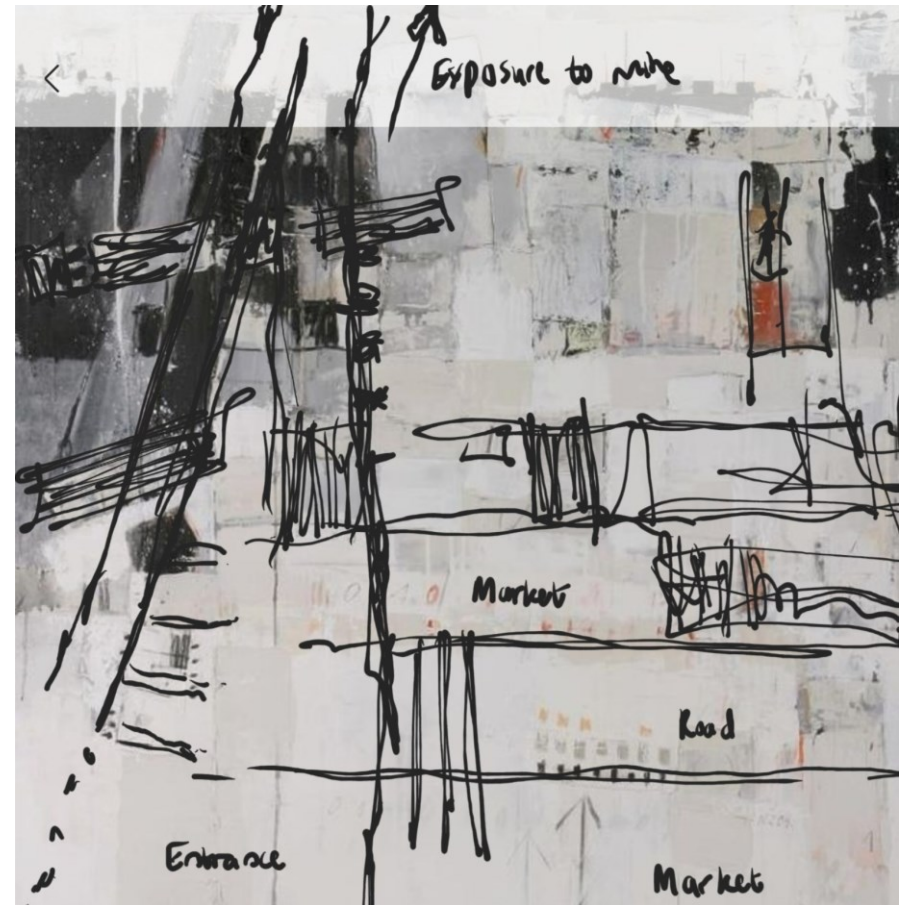


Figure 103: Plan development (author, 2022).

# CHAPTER 4

## GROUNDING: SCARS AND ENGRAVING

4.1 Introduction

4.2 Story of Place

4.3 The Wounded Landscape

4.4 The Act of Engraving - Touchstone

4.5 Extracting Stories

4.6 The Hand of the Engraver

4.6.1 Responding to the rich strata of place- Concept 1

4.7 Healing

4.7.1 Lebbeus Woods and the 'Scar' Metaphor

4.7.2 Copper as a Living Material – Concept 2

4.8 Re-scripting a New Place-identity

4.8.1 Place and Placelessness

4.8.2 Traces of Past Occupancy

4.8.3 Excavating Remaining Witnesses – Concept 3

4.9 Conclusion



## 4.1 Introduction

The manner in which we dwell, leaves scars upon the landscape. Looking at the old copper mining town of NababEEP, the landscape is scattered with scars and remnants of the previous mining era, evidence of many stories that need to be told. The town's identity seems to be lost. Taking inspiration from the act of engraving, the dissertation experiments with the intertwining elements of engraving, architectural narrative and place-making, to tell the story of the place. To redeem the wasteland of a town, the act of engraving may be seen as a way to re-interpret and find beauty in, the scarring and vulnerability of the landscape and its people.

Wastelands can be described as bleak, unused or neglected urban or industrial areas. A piece of land that is forgotten, or damaged beyond repair. NababEEP has suffered tremendously through the rise and fall of the mining era. Once a town of grandeur and celebration, it now lies forgotten and hidden between the granite outcrops of Namaqualand. Years of mining activity have slowly carved away the landscape, extracting its treasures. After many years of lying dormant, the many different narratives of NababEEP are still locked away for the world to hear.



Figure 104: The landscape portrayed as a wasteland with scarring (author, 2022).

## 4.2 Story of Place

The story of Nababeep begins as a tale of grandeur. When the mine opened in 1852, many people from all over the world flocked to the town in search of work. Almost every nation found its representatives here - English, French, German, Italian, Portuguese, the Colonial Dutch, and Afrikaners, and as for the numerous native races, men from far interior, West and East Coast of Africa, KhoiKhoi and Nama people (Fleminger, n.d.: online). The O’Kiep mine was once ranked the richest copper mine in the world. As the mine continued to grow, and the laborers received payment for their hard work, the local Nama people, who is known as a thriftless, happy-go-lucky nation, would often leave the mine to return to their farms if the rains were good

(Fleminger, n.d.: online). To many, the mine was the lifeblood of the area. Since the mine closed, the town slowly began to deteriorate and became a tale of dissolution. Once defined by the mine, the town’s identity was suddenly lost with its closure. The story of Nababeep is one of fragmentation. Along with the damaged landscape and its fragmented pieces left in ruins, the people of Nababeep were also left in a state of vulnerability. The town can be described as an indeterminate landscape- in a state of placelessness. Scarred by years of mining activity, the town and its surrounding granite hills still hold many wounds that have not yet healed. The different scars in the landscape are evidence of a land that has been turned upside down.

Figure 105: A collage of photos taken at the Nababeep mine (O’Kiep Country Hotel archive,



### 4.3 The Wounded Landscape

The mining era, although grand and victorious, has left deep marks in the landscape. The vulnerable landscape has stark contrasts between the broken, scarred earth and the beauty it hides away. Once a year, the dry and arid landscape manages to transform itself into an explosion of beauty and colour when a rush of flowers covers the age old mountains. The flower explosion is not the only treasure the town of NababEEP hides away. Apart from copper, many other minerals, crystals and semi-precious stones are also extracted from its ground.

These treasures are evidence of the beauty that lies within the granite outcrops. The landscape of NababEEP is a fragmented one. Its identity seems to be broken up along with its landscape. Despite the severe scarring, there is much beauty that can still be extracted to tell the story of place.

The touchstone explores ways of making sense of the damaged landscape and finding ways of revealing beauty by looking at the act of engraving.



Figure 106: The wounds of the landscape are caused by deep scratches made to the surface (author, 2022).

## 4.4 The Act of Engraving- Touchstone

The art of engraving is the practice of incising a design onto a hard, usually flat surface by cutting grooves into it with a burin (MHS Library, n.d.: online). The result may be a decorated object in itself, as when silver, gold, steel, or glass are engraved, or may provide an intaglio printing plate, of copper or another metal, for printing images on paper as prints or illustrations; these images are also called "engravings". Engraving is one of the oldest and most important techniques in printmaking.

The indeterminate landscape of Nababeep has been scratched and wounded severely. Its complex landscape hides away beautiful treasures as well as many sorrows as a result of the tragic environmental devastation.

To reveal the inherent beauty of the landscape and its many scars, inspiration was found in the art of engraving and the way the engraver produces something beautiful from a scratched copper plate. In his architectural thesis *The Hand of the Engraver*, Ryan Western (2020: online), draws comparisons between the physical act of scratching the surface of a copper etching plate and the scratched surface of a New Zealand mining landscape (Western, 2020: online).

Inspiration was also found in a series of artworks by David Derksen (2017) where he engraved scenes of a copper mine on a copper etching plate, depicting the intriguing and intimidating world of copper mining. The artworks depict the scars in the landscape, made by immense machines and the brute force of explosives.

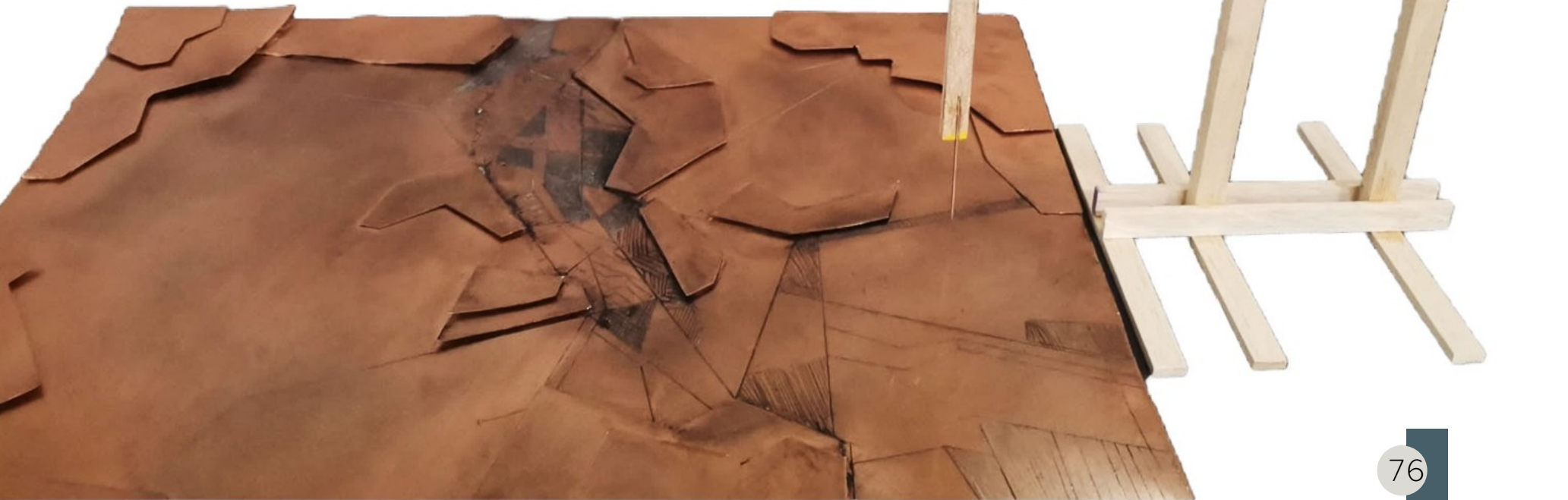
Figure 107 (left): The act of engraving on a copper etching plate (MHS Library, n.d.: online).  
Figure 108 (middle): David Derksen's copper engraving of a mining landscape (Derksen, 2017: online).

Figure 109 (right): A Theodor Galle intaglio print showing the process of copper engraving print making (Wallach, n.d.).



The damage at Nababeep was caused by deep scratches made to the surface, scarring the site so severely that there is no going back. Similarly, as pointed out in the architectural thesis *The Hand of the Engraver* (Western, 2020: online), in the art of engraving, the engraver also makes deep scratches to the surface of a copper plate, and the resulting 'scarring' of the plate allows a story to unfold. By looking at the art of engraving as inspiration, the touchstone explores ways of applying engraving to the architectural design process in a way to help reveal the narrative of the place. It further explores surface conditions and possible site interaction.

Figure 110: The touchstone is an allegorical model of the site and its scars. The engraving device that hangs over the plate symbolises the mine who holds the power over the landscape (author, 2022).



The touchstone is an allegorical model of the site, depicting its deep wounds and scars, intriguing patterns and reliefs in the earth. Experimenting with the art of engraving, deep scratches are made to the surface of the copper plate, symbolising the scars made to the surface of Nababeep's landscape. Inspired by the printing process of copper etching, ink is painted onto the surface of the plate and prints are made on paper.

The act of engraving further provides insight into seeing the scars as possibilities of capturing stories. Taking a closer look at the site and its trauma, and uncovering all of its layers, new voices can start to emerge. It is ultimately the embedded layers of place that allows the story to be revealed. Engraving allows us to think about how the sense of place can come forth once the scars are accepted as part of the place, and embraced to provide unexpected new approaches. In extracting these stories or echoes of the past, a story of place, woven in conflict start to emerge on paper.

Figure 111: Deep scratches are made to the surface of the copper plate (author, 2022).



## 4.5 Extracting Stories

In his book *The Hand of the Engraver: Albert Flocon Meets Gaston Bachelard*, Hans-Jörg Rheinberger, a historian of science, touches on the idea of the image of place: *“The poetic image (...) is not an echo of the past. On the contrary: through the brilliance of any image, the distant past resounds with echoes”* (Rheinberger, 2018).

Marks of past trauma leave scars upon the landscape, visible long after occupancy ceases. When dealing with a site that has a history of past echoes, Jennifer Hill, an architectural theorist, offers insight into how the ongoing traces and scars of a derelict site can contribute actively to the narrative of a site (Hill, 2004: 64). In her article *Six Degrees of Intervention*, she argues that designers must not feel the need to return a derelict site to its original state, but rather look at the cataclysmic events that shaped it as important chapters in the ongoing story of the site (Hill, 2004: 64).

Figure 112: Lines are etched onto the landscape. The scars of the site have the possibility of capturing stories (author, 2022).



The art of engraving provides insight into how one can engage with the scars of the site in a narrative way. In a similar manner the paper extracts the story from the scratches in the copper plate, beauty can be extracted from the broken and damaged landscape. The act of engraving, in this way, becomes a poetic interpretation of the site, extracting different narratives from the site and thus allowing the story of place to unfold.

The new engraving over the site becomes an interpretation of the many embedded layers of place - a poetic layer over the site. The architect becomes the engraver, extracting and telling

stories. Through transforming what was once unsightly, the scars and the broken landscape, into something beautiful, a poetic interpretation is exposed. Rather than removing the scars, and returning the site to its original state, the scars reinterpreted as engravings allow future generations to witness these scarred landscapes so that their intrinsic stories can provide lessons for the future. In this way, engraving communicates contextual narratives in a way that not only revitalises place identity, but also enables us to fully engage a site's heritage and learn from past mistakes.

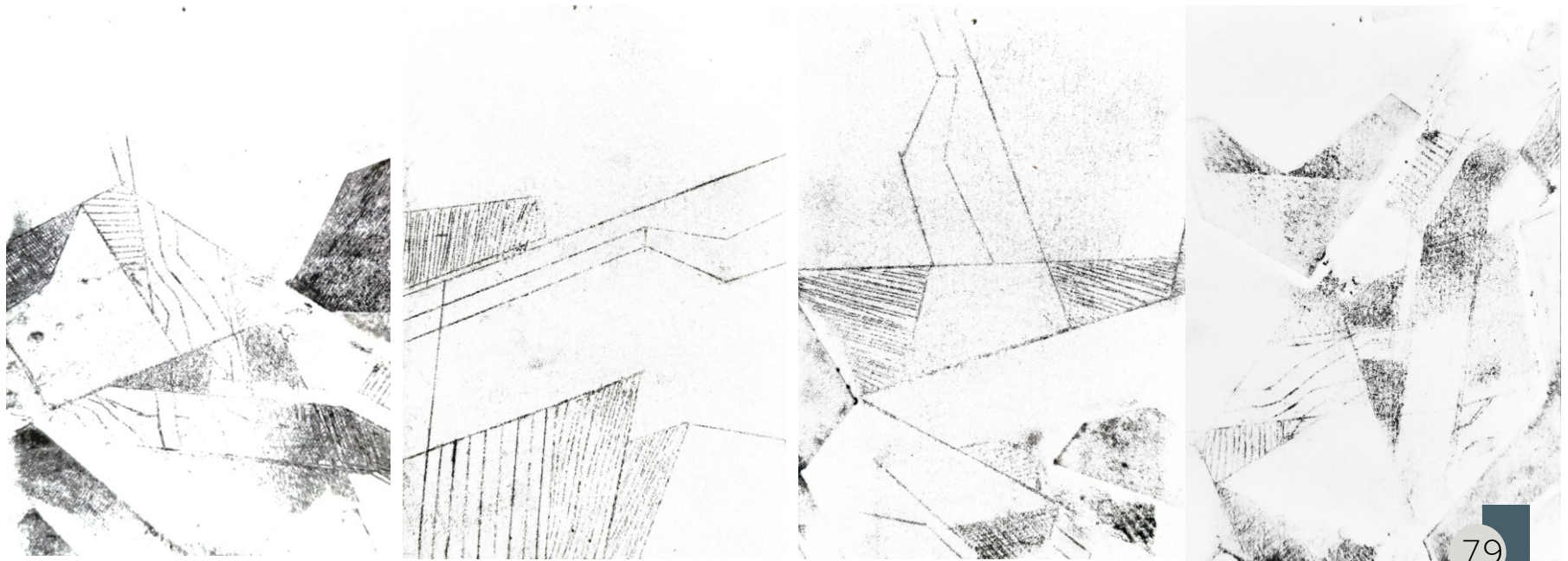


Figure 113: A series of prints are made from the allegorical model, telling the story of place (author, 2022).

## 4.6 The Hand of the Engraver

In the book *The Hand of the Engraver*, the writer brings together the architectural engraver, Albert Flocon, and the architectural philosopher, Gaston Bachelard in dialogue. In a conversation about place-making, Rheinberger links engraving, philosophy and architecture. It is ultimately two different universes brought together - one made of words and the other of incised lines. The two exchanged ideas and theories. Bachelard was fascinated with the way the copper engraver meets the challenge of resistant and resilient matter in a captivating way while Flocon was fascinated with Bachelard's unconventional approach to the sciences and poetics. Together, their dialogue examined and celebrated the interplay of hand and matter as it occurs in poetic writing as well as in the art of engraving (Western, 2020: online),

Engraving is an art form that requires precision with every line. Similarities can be drawn between the engraver and the miner who once depleted the site of its alluvial soil. The mine can be considered once being the engraver and is the party responsible for the deep scratches made into the landscape. *The hand of the engraver* (Rheinberger, 2018) also poses the question of who holds the responsibility. In this case, the engravers, or the miners, hold the responsibility of the landscape in their hands.

In the book, Rheinberger makes futuristic mining connotations: "*The gesture of the engraver simultaneously incises and excavates. It proceeds down into the bedrock and up into the daylight at one and the same time*" (Rheinberger, 2018: 18-20). The words "excavating", and "bedrock" draws comparisons between the mining landscape of Nababep and a copper plate. The words describe the transformations of the mining site.

*The hand of the engraver* (Rheinberger: 2018) further describes engraving as "*an open hand pointing in one direction, in the palm of which an eye opens; in other words, a hand that sees, the hand of the engraver*" (Rheinberger, 2018:9). The hand is therefore in control, and with every line that is drawn, precision and responsibility is needed. Flocon describes the hand of the engraver as being "*the material and knowing agent of a becoming, of an emergence*" (Rheinberger cited by Western, 2020: online).

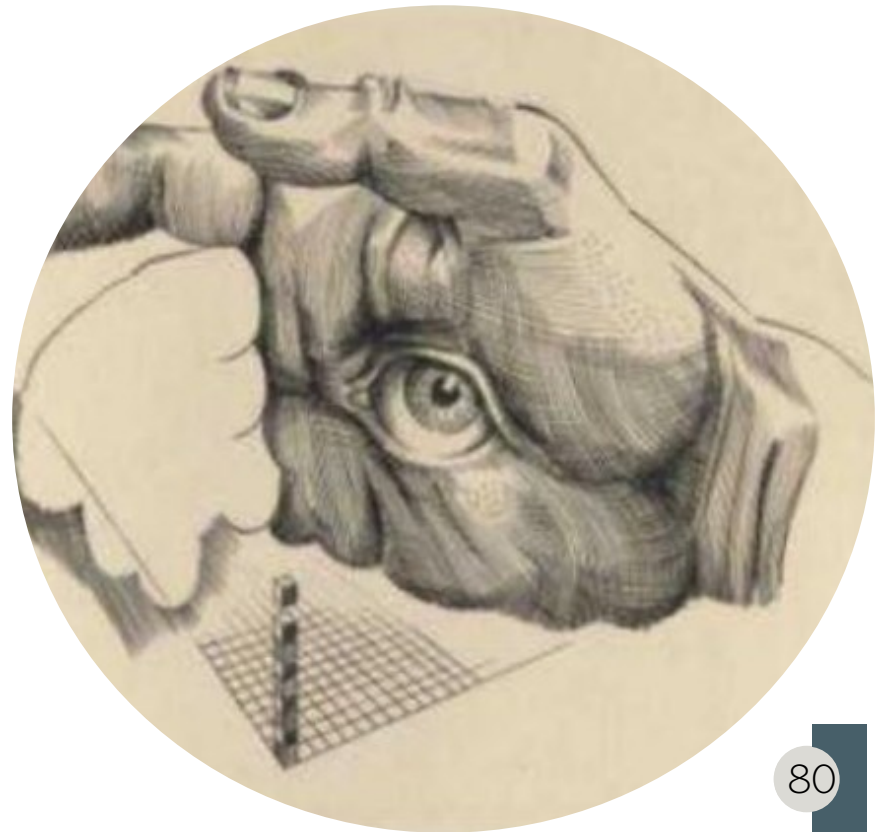


Figure 114: The hand that sees (Rheinberger, 2018: 9).

The mine is not the hand that holds the power anymore; rather it is in the hands of the designer, or the architect to attempt to rejuvenate the town and to make sense of its scars and wounds. When confronted with the damaged landscape, the designer must choose how to interact with it. The hand of the designer becomes the knowing agent and the building, or design, is an emergence, an act of his hand.

When approaching the damaged site, there will be forms of resistance in the confrontation with matter. As an engraver, the designer must choose which lines to draw with caution and responsibility. The hand of the designer must however be led by the community and their needs. Taking into account the previous damage, the designer must find ways of engaging with the site in a sensitive way, establishing a new relationship between the scars and the new architectural intervention. There is freedom and responsibility that the designer must balance, and decide which line to draw.

Another correlation can be drawn between the damaged site, the designer's role to rejuvenate it, and the engraver; in the book Flocon explains that "*one must see with one's hands. To be able to do something with the materials, one must touch them, feel them, test them*" (Rheinberger, 2018: 13). By gaining inspiration from the art of engraving, new ideas and unexpected approaches emerge to the revitalisation of the derelict site. Before the design can intervene on the site, an in-depth analysis must be done, uncovering all of its layers. The first conceptual approach investigates the palimpsestuous strata of place.

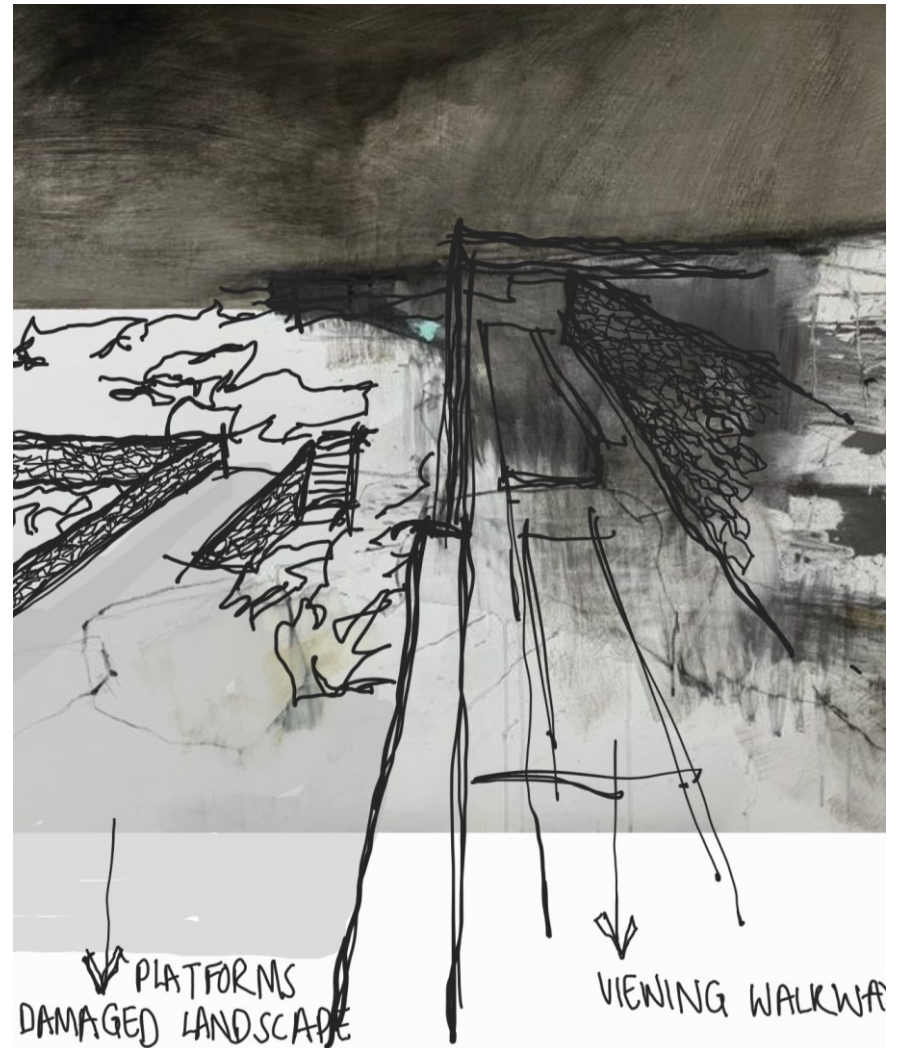


Figure 115: Explorations of how the designer can interact or respond to the damaged landscape. The sketch shows viewing walkways over a scarred landscape (author, 2022).

#### 4.6.1 Responding to the rich strata of place- Concept 1

##### Uncovering Lost Narratives

Resituating residual fragments as lures to expose the palimpsestuous underbelly of place

##### Key Words

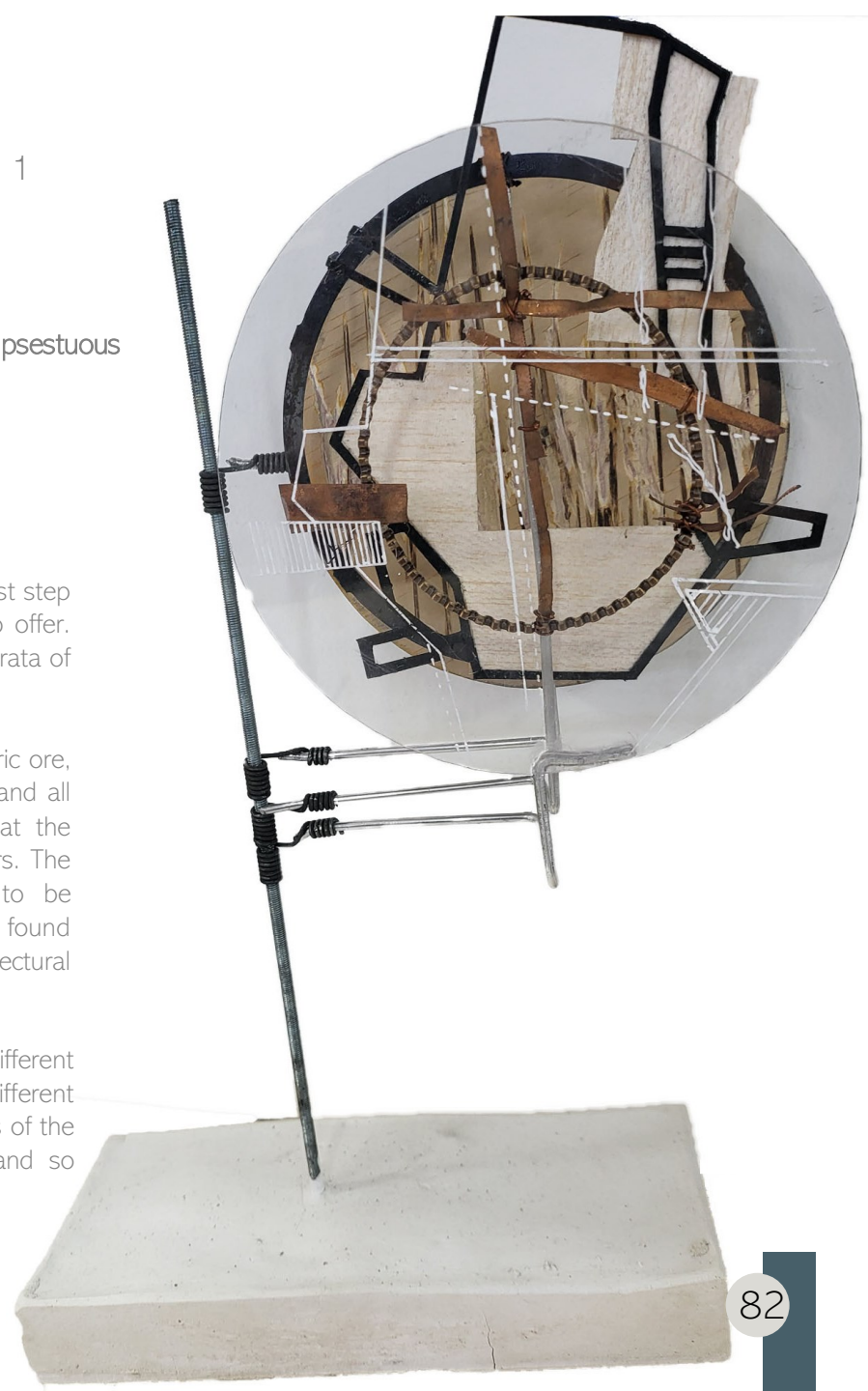
uncovering | past echoes | assemblage  
palimpsest | architectural narratives | layering

As in terms of mining, before the miner can engage with the site, the first step begins with prospecting for minerals and seeing what the site has to offer. Similarly, the first conceptual approach is a deep reading into the rich strata of place in order to uncover its treasures.

There is much richness to be found in the site. By delving into its historic ore, the aim of the conceptual approach is to recover the story of place, and all narratives that seem to be lost. The concept takes a closer look at the different narratives of the site which have transformed it over the years. The town and surrounding landscape are filled with stories waiting to be uncovered. The first conceptual approach tries to expose the richness found within the site and focuses on the layering of different contexts, architectural narratives, history, scandals, past echoes and ghosts of the site.

The concept is a deep reading into the site and documents the different influences on place. The site becomes a palimpsest - an ensemble of different influences. The concept model (on the right) shows some of the layers of the site, allowing one to peel away the different layers one by one and so uncovering its secrets.

Figure 116: Concept 1 is an ensemble of different influences on the site (author, 2022).



The residues of the site are overlaid. Each layer reveals a unique story:

- (1) The first wooden layer from the back shows the scarred landscape and the damage caused by the mine;
- (2) The second layer represents the mining infrastructure, or the residues thereof, and how it pierces into the landscape;
- (3) The third layer represents the copper that is extracted from the mine, which has over the years become an important lifeline in the area;
- (4) The perspex layer is the new poetic interpretation of the site which draws on the old but forms a new story on its own. The new engravings become a poetic layer over the site.

The architectural relevance of the concept draws on the idea that each layer is suggestive of something new to be created - a different response to the old. Similar to the site, the architectural intervention aims to become an ensemble of different influences and layers, each responding to a part of the site.



Figure 117 (above) : The site as a palimpsest of different narratives- scarring, copper and mining residues (author, 2022).

Figure 118 & (right) : A layering of different stories of the site- each layer suggesting a certain chapter in its history (author, 2022).



## 4.7 Healing

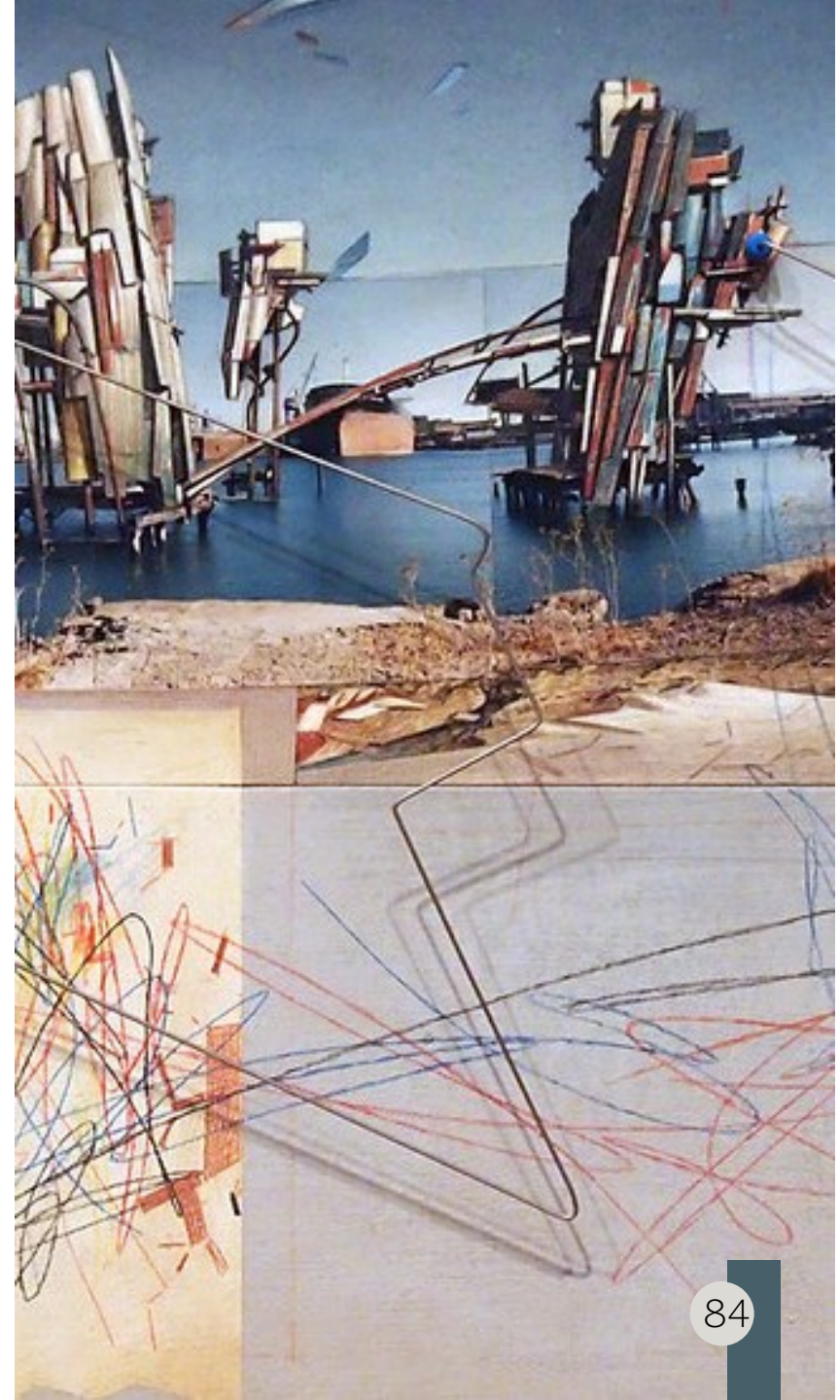
The first response towards the damaged site would be to heal its wounds. Mining environments, active or abandoned, are evidence of humanity's unsustainable damage to environmental systems. The project requires new ways of looking at the scars of a site and finding ways of weaving together fragmented pieces of the site to form a new relationship.

### 4.7.1 Lebbeus Woods and the 'Scar' Metaphor

Lebbeus Woods, an American architect known for his unconventional and experimental designs, was the first to introduce the idea of wounds of places (1996: online). His work focused on revitalising pieces of no-man's land, or non-place. He argued that cataclysmic events often create physical, social and psychological voids in society which are called No man's land. His work specifically focused on places destroyed by war. An example of a disruption was the Siege of Sarajevo between 1992-1996, which tore apart the very fabric of the Yugoslav society (Woods, 1996: online). In the aftermath of the siege, Woods tried to grapple with ways of recolonising these spaces which had been abandoned or laid to waste.

He embraced the wounds of places destroyed by war and believed that they could only emerge from the great depth of their painful, private and collective experiences. By introducing the 'scar' metaphor, he designed projects that build not against the ruin, but with it (Woods, 1996: online).

Figure 119: Woods experimented with scabs over wounds of places (Woods, 1996: online).



The 'scar' can be seen as a manifestation of the wound's healing that at the same time incorporates what the flesh has learned, a sign of transformation and hope that the difficulties of the past have been overcome and a new future lies ahead. In rebuilding Sarajevo, he used radical forms of salvaged material that acts as "scabs," over the "wounds" of a building which was damaged by war (Woods, 1996: online). The scar is a visual reminder of what has been overcome.

The scars of the landscape cannot merely be removed or restored. The scars are part of the history of Nababeep and is evidence of what has been overcome. The community and its surrounding slopes are still reeling from the aftermath of the mining era, as well as its closure. The landscape and the people of Nababeep are in a vulnerable state and must be approached with empathy. Healing from past trauma would be beneficial, and the scars left in the landscape are evidence of the wounds' healing process. To take away these scars would mean to take away a piece of the history and story of the place.

The dissertation explores how the ongoing traces and scars of the derelict site can contribute actively to the narrative of the site. Healing, in this sense, will involve forming new connections between what had happened and the new architectural intervention; investigating how parts of the site and community can be healed to form a new relationship between place and narratives, as well as place and architecture. Copper as a material offers inspiration because the protective layers of copper reflect the healing of the site.

Figure 120: The scar is a visual reminder of what has been overcome. The scar can set in motion and actively contribute to the narrative of the site (author, 2022).



## 4.7.2 Copper as a Living Material- Concept 2

Copper is a living material, constantly transforming itself over time. The patina layer over copper is a thin layer that forms when exposed to the elements to protect it against corrosion. After years or even decades of exposure, this layer continues to grow; later, after the patina has formed with several products of corrosion, it is relatively stable and acts as a protective barrier for the underlying copper. Copper doesn't lose its value once a patina forms, but rather becomes more valuable because it is a sign of time passing. It is a visual reminder of what has been overcome, much like a scar. Inspiration can be drawn from copper and its forever-changing nature. The designer can choose certain parts of the site and heal them by introducing new layers that respond to the old and forming protective barriers over the site like patina. The new layers symbolise the new interventions, an emergence, an act of the designer's hand.

The new intervention becomes a poetic layer over the site, a poetic interpretation of the story of place. This proposal doesn't work against the ruin of the site, but rather uses the ruin and transforms it into something beautiful. The scars of the site are turned into engravings, extracting the beauty out of the unsightly. Much like the way Lebbeus Woods used salvaged material as scabs over the wounds of the places, the designer's engravings narrate.

Hill (2004) argues that the story of a place, whether it is a town or specific site, does not end in the trauma of the place but is rather an ongoing story with many more chapters to come. Hill sees the role of a designer as someone that can add a chapter to a site in a way that allows earlier chapters of the site to be read (Hill, 2004: 65). By adding new chapters, the previous chapters of the site are safeguarded, and can be read and learnt from.

Figure 121: Copper as a living material, forever changing and transforming itself (author, 2022).



Weaving together fragmented pieces of site to form a new relationship, in an attempt to heal its wounds

#### Key Words

remnants | protective layer | healing  
time | re-invigorating | patina

Rather than erasing some of the chapters of the story, the concept sees the trauma caused to the town as an important chapter in its story. By piecing together all of its chapters and fragments of the story, a new identity for the town can be rescripted.

The place-identity of Nababeep is defined by fragmentation and this fragmentation is also seen on site with various fragmented pieces or scabs laying around - remnants of the past. The second conceptual approach explores ways of healing the site by stitching together all fragments of a site in order to form a story of place.

Drawing inspiration from copper as a living material and the patina layers, the concept explores new ways of healing past wounds. Drawing inspiration from the protective layers of copper and its forever changing nature, the scars of the landscape can be healed through adding new layers over the site

Figure 122: An ensemble of different fragments pieced together (author, 2022).



In order to heal some parts of the site, the architectural intervention becomes a series of patina layers over the site, protecting its scarred pieces. The space between these different layers is also important as it becomes a spatial experience.



-  new additions as new layers of copper
-  aged layers of copper as historical ore of site



Figure 123 (right): The concept explores ways of stitching together the fragmented pieces of site (author, 2022).

Figure 124 (above): A series of different patina layers and the spaces in-between (author, 2022).



By retaining some of the scars of the past, they can be incorporated into the new intervention as important early chapters of a greater ongoing narrative. Hill further argues that ongoing transformations of a derelict site can contribute actively to curating a site's narrative through removal of layers, reinsertion of earlier elements and the introduction of new materials (Hill, 2004:64). Imperfect circumstances can therefore present a new opportunity of engagement.

Drawing inspiration from Hill's ideas of an ongoing narrative of the site, it also alludes to the idea of copper as forever-changing material. The designed building or intervention needs to be open to continuous changes over time. Just like the narrative of the site is an ongoing story, the design will have to continuously change itself over time.

Another lesson learned from copper is that time heals all wounds. Time is needed for the scars of NababEEP to be healed. The dissertation explores how the design can change over time, re-invigorating and transforming itself to suit the needs of the community. In creating a design that fits the needs of the community and that can transform itself over time, a new relationship between the people of the place, and the place itself, can be established. The place identity of NababEEP has been lost and the next chapter of the story needs to be about stitching together a new identity through place-making.

Figure 125: Ongoing transformations of a derelict site. New layers are added over the old, the landscape therefore continuously changing itself. (author, 2022).



## 4.8 Re-scripting a New Place-identity

Nababeep can be seen as a non-place, a leftover piece of land from the mining era, tossed aside after its treasures have been extracted. "Place" is defined as a space long taken over by human beings and where something is said about the relationships which people have with their own history, their environment and each other. "Place" becomes a space we know and can identify with. In contrast to this, non-place can be seen as a space in which people cannot recognise themselves and where they have no attachment (Woods, 1996: online).

The mine has long since been disconnected from the people of Nababeep. Its only connection is the visual reminder of the past. The proposed design must establish a new connection between the mine and the people of Nababeep in order to create a new place identity.

### 4.8.1 Place and Placelessness

Edward Relph, a Canadian geographer, in his book *Place and Placelessness*, touches on the concept of place-making. His research focuses on the phenomenology of place. He describes place as follows: "*To be human is to live in a world that is filled with significant places: to be human is to have and to know your place*" (Relph, 1976: 1). Relph also describes the identity of place in terms of three components, namely, first, the place's physical setting; secondly, its activities, situations, and events; and lastly the individual and group meanings created through people's experiences and intentions in regard to that place (Seamon & Sowers, 2008: 43). Interpreting this, the phenomenological understanding and spirit of the place lies within the scars engraved into the landscape, the event that gave the town its identity.

Relph further explains that some places live and die: "*Some places have died - the world is indeed full of dead places...*" (Relph, 1976: 32). Elaborating on this, he argues that it is through the speculative occupation of such scarred landscapes, that these places may become alive once more: "*People are their place, and a place is its people*" (Relph, 1976: 34).

Jonathan Sime, a specialist in the field of environmental psychology, investigates the interwoven relationship between 'place' and architecture in the book *Creating Places or Designing Spaces*. He advocates the importance of creating meaningful places when designing to avoid impersonal concrete monuments (Sime, 1986: 61). Sime also recognises the phenomenological experience of a place, noting that it is very difficult to achieve a sense of place through physical design alone. Commenting on the ideas of Relph and Sime in relation to place-identity, it is understood that a sense of place cannot merely be created through an architectural intervention; it is the people of the place that gives it its identity. It is therefore important that this dissertation makes informed decisions about what is best for the people of Nababeep. The people of the place must lead the decisions of the hand of the designer in each step of the way. The stories of the site are not the only narratives that must be extracted through the process of engraving, but also the stories of the people. It is through lived intensity that an identity of a place is formed; through a certain type of insideness - the degree of attachment, involvement, and concern that a person or group has for a particular place (Seamon & Sowers, 2008: 44). It is this understanding of insideness that Relph believed might contribute to the maintenance and restoration of existing places and the making of new places (Seamon & Sowers, 2008: 44).

## 4.8.2 Traces of Past Occupancy

In order to restore existing places, the fragmented pieces of the site may be reinterpreted in new ways to form a new relationship between the damaged site and the people who will inhabit it. The Seirenscho Art Museum designed by Hiroshi Sambuichi Architects is an example of how past traces of occupancy can offer insights, actively contributing to the narrative of the site.

What was once an abandoned copper refinery, was transformed into a self-sustaining art museum. It is an idealistic project with a vision of regional revitalization through reuse of the island's industrial heritage. The building and structures on the site were left in a state of ruin. The building is both a container for and an integral part of the art exhibition. The architect builds with the ruin, rather than against it in a way that enables the rich historical narrative to be conserved and allows the old copper refinery to be rescue from decay (Shibata, n.d.: online).

Referring back to the ideas of Jennifer Hill, the new intervention becomes a stimulator for future chapters of the ongoing narrative of the site. Through the combination of the old structures and the addition of new design interventions, the ruins can be

constantly reinterpreted in ways that would never have been possible before. The previous scars are not removed, but rather safeguarded and framed as important lessons from the past. The ruins, in this sense, become contextual drivers or nodes when forming another chapter in the history of the site (Hill, 2004:64). The project embodies a context-dependent narrative, incorporating scars from previous trauma together with new interventions to re-script the identity of the place (Shibata, n.d.: online).

The precedent provides important clues on working with the fragmented pieces of a site and interrogating its remaining witnesses. The scars of the site, and traces of past occupancy do not form a background to the new intervention, but rather actively contribute to the narrative of the site, the story of the place. Through establishing new connections between the old and the new, a new place-identity can be rescripted, anchored in the lessons of the past.

Figure 126: The fragmented pieces of the precedent are reinterpreted to form a new chapter in the ongoing narrative of the site (Shibata, n.d.: online).



### 4.8.3 Excavating Remaining Witnesses – Concept 3

Interrogating the different characters on site in an attempt to make sense of the landscape

#### Key Words

characters | remaining witnesses | stimuli  
ordering | woven in conflict | connection

Looking at the Seirenscho Art Museum as inspiration, the third conceptual approach experiments with the idea of using existing ruins on the site as stimulators for future chapters of the overall story of place. The concept further experiments with using the ruins on the site as lessons from the past and building on top of them, establishing new connections between the new and the old. The concept serves as the first attempt of ordering and making sense of the landscape by investigating all of its characters.

As already mentioned, the site is scattered with remnants of the past in the form of monolithic concrete structures, abandoned equipment and discarded tailings. These ruins can be considered as traces of past occupancy in the landscape. The landscape is animated with the stories of the past. When approaching the site, the following questions need to be asked:

- How does the designer make sense of the landscape?
- How does the designer approach order in the landscape?
- How can the designer capture the story of the site?

This concept explores the idea of firstly, understanding the characters on the site, and secondly, the importance of each of them. The concept interrogates and excavates the remaining witnesses on site.

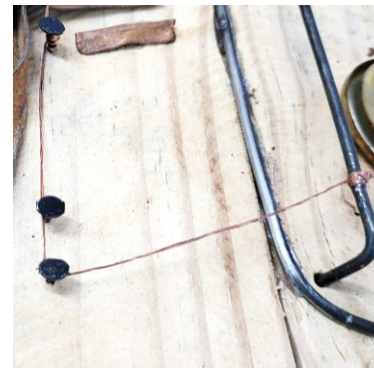
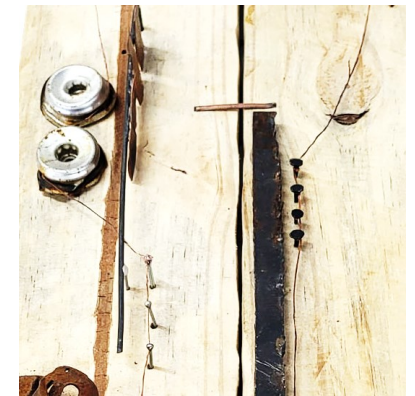
Figure 127: The different residues on the site become important characters of the ongoing narrative of the site (author, 2022).



The concept also investigates the idea of considering the witnesses as stimuli in the area which can set in motion new interventions or connections between them. Forming connections between the characters on site can lead to new responses. The concept model is an allegorical model of the site showcasing its various characters and stitching them together to form new connections.



Figure 128(above): The different characters on site as stimuli (author, 2022).  
Figure 129 (right): Photo series of different characters of the concept model (author, 2022).



A second concept model was built to explore ways a new relationship can be formed between the different characters on site. Working only with a few characters on site, the concept explores how connections can be formed between them - the new architectural intervention also telling the story of the past. The image becomes an ensemble of different residues of echoes of the site.

Figure 130: Moments captured from the concept model depicting ongoing transformations of a derelict site. New layers are added over the old, the landscape therefore continuously changing itself. (author, 2022).



## 4.9 Conclusion

After many years of lying dormant, the town has lost its identity. The mine has become disconnected from the people of Nababep and the town was left in a state of placelessness. By looking at the three conceptual approaches as methods of making sense of the landscape, understanding its layers, ordering the landscape and ultimately healing it, the proposed project works with the ruins of the site in order to form new connections between the history of the site and the new design interventions..

The dissertation is ultimately about place-making in a scarred landscape , and the concepts provide insight into how the fragmented pieces of site and society can be stitched together to form new relationships.

Through uncovering the many embedded layers of the palimpsest of place, a story can begin to emerge on paper. By using the fragmented pieces of site as contextual drivers in the ongoing greater narrative of place, a new place-identity can be rescripted, one that focuses on the idea of 'insideness'. It is only through recognising the past trauma of the site and its people that dead spaces can become alive again.

Figure 131: Moments captured from the three concepts (author, 2022).



# CHAPTER 5

## FINDING INSPIRATION: PRECEDENTS

5.1 Introduction

5.2 Castelveccchio Museum

5.3 Baragwanath Transport Interchange and  
Traders Market

5.4 House F

5.5 Horizon House

5.6 Conclusion



## 51 Introduction

After investigating ways of making sense of the damaged landscape and its scars, and finding ways of redeeming the wasteland, the following chapter will look at inspiration for the design intervention. Firstly, the chapter will investigate the craftsmanship of Carlo Scarpa at the Castelvecchio Museum and the way he works with materials and joints. The next precedent, the Baragawanath Transport Interchange will be investigated in terms of the functioning of the informal traders market.

The third precedent, House F, will explore its spatial organisation as cellular spaces in the landscape. The last precedent, the Horizon House by Lake Flato will investigate the building's response to the landscape as well as its material choices. All of the precedents were carefully chosen to provide insight into the design process.

Figure 132: The palimpsestuous landscape with all of its layers (author, 2022).



## 5.2 Castelvevchio Museum

Architects- Carlo Scarpa

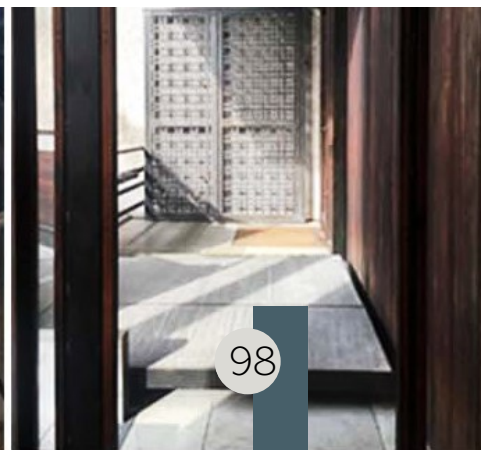
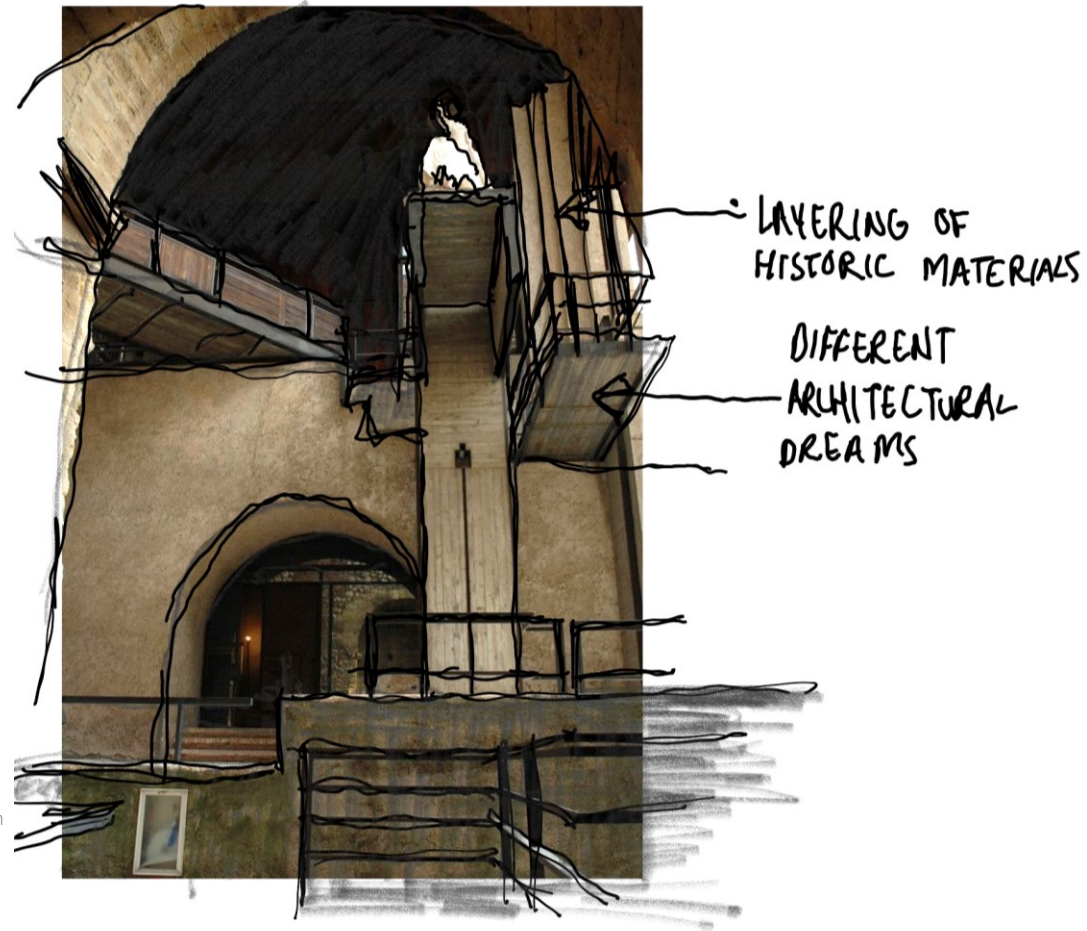
Location- Verona, Italy

Year- 1973

At Castelvevchio, Scarpa focused on the juxtaposition and reconnection of the spaces with distinctly modern elements and his choice to expose, rather than brush over, the differing layers of history. Through a simple variation in levels and falls, Scarpa has created a deeply felt separation of the elements, within an area in which many parts converge. The different landings project into the architectural space, becoming 'architectural dreams', an example of the poetic character that resonates through much of his work.

Figure 133(right): Landings in the building are considered as different architectural dreams (Ghirardi adapted by author, 2013: online).

Figures 134-137 (below): An intricate layout of spaces keeps the visitor engaged with the building's experience (Ghirardi, 2013: online).

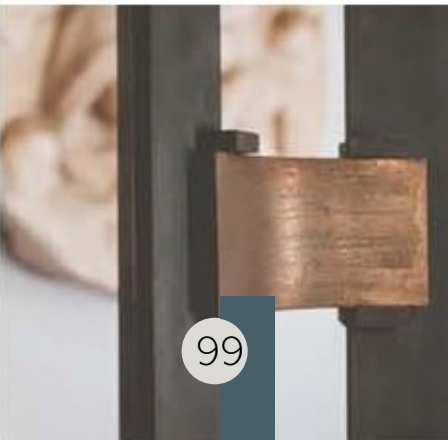
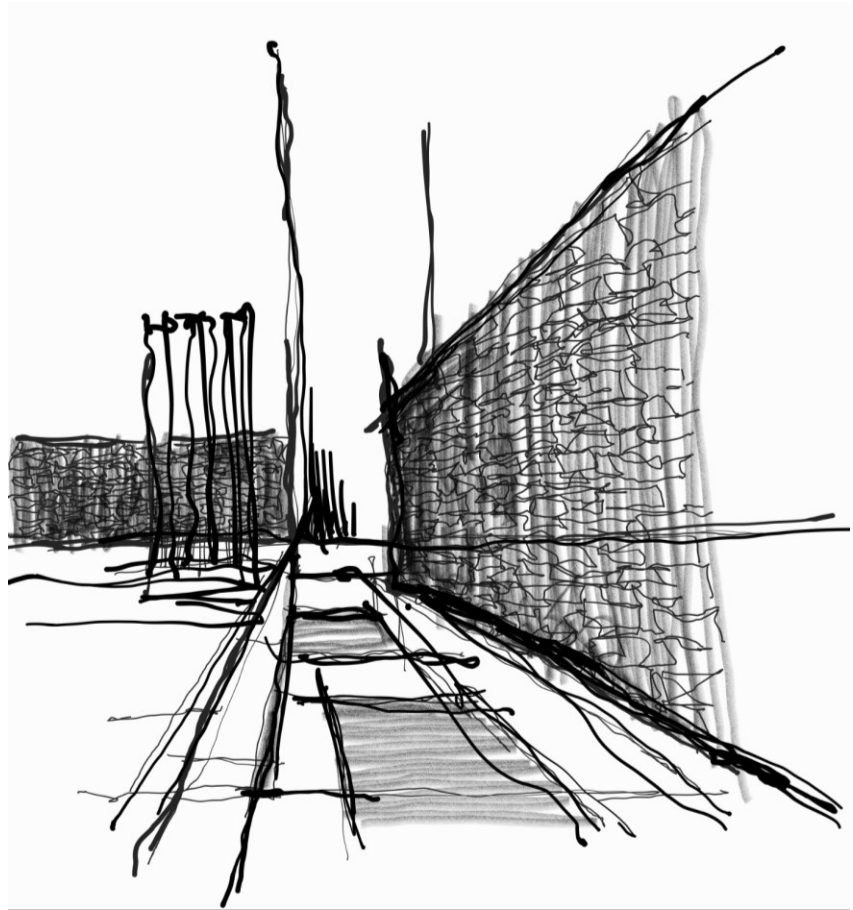


The choice of materials became an integral part of the design, Scarpa's sensitive consideration of materials and details helped his work to achieve a sense of continuity with the several historical layers present within the museum. The point at which two points meet can be perceived as a problem by architects or designers: a problem that needs to be solved. Within Scarpa's work, the joint is an opportunity that provides detail and can expose the nature of an object. Manipulation of the quality of materials, the sophisticated grammar of his paving pattern and the details of the steps are good examples of his ability to imbue junctures with a profound beauty (Ghirardi, 2013: online).

The figure on the right shows an exploration of how the Jewellery Manufacturing & Design Centre can employ a sophisticated grammar of paving patterns, drawing inspiration from the work of Scarpa. Sculptural connections are introduced whereby attention is paid to creating beautiful and intricate joints (Ghirardi, 2013: online). The joint becomes an opportunity to expose the nature of the material.

Figure 138 (right): An exploration of how the design can incorporate sculptural connections. A sophisticated grammar of paving patterns- different landings within the building keeps the visitor engaged with the building's experience (author, 2022).

Figures 139-142 (below): Careful attention was paid to create intricate joints and details (Ghirardi, 2013: online).



In terms of narrative theory, we can clearly spot pieces and passages that reminds one of the mechanisms and devices typical of a story. Scarpa employed a destabilizing narrative throughout the building, the visitor's goal is to render intelligible the meaning-making mechanisms hidden in these interlinked spaces by decoding the narratives systems and communicative codes adopted by Scarpa. Analysing the building in terms of deep research in narrative theory, there are three different actants, namely (1) the adjuvant, (2) the addressor, and lastly (3) the addressee (Ghirardi, 2013: online). The building becomes a multi-layered metonymy, introducing the plot and loading the story with suspense.

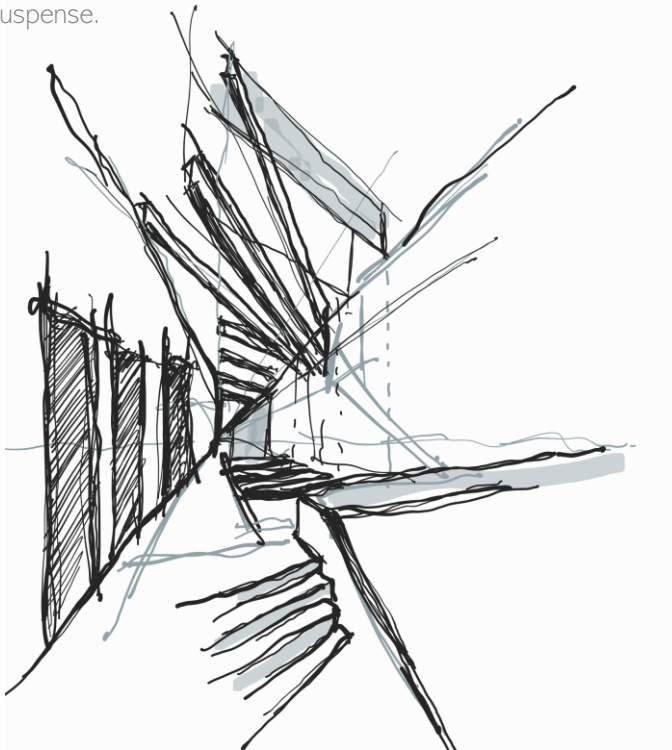


Figure 143: An exploration of how different landings within the building can keep the visitor engaged with the building's experience (author, 2022).

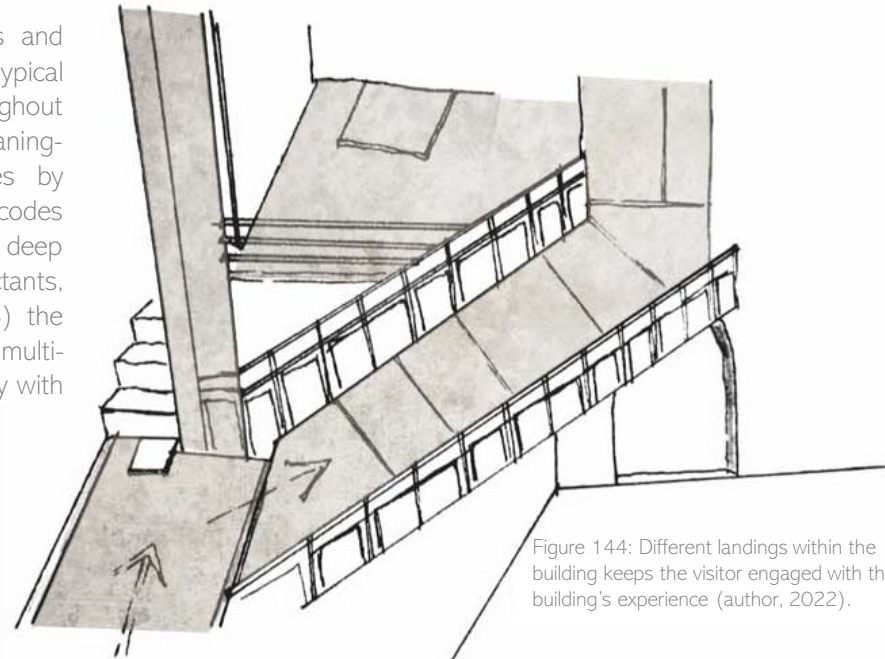
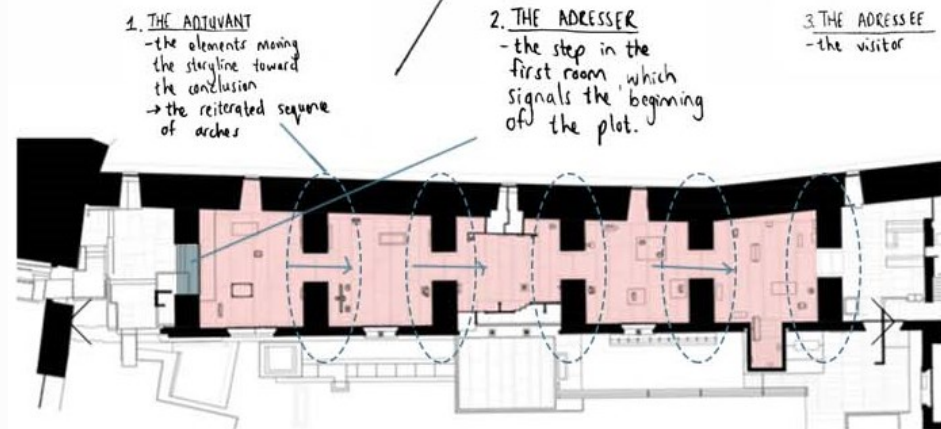


Figure 144: Different landings within the building keeps the visitor engaged with the building's experience (author, 2022).



Figures 145: Narrative theory employed within the floor plan of the building (Ghirardi adapted by author, 2013: online).

The layout of the building keeps the visitor engaged with the building's experience. By employing a destabilizing narrative, the visitors of the building are constantly prompted to move through the building and explore its corridors. Motivated to get to the next chapter of the building, movement throughout the building is created. The figure below shows an explorative drawing of how the Jewellery Manufacturing & Design Centre can employ a destabilizing narrative through a series of different landings, to encourage movement throughout the building.



Figure 146: An explorative drawing of a series of landings (author, 2022).

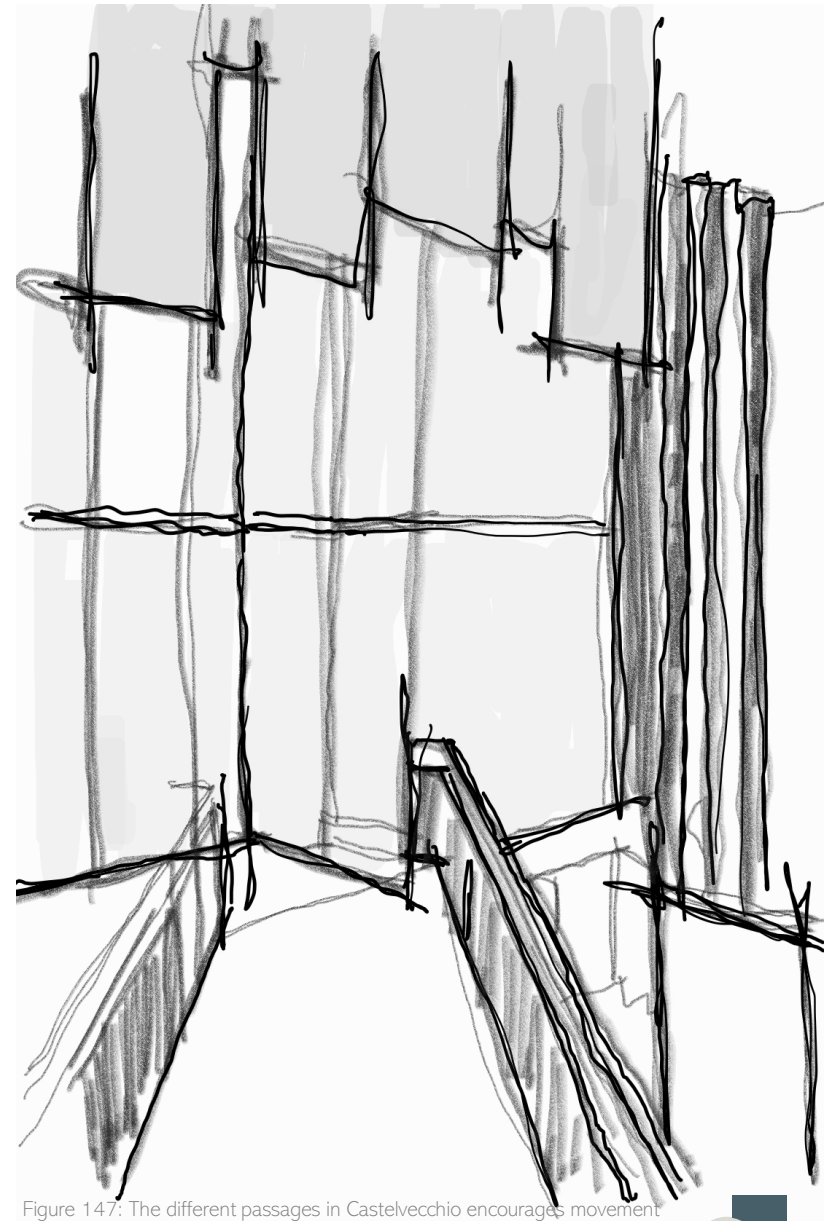


Figure 147: The different passages in Castelvecchio encourages movement throughout the building (author, 2022).

### 5.3 Baragwanath Transport Interchange and Traders Market

**Architects-** Urban Solutions Architects  
**Location-** Johannesburg, South Africa  
**Year-** 2006

This precedent serves as inspiration for the informal trader's market and provides several key aspects that can inspire the design, such as sculptural, rigid connections and the idea of a structural spine.

Organised along the length of the site, the structural spine of the building becomes the binding element for the development onto which all the various functional requirements are attached.

Pedestrian access to the site is of primary importance as to make transition in and out of the site as easy as possible so it is possible to approach the ranks from any direction creating a porous space which ultimately affects the *genus loci* of the space. Robust connections along the spine provides seating for pedestrians passing by. Spaces for vendors are created along the spine with varying degrees of control and freedom.

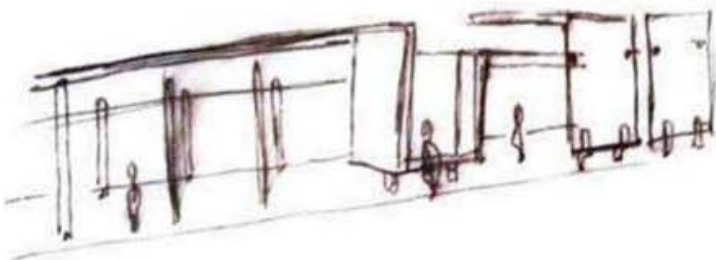


Figure 148: Spaces for informal traders are organised along the length of the site, forming a structural spine (author, 2022).



Figure 149: Vendor spaces along the side of the building promotes a sense of porosity (MATHENGE, 2015: online).



Figure 150: The building makes use of sculptural yet robust connections (MATHENGE, 2015: online).

The figure on the right shows an explorative sketch of how the Jewellery Manufacturing & Design Centre can be organised along a structural spine. The facilities are organised along the road providing pedestrian access. Vertical beacons are inspired from the sculptural, yet robust connections of the precedent, and serves as a way of orientating users.

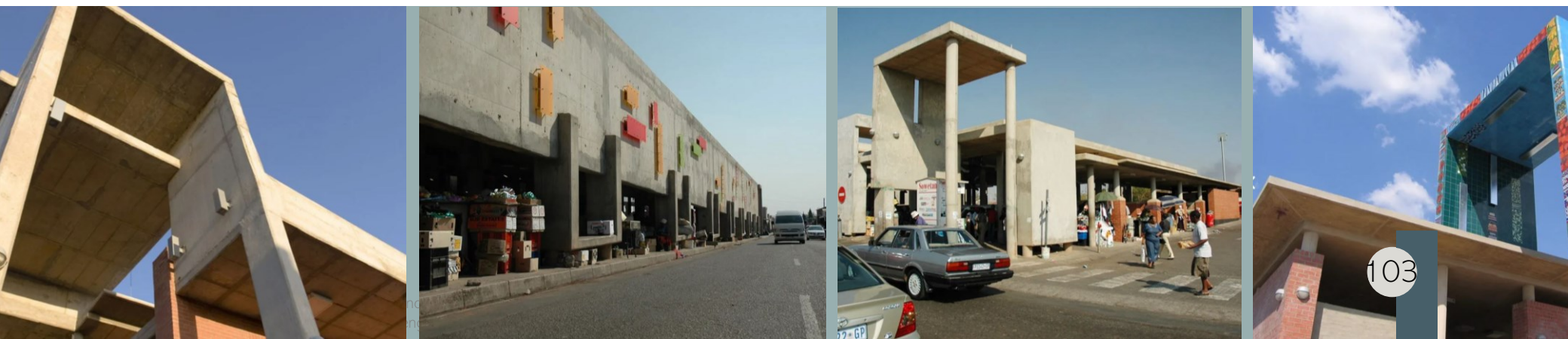
#### Inspirations & Lessons Learned:

- Sculptural connections but in more rigid form
- Robust connections along the spine provides seating for pedestrians.
- Facilities are organised along a structural spine.
- Freedom of movement is encouraged by having porous edges along the spine.
- Pedestrian access becomes the most important factor, allowing the building to be organised along the road.
- Located in a vibrant area, the building accommodates the rituals of the people rather than overpowering them.
- Vertical beacons serves as a method of orientating oneself and separates the facilities so that it's easier for visitors to navigate the building.



Figure 151 (above): An explorative drawing of how the building can be organised along the length of the site (author, 2022).

Figures 152-155 (below): Perspectives showing the sculptural yet robust connections (MATHENGE, 2015: online).



## 5.4 House F

**Architects-** Elphick Proome Architects

**Location-** Mathunzi, South Africa

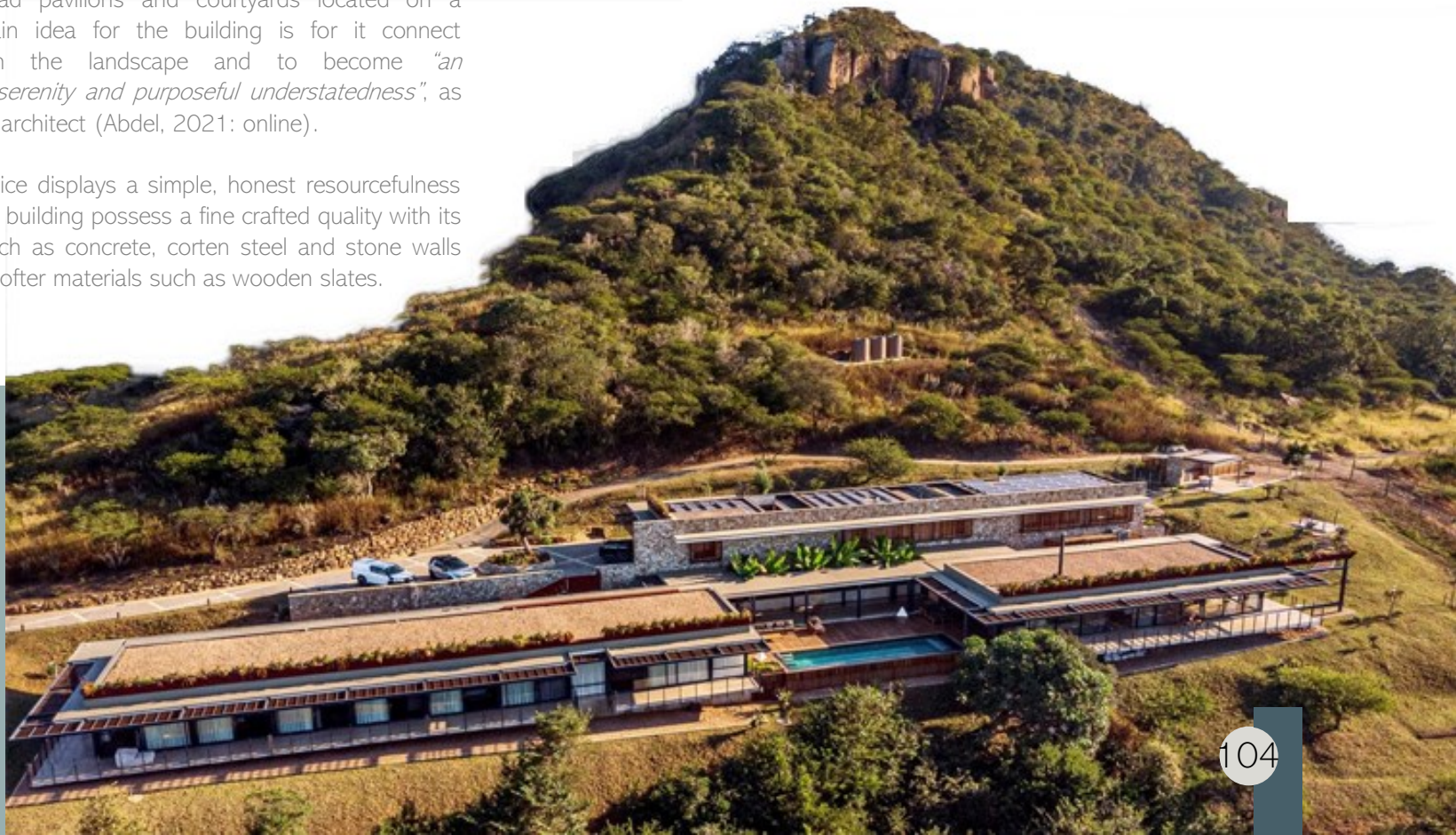
**Year-** 2020

Set in the pristine bush landscape of Karkloof, House F is a private residence that exudes the spirit of the place (Abdel, 2021: online). The residence is organised as a collection of generously spread pavilions and courtyards located on a hillside. The main idea for the building is for it connect isotopically with the landscape and to become “*an architectonic of serenity and purposeful understatedness*”, as described by the architect (Abdel, 2021: online).

The material choice displays a simple, honest resourcefulness and humility. The building possess a fine crafted quality with its raw materials such as concrete, corten steel and stone walls contrasted with softer materials such as wooden slates.

The intention of the design was to create an entirely African contextual response where the linear building disappears into the slopes. Organised as a series of pavilions, fragmented to blend into the landscape, the residence promotes horizontality in a stratified topography (Abdel, 2021: online). The flat roofs that covers the pavilions further promotes a calm visual.

Figures 156: The building as a series of linear pavilions (Abdel, 2021: online).

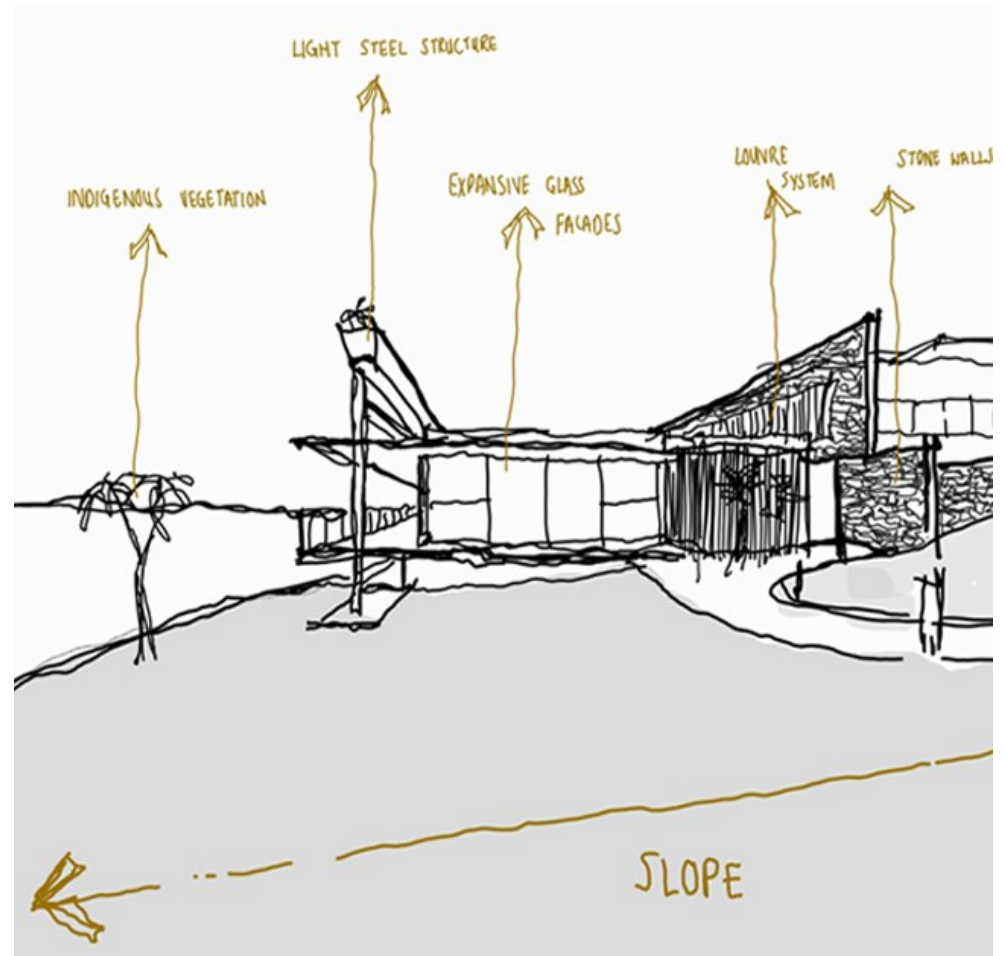


The different pavilions are connected through linear courtyards in which the natural landscape are brought together. Its purpose is to manage the slope differential between the fragmented spaces. Important attention was paid to the experiential connections between inside and outside among the different pavilions in relation to the courtyards. These connections between the buildings enhances the singularity of the spaces. The fragments are designed as intimate spaces but connected as a whole. Space rather than form and feature becomes the primary goal (Abdel, 2021: online).

The social and primary spaces are arranged to respond to the immediate bush and open towards distant views while intimate spaces are organised as cellular. While the overall design promotes a calm horizontal vision, there are several feature elements that animate the simple formal assembly (Abdel, 2021: online). Through the interchange of these spaces, moments of focus and surprise are introduced throughout the building.

Figure 157 (right): A series of different materials are layered against the slope (author, 2022).

Figure 158-161 (bottom): A series of different intimate moments throughout the building, introducing surprise and focus (Abdel, 2021: online).



## 5.5 Horizon House

**Architects-** Lake | Flato Architects

**Location-** Las Vegas, Nevada

**Year-** 2020

The project, much like other rural homes, was about the land. Overlooking the Mojave Desert of Las Vegas, the design was all about the climatic response to the harsh and dry landscape. The building is organised along two outstretched wings that frame a private landscape while blocking the intense west exposure and northern winter winds (Weber, 2020: online).

Further adding to this, the architect elaborated: “*The configuration, materials, daylighting—everything about the experience of the home connects you to the surrounding environment and seamlessly blends with the rugged landscape,*” (Weber, 2020: online).

Figures 162: The building sits on a triangular lot with a steeply sloped hillside (Weber, 2020: online).



The design's textures, colours and materials were carefully chosen to blend in seamlessly with the surrounding desert. Thick rammed earth walls becomes a guiding element throughout the building, exposed on both sides and extending from the interior of the building out into the landscape, connecting indoor spaces to the different courtyard along the way (Weber, 2020: online). The rammed earth walls were constructed by using a blend of two local soils and creates a high performance thermal mass that moderates the daily temperature swings that is typical of a desert.

The walls also serves a double purpose of framing very specific views in order to connect the inhabitant to the intriguing landscape. The interior spaces are connected to discreet courtyards. The landscaping are kept minimal by using hard natural materials, transitioning into the landscape. The materials of the building are further kept natural by creating concrete living and bedroom pavilions, weathered steel roofs cladded with wooden slats. A steel windows fixed to the concrete edge creates a window-seat bump-out where the inhabitant can experience the landscape in full.

Figures 163-164: The rammed earth walls extends from the interior spaces into discreet courtyards (Weber, 2020: online).



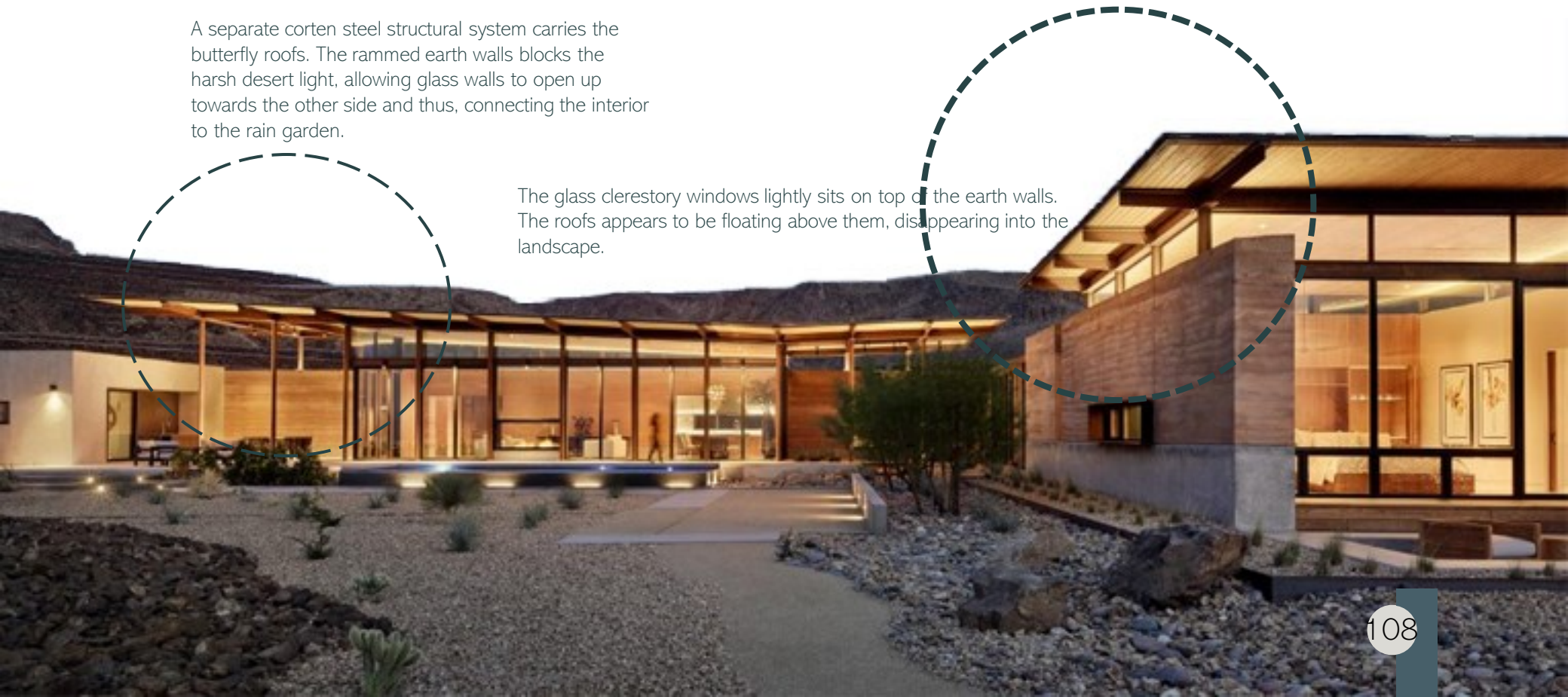
The different pavilions are covered by floating roofs that balance interior daylighting. A separate structural system made of weathered steel columns carries the butterfly roofs, allowing for seamless clerestory windows.

Figures 165: The building blends into the landscape seamlessly (Weber, 2020: online).

Further responding to the climatic constraints of the region, the design celebrates the rare rainfall on this thirsty land by allowing the butterfly roofs to drain to an arroyo lined with palo verde trees (Weber, 2020: online). A scupper waters a courtyard rain garden (Weber, 2020: online).

A separate corten steel structural system carries the butterfly roofs. The rammed earth walls blocks the harsh desert light, allowing glass walls to open up towards the other side and thus, connecting the interior to the rain garden.

The glass clerestory windows lightly sits on top of the earth walls. The roofs appears to be floating above them, disappearing into the landscape.



## 5.6 Conclusion

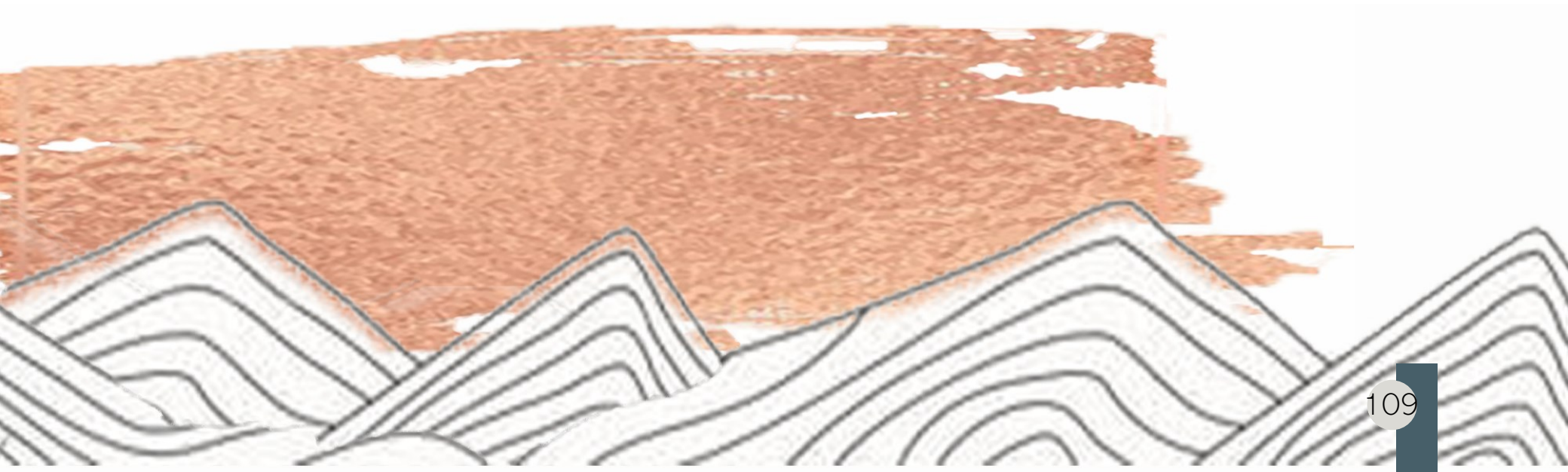
All four of the precedent studies provides important information for the design intervention. The choice of materials and the connections between them both become very important factors throughout the design. The Castelvecchio Museum provides inspiration in working with different joints and connections throughout the building to create an assembly of intricate designed spaces. House F and the Horizon House both provides inspiration in responding to intriguing and complex landscapes.

The material choices of both of these precedents relates back to the environment in which the buildings find themselves.

Figure 166: The palimpsestuous landscape with all of its layers (author, 2022).

The design intervention should be in dialogue with the landscape. This can be done through using materials that speak the same language as the surroundings, ultimately creating smooth transitions into the landscape.

The following chapter will further investigate possible site interaction and ways of responding to various site conditions. The structural touchstone also experiments with different materials. Another precedent, the Steinkopf Community Centre will also be discussed in detail in terms of its climatic response.



# CHAPTER 6

## STRUCTURAL EXPLORATION

6.1 Introduction

6.2 Structural Touchstone

6.3 Case Study

6.3.1 Location & History

6.3.2 Climate & Landscape Typology

6.3.3 Program

6.3.4 Structure

6.3.5 Material Influence

6.3.6 Planning & User Requirements

6.3.7 Spatial Enhancement

6.3.8 Climatic Response

6.3.9 Shortcomings

6.3.10 Design Explorations

6.4 Conclusion



## 6.1 Introduction

Referring back to the art of engraving, the mine was once considered to be the engraver who severely damaged the landscape. Since the mine closed, the responsibility lies with the designer, to choose how to respond to the altered landscape, what engravings to make and which stories to tell.

In the book *The Hand of the Engraver*, Bachelard mentioned that the thing that fascinated him most with the art of engraving is the forms of resistance in confrontation with the matter, and the hand that is the knowing agent of a becoming. Resistance is what elects becoming (Rheinberger, 2018: 22).

## 6.2 Structural Touchstone

### Response to the Landscape

In considering what marks or engravings to leave on the landscape, I decided that in contrast to the destructive nature of mining, the design needs to be in conversation with the mountain and the damaged landscape. Looking at the site, there are several remnants of buildings and mining equipment left behind. The touchstone explores the different site conditions, the earth and the remnants. When working with the damaged landscape, stone walls emerge from the ground with fragile steel construction that hovers above.

The Structural Touchstone explores different ways of responding to the materials present on site- the matter the engraver is confronted with. Careful decisions have to be made in consultation with the landscape, in order not to make the same mistakes as in the past.

A local precedent study, The Steinkopf Community Centre is also analysed in detail regarding its context, material use, structure and landscape conditions. There are many lessons to be learned from the precedent.

By working with the exposed remnants of previously removed buildings as the new foundation for the new intervention, the remnants become transitions between past and present.

The touchstone carefully considers the different conditions of site decisions and how to respond to them, ultimately establishing a relationship between the scarred landscape, its remnants and the interventions of the engraver.

## Material Choice

Inspiration is taken from the patina layer of copper. Patina is a protective layer that forms over copper and similar metals to protect it against the elements. Patina doesn't ruin the copper but rather adds value to it so that it can last a lifetime. In the essay, *The Political Significance of Patina as Materialised Time* by Adrian and Inge Konik (2013: 133), a contrast between superficial, mass-produced materials and good, timeless materials are made. Copper is an enduring and living material. In the essay, the patina was considered as a symbol of wealth in previous centuries. Patina speaks of duration, subdued by time.

By introducing copper connections in the building as timeless details, the copper will also evolve over time with the building and add value.

The materiality is chosen carefully to fit in with the local materials. Stone walls are used to blend with the landscape. The choice of construction method promotes local knowledge and skills heritage as job opportunities.

Figure 167 (top right): Site conditions- concrete foundation remnants (author, 2022).

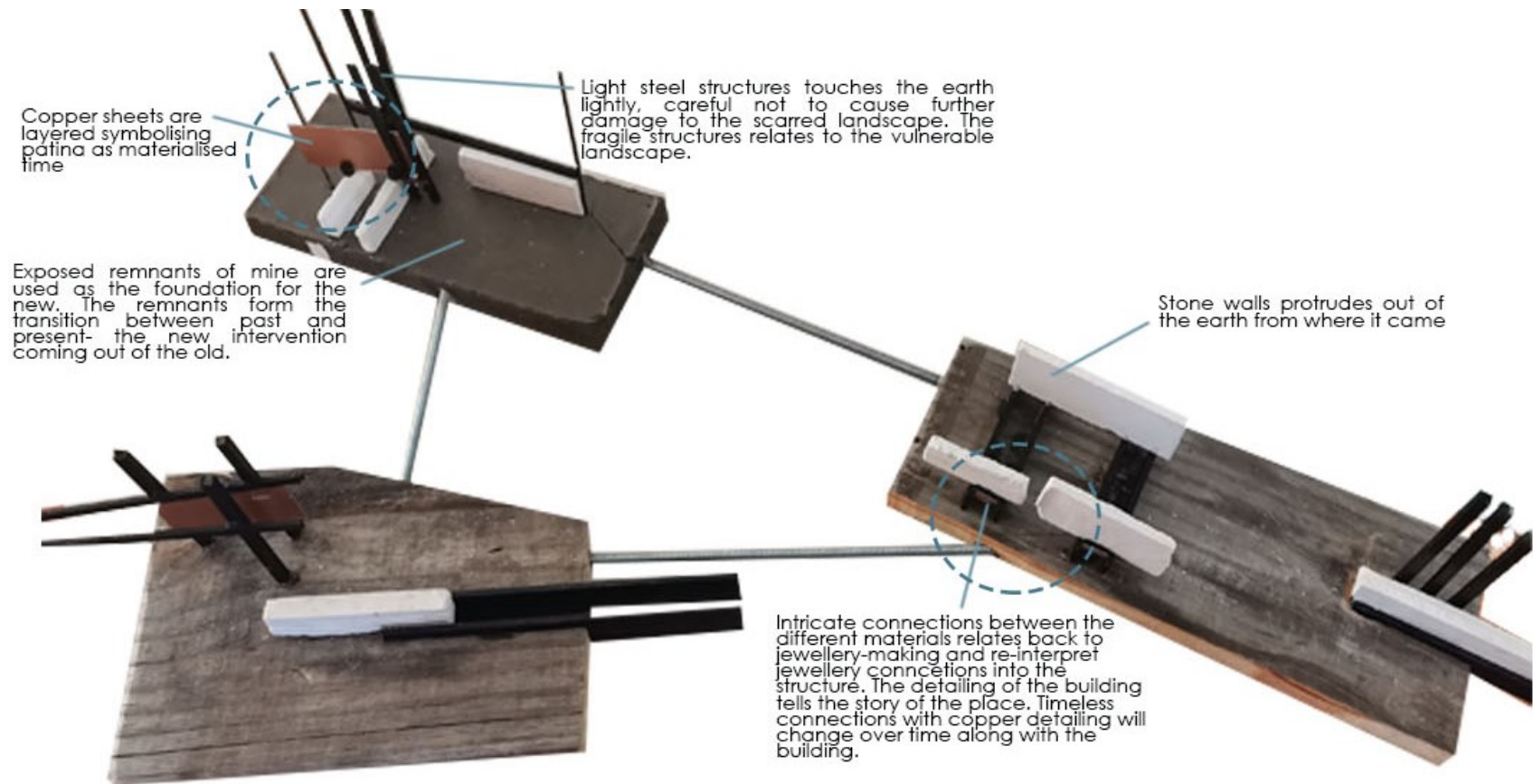
Figure 168 (bottom right): Site conditions- the damaged landscape (author, 2022).



The touchstone is organised around three different site conditions, ultimately exploring the relationship between place and architectural narratives. The touchstone consists of three intimate, fragile spaces dependent on one another. Each site condition allows for a unique architectural response.

Inspiration is taken from the work of Carlo Scarpa, specifically his additions to the Castelvecchio Museum and its intricate joints and connections. Relating back to the intricate detailing of jewellery connections, the touchstone explores intricate connections between different materials.

Figure 169: The structural touchstone consists of three intimate, fragile spaces dependent on one another (author, 2022).





Figures 169-171: The touchstone explores with intricate connections inspired by jewellery crafts (author, 2022).

## 6.3 Case Study: Steinkopf Community Centre

**Architects-** Roelof Sarel Uytenbogaardt

**Location-** Steinkopf, Northern Cape, South Africa

**Year-** 1980

The following section will analyse a single built precedent focusing on the appropriateness of materials, construction methods and visual appearance to fit into the harsh landscape of the Northern Cape. The Steinkopf Community centre is a notable design in South Africa's Architectural history and was awarded an SAIA Award of merit. Sadly, the building has fallen onto disrepair and is no longer used by the community. The precedent was chosen because of its program being similar to the proposed thesis. It is also located in the Northern Cape and built for a small community much like the town of Nababeep. The precedent can therefore not be ignored. This section will analyse the precedent in terms of its appropriateness to the climate of the Northern Cape, as well as its shortcomings. Important lessons can be learned from the precedent both structurally and aesthetically.

The story of the Steinkopf Community centre is a tragedy. One of the great architectural gems of South Africa has fallen into a state of ruin because the community did not accept the building as their own and did not care for it over the last 40 years. Gerhard Bosman, an architectural professor at the University of the Free State who is part of the earth unit, wrote about the community's well-being in his article *Ownership and care in culturally significant architecture: Three case studies*. He argues that ownership and care in the maintenance of community buildings are temporal reflectors of the communal well-being. This care or no care becomes a celebration or rejection of the built environment. He further argues that without ownership, public buildings in communities can deteriorate (Bosman, 2018: 1).

When designing for a small community, the basic maintenance that few communities show towards their public buildings should be considered (Bosman, 2018: 1) when choosing which materials to use. Institutional buildings are in the public domain, and it is therefore the responsibility of the local, regional or national body or council to maintain the buildings (Bosman, 2018: 1). Other factors, such as culture, shared values and religion also plays a role in the maintenance of public buildings. Taking ownership, becomes the most important factor in community design projects. The concern is not simply about how people embrace or reject build projects; it is also about the whole experience of people being in, and interacting with their built environment (Bosman, 2018: 2). In other words, in order for a community to care for their buildings, they must feel a sense of ownership of the buildings, a sense of connection.



Figure 172: The porous colonnade of Steinkopf Community centre (author,2022).

### 6.3.1 Location & History

Mahathunzi enjoys a beautiful, varied landscape with savannah, bushy escarpments, and steep rocky outcrops. Their chosen site is set below a prominent rocky outcrop on the highest extremity of the reserve boasting magnificent panoramic views. Two informative features of the siting were an area of flat 'disturbed' land and dispersion of ingenious trees.

By 1973, the settlement had 1 800 inhabitants. The discovery of copper in the area brought some infrastructure development and many people from all over the world came to the Namaquan copper fields in search of employment. During 1979, a mining company commissioned the Cape Town-based architects Uytenbogaardt and Rosendal to design a community building for the town of Steinkopf.

Steinkopf was still relatively a small town and had modest brick and corrugated roof dwellings with few real public buildings. According to the architects (Beck, 1985: 13), The programme was confirmed by the local community and the site established on a former communal vegetable garden (Bosman, 2018: 14).

Figure 173: The porous colonnade of Steinkopf Community centre (Bell, 2012: online).



### 6.3.2 Climate & Landscape Typology

The climate of Steinkopf is very similar to the town of Nababeep. It is a semi-arid climate. Namaqualand is a vast, barren country of not more than 120 000 souls, a place that gets a total of 50mm of rain per year.

The landscape can be described as a semi-desert terrain with limited vegetation. The landscape typology can be classified as a complex landscape, a mixture between a classical landscape and a cosmic landscape. Characteristics of a classical landscape includes sculptural light quality and hills obstructing the view. The architecture of a classical landscape consists of a mixture of stereotomic and tectonic architecture.

In a cosmic landscape, the sun dictates, it is identified by the vast expanse of sky. Architecture of a cosmic landscape have a strong geometrical order and is stereotomic, in other words anchored in the earth. The landscape of Steinkopf can be seen as a complex landscape whereby there is a vast expanse of sky, a harsh light quality, but the sky is obstructed by hills and mountains. The mountains are classified as granite outcrops, a harsh and arid landscape. Responding to the landscape typology, Steinkopf Community centre is build to seamlessly fit into the landscape. Classified as a complex landscape, the architecture of the centre successfully responds to its typology- thick walls are anchored into the site while towards the sky, the structure becomes lighter with floating roofs. The climatic response of the building will be further analysed in the next chapter.

Figure 174 (top right): The Steinkopf Community centre in the town of Steinkopf. The landscape can be seen as a vast arid expanse with mountains in the distance (Bell, 2012: online).

Figure 175 (bottom right): The structure consists of stereotomic walls anchored in the site and lighter steel construction towards the top. The building sits at the foot of a mountain (author, 2022).

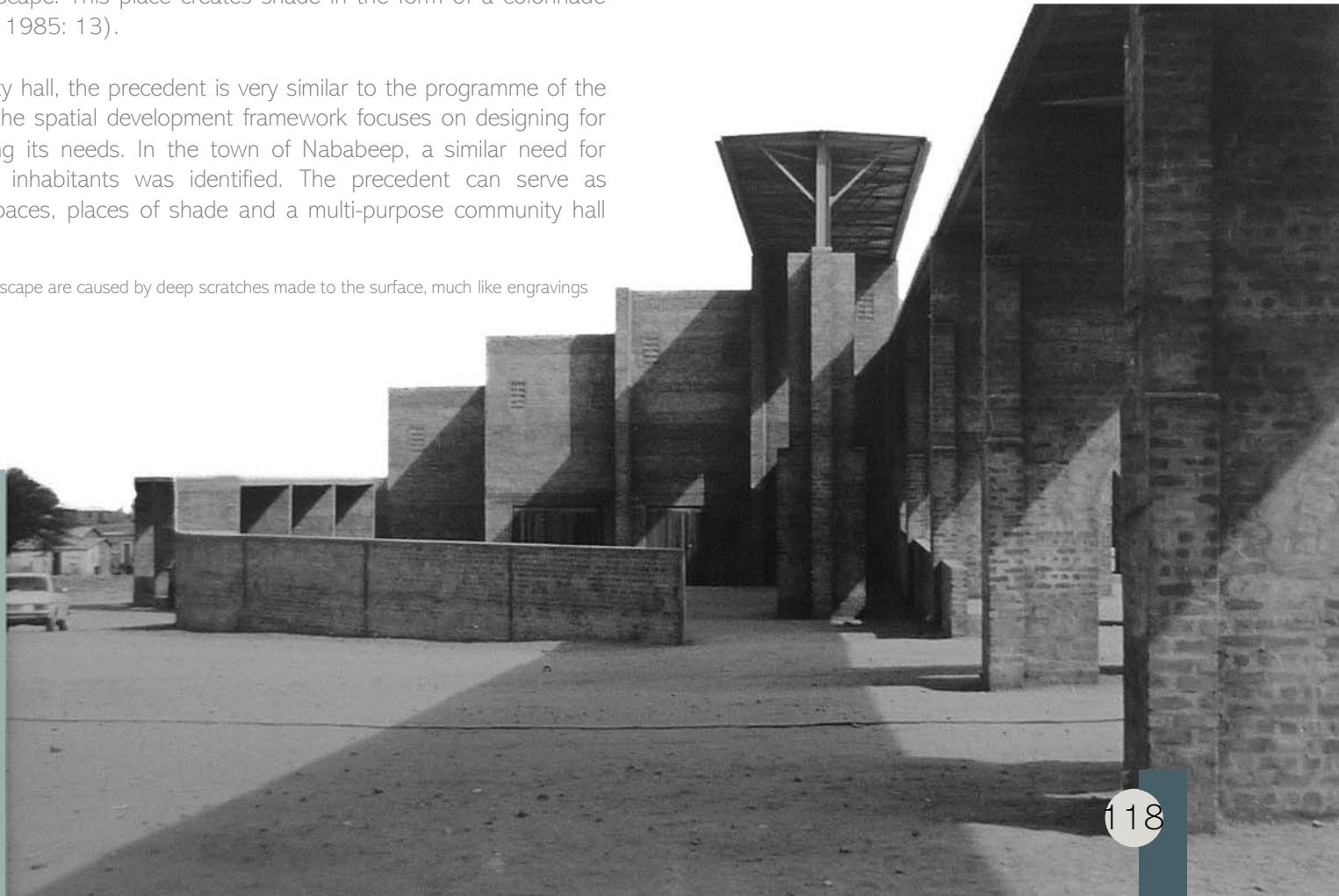


### 6.3.3 Program

The Steinkopf project was conceived as a permeable place of shade, shelter and colour in a very dry arid landscape with very little built structure to respond to. The site was considered a featureless one and the basic need was to create a place for shade where the community can gather. The vision of Uytendogaardt was the idea of creating a dwelling space in the landscape. This place creates shade in the form of a colonnade along access routes (Beck, 1985: 13).

Functioning as a community hall, the precedent is very similar to the programme of the proposed thesis whereby the spatial development framework focuses on designing for the community and fulfilling its needs. In the town of Nababeep, a similar need for gathering spaces for the inhabitants was identified. The precedent can serve as inspiration for gathering spaces, places of shade and a multi-purpose community hall within the town.

Figure 176: The wounds of the landscape are caused by deep scratches made to the surface, much like engravings (author, 2022).



## 6.3.4 Structure

### (A) Type and System

The structural system of the precedent is a mixture between stereotomic and tectonic systems. The structural system consists of loadbearing stone or brick masonry walls with a lighter steel structure roof. The structural roof system is separated from the enclosure system and is supported by its own steel structure. The structure consists of stereotomic brick walls anchored in the site and floating roofs above the walls. Reinforced concrete elements were also used, exposing the function within the structure. A suspended ceiling was avoided to show all the services within the spaces. The structure of the building is therefore exposed and provides an aesthetic quality to the building.

### (B) Roof

One of the necessities of the roof was to span large areas. The structural roof system is separated from the enclosure system. The construction of the structural walls made use of local construction and locally sourced materials; the roof however required a specialist contractor to erect the large span roofing and was prefabricated in Cape Town and installed on site. The roofs of the building extend past the enclosed spaces, serving a dual purpose of binding interior spaces, as well as creating external circulation spaces that define the edge of the adjacent street. Responding to the harsh climate of Namaqualand, Uytendogaardt stepped the roofs away from the sun to form a system of clerestory lighting

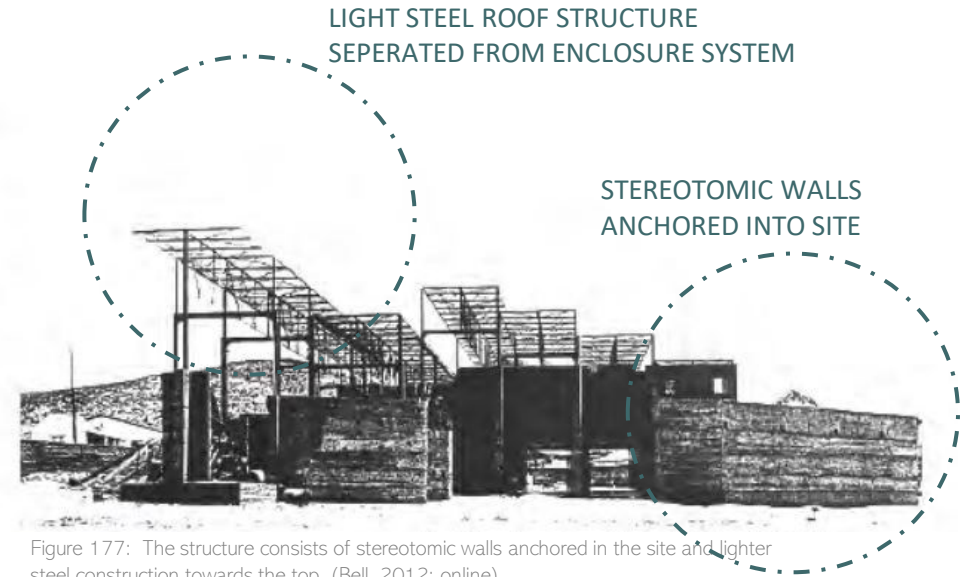


Figure 177: The structure consists of stereotomic walls anchored in the site and lighter steel construction towards the top. (Bell, 2012: online).



Figure 178: Roof spans large open areas, binding interior spaces and creating exterior circulation spaces (author, 2022).

In the communal room, the system of roofs can be seen- curved ceilings filter the harsh semi-desert light, and in thus providing ample natural light into the building. The space becomes washed with light, almost cathedral-like (Bosman, 2018: 16).

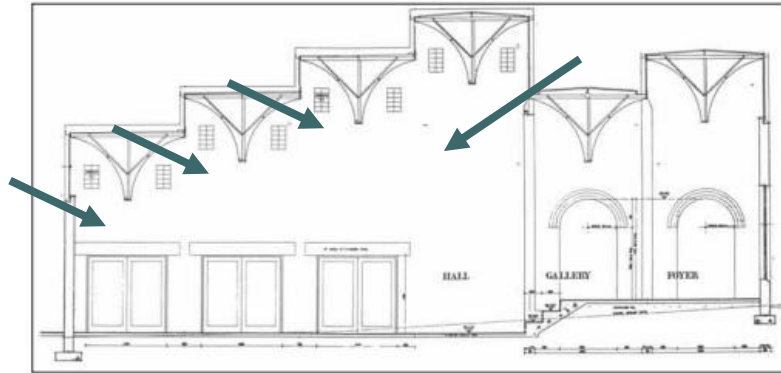


Figure 179: Clerestory windows filter harsh light into the hall (Beck, 1985: 13).

### (C) Floor

The floor of the building is stepped and terraced, allowing for various parts of the building to be used in different ways.

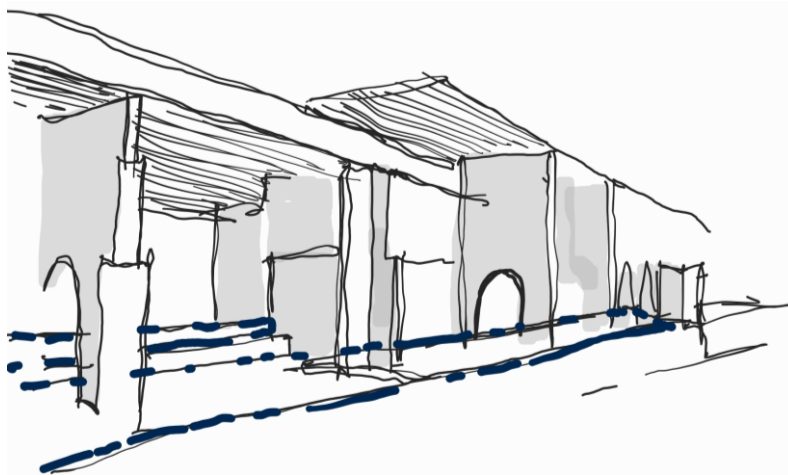


Figure 180: Different landings on the walkway keeps visitors engaged with the building's experience (author, 2022).

### 6.3.5 Material Influence

The use of materials structure types are connected to a regional or vernacular building culture that reflects and is influenced by the available building material of the context (Frampton, 2001: 5-7). Architectural typology, in available materials, also reflects on the building skills at a specific time. Uytendogaardt utilised the local building culture of masonry skills and employed local bricklayers to complete the brick construction of the massive walls and arches (Bosman, 2018: 16).

Louis Kahn, well-known American architect, often mentioned efforts in his buildings to show how the buildings "speak" of the way in which they were put together (Bosman, 2018:15). Uytendogaardt drew inspiration from the work of Louis Kahn for the Steinkopf Community Centre- the building and design approach. Both architects refer to the integrity of a building's structure and material use within the nature and best properties of the material. For example, bricks work best in compressive strength and are therefore celebrated in the building through bricks as arches built into load-bearing cement brick walls.

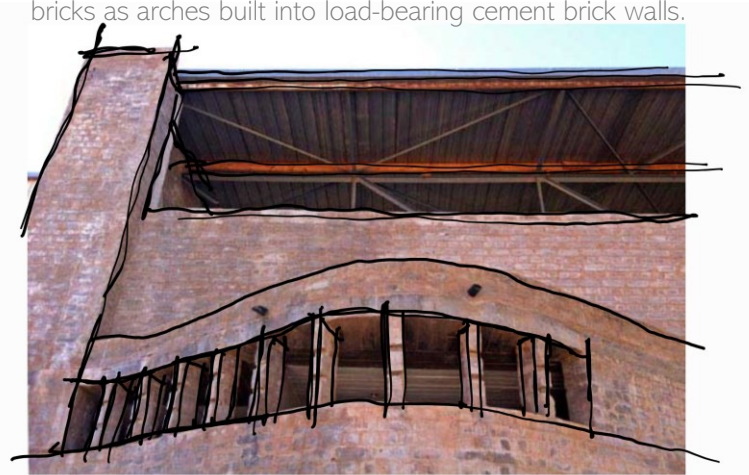


Figure 181: Intricate brick wall patterns (Bell, 2012: online).

### 6.3.6 Planning & User Requirements

The building was built as a response to the needs of the community. Within the dry and arid landscape, Uytenbogaardt identified the need for shelter and protection. The building sits as a linear volume in the landscape, its low-lying linear form typical of a design for the cosmic landscape. The multiple flying roofs over the linear planes act as shade making devices.

The building is organised around a linear spine, which serves as informal gathering spaces. The spine is opened on both sides, allowing access to the gathering spaces from multiple sides. The centre point of the programme is the main hall attached to the covered walkway. Its layout is kept open with no obstructions, allowing the hall to be used for a variety of functions.

The floor of the building and covered walkway is stepped and terraced, allowing for various parts of the building to be used in different ways.

### 6.3.7 Spatial Enhancement

The building is built for the people of Steinkopf. Along with the series of canopies of the building meant for informal gatherings of people, the design also makes an attempt at landscape design to create a space for dwelling. Trees were planted along the edge of the spine, providing further shade. The vision of the architect was to create a place where residents of Steinkopf could come together, escaping the harsh and dry climatic conditions of the area. The porous walkway invites people to gather.

Figure 183: Trees planted along the edge of the spine (Bell, 2012: online).

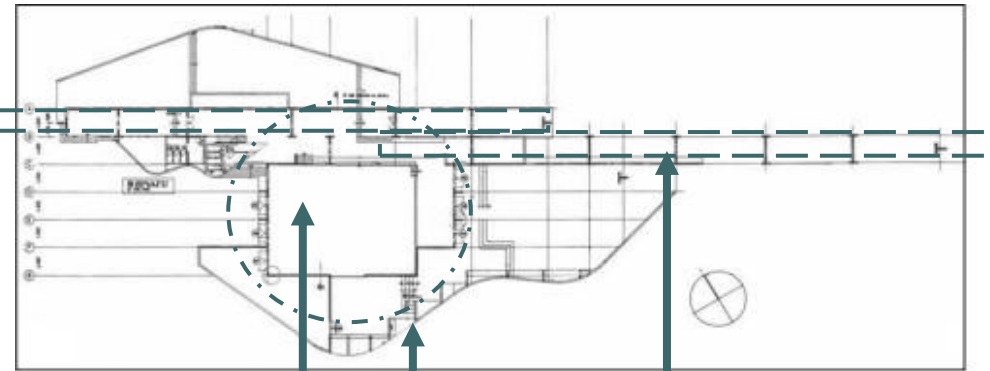
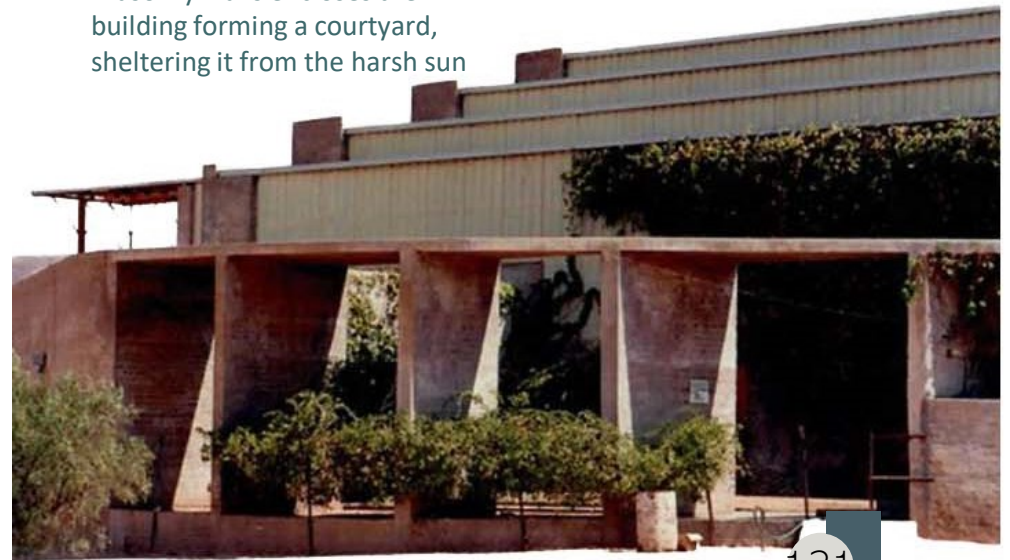


Figure 182: The plan layout (Beck, 1985: 13).

A multi-purpose community hall is not limited to any spatial organisations

A porous covered walkway forms the spine of the building, with the other facilities organised around it

Masonry walls encloses the building forming a courtyard, sheltering it from the harsh sun



### 6.3.8 Climatic Response

The building shows how influences from Louis Kahn, his belief that buildings should speak of the way they are put together, can be localised and adapted to the climate of South Africa. The building has a very successful climatic response. The thick masonry walls shields the interior of the building from harsh light and provides a shelter in the arid landscape. Through creating a series of canopies, the design caters for one of the biggest needs in the area- shade. The building further filters the harsh sun of the Northern Cape through angled clerestory windows. Filtered light is bounced into the hall from the clerestory windows and create a theatrical space. The building is also breathable with many indoor and outdoor spaces, blending together to create usable space.

### 6.3.9 Shortcomings

Even though the Steinkopf Community Centre is one of the best buildings designed by Roelof Uytenbogaardt, the building has sadly fell into disrepair. The residents of the town stopped using the building and the building was therefore also not maintained. There are several reasons why this may be.

#### (A) Scale

One of the reasons the building may not be used is because it is totally out of scale. It sits as a huge sculpture in a small community. In my opinion, the architect should've tried to fit into the town by looking at the scale of neighbouring buildings and mimicking their orders. Although the architect tried to link the building to other houses in the area by using masonry walls and local materials, the building is out of scale to its context.

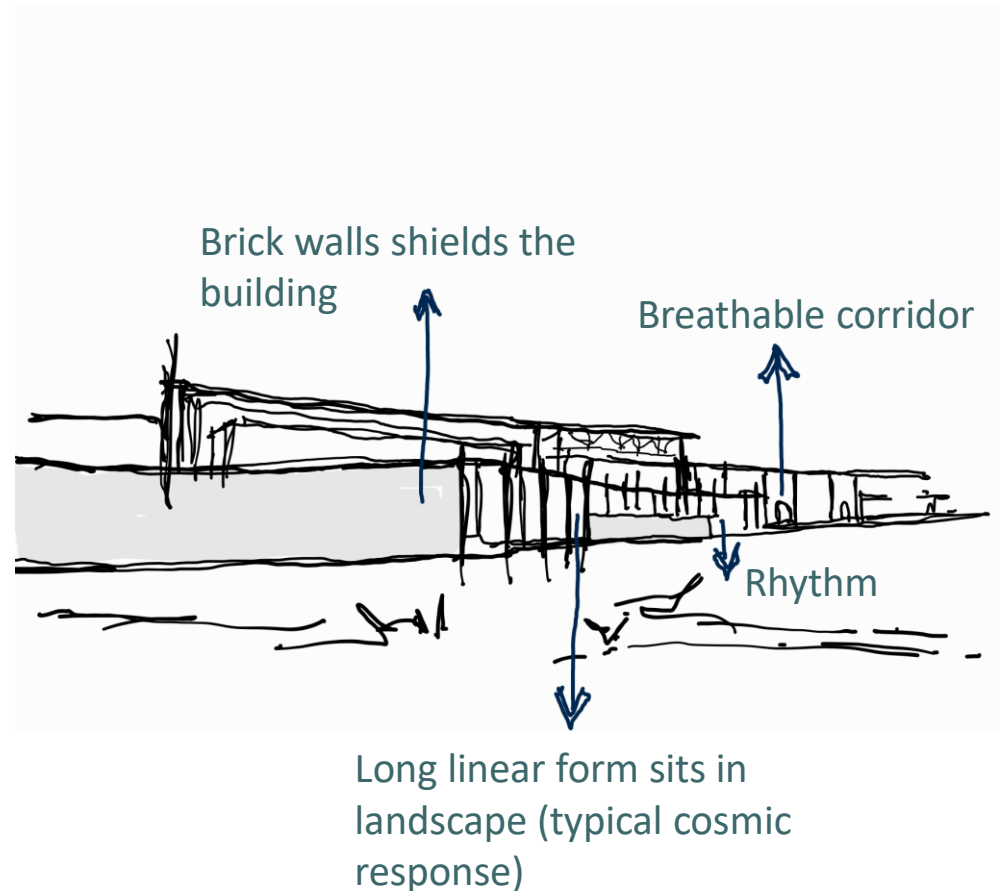


Figure 184: The building has an excellent climatic response (author, 2022).

## (B) Choice of Materials

Although the structure of the building is magnificent and beautiful, its roofs have started to deteriorate over the years. This may be because the ceilings were too high making it difficult to maintain. Another possible reason could be that the materials used for the ceilings and steel trusses were too expensive to replace. It may be that the architect needed to consult with the community to ensure that they will be able to maintain the building and replace materials as the years go by. During a visit to the building in August 2022, the building stood open and the ceilings were almost completely gone, leaving behind only the steel trusses.

Figure 185: The interior perspective of the building show the disintegration of the ceilings (author, 2022).



## (B) The idea of ownership

As explained by Prof Bosman (2018: 14), another reason for the deterioration of the building can be because the members of the community did not feel a sense of ownership of the building. The monumental building rather stood in the centre of their town as a stranger to the people. The people did not use the building as a gathering space, and rather abandoned it and over the years littered it. During the site visit in August, the fences of the building seemed to be taken down. The interior walls of the building seemed to be transformed into canvases as the residents created beautiful paintings on them. A passerby commented that the people of Steinkopf have painted their stories onto the walls hoping that tourists visiting the building would see their work and that they would maybe stand the chance to be seen. Perhaps after all the years the building was left abandoned, the people of Steinkopf have finally made it their own.

Figure 186: The building has an excellent climatic response (author, 2022).



### 6.3.10 Design Explorations

There are many lessons to be learned from the Steinkopf Community Centre. There are things done right, as well as a few shortcomings. Exploring these factors, a few of the positive and negative points will be highlighted and will be investigated in the way it can be translated to the proposed thesis, or how its shortcomings can be overcome.

#### 1. Positive factors that can be translated to the new design:

- 1.1 Similar program
- 1.2 Successful response to landscape typology
- 1.3 Good climatic response
- 1.4 Spatial arrangement
- 1.5 Sculptural and intricate connections
- 1.6 Material use (the use of local construction methods)

#### 2. Shortcomings that can be improved:

- 2.1 Scale of building related to context
- 2.2 Material use- the use of timeless materials
- 2.3 The idea of ownership

#### 1. Positive factors that can be translated to the new design:

##### 1.1 Similar Program

The program of the proposed design is very similar to the one of Steinkopf Community Centre. The people of Nababeep is an extremely close-knit community and the town is in need of places for social gathering where residents can come together and talk about their day. Drawing inspiration from the series of canopies of the precedent, the exploration on the right shows how places of informal gathering can be created while also creating shade. The town of Nababeep is also in need of a community hall. Inspiration is drawn from the precedent in terms of creating a multi-purpose space given to the residents.

#### 1.2 Response to landscape typology

In a similar way the Steinkopf Community Centre makes use of stereotomic walls and floating roofs, the proposed design will also experiment with stone walls and a lighter sculptural roof structure. The landscape typology of Nababeep is also considered as a complex landscape. The design will therefore make use of stone walls, anchored in the site, and floating roofs supported by their own steel structural system. The floor of the building is stepped and terraced, allowing for various parts of the building to be used in different ways.



Figure 187: An exploration of a series of different canopies creating a space for gathering. Responding to the landscape typology, stone walls and a floating roof system is used (author, 2022).

### 1.3 Climatic Response

Taking inspiration from the thick brick walls of the precedent that shelters the building against the harsh sun of the Northern Cape, the proposed design can also make use of thick enclosures. By creating indoor-outdoor spaces and a series of canopies, a place for gathering is created. Floating roofs can let the light in through clerestory windows, filtering the harsh sun.

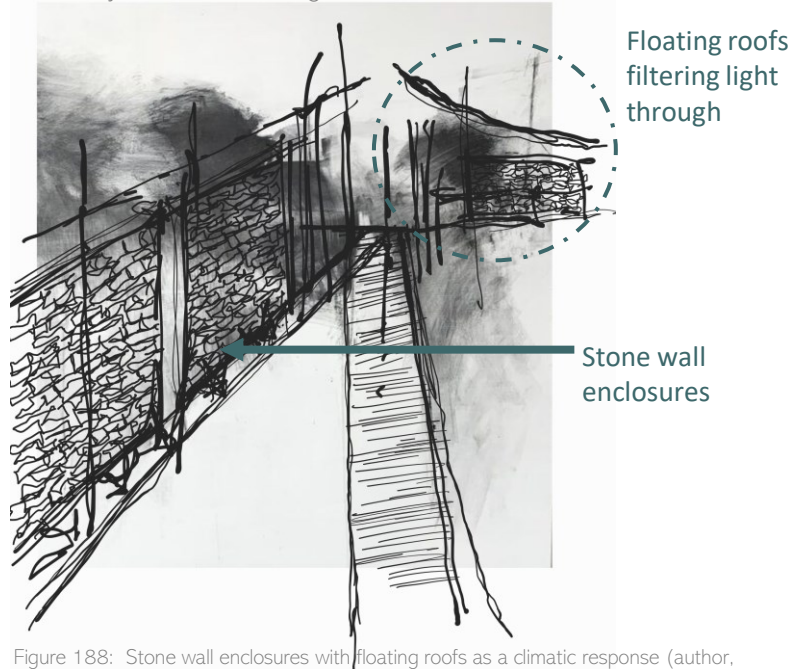


Figure 188: Stone wall enclosures with floating roofs as a climatic response (author, 2022).

### 1.4 Spatial Arrangement

Drawing inspiration from the series of canopies that is organised along a linear spine that serves as an informal gathering space, the proposed design's facilities are also organised along a spine, along the length of the site. The covered spine (figure on the right) serves as a informal market for the residents of the town.

### 1.5 Sculptural and intricate connections

Drawing inspiration from the intricate joinery and light steel structural roof system of the precedent, the proposed design also makes use of a sculptural roof and timeless connections between the stone walls and light steel roof structure.

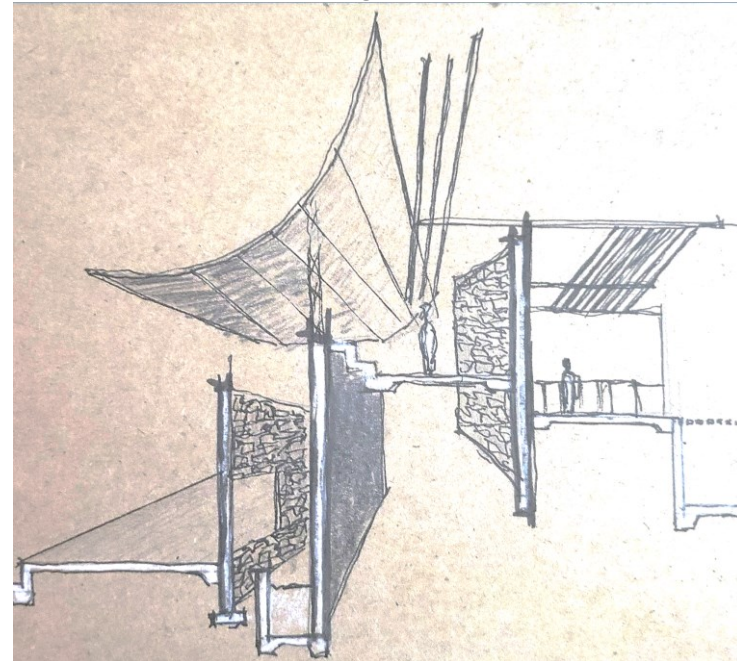


Figure 189: Exploration of sculptural roof system (author, 2022).

### Spine serves as the informal market and is porous to both sides

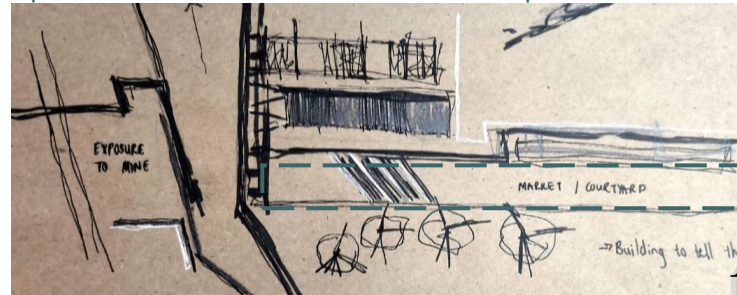


Figure 190: Spatial organisation of proposed design (author, 2022).

## 1.6 Material Use

Uytenbogaardt looked at the local construction methods used in the town as well as the local materials available, and used them to allow the building to fit in with its surroundings. The proposed design will also have to take inspiration from the local construction methods, which is stone masonry. Using discarded stones and rocks from the mine and granite outcrops, the building will harmonize with its surroundings. Stone masonry is also labour-intensive. By using local labourers to construct the stone walls, many residents can be employed.

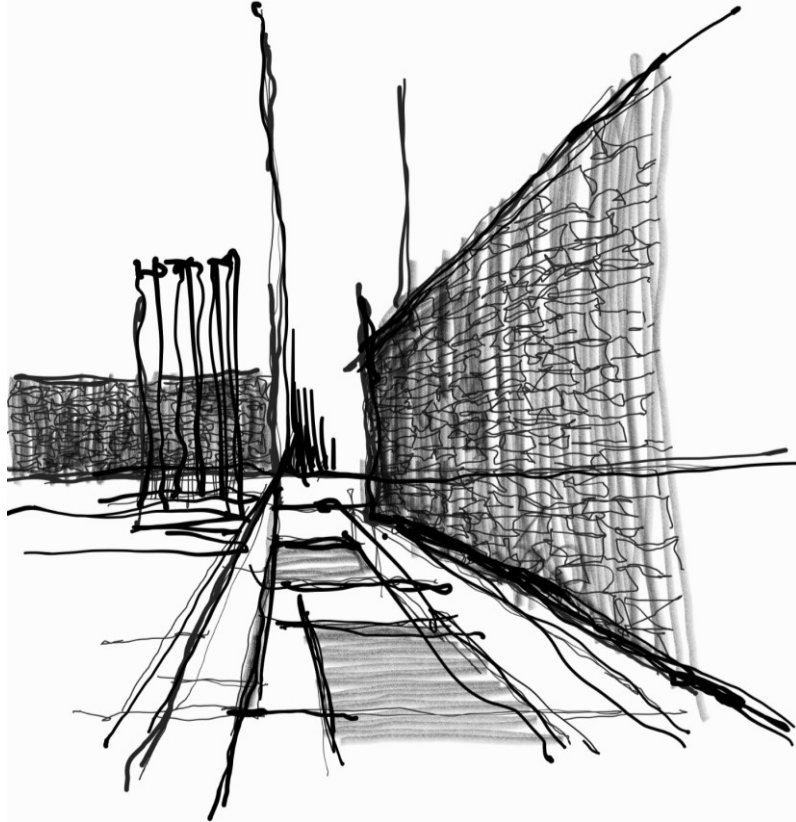


Figure 191: Explorative sketch of using stone walls (author, 2022).

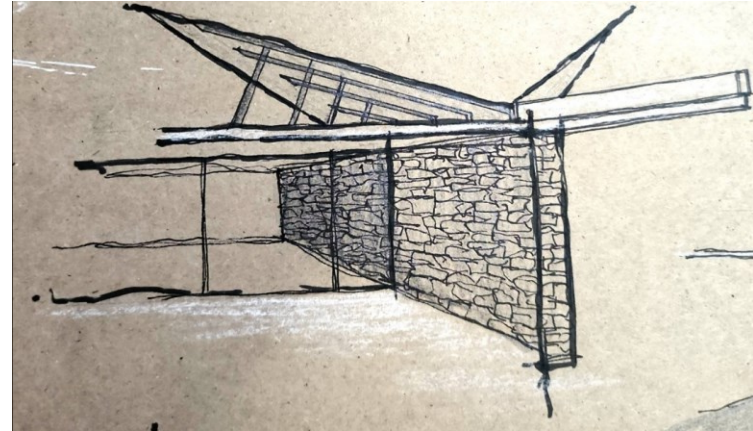


Figure 192: Stone walls (author, 2022).

## 2. Shortcomings that can be improved:

### 2.1 Scale of building related to context

Learning from the mistakes of the precedent, the proposed design will try to fit in with its surroundings by not overpowering its neighbours. Looking at the order and layout of the town and its houses, the design will lend elements from them in order to blend in.

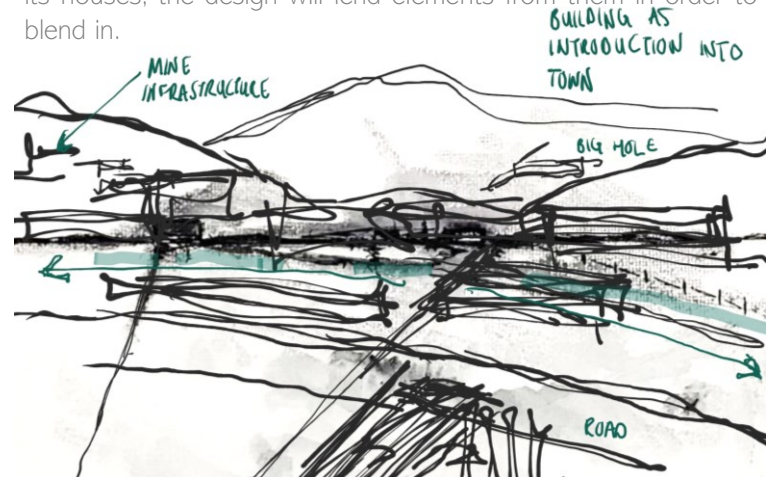


Figure 193: The building will try to harmonize with its surroundings (author, 2022).

## 2.2 Material use- the use of timeless materials

Over time many of the precedent's soft structures disintegrated because the structures weren't well maintained. Whether it is because the residents didn't have the skills to maintain it, or the ceilings were too high, the precedent serves as an important lesson. In the proposed design, careful attention needs to be paid to choosing materials that will outlast a few generations. Drawing inspiration from copper as a timeless material, similar materials will be chosen that can be used to create timeless connections, materials that will be able to change with the building over time. The materials will also be chosen based on the fact that it can be easily maintained and doesn't require specialist work. Using stone walls in the design, materials that come from the earth, it will most likely outlast a few generations and can easily be repaired if need be. The structural touchstone explores the idea of using stones to build walls, the walls ultimately protruding from the ground.

## 2.3 The idea of ownership

In the case of Steinkopf Community Centre, the residents didn't feel a connection to the building and it was therefore not maintained. The proposed design will have to engage with the people of Nababeep in order to be successful. The program of the Jewellery Manufacturing & Design Centre involves getting people of the town to engage, to use the facility to make and sell their own handcrafted jewellery and to also partake in skill development programs. The centre not only creates job opportunities but also provide a way of learning new skills. Attention must be paid that the focus is placed on the people of Nababeep throughout the design process.

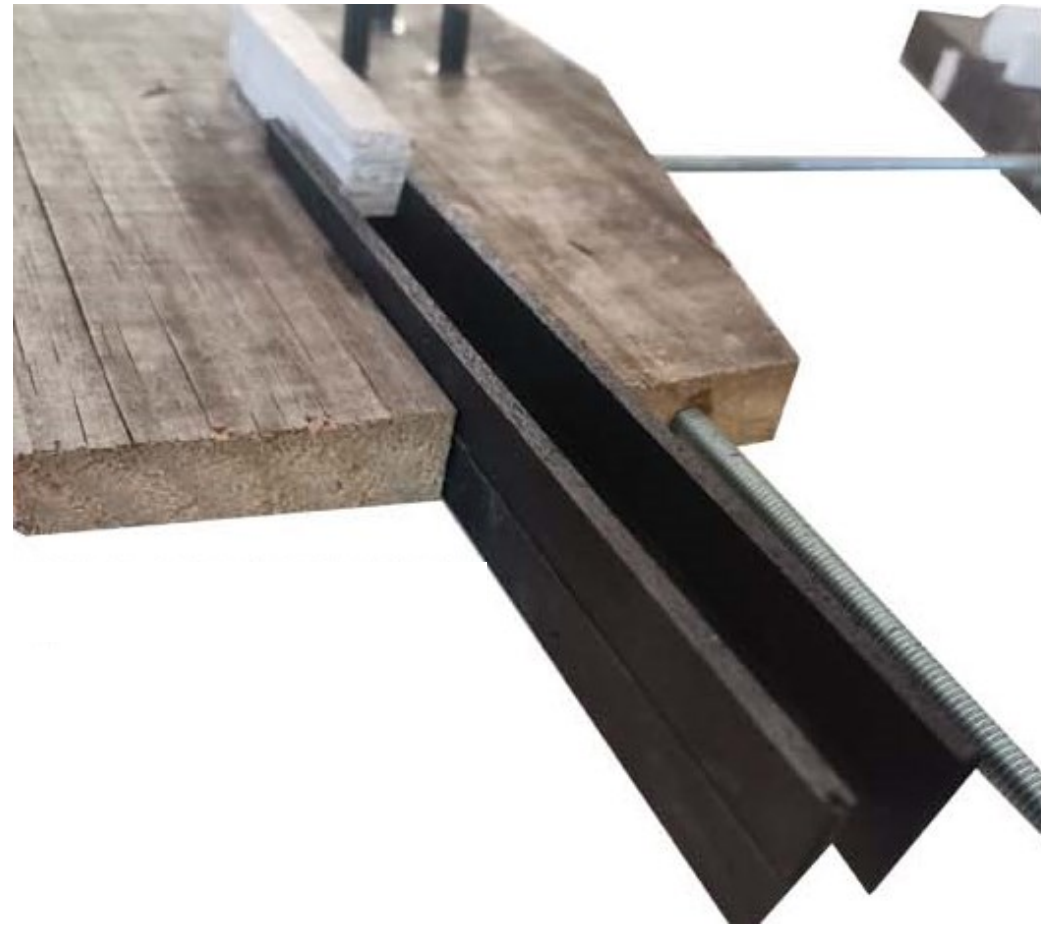


Figure 194: The touchstone experiments with the idea of stone walls protruding from the ground (author, 2022).

## 6.4 Conclusion

The structural touchstone provides insights into material use and how to respond to the damaged landscape of NababEEP. By looking at the Steinkopf precedent study, important lessons can be learned from its material use, response to the climatic constraints in the Northern Cape, as well as a few of its shortcomings. The precedent is very similar to the proposed thesis in terms of its location, type of community and program. By looking at its positive and negative factors, important decisions can be made for the design development forward. Throughout the project it will be important to come back to the precedent study, to make sure none of its mistakes are repeated. The following chapter will explore ways of responding to the derelict site.

Figure 195: The town of NababEEP (author, 2022).



# CHAPTER 7

## CRAFTING A DESIGN PROPOSAL

7.1 Introduction

7.2 Healing

7.2.1 Engravings

7.2.2 Lines in the Landscape

7.2.3 Patina

7.3 Redeeming Wastelands

7.3.1 Making Sense of the Landscape

7.3.2 Accommodation List

7.3.3 Users of the Building

7.3.4 Ordering the Landscape

7.3.5 Fragmentation Vs. Healing

7.4 Towards a Final Design

7.4.1 Typology

7.4.2 Structural System

7.4.3 Material Choice

7.4.4 Structural detailing

7.4.5 Spatial Planning

7.5 Final Design Proposal

7.6 Conclusion



## 7.1 Introduction

Facilitating the site's recovery from past trauma requires a paradigm shift toward the rifts that were torn in the landscape. These rifts and fragments must be repaired and reconnected by forming strong bonds that can create a new relationship between the healing site and the new inhabitants. The art of engraving becomes an important chapter in the process of healing the site.

## 7.2 Engravings

Careful attention must be paid to the manner in which is responded to the complex and intriguing landscape of Nababeep and its wounds. Some of these wounds are irreparable and could cause further damage. The scars that lie on the site have been untouched for decades. Coming in contact with them, the designer needs to decide how to respond to them. Drawing on the ideas of Lebbeus Woods, the design can only emerge from the great depth of the painful experiences experienced by the landscape. The scars, in this sense, are evidence of the wounds' healing process and cannot merely be taken away. The landscape's scars are evidence of a cataclysmic event that shaped the fabric of the town and is an important chapter in the story of place.



Figure 196: The conceptual sketch shows engraved lines in the landscape with scabs of copper, symbolising how beauty can be extracted from the scarred landscape (author, 2022).

By referring back to the act of engraving, it can be understood as a process of extracting beauty. Looking at the site through the lens of engraving, the scars can be seen as the ugly and broken history of the site. These scratches to the surface can however be transformed into a beautiful artwork through introducing new layers over the landscape- the design interventions become engravings of the landscape. The new design interventions, or layers, responds to the scars and through them, the story of place can be told.

Through the art of engraving, different narratives can thus be extracted from the site- stories that have previously been lost. Through adding new layers over the old, a new place-identity can be rescripted. The conceptual sketch shows engraved lines in the landscape with scabs of copper, symbolising how beauty can be extracted from the scarred landscape.



Figure 197: The conceptual sketch shows engraved lines in the landscape with scabs of copper, symbolising how beauty can be extracted from the scarred landscape (author, 2022).

### 7.3 Lines in the Landscape

A series of explorations were done on how design interpretations can act as engravings into the site. Through responding to the ruined landscape and its witnesses, and interpreting them in a new way, a new story of place unfolds, anchored in the lessons of the past. The explorations aim to inspire new ways of approaching the wounded landscape. The models show the engraved lines of the site symbolising its scars while the new additions on top of them symbolises new design interventions as a poetic layer over the site. The exploration experiments with ways of recolonising these spaces which had been abandoned or laid to waste. The scar is a tactile reminder of what has been overcome. The scarring set in motion and actively contributes to the narrative of the site.



Figure 198: A series of conceptual models experimenting with layering different residues over the site (author, 2022).

Healing, in this sense, will involve forming new connections between what had happened and the new architectural intervention. The engravings adds a chapter to the site that allows earlier chapters of the site to be read.

As already mentioned, there are many different characters on the chosen site- ruins that have become the only remaining witnesses of the past. The design should interrogate these characters and showcase the traces of past occupancy. Referring once again to Jennifer Hill, ongoing transformations to the derelict site can help craft its narrative. This can be done through peeling away some layers of the site or introducing new layers. By keeping the ruins of the site in place, and having the new intervention speaking to the old, the ruins can be repeatedly reinterpreted in ways that would never have been possible before.

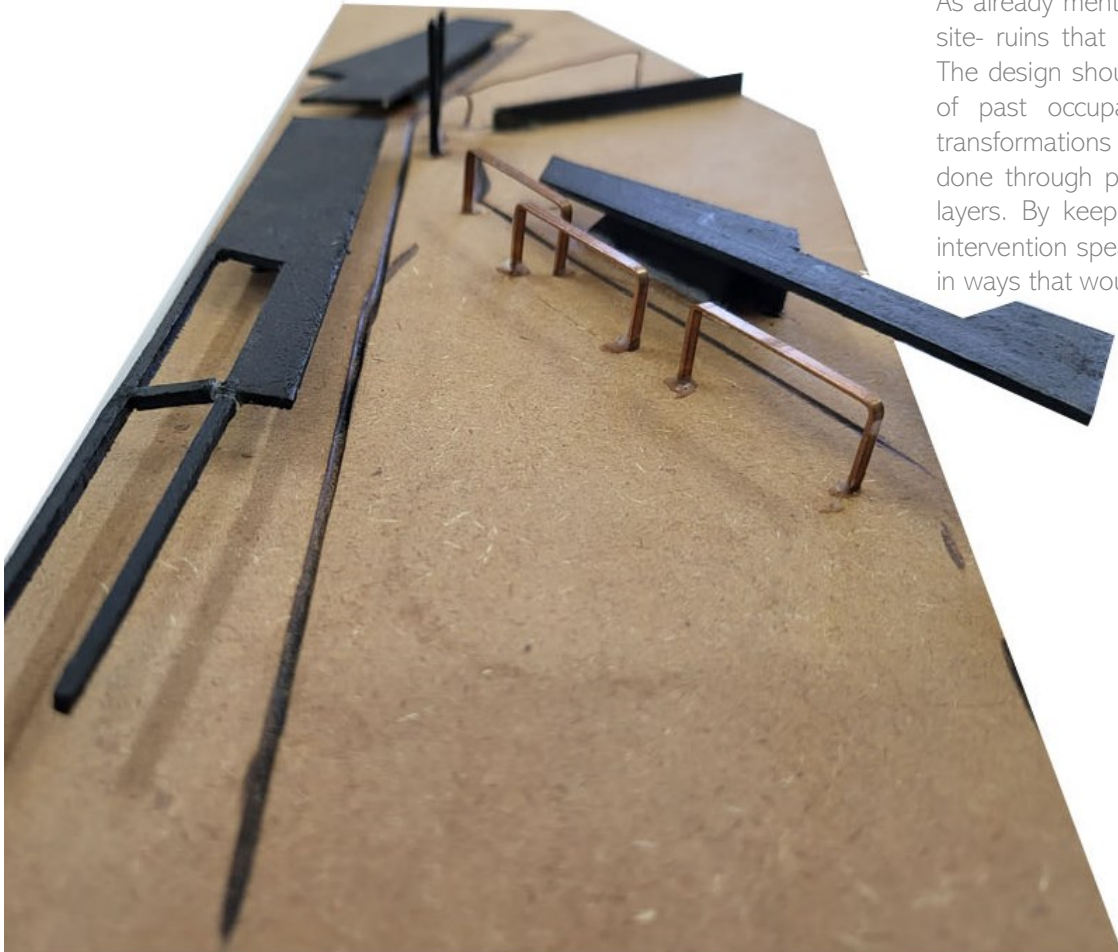


Figure 199: An exploration of the site showing how the scars and ruins can be reinterpreted by adding new layers onto the site.

## 7.4 Patina

The patina layers of copper also involves a process of healing. When a scratch is made to any metal, like iron and copper, the metal becomes exposed to the elements, and begins to corrode. Through the process of corrosion, multiple layers will form over this scratch in the metal in order to protect it against the elements. These protective layers over the metal are called 'patina'. In copper the patina layers are usually a blue-green coating. Multiple patina layers can form over the surface of copper making the material all the more durable. Copper's appearance will constantly change over the years, making it a living material.

The process of corrosion in copper is very similar to the scarring of flesh. Much like the scabs that form over a wound, patina can be seen as new layers over the surface similar to a scar. Drawing inspiration from copper, the design interventions will act as patina layers over a damaged flesh. Through introducing new layers over the site that responds to the old, these poetic layers will become protective barriers over the wounds much like patina. The scar, in this sense, will act as the manifestation of the wounds' healing process. These ongoing transformations to the site will actively contribute to its narrative.

The landscape of NababEEP is rich with history. Its story is made up of many chapters. While the destruction of the mining era can be seen as a severe trauma to the site, the story does not end in the trauma. The abandoned site's story can be reborn again in the rejuvenation of its scars. A new future lies ahead for the town of NababEEP and its damaged landscape. The process of healing can be done through engravings as poetic interpretations as well as scabs over the wounds of the site. The next section will further investigate ways of making sense of the landscape in order to redeem it from being laid to waste. A closer look will be taken at the site and its characters.

Figure 200: Varied copper surfaces



## 7.3 Redeeming Wastelands

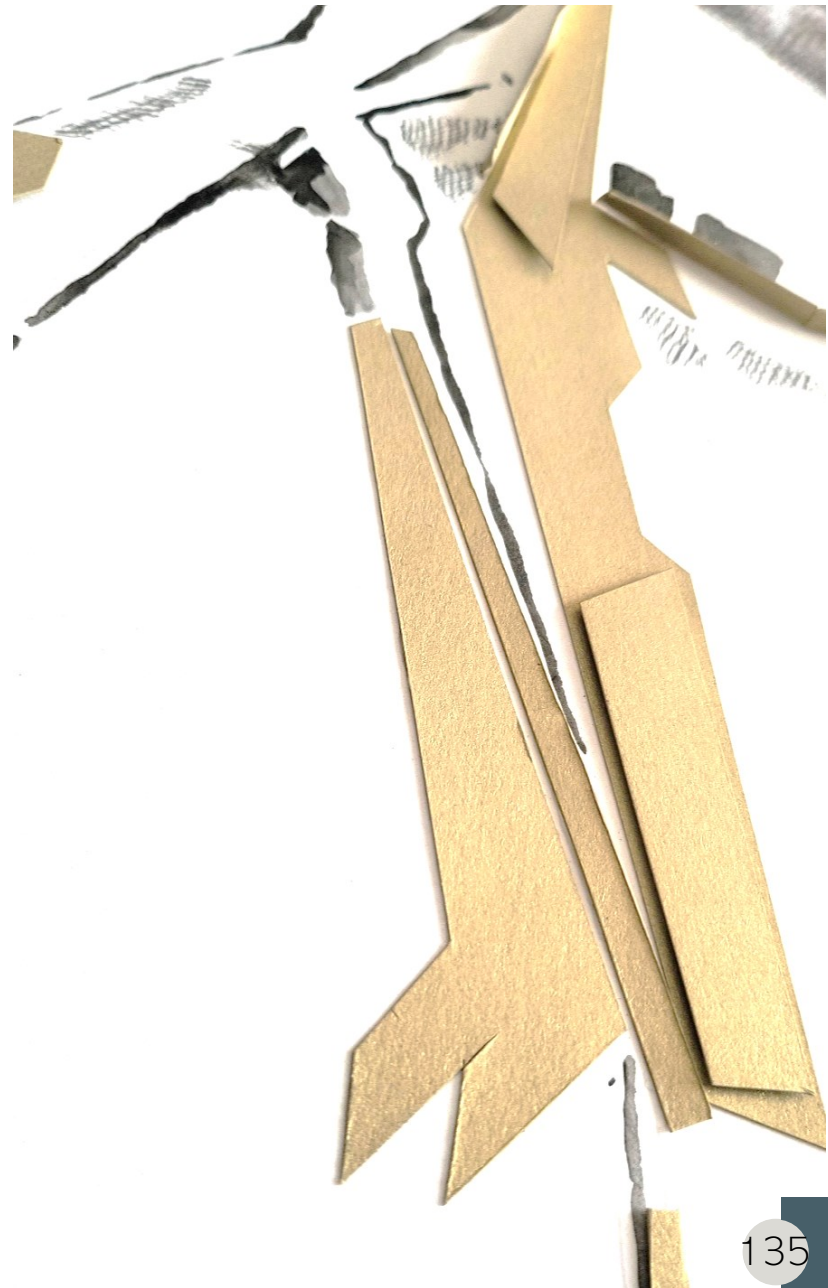
The town and its landscape can be considered a vulnerable space, in urgent need of intervention. The points made in concept 3 are relevant, Excavating Remaining Witnesses, the concept was used to make sense of the landscape through interrogating the different witnesses on site. This chapter will focus on ordering the landscape by looking at initial design responses and ideas.

### 7.3.1 Making Sense of the Landscape

In trying to make sense of the landscape, the concept of fragmentation was introduced. From the site analysis it was clear that there are various fragmented pieces on site with no relationship to one another. Taking inspiration from the ideas of Carlo Scarpa in the Castelvecchio Museum, the idea of a destabilizing narrative is introduced. By employing a narrative throughout the design, the building can begin to create a literary sense of place, revealing its layers one by one.

Carlo Scarpa also focused on the juxtaposition and reconnection of spaces to keep the visitor of the building engaged with its experience. By creating individual, fragmented spaces with connections between them, a destabilizing narrative is created between these spaces, seizing the inhabitant and then letting go once again.

Figure 202: An initial design exploration of a series of fragmented pieces (author, 2022),.



The initial design responses explored ways of ordering the landscape by fragmenting the landscape and forming connections between the pieces. Different structural elements and spaces in the landscape resemble separate jewellery pieces, individual and unique on their own, but integrated in a larger system.

Referring back to the concept of the structural touchstone, which explores the relationship of place and architectural narratives. The touchstone consists out of three intimate, fragile spaces dependent on one another. The vulnerable and fragility of these spaces determine how the design integrates on site.



Figure 203: Explorations are done with different fragments in the landscape (author, 2022).

As described in concept 3, there are certain remnants of the old mining era that are still visible on the chosen site. The first few explorations can be seen as attempts of ordering the site in a way that allows the visitor to come in contact with the ruins and allow for a sense of exploration throughout the site. The first model on the left experimented with ways of welcoming the visitor onto the site, showcasing its facilities and exposing its remnants.

In figure 204, the visitor is allowed to explore the different fragments of buildings through a series of courtyards and transitioning spaces. The end of the building finally opens up to the ruins of the site.

The second exploration (figure 205) explores a central courtyard used as a way for visitors to gain insight into the process of jewellery making. The facilities are organised around this courtyard and visitors are given the opportunity to explore the different facilities. The model also shows a juxtaposition and reconnection between a series of different spaces.

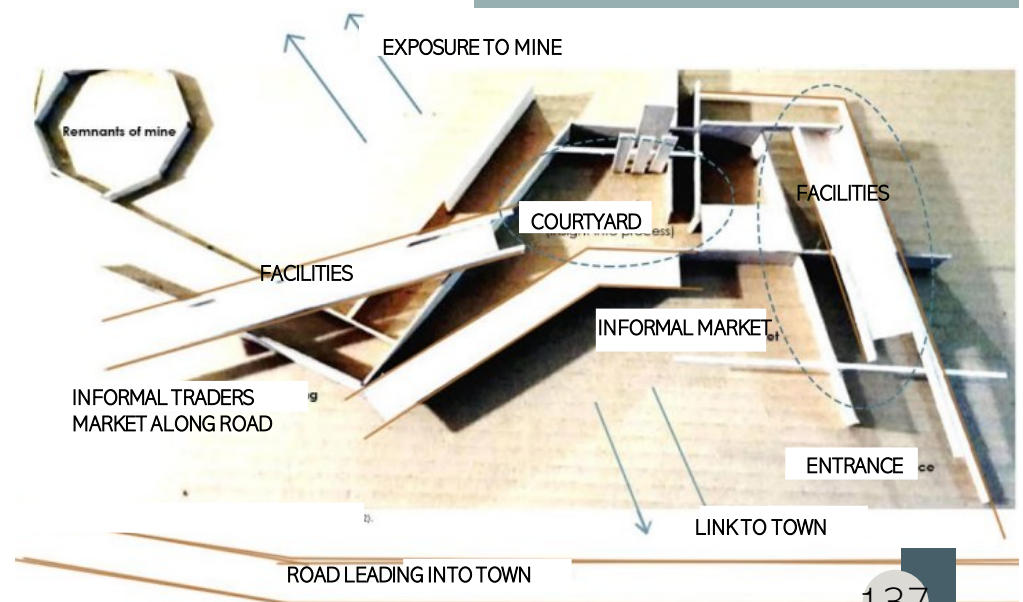
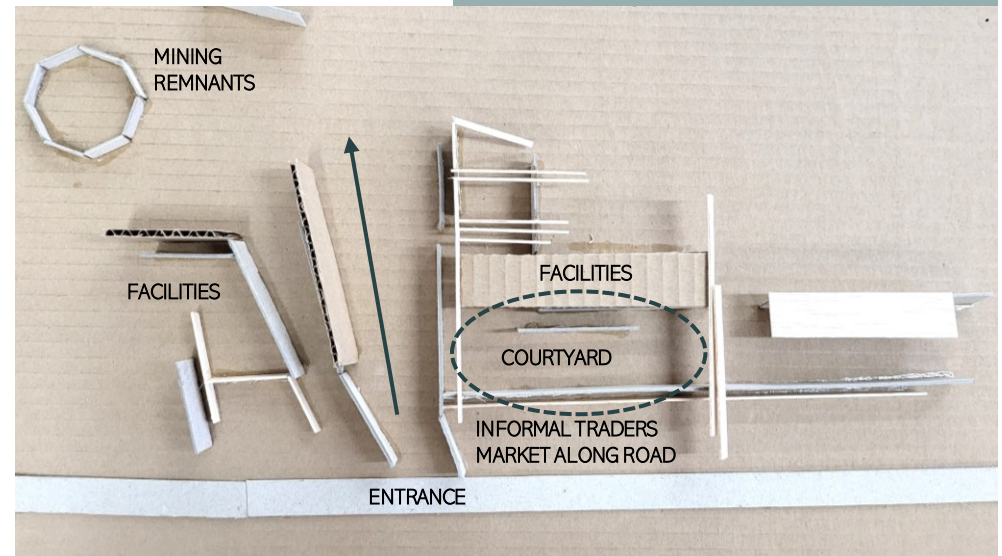


Figure 204 (top right): An initial exploration model inspired by fragments in the landscape (author, 2022).

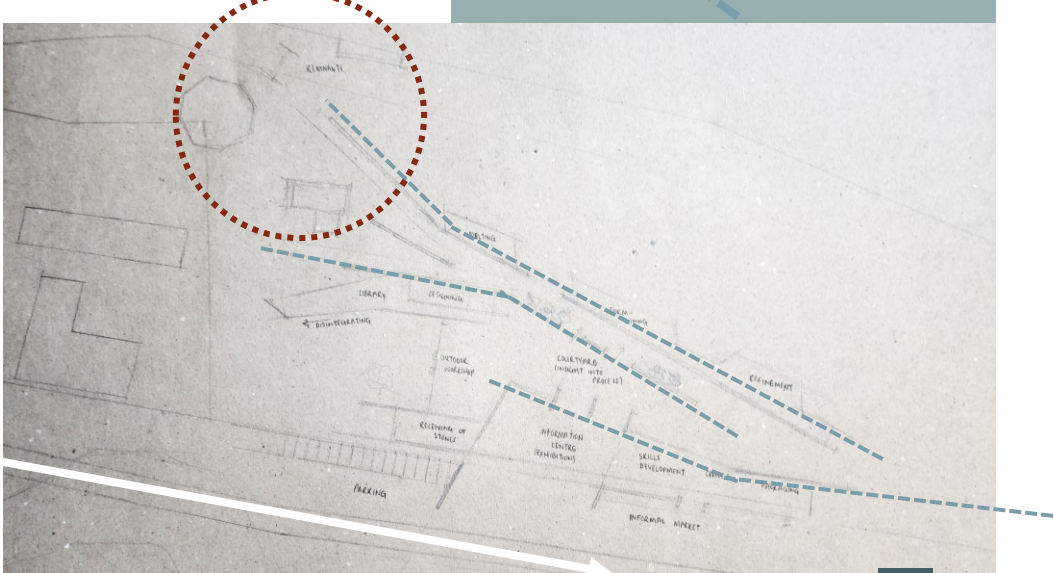
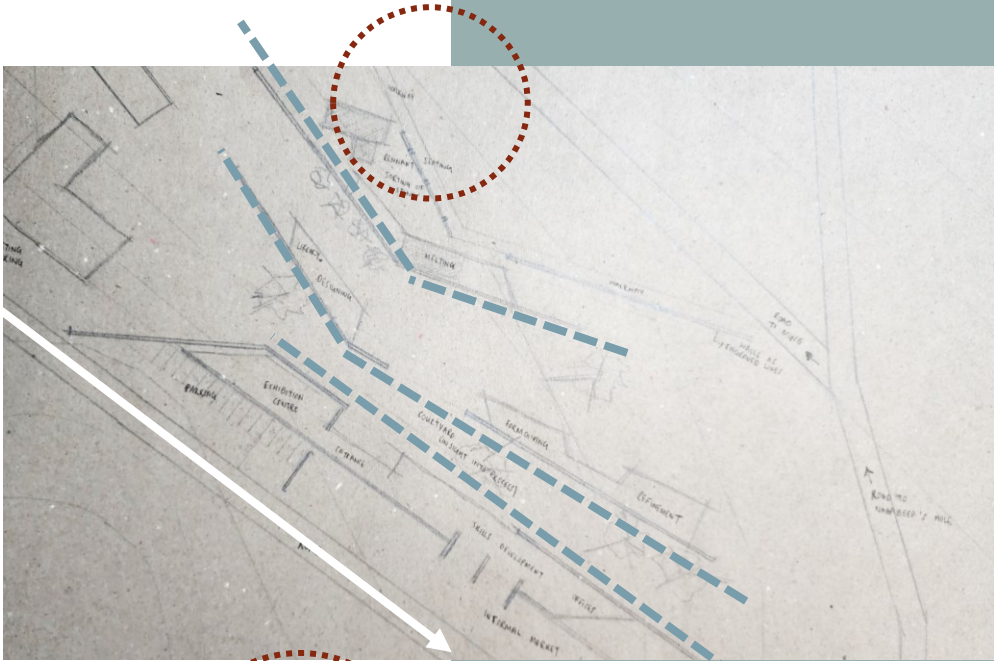
Figure 205 (top right): Different functions organised around the courtyard (author, 2022).

Moving forward, the floor plan takes inspiration from the initial conceptual sketches of fragments in the landscape. The images below show a series of floor plan explorations of ordering the landscape. By employing the idea of fragility and vulnerability of spaces, a deeply felt separation are created between the spaces. The building becomes an experience on the site, the visitor prompted to keep moving and uncovering the different layers it has to offer.

There is also a certain sense of exposure to the mine and its remnants (marked in red). The buildings are ordered in a way to promote movement throughout the site, setting in motion an experience of discovering its treasures.

Figures 206: Initial floor plan explorations inspired by fragments in the landscape (author, 2022).

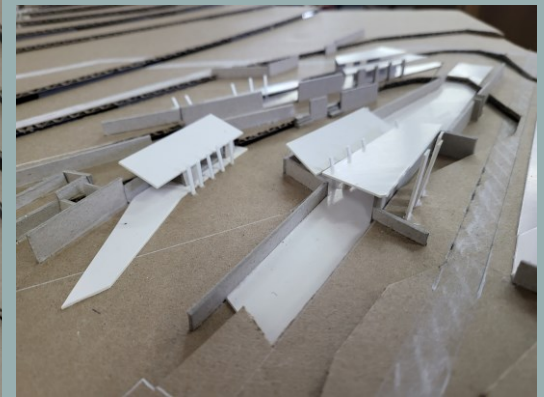
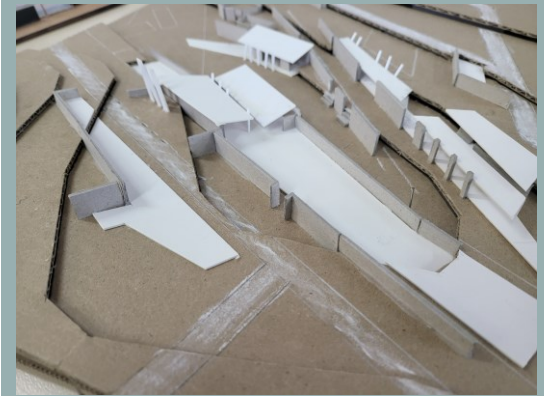
Figure 207: An initial exploration floor plan sketch with a different layout (author, 2022).



Working along the contours, the landscape is considered the main focus of the design. The design is organised along the contours and in a way to allow the visitor to explore the entirety of the site, its damaged slopes, mine heaps and remnants of the past. The buildings are organised as fragments that depend on one another, in a similar way as the structural touchstone. This also ensures as little as possible disturbance to the already damaged landscape. Thick stone walls lead the visitor to the remnants which is scattered all over.

Figure 208 (below): Third attempt at a model (author, 2022).

Figure 209 (right): Moments captured of the model (author, 2022).



- ORGANISED ALONG THE CONTOURS OF THE SITE
- SEVERAL BEACONS ON THE SITE MARKS THE DIFFERENT FACILITIES
- LINEAR SPATIAL ORGANISATION LEADS VISITOR TO REMNANTS

### 7.3.2 Accommodation List

In order to determine what types of facilities are needed and where to place them, a closer look is taken at the accommodation list and its functional requirements. The programme of the Jewellery Manufacturing & Design Centre will involve the following:

(1) PUBLIC	(2) JEWELLERY MANUFACTURING & DESIGN CENTRE
<p>(1.1) EXPOSURE TO THE MINE The proposal welcomes tourists onto the site to explore its remnants. A walkway that starts at the facilities leads all the way to the different ruins on the site and ends with viewing platforms at the big hole. This exposes the visitor to the severely scarred site and also acts as gathering spaces.</p>	<p>(2.1) RECEIVING OF MATERIALS The centre receives materials and stones directly from the mine or from transport companies. A dedicated delivery area is needed with access to the jewellery workshop and packaging facility. Handmade jewellery and other stones are also accepted by the community. A separate space near the road is needed for the receiving and storage of these materials.</p>
<p>(1.2) EXHIBITION CENTRE The exhibition centre is for the public and provides information about the town and the history of its mining activity. It also showcases several crafted jewellery and exhibits stones from the area. -Ablution is required for the visitors. - Reception is also required with seating</p>	<p>(2.2) DESIGN WORKSHOP The design workshop is a space where students and jewellers can sit down and draw designs. Sturdy desks with sufficient light is needed as well as a library space and computer lab.</p>
<p>(1.3) PUBLIC COURTYARD The exhibition space leads to a public courtyard that provides insight into the different jewellery design processes.</p>	<p>(2.3) JEWELLERY WORKSHOP This workshop is the area dedicated for the manufacturing of jewellery. The different requirements are: -jeweller's benches; -sufficient storage; -built-in bench for larger equipment; -smeltery; -storage for oxygen tanks; -fire safety; -private courtyard for lunch breaks; -sufficient security; -a safe</p>
<p>(1.4) TRADERS' MARKET Both of the market spaces are meant for the public to purchase jewellery and stones from the centre and local residents. -Separate ablution is required</p>	<p>(2.4) PACKAGING &amp; BRANDING The facility is where handmade jewellery are packaged and exported from to other retail outlets, or to the informal trader's market. The requirements are: -Offices; -Sufficient storage; -Photography room; -Direct link to delivery zone</p>

### (3) SKILLS DEVELOPMENT

#### (2.5) ADMIN

Admin offices are needed for the management of the facility.

The requirements include:

- 2/3 offices
- communal office
- boardroom
- office of manager
- cleaner's storage
- kitchenette for staff
- staff courters
- separate ablution
- private courtyard for lunch breaks

#### (3.1) LECTURE ROOM

The proposal offers skills development programs to people of surrounding towns or school groups. A variety of short courses are taught ranging from 3 days to 3 weeks. A lecture room is needed where theory of jewellery design are taught.

- Separate ablution is also needed
- An area for lunch breaks

#### (3.2) ACCESS TO OTHER FACILITIES

The skills development programme also makes use of the other jewellery manufacturing facilities, such as the design workshop, jewellery workshop, and the exterior courtyard, where physical skills are taught to the students.

### (4) COMMUNITY ASPECT

#### (3.1) INFORMAL MARKET

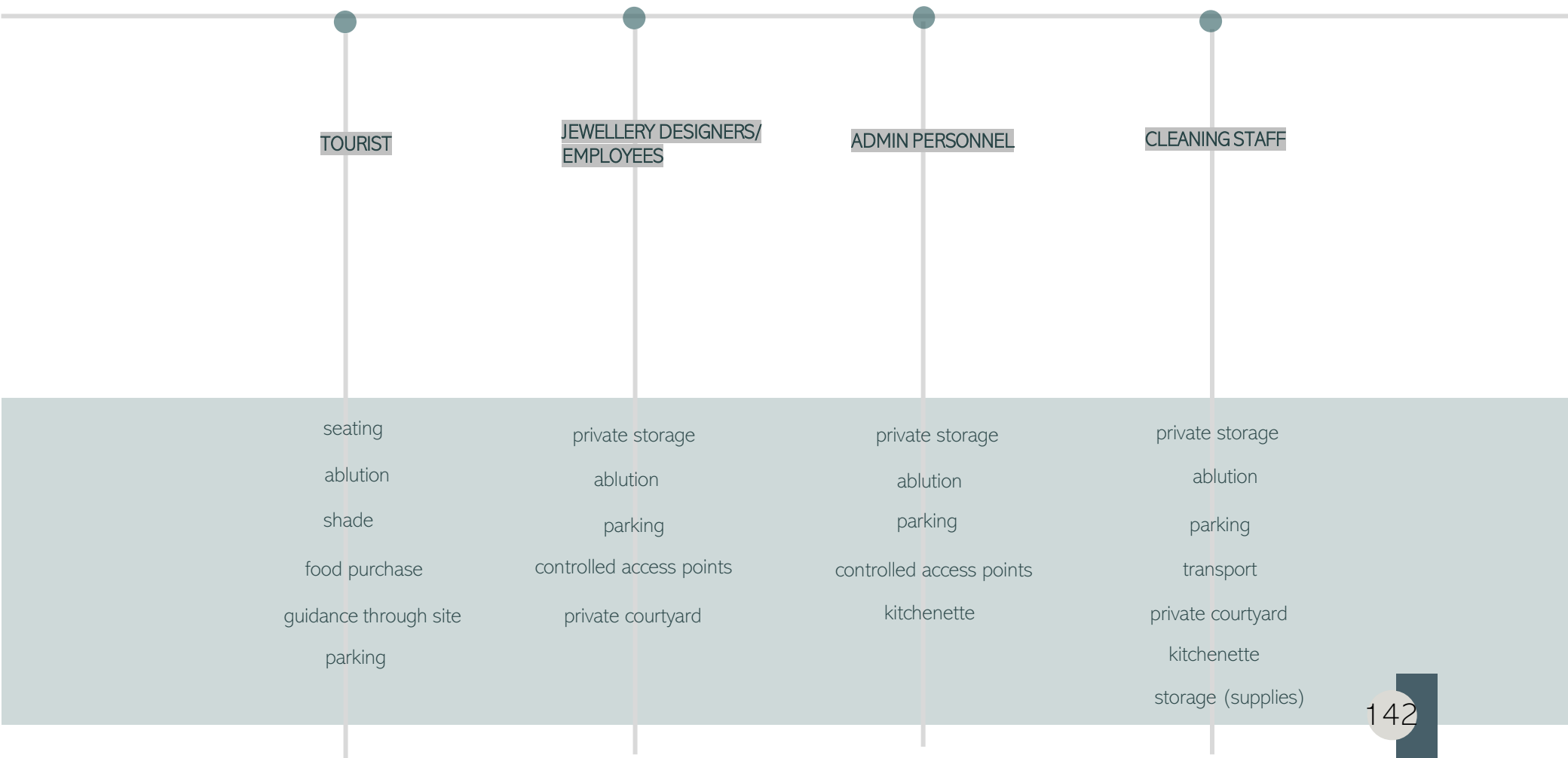
The informal market is an important community aspect of the design proposal. It provides space for the members of the community to sell their handcrafted goods and scavenged stones to passing tourists.

#### (3.2) OUTDOOR WORKSPACE

As a further approach to helping the community, the central courtyard on the site provides an outdoor workspace where members of the community can use leftover pieces of material from the centre to create jewellery pieces.

### 7.3.3 Users of the Building

In accordance to the accommodation list, the users of the building can be identified as well as the requirements for each of them.



LECTURERS

private storage

ablution

parking

controlled access points

private courtyard

office

STUDENTS

transport

ablution

parking

gathering spaces

seating

COMMUNITY

transport

ablution

parking

gathering spaces

storage (market)

seating

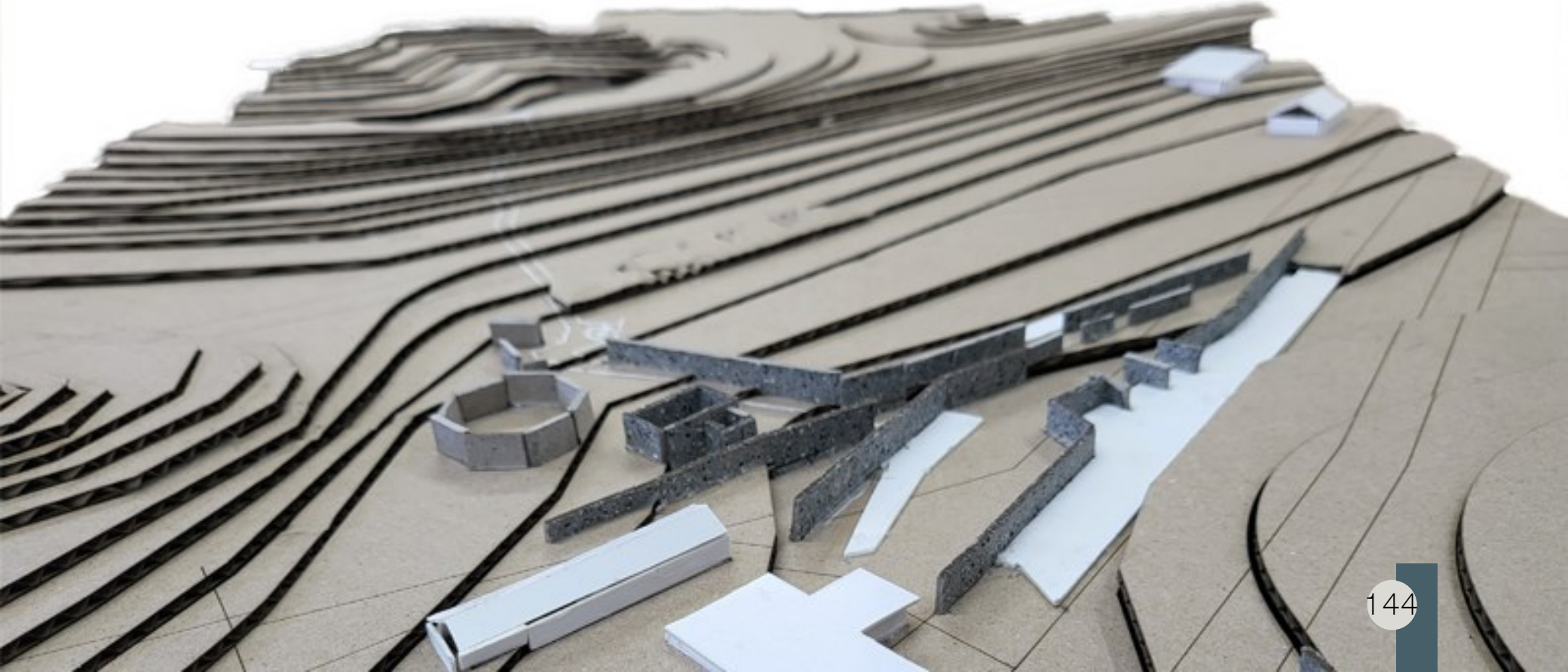
exhibition space

### 7.3.4 Ordering the Landscape

A step further into the design process, thick stone walls are introduced onto the site, separating the different fragments from each other. The fragmented pavilions are attached to these walls and each of them serves a separate function. Each building becomes a contextual driver, setting in motion a sense of movement through the landscape. It is the experience throughout the site that becomes the main goal of the spatial planning.

The stone walls (in grey) further divides the public and private spaces from each other. At times the stone walls open up towards the central courtyard to allow visitors to experience the facilities; while at other times the stone walls closes the building off from the public, in the case of the jewellery workshops. The stone walls also serves an important function of shielding the buildings from the harsh semi-desert sun.

Figure 210: The model explores spatial planning options (author, 2022).



The figure on the right show the different functions scattered on the landscape. The building is organised in a linear form opening up towards the mining remnants. To welcome tourists onto the site, a walkway (marked in blue) leads the visitor through these ruins (marked in red) to a severely scarred site, the big hole of Nababeeep, located at the side of the mountain.

The thick stone walls separates the spaces from one another, creating a destabilizing narrative to keep the user engaged in the building's experience.

DESIGN WORKSHOP  
SOCIAL GATHERING SPACE  
JEWELLERY MANUFACTURING WORKSHOPS

The existing heaps of discarded copper ore and other rocks serves as a boundary to the site. In order to fit in with its surrounding landscape, attention is paid to the adjacent buildings so as to not dominate over them. The scale of the building is kept small so as to fit in with the scale of the surrounding buildings. By spreading the functions of the spatial planning over separate buildings, the fragmented structures are kept small and in relation to its surroundings.

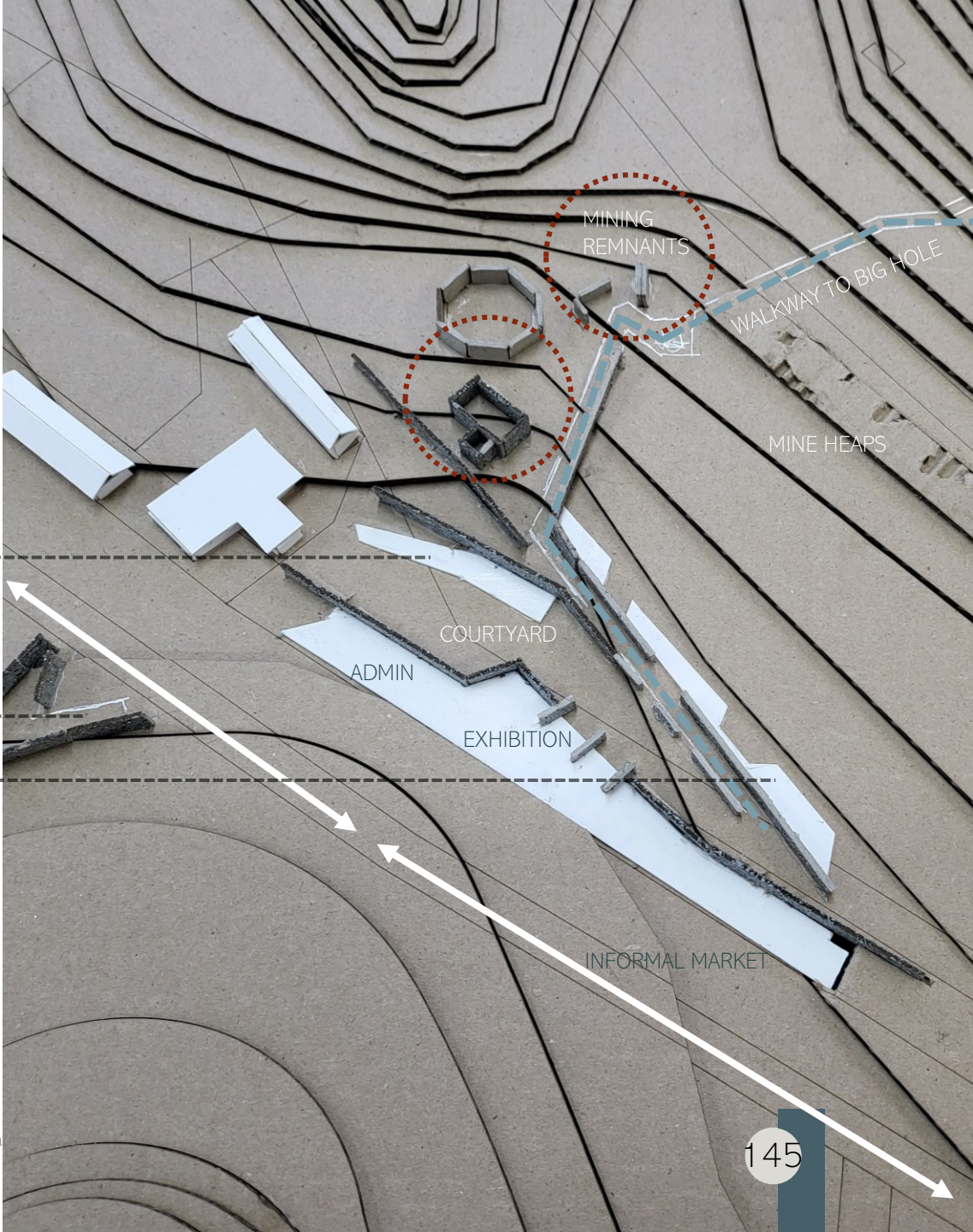


Figure 211: An initial exploration model inspired by fragments in the landscape (a)

### 7.3.5 Fragmentation Vs. Healing

The idea of fragmentation is not only introduced on plan, but also applied to the interior organisation of these spaces. The story of the landscape is defined by fragmentation- its earth broken up into pieces. In order to tell the story of the place, the design makes use of juxtaposition and reconnection of spaces to create a destabilizing narrative throughout the spaces. By breaking up the spaces from each other, fragile spaces are created within the landscape, referring to the vulnerability of the landscape and the way the mining equipment grasps the earth only to let go again.

By creating different levels and falls throughout the design, the spaces are juxtaposed and reconnected constantly, setting in motion a continuous process of uncovering.

In contrast to the fragmentation of spaces, the story of place can further be told through the healing of the spaces. Structurally, the spaces are healed through adding a series of layers over the site. By overlaying different residues, each layer of the building reveals something about the story of the site. The element of layering on the interior of these spaces is seen through a series of different materials superimposed over each other. The figure on the right show a series of different residues creating an ensemble of different layers, such as stone walls, floating roofs, structural steel systems and a variety of platforms. A series of different levels and falls further enhances movement through the building.

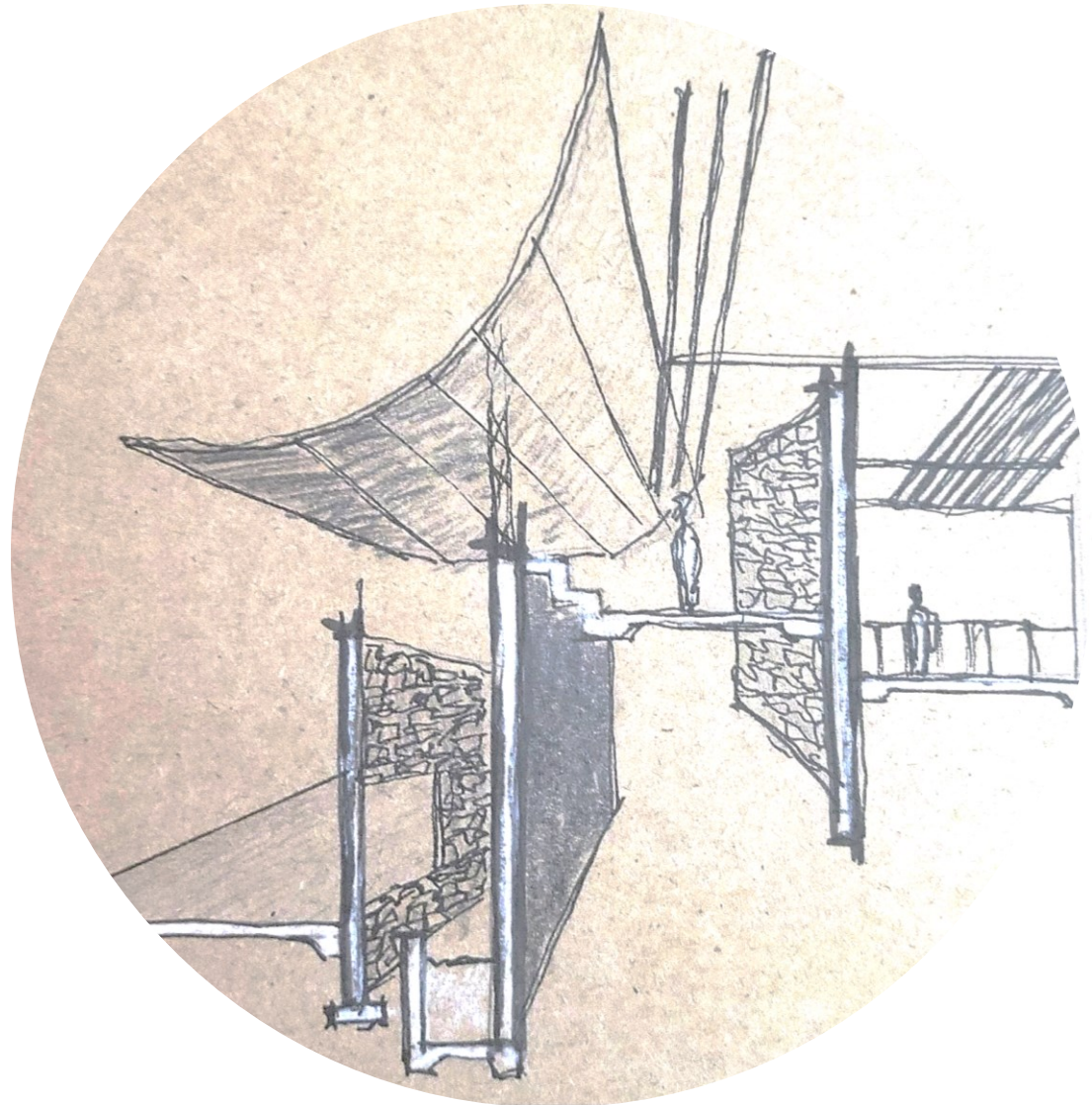
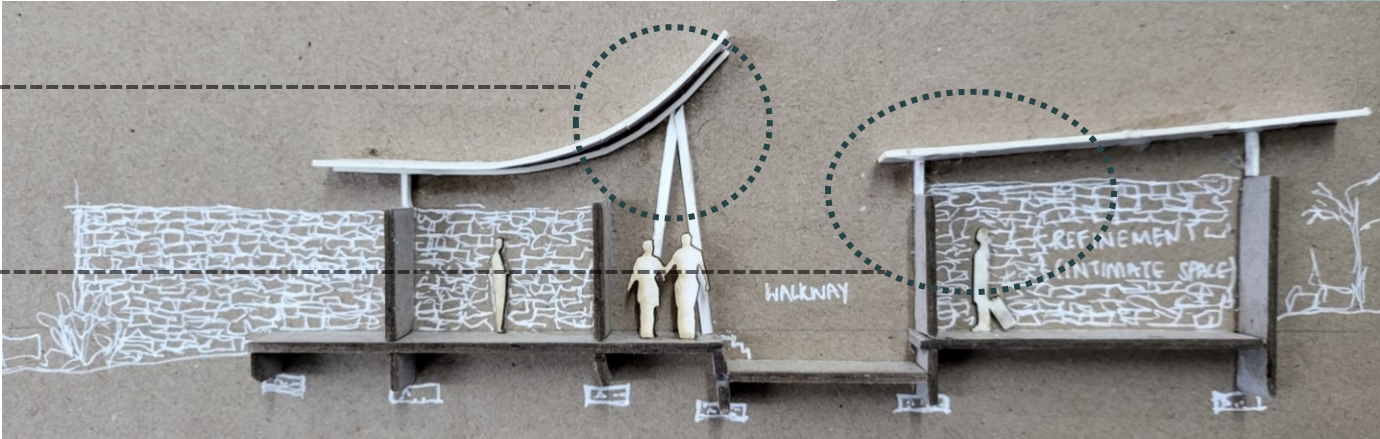


Figure 212: An initial exploration of how a series of levels and falls can create a destabilizing narrative throughout the design (author, 2022).

The idea of the design is to create different cellular spaces connected through a series of platforms. The materials and structural systems are carefully chosen to create intimate and fragile spaces. By using stone and rammed earth walls anchored in the site and other local materials such as corrugated roof sheeting, the design will fit in with its surroundings. The following images show a series of experiential models of different roof systems. Generic roofs such as monopitch roofs are mainly used because it's a popular local construction. It is important that the design does not use make use of foreign construction methods or extravagant roof systems.

experimentation with a steel structural system separate from the walls that carries the roof

Local construction method: monopitch corrugated roof



A series of different roofs layered over each other

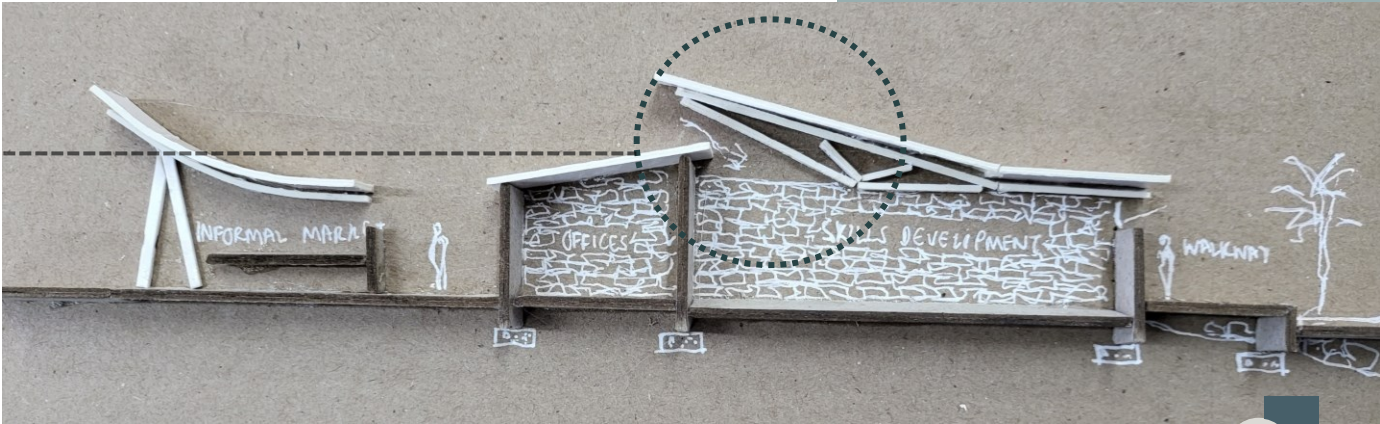


Figure 213: Initial explorations of roof systems (author, 2022).

Further incorporating the idea of fragmentation within the spaces, the roofs are designed to be separated from the wall enclosure systems. Structurally, the design makes use of sculptural connections and timeless materials. Stone walls are anchored in the earth while lightweight roofs floats above the walls evoking the fragile mine structures that pierce the earth. The thick walls shelters the spaces from harsh sun exposure and creates a thermal mass. By separating the roofs from the solid walls, the sense of layeredness is further enhanced. Clerestory windows allows light to filter into the spaces. It is the connections between the wall and roof that becomes the focus point of the design approach. By using local materials that are readily available, but incorporating them in a artistic and sophisticated way, these connections between wall and roof can become intricate details and joints inspired by jewellery connections. Incorporating discarded stones and rocks from the mine into the stone walls, the building will harmonize with its surroundings. The following model shows an exploration of a sculptural roof system separate from its wall enclosures. Fragmentation is introduced by separating the building elements from each other.

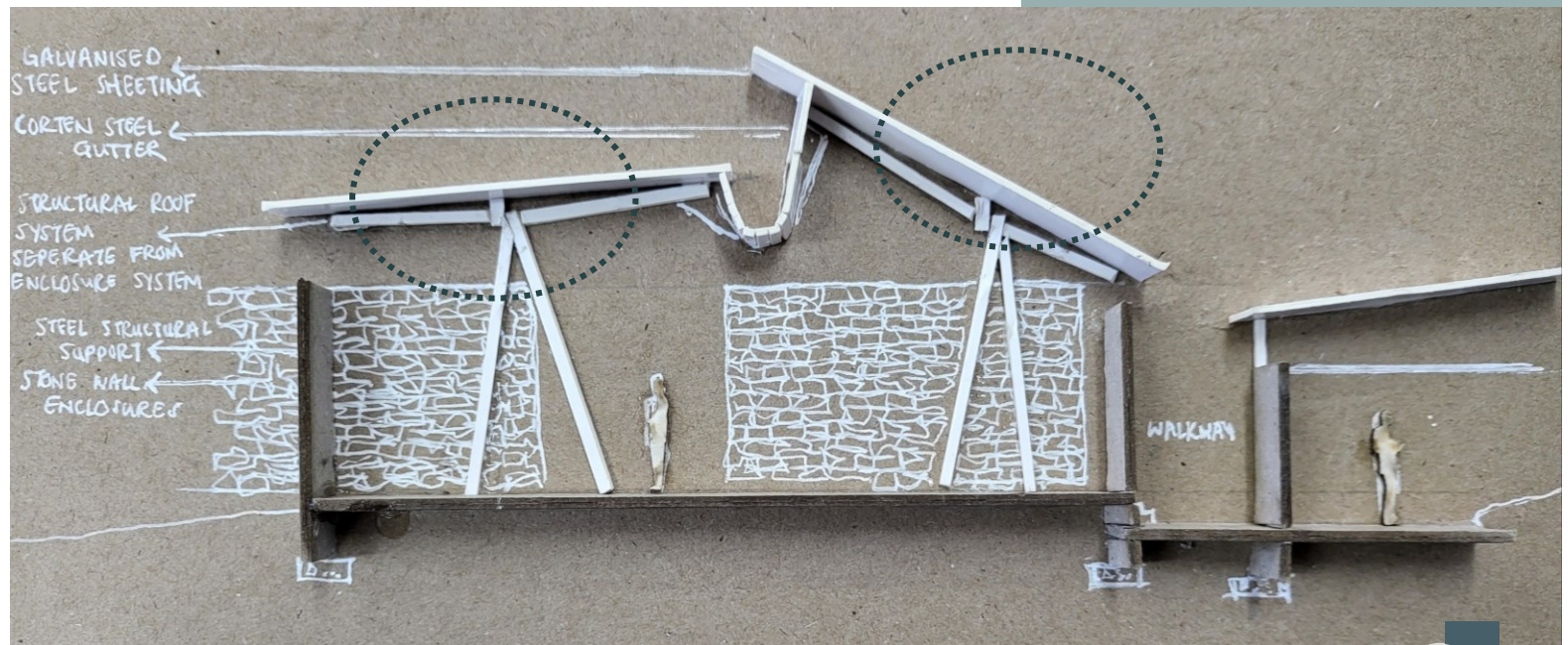


Figure 214: Separate roof support systems (author, 2022).



Figure 215: Design exploration of an ensemble of different materials and layers (author, 2022).

Fragmentation is further introduced into the design through incorporating the ruins and remnants of the site to create a sequence of varied, intimate and personal spaces with benches along the walkway. Scattered between the ruins, there are also a variety of social spaces. Through layering different fragments and materials, an ensemble of intriguing spaces can be created, its material use and connections inspired by jewellery connections.

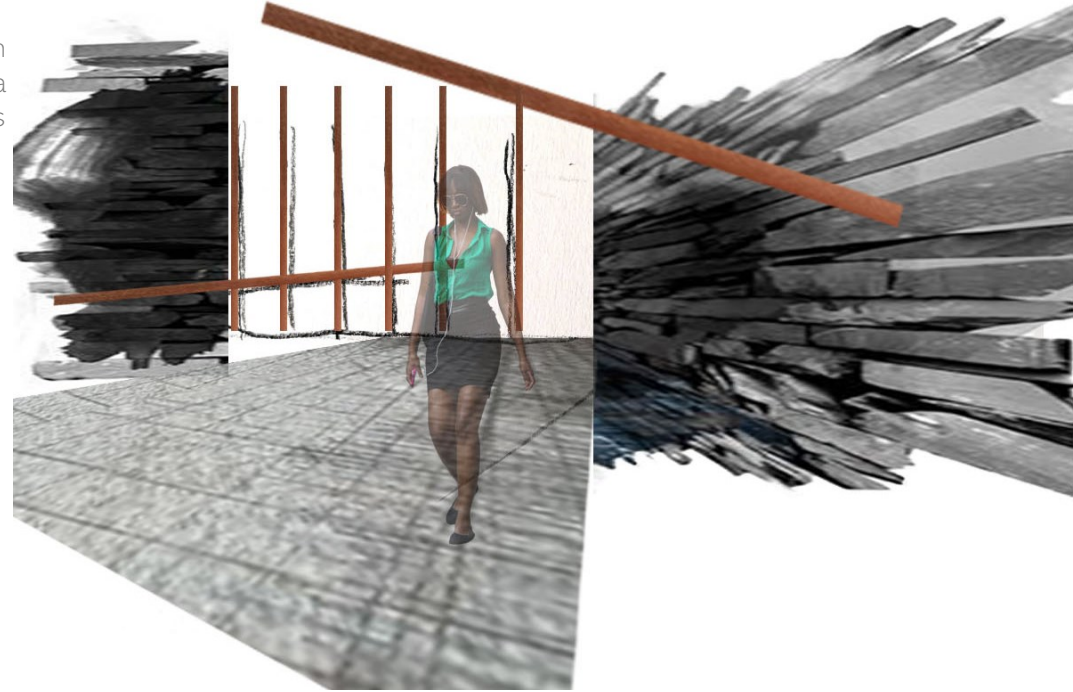
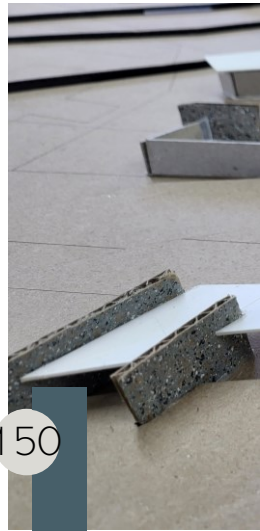
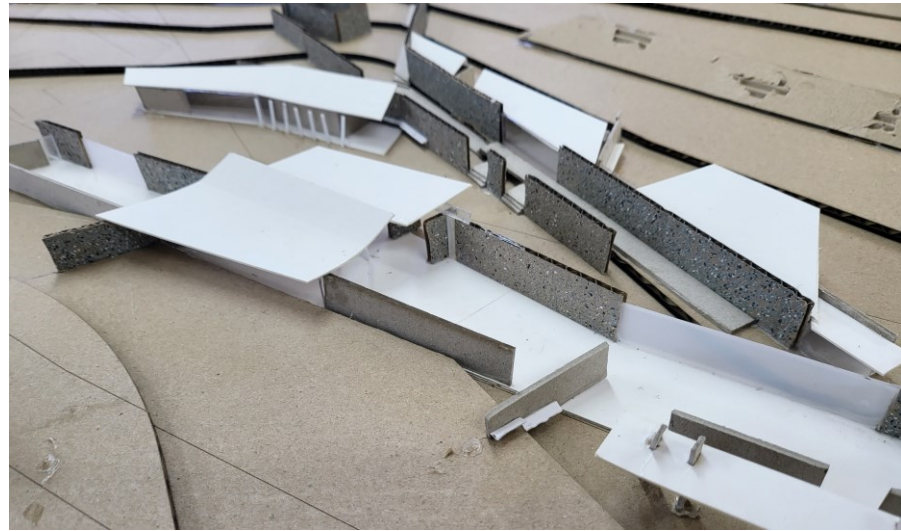
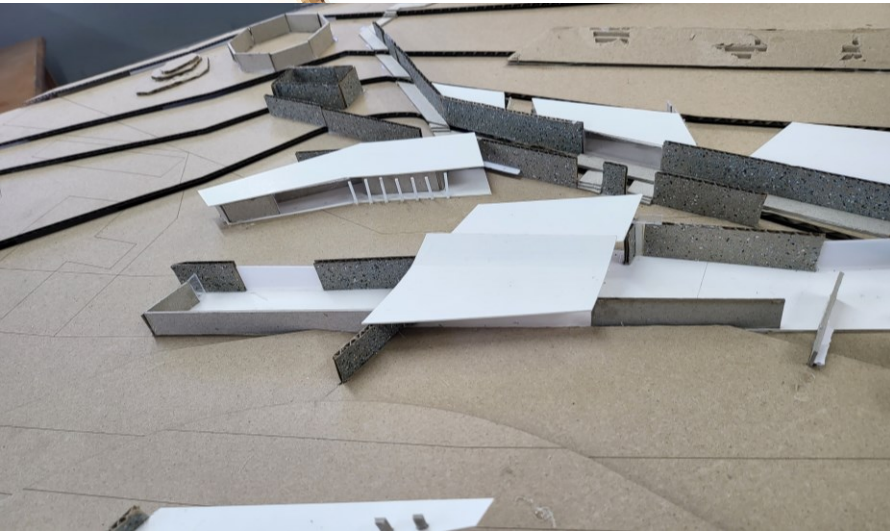
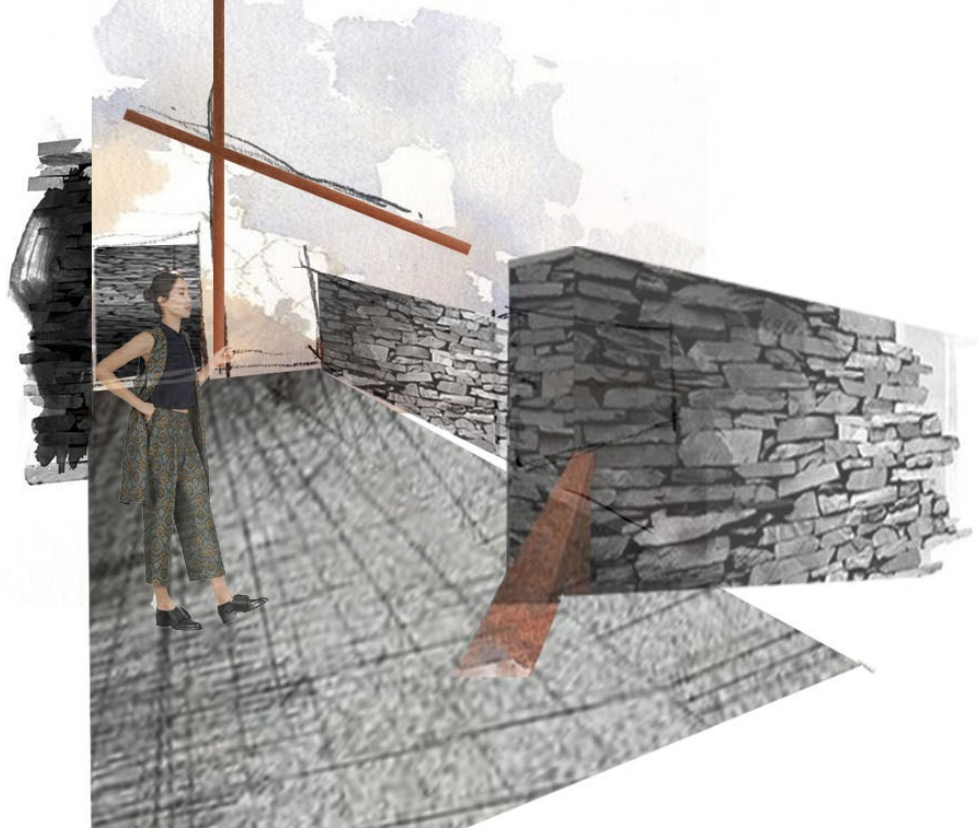


Figure 216: Jewellery connections provide inspiration for these spaces (author, 2022).



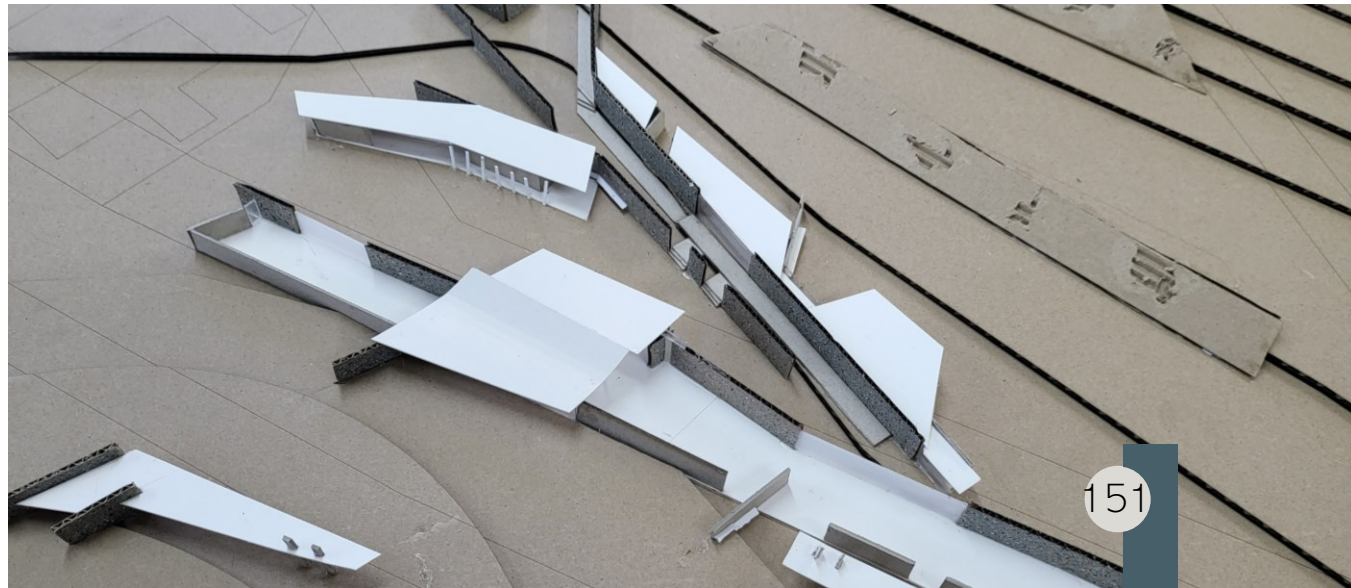


Drawing inspiration from the Seirenshe Art Museum, several beacons are scattered around the site, orientating the visitor and marking the different facilities.

Each fragment of a space becomes a contextual driver in the act of uncovering the place.

Figure 217 (left): Design explorations of fragments of spaces (author, 2022).

Figures 218-221 (bottom): Moments of the model captured (author, 2022).



Further explorations show how a series of different levels and surfaces throughout the building can create a tactile or experiential separation and fragmentation. Structurally, the design makes use of locally sourced, textured materials. Different residues are layered to become an immersive experience. Organised as a series of pavilions, fragmented to blend into the landscape, the different levels and falls further promotes a destabilizing narrative, allowing the visitor to explore the site through its different platforms. As the building tells the story of place, the different layers of the structures are revealed one by one. While the overall design promotes a calm, monotonous visual, there are several feature elements within the formal simple assembly. The interchange of these contrasting spaces provides moments of focus and surprise.



Figure 222: Design exploration of an ensemble of different materials (author, 2022).



Figure 223: Exploration of different fragmented pavilions in the landscape (author, 2022).

## 7.4 Towards a Final Design

### 7.4.1 Typology

The typology of the design fits in with the rest of the town by having ordinary monolithic roofs and single-storey structures. The construction thereof are however done in a sophisticated and well-crafted manner. To respond to the landscape typology, the design makes provision for the harsh climate of Nababeep. The spaces are sheltered from the heat by the thick stone and rammed earth walls. The openings in the walls are kept minimal. Clerestory windows are rather used for light and natural ventilation. The roofs also have large overhangs. By creating a variety of different courtyards between the fragmented spaces, the design is typical of a desert landscape. The courtyard spaces not only binds together the different fragments, but also creates places of refuge from the harsh sun.



Figure 224: The interior looks out onto a small courtyard space sheltered by thick stone walls (author, 2022).

## 7.4.2 Structural System

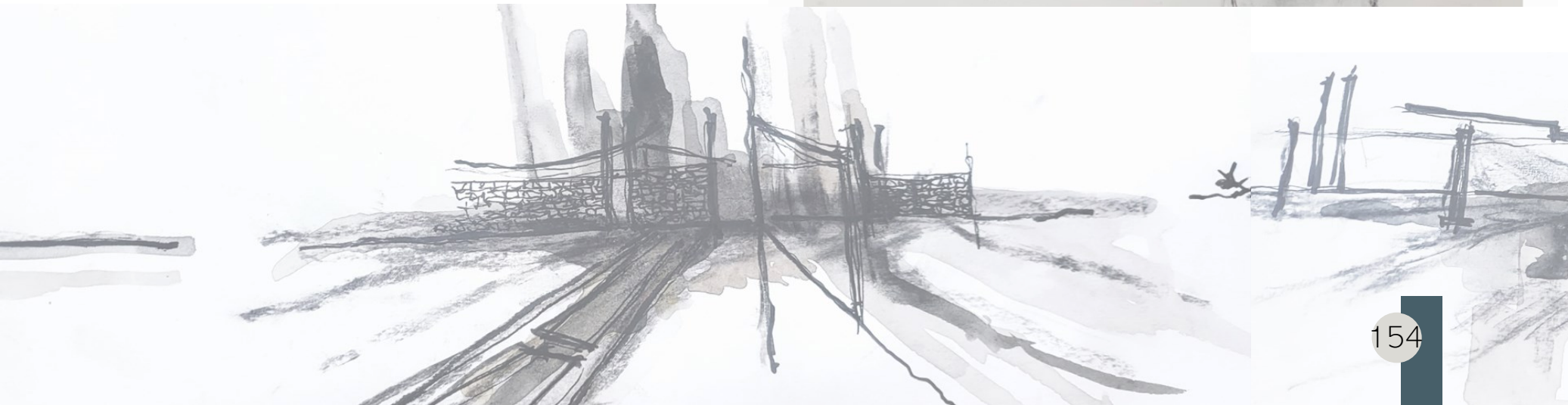
The structural system consists of loadbearing stone or rammed earth walls with a lighter steel structure roof. The wall edge becomes an important design feature within the project as careful attention is paid to crafting intricate connections between the roof and wall.

At times the roof structure rests on the loadbearing stone walls; while at other places the structural roof system is separated from the enclosure system and is supported by its own steel structure. The structural system of the design is exposed and contributes to the aesthetic of the building. The craftsmanship of the builders is exposed through intricate joinery and connections throughout the building. Monopitched floating roofs hovers above the solid stone walls blending into the surrounding granite hills.



Figure # 225 (right): Structural system of anchored walls with floating roofs (author, 2022).

Figure 226 (below): Sectional explorations (author, 2022).



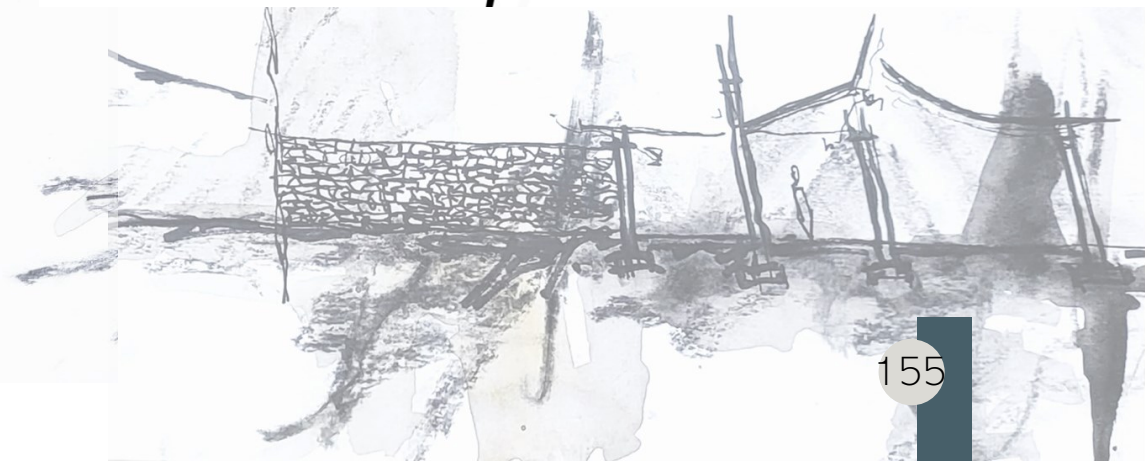
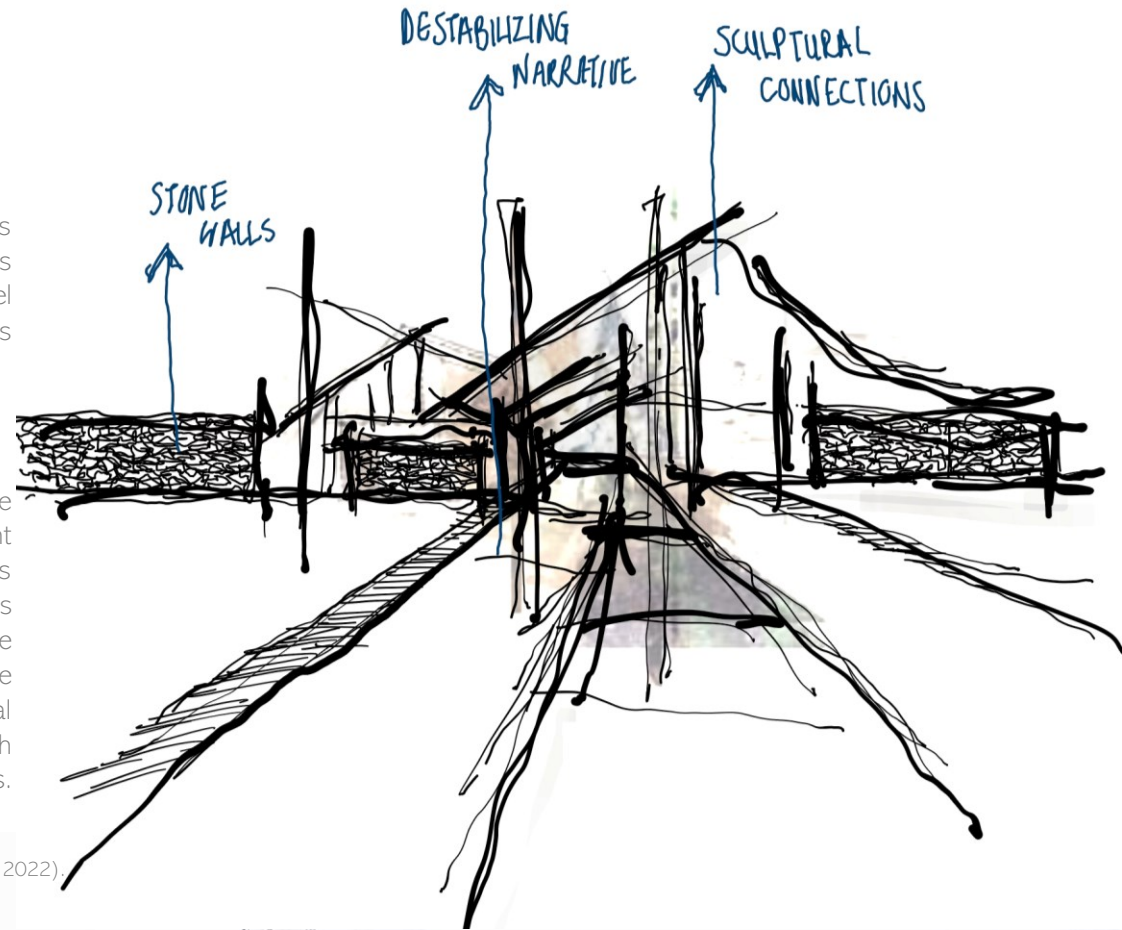
### 7.4.3 Material Choice

The material choice displays a simple, honest resourcefulness and humility. The building possess a fine crafted quality with its raw materials such as concrete, rammed earth, corten steel and stone walls contrasted with softer materials such as wooden slates.

### 7.4.4 Structural Detailing

Taking inspiration from jewellery design, the idea is to create intricate details and joints that explores the different techniques of fastening and connecting jewellery. These details are employed throughout the design but especially as connections between the roof and wall. By looking at the patina layer of copper, a series of layers are introduced to the design. While the overall design consist of a simple formal assembly, the interior of these spaces become layered with different residues, creating intimate and personal spaces. Space rather than form becomes the primary goal.

Figure 227 (right): Structural system of anchored walls with floating roofs (author, 2022).



### 7.4.5 Spatial Planning

The final floor plan accommodates a variety of functions in separate fragmented spaces. The formal assembly of different fragments are located along the road that leads into town. Along each side of the road is informal traders' markets where jewellery of the centre are sold to passing tourists. The community are also able to sell their handcrafted jewellery and stones here, as well as other products such as food and beverages.

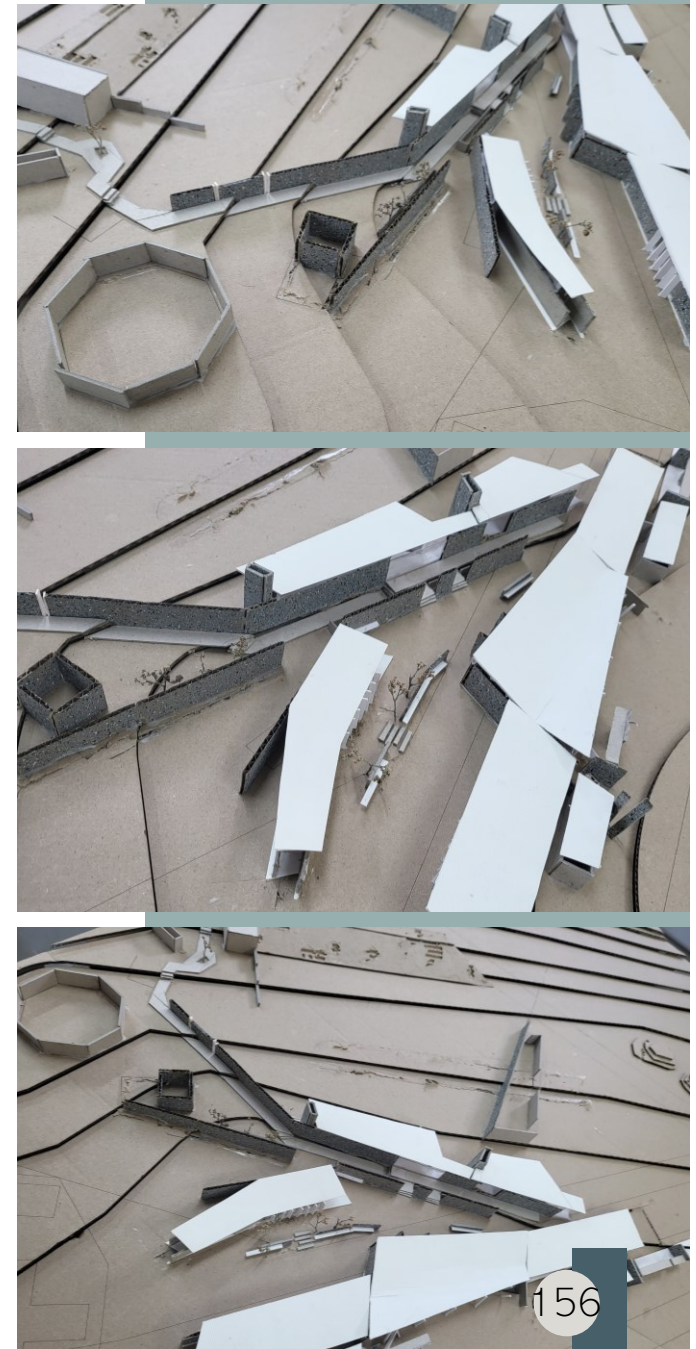
Approaching the building from the parking alongside the road, the exhibition space is the first public space into which the visitor enters. On the left is private facilities such as admin, and on the right is also offices and packaging facilities. The exhibition centre opens up to a public courtyard that provides insight into the process of jewellery making. Workbenches are organised along a landscaping stone wall and provides an outdoor workspace for members of the community. From the courtyard an elevated walkway leads the visitor to the different ruins, exposing them to the mine and the damaged landscape.

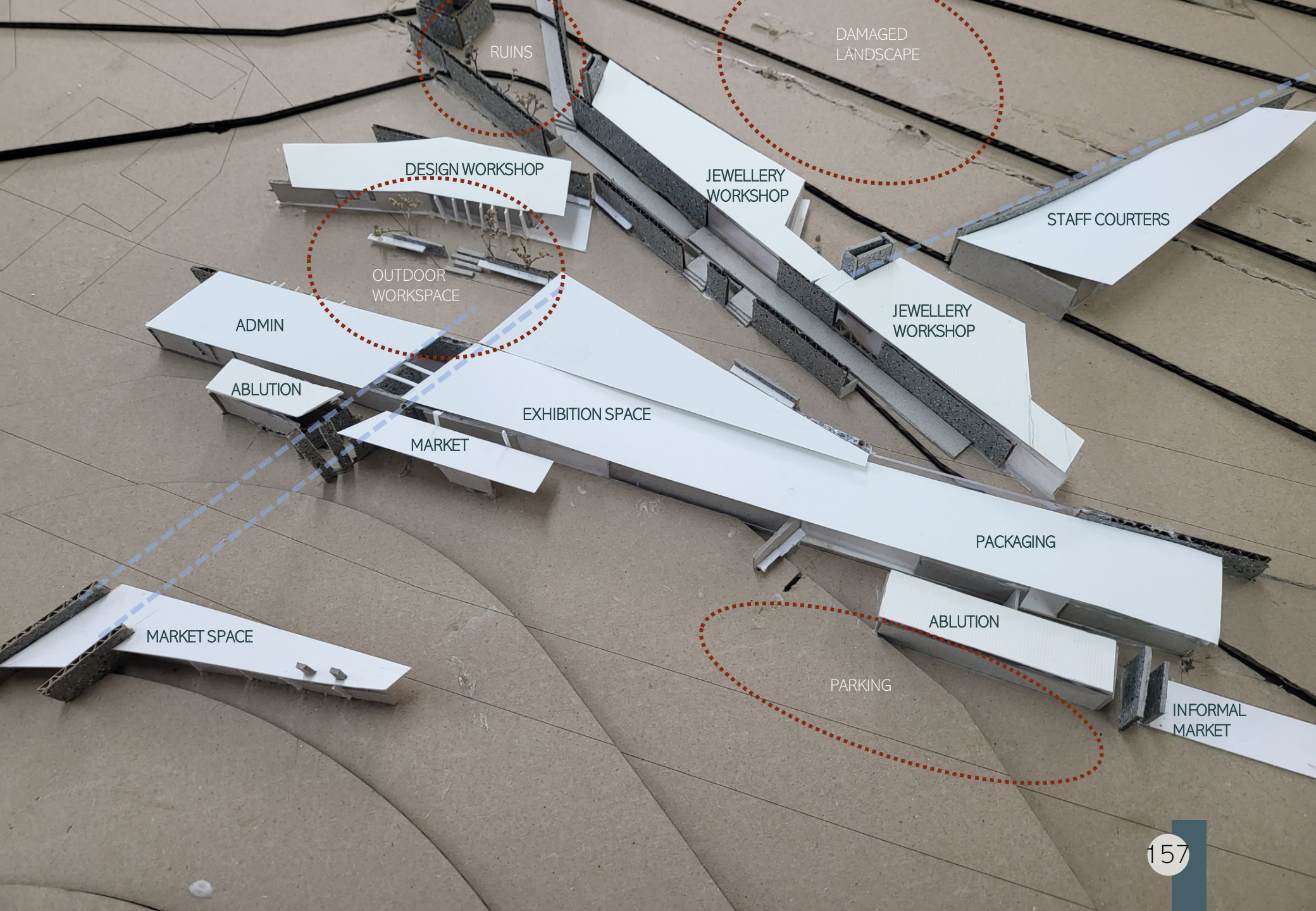
The jewellery design facilities are organised as private spaces attached to the stone walls. The design workshop offers a library and computer lab. On the other side of the walkway, a thick stone wall separates the public from the private functions. With two access points, the jewellery workshops are organised along this wall, making to-and-fro movements easier in a narrow space. The workshop opens up towards to north, providing intriguing views of the mountain and mine heaps. A private courtyard provides space for the jeweller's to take a lunch break and to gather. Picking up on the lines of the building, another fragment is located towards the north-east side of the building, namely a skills development centre and staff courters.

The design proposal is all about the landscape. The buildings therefore opens itself towards the landscape and frames different views of the damaged site.

Figure 228 (right): Moments captured of the spatial arrangement (author, 2022).

Figure 229 (adjacent page): The spatial arrangement as shown on the model (author, 2022).





RUINS

DAMAGED LANDSCAPE

DESIGN WORKSHOP

JEWELLERY WORKSHOP

STAFF COURTERS

OUTDOOR WORKSPACE

ADMIN

JEWELLERY WORKSHOP

ABLUTION

EXHIBITION SPACE

MARKET

PACKAGING

MARKET SPACE

ABLUTION

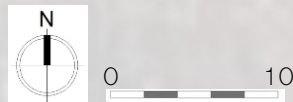
PARKING

INFORMAL MARKET

7.5 Final Design Proposal







**GROUND FLOOR**

Figure 230 Ground floor plan and its functions (author, 2022).





Figure 231: Perspective of the exterior of the packaging facilities. Glass walls with a corten steel louvre system opens up towards the central courtyard (author, 2022).



Figure 232 : The interior of the jewellery workshop opens up towards the landscape, looking out onto the mine heaps (author, 2022).



Figure 233 : Interior of jewellery workshop (author, 2022).



Figure 234 : Perspective of jewellery workshop's exterior opening towards the mining remnants (author, 2022).

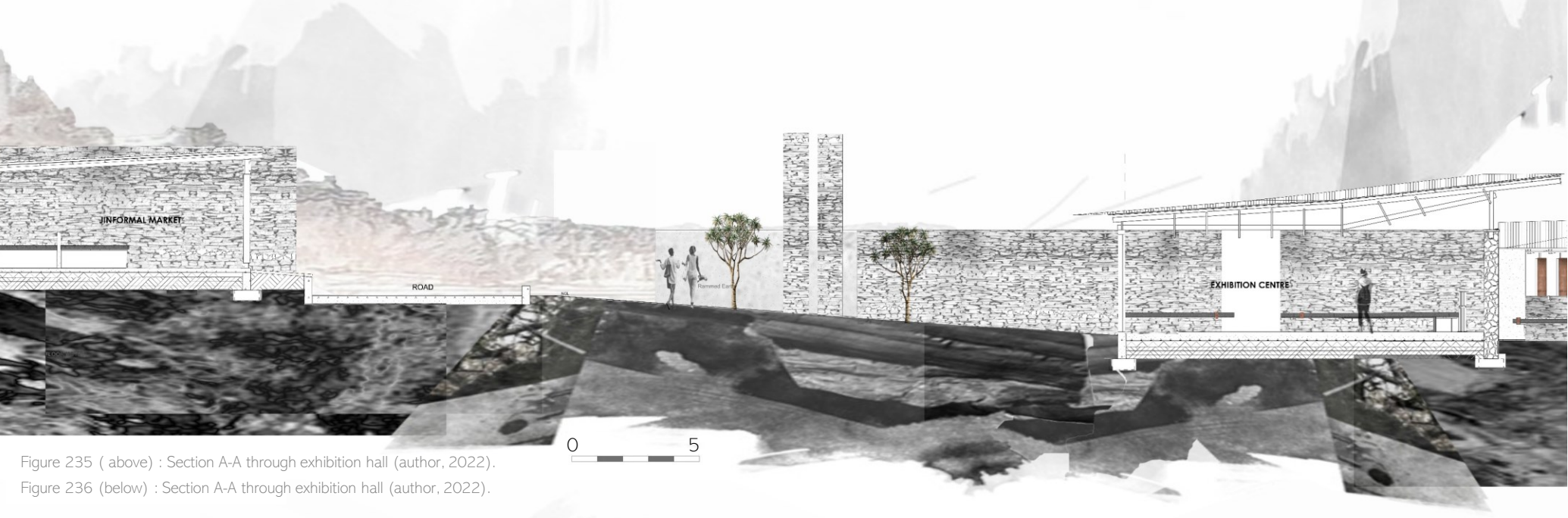
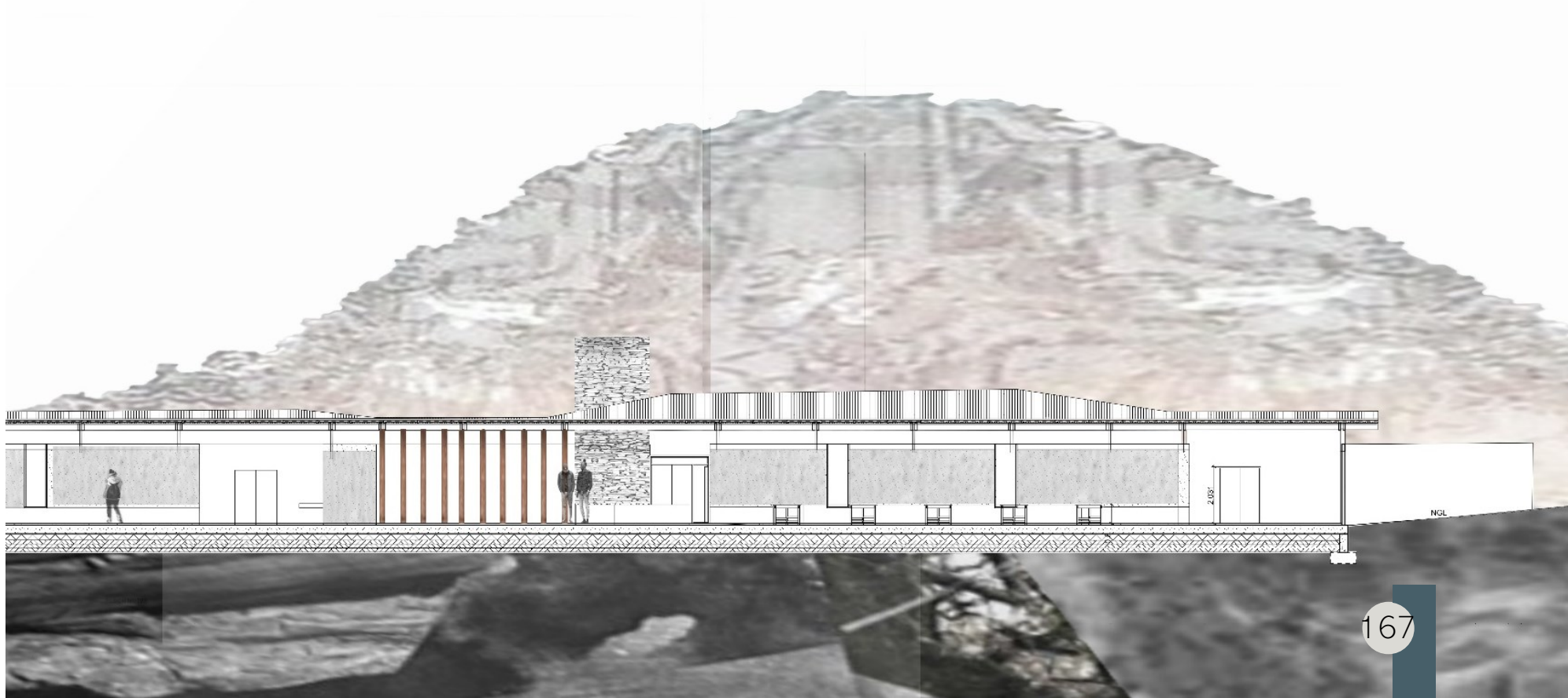


Figure 235 ( above ) : Section A-A through exhibition hall (author, 2022).  
 Figure 236 ( below ) : Section A-A through exhibition hall (author, 2022).







SOUTH ELEVATION

Figure 237 (above) : South Elevation (author, 2022).

Figure 238 (below) : North Elevation (author, 2022).



NORTH ELEVATION



Figure 239 : Entrance to the building with the mining landscape in the background (author, 2022).

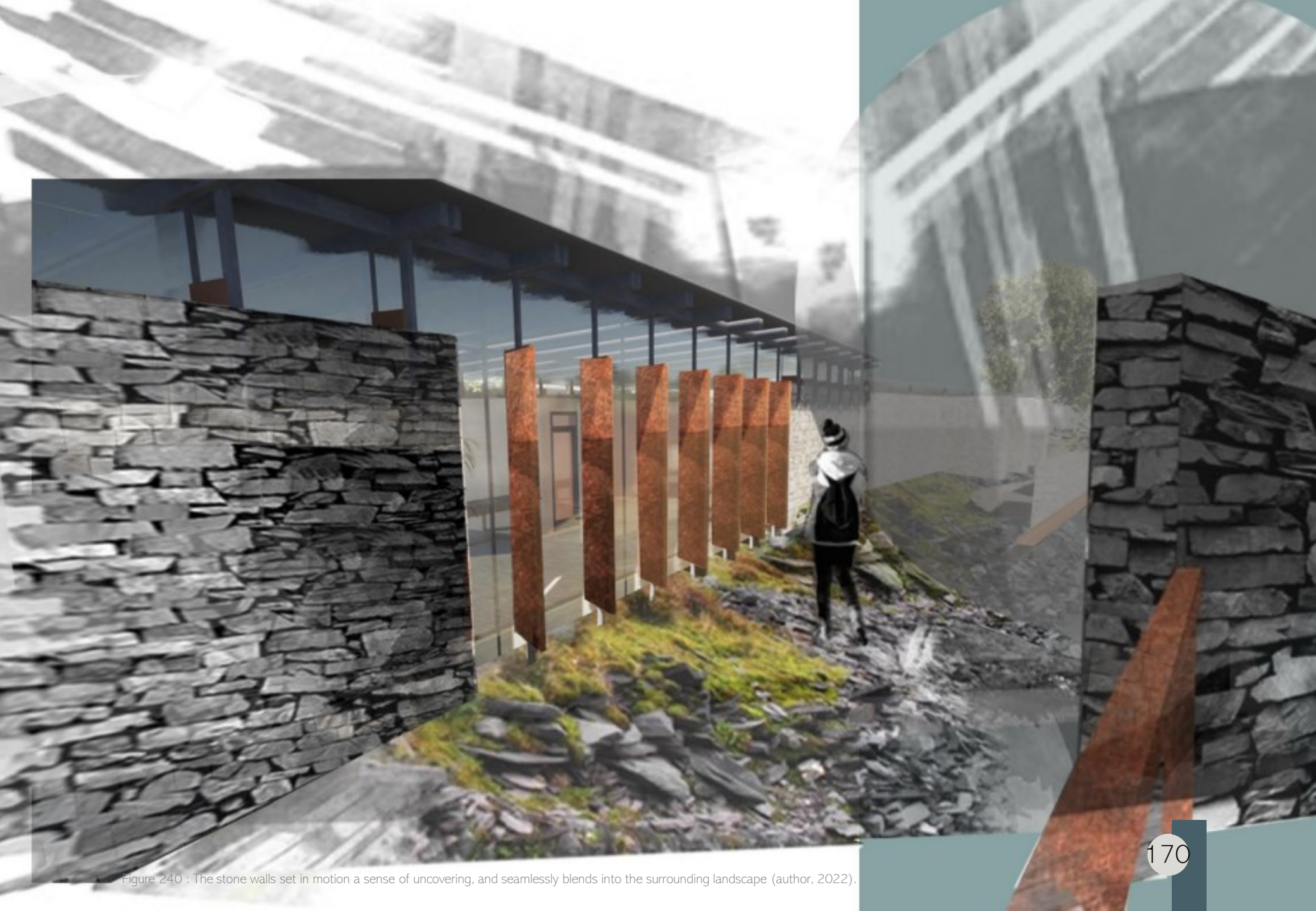


Figure 240 : The stone walls set in motion a sense of uncovering, and seamlessly blends into the surrounding landscape (author, 2022).



Figure 241 : interior of the design workshop shows the roof structures exposed, contributing to the aesthetic of the design (author, 2022).

## Structural Detailing

Although the roof designs consist of a simple formal assembly of mono pitched roofs, the interiors of the spaces become layered with different residues. Referring back to the protective layers of patina, the roofs over the spaces become an ensemble of different layers. The structural roof systems are exposed and the structural system can therefore be defined as explicit expression. To create a softer and warmer atmosphere, a suspended ceiling of timber sections filters light into the design workshop.



Intricate connections between the wall and the roof creates a sense of craftsmanship within the spaces. Inspiration is taken from jewellery connections to create intriguing joinery.

Figure 242 (top right): A layering is present within the design workshop interior (author, 2022).

Figure 243 (bottom right): Intricate connections between the wall and roof in the jewellery workshop inspires creativity within the space (author, 2022).



The thick stone walls serves as engravings in the landscape. The walkway leads all the way to the big hole of Nababeep at the edge of the mountain. Along the way, seating opportunities are provided against the stone walls, allowing visitors to take in the intriguing and complex landscape.

Figure 244 (top right): Seating opportunities along the stone walls (author, 2022).



The walkway along the jewellery workshop are lined with indigenous vegetation such as bright green shrubs and quiver trees. A steel structural system, separate from the wall enclosures, carries the roof. By fragmenting the spaces, a sense of juxtaposition and reconnection is introduced.

Figure 245 (bottom right): Separate steel column system (author, 2022).



The sculptural walkway leads visitors through a series of ruins. Social gathering spaces scattered among the remnants provide space for pondering and remembering. New corten steel structures are layered over the old concrete structures as scabs over a wound.

Figures 246- 248: The sculptural walkway leads to the remnants with alternating social spaces scattered in between. (author, 2022).





Figure # (top right): Creating opportunities along the stone walls (author, 2022).

Figure 249: Interior of the exhibition centre (author, 2022).

Inspired by the work of Carlo Scarpa at the Castelvecchio Museum, the exhibitions are designed in such a way to showcase the honesty of materials and the intricate joints between them. The roof trusses remind of jewellery connections while light is reflected off the hammered copper ceilings.

Several exhibitions are scattered throughout the space, allowing different stones and specimens found in the area to be exhibited for visitors to see.

Figure 250 (right): The hammered copper ceilings are attached to the trusses (author, 2022).





Figure 251: The informal market space along the road provides space for members of the community to exhibit their crafts (author, 2022).

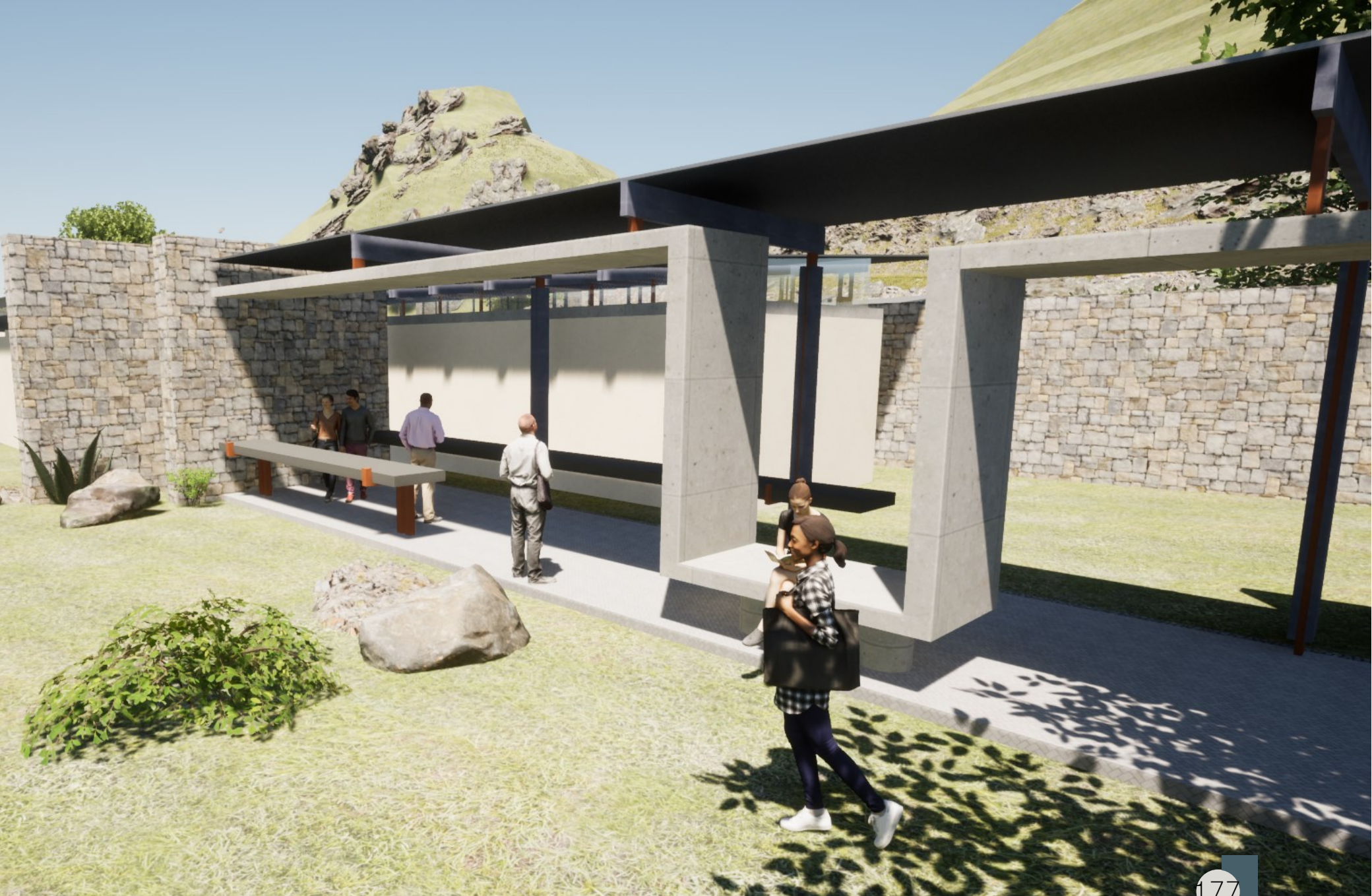
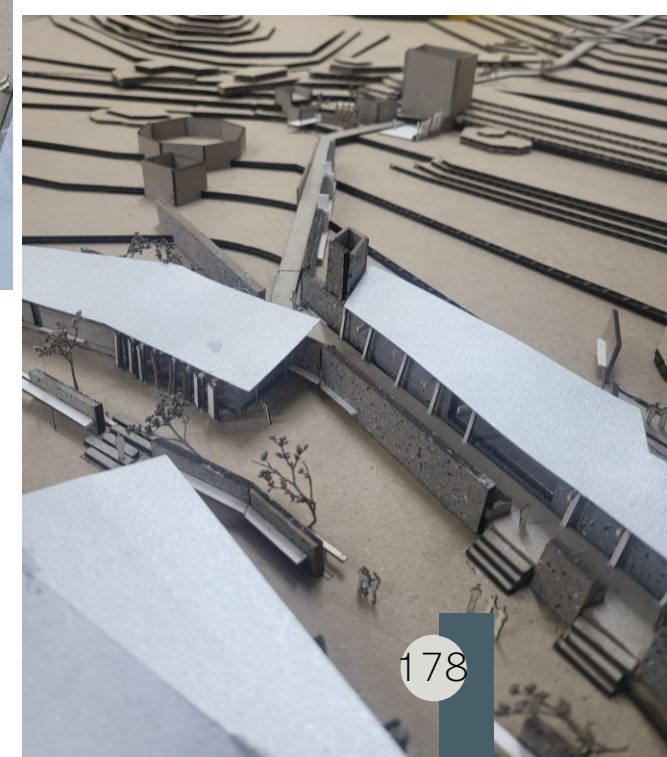
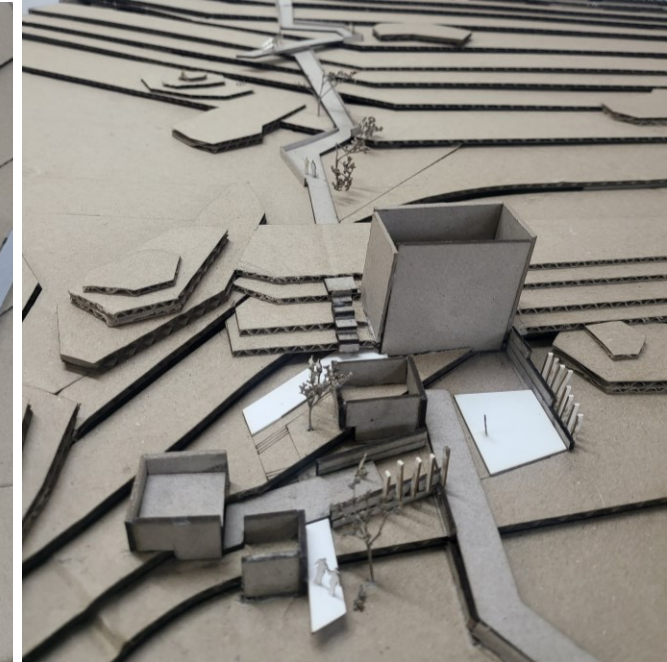
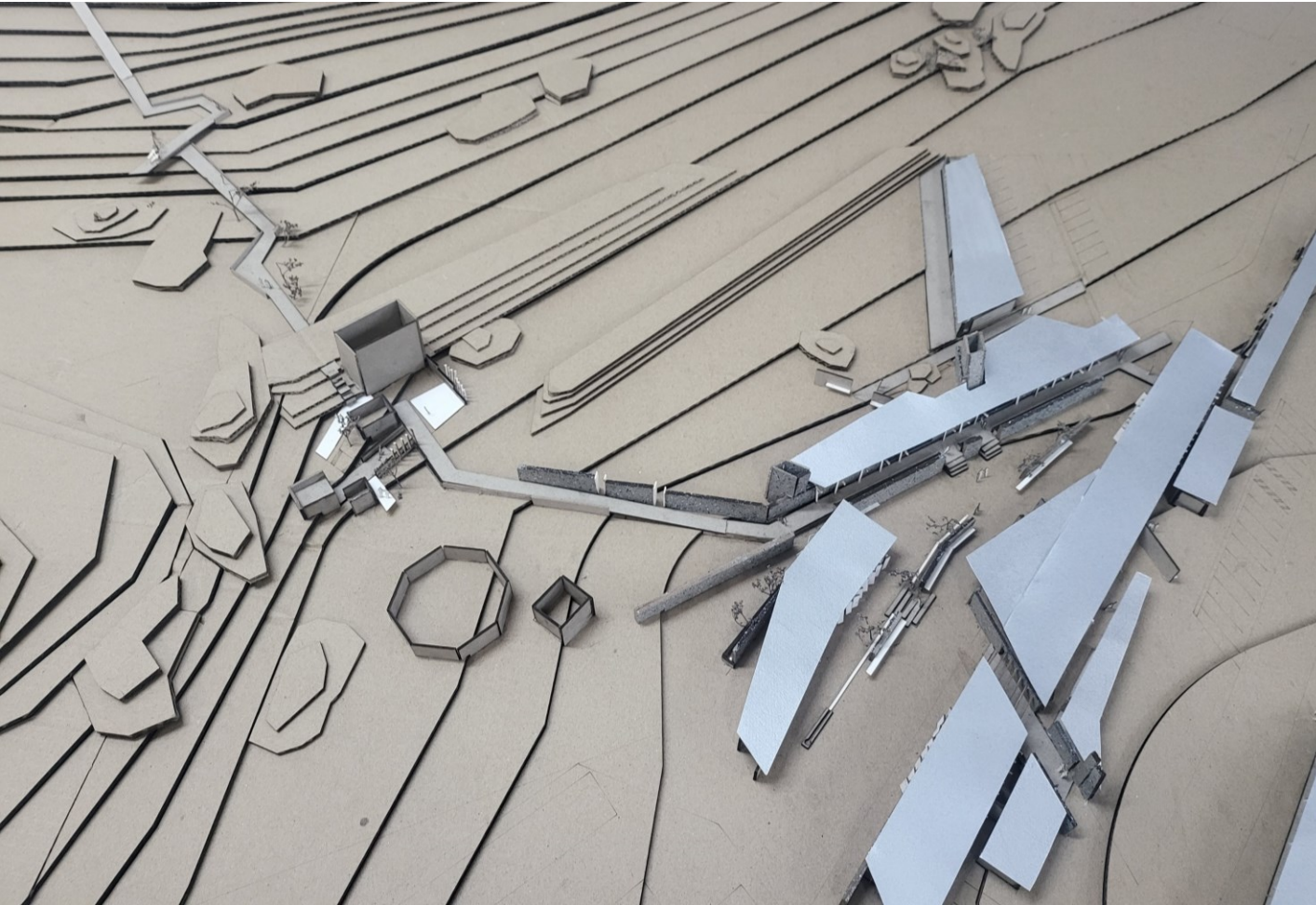


Figure 252: The informal market further provides seating opportunities along the edge of the road, providing social gathering spaces (author, 2022).



The final model shows the design proposal as a series of sculptural pavilions lying in the landscape, organised along the contours of the site to blend into the landscape. The walls act as engravings in the damaged landscape and organises the different fragments.

The sculptural walkway leads visitors from the courtyard towards the mining remnants where different social spaces are fitted in between the ruins. The walkway further leads the visitor over the mine heap towards the big hole in the side of the mountain, zig zagged between different rocky outcrops, careful not to cause further damage to the scarred landscape.

Figure 253-255 : Final design proposal shows buildings as fragments in the landscape and the sculptural walkway leading the visitor through the scarred site (author, 2022).

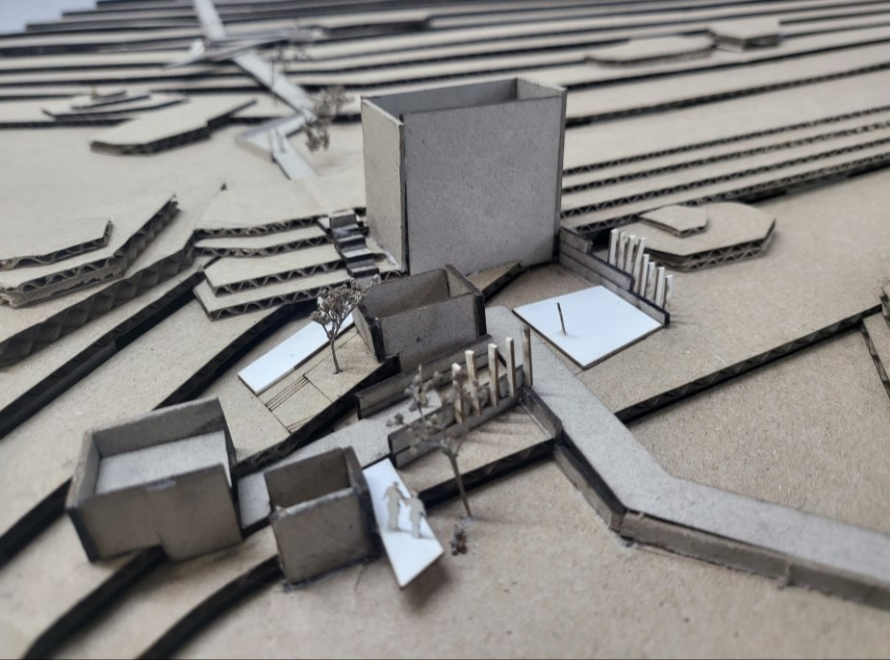


Figure 256 : Mining remnants with new design interventions (author, 2022).



Figure 257 : Stone walls set in motion a sense of movement through the site (author, 2022).

Figure 258 (right) : Buildings as fragments (author, 2022).



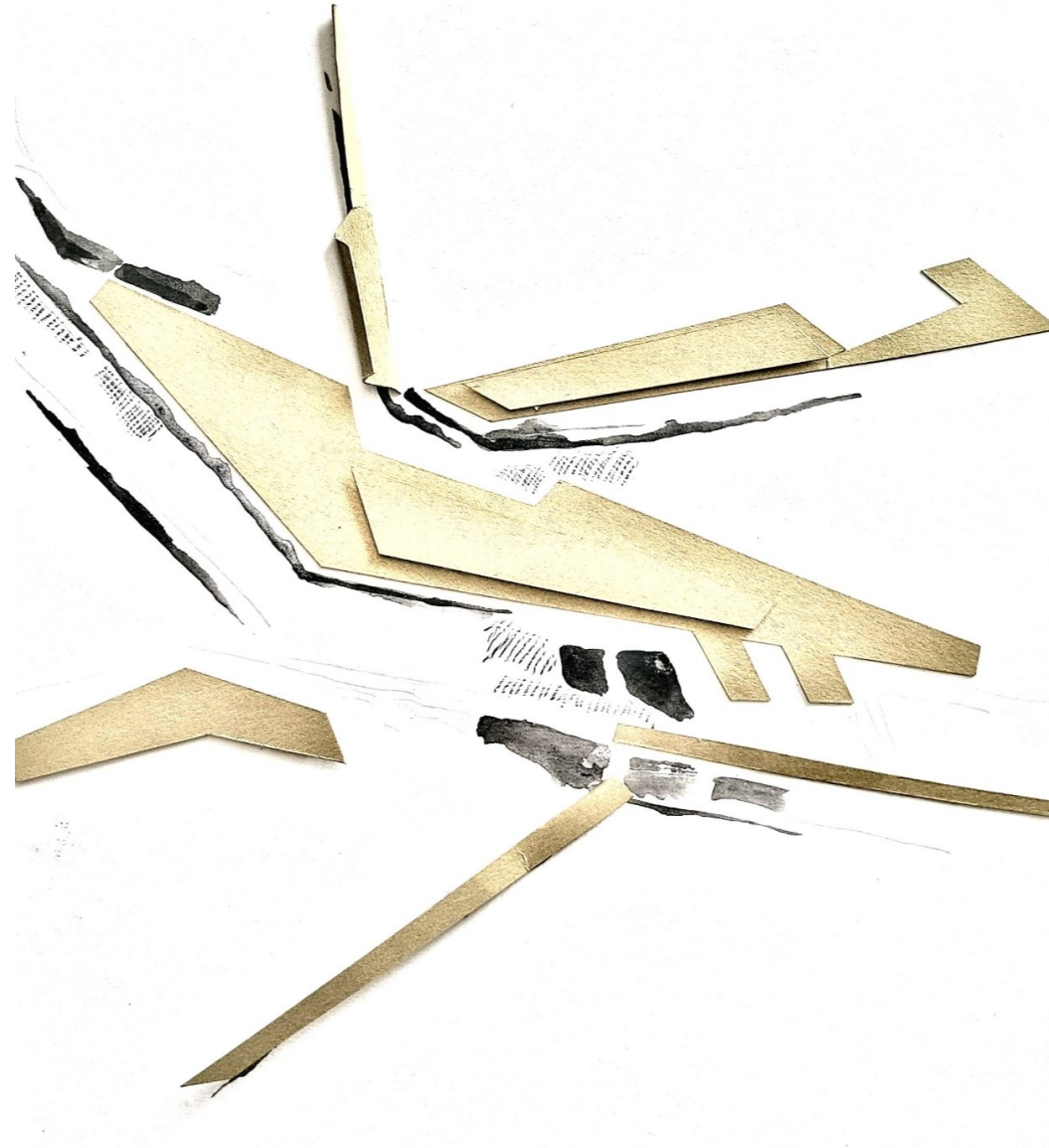


## 7.6 Conclusion

The first conceptual approaches to the building, namely (1) ordering the landscape, and (2) healing the site, have provided very useful in the design response. By applying the idea of fragmentation as a way of ordering the landscape, different fragments of spaces were created and then forming connections between them, Organised as a series of pavilions, fragmented to blend into the landscape, the design promotes horizontality in a stratified topography.

The second concept of healing provided insight in how the new design interventions can fit onto the landscape. The interventions are layered over the site, becoming poetic interpretations thereof- the new responding to the old. The concept of healing was also introduced in the interiors of spaces. By layering different materials over one another, the space becomes an ensemble of different influences. The following chapter will take a closer look at the technical resolution of these concepts.

Figure 259: Scabs in the landscape(author, 2022).



# CHAPTER 8- TECHNICAL RESOLUTION

## 8.1 Introduction

## 8.2 Environment and Micro-Climate

### 8.2.1 Climate & Landscape Typology

### 8.2.2 Topography

### 8.2.3 Typology

### 8.2.4 Site Analysis

### 8.2.5 Soil conditions

## 8.3 User Behaviour, Socio & Economic Profile

## 8.4. Spatial Planning and Enhancement

### 8.4.1 Spatial planning

### 8.4.2 Landscaping

### 8.4.3 Horizontal Circulation

### 8.4.4 Parking

### 8.4.5 Storm Water Control

## 8.5 Building Requirements

## 8.6 Structural System

### 8.6.1 Type of structure

### 8.6.2 Material choice

### 8.6.3 Detailing

### 8.6.4 Climatic response

### 8.6.5 Responsibility of design

## 8.7 Technical Drawings

## 8.8 Conclusion



## 8.1 Introduction

The technical investigation is a significant part of the design process as it explores the influences the location of the site and has on the project. The environment and micro-climate in which the project finds itself not only influences the climatic response and material use, but also the typology of the design. Another important factor that influences the design of a building is the proposed users and their requirements, as well as the socio & economic profile. All of these factors actively contribute to the overall functionality of the structure. These conditions are imperative to the design resolution.

## 8.2 Environment and Micro-Climate

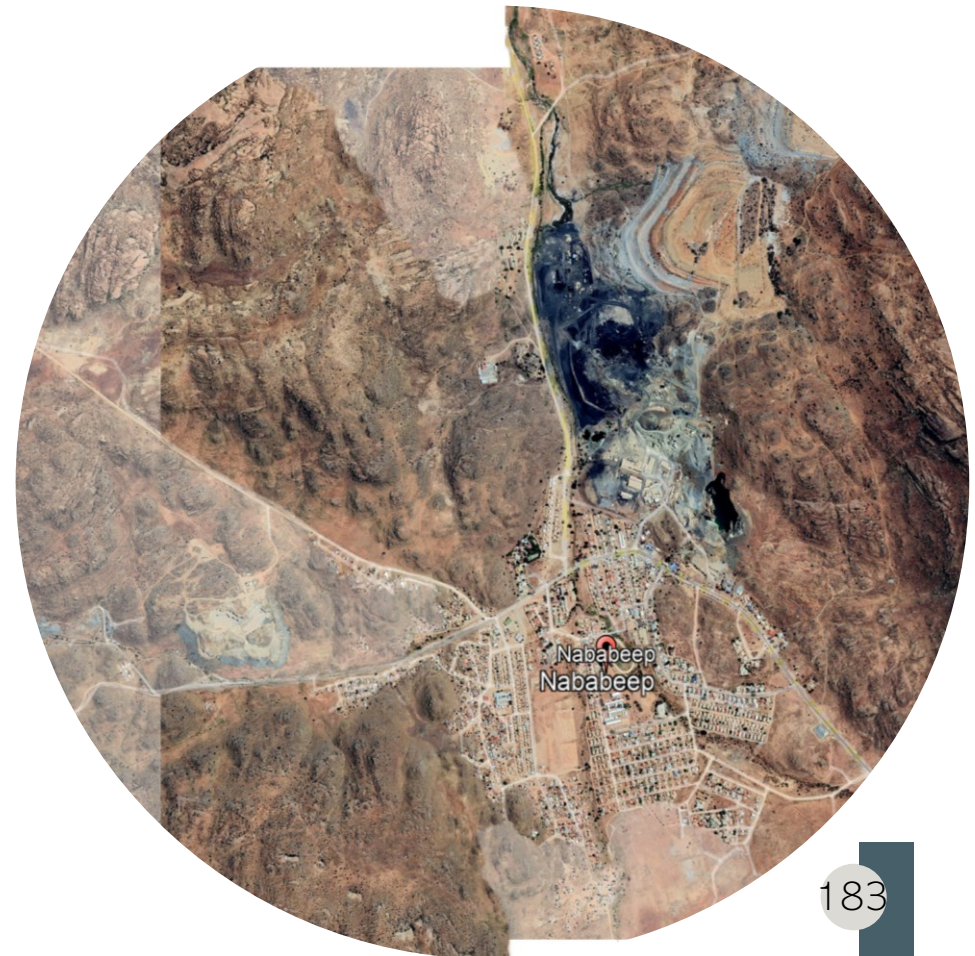
### 8.2.1 Climate & Landscape Typology

The town of Nababeep is located in the Kamiesberg Region of Namaqualand, a semi-desert terrain with a total of 50mm of rain per year. With its severe temperature swings, summer is extremely warm while winter is extremely cold. Described as semi-arid, it suggests that the rate at which water evaporates from the surface of the ground is marginally higher than the rate of precipitation. The vegetation of the Kamiesberg Region is adjusted to the dry climate so as to store water to outlast the dry parts of the year. Rainfall is usually between August and September.

As already mentioned, the landscape typology can be classified as a complex landscape, a mixture between a classical landscape and a cosmic landscape (Norberg-Schulz 1980). The architecture of a complex landscape can be classified by thick walls anchored into the earth while towards the sky, the structure becomes lighter with floating roofs.

Figure 260: The town of Nababeep (author, 2022).

The technical chapter will explore all the practical factors that influenced the design and will also look at the structural system through the theoretical lens. Conceptually, the project attempts to build upon the ruins and scars of the site in order to heal it. The theoretical approach should be reflected architecturally through the design's structural considerations



## 8.2.2 Topography

Nababeep is located among several hard granite hills with an altitude of more or less 840 m above sea level. The topography of Nababeep can be classified by a sloped landscape towards the ocean with various hills ranging from small rocky hills to big granite mountains. The landscape can further be classified by its rocky ground surface with occasional green shrubs. Indigenous quiver trees are also scattered on the slopes of the mountains.

With regard to the site itself, it is located on a relatively flat surface along a road. The site consists of several mine heaps of discarded ore. These heaps will form the backdrop to the design and will serve as boundaries to the site. The site runs all the way to the big hole in the mountain's side, which serves as the edge of the site. The mountain is located on the north-eastern side of the site, sloping down to the south-western side. On the other sides, steep rocky hills become natural boundaries to the project, which may cause drainage problems for the proposed structure. There are currently no municipal storm water run-off drains on the site. The design will therefore need to accommodate storm water in a way that it does not cause damage to the proposed building.

## 8.2.3 Typology

The typology of the houses of Nababeep are classified as mining houses, typically of gable roofs. Most of these houses were constructed at the same time when the mine was founded and can be classified as low-income, single-storey houses, constructed of brick walls plastered and painted, with corrugated roof sheeting. Most of the houses are fenced off by wire fences and possess a small garden along the edge of each house. Almost all of the houses also consist of a small front porch, sheltering the interior from the harsh Northern Cape sun. The church is the only building that stands out among the rest with a big gable roof that stretches almost to the ground.

Because it is a small town with relatively ordinary single-storey houses made of affordable and standard materials, the design will need to fit into the typology and cannot stand out among all the buildings. The design needs to be of simple construction, speaking the same language of the town but in a more sophisticated manner.



## 8.2.4 Site Analysis

### (A) Existing structures

There are several concrete remnants on the site, including concrete foundations of removed buildings, scattered staircases, buildings left in ruins, different platforms, concrete gutters as well as old mining apparatus. The ruins of these remnants can be used to build new structures upon them- the new translating to the old. As a responsible designer these remnants are kept in place and recycled into new design interventions.

### (B) Access to site

The site is located along a primary tarred road (marked in blue on figure #) that leads into town. The site (marked in red) for the proposed design is located on both sides of the road. A gravel road diverges onto the site and leads all the way to the big hole, as well as the mining grounds. This gravel road will be used for deliveries and access to the site for personnel parking. Parking will be incorporated on the side of the tarred road, careful not to disturb the landscape of the site further.

### (C) Orientation

The site faces north-west, and the building can therefore be organised along the road so as to make use of the Northern light. Figure # show the orientation of the building in white.

Figure 261 (left): The layout of the town and location of the site (author, 2022).

Figure 262-264 (right): Existing structures on the site (author, 2022).



## 8.2.5 Soil conditions

The site consists of a rocky ground with several big and small rocks scattered throughout the site. Some of these rocks are copper ore or quartz discarded by the mine. Fine gravel on the site also shows remnants of dark green ore glistening in the sun. Heaps of discarded tailings on the site are evidence that the land has been upended. There exists the opportunity to re-use these discarded rocks in the design through the construction of stone walls, further allowing the building to seamlessly blend into the rest of the landscape. Fine gravel is also used within the design along the edges of the buildings, separating the walls from its platforms.

Taking a look at the rest of the town, several surrounding hills have also been turned upside down. Layers of different coloured ground are extracted from deep within the earth. There exists the opportunity to incorporate these different colours of sand into the design through constructing rammed earth walls. These walls also tell the story of the landscape and its layers of history.



Figure 265 (top): Gravel found on the site (author, 2022).

Figure 266 (bottom): Layers of coloured earth (author, 2022).

### 8.3 User Behaviour, Socio & Economic Profile

The primary function of the proposed project is to provide employment and future opportunities for the people of NababEEP. The residents of the town are severely impoverished. The project hopes to create a space where locals can sell their crafts to passing tourists. The skills development centre hopes to empower the people of NababEEP to take their lives into their own hands and to further pass down jewellery design and marketing skills. By promoting the compulsive creativity of the people of South Africa, the project hopes to inspire a sense of ownership among the people- the building and informal markets are given to them.

By employing local labourers to construct the building, the idea is to involve the community in the project. By this involvement, a sense ownership may be developed among the users of the Jewellery Manufacturing & Design Centre. The design encourages all members of the community to tell their stories to the rest of the world by creating jewellery that speaks of the copper wonder of Namaqualand.

The different functions are organised along these stone walls as separate fragments. The layout of the buildings is determined by the different processes of jewellery design, namely:

- (1) Design
- (2) Cutting and forming
- (3) Refinement
- (4) Cleaning
- (5) Packaging & branding

### 8.4. Spatial Planning and Enhancement

#### 8.4.1 Spatial planning

The landscape is integrated into the design. The proposed design uses the ruins on the site to augment the function of the proposed project by allowing the visitor to uncover the stories of the site by discovering its different layers one by one. The new design interventions on the site are in conversation with the landscape. Exploring these fragments one by one, allows the visitor to come in contact with the stories of the site and its different scars. By using the mine heaps as backdrops to the site, the user is brought into dialogue with the damaged earth. A sculptural walk (marked in red in figure #) connects the town to the old mining ruins, commemorating the forgotten stories through the landscape.

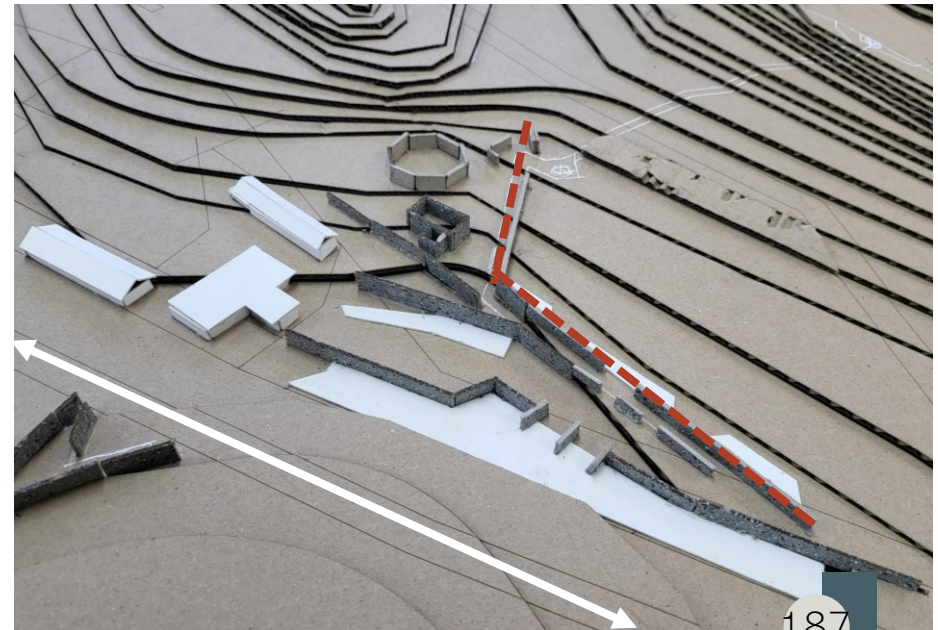
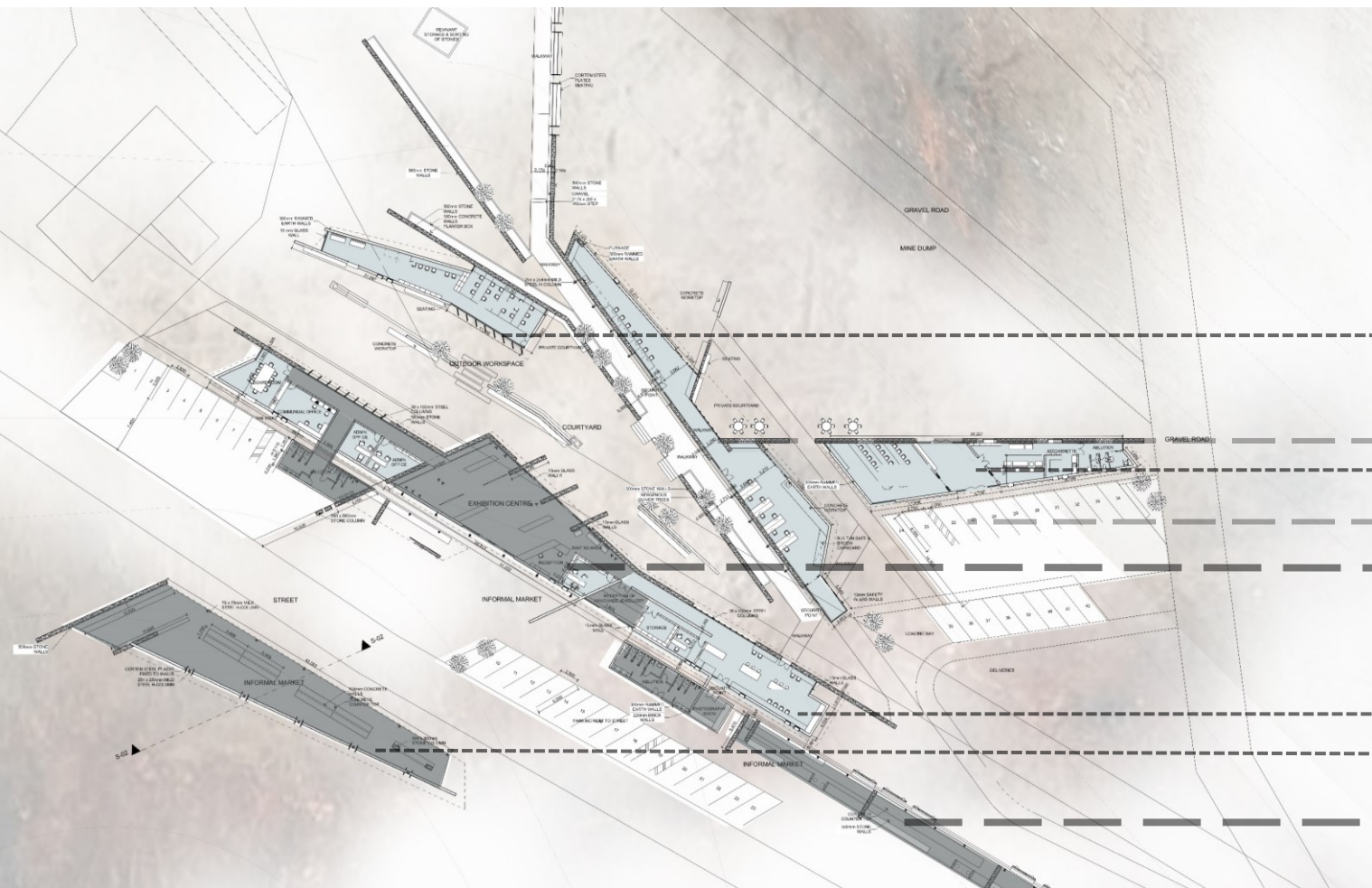


Figure 267 : The floor plan is organised as different fragments (author, 2022).

Benches along the walkway allows for seating opportunities and gathering spaces among the ruins, allowing the visitor to fully engage with the animated landscape.

The thick stone walls are used in such a way as to separate public and private functions from each other. Each fragment accommodates a different function. The difference between public and private spaces are demonstrated in the following figure; public spaces marked in dark grey, and private in blue.

Figure 268: The difference between public and private spaces (author, 2022).



DESIGN WORKSHOP

Jewellery workshop  
SKILLS DEVELOPMENT

staff parking

EXHIBITION CENTRE

PACKAGING & BRANDING

informal market

INFORMAL MARKET

## 8.4.2 Landscaping

Several indigenous vegetation is introduced onto the site. The landscaping extends from the footprint of the structures in a more organised manner, finally disintegrating into the natural landscape. Indigenous trees are introduced in linear rows along the stone walls, and finally dissolve into the disorganised landscape. The discarded tailings of rocks are incorporated into the spatial planning and becomes a landscaping element. The courtyard in the middle of the facilities allow the visitor to gain insight into the process of jewellery manufacturing.

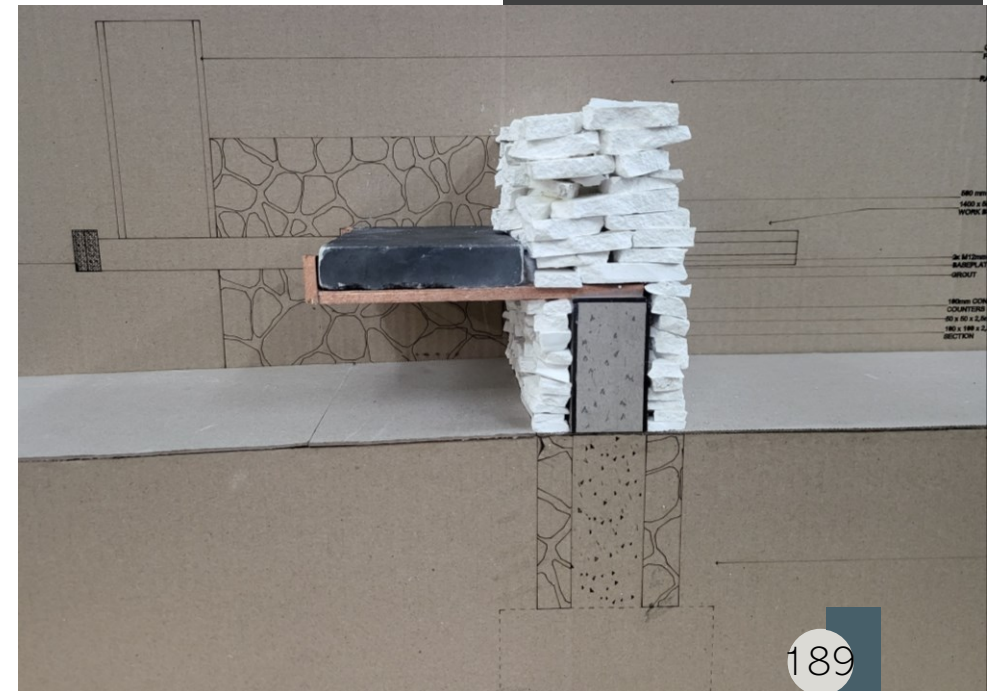
An outdoor workshop located in this courtyard allows members of the community or public to craft their own jewellery with leftover materials. Work benches rest on natural rocks while weathered steel plates along the edge of the stone walls become water features. The worktops are made of concrete with a black dust from the mine heaps used as an aggregate, further reworking leftover materials from the site.

Figure 269 : Workbenches rest on rocks (author, 2022).

Figure 270 (bottom) : A section model of the concrete worktops (author, 2022).

## 8.4.3 Horizontal Circulation

The horizontal circulation separates public from private users of the building, namely staff, employees, jewellers, and students. Different platforms further separate public from private. The sculptural walkway is mainly used for tourists while many other walkways serve as linear circulation routes for staff.





#### 8.4.4 Parking

A total of 42 parking spaces are organised as pockets around the site. The majority of the parking is located along the tarred road, allowing for easy access to the entrance of the exhibition centre and the informal market.

The staff parking is located near the skills development centre with a separate delivery zone where loads of materials and gemstones can be dropped off and easily carried to the packaging facilities as well as the jewellery workshops. Provision for bus and taxi drop-offs is also made for employees and visitors to the skills development centre. The parking spaces adhere to SANS 10400-D: Public Safety.

#### 8.4.5 Storm Water Control

Because of the slope of the site, provision is made for storm water from the mountain to be carried away from the buildings. The water is carried to the side of the road where it falls into municipal gutters.

Because of the low rainfall of the area, the design makes use of thin weathered steel gutters attached to the underside of the structural beams of the roof structure. These intricately designed roof gutters becomes a sculptural addition to the roof structures.

Figure 271 : Corten steel gutters are attached to the underside of the steel beam (author, 2022).

## 8.5 Building Requirements

The Jewellery Manufacturing & Design Centre accommodates a variety of different users and functions. Each of these spaces have their own requirements, as set out in chapter 3.6 (Case Study- Valentino Jewellery Studio & Goldsmith Academy). The design responds to each of these needs and can be seen in the interiors of these different spaces.

### (A) Design Workshop

The design workshop and library are meant to be a peaceful and quiet space where students can draw and research designs. Adequate storage is needed for the library, as well as tables for the workshop. Clerestory windows offer sufficient light whereas the timber slatted ceiling filters the light through to create a soft light within the space. Corten steel plates are fixed to the rammed earth walls, creating window seats where users can sit down to read a book.

Figure 272 : Corten steel window seats (author, 2022).



### (B) Jewellery Workshop

The jewellery workshop requires special built-in jewellers' benches. Each employee/student has their own bench and their own hand-held tools. Each desk also requires its own storage. The design provides storage built into the stone walls. Clerestory windows on both sides of the workshop provides adequate lighting needed for crafting jewellery. A long built-in bench is provided for all larger equipment that are shared amongst the students. All desks are arranged parallel to this bench, allowing to-and-fro movements between them without students colliding into each other. A built-in basin next to the smeltery makes it easier to work with hot metals. The jewellery workshop is split into two parts, separating beginner and advanced students from each other. Each side has its own smeltery and washbasin. The oxygen tanks for the smelteries are located on the outside of the building in metal cages, as per requirements. By arranging the jewellery workshop in a linear form, it promotes easy access within the space. Each space make room for 3 fire extinguishers and emergency kits, as well as fire blankets.

Figure 273 : The jewellery workshop is arranged in a linear form, allowing for to-and-fro movements within the space (author, 2022).



### 8.3.2 Security

Security is an important requirement when working with jewellery. The jewellery workshop is secured by separating it from the rest of the facilities by a thick stone wall. The wall separates private from public space and only opens up to two access points with control access that leads into the workshop. These glass wall entrances are made of 10,38mm laminated safety glass.

## 8.6 Structural System

### 8.6.1 Type of structure

The structural system of the proposed design is a mixture between stereotomic and tectonic systems. The structural system consists of loadbearing stone walls or rammed earth walls with a lighter steel structure roof. The stone or rammed earth walls are anchored in the earth while sculptural roofs seem to hover above the walls. Because the design consists of different fragmented spaces, different structural templates were designed that is alternated throughout the spaces.

At certain spaces, the roof is carried by loadbearing steel columns that rests on the stone walls, along with a galvanised steel window frame with tempered glass infill according to engineer's specifications to support the roof structure. At other spaces the structural roof system is separated from the enclosure system and is supported by its own steel structure on the exterior of the building. Careful attention was paid to the detailing of the walls' edges and the resolution of the roof system.

Within the workshop, there are two safes located where students and employees can store their creations and other materials at the end of the day. Each person has their own compartment and when the next workday begins, they can again retrieve their goods from the safe.



Figure 274 : The structural system consists of stereotomic walls and floating roofs (author, 2022).

The structural system of the design can further be classified under the term “structural expression” or “explicit expression”, as described in the article Structure and Ambiguity by Peter Wiederspahn. This type of construction can be described as a structure that visually makes evident the forces in its structural form (Wiederspahn, :135). In other words, the design makes its structural form known and the image of the building is determined by it. The proposed design showcases a series of different structural connections and makes it known how the building is constructed. For instance, the beams and supporting columns are left exposed. The beauty of the design lies in the assembly and joinery of different materials such as steel, copper and weathered steel. The structure of the building is therefore exposed and provides an aesthetic quality to the building.

#### (A) Stereotomic Structure

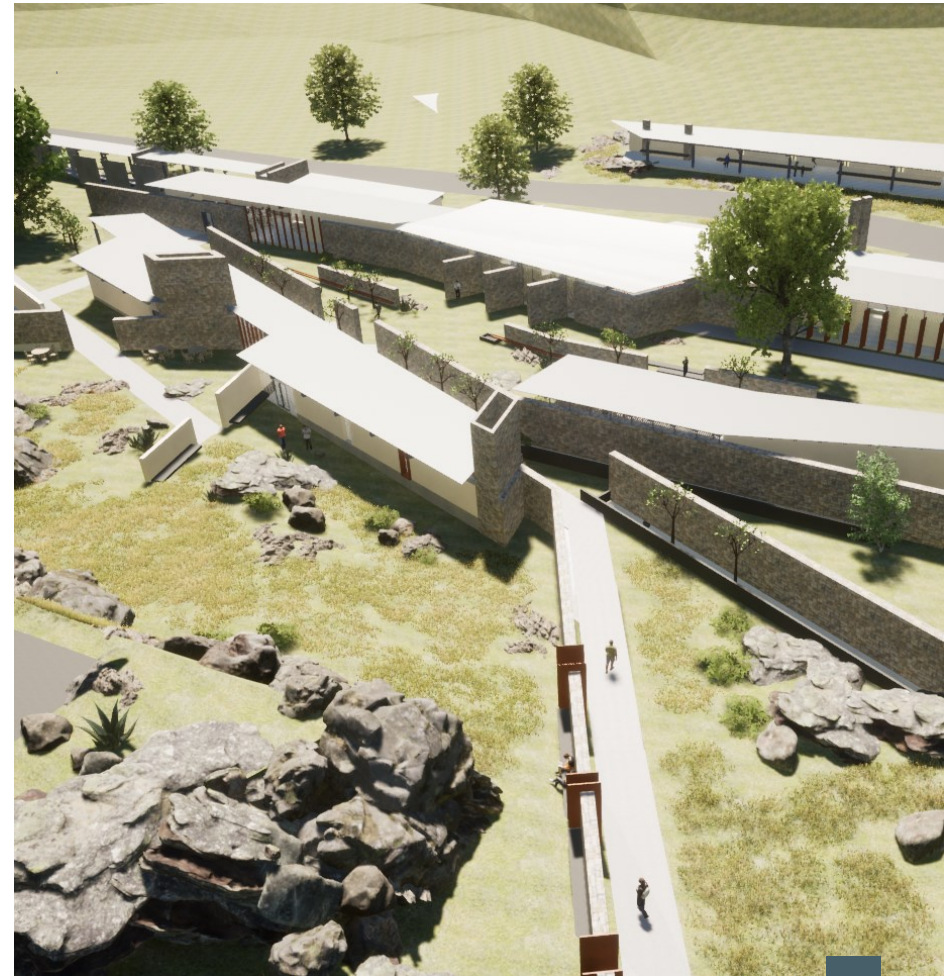
The bulk of the building comprises of solid stone masonry constructed iron stone alternated by quartz found on the site. The linear form of the structure is emphasised through 620mm thick stone walls anchored in the earth. These walls become a guiding element in the design with the facilities attached to these walls.

The stone walls are alternated with 350mm thick rammed earth walls with corten steel plates fixed to the edges of the walls that forms window seats. A 200mm concrete ring beam is fixed to the top of the rammed earth walls ensuring that the walls don't become damaged by water exposure. The structural roof system is then fixed to this ring beam.

Figure 275 : The spatial organisation of the design with stone walls as the stereotomic structure and lighter steel structures to support the roof (author, 2022).

#### (B) Tectonic Structure

The tectonic structure consists of the separate structural roof systems on the exterior or interior of the spaces. The steel structures, alternated with corten steel joinery, supports a tectonic roof structure, with steel beams and corrugated roof sheeting.



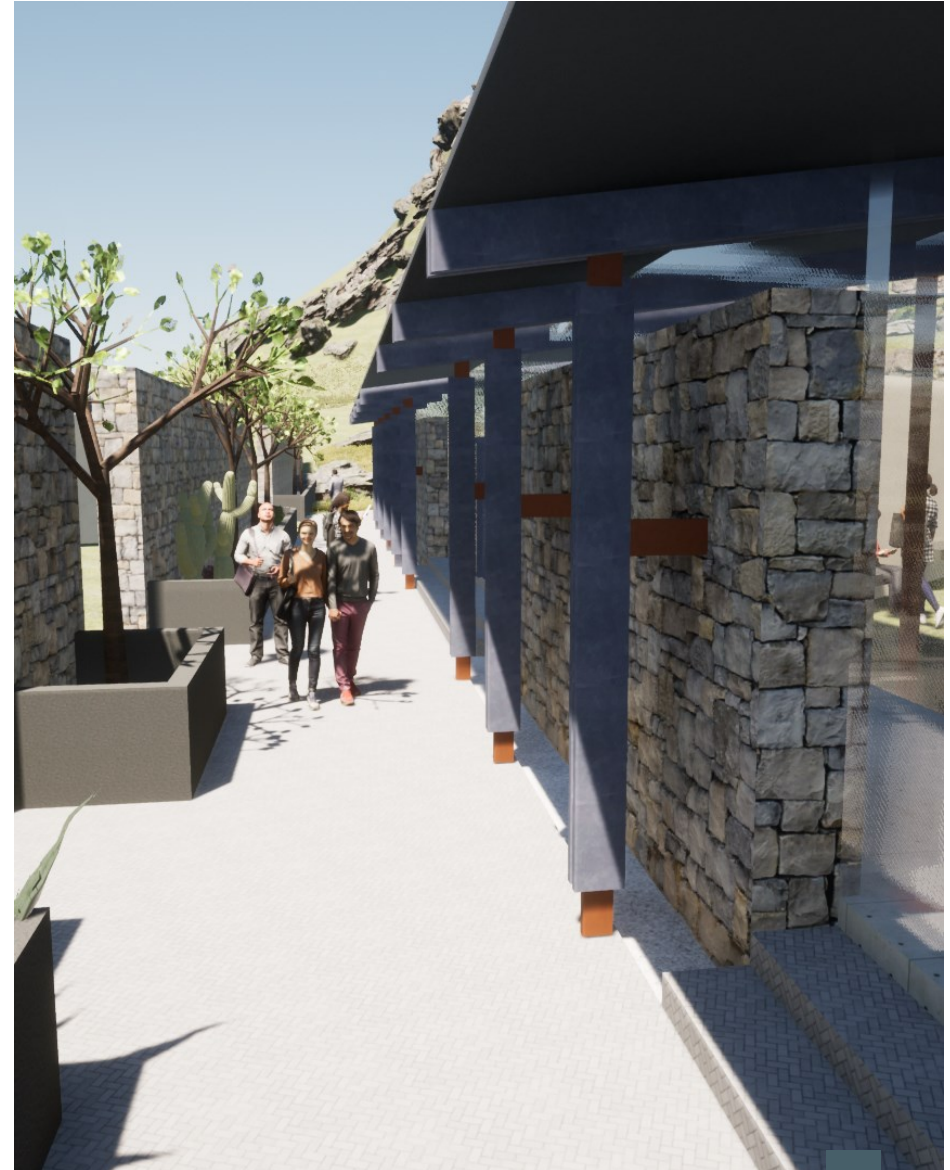
### (C) Roofs

The design makes use of several mono pitched roofs of Chromadek Nu-Rib 762 iron sheets fixed to 100x50x20m/s lipchannel spaced at 1200mm C.C. The roof pitches vary to illustrate different functions within the structure. Because of the typology of houses in the town, the design cannot have extravagant roof structures. A decision was made to rather make use of ordinary low-cost materials and roof typologies, but to incorporate them in a sophisticated manner.

While the mono pitched roofs seem simple from afar, a sense of layering was introduced on the interior of the roofs, referring back to the idea of patina layers. With its sculptural connections and the use of timeless materials, the roofs possess a sculptural quality.

At places, a ceiling of timber sections are suspended from the steel beams in order to filter light through and to create a softer atmosphere in contrast to the exposed steel structures. In the exhibition space, hammered copper ceilings provides a sculptural quality to the space where light bounces off the copper.

Figure 276 : The design makes use of simple mono pitched roofs, known to the area. However, the way it is incorporated in an artistic manner allows for a sense of layering. Different materials and elements are layered so that the steel structural system that carries the roof becomes an ensemble of different joints (author, 2022).



## 8.6.2 Material choice

The choice of materials was carefully considered in terms of cost, appropriateness and maintenance. Referring back to the Steinkopf Community Centre, it was argued that one of the reasons the building was neglected is because the community did not have the funds or equipment for the maintenance of the high ceilings and steel trusses. The ceilings were also extremely high and out of scale to the context, making it difficult to maintain. In considering this, it was decided that the proposed design will make use of simple and generally available materials that is easy to maintain.

### (A) The idea of ownership

In order to promote the idea of ownership, the idea was introduced to involve the community in the construction of the project. Both the construction of stone walls and rammed earth walls are extremely labour-intensive. By involving the community, opportunities for employment are created, further helping the people of Nababeep. Both of these materials can also be considered as timeless materials that will last for centuries. If damage occurs to the walls, maintenance is also easier as local craftsmanship is used. The stone walls also fit into the landscape and relates to other existing stone structures on the site. The local way of construction is applied.

### (B) Patina as materialised time

The design promotes the use of timeless materials and well-crafted structure. In the article *The political significance of materialised time* (Konik, Konik & Mare, 2013) the point is made that the patina layer of copper speaks of duration and memory. In a culture of consumerism of present day, it is very rare to come in contact with materials that have lasted a lifetime, such as copper. In the modern way of consumption, the application of mass-produced products has made buildings cheap and non-durable.

The article introduces the idea of a patina-orientated system of consumption and inspires thought about the idea of timeless materials, that much like copper, ages and grows more valuable over time. In ancient times, patina on copper was a sign of duration, or wealth. Patina cannot be recreated but is rather an indication of fine objects subdued by time (Konik, Konik & Mare, 2013: 135).

In response to this idea of patina, a decision was made to incorporate good and timeless materials into the design- materials that doesn't lose value but rather changes with the building over time. By using well crafted connections and good materials, the lifetime of the building is also lengthened. Examples of timeless materials that were introduced, is corten steel plates and connections, as well as copper clad steel joints at some places. In using these materials, it adds a sculptural quality to the building. As the town of Nababeep will change over the years, the proposed structure will also continuously transform itself over time, much like patina.



Figure 277 : By the use of timeless materials such as weathered steel and well-crafted connections, the building is able to change itself over time (author, 2022).

### 8.6.3 Detailing

Through using timeless materials, the lifespan of the proposed structures is also lengthened. Throughout the design, careful attention was paid to the design of intricate details and connections. Referring back to jewellery manufacturing & design, the connections and joints in the building are inspired by the different techniques of fastening and connecting jewellery. By using timeless materials such as copper or corten steel for these connections, a sense of craftsmanship is introduced to the project.

South Africa possess a sense of compulsive creativity and is rich in craftsmanship. The connections between different materials in the building showcases this craftsmanship and will hopefully inspire new ideas for the designers within the building. The following images show the intricate detailing of the building in relation to previous jewellery explorations.



Figure 278 : An example of intricate wall edge details (author, 2022).



Figure 279 : Edge detail (author, 2022).

### 8.6.4 Climatic response

The thick stone and rammed earth walls also play a role in the thermal performance of the building by sheltering the cellular spaces from the harsh desert sun. The buildings are further sheltered from harsh light by keeping the openings in the walls as minimal as possible. Clerestory windows are rather used to filter natural light into the different spaces.

Where glass walls are however used, corten steel louvre systems are used to block out western light and to allow northern light to enter the space.

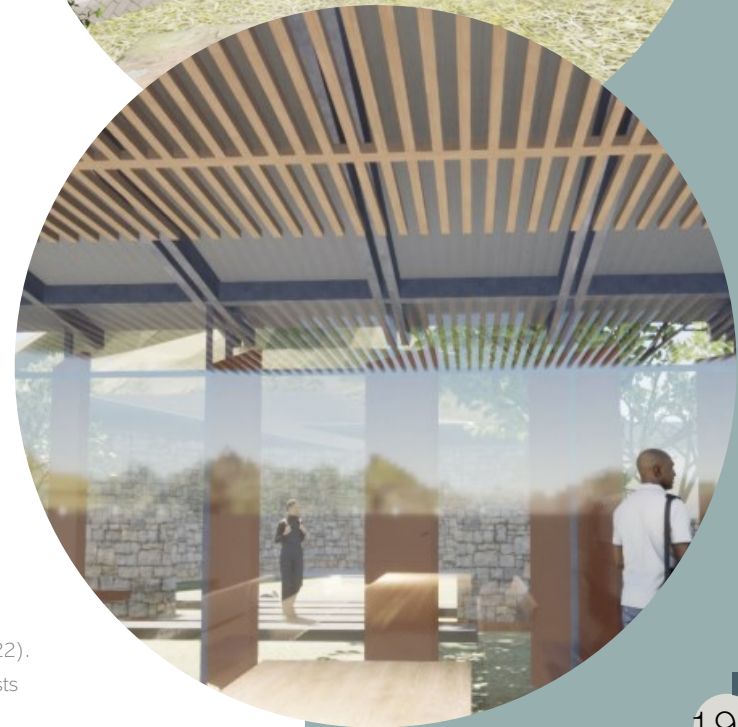
### 8.6.5 Responsibility of design

As a designer, it is important to make responsible decisions, not only in how to respond to the landscape, but also in deciding which materials to use. As a way of using leftover materials, the design recycles the old mine dumps through using the black dust as an aggregate in concrete slabs and walls. Through the use of material found in the landscape, these concrete walls blend seamlessly into the landscape.

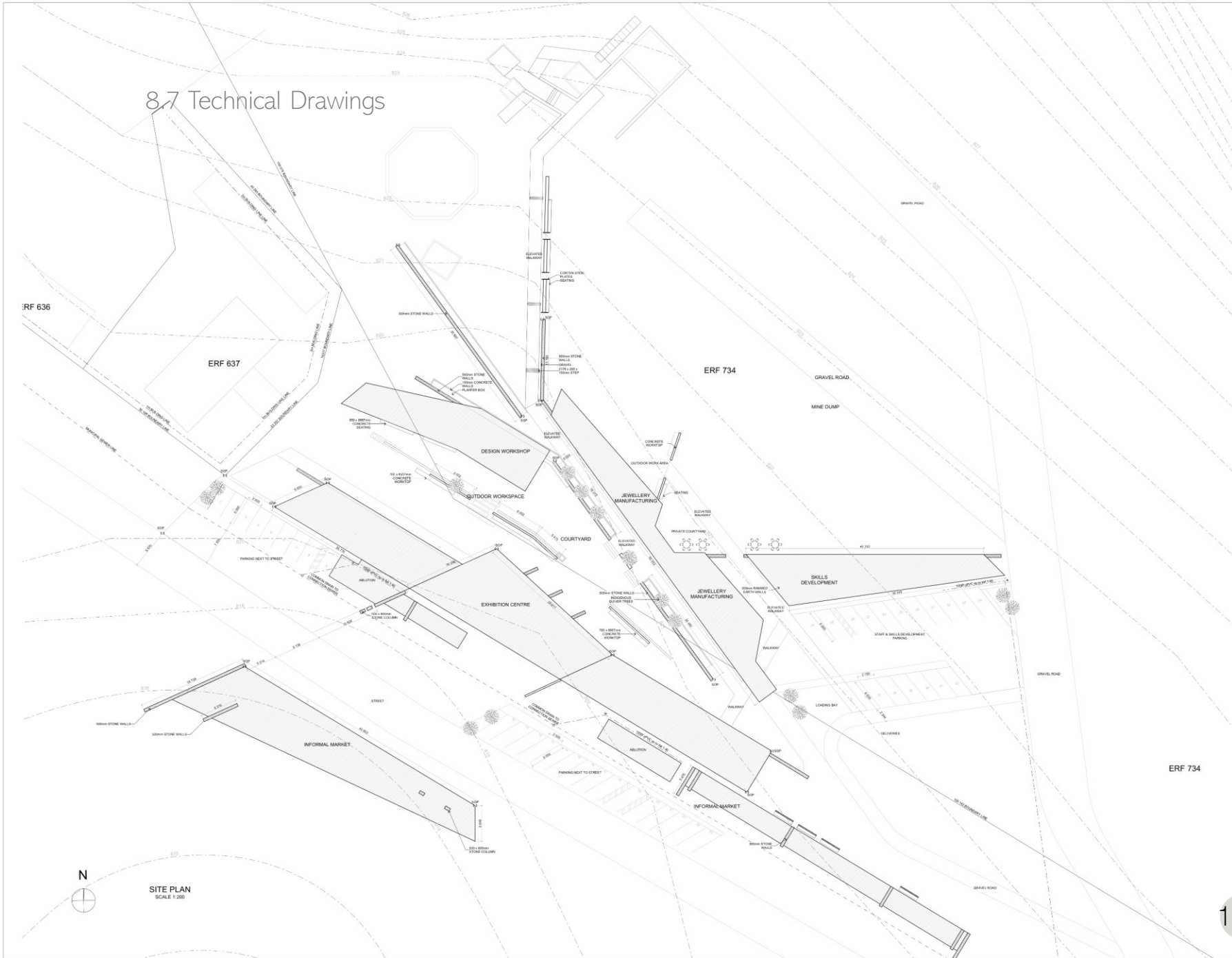
Looking at the material usage in the building, one of the design elements requires two steel lipped channels as beams. In order to cut down on costs, a decision was made to rather use steel box sections cut in half with both sides welded to the columns. This not only creates a more efficient approach, but also reduces the building's environmental impact.

Figure 280 (top right) : Waste material is integrated as an aggregate into concrete slabs (author, 2022).

Figure 281 (bottom right) : Steel box sections are cut in half and used separately to cut down on costs (author, 2022).



# 8.7 Technical Drawings



**DRAWING TITLES:**

DRAWING NAME:	SCALE:
A101 SITE PLAN	1:200
A102 FLOOR PLAN	1:200
A103 ROOF PLAN	1:200
A104 LOCALITY PLAN	1:500
A105 SECTIONS	1:100
A106 ELEVATIONS	1:200
A107 DETAILS	N/A
A108 DETAILS	N/A



**PROJECT FILE:**

PROJECT NAME: STRUCTURAL IMPROVEMENTS OF UNIVERSITY OF THE FREE STATE LIBRARY & ARCHIVE DEPARTMENT & DESIGN CENTRE IN THE OLD BANK BUILDING OF BLOEMFONTEIN

PROJECT ADDRESS: UNIVERSITY OF THE FREE STATE, BLOEMFONTEIN, SOUTH AFRICA

CLIENT: UNIFUNDS SKILLS DEVELOPMENT

A101 SITE PLAN

27 OCTOBER 2022

UNIVERSITY OF THE FREE STATE  
UNIVERSITEIT VAN DIE VRYSTAAT  
UNIVERSITEIT VA FREESTAAT

MERLIN FOURIE  
ARCHITECT



DRAWING TITLES

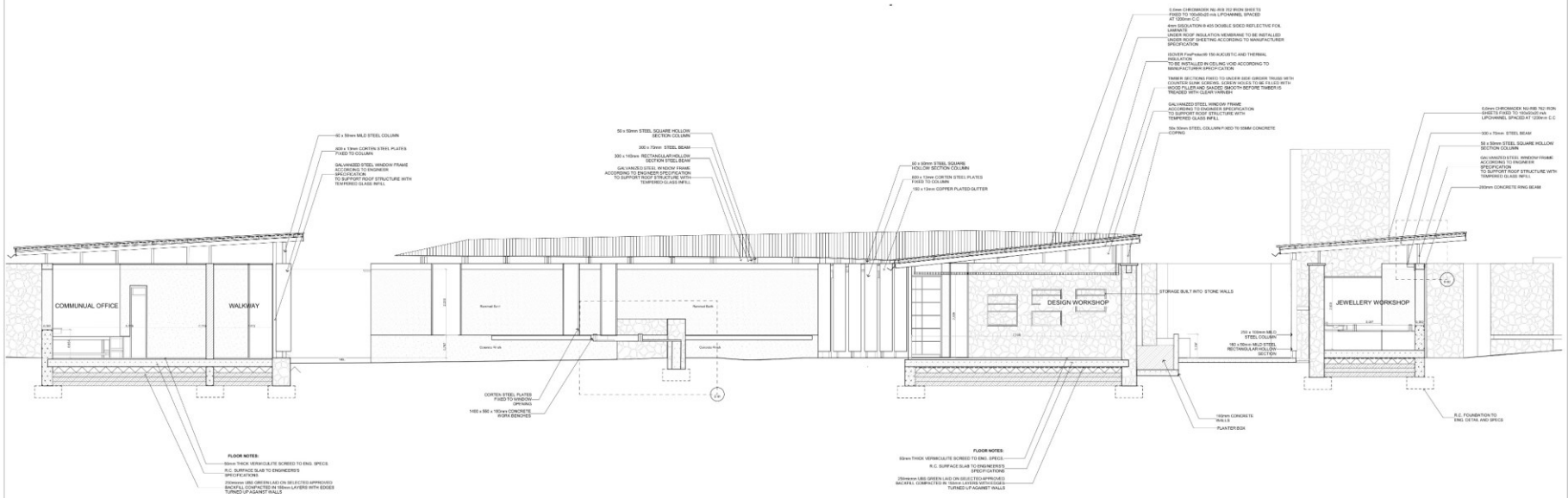
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A103 ROOF PLAN	1:200
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A106 SEAWALLS	1:500
A107 DETAILS	N/A
A108 DETAILS	N/A



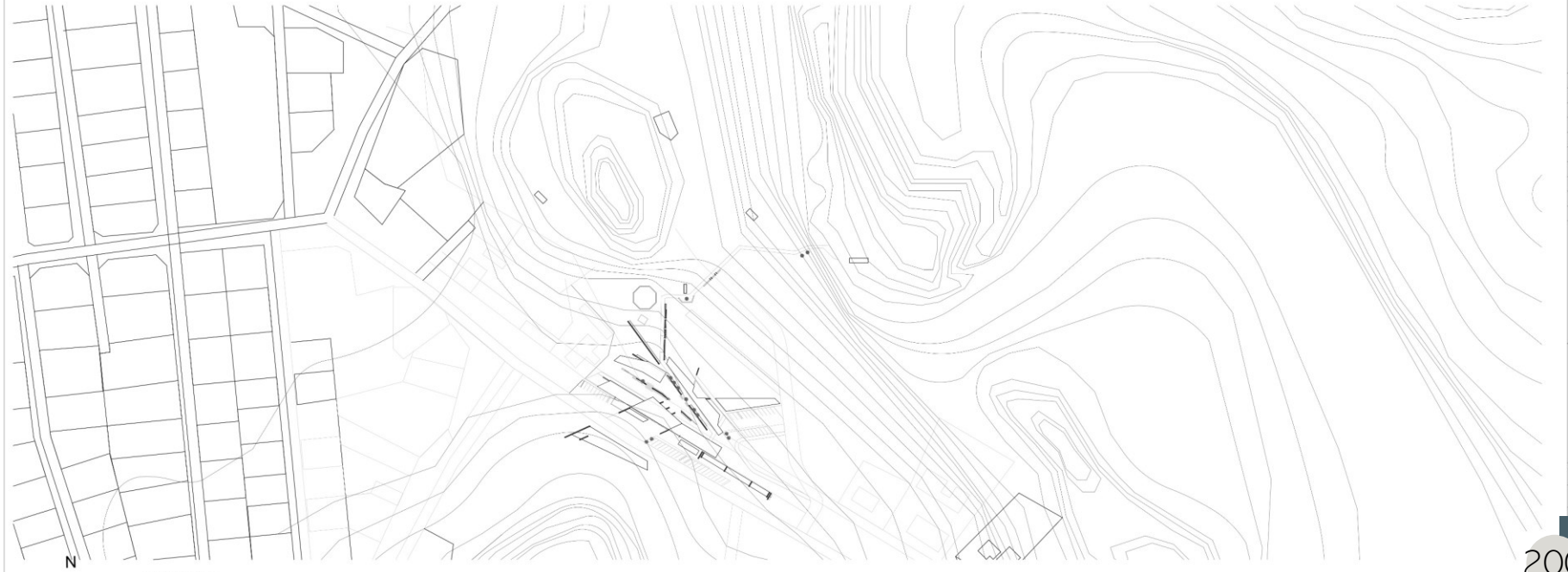
PROJECT TITLE: STRUCTURAL IMPROVEMENTS OF LABORATORY & SKILLS DEVELOPMENT & TRADING CENTRE IN THE JONAS MEYER BUILDING  
 PROJECT ADDRESS: NORTHERN CAPE  
 CLIENT: SOUTH AFRICA

PROJECT FILE: STRUCTURAL IMPROVEMENTS OF LABORATORY & SKILLS DEVELOPMENT & TRADING CENTRE IN THE JONAS MEYER BUILDING  
 DRAWING NAME: A102 FLOOR PLAN  
 DATE: 27 OCTOBER 2022  
 UNIVERSITY OF THE FREE STATE  
 MERLIN FOURIE  
 ARCHITECT

N  
 GROUND FLOOR PLAN  
 SCALE 1:200



SECTION B-B THROUGH DESIGN WORKSHOP  
SCALE 1:50



LOCALITY PLAN  
SCALE 1:1000

DRAWING TITLES

DRAWING NAME	SCALE
A101 SITE PLAN	1:500
A102 FLOOR PLAN	1:200
A103 ROOF PLAN	1:200
A104 LOCALITY PLAN	1:500
A105 SECTION	1:50
A106 ELEVATIONS	1:200
A107 DETAILS	N/A
A108 DETAILS	N/A



PROJECT TITLE

STRUCTURAL IMPROVEMENTS OF UNIVERSITY  
A Building Renovation & Design Centre in the  
Orange Free State

PROJECT ADDRESS

NAMENBERG, NORTHERN CAPE  
SOUTH AFRICA

CLIENT

UNIVERSITY OF THE FREE STATE

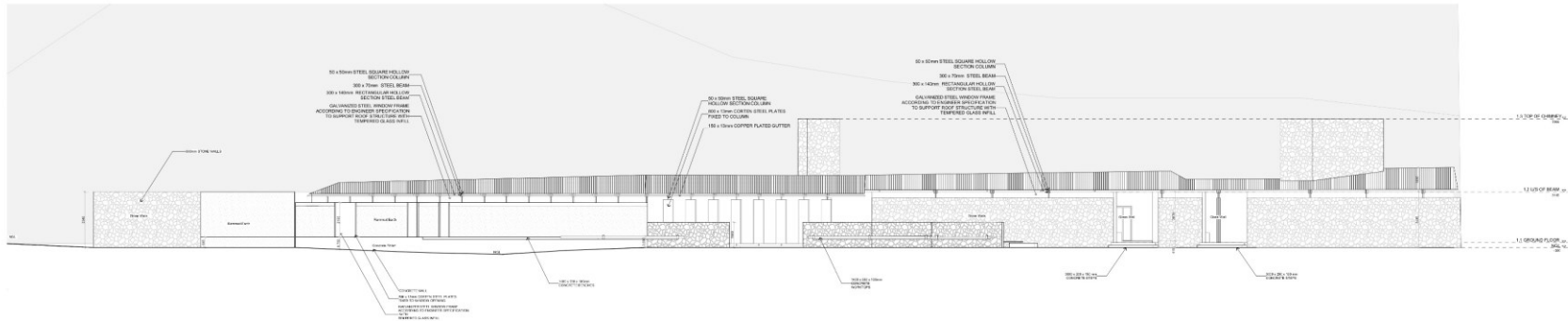
ARCH LOCALITY PLAN

27 OCTOBER 2022

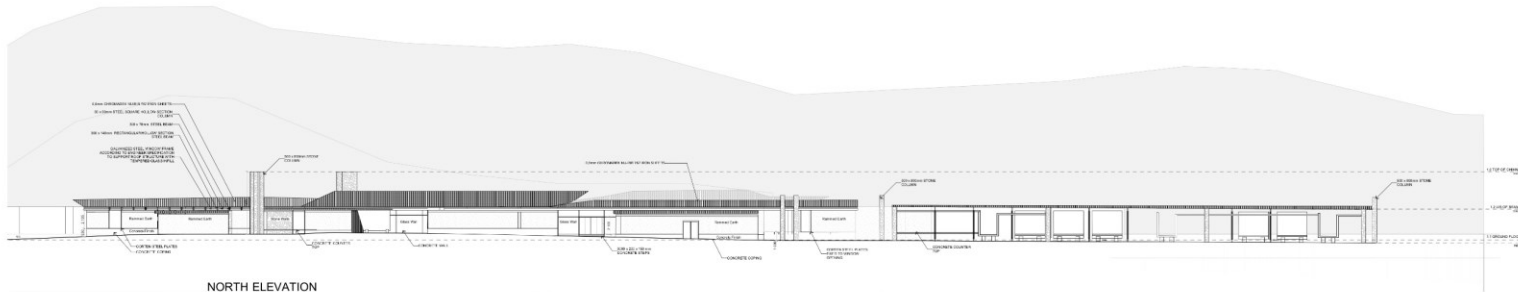
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UNIVERSITEIT VAN DIE VRYSTAAT  
UNIVERSITEIT VA FRÛESTAAK

MERLÍN FOURIE  
JULY 2022

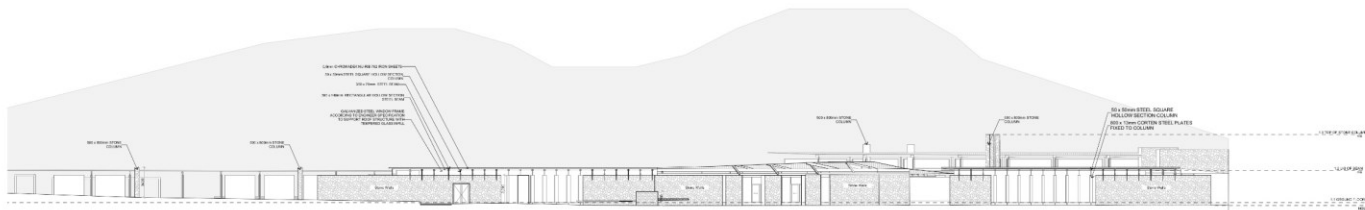




ELEVATION OF DESIGN WORKSHOP  
SCALE 1:100



NORTH ELEVATION  
SCALE 1:200



SOUTH ELEVATION OF MAIN BUILDING  
SCALE 1:200

DRAWING TITLES:

DRAWING NAME	SCALE
A101 SITE PLAN	1:500
A102 FLOOR PLAN	1:200
A103 ROOF PLAN	1:200
A104 LOCALITY PLAN	1:500
A105 SECTIONS	1:100
A106 ELEVATIONS	1:200
A107 DETAILS	N/A
A108 DETAILS	N/A



UFS  
UNIVERSITY OF THE FREE STATE  
UNIVERSITEIT VAN DIE VRYSTAAT  
UNIVERSITEIT VA FREESTAT



PROJECT TITLE	STRUCTURAL MEMBERSHIP OF LABORATORY
PROJECT ADDRESS	A. Joubert Street, Bloemfontein & George Street in the Orange Free State
CLIENT	UNIVERSITY OF THE FREE STATE

DATE	27 OCTOBER 2018
BY	UNIVERSITY OF THE FREE STATE
SCALE	1:200
PROJECT	UNIVERSITY OF THE FREE STATE
CLIENT	UNIVERSITY OF THE FREE STATE
DATE	27 OCTOBER 2018
BY	UNIVERSITY OF THE FREE STATE
SCALE	1:200
PROJECT	UNIVERSITY OF THE FREE STATE
CLIENT	UNIVERSITY OF THE FREE STATE





## 8.8 Conclusion

Looking back at the design synthesis, I was able to make informative decisions regarding materiality and climatic responses by looking at the various precedents. The Steinkopf community centre provided important information with regards to building in the Namaqua Region and the importance of ownership in a small town.

Although the design makes use of ordinary and available materials and techniques of construction, a sculptural and sophisticated quality is introduced to the design by making use of quality materials and timeless connections.

Figure 282: Varied copper surfaces



## 9. REFLECTION

South Africa is a unique country with an atmosphere of compulsive creativity. The thesis takes a closer look into reclaiming leftover space in the form of an old copper mining town in the heart of Namaqualand. There are many small towns within South Africa that is filled with history and treasure. Nababeep is one such town, with an unique story to tell- one of grandeur and of devastation.

By using jewellery manufacturing as a way of creating employment and uplifting the town out of a cycle of poverty, the project speak of craftsmanship.

The act of engraving serves as a golden thread throughout the design process, inspiring new approaches of engaging with a derelict site. By looking at the past occupancies of the site and incorporating the ruins of the site into the story of place, future generations will be able to look at the design as an ensemble of different influences- a palimpsest of different narratives.



## 10. WORK CITED

Abdel, H., 2021. House F / Elphick Proome Architects. [online] ArchDaily. Available at: <<https://www.archdaily.com/969444/house-f-elphick-proome-architects>> [Accessed 10 May 2022]. Beck, Haig (Editor). 1985. *UIA International Architect : Southern Africa* (Issue 8). London: International Architect. p 12

Bell, M., 2012. Steinkopf Community Centre. [online] Artefacts.co.za. Available at: <[http://www.artefacts.co.za/main/Buildings/bldg\\_images.php?bldgid=9194#14741](http://www.artefacts.co.za/main/Buildings/bldg_images.php?bldgid=9194#14741)> [Accessed 15 May 2022].

Bosman, G. 2018. Ownership and care in culturally significant architecture: Three case studies. *Acta Structilia* 2017 24(1). pp. 1-26

Derksen, D., 2017. The Copper Project — David Derksen Design. [online] David Derksen Design. Available at: <<https://www.davidderksen.com/work/the-copper-project>> [Accessed 15 August 2022].

Fleminger, D., n.d. 1870 The Copper Wonder of Namaqualand. [online] Southafrica.co.za. Available at: <<https://southafrica.co.za/1870-the-copper-wonder-of-namaqualand.html>> [Accessed 19 September 2022].

Frampton, K. 2001. *Studies in tectonic culture. The poetics of construction in nineteenth and twentieth century architecture*. New York: MIT Press (MA).

Hill, J. 2004. *The Double Dimension: Heritage & Innovation*. Royal Australian Institute of Architects. Pp. 63-85

Konik, A., Konik, I. and Mare, E., 2013. The Political Significance of Patina as Materialised Time. *South African Journal of Art History*, 28, pp.133-155.

Marais, C., 2017. Diamond Legends of Alexander Bay - Karoo Space. [online] Karoo Space. Available at: <<https://karoospace.co.za/diamond-legends-of-alexander-bay/#:~:text=The%20area%20north%20and%20south,to%20their%20children%20as%20toys.>> [Accessed 6 August 2022].

Maritz, N., 2019. UIBA-OAS CRYSTAL MARKET. [online] NAMIBIA | archaeology of the future: tomorrow's architectural landscape. Available at: <<https://namibiaarchaeologyofthefutureblog.wordpress.com/portfolio/uiba-oas-crystal-market/>> [Accessed 9 June 2022].

Ministry of Industrialisation, Trade and SME Development, 2016. GROWTH STRATEGY FOR THE NAMIBIAN JEWELLERY INDUSTRY AND COLOURED GEMSTONE VALUE CHAIN — Gemstones and Sustainable Development Knowledge Hub. [online] Gemstones and Sustainable Development Knowledge Hub. Available at: <<https://www.sustainablegemstones.org/blog/2017/10/12/growth-strategy-for-the-namibian-jewellery-industry-and-coloured-gemstone-value-chain>> [Accessed 16 August 2022].

MHS Library, n.d. LibGuides: Printmaking: Engraving. [online] MHS Library. Available at: <<https://libguides.mhs.vic.edu.au/c.php?g=174573&p=1150391>> [Accessed 10 August 2022].

Norberg-Schulz, C. (1980), *Genius loci: Towards a phenomenology of architecture*, Rizzoli.

O'Reilly, T., 2010. Turning jobless into jewellers - Brand South Africa. [online] Brand South Africa. Available at: <<https://brandsouthafrica.com/jewelleryschool130032008>> [Accessed 13 August 2022].

Phillips, J., 2022. Palimpsestuous Behaviour: Democracy, Resistance, Downtowns, and Skateboards or, How to Read Culture. [online] Culturalstudiesresearch.org. Available at: <<http://culturalstudiesresearch.org/wp-content/uploads/2012/10/PhillipsPalimpsestuousBehaviour.pdf>> [Accessed 1 May 2022].

Porter, T. 2004. ARCHISPEAK An illustrated guide to architectural terms. Spon Press. P 105.

Relph, E.C. 1976. Place and Placelessness. Pion.

Rheinberger, H. 2018. The Hand of the Engraver: Albert Flocon Meets Gaston Bachelard. Translated by Kate Sturge. State University of New York Press.

Rundel, P., 2013. Biodiversity of the Succulent Karoo. Encyclopedia of biodiversity, (2), pp.485-490

SAFARI2GO, 2019. Celebrating the Ûiba-Ôas crystal market. [online] Namibian.org. Available at: <<https://namibian.org/news/tourism/crystal-market>> [Accessed 9 June 2022].

Sime, J.D. 1986. Creating Places or Designing Spaces. Journal of Environmental Psychology. Vol. 6. No.1. pp. 49-63  
Seamon, D. & Sowers, J. 2008. Place and Placelessness, Edward Relph. Key Texts in Human Geography. London: Sage. Pp.43-52

Shibata, I., n.d. [online] Arup.com. Available at: <<https://www.arup.com/projects/inujima-seirenscho-art-museum>> [Accessed 11 May 2022].

Uytenbogaardt, Roelof Uytenbogaardt & Rozendal. Community Centre, Steinkopf (1978-80); in Beck, Haig (Editor). 1985. UIA International Architect : Southern Africa (Issue 8): pp 12-13

Vjewellerystudio.com, 2022. [online] Vjewellerystudio.com. Available at: <<https://www.vjewellerystudio.com/goldsmith-academy>> [Accessed 10 August 2022].

Weber, C., 2020. 2020 RDAA | Custom Rural or Vacation House | Horizon House | Lake|Flato Architects - Residential Design. [online] Residential Design. Available at: <<https://www.residentialdesignmagazine.com/2020-rdaa-custom-rural-or-vacation-house-horizon-house-lakeflato-architects/>> [Accessed 10 May 2022].

Western, R., 2020. The Hand of the Engraver. Master of Architecture (Professional). Victoria University of Wellington.

Woods, L. 1996. WAR AND ARCHITECTURE: Three Principles. [online] Available at: <<https://lebbeuswoods.wordpress.com/2011/12/15/war-and-architecture-three-principles/>> [Accessed 18 May 2022].

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