TOORWATER

A wellness retreat that captures the stories of Toorwater, a natural hot spring in the Klein Karoo.

Inge Johnston | 2017080538

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By Inge Johnston

Dissertation submitted in partial fulfilment of the requirements for the degree Masters of Architecture M.Arch (Prof)

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CO – STUDY LEADER: Mrs A Wagener

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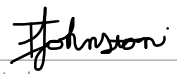

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My sincere thanks to my mentors Prof. Jan Smit, Mrs Petria Smit, and Annemarie Wagener for their guidance

I am very grateful to my parents, family and friends for their support throughout my studies

Lastly, I am very grateful for Gousie van Jaarsveld and Anneke Du Preez who shared their stories of Toorwater with me.

Living in the same region as Toorwater Warmbad, I had always been fascinated by the idea of a natural hot spring which would appear from a mountain and never stop flowing. As a child we visited the spring only once, as the facilities were already unused. My father would tell me the stories of how they always came camping here and bathed in the hot spring's water. In my imagination, I could see the place alive with people coming from all over the country to see the hot spring, and it saddened me that this was not there anymore - a stream of natural hot water flowing into the landscape without anyone appreciating it -the fascination of a hidden natural phenomenon waiting to be revived.

When I had to decide on a site for my master's project, Toorwatwer immediately came to mind; an oasis in the middle of the Klein Karoo, full of potential. Such a natural phenomenon should be shared with the world, and more people should be allowed to experience it. This made my site selection easy as I knew I had to celebrate the phenomenon of Toorwater.

Chapter layout

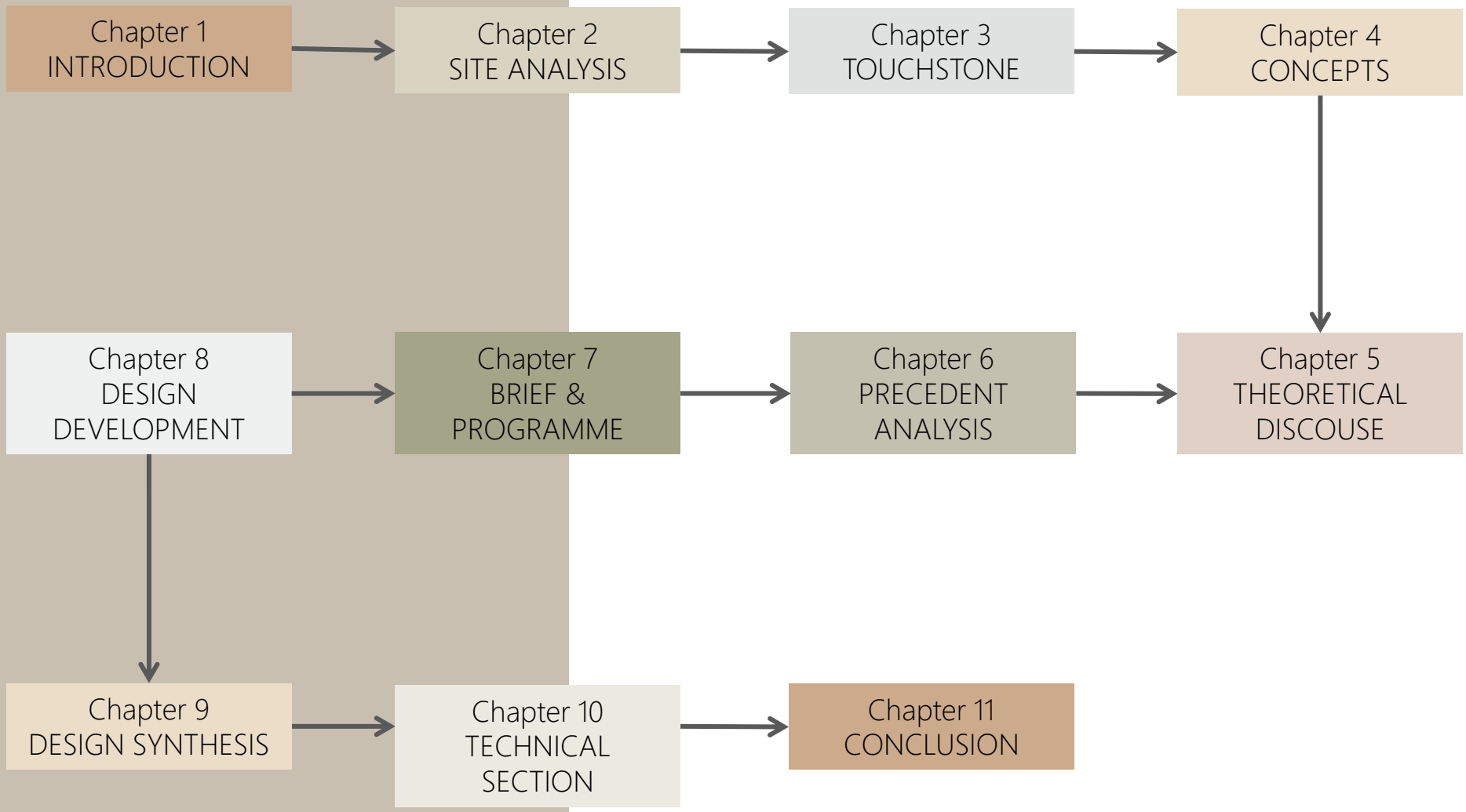


Figure 1: Chapter layout (Author, 2022).

Abstract

In the natural landscape of the Klein Karoo, narratives flow from the spring at Toorwater. The research question asks how the stories flowing from Toorwater can be translated into a wellness retreat that celebrates regionalist placemaking and sparks new stories? Previous examples in South Africa have illustrated the use of natural hot springs for resorts, while this design proposes using the natural hot spring as a wellness retreat, focusing on the therapeutic effect on physical and spiritual well-being. This proposal suggested buildings that focus on the natural landscape and narratives of place. The research question was approached through the exploration of local narratives and how to establish an appropriate architectural language in the Klein Karoo. This dissertation will provide a better understanding of how the narratives embedded in Toorwater can be told through architecture rooted in place.

Glossary:

Toor – (adjective) being magical

Betower – (verb) to be captured and allured in an irresistible way

Betowerend – (adjective) charming or fascinating

Betowerende – (attribute)

(Preston, 2019: online).

Toponymy

The water of Toorwater has an undeniable quality which cannot be adequately expressed in English as it was originally named in Afrikaans. The embodied quality of the water is what fascinates people and has sparked stories over the years in an attempt to understand Toorwater. It is, therefore, necessary to understand the real meaning of the word 'toorwater.'

The word 'toor' on its own refers to the act of doing magic rather than being magical (Glosbe, 2022: online). From the word 'toor' in Afrikaans comes the word 'betower', which directly translates to 'enchanting' in English. However, the English translation of the word betower does not do the word justice. In Afrikaans betower means; "op onweerstaanbare wyse aangryp en meevoer" (Preston, 2019: online), which translates as "to be captured and allured in an irresistible way". The Afrikaans word 'betower' will therefore be used to describe the water, as the Afrikaans word is more expressive.

The mystery of Toorwater makes the water so significant and gives it interpretive depth. Maybe it is not the water that is *betowerend*, but rather the stories, the interpretation and the fantasy that makes Toorwater *betowerend*.

Figure 2-4: Toorwater landscape (Author, 2022).

The story of Toorwater

An oasis in the middle of the otherwise barren Klein Karoo region of South Africa is sustained by a natural hot spring called Toorwater. A natural spring with 40° - 80° C hot water runs from a gorge in the Swartberg mountains. In English, toorwater means 'enchanted' or 'bewitched' water, originating from the natural phenomenon.

This story of Toorwater is compiled from a variety of individual stories told by locals and travellers who encountered Toorwater on their journey through the Klein Karoo and which spark an immediate interest in the natural hot spring. Whether these stories are always accurate cannot be determined, but they contribute to the true story of Toorwater, allowing a deeper understanding of the place and its character. Many of these stories have been passed on through generations. To preserve my personal interpretation, I will add to this narrative by telling the stories as I remember them being told to me.

The following three stories contribute to the overarching story of Toorwater and its characteristics:

- At times, methane gas escapes from the spring, igniting into ghostlike flames, giving the place its name, Toorwater (Classen, n.d: online). Like any ghost story, the truth of these stories can be questioned, but that contributes to the mystery of Toorwater.

- This mystical quality of Toorwater reappears in other stories about the hot spring. It is believed that in early 1600, travellers would leave the sick at the hot spring, where they would heal and be able to catch up with the rest of their convoy. Healing as a characteristic of the Toorwater can be placed alongside mystery (Du Preez, 2022: interview).

- In the early 1700s, before the farmers drove the indigenous people away from Toorwater, it is said that the indigenous people covered the water with animal hide on frosty mornings. This would conceal the steam from the hot water to prevent other travellers from seeing the steam and taking over their source of life.

Timeline of Toorwater

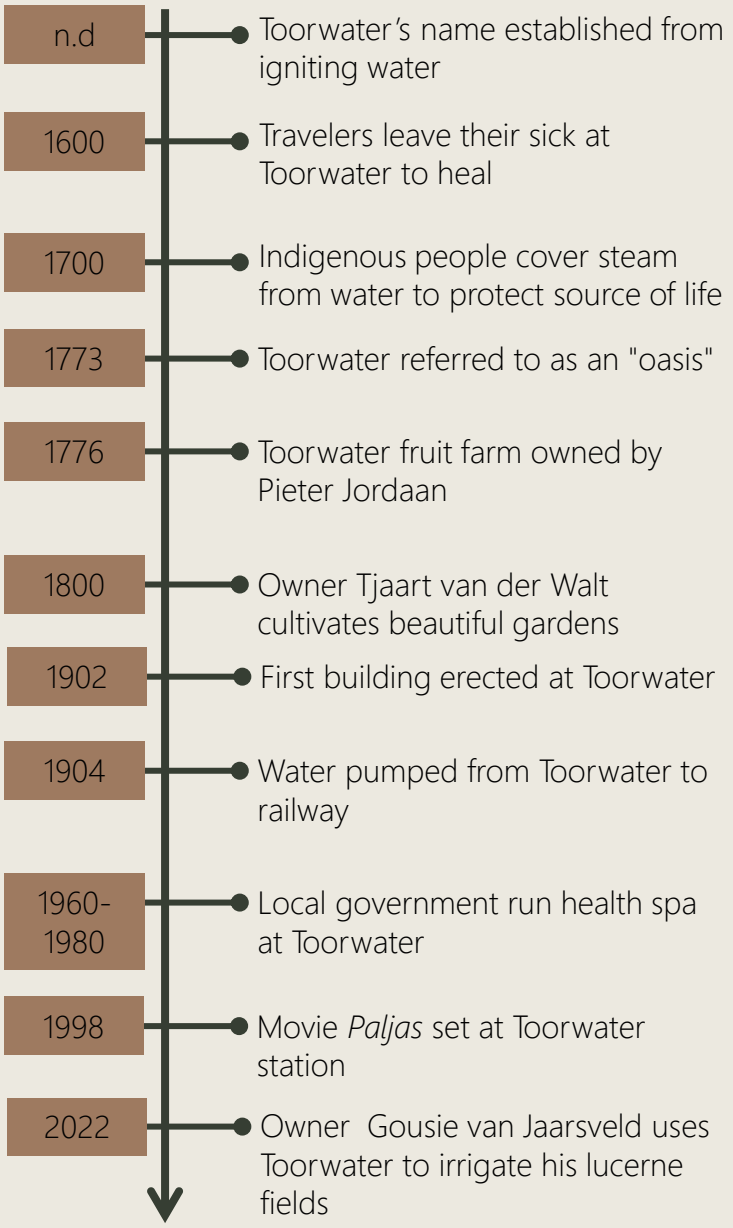


Figure 5: Timeline (Author, 2022).

A clear idea can be shaped as to the character of Toorwater by combining the essence of these three stories. First, the mystical qualities of the water; secondly, the water's ability to heal, and thirdly, the water as a source of life. The essence of the water is uncovered by merging these three qualities (Van Jaarsveld, 2022: interview).

Based on in-depth research, a timeline (Fig 5) was developed to provide as accurately as possible a thread linking the stories of Toorwater. In 1773 a traveller told the story of how they travelled over the driest country he had ever seen, with not a single blade of grass on the stony dry planes, but in this dry land the gardens of Toorwater stood "beautiful and proud." Another traveller, in 1776, remarked that he was surprised to see the large fruit trees at Toorwater (Heese, 1965: 9). At the end of the 19th century, another traveller mentioned the beautiful gardens at Toorwater, owned by Tjaart van der Walt at that time (Heese, 1965: 11).

The buildings at Toorwater, which still exist today, were erected in 1902 by the owner at that time, which would later be repurposed to become a health spa.
In 1904 the railway line opened between the Southern Cape and Port Elizabeth via Toorwater station. The railways had an agreement with the then owner of Toorwater to install underground tanks to pump the water to the nearby railway line, where the *"trein drink water", as the current owner, Gousie van Jaarsveld puts it. Today the water is used to water the lucerne fields, and Van Jaarsveld firmly believes that the crops grow better if he uses the water while it is still hot.

From 1960-1980 Toorwater was used as a health spa owned, by the local government, in the same way as the indigenous people did long before: the water flowed into baths made of rock outside a building erected for that purpose. Similar baths were built inside the building where people could take a hot bath. The hot springs originate in the gorge of the nearby Swartberg mountains, where the hot water comes from a volcanic source (Du Preez, 2022: interview).

*train drank from the water

CHAPTER 1 | Introduction

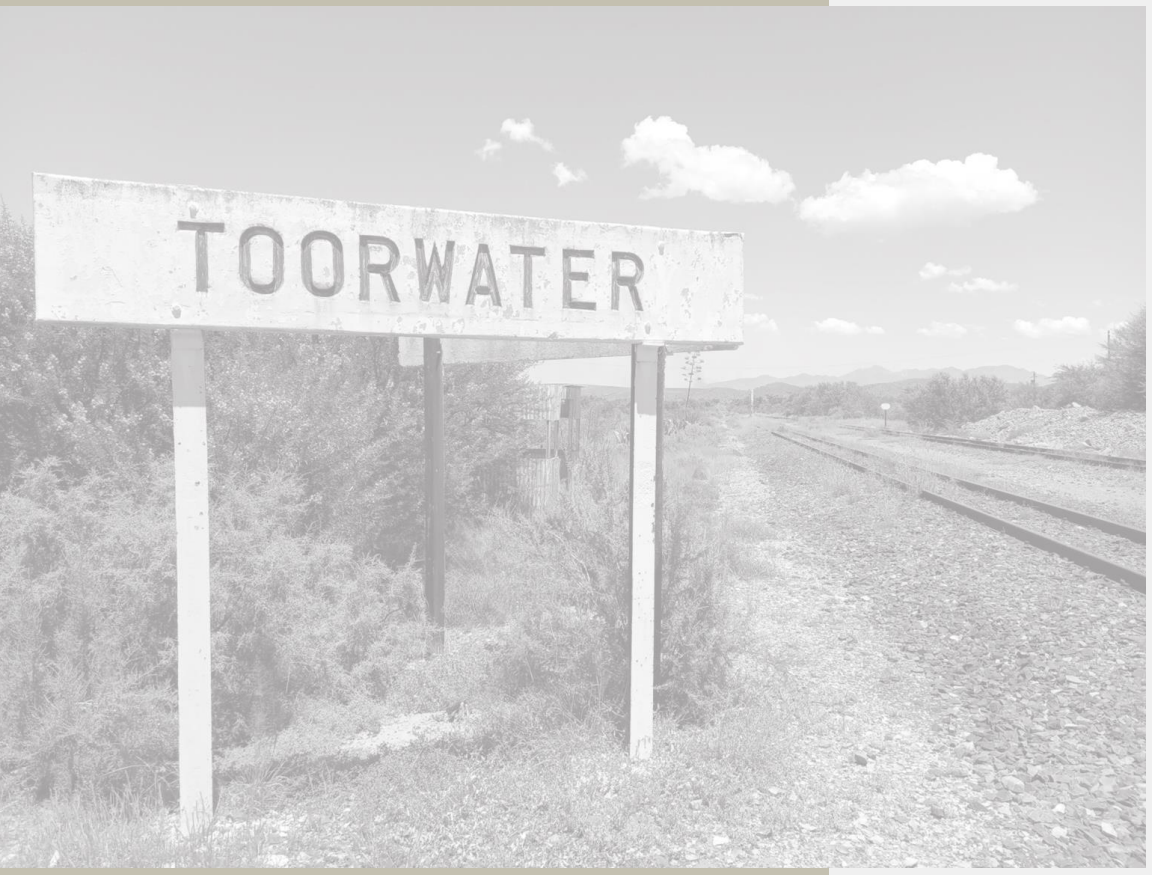


Figure 1.1: Toorwater sign (Author, 2022).

Introduction

On a cold winter morning at the foot of the Swartberg mountains, steam lingers on the surface of the hot water. A mystical quality hangs in the air with the steam coming from the natural hot spring and the morning frost still clinging to the dry Karoo bushes.

The natural phenomenon at Toorwater has sparked many stories over the years, fascinating people with the rare occurrence of an oasis in the Klein Karoo. Drenched in stories about the mysteries of the natural hot spring, Toorwater is a place of interest.

Water is commonly linked with healing and wellness. Over the years, water has been used for healing to using it for luxurious purposes, while also being associated with life. When looking at wellbeing, water is the perfect candidate for relaxation, meditation and healing. Situated in the beautiful natural landscape, the hot spring at Toorwater provides the ideal circumstances to promote wellbeing. Providing people with a place to promote their wellness will benefit both them and the place, as it will contribute to the story of Toorwater and allow it to be passed on for generations to come. This leads to the research question:

How can narrative architecture and regionalist placemaking be used to transform the stories flowing from Toorwater into a wellness retreat, and re-spark the narrative of the place?

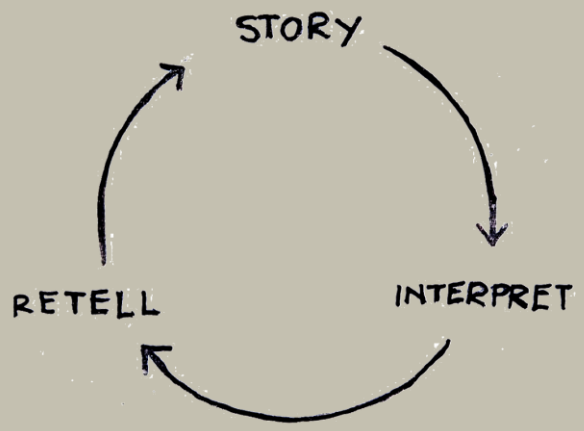


Figure 1.2: The storytelling cycle (Author, 2022).

Telling stories and making architecture have more similarities than one might think. When a story is told, the listener interprets the story through their own memories and associations with events in the story. This means that their interpretation is linked to their identity. When retelling the story, that person will focus on the events they found most relevant or appropriate to themself. The story will therefore be reinterpreted and retold from their experience and point of view. A study of architecture reveals the same cyclical pattern (described as narrative architecture) as a recurring cycle of human storytelling by narrators.

In the case of architecture, the story is the place. When the architect encounters the site, they interpret it through their views and memories of elements from the site. During the design of the building, architects will focus on the things they find important and interpret the site accordingly. Therefore, an architect's contribution to the narrative of the place is the retelling of its story, based on their individual experience and, in turn, each visitor will interpret the architectural experience differently through their memories and identity.

Ultimately, there is no right or wrong way to interpret the story or site, only the validity of individual interpretation and retelling of a story.

Figure 1.3 – 1.5: Photos of site (Author, 2022).

1.2 Site

Toorwater Warmbad is located in the Klein Karoo of the Western Cape. The site is situated in a rural environment on a farm named Nietgenaamd, owned by Gousie van Jaarsveld and named after the natural hot spring, which flows uninterruptedly from a gorge in the adjacent Swartberg mountains. Two buildings are situated on the site but have been left in decay as it is no longer occupied. Originally the buildings were used for a health spa developed by the local government. Today the buildings stand empty, and the only point where the water can be experienced is out of a pipe connected to the gorge. Locals and a few other tourists know about the magic of Toorwater, but in the current condition of the site finds itself in, it is not visited as often anymore. An oasis in the dry Klein Karoo, however, holds the potential of a tourist attraction with the natural phenomenon of Toorwater as the key.

Figure 1.6: Drawing site and landscape (Author, 2022).

1.3 Brief & client

The brief is to create a wellness retreat that focuses on the wellbeing of people by creating spaces and facilities that promote physical and emotional health through relaxation and meditation, a place where people can retreat from the busy world into the natural landscape of the quiet Klein Karoo, creating a calm and secluded place to rest where the natural hot spring will be the central point in narrating the programme, sensual experiences and environmental perception. Providing different experiences at Toorwater, the design proposal is divided into different buildings, each using water differently to enhance the visitor's different sensual experience.

Eden District Municipality is the client, as they highlighted the potential development of Toorwater in their spatial development framework of 2004. The spatial development framework proposes "an extensive spa-type health and recuperation resort linked directly to the hot spring, offering a luxury nature experience aimed at international tourists and executive-level travellers" (Eden District Municipality, 2004: 30). This plan never materialised, but the potential of Toorwater as a tourist node remains.

Figure 1.7: Client logo (Government Handbook, 2022: online).

1.4 Theoretical stance

The assumption that stories shape Toorwater, leads to narrative theory to be investigated. As the central theory underlying this dissertation, narrative is discussed, based on the work of Paul Ricoeur (1913-2005) supported by other theorists such as Le Corbusier (1887-1965) and Peter Zumthor (1943-current date). Narrative is discussed to establish the importance of retelling stories. In order to tell the story of Toorwater through architecture, narrative architecture is investigated as a way to interpret stories and retell them through buildings. Elements are identified that can convey the narrative of place. "Promenade" as a narrative device is discussed by studying the work of Le Corbusier and how he implements promenade in his architecture.

After narrative has been linked to human spatial experience in architecture, shaping the atmosphere is discussed as a way to create memorable experiences in a building. Atmosphere can convey narrative and memory, which makes it a valuable tool in narrative architecture. When the impact of atmosphere on spatial experience is understood, it can be manipulated to convey a specific experience and, in the end, a particular narrative. Shaping atmosphere through architecture is analysed through the writings of Peter Zumthor, and his implementation of atmosphere at Thermal Vals, to establish how narrative of Toorwater can be told through architecture.

Research question:

How can narrative architecture and regionalist placemaking be used to transform the stories flowing from Toorwater into a wellness retreat, and re-spark the narrative of the place?

1. 5 Aims and contributions

The proposed Toorwater Wellness Retreat will tell the story of this enchanting place and aims to tell the story of the site and provide a secluded place from busy everyday living: a place where people can come to relax at an oasis in the natural environment. The retreat creates a space for people to focus on their physical and spiritual well being - by creating a calm place for meditation and relaxation. With the assistance of the natural hot spring, the retreat aims at creating a memorable experience. Discovering the stories of Toorwater through the architectural experience will contribute to the character of Toorwater, and the visitor's experience re-sparking the narrative.

Focusing on telling the story of Toorwater and sparking new narratives, the retreat adds to the identity of the place. Retreat adds to the wellness of both the place and the visitor, by enhancing the natural phenomenon of Toorwater. The stories of Toorwater, which shape the place, are increased by allowing new stories to be born from the enhanced experience of the water. Along with this, more people can experience the stories of Toorwater and benefit from its enchanting waters.

CHAPTER 2 | Site analysis

Figure 2.1: Sketch of Toorwater landscape (Author, 2022).

Figure 2.2 Photo of existing construction (Author, 2022).

2.1 Introduction

In this chapter, the proposed site for the Toorwater Wellness Retreat is introduced and discussed. The site analysis is divided into five parts: macro, meso, macro, site conditions and natural hot spring. In the macro analysis, the nearby towns are identified and discussed in terms of the part they have played in the development of Toorwater as it is today, as well as their intended role in the success of the proposed Wellness Retreat. Introducing some of the site's histories in the meso analysis, leads to comprehension of the site name and the significant structures surrounding the site.

When the site is understood in its bigger context, the microanalysis identifies vital features on the site that either relate to historical events or is key to understanding the site in its current condition. Identifying the site conditions leads to a more practical understanding of the site and its climate. An in-depth discussion of the natural hot spring talks about the history of thermal springs in South Africa and their benefits. The water classification is linked to its wellness and health benefits while identifying the benefits associated with thermal springs. Tourism related to thermal springs starts becoming part of the discussion to introduce the type of building best suited for the site and concludes the site analysis findings.

Toorwater is located in the Western Cape of South Africa, on the R341 between Oudtshoorn and Willowmore. From the tar road, a dirt road of 6km leads across a bridge over the Olifantsrivier to the farm on which Toorwater Warmbad is located.

The R341 is a well known tourist route as tourists often travel through this part of the Klein Karoo to see the unspoilt natural landscape.

As far as nearby towns are concerned, Oudtshoorn, Willowmore and Uniondale are of interest.

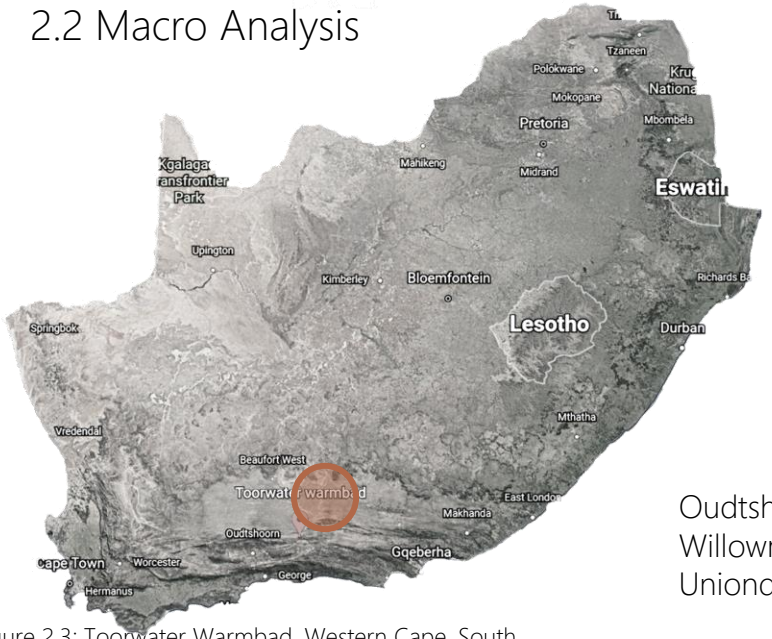


Figure 2.3: Toorwater Warmbad, Western Cape, South Africa (Google Earth, 2022: adapted by author).

Oudtshoorn to Toorwater – 107 km
Willowmore to Toorwater – 43 km
Uniondale to Toorwater – 37 km

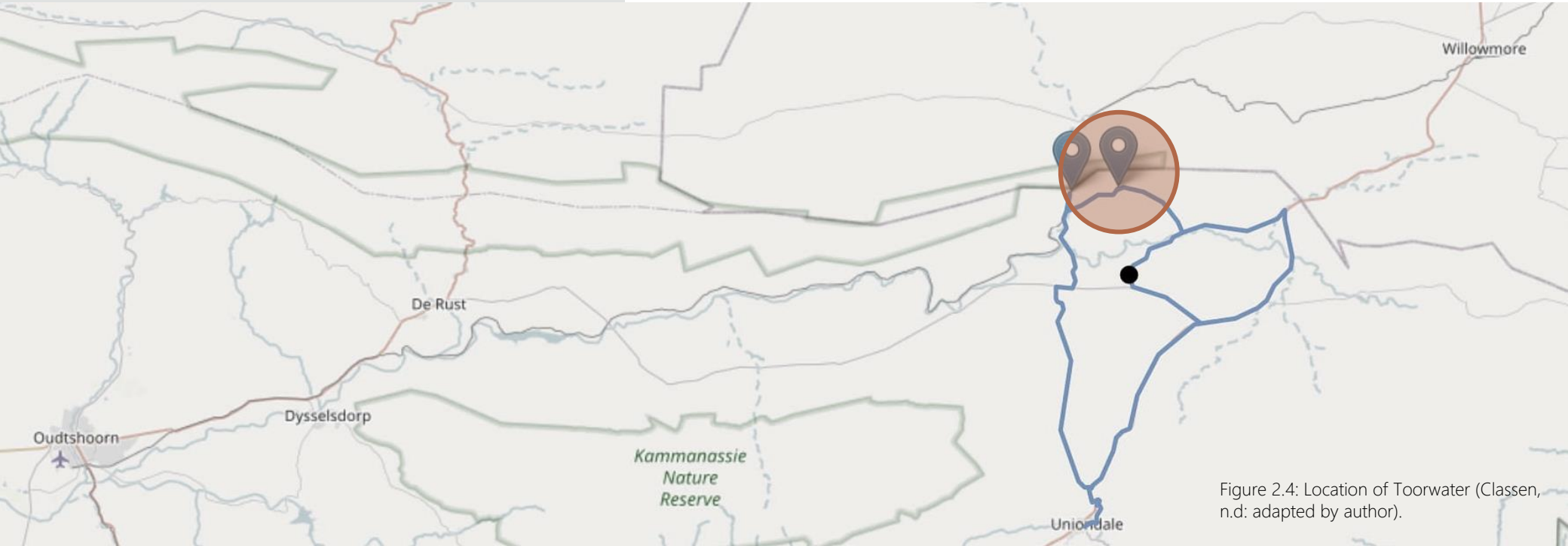


Figure 2.4: Location of Toorwater (Classen, n.d: adapted by author).

Toorwater is situated on the farm Nietgenaamd owned by Gousie van Jaarsveld. The name toorwater came from the mystical water at Toorwater Warmbad and became the name of the train station near the site (figure 2.6). (See glossary for a discussion of the toponymy of Toorwater).

A deep and narrow gorge, called the Toorwaterpoort (figure 2.7), which refers to a gorge, is situated at the eastern end of the Swartberg mountain range. The Traka River created this gorge over the years, resulting in the topological link between the Groot Karoo and the Klein Karoo. Iron oxide in the water causes the reddish colour of the rock exposed in the steep walls of the gorge.

Figure 2.5: Toorwaterpoort gorge (Google Earth, 2022d: adapted by author).

Figure 2.6: Toorwater railway line (Classen, n.d: online).

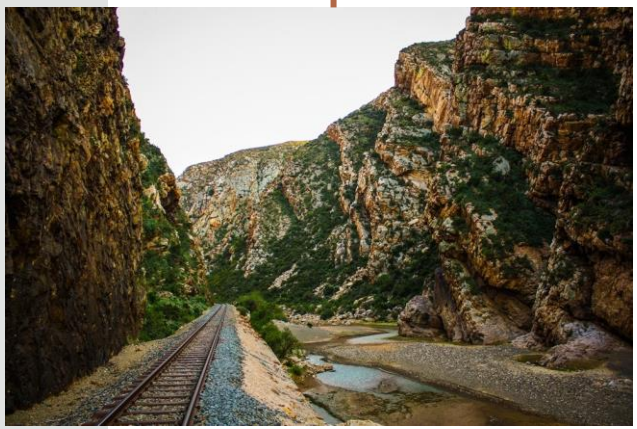


Figure 2.7: Toorwaterpoort (Classen, n.d: online).

Figure 2.8: Toorwater site (Author, 2022).

The mountain range creates the border between the Eastern and Western Cape. In 1904 the passage through the gap was opened as a railway line from the Southern Cape to Port Elizabeth that would stop at the Toorwater station. Although the scenery through the gorge is breathtaking, occasional floods have damaged the railway line, requiring frequent maintenance.

During the Anglo Boer War (1899-1902), a conflict between the British Empire and the two Boer Republics, Toorwaterpoort was protected by a fort to restrict the Boer Commando movement (Classen, n.d: online). Today the railway is no longer used, and the gorge is ideal for hiking and sightseeing.

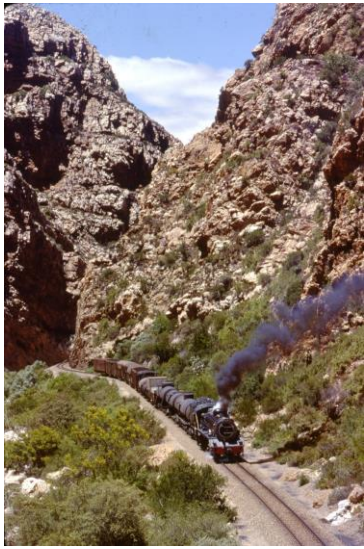


Figure 2.9 & 2.10: The Blue Train in Toorwater Poort (Classen, n.d: online).

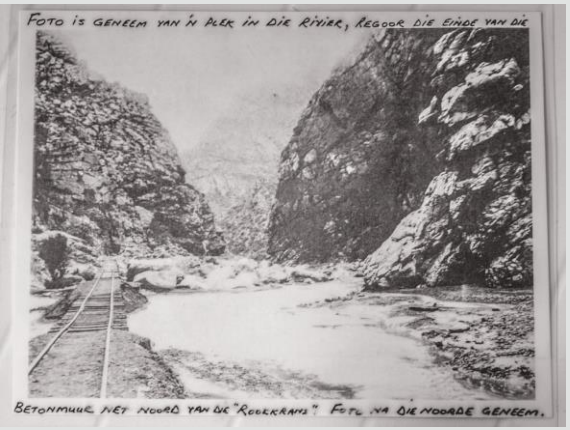


Figure 2.11: Flood in poort (Classen, n.d: online).

Figure 2.12: British soldiers in poort (Classen, n.d: online).

Figure 2.13: British soldiers in Anglo Boer War (Classen, n.d: online).

In 1959, James F. Coughlin established the Roman Catholic Church at Toorwater (Classen, n.d: online). A priest from Oudtshoorn comes to deliver mass once a month, allowing the church community to remain active. The other building near Toorwater is an old farmhouse standing empty at the moment.

Apart from the lucerne fields the rest of the surrounding landscape is only used for grazing Angora goats.

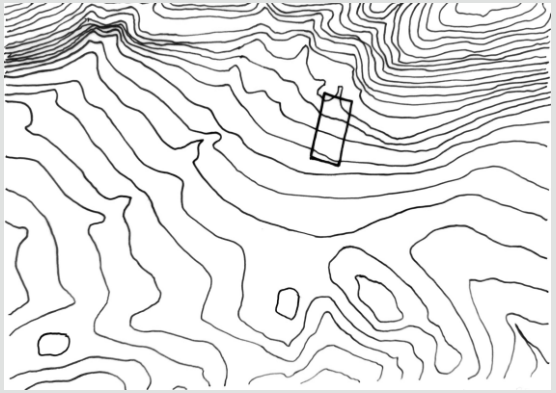
Figure 2.14: Toorwater location (Google Earth, 2022d: adapted by author).

Figure 2.15: Old farm house (Author, 2022).

Figure 2.16: Roman Catholic Church (Author, 2022).

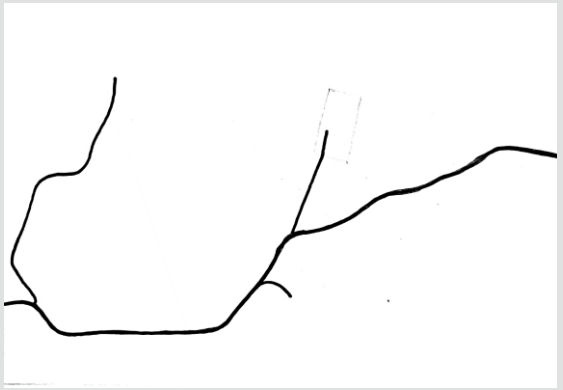
Figure 2.17: Roman Catholic Church interior (Author, 2022).

Contours slope from mountain

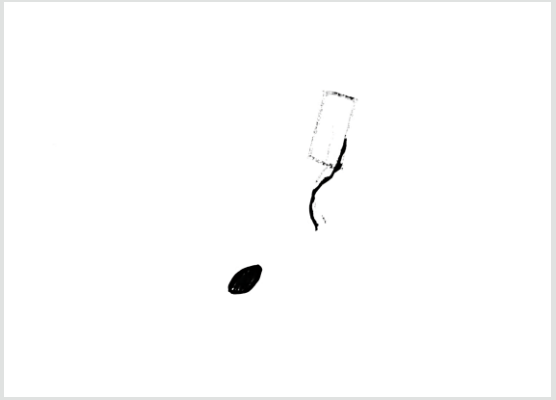


Buildings nearby

Roads connected to Toorwater



Water found near Toorwater



Succulent Karoo Vegetation

Limit of site

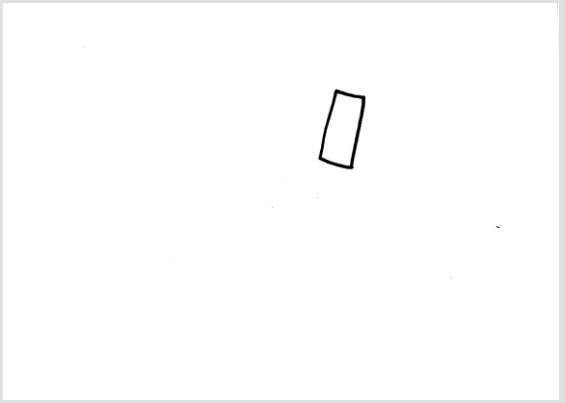


Figure 2.18: meso site analysis (Author, 2022).

The main building on site was used for accommodation and a health spa, while the other was occupied by the groundkeeper when Toorwater was still used as a health spa.

Figure 2.19: Micro site (Google Earth, 2022d: adapted by author).

Figure 2.20: Main building on site (Author, 2022).

Figure 2.21: Existing building on site (Author, 2022).

Figure 2.22: Hot water outlet (Author, 2022).

Photographs of site:

Figure 2.26: Orange ground in gorge (Author, 2022).

Figure 2.27: Remainder of garden (Author, 2022).

Figure 2.28: Underground water tank (Author, 2022).

Figure 2.29: Site approach (Author, 2022).

The two existing buildings on site were built in 1902 and is therefore classified as heritage building according to the National Heritage Resources Act 25 of 1999. Buildings older than 60 years are protected by the Act and must be preserved. As these are the only buildings on site, they are a fundamental part of the site and its history. This influences the design as the existing structure must be reused and therefore become part of the design and direct the design decisions.

Travellers left their donkeys in the old kraal when they stayed overnight. When the baths were still used the visitors could either stay in the buildings or camp under the Oak trees.

Today only traces remain of the camping grounds, old kraal and outside baths. The two buildings still stand but are left to decay, as it is no longer being used.

A wide variety of native trees is found on site, along with the remains of a garden.

The site is approached from the South along a gravel road which leads up towards the mountains at the Northern side of the site.

It might not be used today, but the water still flows strong and the grass remains green from the hot spring water, creating an oasis in the dry Karoo landscape.

Figure 2.23: Existing building on site (Author, 2022).

Figure 2.24: Main building on site (Author, 2022).

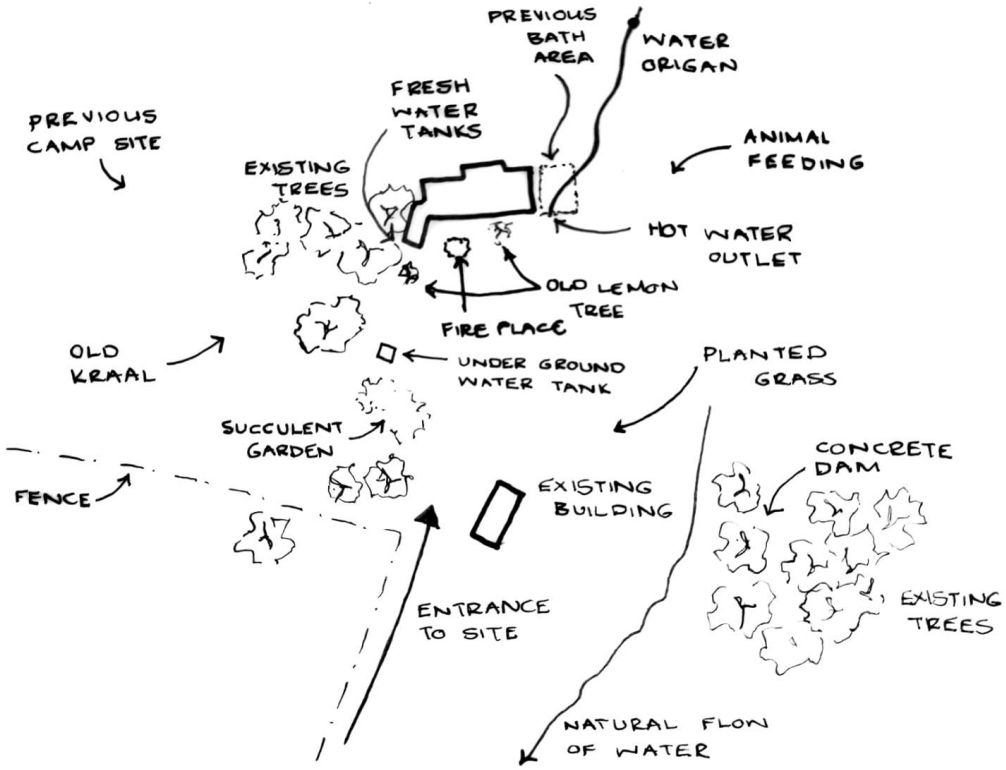


Figure 2.25: Micro site analysis (Author, 2022).

Photographs of site:

Figure 2.30: Remainder of oak trees (Author, 2022).

Figure 2.31: Dam on site (Author, 2022).

Figure 2.32: Remainder of old kraal (Author, 2022).

Figure 2.33: Existing building sitting in site (Author, 2022).

Figure 2.34: Photos of hot water outlet (Author, 2022).

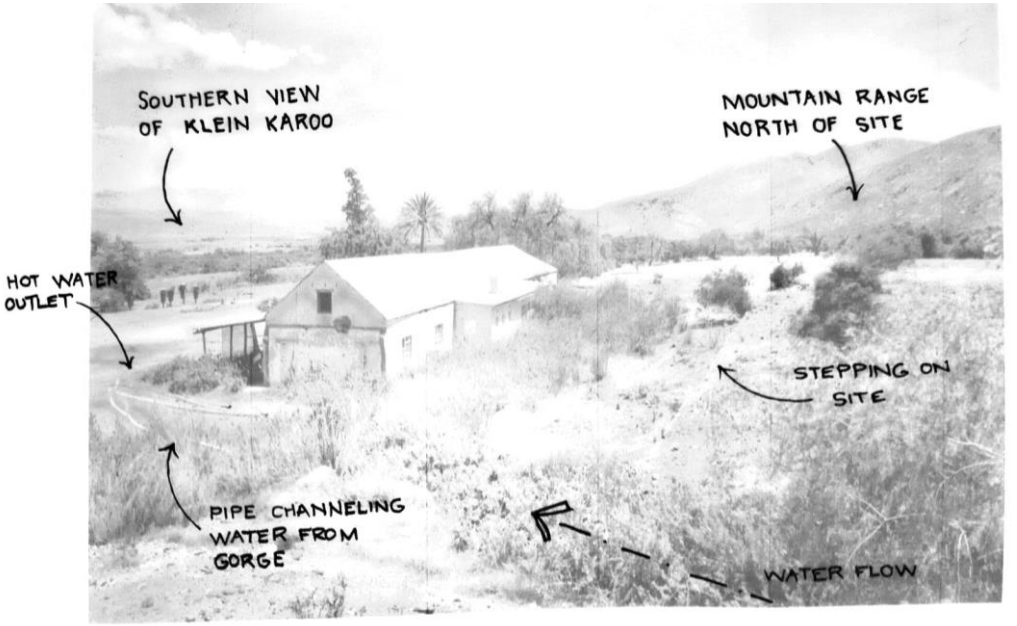


Figure 2.35: Analysis of site (Author, 2022).

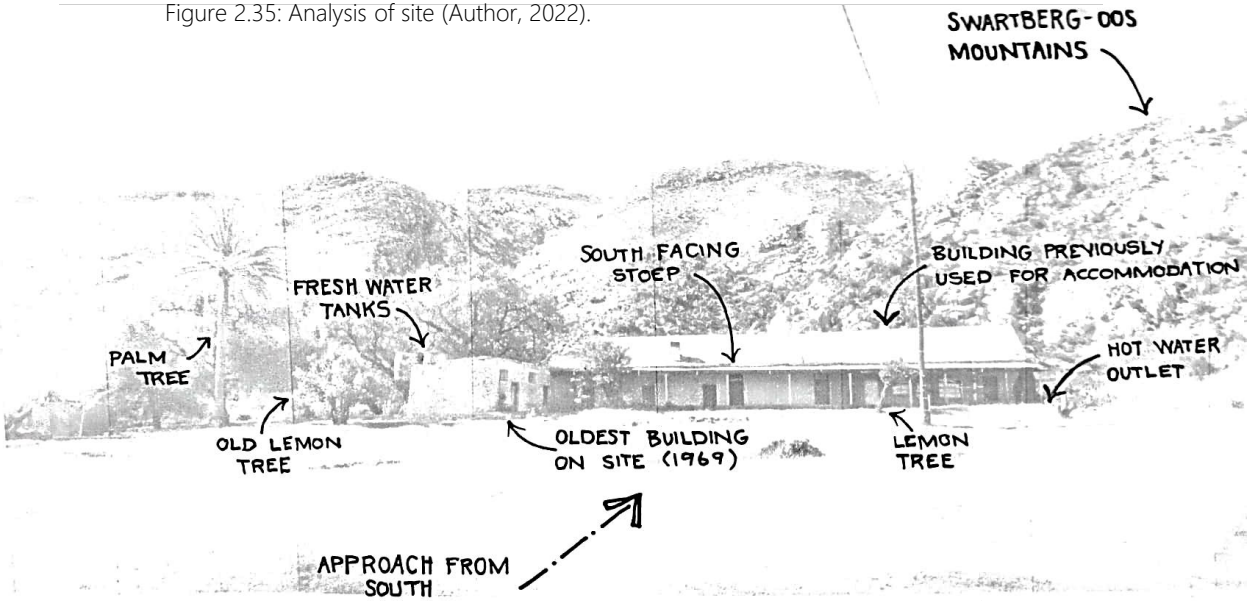


Figure 2.36: Analysis of building (Author, 2022).

Restrictions: Site size 95m x 195m

Area: 1.80Ha

Prevailing wind direction: South-East to Nort-West

Average Wind speed: 5m/s mean wind speed

Rainfall: 200-300mm annual rainfall

Climate: Mean Annual Temperature: 17-18°C

Max 30°C in summer and min 4°C in winter

Vegetation: Succulent Karoo Vegetation

Solar radiation: 5 251 - 5 500 W/m^2

Rock: Travertine & Manganese oxide with iron

(CapeFarmMapper, 2022: online).

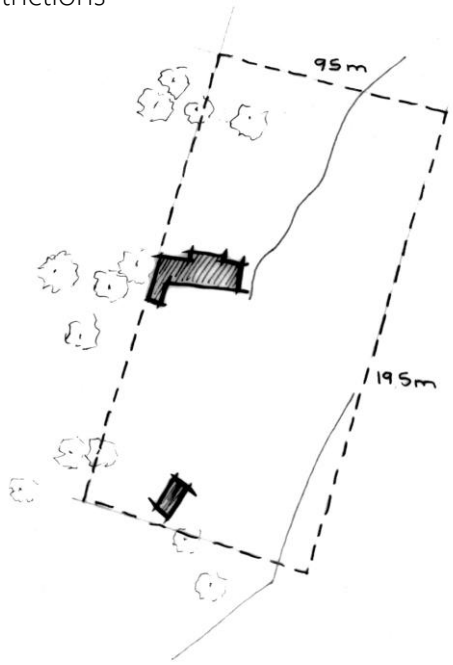
Warm summers lead to specific building features such as the stoep towards the South to occupy in the warm summers.

The natural hot water, on the other hand, is ideal to heat up in the cold winter months.

Low rainfall means little vegetation, but at Toorwater the natural water source provides ample water to maintain vegetation.

Figure 2.37: Section drawing of site (Author, 2022).

Restrictions



Sun path

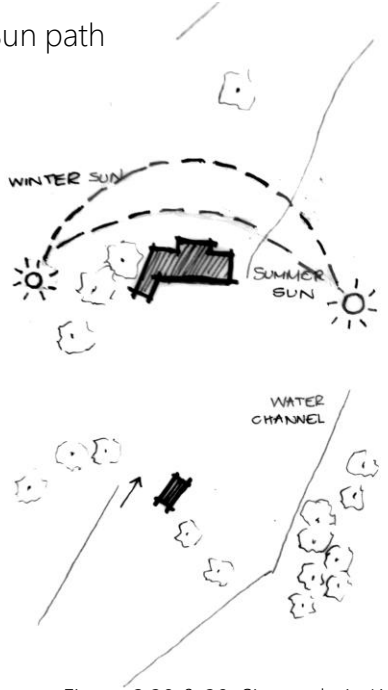
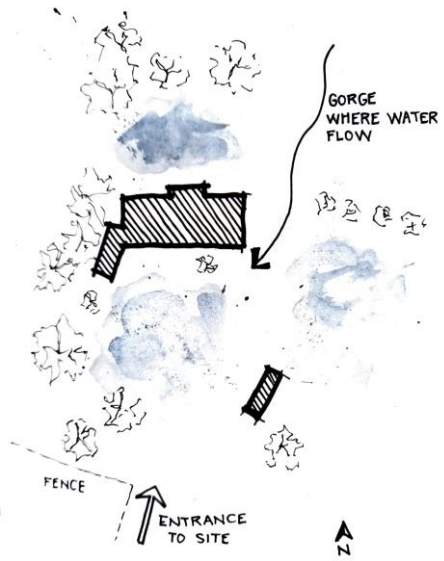


Figure 2.38 & 39: Site analysis (Author, 2022).

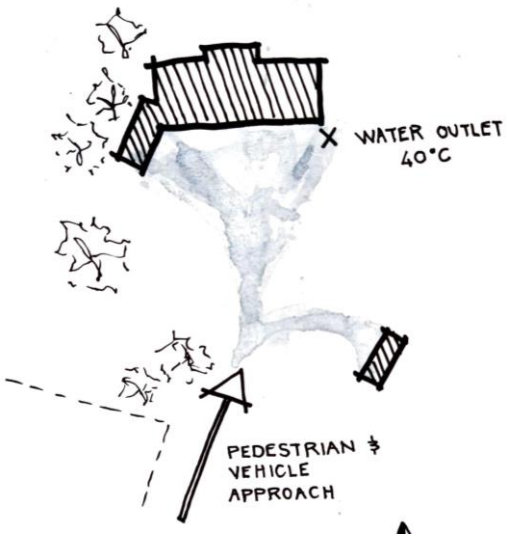
Figure 2.40: Water with high iron levels (Author, 2022).

Figure 2.41: Manganese rock (Author, 2022).

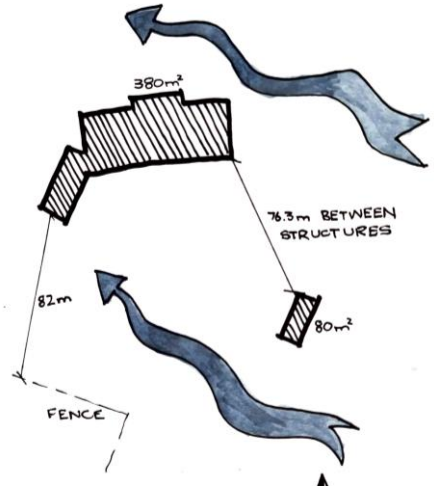
Space



Approach



Wind direction



Views

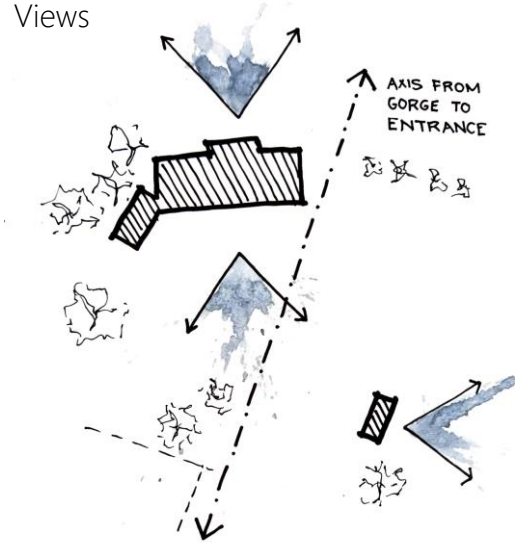


Figure 2.42-2.46: Site analysis (Author, 2022).

Figure 2.47: Hot water flowing from pipe (Author, 2022).

2.6 Natural hot spring

There are eleven thermal hot springs in the Westen Cape (Erfurt-Cooper & Cooper, 2009: 131). Eight of these thermal springs are developed, and Toorwater is one of the three that remains undeveloped. Thermal water is heated by volcanic activity or pressure built up in subterranean rock formations. It results in a geothermal temperature gradient passing through fractures in the earth to heat the water (Erfurt-Cooper & Cooper, 2009: 131).

Thermal springs have many associations with myths and beliefs that these waters have healing powers. Most of these springs have a story or legend about their miraculous healing powers, which promotes them to tourists (Erfurt-Cooper & Cooper, 2009). Similarly, the story of Toorwater contains legends about the thermal spring's healing powers that fascinate people and attract tourists.

During the 17th century, the Dutch settlers brought the thermal spa culture to South Africa. The Dutch discovered natural thermal springs, which were later turned into spa resorts. Resorts were established over South Africa: Warmbaths in Limpopo, Badplaas in Mpumalanga, Montagu in the Western Cape and Aliwal North in the Eastern Cape (Booyens, 1981).

The water at Toorwater reaches the surface at 49°C and is classified as 'chalybeatic', which means the water has a high iron content that can be accompanied by manganese (Kent, 1952). Chalybeatic water can also be referred to as ferrous water. Bathing in iron-rich water can help with iron-deficiency, anaemia, and stress-related conditions (Petraccia et al., 2006). Iron-rich water can also be used to sustain the blood with oxygen while also assisting in forming red blood cells that will help the body build resistance against disease, and maintain the body's metabolism (Altman, 2000).

Figure 2.48: Hot water flowing down site (Author, 2022).

2.6 Natural hot spring

Toorwater thermal spring has high amounts of iron and contains manganese with a total dissolved solid count of 100mg/l. The PH value of Toorwater is 7.1, which is considered neutral. Other main cations found in the water of Toorwater are chloride and sulphate (Kent, 1952). Toorwater also contains nickel, phosphorous, rubidium, lithium and strontium (Diamond & Harris, 2000).
Thermal springs can be used for health, pleasure, wellness, and balneotherapy. Natural occurring thermal water can be used for therapeutic purposes. Balneotherapy is "a natural approach to health and healing that uses hot spring water, gases, mud and climatic factors as therapeutic elements" (Altman, 2000: 180). The water, however, does not comply with SANS 241:2005 drinking water standards for humans and is also not suitable for livestock (Olivier & Jonker, 2013: 38).

Health and wellness tourism immediately comes to mind when approached with a natural hot spring. "Thermal springs have considerable potential for the revival of health and wellness tourism" (Olivier & Jonker, 2013: 38). Thermal spring tourism refers to using thermal springs for health and leisure purposes that will prevent disease or promote wellbeing (Erfurt-Cooper & Cooper, 2009).

2.6 Natural hot spring

Benefits associated with thermal springs include:

• Health – the minerals in hot springs can treat health conditions such as arthritis, psoriasis and rheumatism.

•Mental – body, mind and spirit are uplifted when visiting a thermal spring and will result in a feeling of wellness.

•Therapeutic – bathing in thermal waters containing natural minerals that can be relaxing and mentally uplifting.

(Erfurt-Cooper & Cooper, 2009).

Wellness tourism caters for people who want to relax or experience something different (Olivier & Jonker, 2013: 38). Toorwater can offer both, with a natural hot spring as an attraction that can also be used for experiential purposes.

Tourism is a labour intensive industry and can therefore be beneficial in job creation for small rural communities (Olivier & Jonker, 2013: 38). This makes the reactivation of Toorwater more considerable as it will not only provide health and wellness benefits, but also provide job opportunities for the locals.

"It is thus clear that South African thermal springs have considerable development potential, which can be optimised by cascading the water through multiple tiers of use" (Olivier & Jonker, 2013: 38).

Figure 2.49 Flowers with mountain range background (Author, 2022).

2.7 Conclusion

The site analysis leads to a better understanding of the site and its surrounding context. Situated between Willowmore and Oudtshoorn puts Toorwater in an ideal tourist spot. Historical landmarks such as the Toorwater station and the Roman Catholic church strengthen the site's significance. Toorwater is situated on a sloping site with the Swartberg mountains in the North and a view over the Klein Karoo in the South. Traces of history is still visible on the site and assist in telling the story of Toorwater. Historic buildings provide the chance for adaptive reuse on site to activate these buildings again.

The site's slope encourages a natural journey from the site's approach to the origin of the hot spring higher up. Along the journey, traces of the site's history and breathtaking views over the Klein Karoo landscape can be found. The journey starts to tell the site's narrative, which is the essence of the place. Rocks, structures and vegetation all point to the story of Toorwater and how the place came to be. Looking at the history of thermal springs and the benefits of bathing in natural spring water starts the approach to an appropriate architectural response to tell the site's story and allow people to experience the benefits of the natural spring. Health and wellness tourism is the most appropriate response that will contribute to the site.

CHAPTER 3 | Touchstone

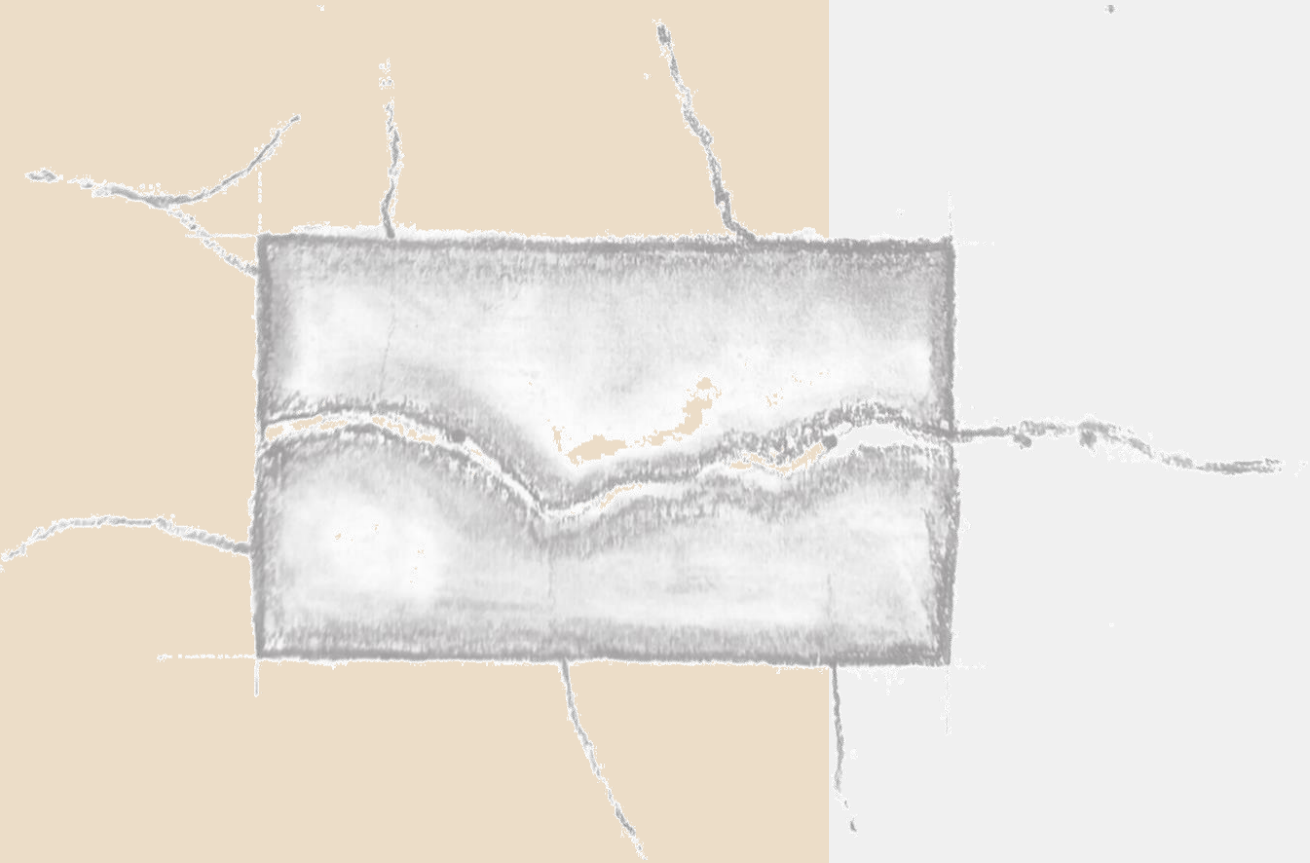


Figure 3.1: Sketch at Toorwater (Author, 2022).

Figure 3.2: Touchstone (Author, 2022).

Touchstone

The touchstone is an initial exercise to capture the site's essence abstractly and showcase the design intent. The outcome of the project and the effect it will have on the place, and people, are presented creatively to capture the project's essence and assist in the development of the design.

The mystery of the *betowerende** qualities of Toorwater makes the water significant and gives it interpretive depth. Maybe it is not the water that is *betowerend*, but rather the stories, the interpretation and the fantasy, that makes the water *betowerend*. The stories are the core of the water and might also be the key to understanding the water. The water is mesmerizing and open for interpretation, leading to various stories.

Much of the water's identity is captured in the stories surrounding the water. In the different stories, three core characteristics of the water take shape, the water as a source of life, its ability to heal and its mystical quality. Merging these three qualities of the water, the essence of the water is uncovered. The touchstone weaves the stories together to generate the essence of the water.

The touchstone shows these three qualities that make up the essence of the water. When looking from above, one's perspective of the three distinct characteristics is altered and woven into an encompassing whole - questioning the individual's interpretation.

The touchstone development process and investigation helped me come to the conclusion that the essence of the water is the combination of the different stories. For the *betowerende* essence of the water to be sustained, the stories need to be encouraged by retelling the stories or allowing interaction with the water for new stories to be born.

*See glossary

CHAPTER 4 | Concepts

Figure 4.1: Obscure sketch (Author, 2022).

4.5 Introduction

The architectural concepts provide three conceptual approaches to the site's design response. Client, site and project type all work together to create the concept: a unifying theme related to architecture. The concept requires that it must be able to be drawn and built. Relating to the site, the concept is project specific and relates to the essence of the project.

The main characteristic of Toorwater is the different interpretations of the place. This aspect was used as a tool to analyse the site and the three concepts, therefore, showing different interpretations linked to Toorwater. The three characteristics of the water are healing, source of life, and mystery, which lead to the concepts of origin, process and obscure.

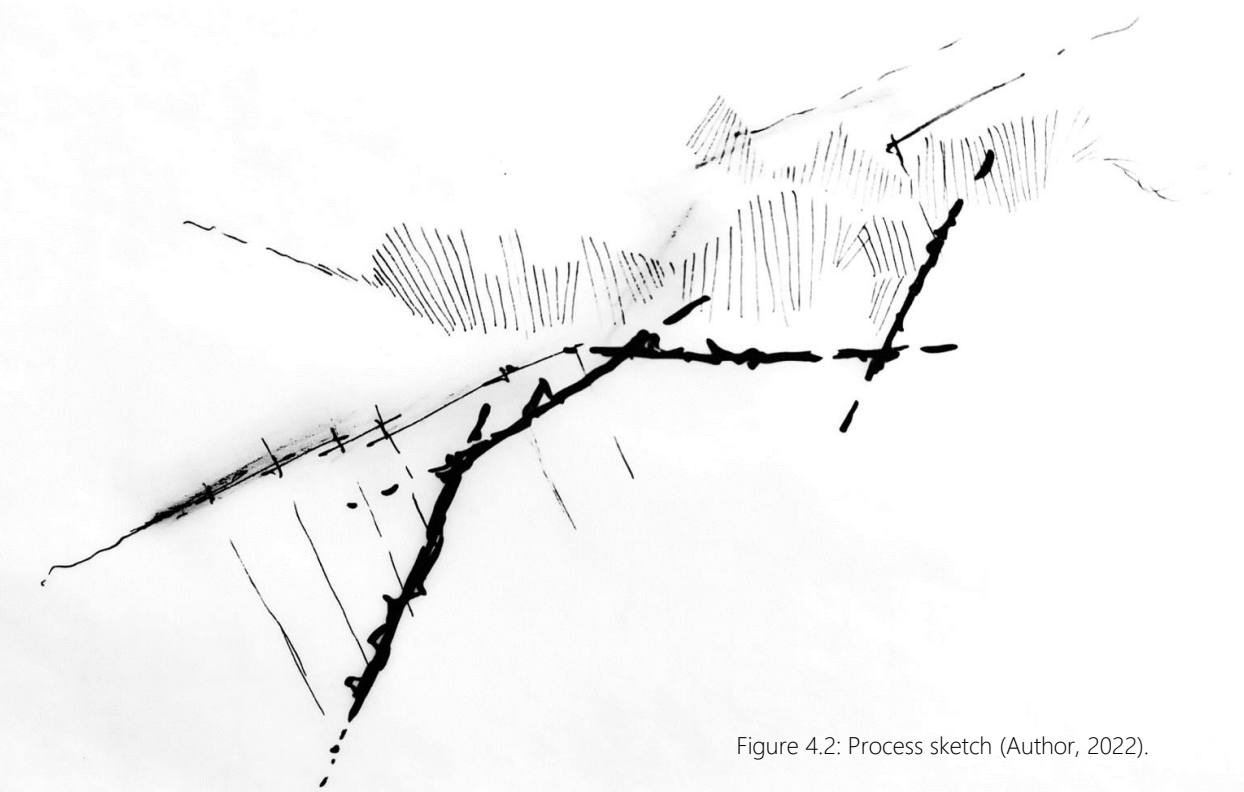


Figure 4.2: Process sketch (Author, 2022).

Figure 4.3: Process concept model (Author, 2022).

Connection | Story line | Foundation

Process as a concept started with the progression through the site and also relates to the development of the stories. The source of life is connected to the water's *betowerende* attributes that attracted people to live there. All the stories are connected by the water, similar to how water connects all life. Connecting people to the water will lead to interaction, and inevitably, new connections to the water will be shaped. The water, in this case, is not only a source of life but also the source of different stories. Water is the storyline's foundation that allows stories to flow while sustaining life. The stream of life is the foundation of all beings. The site is the foundation for the design, and the design is therefore rooted in the site.

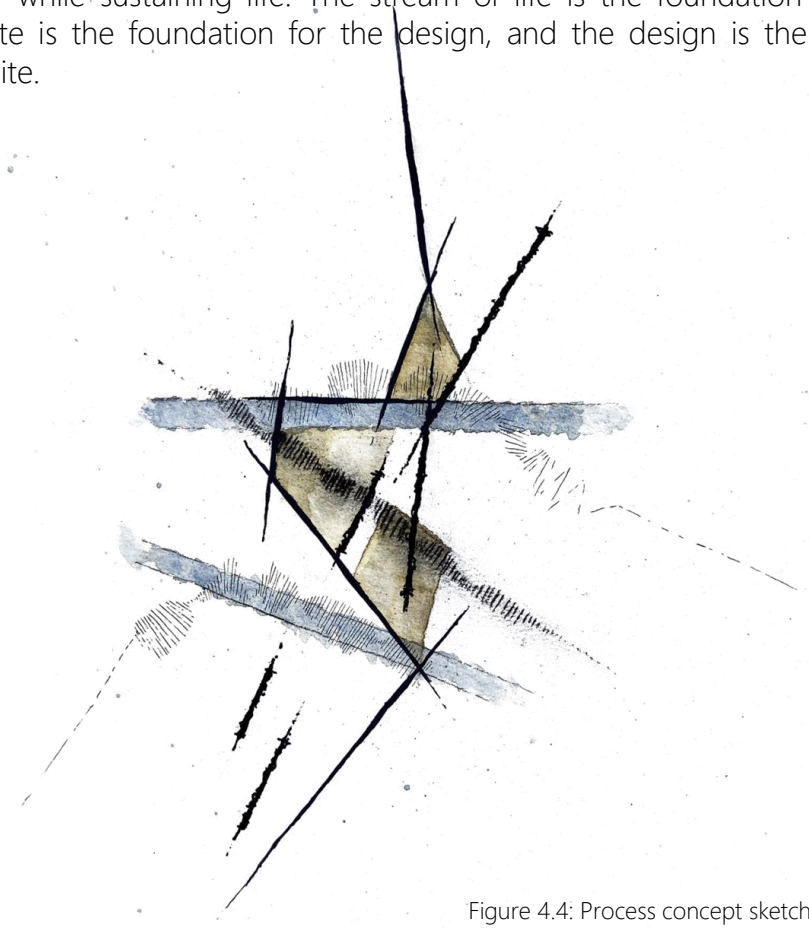


Figure 4.4: Process concept sketch (Author, 2022).

Figure 4.5: Origin concept model (Author, 2022).

Threshold | Unfold | Balance

'Origin' here refers to the birthplace of the site's characteristics, which in this case is the water. The water, as a healing substance, restores the imbalance. Illness is the lack of total harmony (Wepener & Müller, 2013: online), and healing is a process where the imbalance is restored. Transition happens from illness to health. Healing is also a process that happens over time, and the passage of time is needed to heal.

Healing is the development from illness to health through steps: stepping on a path that transforms that which is imbalanced through space unfolding when passing through. The process of movement creates harmony between humans and space or humans and nature. Transition over the threshold using different materials can be successful when materials complement each other and work together to create a balance. There is a balance between following a path and discovering a path. (Botsford, 2020: online).

Figure 4.6: Origin concept sketch (Author, 2022).

Figure 4.7: Obscure concept model (Author, 2022).

Screen | Undercover | Shadowing

Obscure as a concept refers to covering something or uncovering it. In this instance, the uncovering of stories related to Toorwater is investigated. To reveal something, it must first be covered, screened or shadowed. The mystical quality of the water obscures the true fact, but is also the reason why people are intrigued. When something is obscure, it cannot fully be comprehended, but leaves the viewer in suspense and even allows them to make their own interpretation.

An oasis is a refuge where a source of water is found in a dry area, allowing that area to become a fertile spot. The water is an enigma as it is mysterious and difficult to understand. The mystery of the water is that it cannot be understood, and the explanation is concealed. The real reasons for the water's mystical quality are obscured and shadowed by the various stories that try to uncover the mystery. Through the process of trying to uncover the truth, only more stories take shape because everybody has their own interpretation. A veil will create a shadow and obscure the view. The mystery is related to the uncertainty of the true object. The obscurity becomes the new characteristic of the object rather than the real object itself.

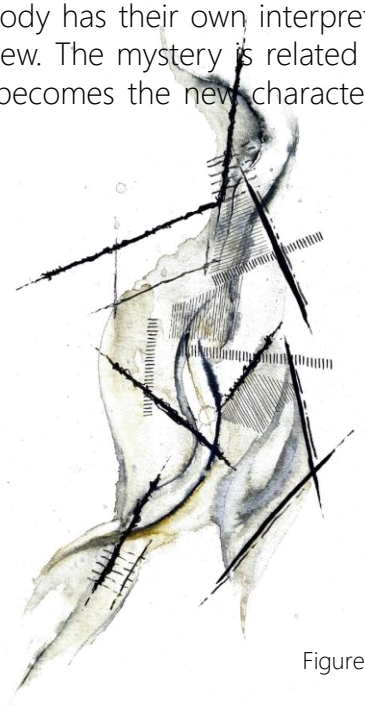


Figure 4.8: Obscure concept sketch (Author, 2022).

4.5 Conclusion

The three conceptual approaches all provided a way to interpret the site and the narrative of Toorwater. The main characteristics of the site are interpreted on the landscape of Toorwater with reference to the journey along the site. All three conceptual approaches can be used to form an appropriate architectural response to the site.

Combining the three conceptual approaches lead to an architectural language which uses the water as the main connection and storyline of the site: architecture which unfolds with the transition through thresholds and obscures the true fact to allow people to make their own interpretation of Toorwater.

In the next chapter, Theoretical Discourse, this unfolding will be explained in terms of the theories of Narrative.

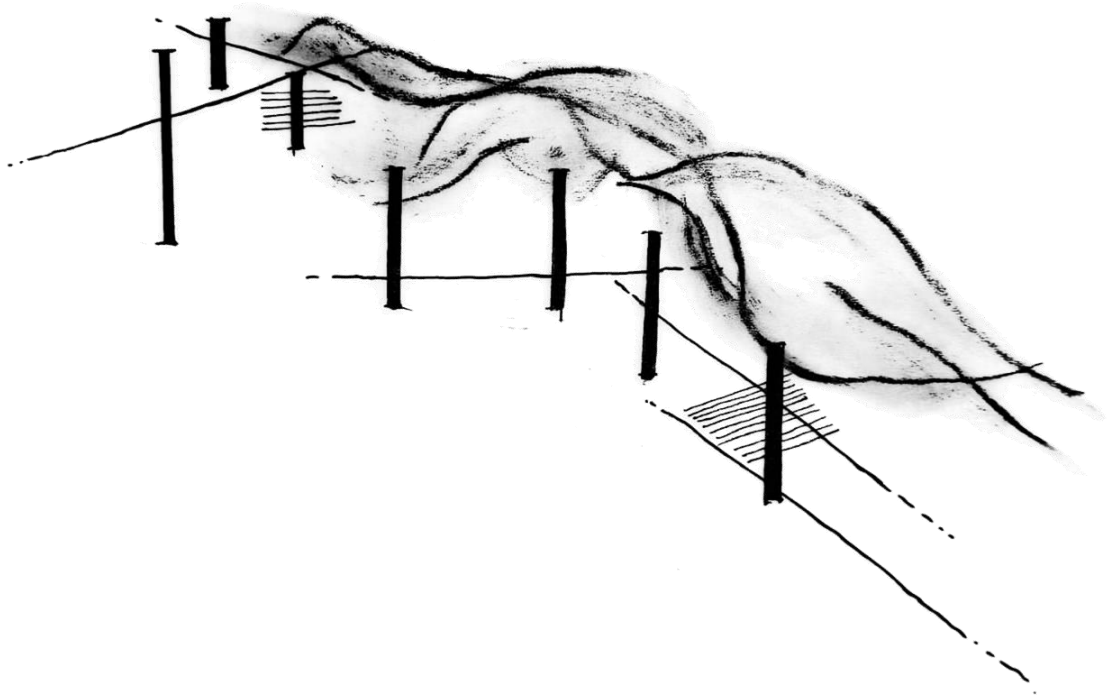


Figure 4.9: Origin sketch (Author, 2022).

CHAPTER 5 | Theoretical discourse

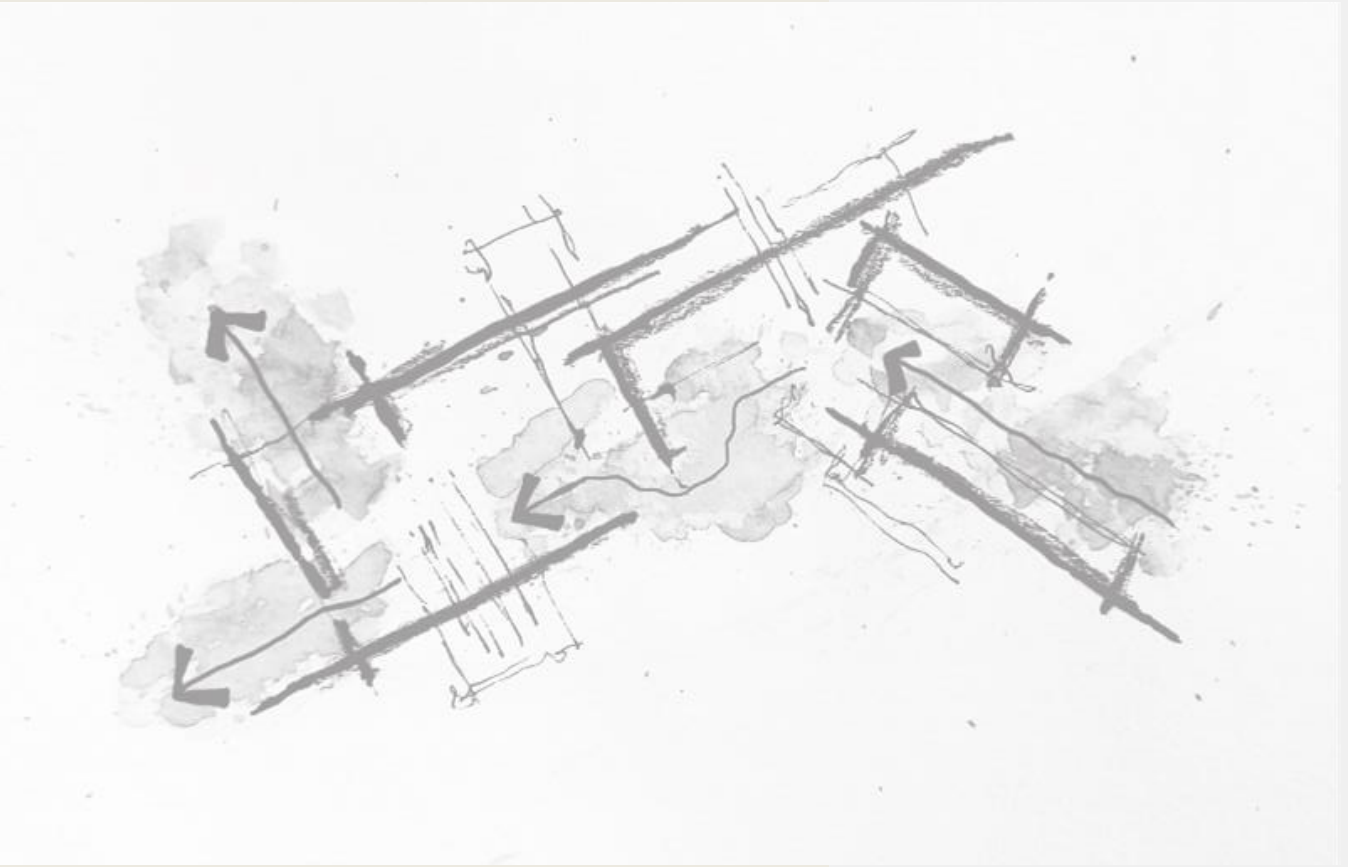


Figure 5.1: Theory sketch (Author, 2022).

CHAPTER STRUCTURE

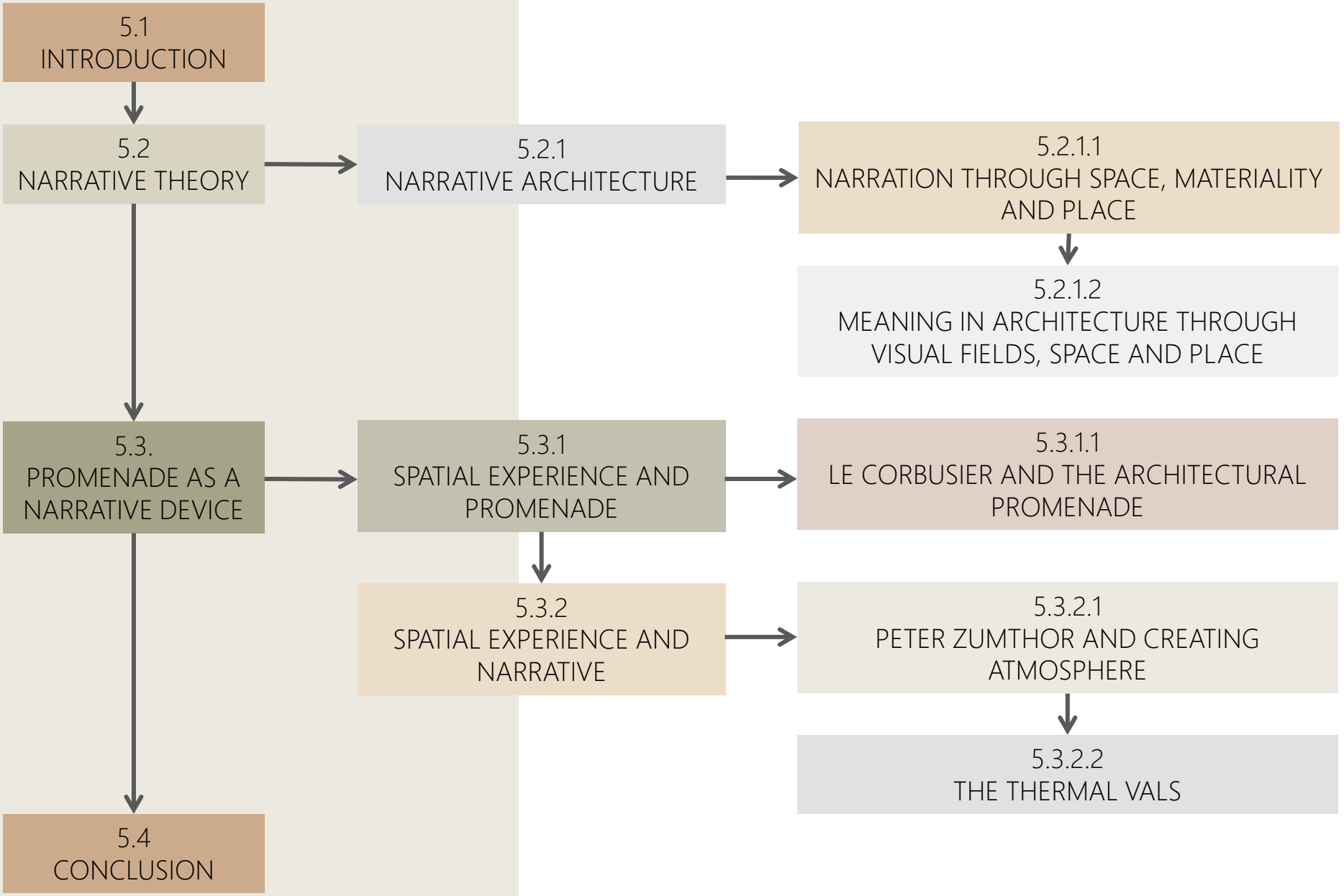


Figure 5.2: Natural landscape at Toorwater (Author, 2022).

Figure 5.3: Natural hot spring at Toorwater (Author, 2022).

5.1 Introduction

Toorwater is a wellness retreat shaped by the stories surrounding the place and the water, defining its character and identity. The site is located on a small farm in the Klein Karoo. As the narratives of Toorwater shape the character of the place, it can also be used to shape the architecture. Therefore, the design process is centred around Narrative theory, as developed by Paul Ricoeur (Ricoeur, 1991), to determine an appropriate architectural response to the site, which provides a place for isolation, relaxation, and meditation. The beautiful natural landscape, (Figure 5.2), provides a sense of peace, with the natural hot spring as Toorwater's main attraction (Figure 5.3). Narrative theory is discussed to investigate how the story of Toorwater can be told through architecture and capture the present experience and qualities of the site. Investigating narrative leads to understanding the implications of stories and how people interpret them. Narrative, in terms of architecture, investigates how experience can be captured, expressed and enhanced with the assistance of architecture. The leading theory is supported by looking at the 'architectural promenade' as implemented by Le Corbusier, and 'atmosphere' as implemented by Zumthor, to similarly capture the character of Toorwater through heightened experiences and allow for new interpretations of its story.

"Cultural are upheld by storytelling, especially by the elders in a community, rather than by literal facts. If the story authenticates the mystique and connects to the landscape, it stays in the collective memory of people"

(Biesele, 1993).

Paul Ricoeur (1913-2005) was a French philosopher who contributed to narrative theories and was also known for his engagement with hermeneutic phenomenology. Narrative theory assumes that storytelling is a fundamentally human way of understanding experiences such as time, process and change. From my study, the nature of narrative and its uses, structures, elements and effects take shape. Narrative as storytelling is therefore understood to be a way of explaining human experience. As Phelan (2022: online) explains, narrative theorists study is "how stories help people make sense of the world, while also studying how people make sense of stories."

In his book *Time and Narrative*, Ricoeur (1984) explores the relationship between narrative and time. His theory broadens narrative from historical and folklore to meaning-making through written stories of lived experience. He refers to 'refiguration' as the recollection of events to reveal existential realities. These realities reveal what it is to be in the world beyond just the literal meaning (Ricoeur, 1984: 54). Interpreting these narratives provides the opportunity for an imaginative leap he refers to as the "poetic act" (Ricoeur, 1984: 64). Ricoeur believes that past narrative theorists distanced lived experience from narrative and restricted narrative to fiction. He rethinks this relationship between history and life and concludes that fiction shapes human life.

In his earlier work, *The Human Experience of Time and Narrative*, Ricoeur (1979) writes about how narrative influences our experience of time. Ricoeur argues that storytelling and writing down history can be used as a device to understand that which seems chaotic, mute and obscured. Narrative thus shapes time by allowing for the understanding thereof. Ricoeur questions whether there is any difference between history and fiction since, in his view, both shape our experience of time (Ricoeur, 1979: 33). Hayden White (1928-2018) agrees with Ricoeur that a relationship exists between history and fiction because of their narrative structure (Ricoeur, 1984: 161).

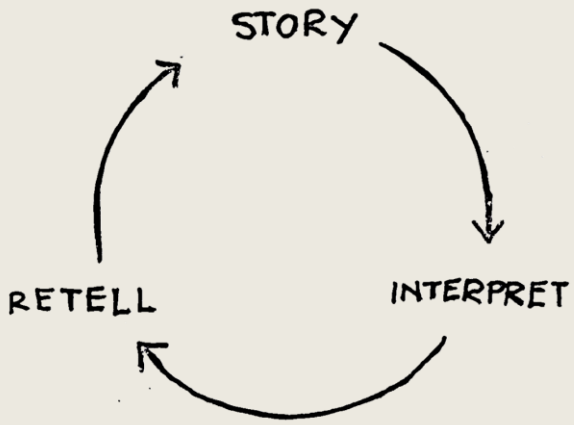


Figure 5.4: Retelling stories (Author, 2022).

Bridging the gap between historical and fictional narratives can only be done by proving that they are both grounded in basic temporality, giving both of them an existential foundation. Ricoeur claims that the reasons for writing history and telling stories are both rooted in temporality, creating a unity between the future, past and present (Ricoeur, 1979: 34). From Ricoeur's writings, it can be argued that both historical and fictional narratives influence our experience of time and are essential in understanding our lived experiences.

This relation between life and narrative is discussed in his article *Life in quest of narrative* (Ricoeur, 1991: 20). Here, the retelling of a story is referred to as the best way to reveal the real value of a story as more attention is given to the transition towards the conclusion (Ricoeur, 1991: 22). Here the poetic act and temporal totality are linked to a narrated story, but still he states that "stories are recounted, life is lived", and the gap between fiction and life is yet to be crossed (Ricoeur, 1991: 25). Ricoeur continues by stating that "stories are recounted, but they are also lived in the mode of the imaginary" (Ricoeur, 1991: 27). Narrative allows life to be reconfigured and this is how he links life and narrative, as reading is a way of living (Ricoeur, 1991: 26). Therefore, the stories of Toorwater, whether fictional or historical, are essential in understanding the lived experiences of visitors at Toorwater. From the above-mentioned argument, my hypothesis is that this may also be said for architecture, as experiencing the narratives of architecture is also a way of living.

The narrator tells the story, but we can be our own narrator as to how we perceive these stories (Ricoeur, 1991: 32). Our imagination allows us to obtain a narrative understanding of our own identity, referred to as 'narrative identity' (Ricoeur, 1991: 33). Charles Taylor (1931-age 90 years) disagrees with Ricoeur's idea of the relationship between narrative and self. Taylor believes that this relationship is not based on formal emplotment, but rather that one must be able to justify one's own understanding with transitional arguments and practical reason, which is interpretations of "what I really have been living." He takes the position that some positions may not be absolutely correct and that some positions may be superior to others (Taylor 1989, 72).

Ricoeur argues that narrative is poetic, but Taylor disagrees with this notion as he believes that the existence of our being in language is a problem for interpretive judgement and practical reason (Taylor, 1989). Taylor may have a point that external factors may influence our interpretation of narrative, but maybe that is what contributes to the interpretation. It may not be interpreted by judgement or reason but instead experienced with external factors, i.e. architecture that contributes to, rather than obscures the narrative interpretation.

The narrative understanding that Ricoeur refers to can extend to a narrative understanding of architecture. Therefore, this theory is relevant to the design proposal as the proposed site is saturated with stories about the place, its character, history and spirit. With narrative as the primary guiding point for the design development, this theory not only assists with understanding the overall narrative but also in understanding how the narrative can be personally interpreted. The theory demonstrates how the narrative can determine the way humans experience time and, in that sense, architecture. Ricoeur believes that individuals can incorporate existing narratives into their own. The architects can therefore incorporate the narratives of Toorwater into architecture and tell the story with the assistance of structure material and atmosphere.

In order to link narrative theory to architecture, other theorists are also consulted about narrative in architecture, and promenades and atmosphere are explored to strengthen narrative in architecture and make it practical to apply in architecture.

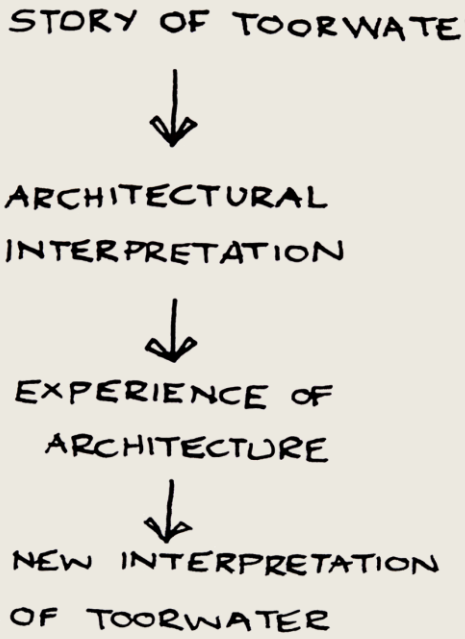


Figure 5.5: Interpreting Toorwater (Author, 2022).

Narrative is composed of sentences, words and text when associated with language. Architecture is not composed of words and cannot be seen as a language in that sense. When referring to 'narrative architecture' it refers to an adaptive way of speaking that assumes architecture has certain features that allows it to be linked to narrative-like features. The key question is to ask what the words, text and sentences are that allow architecture to become 'narrative.' What are the materials and spatial densities that allow architecture to develop a narrative quality?

Narrative architecture represents a story by interpreting its physical and spiritual attributes. These attributes can include materials, construction, morphology, space arrangement, and the use of colour and light. The architect is the 'teller' of the story and the visitor, the reader, experience the story. The story can be interpreted in different ways and have multiple meanings. Like a book, architecture is designed by an author, the architect, and read by a reader, the visitor, to provoke reactions and emotions from the visitor (DiMascio & Maver, 2014: 654).

This links to Ricoeur's view that a story is interpreted and that retelling a story can add value to the original story as the narrator tells the story from their perspective and experience. In response, the reader of the story will also have a different interpretation of the story and interpret it differently. The same is valid for when an architect interprets a site. Each architect will have a different interpretation of the same site, as their experience of the site will differ because of their individuality. The architect can only interpret the site and retell its story as they experiences it.

The act of interpreting the story of Toorwater into architecture can be linked to the medium of the 'poetic act' as referred to by Ricoeur. In this case, the architect is the author retelling the story of Toorwater, using architecture as a means for the user to experience the story and interpret it in their personal way.

Ground colour

Rock contours

Tree heights

Sun exposure

Figure 5.6-5.9: Site characteristics (Author, 2022).

5.2.1 Narrative architecture

DiMascio and Maver propose ways of telling a story through architecture in the journal *Investigating a narrative architecture* (2014). DiMascio and Maver explain how previously mentioned attributes can be used to tell the story of place. Ground colour, rock contours, tree heights, and sun exposure are some attributes of the physical context that can be translated into architectural characteristics. As the architect is the author, they must do the extensive research on the site to write an appropriate story thereof. A better understanding of the site will lead to a more appropriate architectural response. The narrative is already embedded in the place so that the architect can reveal it with the appropriate architectural elements such as materials, colour and light, morphology, and space arrangement (DiMascio & Maver, 2014: 654-655). Investigating the site leads to an understanding, and architectural elements can then be used to reveal the site's unique essence and retell the narrative.

Figure 5.10: Spatial elements (Author, 2022).

Narrative, which tells the story of a place, also relates to the visitor's awareness of place through spatial experience. A building can make the visitor aware of their surroundings using architectural elements and the architectural response to the surrounding context. Making users aware of their surroundings can be referred to as heightened awareness, which links to the building's ability to make the user aware of the moment and place to create meaning (Louw, 2016: 27 - 28).

Specific elements in architecture can communicate particular meanings. Space, as one of the essential elements of architecture, links to spatial experience, which is used to describe the architectural experience. A building can be experienced by moving through different spatial components which make up the architecture. Architectural spaces can represent various events, while their arrangement establishes the sequence of movement. The architecture is revealed through the experience and discovery of spaces (DiMascio & Maver, 2014: 655-656). Narrative architecture can be analysed through these spatial elements:

- Function arrangement - spatial organisation
- Connectivity - the connection between spaces
- Movement - horizontal and vertical paths that connect spaces
- Spaces - shape and dimensions of spaces

These elements work together to establish the spatial experience by choreographing movement, which links to Narrative as a progression of events to form a storyline.

Characteristics can be added to these elements to enrich and strengthen the story, by focusing on materiality:

- Materials, texture, and position of materials
- Light, natural light, and shadows
- Construction, assemblage system, and technology
- Colours, placement, and type of colours

(DiMascio & Maver, 2014: 655-656).

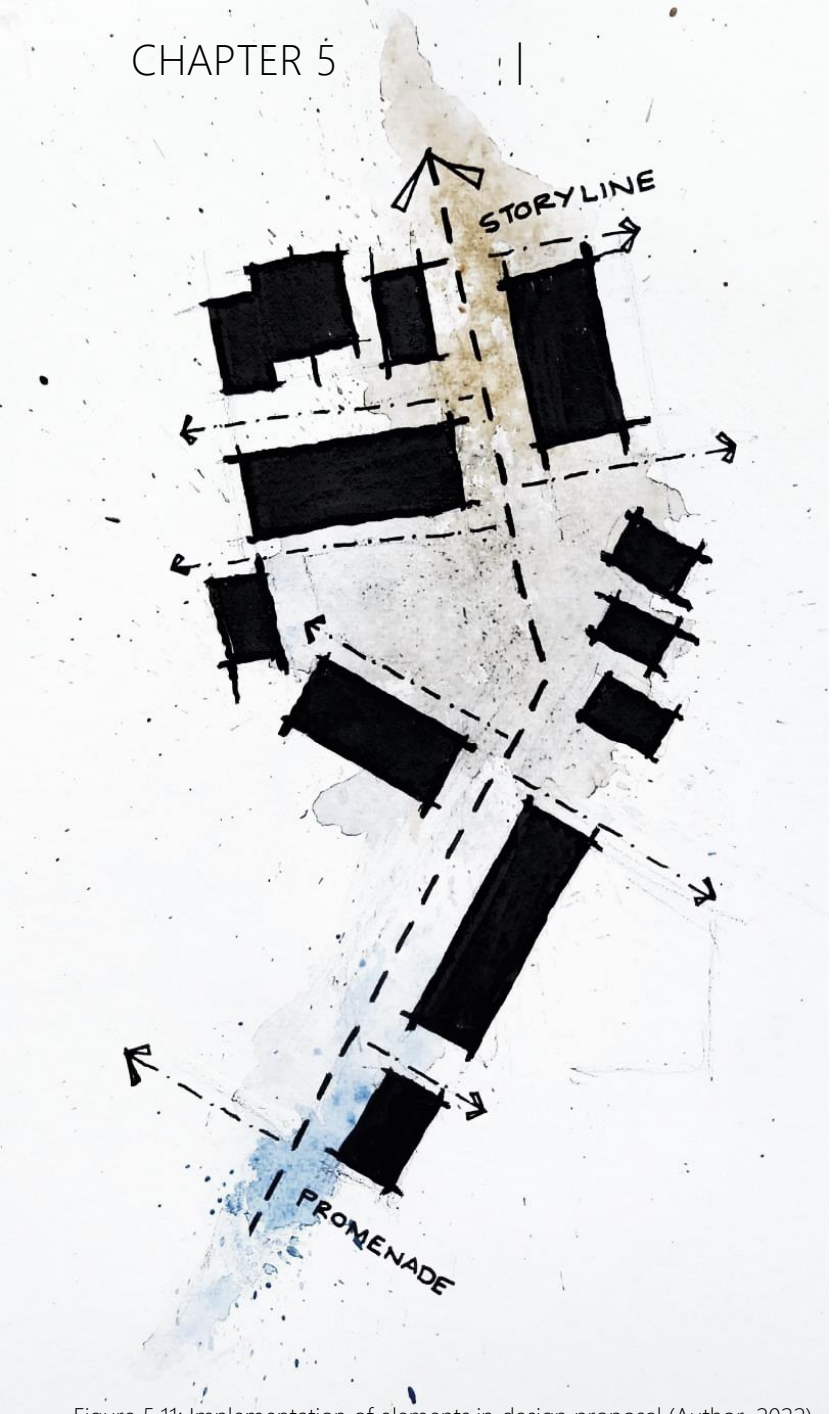


Figure 5.11: Implementation of elements in design proposal (Author, 2022).

Choreographing movement through space, the previous mentioned characteristics shape space and give meaning to the transition between spaces creating thresholds. Using the elements and characteristics, the narrative of place can be scripted and told through the architecture.

The spatial application of the design proposal uses these architectural elements, specifically focussing on movement and space; different functions are arranged from public to private. A promenade connecting all the buildings throughout the site ensures connectivity between the different functions. This connection is strengthened with water channels and ponds along the promenade, functioning as a storyline that connects all the different experiences. The promenade and water channels also direct the movement between the buildings by placing them in relation to each other. The functions determine the shape and dimensions of the spaces within the different buildings and their position in the greater scheme regarding public and private (see figure 5.11).

Figure 5.12: Material application (Author, 2022).

Figure 5.13: Direct light through punctured windows (Author, 2022).

Figure 5.14: Indirect light through light shafts (Author, 2022).

The material application in the design proposal applies the above mentioned characteristics and focuses on the spatial experience. Materials are inspired by the materiality of the existing buildings on site and those available in the region. Stone walls are constructed from local stone, and colours are derived from the existing whitewashed buildings on site and the rocky mountains in the backdrop. Light is essential in the Karoo landscape, and is used in different ways throughout the buildings. The natural bright light acts as a mediator which connects and shapes the different materials throughout the day: direct light through punctured windows or dappled light through shading devices. Indirect light is implemented through roof openings and light shafts.

Figure 5.15: Water channel (Author, 2022).

Figure 5.16: Water dripping down wall (Author, 2022).

Figure 5.17: Reflection pond (Author, 2022).

Water is used as a 'material' throughout the design proposal. The water is used in different forms to link it with the stories referred to in the story of Toorwater. Water flowing down channels, bubbling in baths, dripping down walls, steaming from ponds or even standing still to reflect the sunlight. The Toorwater is the one element that triggers smell, sight, hearing, touch and taste for the vistor. Implementing water into the design proposal creates a multi-sensory experience and, therefore, atmosphere.

The story of Toorwater is told through the building's functional, constructive, and aesthetic characteristics, accompanied by scale, rhythm, proportion, solidity, and transparency, all working together to shape the place (DiMascio & Maver, 2014: 655-656). A well-constructed architectural story is essential in the narrated understanding of place. Therefore, the quality of architecture strongly influences the narrative understanding of place and creates meaning in architecture (DiMascio & Maver, 2014: 661). Not only does the architecture intend to tell the story of the place, but it also allows the user to interpret their own story and better understand themself and the world they live in, as it shapes the experience of time, as proposed by Ricoeur, and our lived experience.

The water, materials and landscape in which the building is situated all work together to create an embodied experience that conveys the narrative of place, reminiscing the source of life, mystery and healing connected to Toorwater.

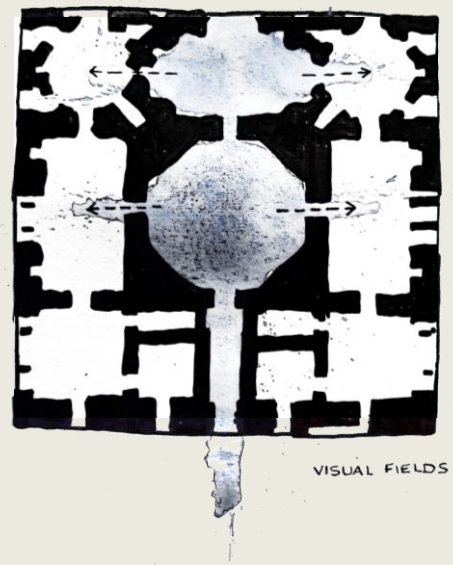


Figure 5.17: Visual fields at Chiswick Villa (Author, 2022).

As argued above, basic architectural elements, such as space and material, can create meaning and determine the lived experience. However, Sophia Psarra (2009) argues that imposing restrictions on the individual's view can also create meaning in architecture.

Psarra who, studied geometry and the configuration of buildings in her book, *Architecture and Narrative* (2009), talks about how the visual field of individuals is determined by the geometry and configuration of the building and uses the example of the Chiswick Villa in London designed by Richard Boyle, William Kent, and Francis Fowke, 1729. Sightlines, visual fields, and patterns of individual spaces play a significant role in human response to space because "...human behaviour constitutes spatial patterns generated and sustained by spatial configuration" (Rashid, 2010: 543-544).

The layout of a building can choreograph and predict human behaviour when a user reacts to the form, patterns and layout of a building. The user's behaviour and response to the building must be purposely manipulated to invoke a wanted interpretation of the story being narrated. Visual fields can be choreographed to determine the user's meaning making and perception of the building by providing different visual variations. The user is encouraged to engage and interpret their spatial experience of the building while generating narrative meaning from it (Rashid, 2010: 544-545). The research question that Psarra's work can generate is, how can visual restrictions be choreographed at Toorwater to create the desired spatial experience?

To answer this question, the design proposal provides visual fields by positioning the buildings. Choreographed restricted visual fields, form and layout generate specific meaning and spatial experience.

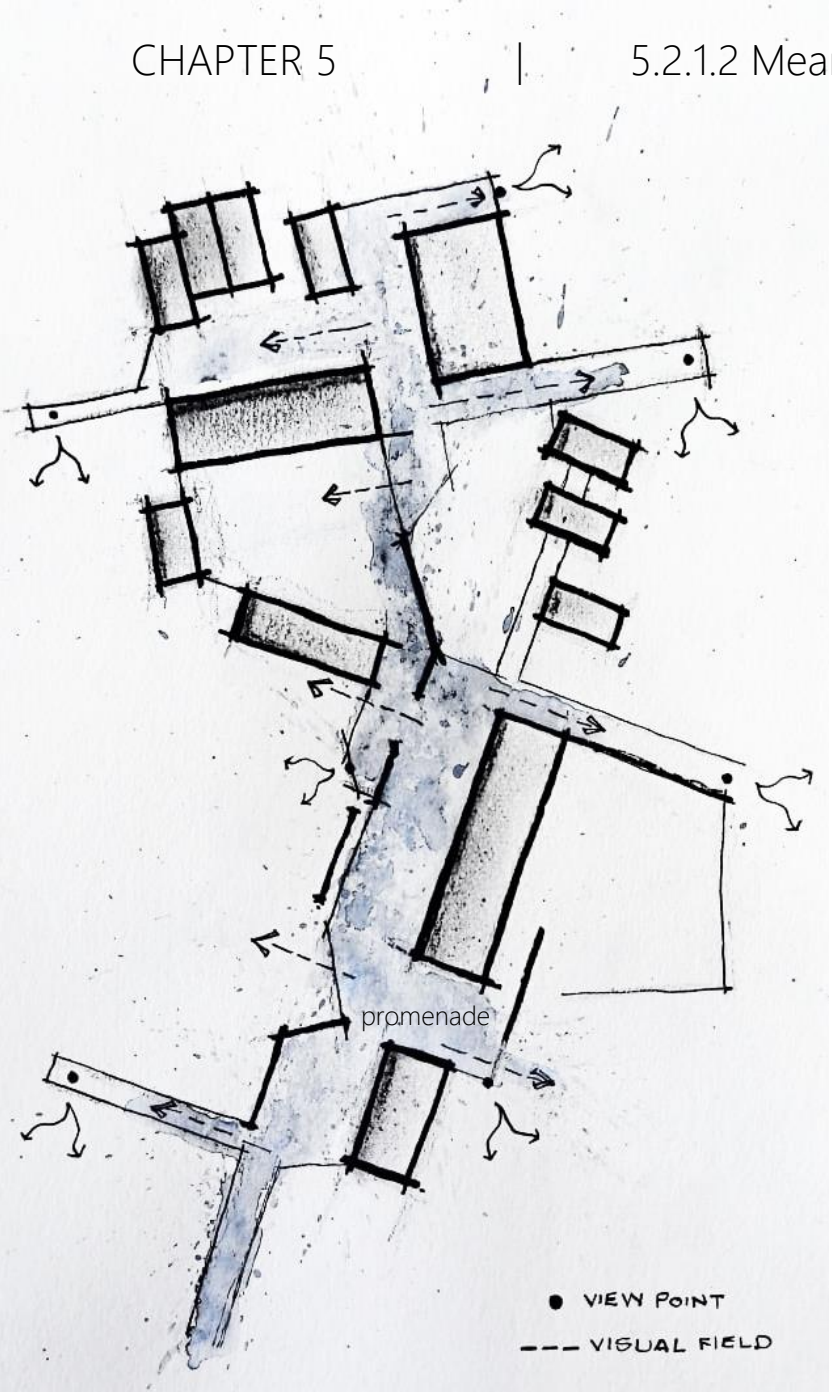


Figure 5.18: Visual fields in design proposal (Author, 2022).

Figure 5.18 shows how the visual fields along the promenade are focused on particular landscape views to choreograph the visitor's experience of Toorwater. Restricting the visitor's visual field in places to particular images assists with telling the site's story and introducing the site to the user. Framing views of the site or allowing lookout points introduce the site to the user as they progress along the promenade. Through the journey, specific glimpses are revealed as a narrative for the user to construct their interpretation. Only at the end of the route can they look back on the journey and see Toorwater as a whole, revealing the sum of all the parts they have been experiencing along the way.

Along with the visual restrictions implemented in the design proposal, the buildings also create visual restrictions. Human behaviour through certain buildings is anticipated with the use of light and, in some cases, water. These two elements determine the journey through a building and how a user experiences the building. Visual fields inside the buildings are also carefully planned to frame particular views and give the space a feeling of seclusion or inclusion. The journey outside allows the user to view away from themself, whereas the journey inside the buildings allows the user to view into themself, providing a place for both an inside and outside journey.

Narrative in the design at Toorwater refers to the experience that is developed by views, sounds and feelings that the user experience at each point in the journey and how they are linked. Promenade, on the other hand, refers to the physical journey from one point to another.

Figure 5.19: Voyage of discovery (Author, 2022).

Narrative architecture is linked to movement that dictates spatial experience and generates meaning (Penz, 2004: 42). Moving through a building is one of the best ways to experience narrative architecture, as the visitor's viewpoint constantly changes as the journey unfolds. Movement through space is linked to Le Corbusier's concept of the 'architectural promenade', which he uses to emphasise the discovery of architecture through engagement (Figure 5.19). Le Corbusier refers to the promenade as a voyage of discovery where the viewer learns of the building and its environment (Penz, 2004: 42). It is argued that this voyage of discovery can also lead to uncovering the narrative of a place. Promenade is therefore introduced as a narrative device in this design proposal to tell the story of Toorwater and discover the identity of the place.

The architectural promenade is a valuable tool to improve the spatial experience of a building (Louw, 2016: 29-30). The promenade as a concept at Toorwater is a choreographed journey that provides moments of pause to give the user a memorable experience that makes them aware of their immediate context. By engaging the viewer in the architectural experience, memory and imagination can be triggered to create a heightened awareness of the present moment and place. Triggering the imagination, according to Ricoeur (1991), is valuable as it allows us to obtain a narrative understanding of ourselves.

By creating an architectural experience at Toorwater, the user not only becomes aware of the place and its narrative but also themselves. The promenade, through Toorwater, improves the spatial experience of the buildings and heightens awareness of the moment and place.

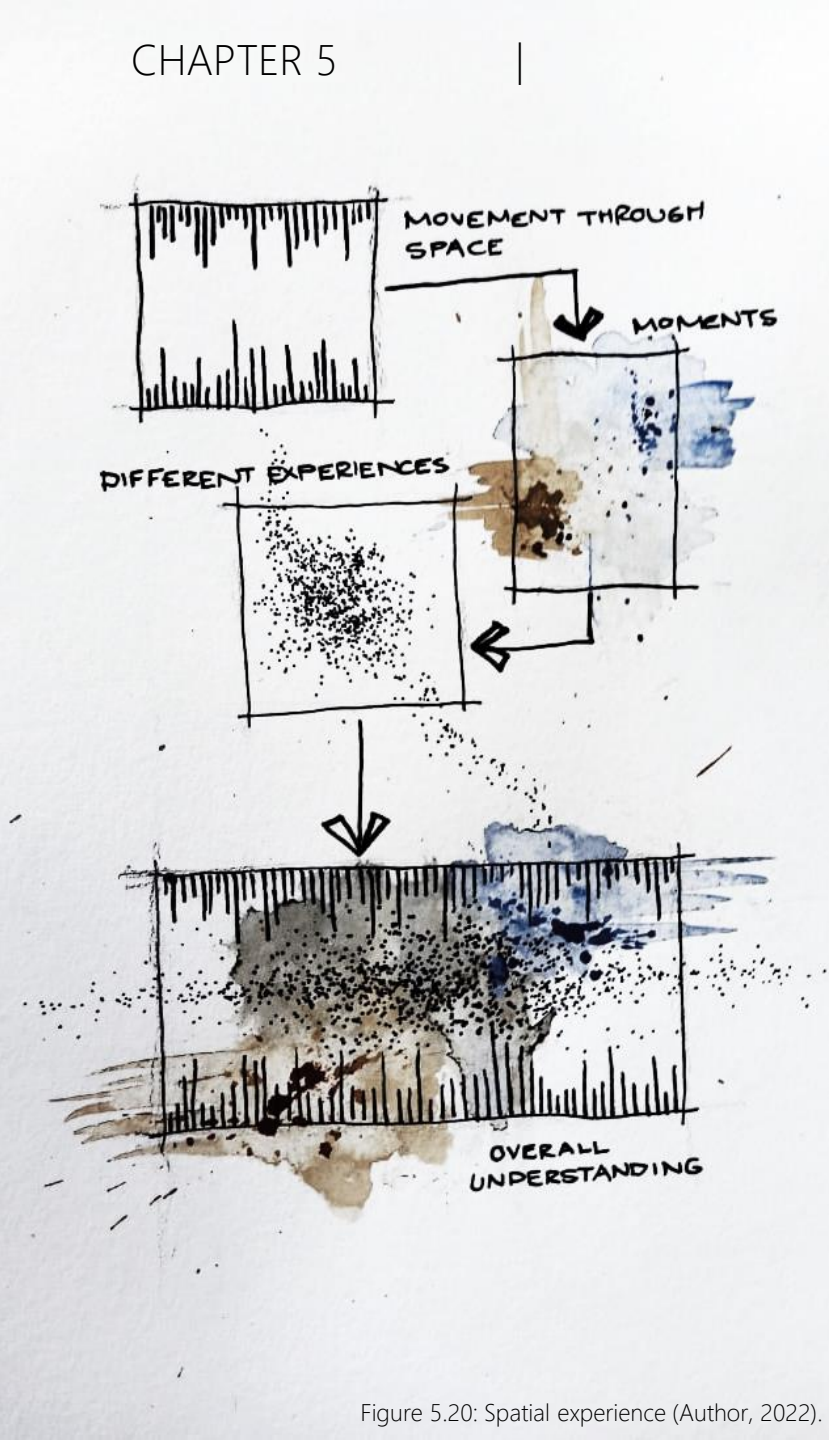


Figure 5.20: Spatial experience (Author, 2022).

Promenade can be used as a device to enhance the user's spatial experience of a building by ordering a series of fascinating moments in the experience of a space. To fully understand the meaning of space, the visitor has to move through the space and gather the different experiences to construct an overall understanding of the architecture (Louw, 2016: 17). This overall understanding of the buildings helps to understand the narrative it is intended to convey. Le Corbusier saw the architectural promenade as a 'sensory unfolding of events that could trigger the visitor's memory and imagination, (Louw, 2016: 19). A building that can affect memory and imagination can also transform emotion and mood. This is what the design proposal strives to do, and promenade can therefore be implemented to generate positive moods and emotions from the user to achieve a pleasant experience.

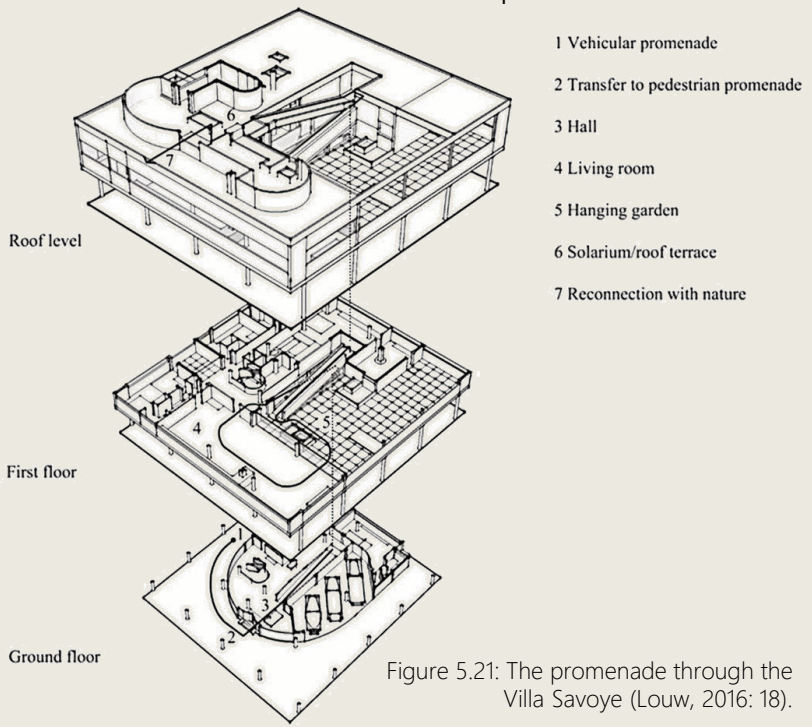


Figure 5.21: The promenade through the Villa Savoye (Louw, 2016: 18).

Figure 5.22: Windows at Villa Savoye framing landscape (Bianchini, 2022: online).

Le Corbusier designed an excellent example of an architectural promenade at Villa Savoye, France, 1931. Villa Savoye illustrates the experience of space through circulation as the building is experienced by moving through it. Le Corbusier described this promenade as a device that offers various unexpected and astonishing moments (Louw, 2016: 17).

In Villa Savoye the route is carefully planned through the building to guide the user to change speed (Figure 5.21). Starting with the arrival by car, which changes to biological time as the user slows their pace by walking. At the end of the route, the user is reconnected with nature through a window that frames the landscape (Louw, 2016: 18) (Figure 5.22).

In this section, the promenade seen in Villa Savoye is compared to the promenade at Toorwater.

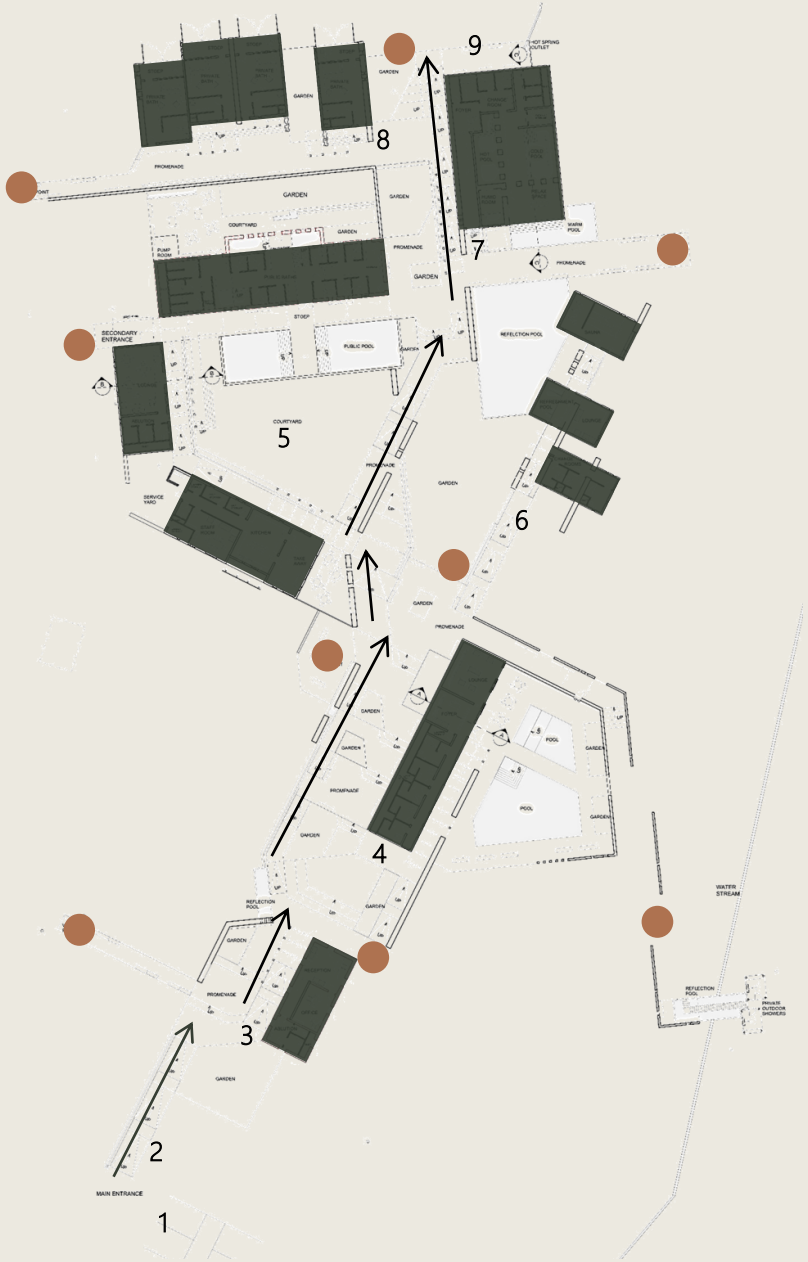


Figure 5.23: The promenade through Toorwater (Author, 2022).

Learning from Le Corbusier, the design proposal similarly carefully plans the route through the site. Like Villa Savoye, the visitor drives to Toorwater by car (1). From the parking, a slower pace is introduced by approaching the building (figure 2.24). On the journey along the Promenade glimpses of nature are introduced. However, it is only at the end of the route that the visitor fully reconnects with nature, when they look back over the landscape as a whole (figure 5.25). The journey achieves a sense of heightened awareness at the end by generating positive moods and emotions for the visitor.

Unexpected moments are also implemented in the design of Toorwater as seen at Villa Savoy. On this voyage of discovery, the user is led through the Toorwater along the promenade with the assistance of water. Through the journey, the user learns about the water and the environment, which in the end, leads to the discovery of the narrative of Toorwater.

The architectural promenade uses views along the way to express the narrative of Toorwater. The story begins on the ground and ends at a lookout point in a climax with a landscape view. Reflecting on the narrative from the end of the voyage is also very important in understanding the narrative (Louw, 2016: 18). The journey through Toorwater has the same narrative expression as Villa Savoye - working with the views along the journey and taking the user from one state at the start and ending at a climax. The view over the Klein Karoo allows the user to reflect on their journey to understand the narrative (figure 5.23).

1. Vehicle promenade
2. Transfer to pedestrian promenade
3. Reception
4. Semi-private baths
5. Public courtyard
6. Sauna
7. Semi public baths
8. Private baths
9. Reconnection with nature

Glimpses of nature

Figure 5.24: Start of promenade (Author, 2022).

Figure 5.25: End of promenade (Author, 2022).

Figure 5.26: Atmosphere (Author, 2022).

The narrative of a building can also be conveyed through spatial experience. This experience is linked to the quality of a architecture, referred to by Swiss architect Peter Zumthor as a building that 'moves' him. A building's ability to 'move' people can directly be linked to atmosphere (Zumthor, 2006). Atmosphere is the lasting experience of the space that triggers memory and narrative. Intuition emphasises texture, material, light, and shadow as experience generators to tell the story of the place through architecture. Arguing that atmosphere is linked to spatial experience is linked to Peter Zumthor's view that atmosphere is the core theme in architecture (Havik, Teerds & Tielens, 2013: 3-12).

Atmosphere can also be described as an emotional and personal impression of space that is generated by the spatial proportions, ageing of materials, connection between materials, assembly of materials, and the building's connection to place through rhythm and light (Havik, Teerds & Tielens, 2013: 3-12). The atmospheric experience establishes the intimate relationship between the visitor and Toorwater. This complex relationship can be described as "being at once mindful and embodied, simultaneously evoking energy and silence, materially grounded and touched by light, alive and ageless" (Havik, Teerds & Tielens, 2013: 3-12). For the building to tell the story of its physical environment, it has to stay in dialogue with the surrounding context.

Figure 5.27: View of natural landscape (Author, 2022).

Figure 5.28: View of landcsape (Author, 2022).

In the design proposal the dialogue between environment and building is sustained through the implementation of Le Corbusier's 'architectural promenade' as discussed earlier. Curated views of the natural landscape (figure 5.27 & 5.28) not only sustain the dialogue but contributes to the atmosphere of the building, allowing the visitor to experience a memorable journey through the creation of atmosphere. Connecting emotion to the experience of space, makes it personal and can trigger interpretation of place.

Narrative is how humans experience time which is linked to atmosphere as it also refers to the experience of time. Atmosphere combines different elements triggering a multi-sensory experience, just like narrative is a collection of events combined into a meaningful whole to create a story. Memory in architecture directly links to atmosphere, and memory is what leads to narrative. Creating memorable experiences in the design proposal can lead to a narrative understanding of place. Narrative is the result of this interpretation, the 'poetic act', as referred to by Ricoeur. This implementation of the 'poetic act' through architecture can be seen in the work of Peter Zumthor, as illustrated in the following precedent study.

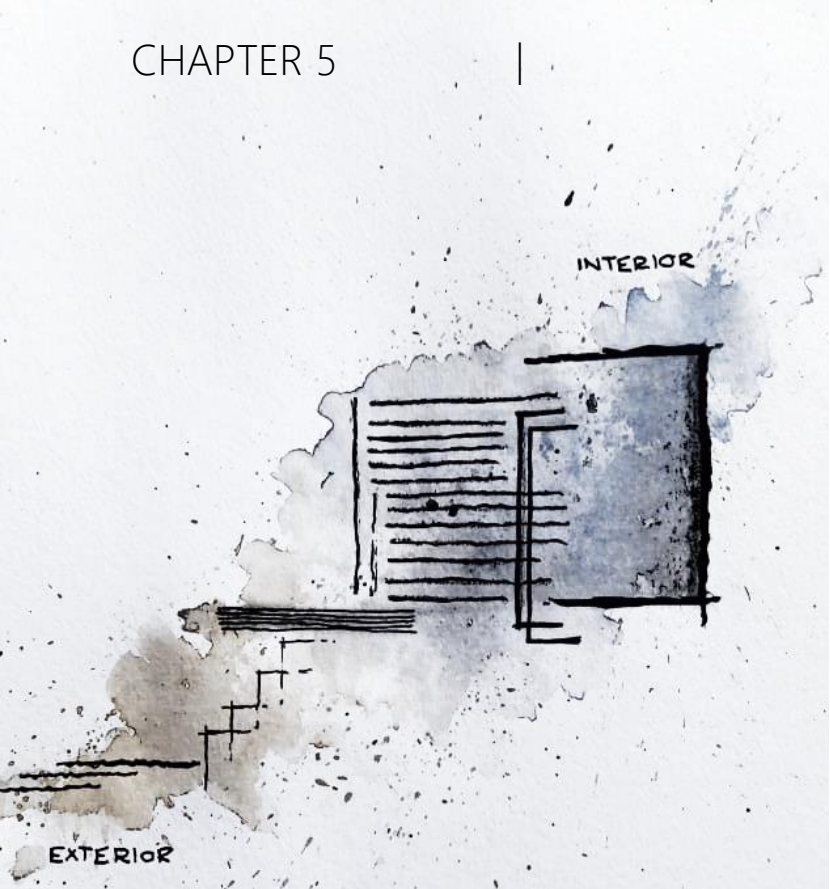


Figure 5.29: Threshold (Author, 2022).

Zumthor describes architectural atmosphere as the characteristics of a space that evoke an intensified feeling or mood. Zumthor sees atmosphere as the combination of material, colour, sound, form, and texture. The atmosphere in a building has the ability to create tension between inside and outside, intimacy or movement (Zumthor, 2006: 23-73). The architectural elements combine to create the spatial experience in the building, also referred to as atmosphere.

The relationship between the interior and exterior is essential, according to Zumthor. His buildings have a strong relationship with their surroundings and are associated with mood and atmosphere (Zumthor, 2006: 7). The design proposal has a similar connection to its surroundings as the site's narrative is the project's origin. The mood and atmosphere in the architecture are, therefore, in dialogue with the surrounding natural context. Zumthor carefully designs the interior and exterior and the movement between public and private, focussing on the threshold. Transition from exterior to interior is an essential characteristic of the existing building vernacular of the Klein Karoo. A gradual transition from exterior to interior is therefore introduced in the design proposal by guiding the user through different thresholds. Public and private are separated in the design proposal, and the implementation of water channels guides the movement between them (figure 5.29).

Figure 5.30: Water reflections (Author, 2022).

Figure 5.31: Water channel along promenade (Author, 2022).

Zumthor believes that materials may be used in creating atmosphere if they contribute to the meaning of the space (Zumthor, 1998: 10). Materials such as stone, whitewashed brick walls and light are all derived from the existing architecture at Toorwater. Water is introduced as the main material in the design proposal working with the other materials. Water is a material that can take on many forms by shaping the design proposal along with the natural landscape. The water is used as a material in its different forms: flowing, steaming, still standing, dripping, bubbling and reflecting. The water contributes to narrative in these different states by shaping the embodied experience. Dancing water reflections on a white wall is only one example of the water's contribution to spatial experience.

Zumthor mentions the influence of memory on atmosphere. Atmosphere can either activate memories of a place or create new memories (Zumthor, 1998: 26). The design proposal focuses on creating new memories based on the memories of Toorwater. These memories are connected to narrative and the initiation of new narratives. The story of Toorwater is told through the architecture and interpreted into new narratives by the users. Perceiving these narratives through their imagination and identity, the user can contribute to the growing story of Toorwater. The users connect their experience of Toorwater to their embodied experience and memory such that their interpretation is either similar to previous narratives or new narratives, which assist in shaping the story of Toorwater.

Figure 5.32: Light inside Therme Vals (Smylie, 2020: online).

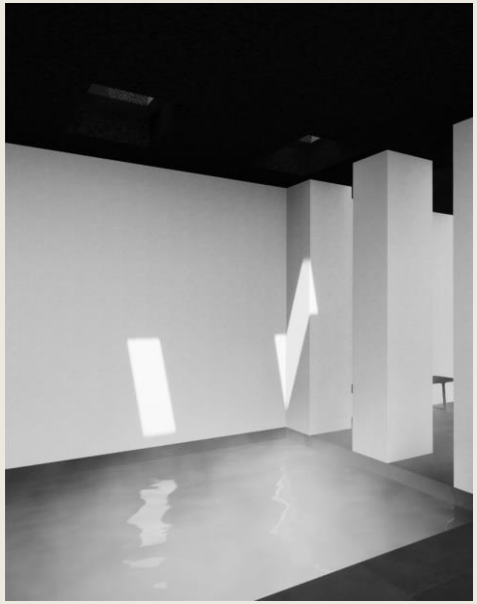


Figure 5.33: Light inside Toorwater (Author, 2022).

Thermal Vals Baths by Zumthor is discussed to understand atmosphere in architecture better. Atmosphere in this building encourages users to dwell between the spaces at a relaxing pace. The perception of space influences the user's experience of the space (Smylie, 2020: online). Choreographing the user's experience of space can determine their perception of place. The design proposal focuses the user's perception of place to the surrounding context and qualities of water. Light, materials, movement and water are all choreographed to ensure this spatial experience stays in dialogue with the narratives of Toorwater, the site and its water. Like Thermal Vals, the design proposal encourages the user to dwell through the site and experience water in its many forms.

In the thermal baths, Zumthor strived to create a space that would invite the user to stay longer. The user must not just pass through but pause to look at how the light falls. The user strolls through the building, discovering different experiences along the way (Figure 5.32). The building provides a place where individuals can be under the calming effect of the spatial experience (Zumthor, 2006: 41- 45). The design proposal learns from Zumthor's approach to allow the user to dwell and even linger in certain places. Moments of pause are implemented into the design proposal through moving shadows on a wall, water reflecting light, the sound of water running down a wall, a shaft of indirect light brightening a room and the slow evaporation of steam from a hot pool in a cold room (Figure 5.33). These moments draw the users through the building and encourage them to stay longer. The calming effect of spatial experience is achieved with the dialogue between water, materials, environment and light. As a wellness retreat, the architecture creates a space of relaxation and reflection to promote wellness. Water is the main element determining the mood in each building, shaping the spatial experience and narrative interpretation of Toorwater.

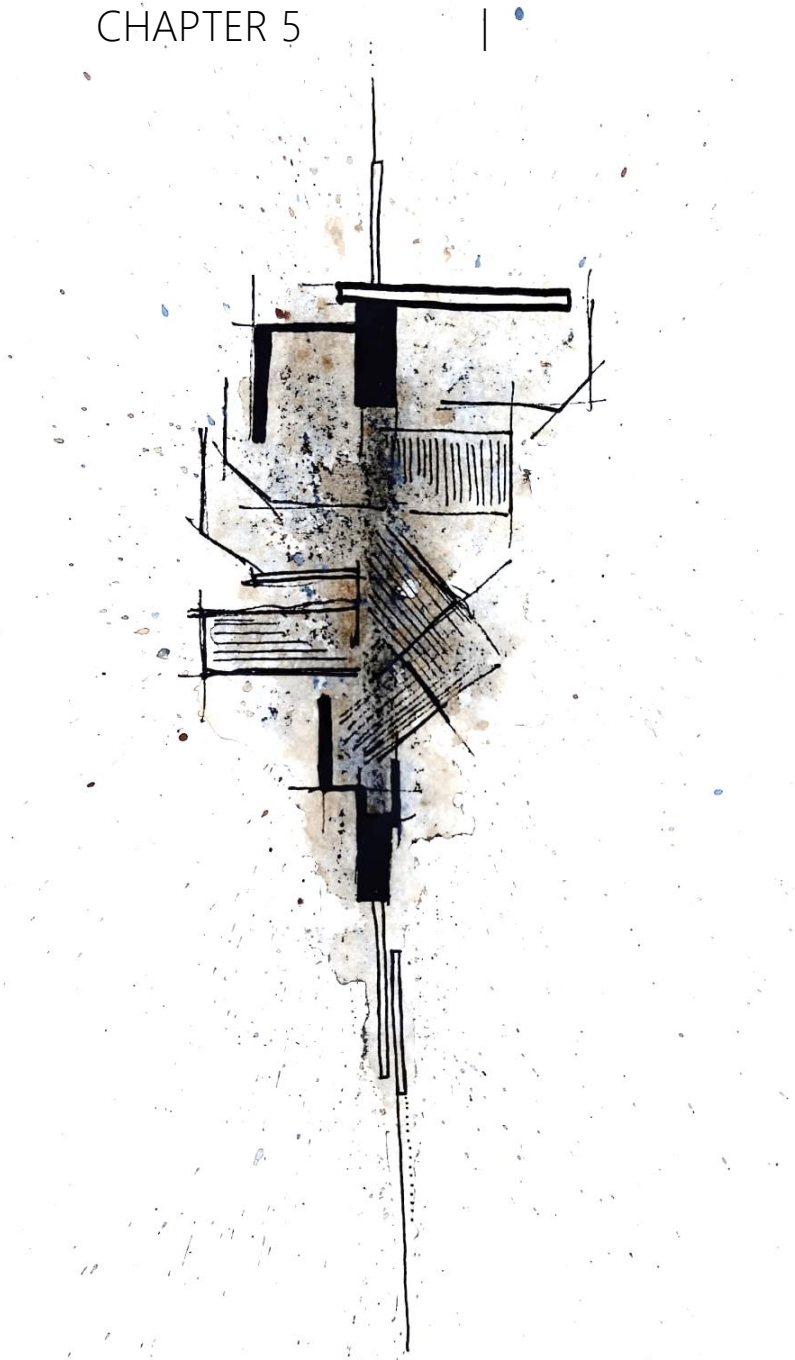


Figure 5.34: Telling the story of Toorwater (Author, 2022).

On this journey to preserve the narrative of Toorwater, the importance of site and context is recognised. The water and the stories are related to the place and act as the main generators of narrative. Narrative is essential in understanding the lived experiences of the place and must therefore be retold for the character to be preserved. According to Ricoeur, retelling stories reveals a story's real value and contribute to shaping human life as stories are relived in our imagination. Experiencing architecture is a way of living and reliving narrative. Architecture is therefore proposed as a way to convey the story of Toorwater. A building can make the user aware of the surroundings and draw attention to the natural phenomenon at Toorwater. Elements and characteristics of space, materiality and place are used to convey the narrative of Toorwater. Telling the story of Toorwater through architecture links to the site's physical characteristics, specifically water, context and light. Promenade, as a narrative device, generates meaning and understanding of place. Like a storyline, the promenade links architectural events to formulate a story. Spatial experience along the promenade communicates the dialogue of Toorwater through memorable experiences. Surrounded by natural hot water in the Klein Karoo landscape, a sense of relaxation and calmness arises while new interpretations of the story of Toorwater are born.

CHAPTER 6 | Precedent Study

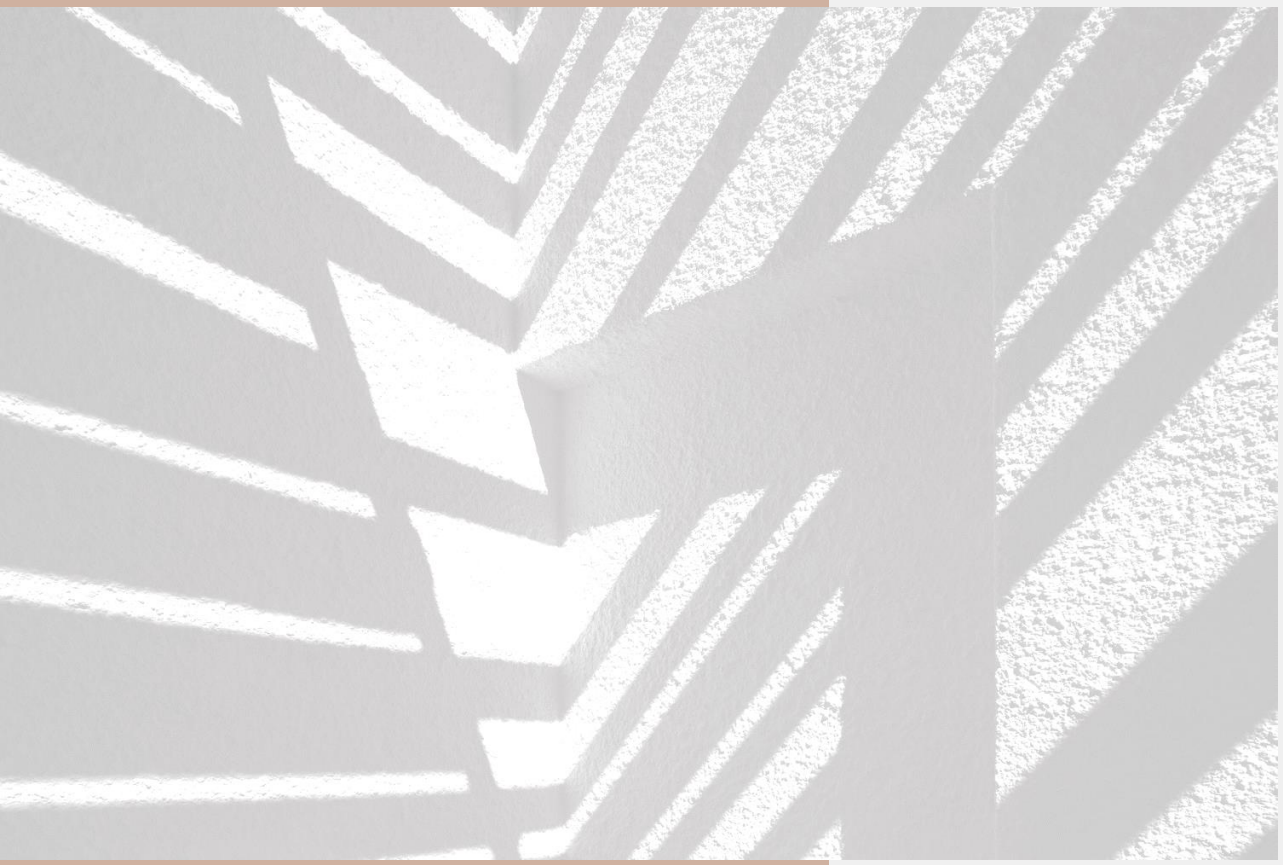


Figure 6.1: Light and shadow (Davies, 2016: adapted by author).

Figure 6.2: Amangiri resort in landscape (Press, [n.d.]: online).

Figure 6.3: Amangiri blending into surrounding context (Press, [n.d.]: online).

Architects Rick Joy, Marwan Al-Sayed & Wendell Burnette
Canyon Point, Southern Utah, 2009

Location & contextual response

Located in the desert with flat mesas and water-carved plateaus, the resort is situated against a low sandstone rock formation The individual buildings are integrated with the site by constructing the building according to the site's natural contours.

The relationship between the buildings and the landscape is evident in the combination between the organic red earth and the raw surfaces. The building frames the landscape through various openings while the landscape houses the building structure creating a complementary relationship between the built and natural environment (Hudson, 2013: online).

> *"In this spacious resort, the ethereal and immaterial aspects of intimate spatial experiences—sounds, smells, textures, moods—come to the foreground, as the architecture itself retreats into the rocky landscape through its dense materiality, staccato volumes, and striated horizontal profile." – Rick Joy*
>
> (Joy, 2008: online).

Figure 6.4: Opening allows landscape into building (Joy, 2008: online).

Figure 6.5: Exterior courtyard (Kemps, [n.d.]: online).

Location & contextual response

Large openings in the building allow for views of the landscape and bring the exterior into the building's interior. The visitor is introduced to the landscape through exterior courtyards, creating an intimate relationship with the exterior and bringing them closer to the landscape.

The building celebrates the magic and mystery of the site by honouring the rock formations in the landscape and the majestic cliffs. Water, sky and rock are the elements gathered from the landscape into the building and therefore look as if it is moulded from the earth and is an extension of the landscape made out of stone, light and sand (ArchEyes, 2020: online).

The building blends into the landscape and highlights the beauty of the landscape by allowing the user to appreciate the beautiful natural surroundings (Divisare, 2016: online).

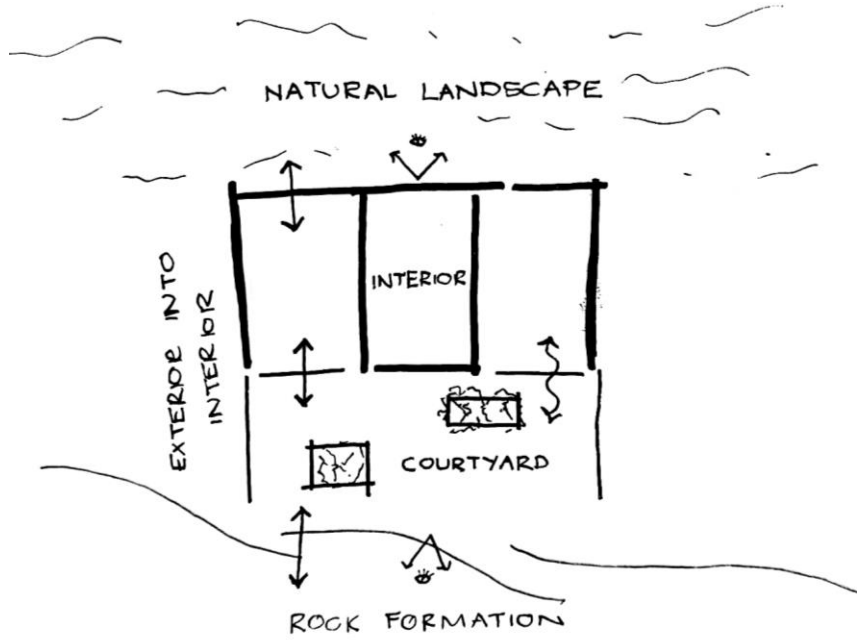


Figure 6.6: Exterior and interior relationship (Author, 2022).

Figure 6.7: Building form (Fletcher, 2009: online).

Figure 6.8: Rock integrated to pool (Kemps, [n.d.]: online).

Form

The rough textured rock landscape contrasts with simple yet strong geometries, allowing the resort to act as a spectator while integrating into the landscape. (Hudson, 2013: online).

Integrated into the rocky landscape the straight-lined building is nestled into the rocks and contrasts the organic terrain. The integration of the building into the landscape can be seen in the large pool which is shaped around the intruding rock (Hudson, 2013: online).

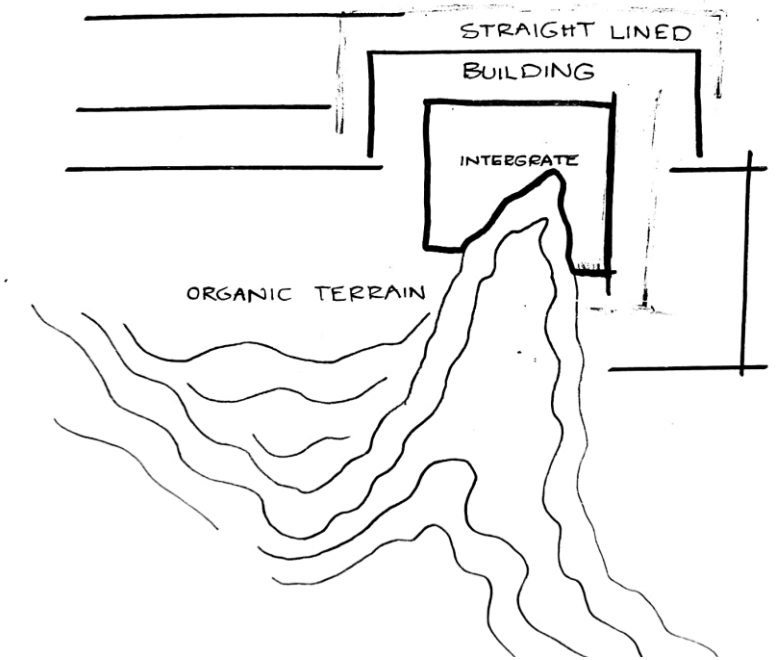


Figure 6.9: Straight-lined building integrated into organic terrain (Author, 2022).

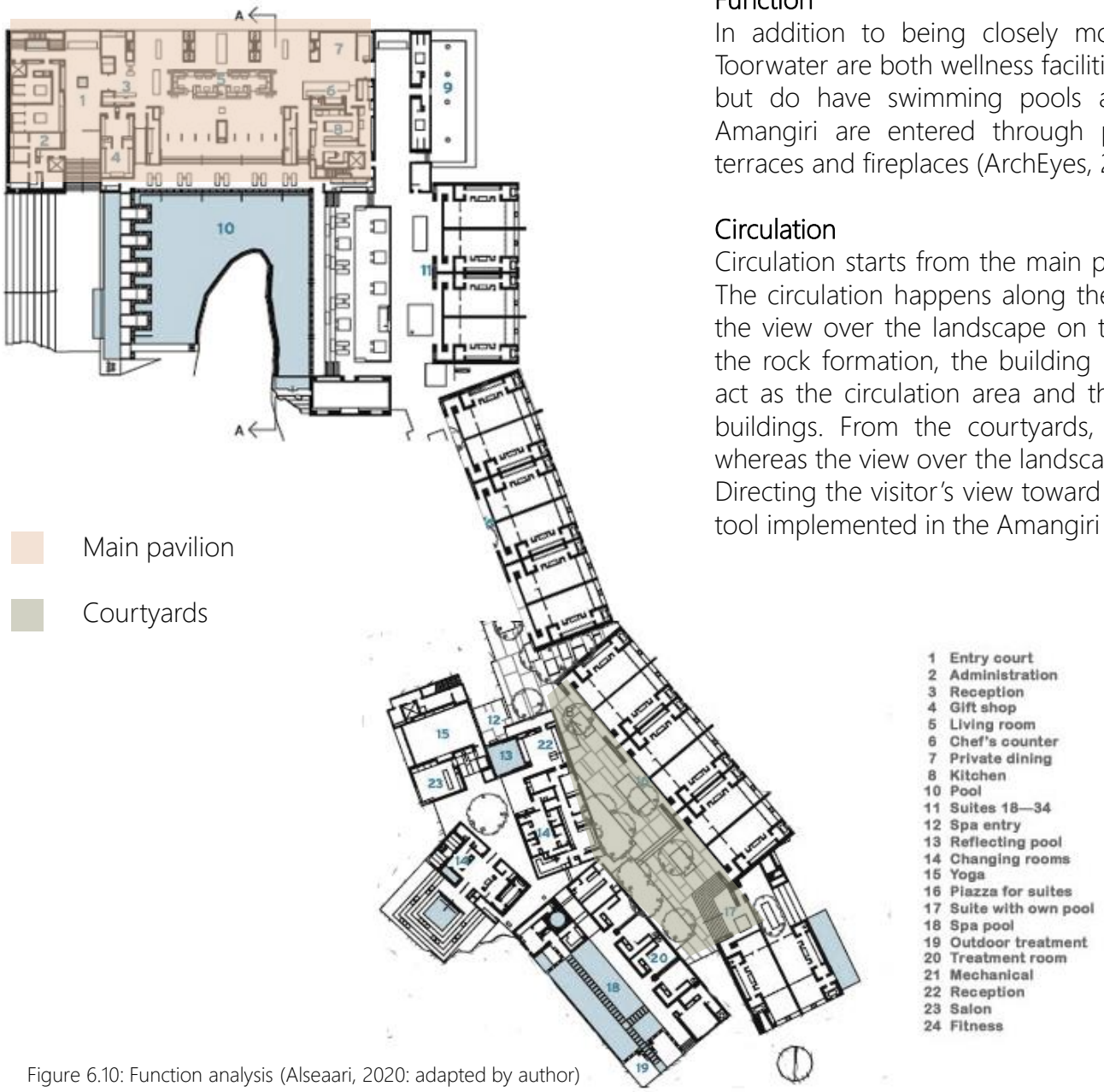


Figure 6.10: Function analysis (Alseaari, 2020: adapted by author)

Function

In addition to being closely moulded to the landscape, Amangiri and Toorwater are both wellness facilities. They do not provide the same services but do have swimming pools and eateries in common. The suites at Amangiri are entered through private courtyards and all have private terraces and fireplaces (ArchEyes, 2020: online).

Circulation

Circulation starts from the main pavilion from where the two wings extend. The circulation happens along the edge of the rock formation to preserve the view over the landscape on the opposite side. Following the shape of the rock formation, the building bends along the same curve. Courtyards act as the circulation area and threshold between the mountains and the buildings. From the courtyards, the view is focused on the mountains whereas the view over the landscape is only visible from within the buildings. Directing the visitor's view toward specific natural features is a very valuable tool implemented in the Amangiri Resort.

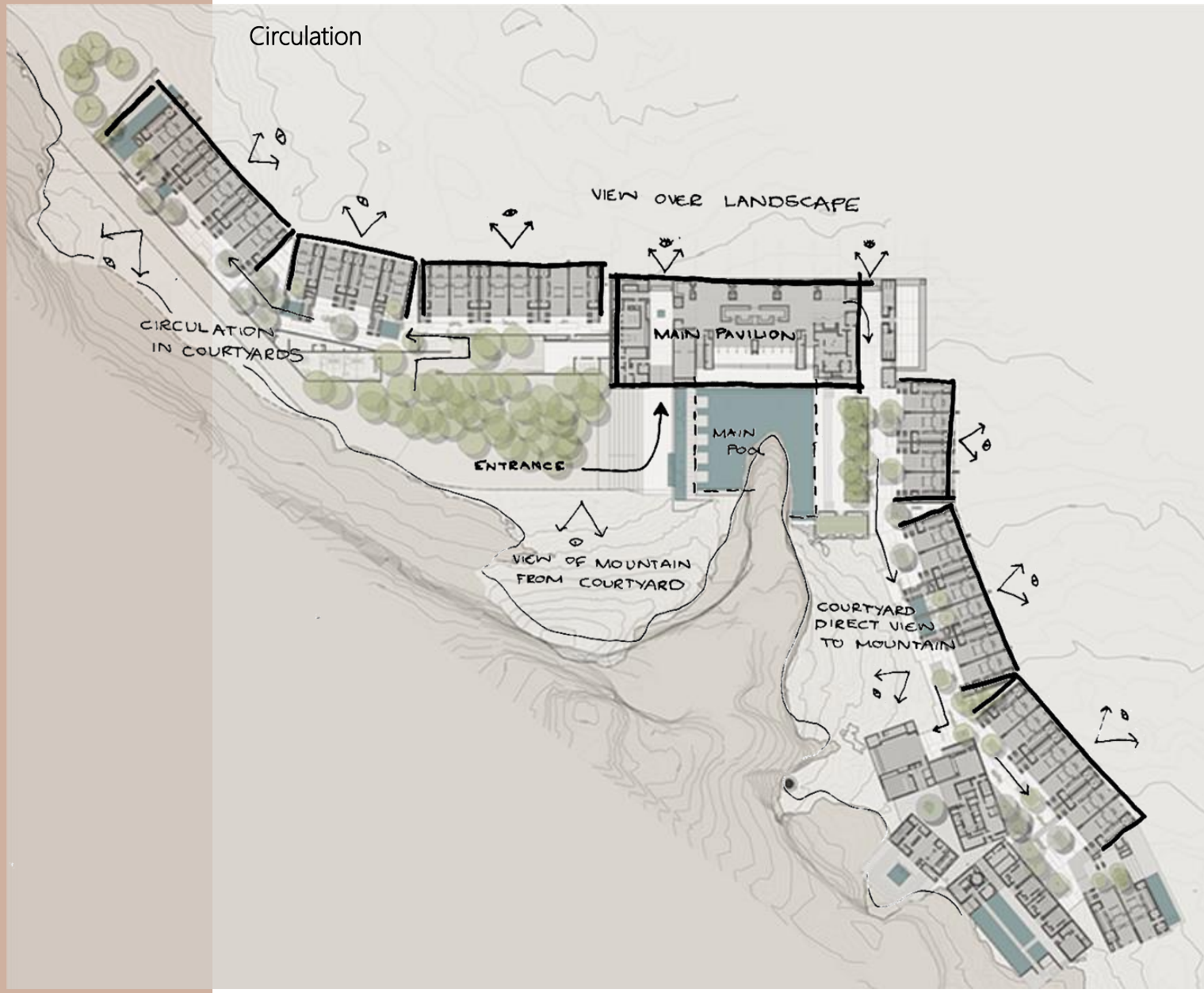


Figure 6.11: Plan analysis (ArchEyes, 2020: adapted by author).

Figure 6.12: Wood Cubes (Press, [n.d.]: online).

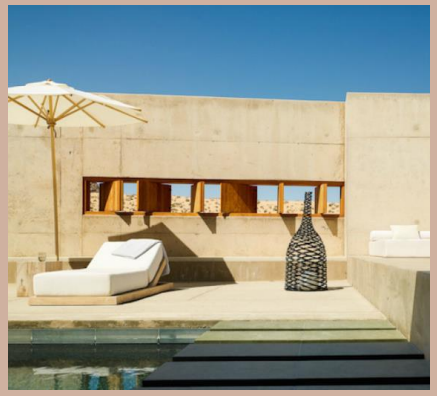


Figure 6.13: Adaptable panels (Press, [n.d.]: online).

Figure 6.14: Shading devices (Press, [n.d.]: online).

Materiality

Wood, light, water and concrete are used as materials in the building. Local aggregates used in the concrete, match the neutral colours of the context and ground the building into the site. The mix of wood, water stone and concrete aid in capturing the desert features of the site and ground the building in the context (Hudson, 2013: online).

The minimalist concrete is carved by movement, light and programme. The sand, sage and rock colours blend into the landscape making it timeless and an abstraction of the site. The concrete is cased to appear like frozen sand and cast stone (ArchEyes, 2020: online).

Environment & micro climate

Adapting to the desert climate the building uses textile shading devices and in open courtyards, to minimize exposure to the sun. Trees are planted throughout the building to create natural shading throughout the circulation of the building. In the hot desert climate, shading is an important aspect to take into consideration to minimize temperature build-up in the building, and also to provide places where visitors can retreat from the harsh desert sun into the shade.

Wooden screens are also applied as shading devices which only allow strands of light through to create moving patterns on the smooth concrete surfaces. The screens also act as separating devices which can obscure views into a space but allows rays of light into the space.

Natural cooling devices use the desert wind to cool the building through adaptable panels. These panels can adjust to determine the amount of wind and ventilation through a space.

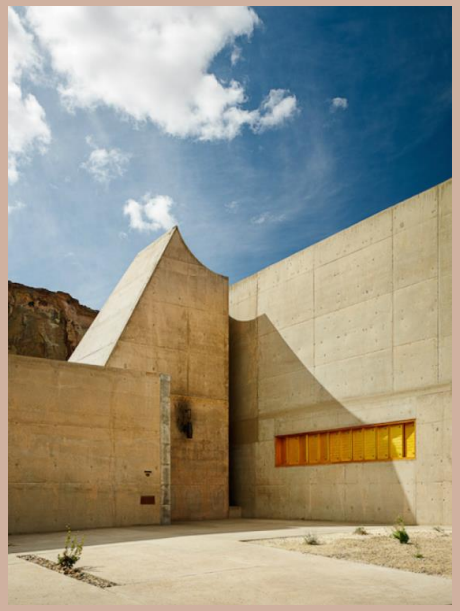


Figure 6.15: Sculptural lighshaft (Press, [n.d.]: online).

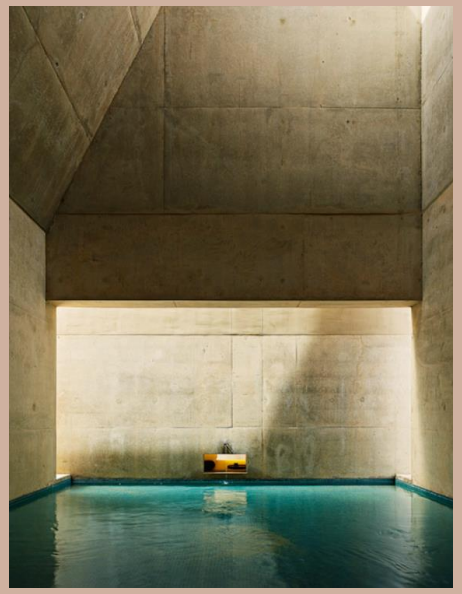


Figure 6.16: Light shaft interior (Press, [n.d.]: online).

Atmosphere

The indoor pool next to the reception is lit by a skylight (Hudson, 2013: online). The light entering through a light shaft from above plays with the atmosphere of the space through reflections on the water. The light falls on the smooth concrete walls and shifts throughout the day.

The fireplace in the reception adds to the overall spatial experience which is strengthened by the timber doors connecting the two spaces. The spatial experience can be altered by opening the timber doors fully or only partially.

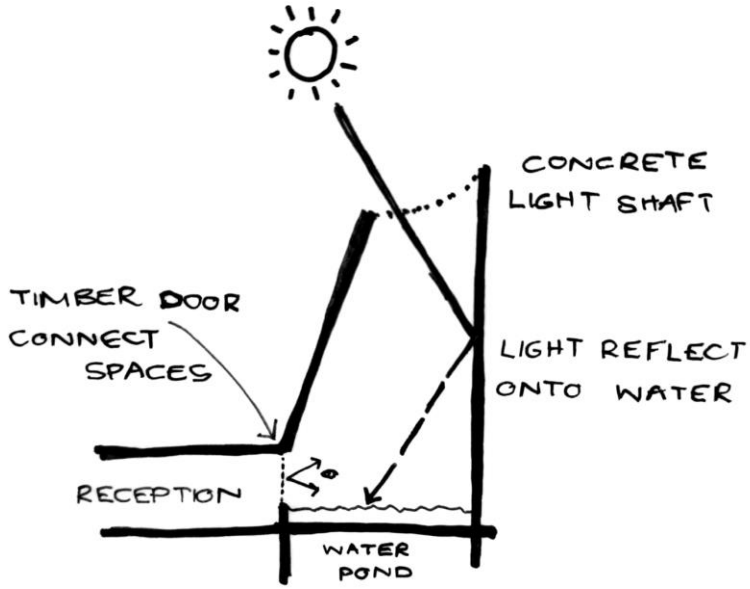


Figure 6.17: Section analysis (Author, 2022).

Figure 6.18: Water flowing on courtyard wall (Aman, 2022: online).

Figure 6.19: Water flowing on courtyard wall (Aman, 2022: online).

Figure 6.20: Amangiri resort in landscape (Press, [n.d.]: online).

Water

The water adds vibrant colour to the desert's earthy tones (Hudson, 2013: online).
Five separate water elements with pavilions show the timeless nature of the landscape, as the built elements are either solid or liquid, heavy or light which is determined by the placement of the function and the program (ArchEyes, 2020: online).

The constant sound of water adds to the soothing atmosphere (Divisare,2016: online). Water is used in different ways throughout the building, e.g. flowing out of the walls, bubbling in a jacuzzi, shimmering in large pools, reflecting in shallow ponds and dripping in narrow walkways.

Light

The strong light of the environment was incorporated into the design and used as a changing material throughout the day (ArchEyes, 2020: online).

Light enters the building in different ways. Skylights allow the light to enter from above and panoramic windows allowing for well-lit interior spaces (Divisare,2016: online). Dappled light through wooden screens and textile shading add to the atmosphere and experience of the building. Water reflects the light onto the sleek concrete surfaces adding a sense of texture to smooth materials.

The strong desert light gets manipulated throughout the day and contributes to the building as a moving material which can change size and shape. The geometric buildings cast strong shadow lines into each other, whereas the water and shading devices cast lighter shadows and textured patterns on the smooth concrete surfaces.

Figure 6.21: Vertical openings (Clark, 2009: online).

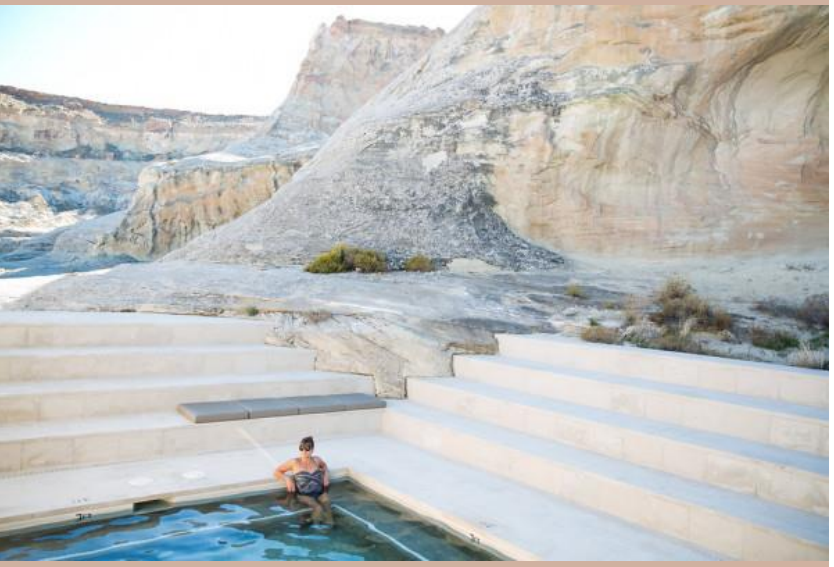


Figure 6.22: Transition into nature (Clark, 2009: online).

Manmade & nature relationship

Vertical openings are used throughout the building either in the fenestration or circulation (Hudson, 2013: online). Situated between earth and sky the building is grounded in the earth through the material use and colour, but the building also reaches for the sky by opening up the solid block, either through openings or courtyards.

The flow from man-made to nature is done subtly with the use of the same colour materials and the transition from enclosed to open and eventually nature. Nature is led into the building through trees and water which follow the circulation in the building throughout the different courtyards.

Conclusion

The architects wanted to create a contemporary interpretation of native architecture that respects the natural environment and generates a spirit of the place (ArchEyes, 2020: online).

There is a well-balanced relationship between the natural and built environment, the building is shaped by the site and in return, the site is amplified by the building. Light, water and earth are shaped into a building to create a relaxing atmosphere and memorable experience.

> *"In its deliberate simplicity, the architecture nudges visitors into a more acute attunement with the place they inhabit." – Rick Joy*
>
> (Joy, 2008: online).

Figure 6.23: Caracal cabin (Sther, 2021: online).

Figure 6.24: Caracal sitting in landscape (Sther, 2021: online).

Mfs Drew Architects
Klein Karoo, South Africa, 2021

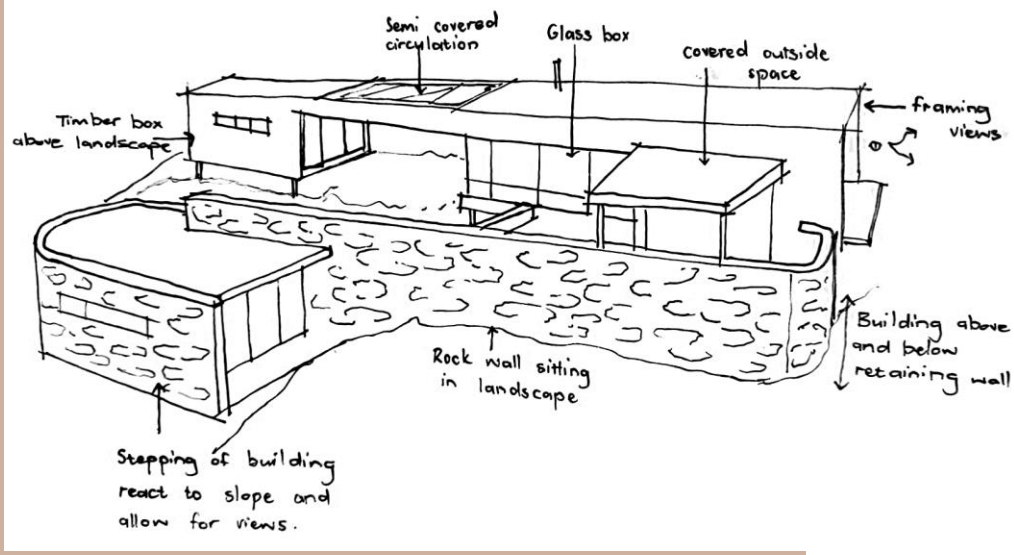
The landscape and environment inspired the design in the Klein Karoo. The building is placed to take advantage of the view from both sides of the mountain. They used sustainable farmed wood on a large majority of the exterior. The lower part of the building is cladded in stone which was collected on site. A minimal impact on the landscape allows the building to blend in with the landscape. The shape of the building followed the axis of the ridge on which it is built and the roof plan tapers along with the ridge of the mountain (Stehr, 2021: online).

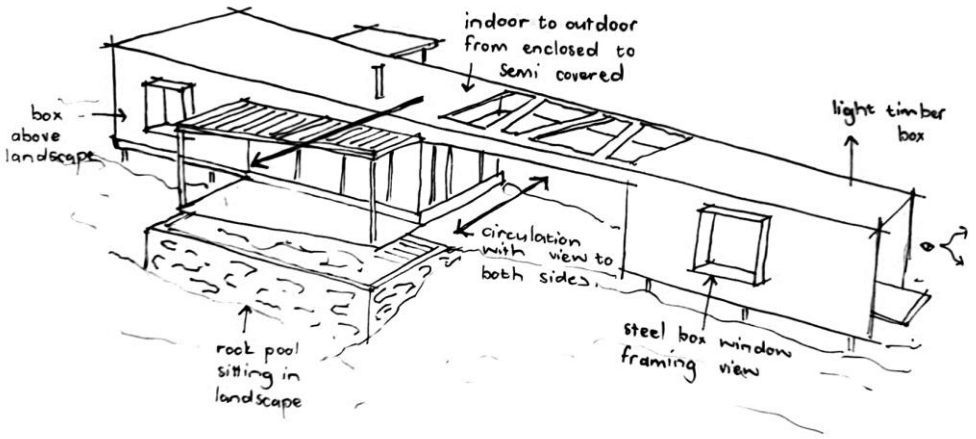
The rock outcrops and vegetation were preserved and amplified in the design with framed views. The pool is cladded in local stone and hovers over the edge of the cliff with a view of the valley below it. The building has an indoor-outdoor flow with the central lounge on the deck. The timber cladding on the exterior and interior unifies the building (Stehr, 2021: online).

> *"The core of the Caracal Cabin experience is one of being simply but luxuriously cocooned in a pared-back, beautiful timber box, in a breathtaking natural environment that evokes a sense of calm, contemplation and wonder."*
>
> *(Stehr, 2021: online).*

Figures 6.25 & 6.26: Caracal view to landscape (Sther, 2021: online).

Figure 6.27: View from pool (Cabine Du Cup, 2022: online).





Figures 6.28 & 6.29: Building analysis (Author, 2022).

Figure 6.30: Indoor-outdoor flow (Sther, 2021: online).

Figure 6.31: Framing views(Cabine Du Cap, 2022: online).

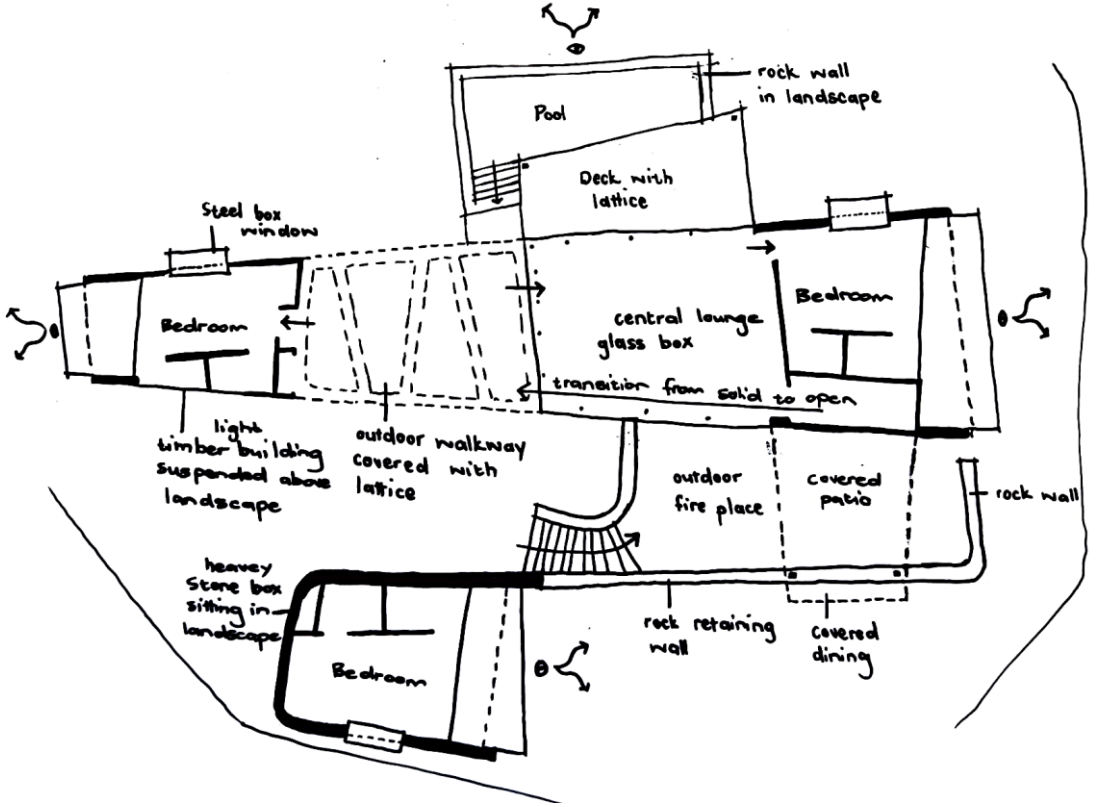


Figure 6.32: Analysis of plan (Author, 2022).

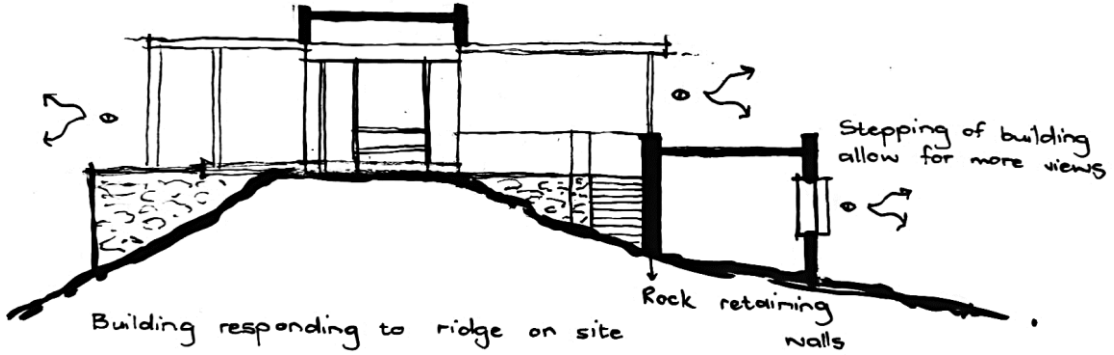


Figure 6.33: Section responding to site (Author, 2022).

Figures 6.34 & 6.35: Timber box above landscape framing views (Sther, 2021: online).

Figure 6.36: Covered exterior (Cabine Du Cup, 2022: online).

Lessons learned & Principles identified:

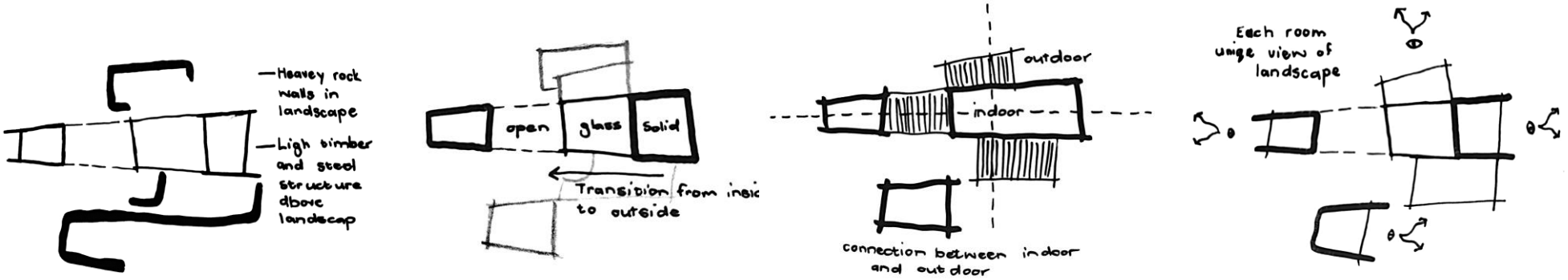


Figure 6.37: Plan analysis (Author, 2022).

Figure 6.38: Object in landscape (Davies, 2016: online).

Figure 6.39: Pool with stone wall (Davies, 2016: online).

Open studio Architects
Great Karoo, South Africa, 2015

The architects describe the house as an agricultural object in the landscape, situated on the outskirts of Prince Albert, at the foot of the Swartberg Pass. The building responds to its natural elements. The air and light in the building can be adjusted to the changing climate throughout the year to create awareness of the natural landscape. The building was constructed by local builders using a limited range of materials. The white-washed walls resembled traditional Karoo building style and are, therefore, the main exterior feature of the building.

Timber shutters were implemented in the punctured walls adapting to the warm summers and cold winters. The large windows allow light to enter the building in the winter, while the shutters can be opened to cool it in the summer. Interaction with the landscape is choreographed with the placement of openings to bring the landscape into the building (Davies, 2016: online). The sharp quality of karoo light is used to its advantage by playing with the movement of light on the white-washed walls.

Figure 6.40: View of landscape (Davies, 2016: online).

Figure 6.41: Punctured wall (Davies, 2016: online).

Lessons learned & principles identified

- Sculptural solid structure
- Awareness of landscape
- Adapting light and air
- Object in landscape
- Traditional Karoo building style
- Limited range of materials
- Punctured walls
- Timber shutters
- Large openings for winter
- Natural ventilation in summer
- Choreographed views of the landscape
- Movement of light on white-washed walls

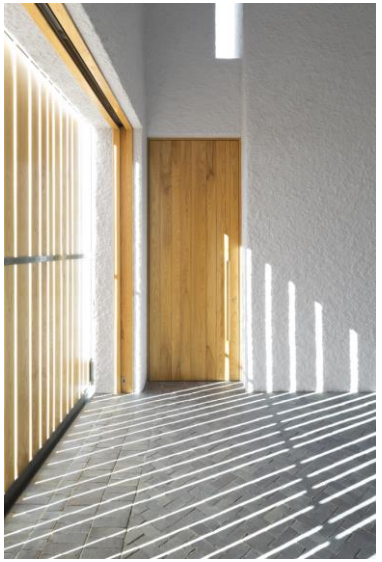


Figure 6.42 & 6.43: Use of light (Davies, 2016: online).

Figure 6.44: Object in landscape (Kerdraon, 2021: online).

Figure 6.45: Outdoor pool (Kerdraon, 2021: online).

Orma Architects
Olmeto France, 2019

Working with the site, the building was inspired by the ochre granite tuff. Born from the earth, thick walls enclose the programme while a light passageway is used to frame the landscape. The play of light can be seen on the wall, revealing its texture (Kerdraon, 2021: online). Flat roofs are combined with light shafts to allow natural light from above. The pools are designed with concrete gutters which lead to a buffer tank on a lower level.

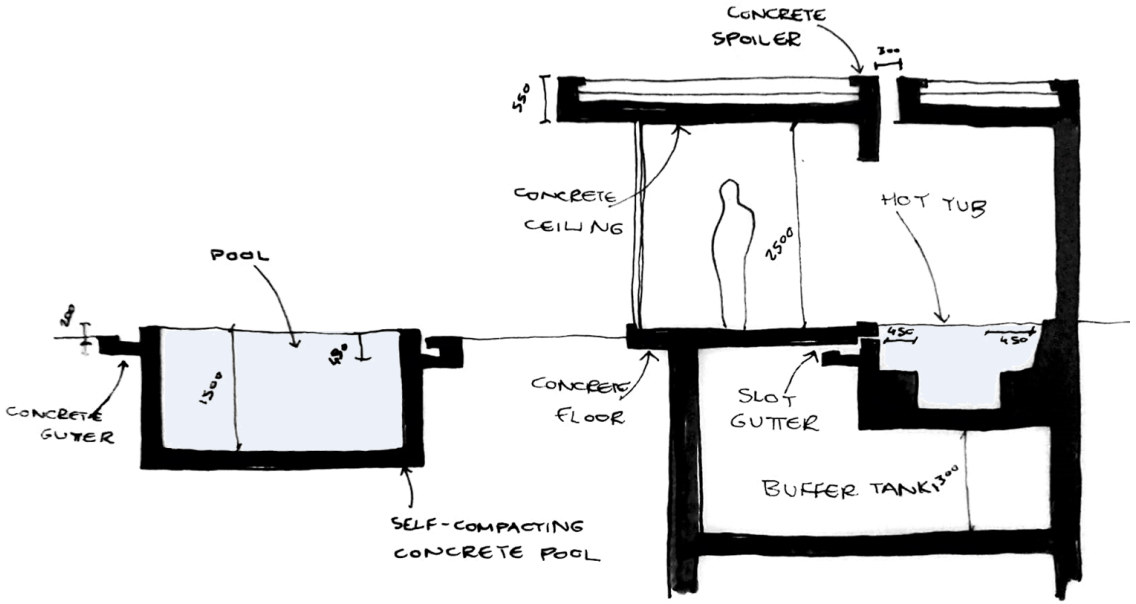


Figure 6.46: Section analysis (Author, 2022).

Figure 6.38: Outdoor shower (Davies, 2016: online).

Figure 6.39: View from inside (Davies, 2016: online).

Lessons learned & principles identified

- Materials inspired by the site
- Thick walls lead the user through the building
- Frame landscape
- Play of natural light on wall
- Light shaft in flat roof
- Natural light from above on the interior pool
- Concrete gutters around pools

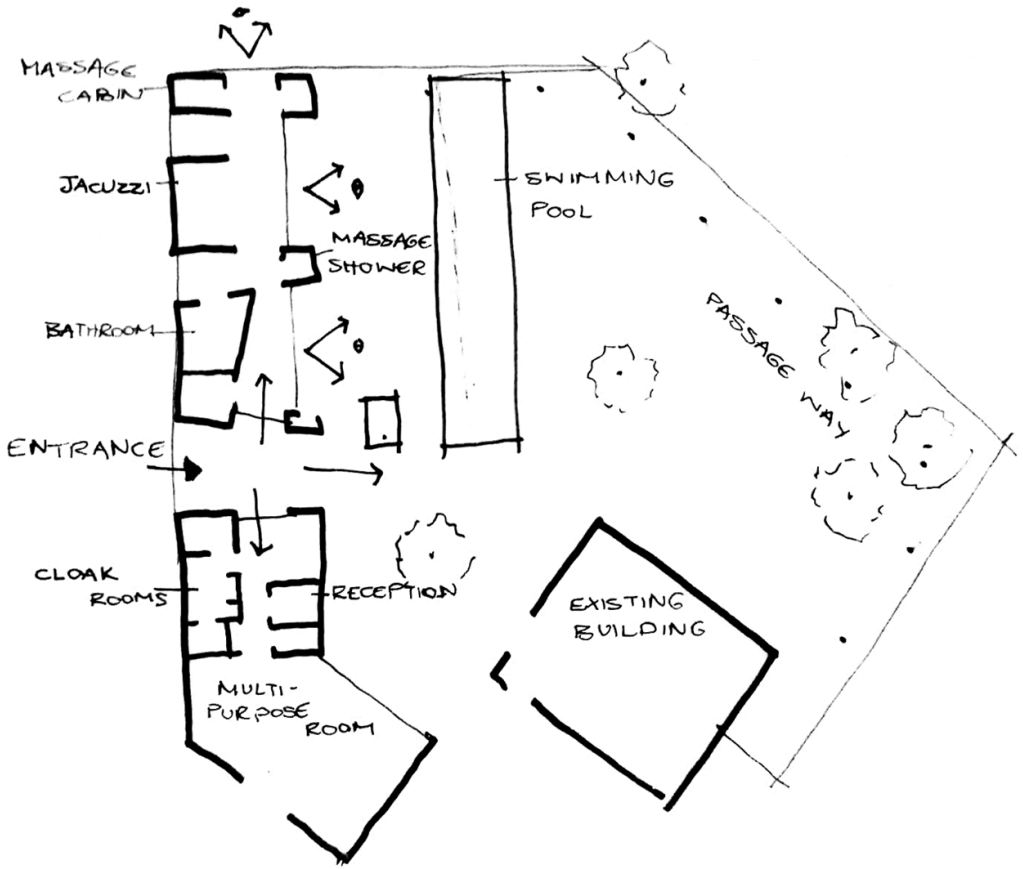


Figure 6.40: Plan analysis (Author, 2022).

CHAPTER 7 | Brief & programme development

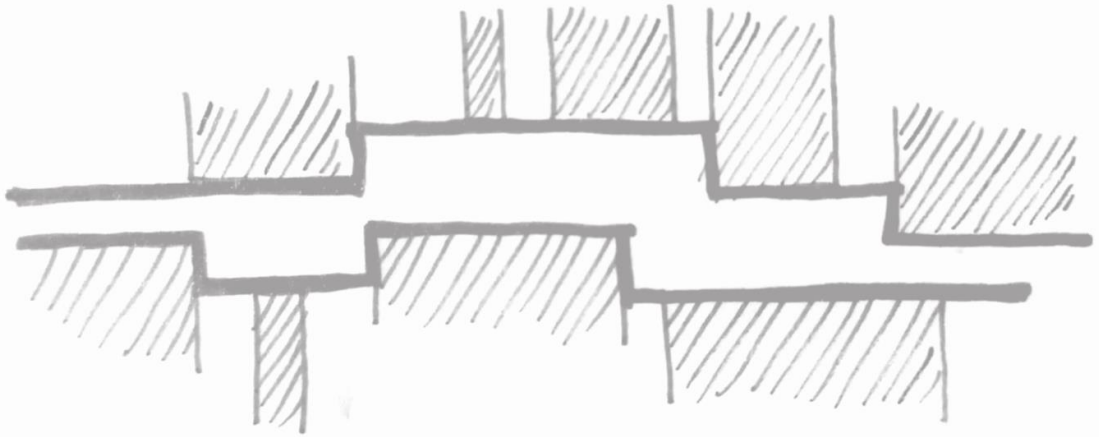


Figure 7.1: Drawing of promenade (Author, 2022).

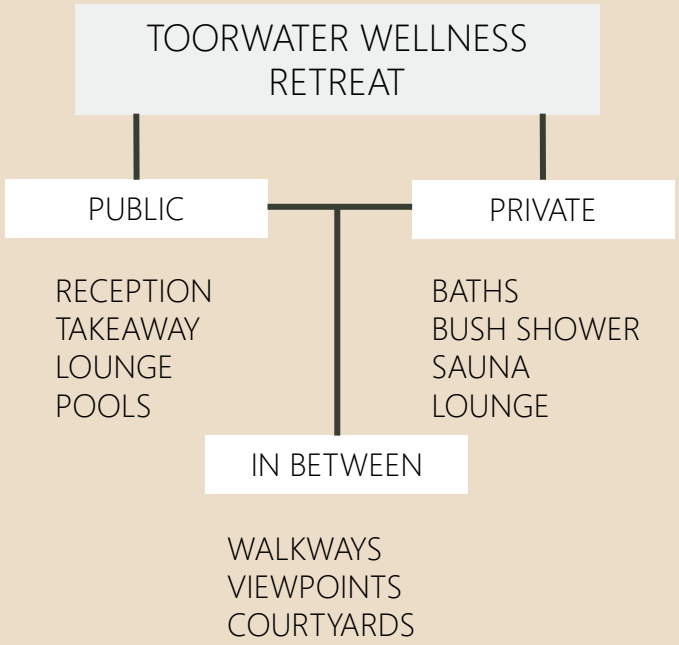


Figure 7.2: Brief diagram (Author, 2022).

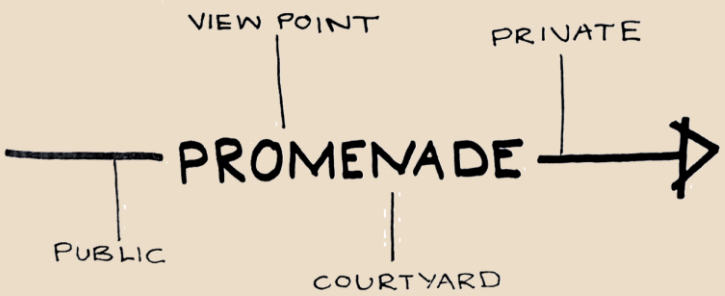


Figure 7.3: Programme concept sketch (Author, 2022).

The brief is to create a wellness retreat that narrates the story of the place while creating a space for physical and spiritual wellness. Tourists and locals will be accommodated to experience the natural phenomenon. Working with the therapeutic effect of a natural hot spring, the water is accommodated in different forms, providing the opportunity for various bathing experiences.

The programme accommodating about 30 people is choreographed along a central promenade which leads the visitor through the site along a journey of discovery and reflection. Public, semi-public and private baths allow a variety of experiences to improve physical and spiritual wellness. Engaging with the natural hot spring will allow the users to interpret the narrative of Toorwater and make it their own. The main focus of the brief and the programme is to tell the story of Toorwater while allowing people to enjoy the benefits Toorwater has to offer. A place to retreat from the busy and stressful world to improve wellness and benefit from the therapeutic effect of the natural hot spring and Klein Karoo landscape.

CHAPTER 8 | Design development

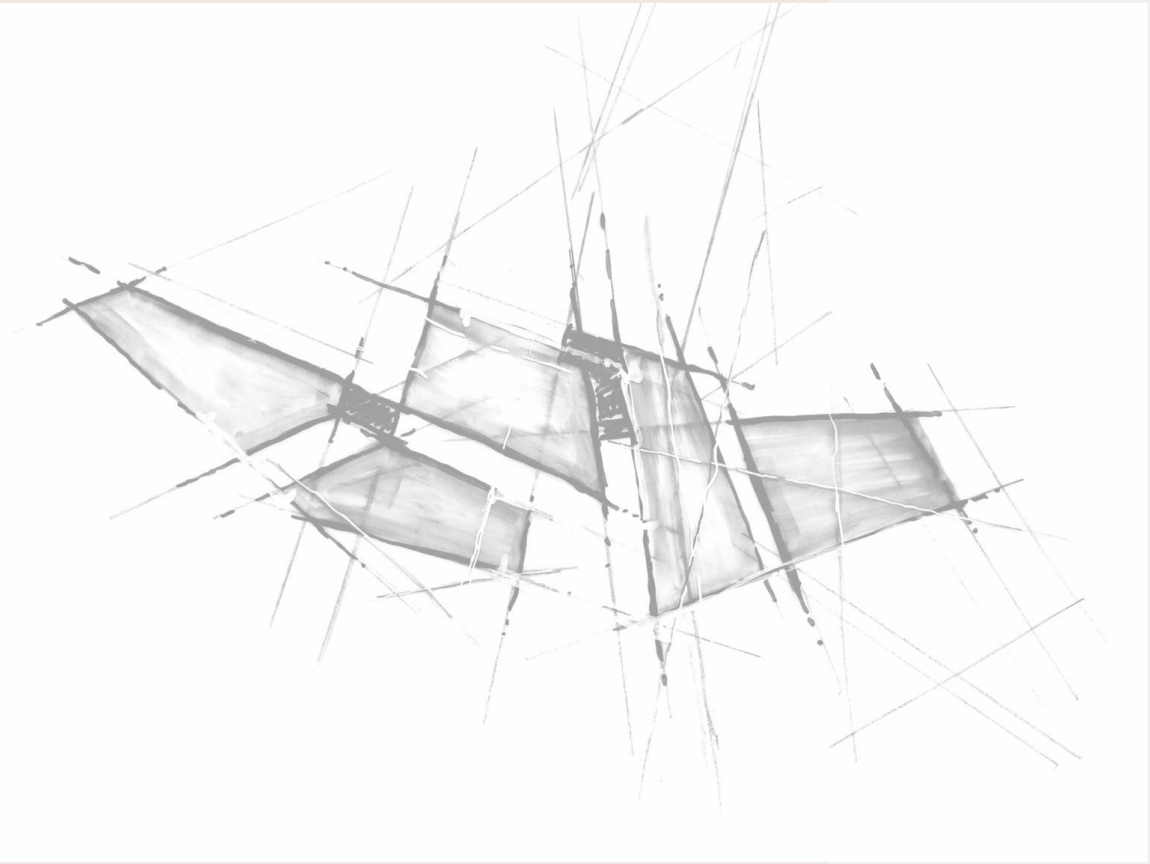


Figure 8.1: Development drawing (Author, 2022).

Figure 8.2: Water channel on site (Author, 2022).

8.1 Introduction

This chapter narrates the design process, from initial ideas to the final resolution. Concept sketches started the process in the first phase by drawing over the site and identifying essential elements that determined the plan. The second phase was developing a more detailed plan and 3D development. A model assisted in understanding the slope of the site and the relation between the different buildings, and between the buildings and the landscape. Research into Toorwater in all its forms and manifestations led to an investigation of its impact on the physical site as well as on the place.

Spatial studies and diagrams were used to determine the building size and identify the use of the different buildings. In the third phase, the design of the promenade became crucial, along with more in-depth development of the individual buildings. The identification of, and investigation into appropriate theoretical approaches, helped to shape the architectural language of the different buildings relating to their functions. During the fourth and final phase, an integrated architectural language was developed and implemented. An idea can be shaped by the scheme as a whole when looking at the model, which brings the plan and 3D development together.

A morphological study of the local architectural language assisted the design development. The existing buildings on site are analysed along with nearby buildings in the region to create an appropriate response. The elements identified from the local architecture are implemented in the design, along with principles recognised in them. Lastly, the construction touchstone is discussed concerning the morphological study and the elements identified within it that assisted in the design development.

The design development started by identifying essential points on site and working with them to create a spatial experience on the plan. Clues from the landscape and existing buildings shaped the different approaches and explorations. Working around the existing vegetation and with the lines of the existing buildings, specific primary responses to the site could be identified. Lines were identified on site, whereafter the in-between spaces proposed by the lines were pinpointed. These spaces led to the in-between spaces that can be created using walls and structures.

The concept plans placed buildings on more specific plans to shape the in-between spaces. Walls and masses were used to shape the plan and the existing feature, how the masses interact with the site and the views became vital in determining the masses' placement, size and shape. Interaction with the site became the primary concern with further plan development.

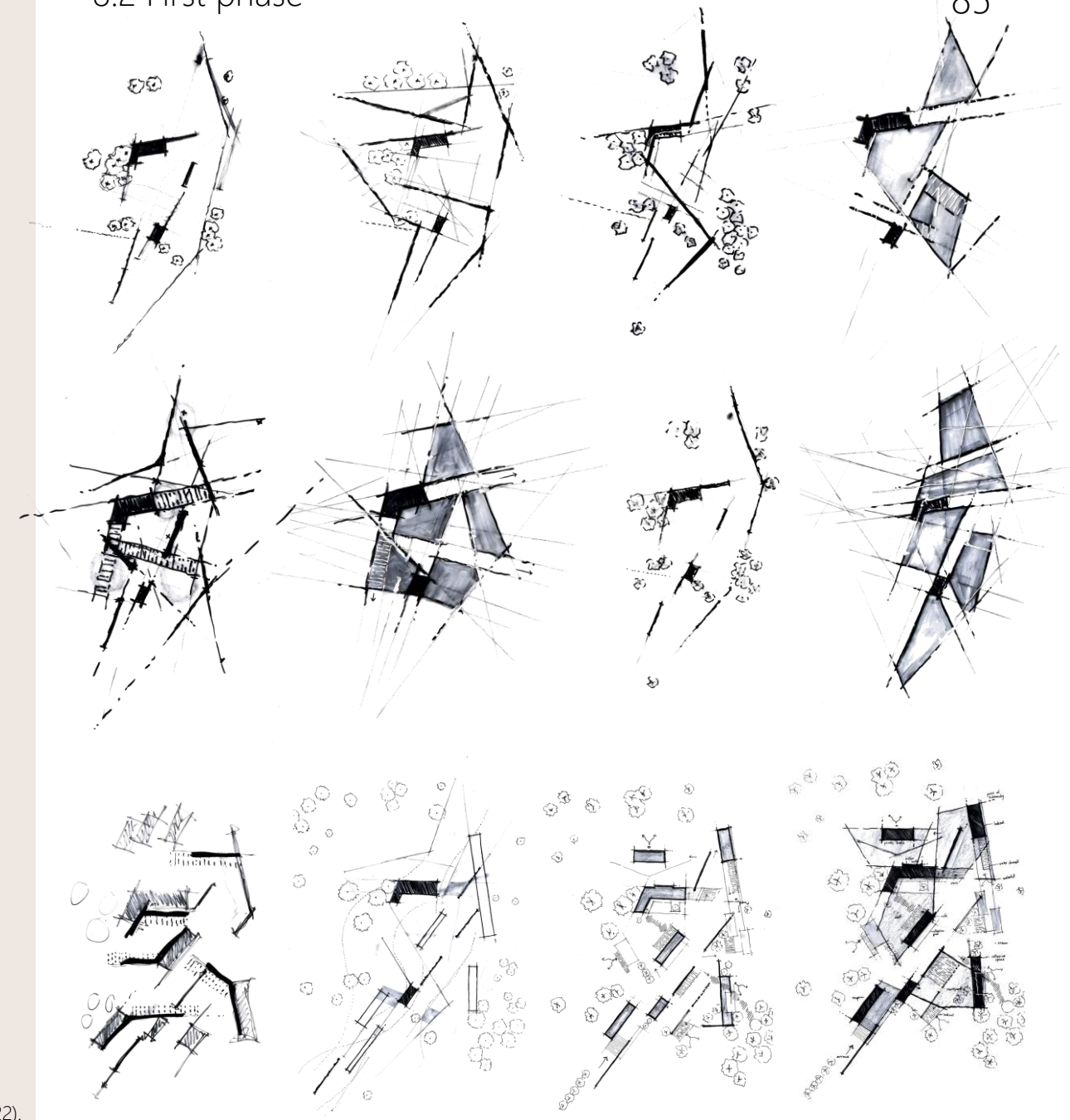


Figure 8.3: Plan concept sketches (Author, 2022).

A brief development assisted in allocating functions to the different masses on the plan and determining the placement of pools, views and shading devices. The journey through the site is linked to the functions and their place in the overall design. How the buildings will be experienced became essential and started the 3D development.

Each building was designed by looking at its place in the bigger scheme and where it is located on the site. Considering slope, views and existing trees, the 3D developments started taking shape with precedents' help. Choices had to be made regarding the building's response concerning how it sits on the site. Some buildings are sunken into the landscape while others sit above the landscape.

A variation of sections was explored to investigate the most appropriate response to the new buildings to the existing ones, specifically looking at different roof options that would work with the existing pitch roofs.

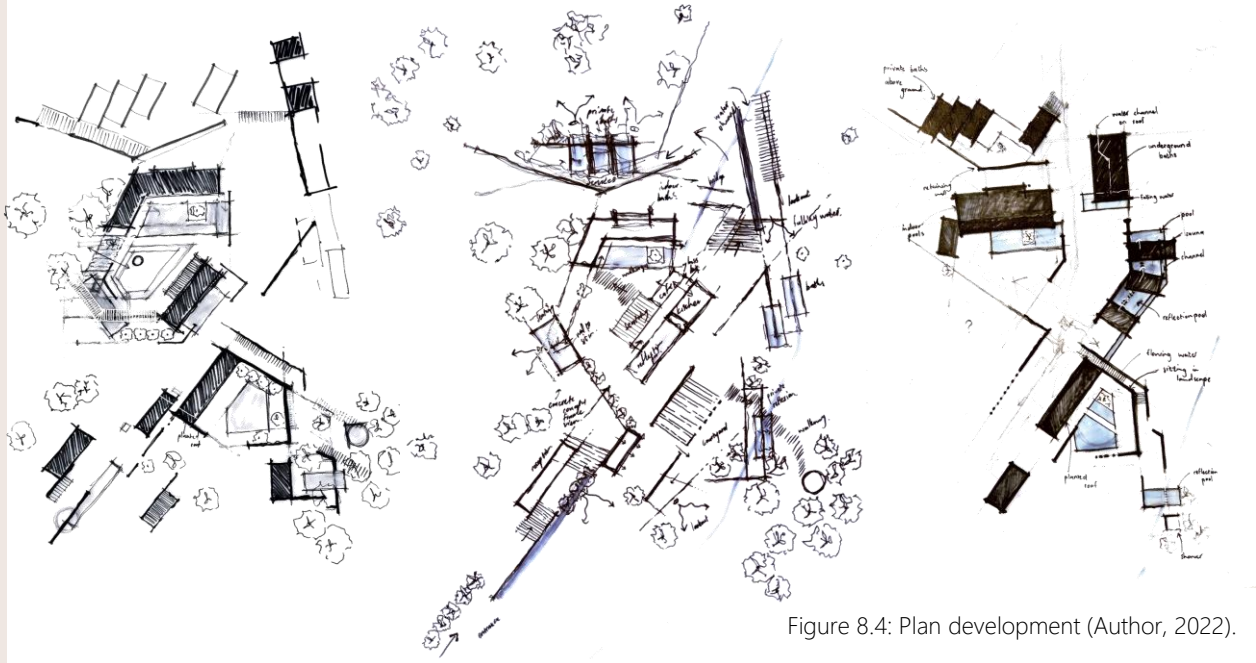


Figure 8.4: Plan development (Author, 2022).

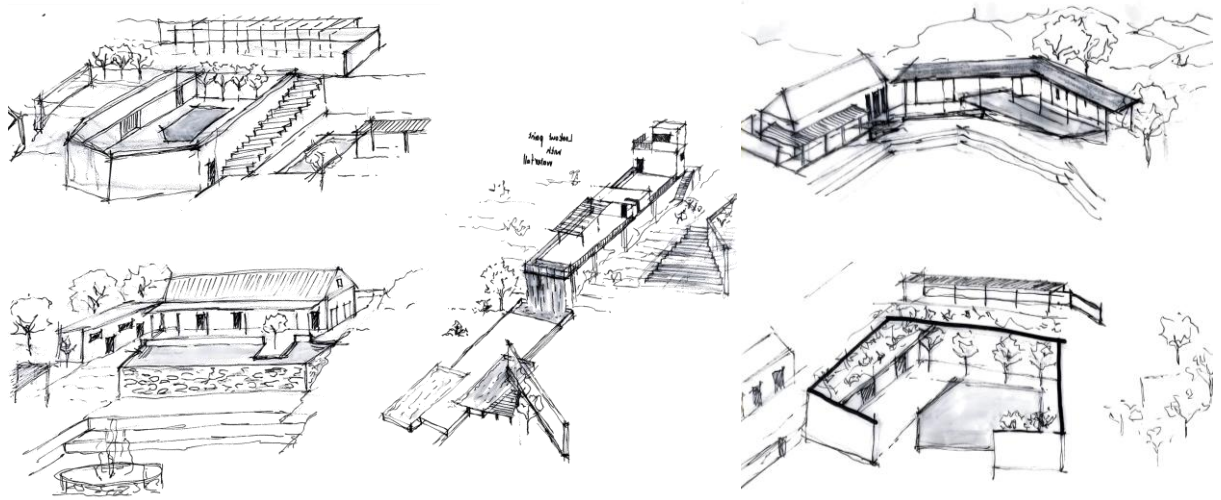


Figure 8.5: 3D development (Author, 2022).

After determining the size needed from the accommodation list, the buildings could be shaped according to the size needed to accommodate their functions. Pools and baths were allocated at each building. The 3D development and plan came together in the first model. It allowed a better understanding of how the buildings would sit on the site. Relations between heights, distances and 3D started contributing to the design, and issues regarding these points could be addressed.

Figure 8.6: First model (Author, 2022).

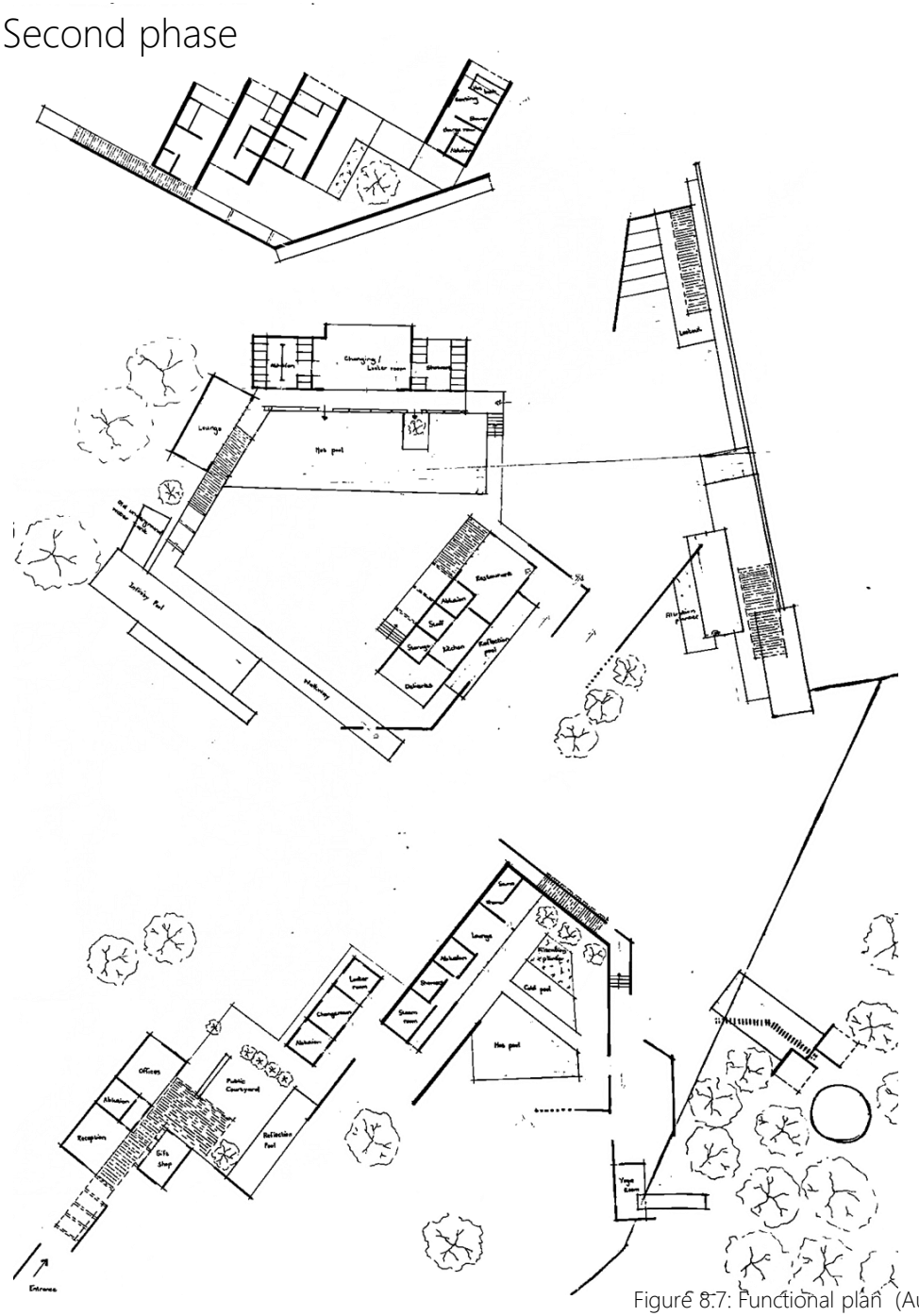


Figure 8.7: Functional plan (Author, 2022).

While the buildings started to take shape, the in-between spaces remained a problem. The next step in the design development was crucial in bringing the whole design together. Designing the in-between spaces that would lead the visitor through the building started by implementing walkways, ramps, stairs and viewpoints. This part of the design took shape as a promenade linking all the different buildings on site and incorporating the landscape into the journey through the site.

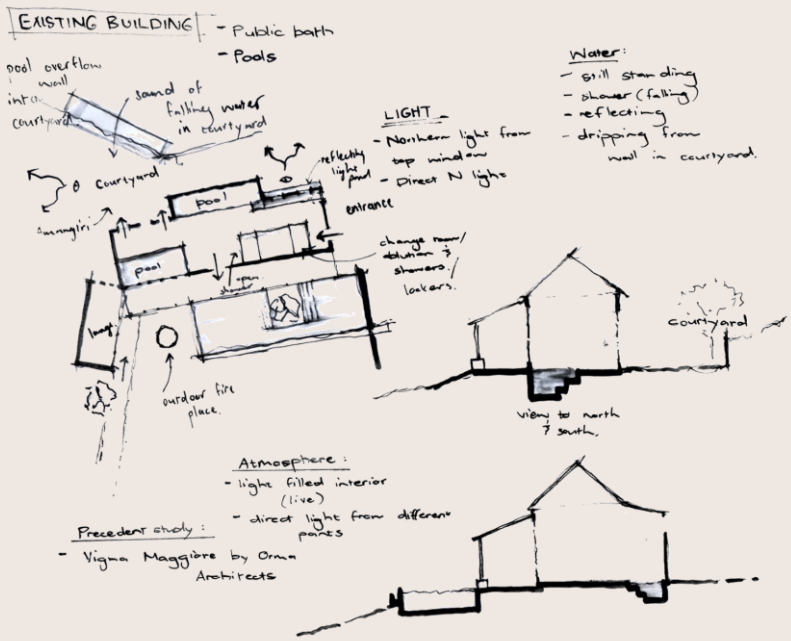


Figure 8.8: Existing building development (Author, 2022).

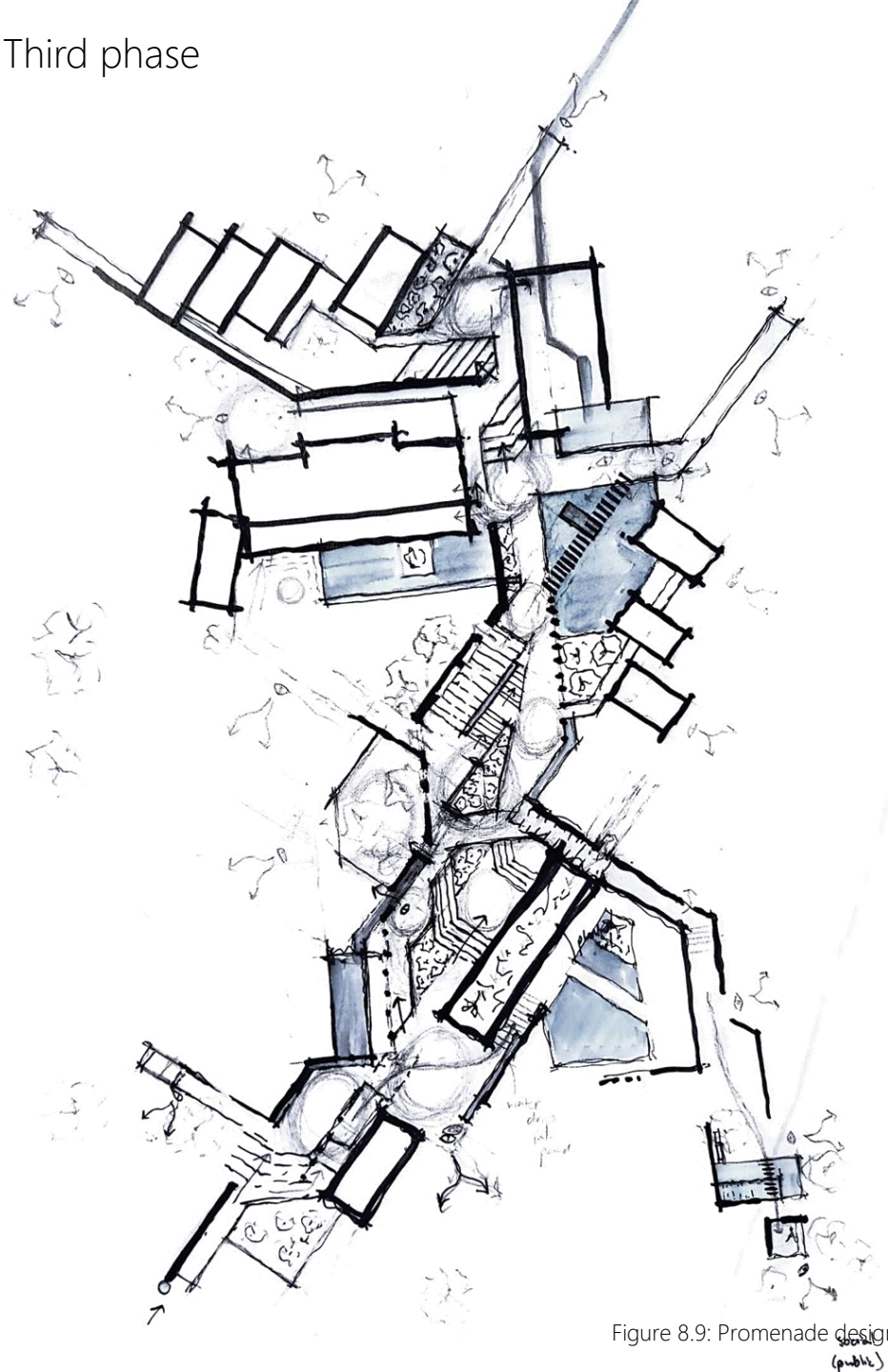


Figure 8.9: Promenade design (Author, 2022).

With the development of the promenade came the development of individual buildings. Each building was identified in its function and how it will sit in the landscape. The different experiences in each building were identified and linked to the interior development of each building. Materials, light, and water are used to shape the different buildings.

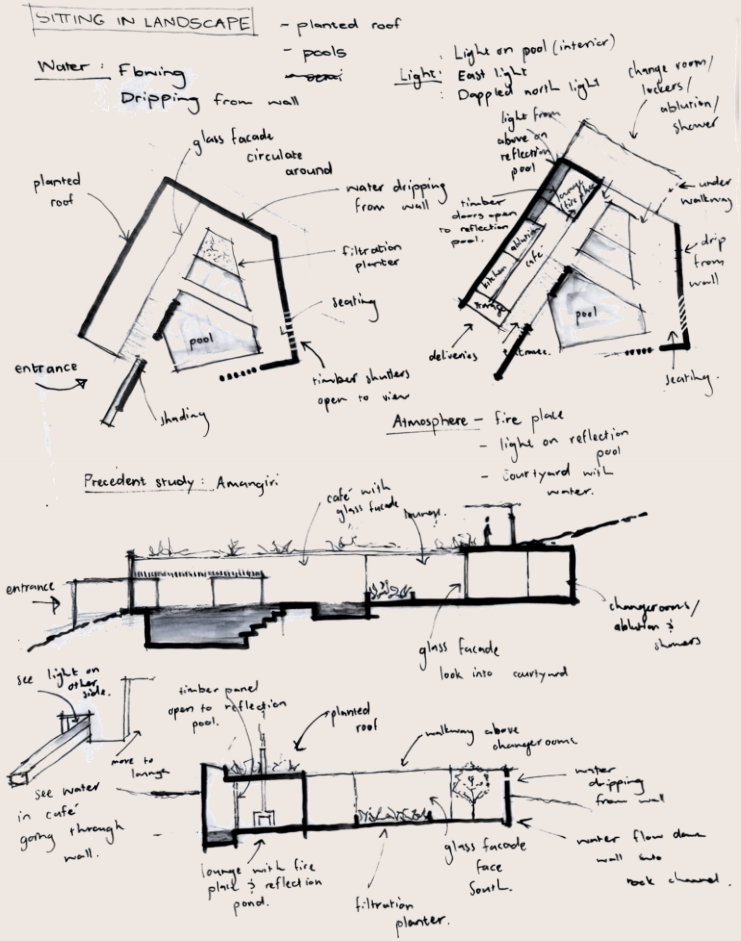


Figure 8.10: Semi-public bath development (Author, 2022).

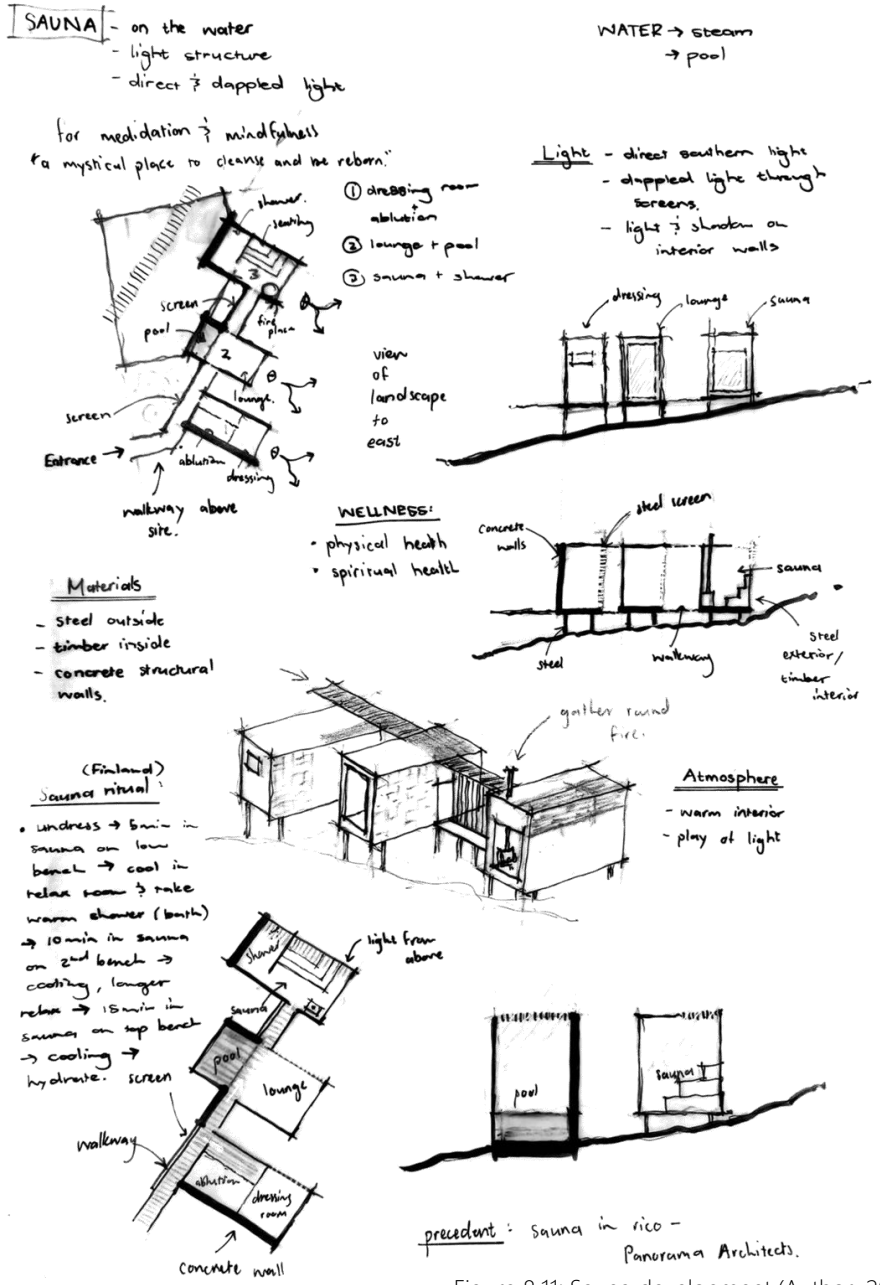


Figure 8.11: Sauna development (Author, 2022).

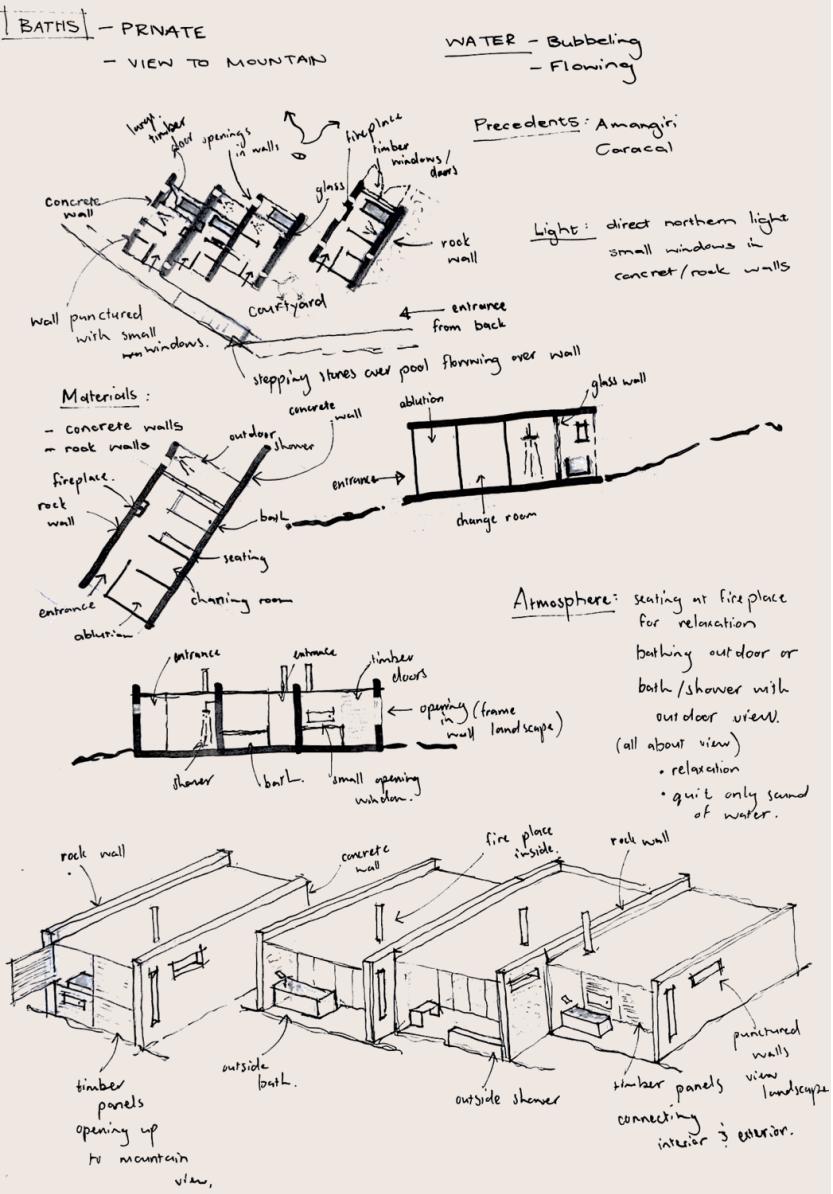


Figure 8.12: Private bath development (Author, 2022).

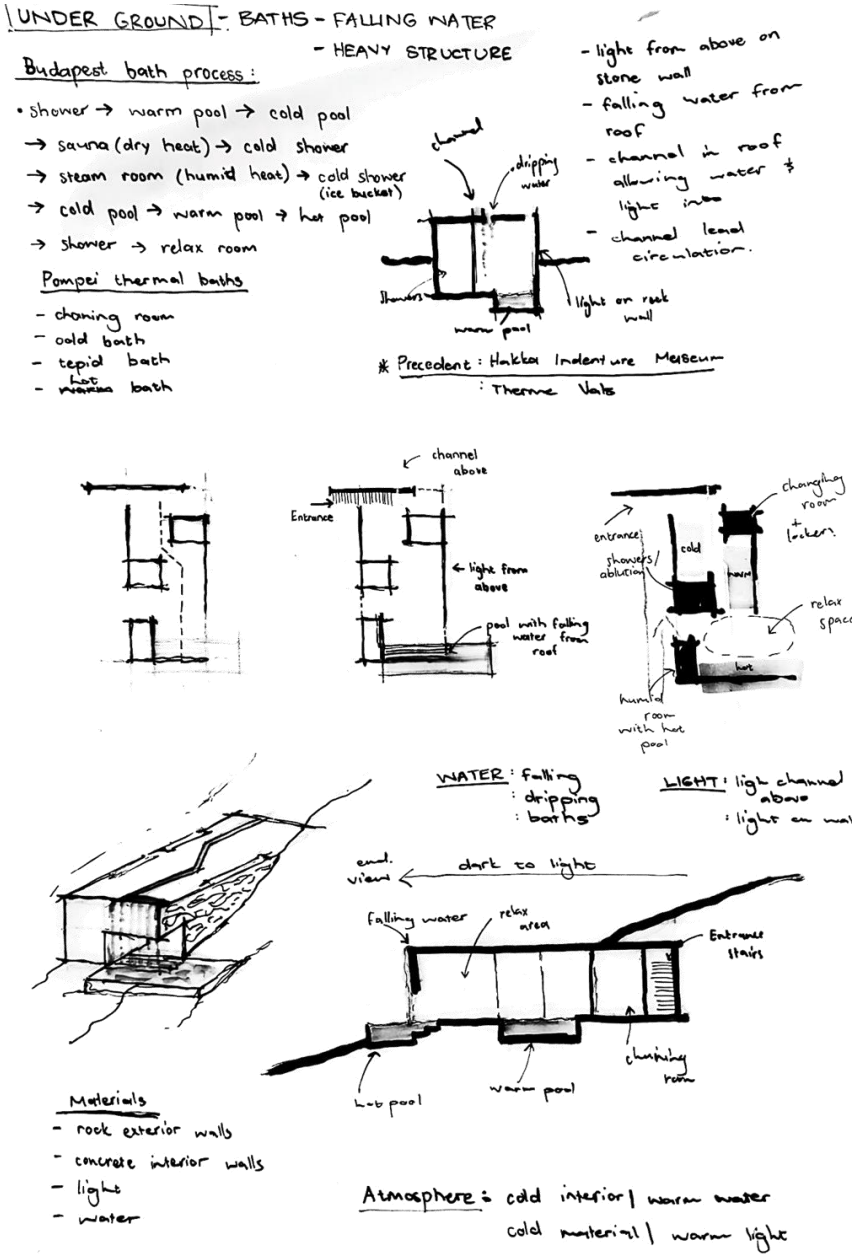


Figure 8.13: Semi-public bath development (Author, 2022).

Struggling with the 3D language of the buildings, a morphological study was done to understand the local architecture. The transition was the most valuable characteristic shared by all the local buildings and was therefore implied in the design. Whitewashed wall on a stone base made a regular appearance. It was used throughout the design to establish a uniform architectural language that links to Klein Karoo's local architecture. The morphological study and the construction touchstone, which will be referred to later in this chapter, assisted in shaping the architectural language.

Flat roofs were decided as the best approach to allow the existing pitch roof to be immediately identifiable in the bigger scheme. Working with threshold was introduced by moving from a walkway, then under a pergola, leading to a more solid canopy before entering the building. Stone walls and water channels are introduced as guiding mechanisms throughout the scheme.

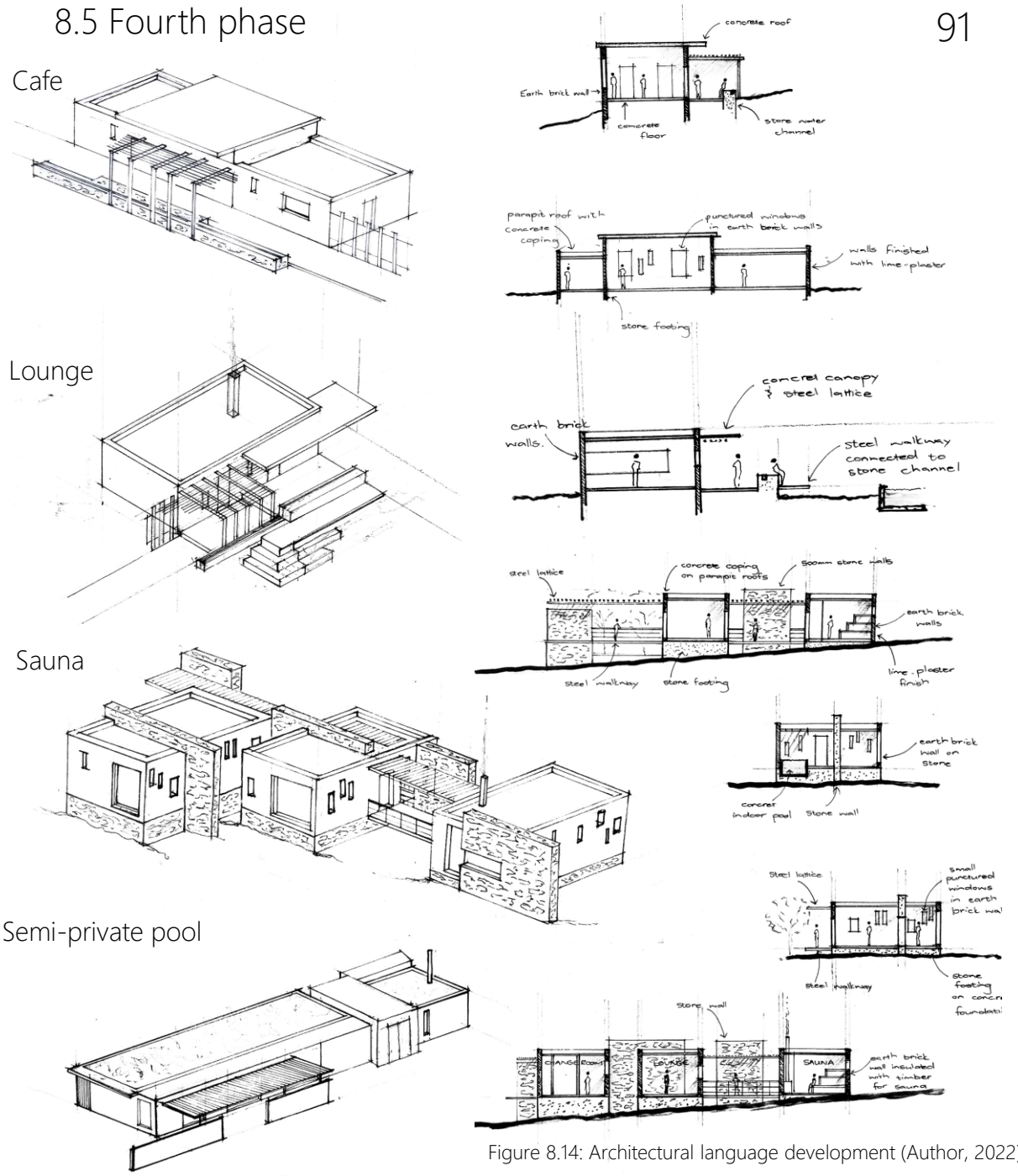


Figure 8.14: Architectural language development (Author, 2022).

8.5 Fourth phase

The promenade is shaped by the buildings and the stone walls, which lead the visitor through the design and on the journey of discovering the site. Gardens and courtyards are created along the promenade to create moments of pause and reflection. Materials used in the new buildings combine white plastered and stone walls. Planted roofs and skylights are added to the new buildings and different-sized pools.

The design scheme is divided into public and private pools to allow a variety of experiences. At the centre of the site, the most public part of the design is situated with a large courtyard behind the existing building. Each building contains a different water experience and characteristic as each has a view over a different part of the landscape.

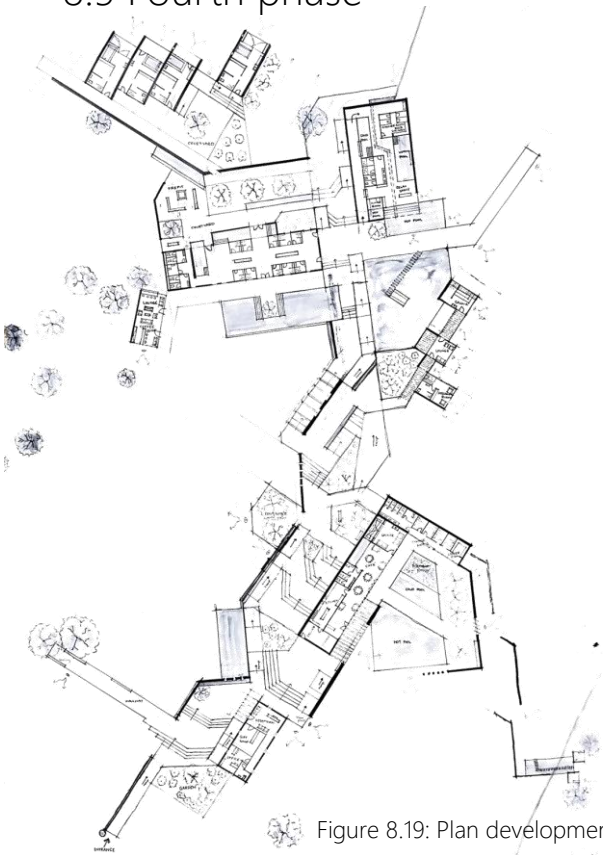


Figure 8.19: Plan development (Author, 2022).

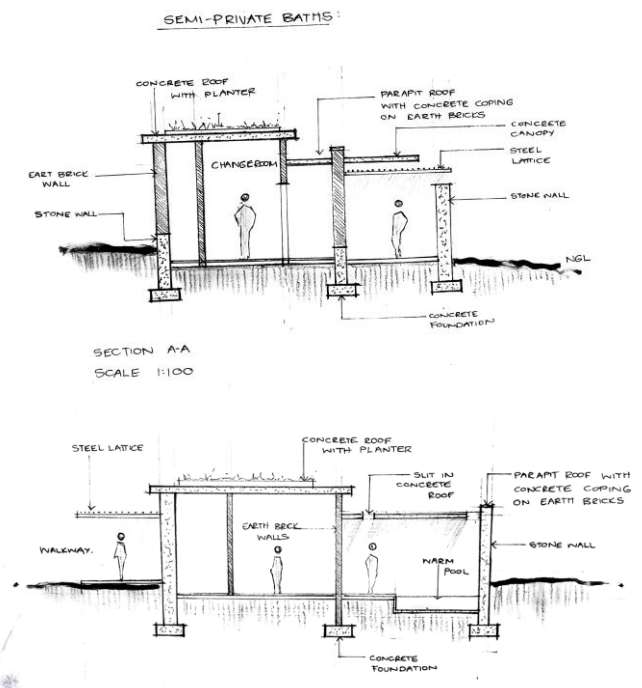


Figure 8.18: Sectional development (Author, 2022).

Figure 8.15: Model developing public spaces (Author, 2022).

Figure 8.16: Model developing promenade (Author, 2022).

Figure 8.17: Model developing baths (Author, 2022).

Building the model helped to understand the relationship between the different materials. The stone walls are easily identifiable as guiding elements, whereas the white walls represent the building itself. Problematic points could be recognised in the model regarding green spaces in the promenade and some orientation and placement of buildings. The existing buildings can be identified within the larger scheme. New and existing buildings share a similarity which connects them in the design. Journeying through the site, the landscape is incorporated into the design through views, integration and orientation.

Figure 8.20: Second model (Author, 2022).

Figure 8.21: Plan reflecting model (Author, 2022).

MORPHOLOGICAL STUDY OF LOCAL BUILDING CHARACTERISTICS

Earth bricks

Stone construction

Zig-zac road up hill

Transition from outside to inside

Timber shutters

Stoep

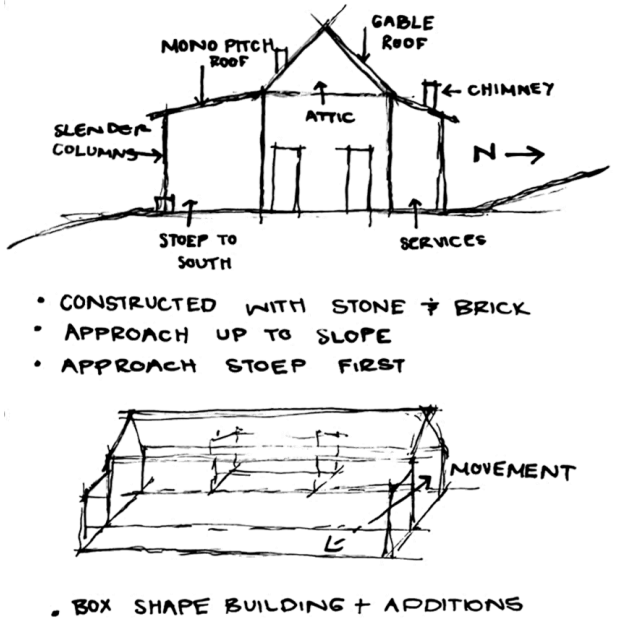
Figure 8. 22: Regional buildings (Jorgensen, 2018, 48 - 287).

Characteristics:

- Stoep
- White washed walls
- Earth brick wall construction
- Base built from Stone
- Gable roof with corrugated sheeting
- Attic
- Box shape building
- Karoo light contributes to character
- Timber roof structure
- Breathable plaster
- Timber windows and doors

Figure 8.23: Existing building on site (Author, 2022).

Figure 8.24: Exterior of existing building (Author, 2022).



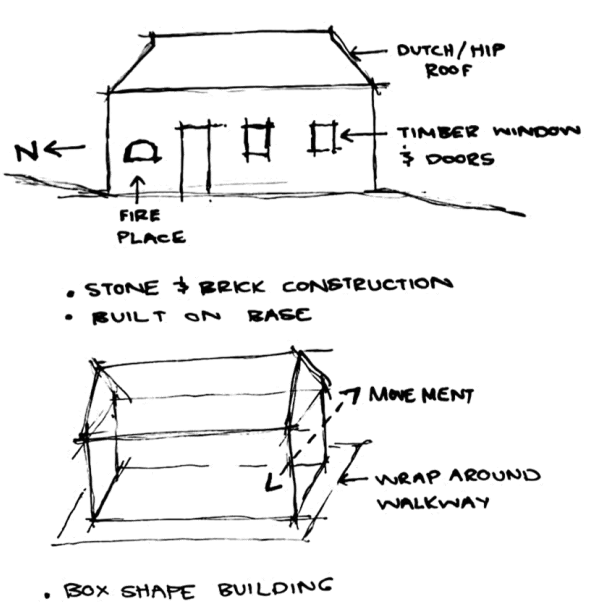
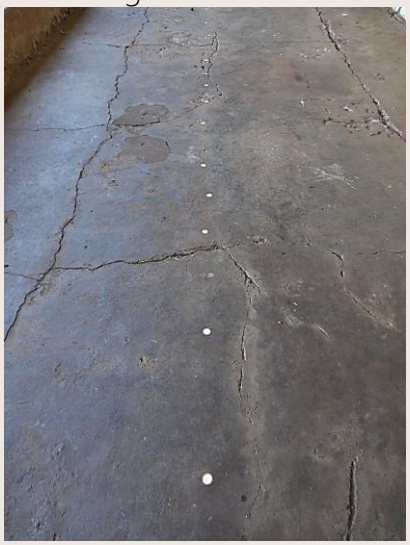


Figure 8.25: Existing building analysis (Author, 2022).

Characteristics:

Karoo light

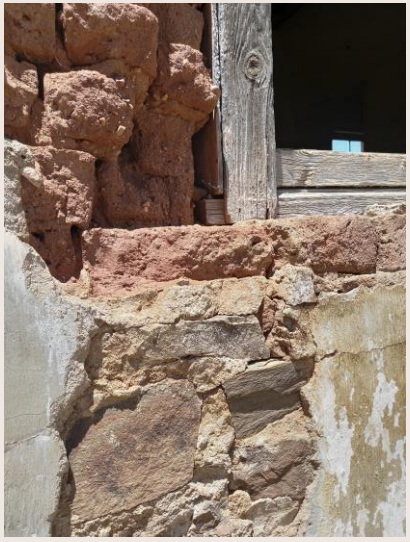


Rock construction

Existing rock baths

Timber & corrugated steel

Rock base construction



Timber doors

Timber interior floors

Earth bricks

Figure 8.26: Existing building details (Author, 2022).

Characteristics:

- Stoep
- Stairs approach building
- White washed walls
- Earth brick wall construction
- Base built from stone
- Gable roof with corrugated sheeting
- Attic
- Stoep covered with curved canopy
- Box shape building
- Symmetry
- Stepping pattern on walls and around windows
- Karoo light contribute to character
- Transition from exterior to interior

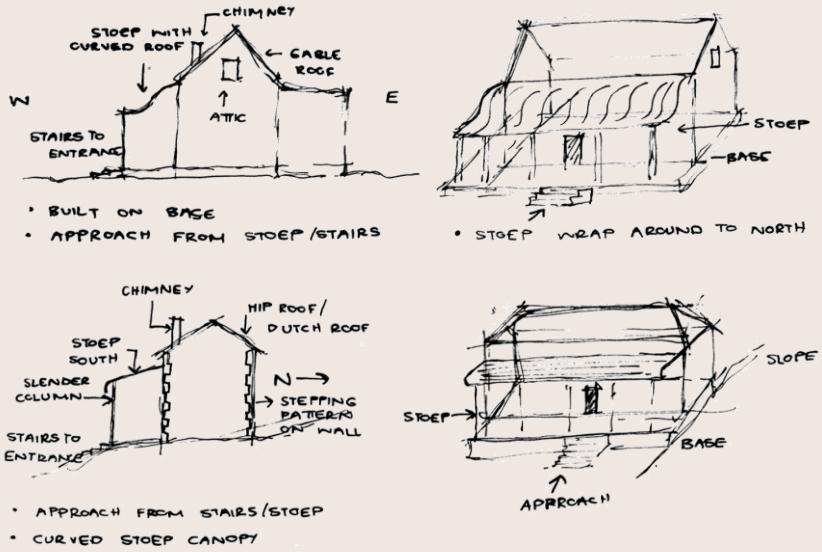


Figure 8.29: Regional analysis (Author, 2022).

Figure 8.27: Regional buildings (Author, 2022).

Figure 8.28: Farm house (Author, 2022).

Characteristics:

- Stoep
- Stairs approach building
- White washed walls
- Earth brick wall construction
- Base built from stone
- Gable roof with corrugated sheeting
- Attic
- Stoep covered with curved canopy
- Box shape building
- Symmetry
- Stepping pattern on walls and around windows
- Karoo light contribute to character
- Transition from exterior to interior

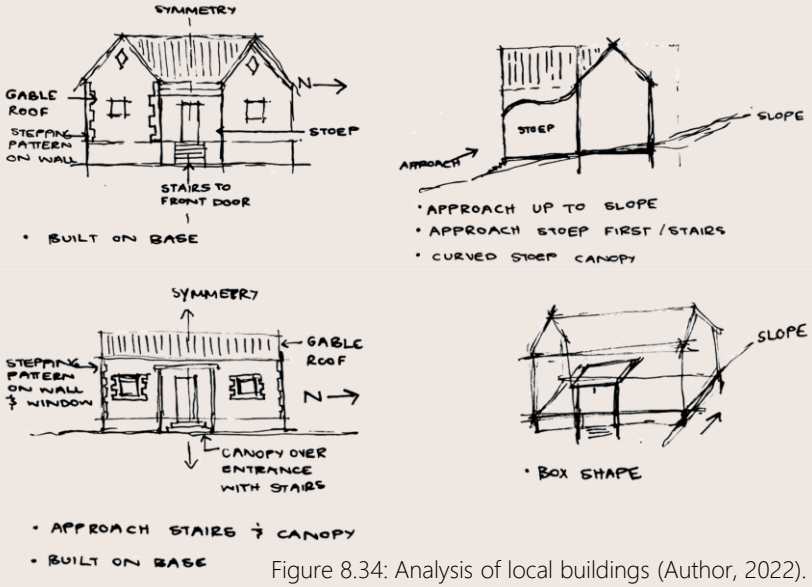


Figure 8.34: Analysis of local buildings (Author, 2022).

Figure 8.30 & 8.31 : Regional buildings (Author, 2022).

Figure 8.32 & 8.33: Light and shadow lines (Author, 2022).

The construction touchstone followed from the morphological study of the local buildings. After the characteristics were identified in the study, it was reinterpreted in the construction touchstone. Firstly the concept of the threshold was interpreted in the usage of materials. Moving from one material to the next, the transition from solid to more transparent. Thresholds with the use of steps and walkways. The concept also introduces a water channel as a core element connecting the thresholds. The transition between materials leads the visitor into the building and encourages movement along the walkway. A combination of large steps and smaller steps introduces different forms of movement, from moving determined to a form of strolling. Stepping of the water channel is suggested in the concept model to step with the site's slope.

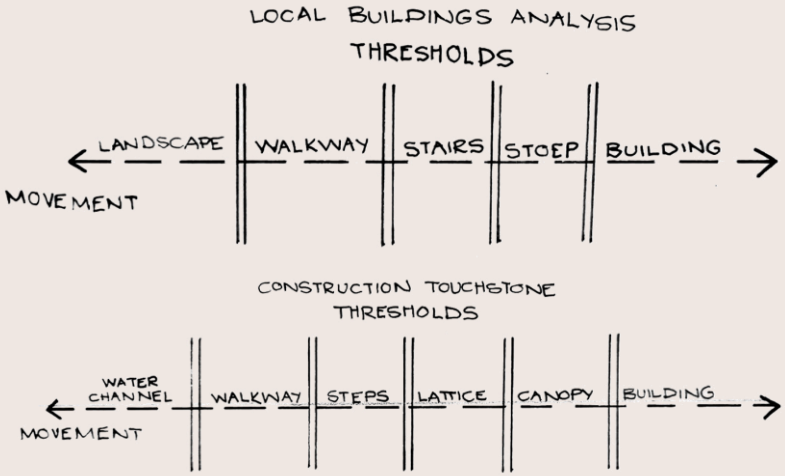


Figure 8.39: Threshold analysis and implimentation (Author, 2022).

Figure 8.35 – 8.8.38: Construction concept model (Author, 2022).

Figure 8.40: Existing building ruin (Author, 2022)

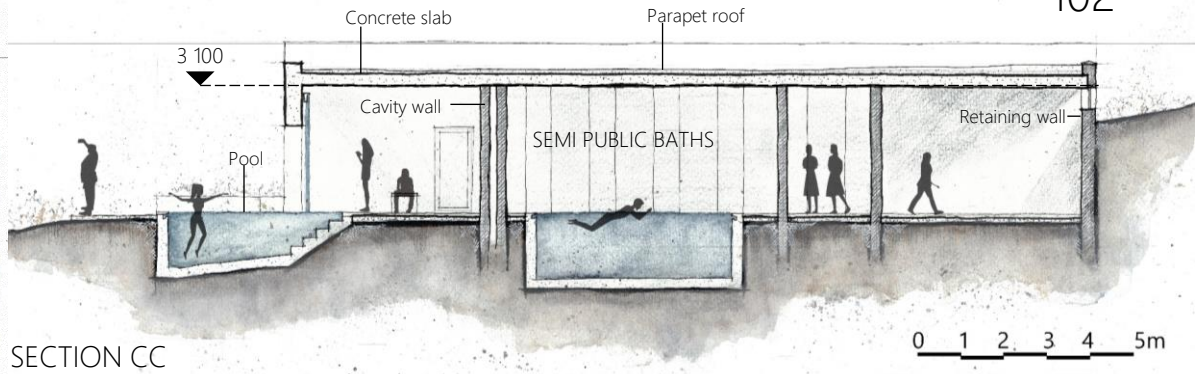
8.8 Conclusion

The design development shows the thought process and journey towards the final design and the project outcome. The plan was developed throughout the four phases, along with the 3D that came together in the design models. The original concept sketches shows the reason for the building's placement on the site and in relation to each other. A big leap was taken in the 3D development of the project after looking at the morphological study to determine an architectural language which would be appropriate for the site. Another significant contribution to the project was the design of the promenade, which links all the buildings with each other and the site. The spatial experience and atmosphere of the type of buildings contributed considerably to the design of the different buildings and their characteristics. Lastly, the construction touchstone contributed considerably to the architectural language to link throughout the scheme and responded to the existing buildings on site appropriately.

BIRD'S EYE VIEW

Toorwater Wellness Retreat

LOCATION PLAN



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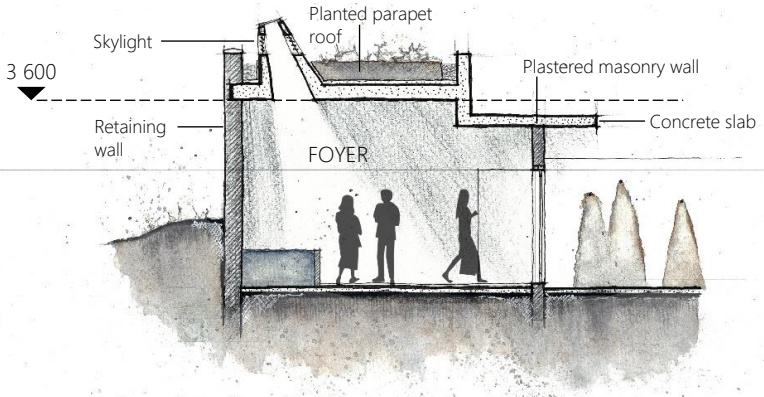

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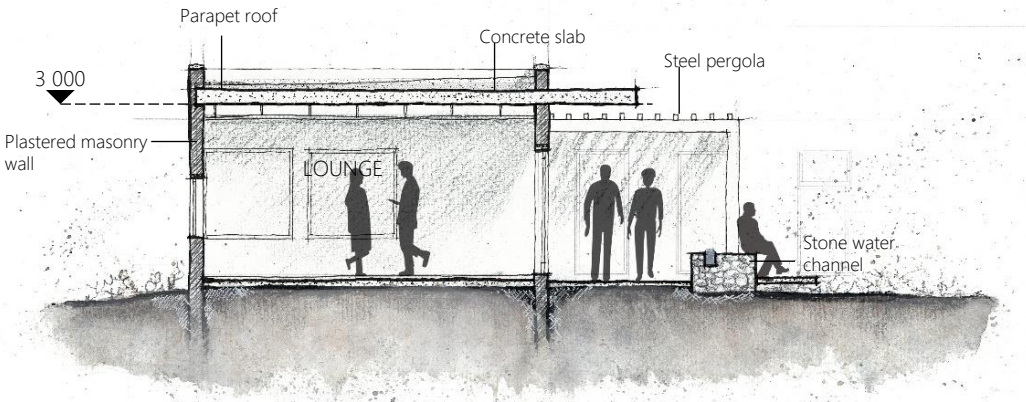

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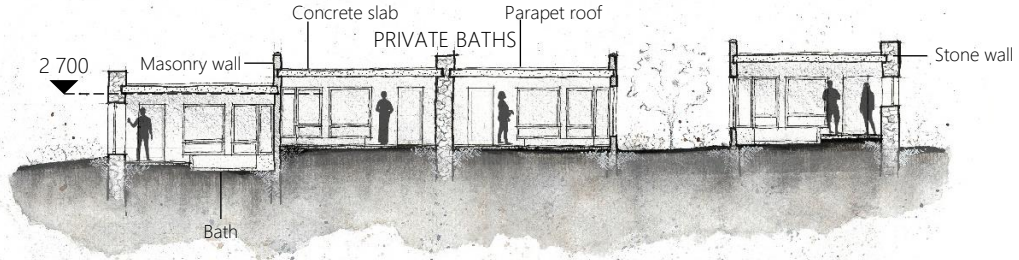

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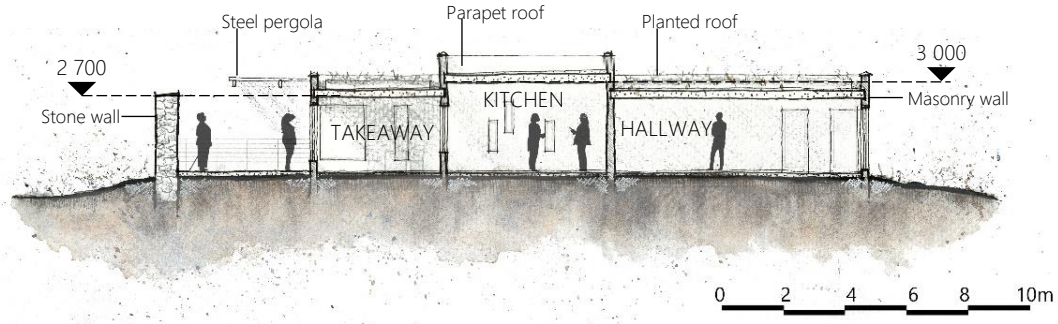

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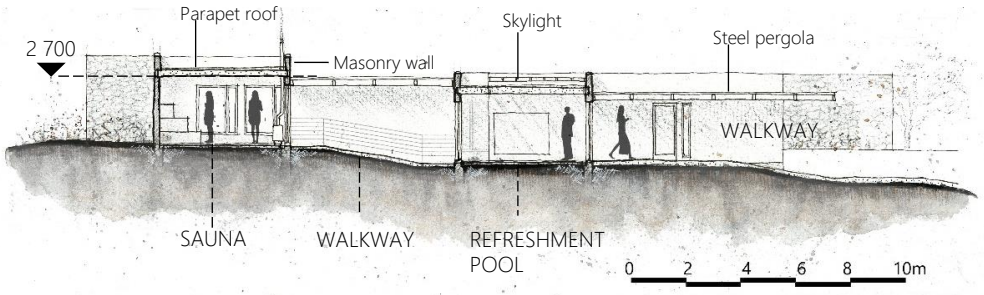

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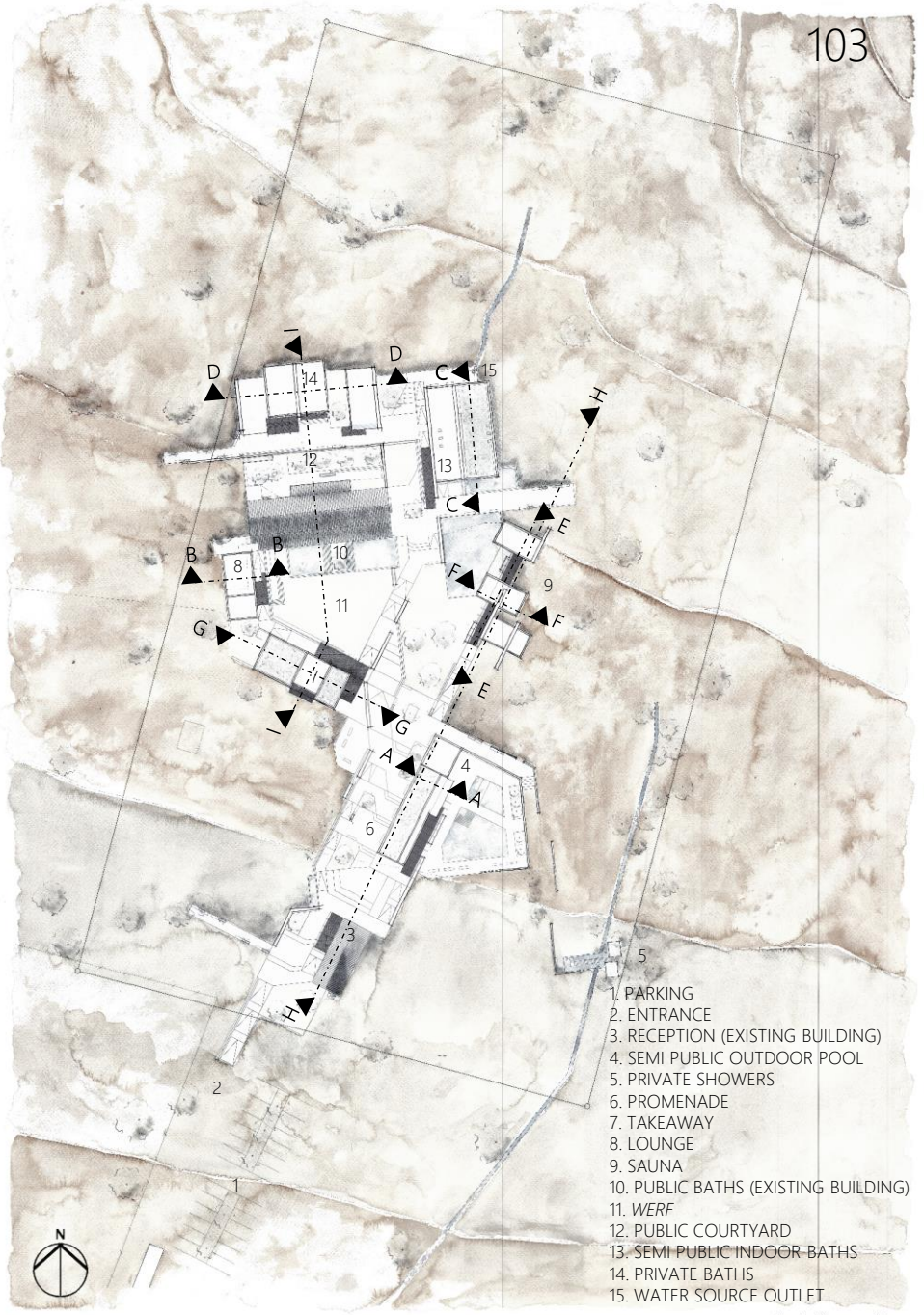


SITE PLAN

SEMI PUBLIC POOL PERSPECTIVE

GROUND FLOOR PLAN
SCALE 1:200

SEMI PUBLIC BATHS EXTERIOR PERSPECTIVE

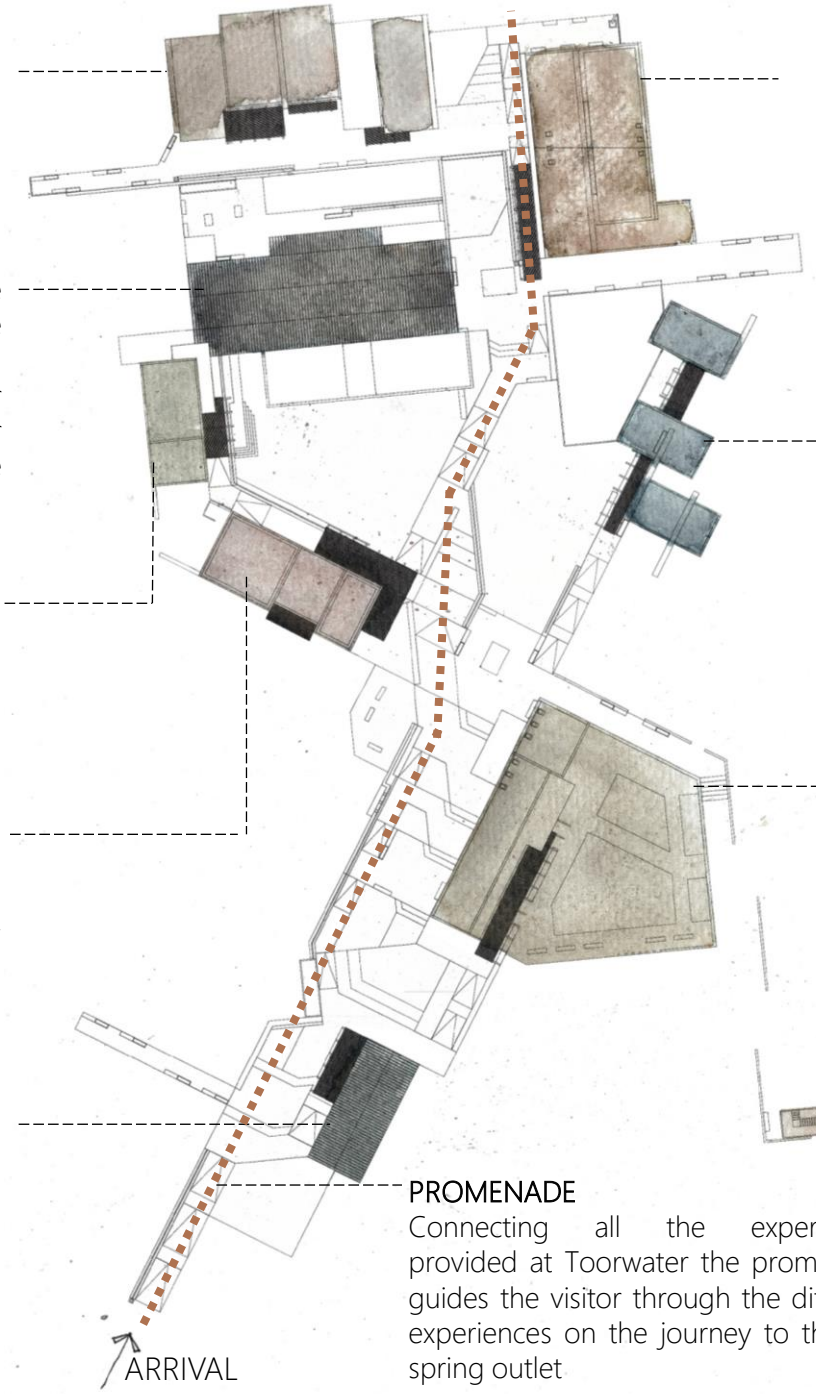
PRIVATE BATHS
Each unit consists of an indoor bath and stoep overlooking the mountains at the north. For a secluded breakaway, a unit can be booked for the day. (Accommodate max 8 visitors)

PUBLIC BATHS
Open to the public, visitors can enjoy the indoor and outdoor baths housed at the main building. With a northern courtyard for the winter and the *werf* in the south for the summer, the building provides all year round accommodation. (Accommodate max 30 visitors)

LOUNGE
Accessed from the *werf*, the lounge can be used to enjoy a cup of coffee, eat a takeaway or just relax and enjoy the fireplace.

TAKEAWAY
Providing takeaway throughout the day, visitors can enjoy a light meal while admiring the landscape. Picnic baskets can also be ordered when spending the day elsewhere in the complex.

RECEPTION
Arriving at Toorwater, visitor get all their information regarding the different experiences available and how to locate them. Bookings for the semi public baths, sauna, private baths and showers are also made here. (Toorwater accommodate approximately 50 visitors)



SEMI PUBLIC INDOOR BATHS
Storing their belongings in a personal changing rooms, visitors can enjoy the different water temperatures accommodated by the variety of baths especially pleasant in cold winter months. (Accommodate max 6 visitors)

SAUNA
The sauna consist of three buildings which accommodate changing rooms, a refreshment pool, a lounge, showers and a sauna. Booking a sauna the visitor can expect large glimpses of the landscape in the East. (Accommodate max 6 visitors)

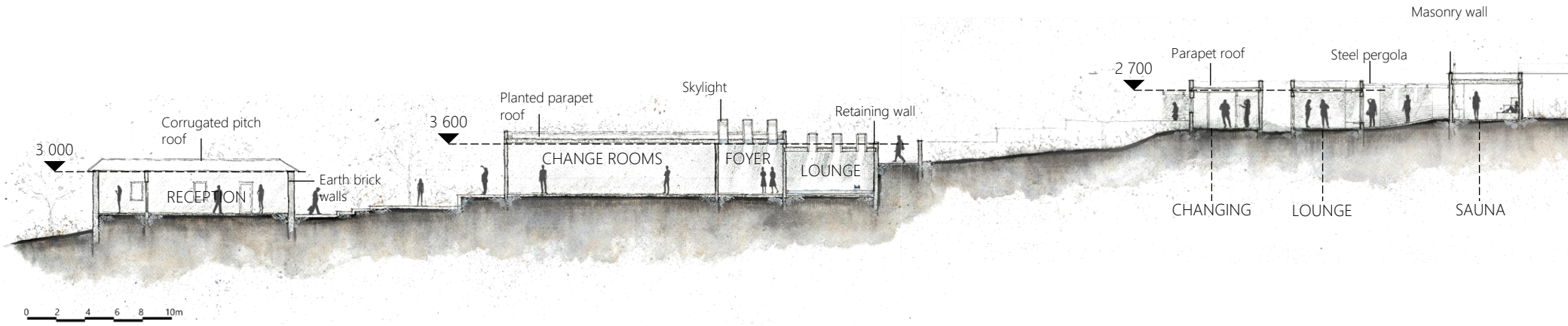
SEMI PUBLIC OUTDOOR POOLS
Consisting of two pools a visitor can book a changing room for private use and store their belongings. Nestled into the landscape, the building allows a view to the South over the Klein Karoo landscape that can especially be enjoyed on hot summer days. (Accommodate max 10 visitors)

PROMENADE
Connecting all the experiences provided at Toorwater the promenade guides the visitor through the different experiences on the journey to the hot spring outlet

PRIVATE SHOWERS
Located between a group of trees, the private showers can be booked for a quiet encounter with nature. (Accommodate max 2 visitors)

COURTYARD PERSPECTIVE

EAST ELEVATION OF COMPLEX



SECTION HH

PERSPECTIVE OF WERF

SECTION II

ENTRANCE PERSPECTIVE

ELEVATION FROM APPROACH

PERSPECTIVE OF TAKEAWAY

SOUTH ELEVATION OF TAKEAWAY

0 4 8 12 16 20 M

PERSPECTIVE OF TAKEAWAY ENTRANCE

EAST ELEVATION OF LOUNGE

0 4 8 12 16 20 M

PERSPECTIVE OF LOUNGE

PERSPECTIVE SEMI PUBLIC POOLS OVERLOOKING LANDSCAPE

SEMI PUBLIC OUTDOOR POOL

Nestled into the landscape the retaining wall creates a courtyard that opens up towards to South. Transitioning over different thresholds along the walkway into the building makes the visitor aware of the transition from outside to inside. A shallow and deep outdoor pool provides the visitor with a choice of how to experience the water. Timber louvres in the courtyard wall allow for a glimpse of the landscape at the East while allowing the pools to remain out of sight.

Water flowing down the retaining wall creates a constant awareness of Toorwater with the constant sound of running water. Inside the building, a lounge creates a space for relaxation with a fireplace and reflection pool which reflects the indirect light from skylights on the roof.

Key plan

EAST ELEVATION OF SEMI PUBLIC OUTDOOR POOLS

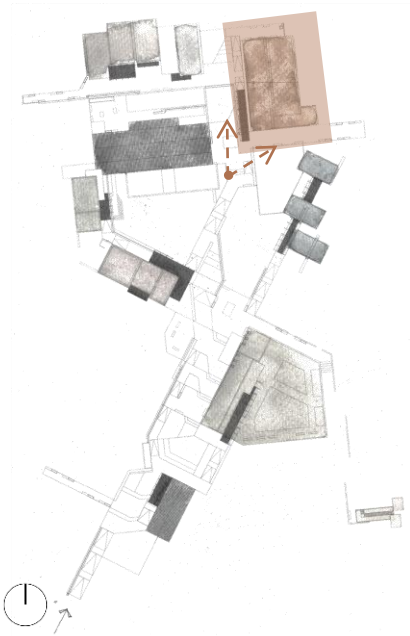
ENTRANCE TO SEMI PUBLIC OUTDOOR POOLS

SEMI PUBLIC BATHS INDOOR PERSPECTIVE

SEMI PUBLIC INDOOR BATHS

With little direct light, the steam from the hot baths gives a mysterious quality to the interior of the building. shafts of light enter the building through skylights on the roof and move over the walls as the day progresses. Condensate water drips from the cold concrete roof slab making the visitor aware of water and its different forms. A large opening at the South of the building is screened with a curtain of running water which obscures the view into the building.

A pergola structure throws dappled light on the textured stone wall which leads the visitor to the end of the journey at the natural hot spring outlet.



Key plan

SOUTH ELEVATION OF SEMI PUBLIC INDOOR BATHS

0 4 8 12 16 20 M

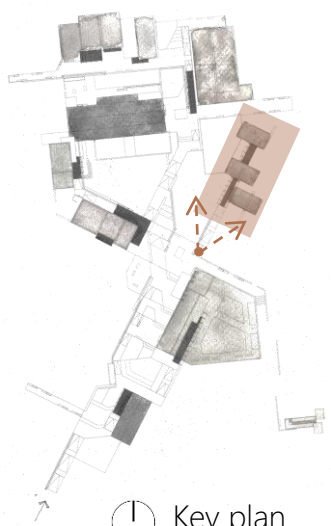
PERSPECTIVE PROMENADE PAST SEMI PUBLIC BATHS

PERSPECTIVE OF WERF FROM TAKEAWAY

SAUNA

Transitioning between the three spaces of the sauna ritual, the visitor is constantly aware of the landscape with views towards the East. While experiencing water in the form of steam in the sauna the visitor can relax while being close to nature. The fireplace in the sauna also adds to the experience as it links to the story of Toorwater and the igniting flames that are said to be seen on the water.

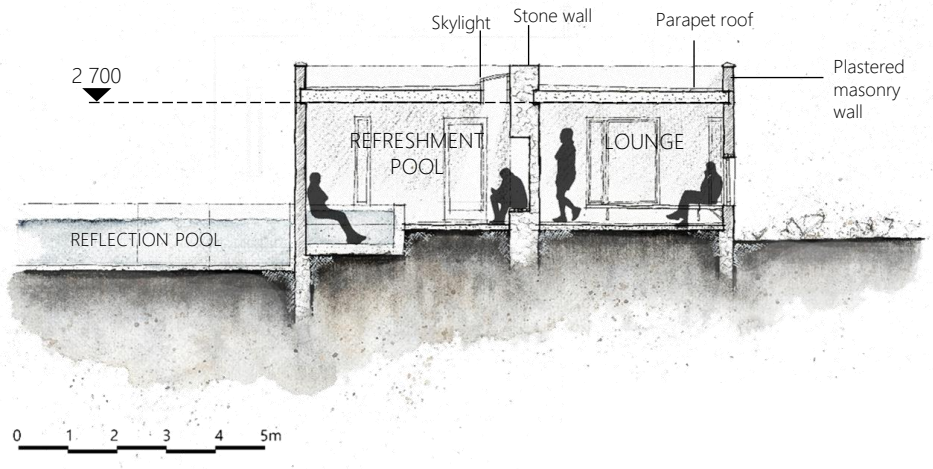
On the walkway between the different buildings, the visitor experiences both the promenade and the location of the complex along with views of nature which places them within the landscape of Toorwater.



Key plan

EAST ELEVATION OF SAUNA

0 4 8 12 16 20 M



SECTION FF

ENTRANCE PERSPECTIVE TO SAUNA

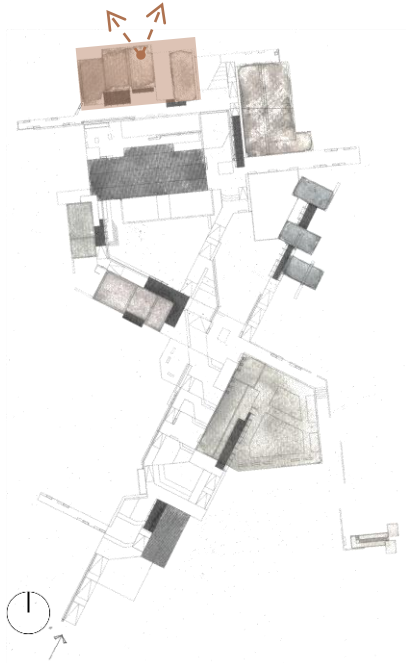
WATER CHANNEL IN COURTYARD

PRIVATE BATHS

Looking out over the Swartberg mountains in the North, the private baths allow for n quiet getaway at the end of the promenade.

The baths are entered from a courtyard at the South, secluded from the rest of the complex.

The private bath provides the visitor to book a unit for the day where they can soak in a bubbling hot bath with a fireplace burning in the background. Light enters through the large Northern windows and can be adjusted with timber screen doors which creates a threshold between the inside and the outside. Only the sound of the bubbling water breaks the silence of the Klein Karoo, allowing the visitor to meditate and reflect on their relation to the natural landscape.



Key plan

SOUTH ELEVATION OF PRIVATE BATHS

0 4 8 12 16 20 M

VIEW FROM PRIVATE BATHS

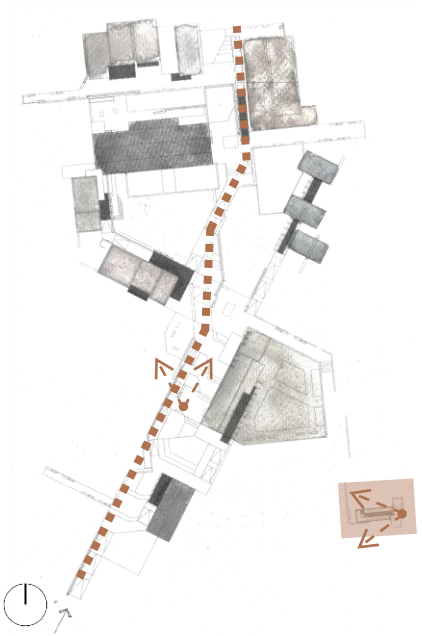
PERSPECTIVE OF PROMENADE

PRIVATE SHOWERS

Hidden between a group of trees the sound of water falling on stone provides a calm and secluded space where the visitor can feel part of nature. Moving over the stepping stones on the reflection pond, views are framed that tells the visitors bits and pieces of the story of Toorwater.

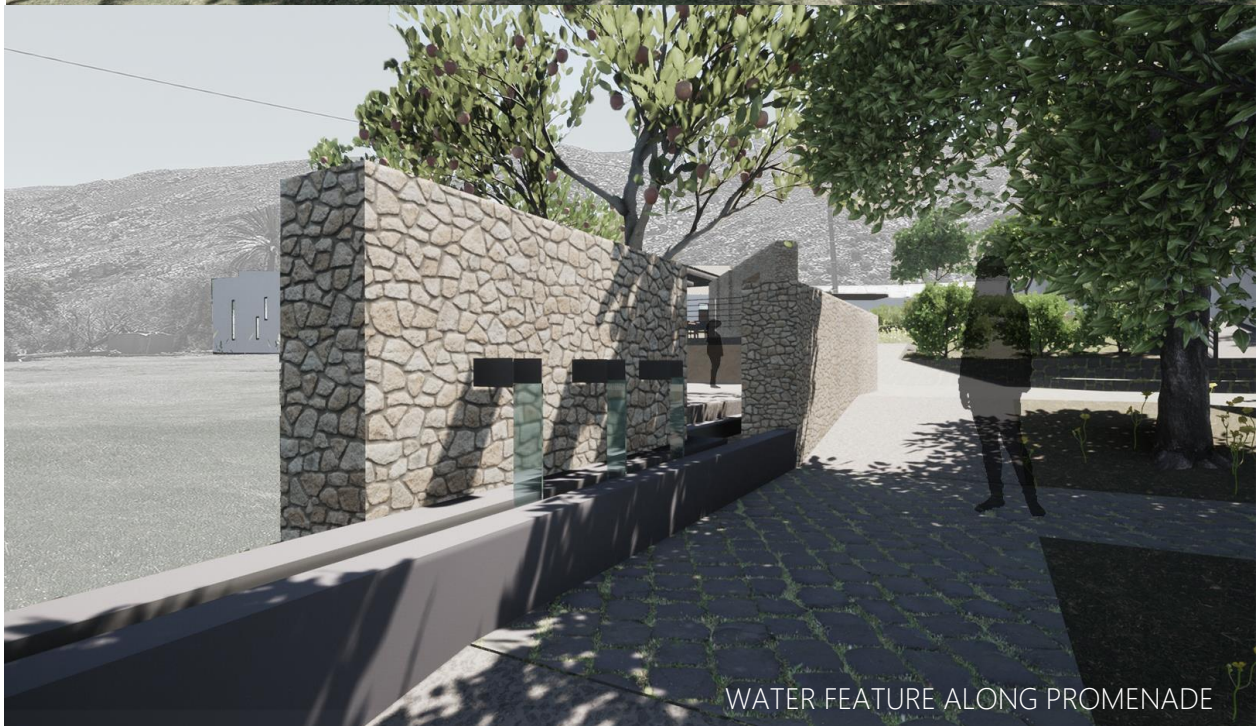
POMENADE

The visitor is led through Toorwater along the promenade with the assistance of stone walls and water channels that guides the visitor along the journey from arrival to the natural hot spring outlet. Along the journey the story of Toorwater is narrated through the different experiences of the water and the views along the way.



Key plan

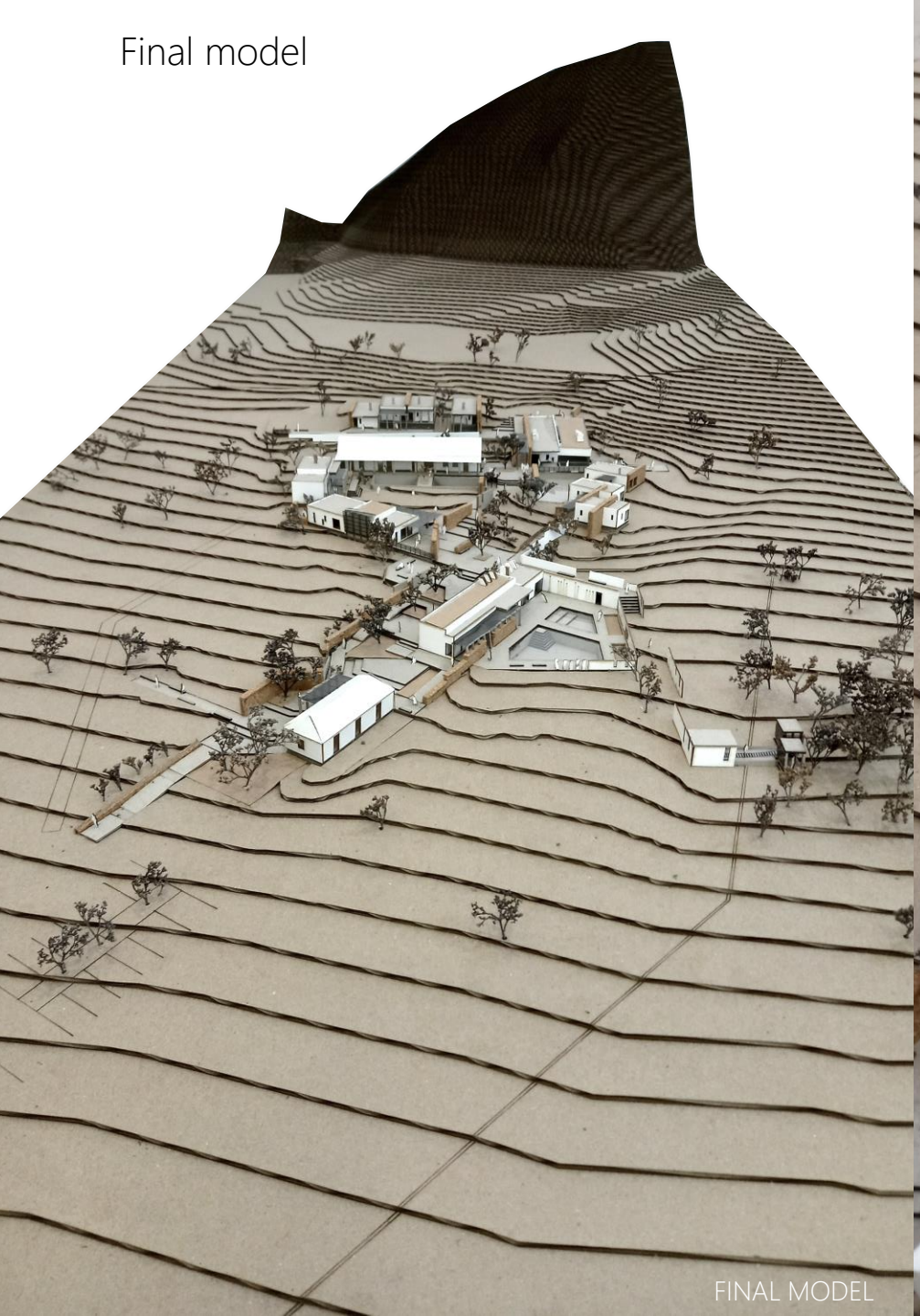
PERSPECTIVE OF PRIVATE SHOWERS



WATER FEATURE ALONG PROMENADE

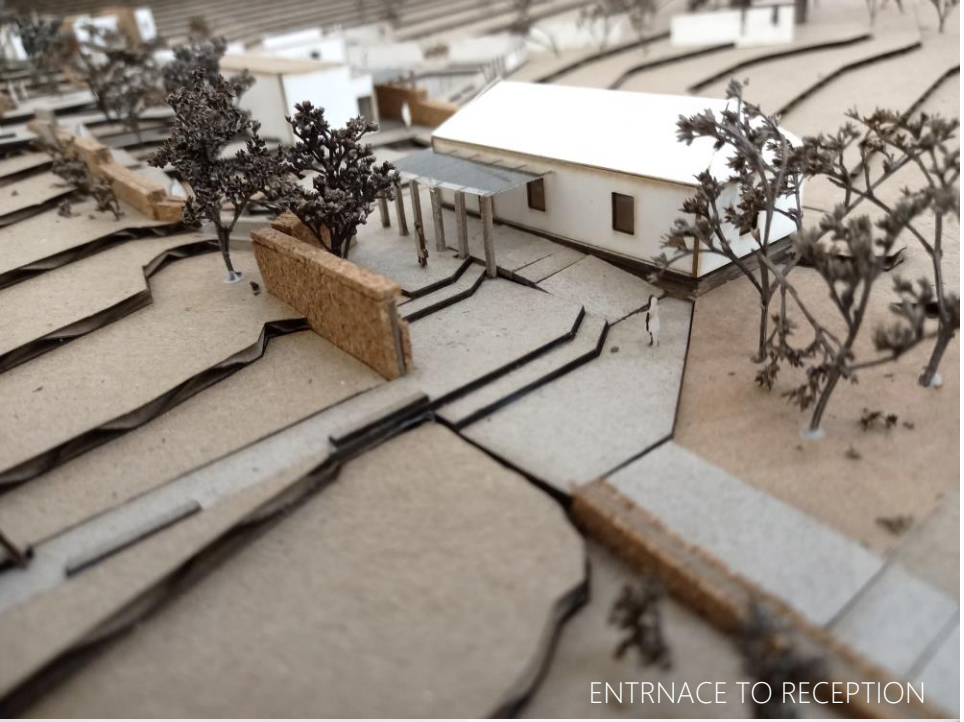
PERSPECTIVE OF HOT WATER SPRING OUTLET

Final model



FINAL MODEL

PROMENADE ON MODEL



ENTRNACE TO RECEPTION

SEMI PUBLIC OUTDOOR BATHS

SAUNA

PRIVATE SHOWERS

WERF

PROMENADE FROM PUBLIC BATHS

TAKEAWAY AND WERF

SEMI PUBLIC INDOOR BATHS

PRIVATE BATHS

VIEW FROM HOT SPRING

TOP VIEW OF MODEL

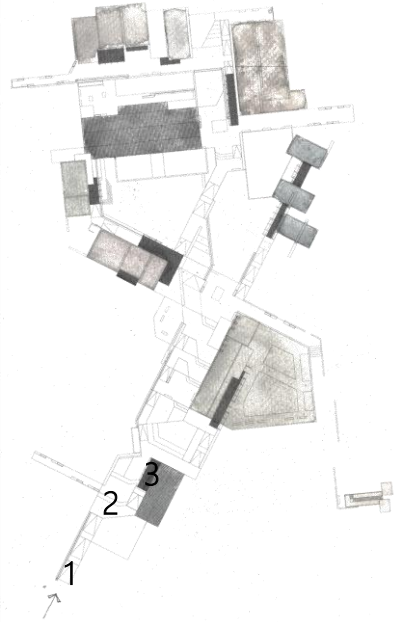
CHAPTER 10 | Narrative of Toorwater proposal

Figure 10.1: Natural hot spring source (Author, 2022).

Transitioning from the dry Karoo dust road to the green gardens of Toorwater, the visitor is drawn by water flowing from the wall into a culmination point. A low wall channels the water to the point of entry, where the ground becomes a paved ramp, leading the visitor in the direction from which the water flows. Walking next to the water channel on one side and the gardens on the other, the visitor is guided by the water to find its origin(1). At the end of the water channel, the visitor is compelled to search for the source of the water.

(2) Climbing the stairs, the visitor can either move towards the lookout point or the reception. In the courtyard next to the reception, water flows through slits in a large stone wall that obscures the water's origin. In the courtyard, the tree provides shading from the harsh Karoo sun and invites the visitor to take refuge in the setback of the stone wall.

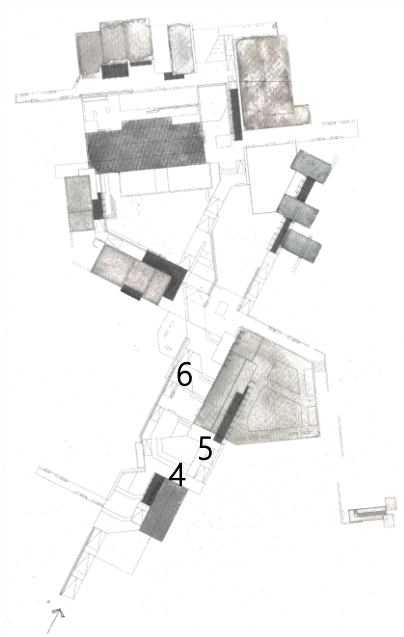
(3) From the reception, the view of the mountains, which was visible upon approach, is now obscured by the stone wall and other buildings along the promenade. Transitioning into the reception from under a pergola structure, the visitor crosses the threshold from outside to inside.



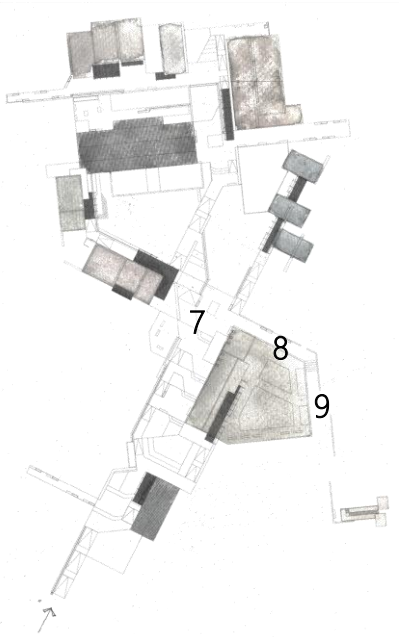
Passing the stone wall, the origin of the flowing water is revealed with a reflection pool tucked into the landscape. The promenade with stairs, ramps and gardens leads up the slope, showing the journey that lies ahead. Looking towards the right shows a glimpse of the landscape to the east (4).

(5) Approaching the semi public outdoor pools, the view of the landscape is obscured by a stone wall leading the visitor into the building with the assistance of a pergola structure.

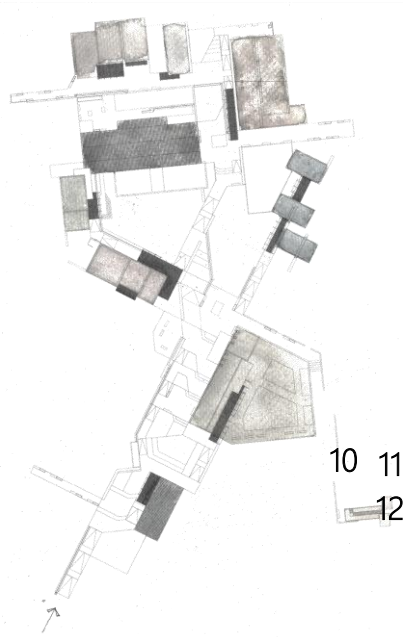
Strolling along the promenade, pockets of gardens and seating are provided along the way, with the stone water channel still leading the visitor. Glimpses of the landscape are combined with water flowing from a stone wall, leading the visitor to another lookout point (6).



(7) The visitor reaches a point on the promenade where the decision must be made to either go left to the werf or right to the sauna and private shower. Walking past the ramp to the sauna, a view over the pools and the landscape creates a point of reflection (8) before moving to the private showers between the trees(9).



(10) Stepping stone over a reflection pool leads the visitor to the private showers obscured with timber screens. Glimpses of the landscape is framed through openings in the walls accompanied by reflections on the water(11). Coming back from the showers the mountains is framed with a slit in the wall (12)



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14

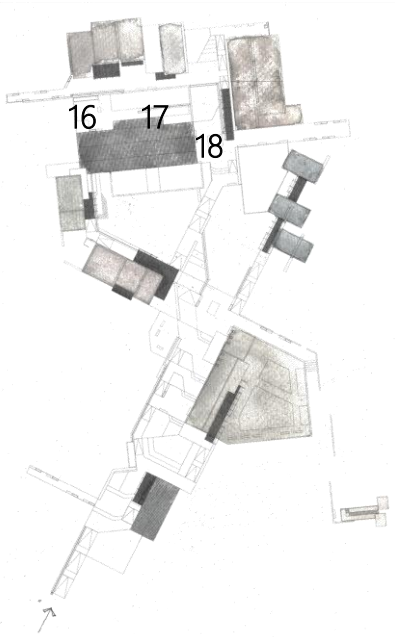
15

Approaching the werf and public area, the building becomes closer. A green lawn signified the werf enclosed by the different buildings looking onto the werf (13). The visitor can either move around the werf past the takeaway and lounge or directly to the public baths. The promenade around the werf is directed by a stone water channel and articulated with pergola structures at the entrances of the buildings. Transitioning from the ramp, underneath a pergola structure, to a concrete slab leading into the lounge, the visitor is made aware of moving from the outside to the inside (14).

At the top of the lounge, a view over the landscape is provided to the left, and the original stoep of the main building leads to the public baths. The outdoor pool overlooks the werf (15), and the indoor pools look toward the courtyard at the north.

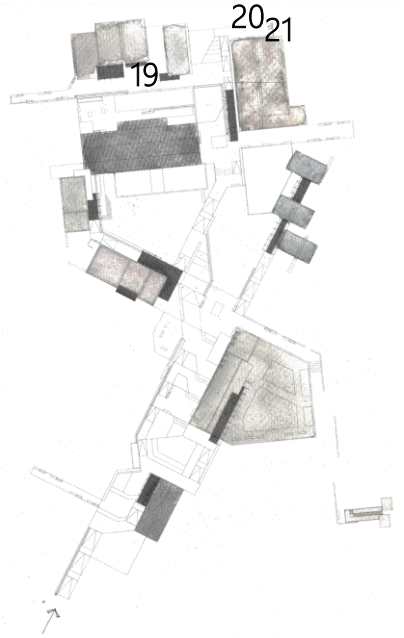
(16) Moving through the main building, the courtyard provides seating in the trees' shading accompanied by the sound of water running from the wall and steam evaporating from the hot water running down the channel (17).

(18) From the right of the main building, the last part of the journey leads the visitor past the semi public indoor pool with a pergola structure throwing shadows on the stone wall accompanied by a water channel. The visitor can continue the journey or move past the semi-public bath with a water curtain to a lookout point.



(19) With the mountains growing closer, the private baths and another lookout point are located at the left while the hot spring source waits at the top of the promenade.

(20)At the end of the journey, the Swartberg mountain range stands proud, and the visitor is greeted with the hot water of the natural spring running from a stone wall into a culmination point. The visitor can sit and reflect on the journey through Toorwater and look back over the landscape. Reflecting on the journey, visitors can see where they have been and how Toorwater fits into the rest of the Klein Karoo landscape. Putting together the experiences along the way, the visitor can construct their own story of Toorwater, grasping the story as a whole and interpreting it in their own way, while looking over the landscape (21).



Technical investigation

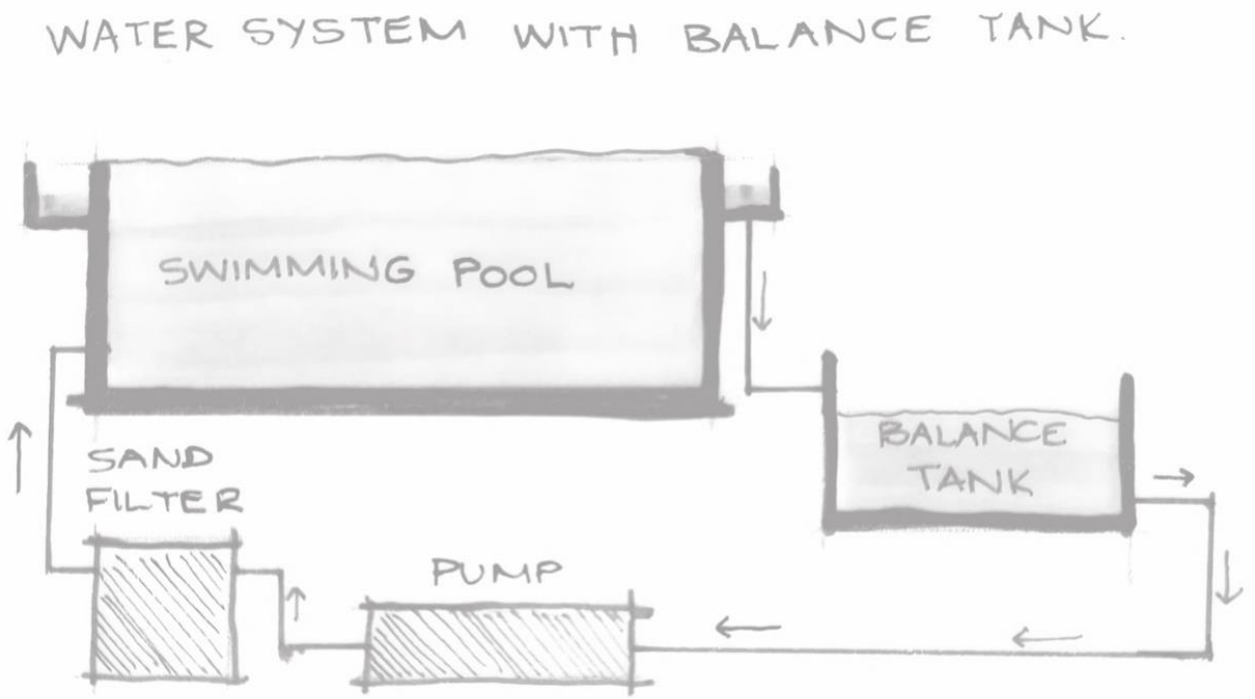


Figure 11.1: Pool water system (Author, 2022).

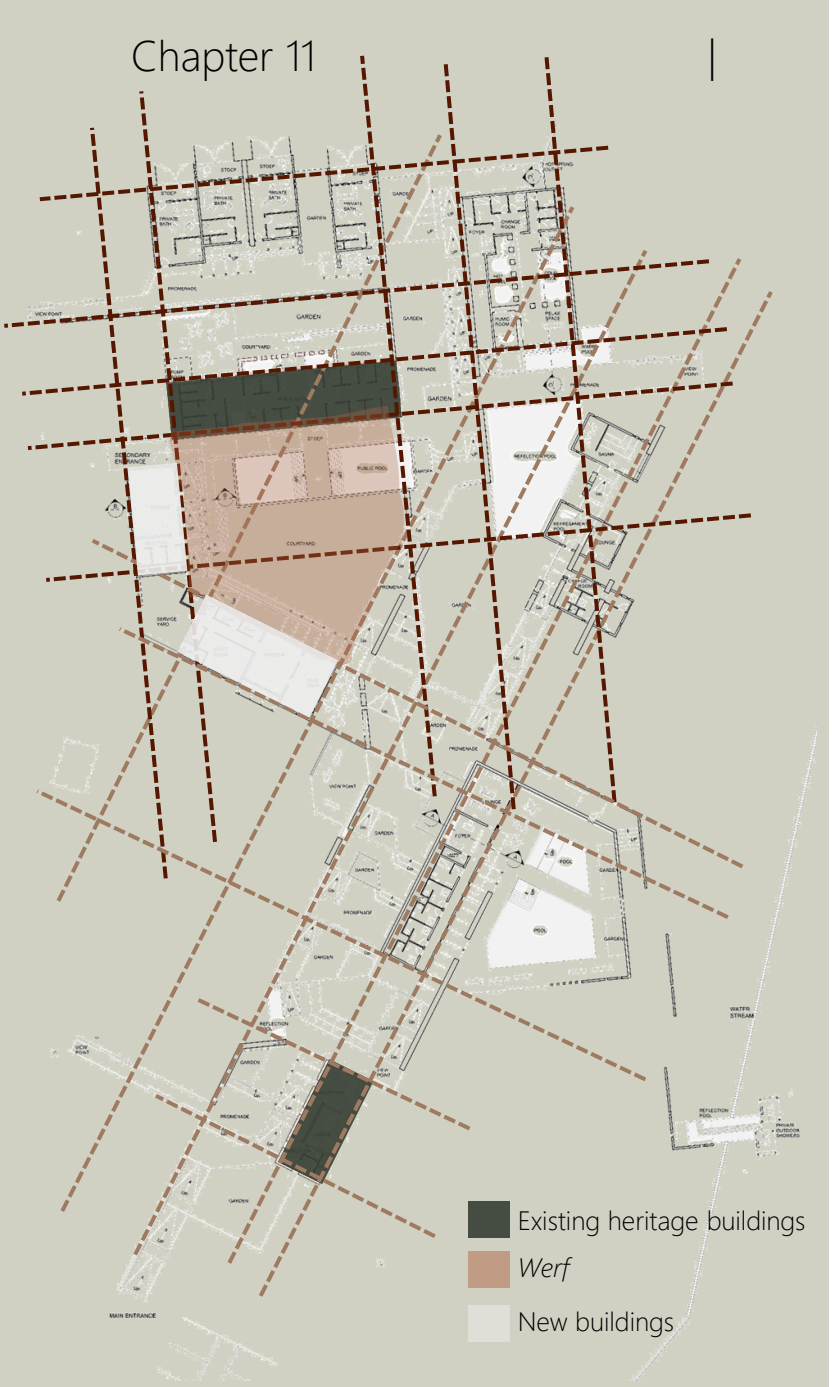


Figure 11.2: Grids of heritage existing heritage buildings (Author, 2022).

The chapter explains how physical attributes of the site and the existing structures influenced the design process. The investigation also shows the resolution of the service required for the wellness retreat to function in a rural environment.

Working on a site, such as Toorwater, with a strong identity, it is essential to identify and carefully consider all the relevant attributes of the site. As discussed in the site analysis, chapter 2, important physical features were identified and used to shape the design approach. From the point of view of the man-made topography, the main determining factor is the two existing heritage buildings (see section 2, figure 2.23 & 2.24) which shaped the spatial planning. Being orientated towards the north and the northeast, it generated two distinct organizing grids that guided site planning and design decisions. The grids were used to determine the other building's shape, orientation, and placement in the larger complex. For example, between these two buildings, a **werf* was suggested, which became the most public space in the retreat layout. Enclosing an open space to become a *werf* it was further incorporated into the design proposal by adding more buildings to strengthen the concept of the *werf*.

To revitalize the heritage buildings, as explained in chapter 2, p.20, they are both incorporated in the design proposal. The buildings are preserved in order for them to retain their identity and contribute to the extended narrative. The larger building of the two becomes the main building, in the wellness retreat, housing public baths. When Toorwater was used as a health spa, the larger building of these two housed indoor baths and showers, which led to and inspired the inclusion of indoor baths in the new proposed Wellness Retreat facilities. The smaller existing building is repurposed in the design proposal at the reception, preserving it as the visitor's first impression when approaching Toorwater. With a rich history of gardens and fruit trees, the design proposal adds vegetation on the site to strengthen its identity. Succulent gardens and fruit trees are planted along the promenade to provide shade to add to the story of Toorwater being an oasis in the Klein Karoo. Water from the hot spring can be used to sustain the vegetation as it currently sustains the lucerne fields of the farmer.

*werf in English refers to a farmyard

Figure 11.3: Baths in existing building (Author, 2022).

Figure 11.4: New proposed baths in existing building (Author, 2022).

Figure 11.5: Existing approach to Toorwater (Author, 2022).

Figure 11.6: New proposed approach to Toorwater (Author, 2022).

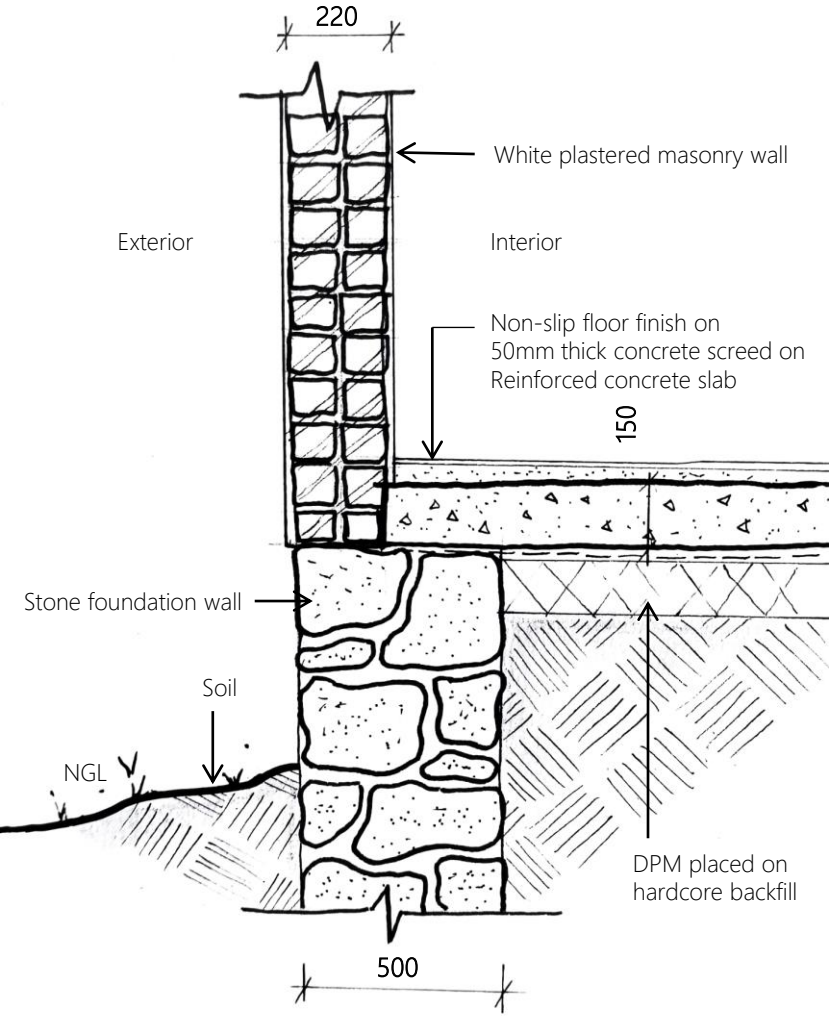


Figure 11.7: Proposed stone plinth detail to reflect typical local construction (Author, 2022).

Like the local vernacular, Karoo architecture, the two existing buildings on site are constructed from earth blocks covered with whitewashed plaster. After a morphological study of the buildings in the surrounding area, as mentioned in the design development chapter 8, a list of typical architectural characteristics was identified: plinth, corrugated iron roofs, and often a stoep (veranda) or *afdak* (canopy) at along the front of the building. Most of these buildings also have a stoep or canopy before the entrance of the building. These local building characteristics influenced the structure and materiality of the wellness retreat. All the new buildings have flat planted roofs, visually differentiated from the historical ones.

The new buildings are not constructed from earth brick but regular clay brick as they will be easier and quicker to build by local builders who are no longer skilled in the making and use of earth construction. The bricks are plastered and painted white to look similar to the existing buildings. A stone base represented new details with 500mm thick stone foundation walls used for buildings that are lifted above the ground as if historical stone plinths (Figure 11.7). Such stone walls are also seen along the promenade. These 600mm thick stone walls guide the visitor through the route. Stone will be obtained in the excavation process through the excavation.

Figure 11.8: Threshold in design proposal (Author, 2022).

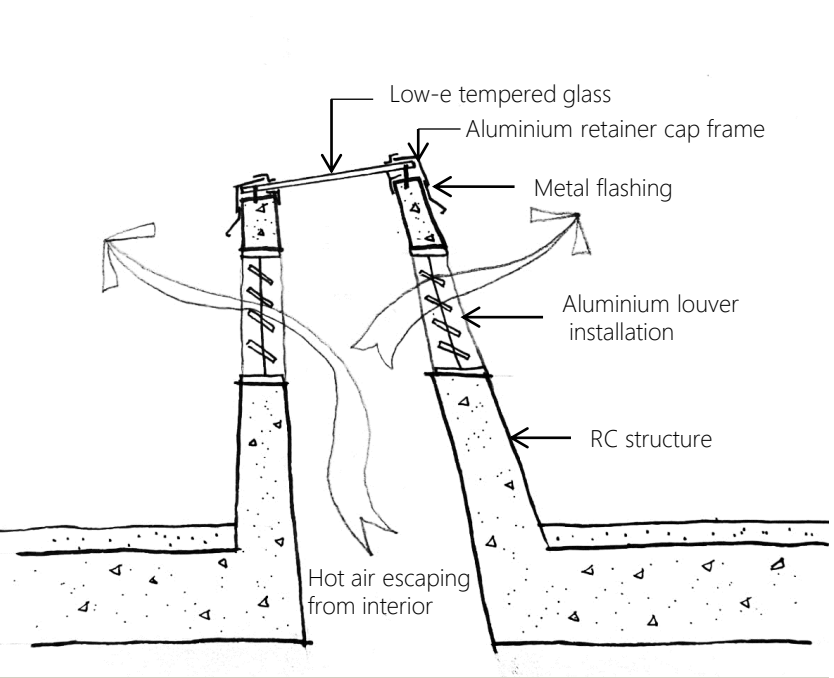


Figure 11.9: Skylight section (Author, 2022).

Thresholds

The local architectural tradition of transition and threshold is translated into the design proposal through the use of stairs, changes in floor levels, pergola structures and cantilevering concrete roof slabs. When moving from the outside to the inside, the visitor crosses over different thresholds to make them aware of their transition between nature and man-made space (figure 11.8).

Light

The control of light plays an essential part in Karoo architecture, which inspired the use of louvred pergola structures rather than solid canopies. The steel pergolas provide light to be filtered which creates shadows on walls and floors. These moving shadows make the visitor aware of the time of day and the distinct natural light quality of the Karoo. Light adds to the materiality of the buildings as the materials have different qualities under different light conditions. Light shafts are another tool to manipulate light quality inside buildings. The in-situ cast concrete light shafts do not only function practically to bring light into dark spaces through tempered reflective glass, but also allow the desired 'atmosphere' to be created in particular spaces. Indirect light that enters through carefully positioned and oriented light shafts and slits in the roof also move through the day, further connecting the outside with the inside. Galvanised steel louvres allow the light shaft to act as hot air and especially steam ventilation systems in rooms with indoor pools (figure 11.9).

Fenestration & glazing

Local architecture is known for many small punctured openings in walls, which is implemented in the design proposal along with larger openings to strengthen the connection between inside and outside. Windows are mostly positioned towards the desired views, and towards the south where they are required to maximise natural light in interiors. Where large north facing windows are required, they are provided with timber shutters to provide privacy and control.

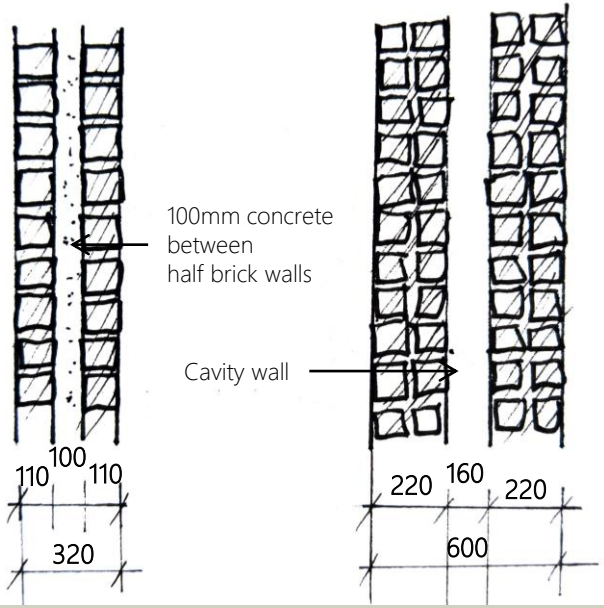


Figure 11.10: 320mm and 600mm cavity wall sections (Author, 2022).

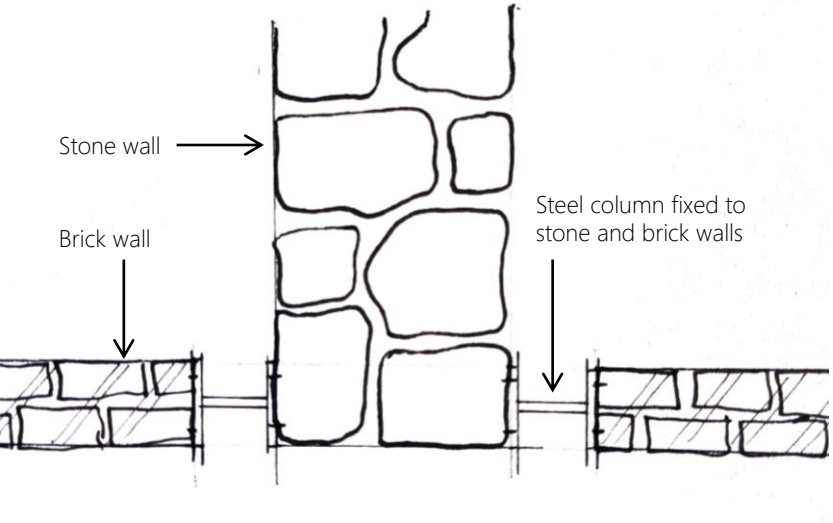


Figure 11.11: Stone and brick wall connection (Author, 2022).

Structure

The structural system is loadbearing masonry, primarily of clay brick and site-sourced dressed ironstone. Where these two systems meet, the connection is articulated with a recessed steel plate (figure 11.1). Exterior brick walls are conventional double-skinned collar walls with brick force reinforcement, plastered. In the semi public baths, insulated 600mm cavity walls are used (figure 11.10). Butterfly wall ties are used at spacings not greater than 450mm spacing in height and 600mm horizontal interval. Retaining walls are typically 320mm wide with a mesh reinforced concrete core and ties.

Roofs

All new roofs are flat concrete-planted roofs with parapet walls. In addition, to provide differentiation from the pitched corrugated iron roofs of the historical buildings, this improves insulation and therefore energy efficiency and also reduces visual impact of the roofs from viewpoints on the promenade (figure 11.12).

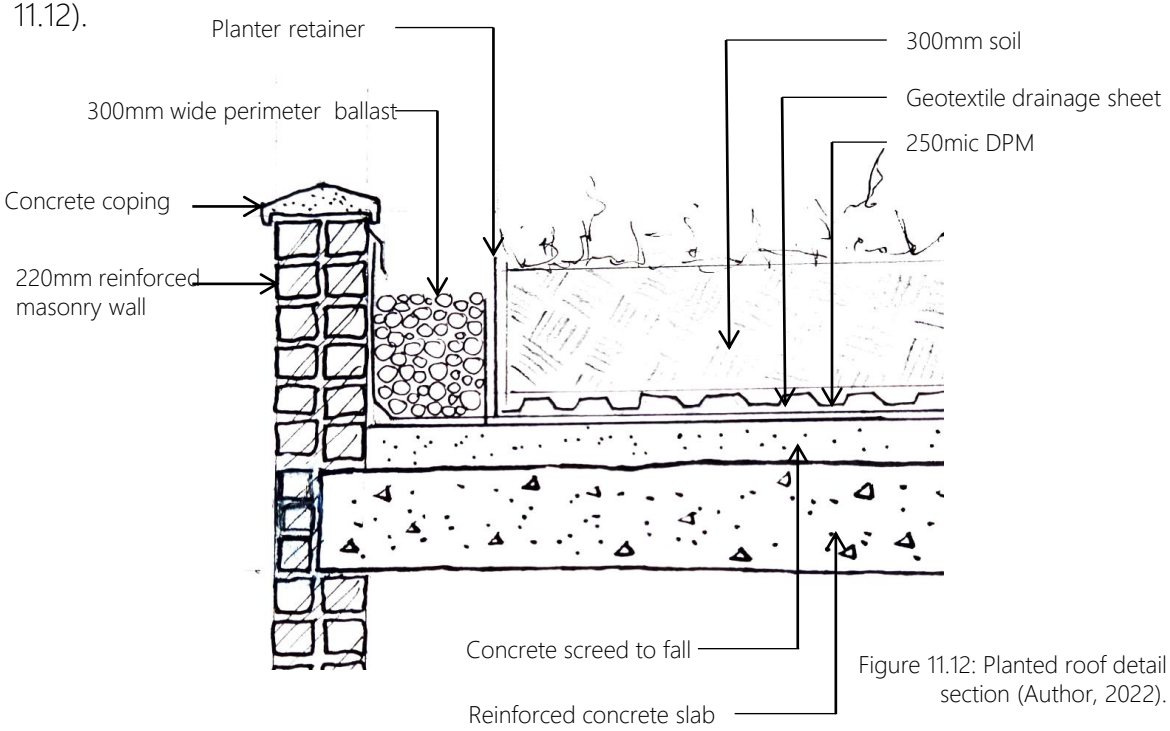


Figure 11.12: Planted roof detail section (Author, 2022).

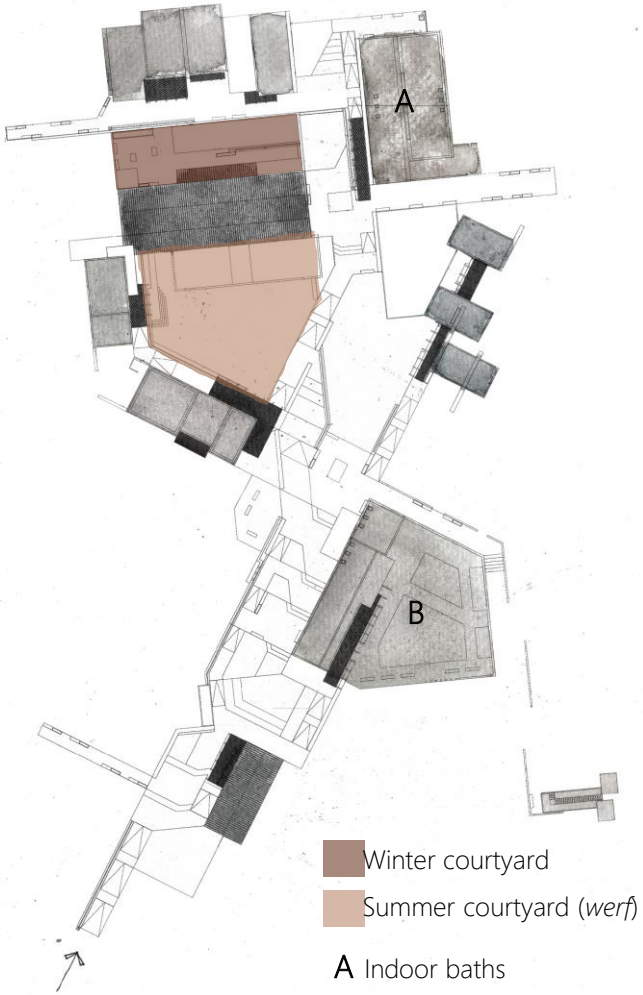


Figure 11.13: Response to winter and summer (Author, 2022).

Climatic Response

The Klein Karoo is known for its hot summers and cold winters, which is addressed in the design proposal by providing different spaces for hot and cold days. An example of this can be seen at the public baths, where visitors can use the indoor baths in the cold winters and the courtyard on the northern side of the building. In contrast, visitors can use the outdoor pool on the south side and enjoy the shade of the covered stoep on hot days. This can also be seen in the two semi public baths, one outdoor and one indoor, to accommodate the different seasons (figure 11.13).

Responding to the climate, passive solar heating and natural ventilation are implemented in the design proposal. Timber screens, carefully maintained in outdoor climate, and steel pergolas are used to achieve shading outside the buildings, shade openings from the sun, and prevent the building from building up heat inside. Natural cross ventilation is implemented with openings on opposing sides of buildings and the use of ventilated light shafts (figure 11.14).

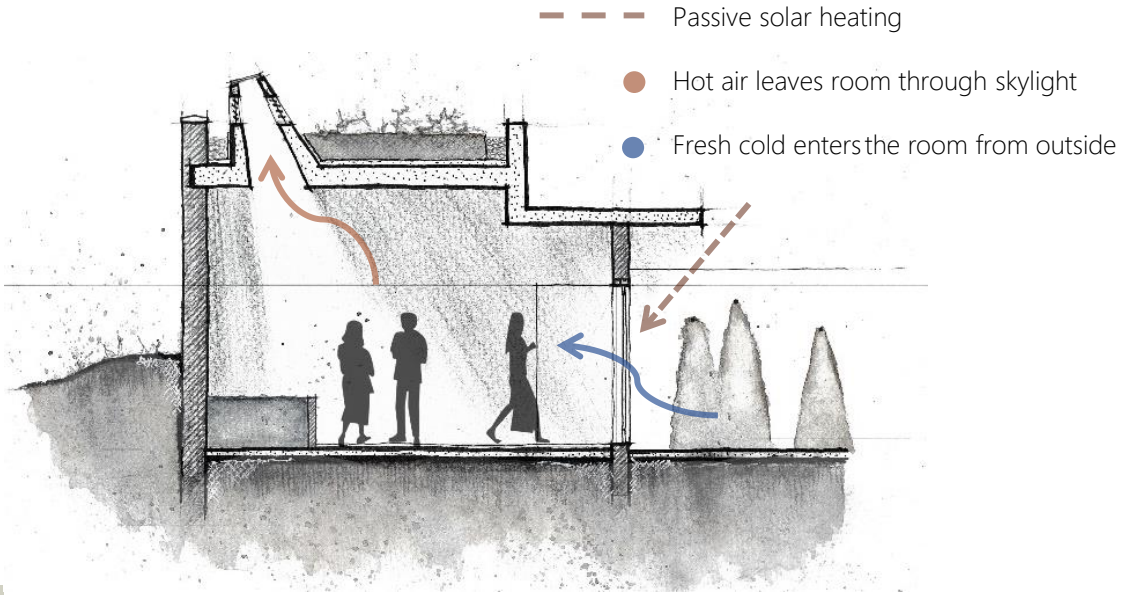


Figure 11.14: Section showing natural ventilation (Author, 2022).

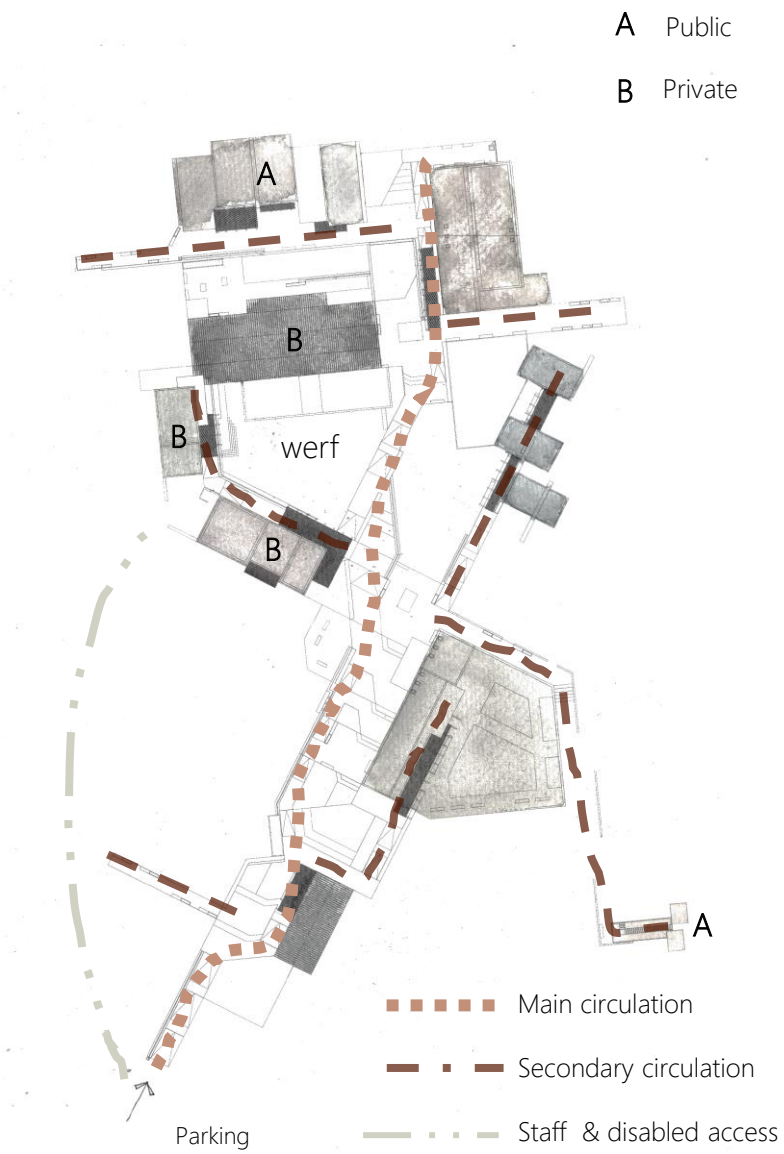


Figure 11.15: Circulation on plan (Author, 2022).

Access & Circulation

Toorwater is approached from the south, from where the promenade leads the visitor up along the slope to the natural hot spring outlet at the north. The promenade connects all the different buildings and functions as the main circulation route throughout Toorwater. Along the journey through the complex, the story of Toorwater is revealed through the different experiences. The staff also access Toorwater from the same point as the visitors but then turns onto a separate route to the service yard. Deliveries and disabled transport all follow this route directly to the *werf*. Disabled visitors are accommodated throughout the complex with the installation of 1:12 ramps that have access to all the buildings. Disabled and elderly visitors can also be directly transported to the *werf* with a golf cart used by the staff (figure 11.15).

Public functions are arranged around the *werf*, while the private function, like the showers and the baths, are located separately, facing towards the landscape. The promenade is the backbone that links all the buildings together and connects them to form a unity (figure 11.15).

Figure 11.16: Fiberglass pool construction on site (Korekote, 2012:online).

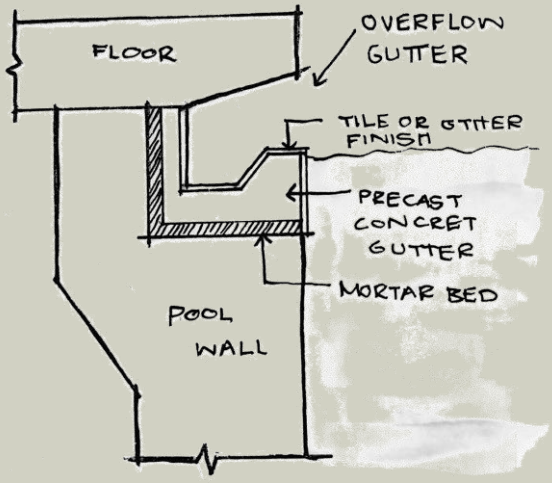


Figure 11.17: Overflow gutter (Author, 2022).

Construction

Fibreglass pools are the most effective type of pool to use in the wellness retreat. With iron-rich water on site, the non-porous surface of fibreglass pools will be the best solution to prevent algae from growing on the pool surface. The surface colour of the gel coat in a fibreglass pool can be specified in darker colours such as grey and black. A darker coating will allow the pool to fit in with the natural landscape (HPA, 2016: online). Fibreglass pools can be manufactured on-site to custom shape and size. The process starts by digging the hole for the pool followed by building the form of the pool with plywood and studs (figure 11.16). The concrete floor is cast and the fibreglass hydromat layers are applied before the colour topcoat is added. Lastly, the pool is backfilled with dirt and ready to fill with water (Korekote, 2012:online). Stairs in the pool should have anti-slip patterns to protect the bathers from injury (HPA, 2016: online). Chlorine pools are selected over salt pools to lower the cost of electricity and the system's complexity. 3-5mg/l chlorine is required to clean chlorine pools (HPA, 2016: online).

Overflow control is vital in public pools to accommodate the bathers and maintain a constant water level (HPA, 2016: online). When working with warm water, it is better to place the flow gutter under the floor (figure 11.17) to allow the water to maintain heat and not cool off while flowing through the overflow gutter to the balance tank. The balanced tank must be placed where it will be easily accessible for cleaning and servicing

General planning considerations

The plant consists of pumps, a balance tank, filters, heat exchanger, booster pump, pH adjustment dosing system, aerator pump, automatic controller and disinfectant dosing system (HPA, 2016: online). Keeping the pipeline as short as possible is good practice, and therefore the treatment plants are positioned as close to the pools as possible to allow for installation and maintenance. A place for chemical storage and plant maintenance should also be provided in the plant room (HPA, 2016: online). The plant room should be around 2.5 x 2.5m (Hilton, 2021: online).

Water treatment system

It is important to keep the water level at a point that continuously overflows into the gutter and to the balance tank. From the balance tank, the water is circulated through a filter and back to the pool. The water should be chemically treated, circulated and filtered 24 hours a day. After the water is heated, it is returned to the pool through the inlet. A fail-safe should be in place when the water stops circulating (HPA, 2016: online), as is very possible with the current uncertain electricity supply by the national electricity provider, ESKOM.

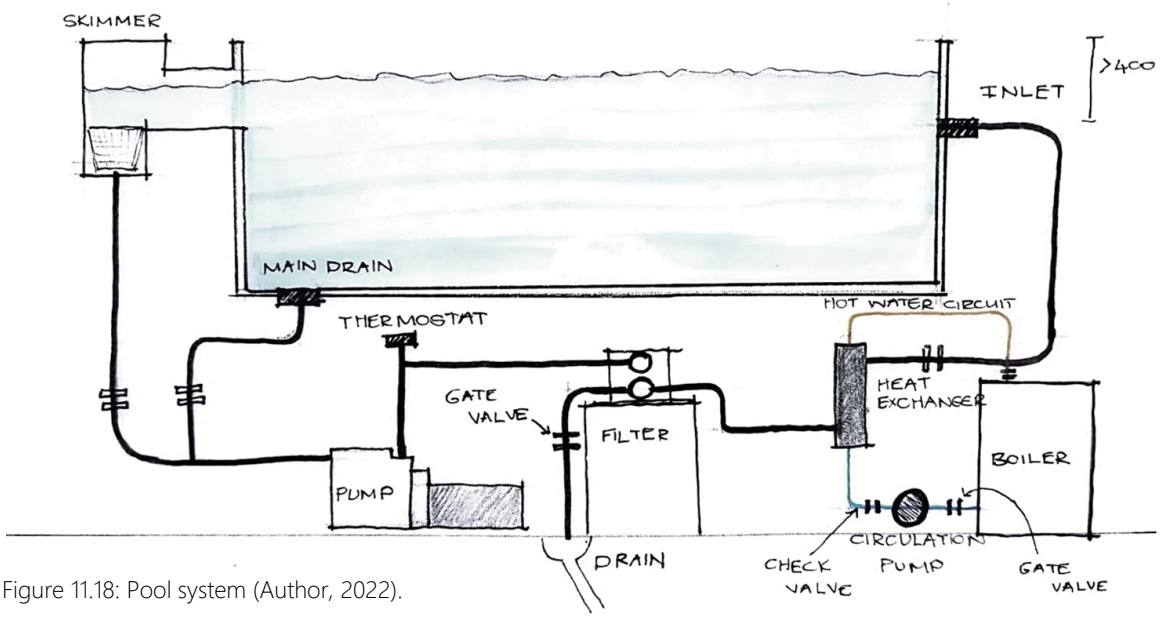


Figure 11.18: Pool system (Author, 2022).

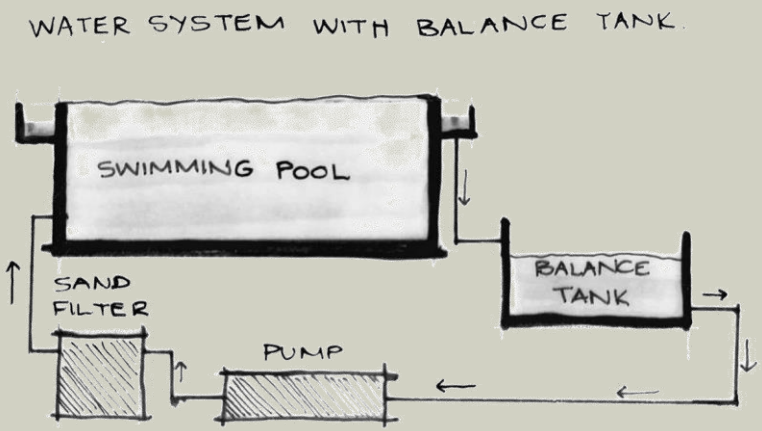


Figure 11.19: Balance tank system (Author, 2022).

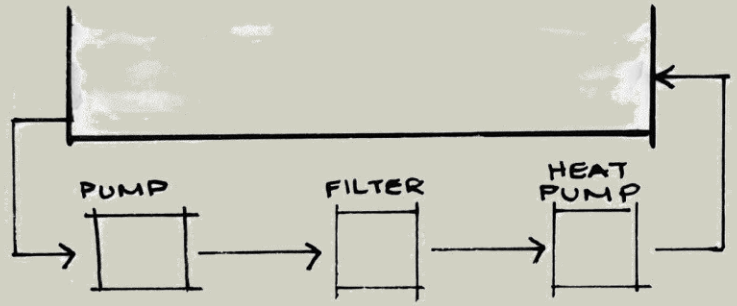


Figure 11.20: Basic pool system (Author, 2022).

Balance tank

The balance tank is the source of backwash water. The tank can either be cast in or stand-alone. When the pool is unoccupied, the balance tank must be able to provide a filter backwash. The flow rate of the filter determines the backwash volume. The average displacement of water per bather is about 0.075m3 and can therefore be used to calculate the total bather displacement of the pool (HPA, 2016: online).

Pump circulation

The pump size should be able to make a turnover of 6 minutes in public pools. Therefore, a skimmer will also not work in a public pool and other level deck systems should be considered (HPA, 2016: online).

Filtration

A sand filter is suggested for commercial use as it has reduced maintenance requirements and can be sized according to the water tank (Sutherland, 2020: online). A filter with a minimum, medium rate of 10-25$m^3/m^2/h$ is proposed for commercial pools (HPA, 2016: online).

Heating

The temperature of the hot spring water is about 40 degrees; to maintain the integrity of the visitor's experience of the Toorwater effect, the water being pumped back into the pool should also be at that temperature. Less heating than in the case of conventioanally heated pools will be required as new incoming water will already be heated, but the temperature will still have to be kept constant with the help of heaters. Use will be made of both solar water heaters, and an electrical heating system to be used whenever the alternative is not available or sufficient.

Booster pump

In places in the design where a more complex water system will be needed or where the system will have to service more than one pool, a booster pump might be needed. The booster pump will improve the water flow rate and increase the water pressure. A booster pump will also be needed to pump the water from the source to the different systems. As the natural hot spring source is situated at the top of the slope, the water from the source will be able to flow naturally to all the buildings, but pumps may be needed to increase the flow.

Location

The positioning of the pools is an important design planning consideration. Not only does it influence, and is impacted by conceptual and theoretical influences , but also by practical and technical factors. Outside pools may for example suffer from excessive leaves being dropped into the water or a large influx of rainwater causing chemical imbalance. When placed indoors, well-ventilated rooms are required as hot pools release large amounts of moisture through steam (HPA, 2016: online).

Water replacement

Pool water should regularly be replaced significantly in public pools. Some ways to determine when to replace the water are when the number of bathers = the water capacity (m3) or when the number of bathers = half of the water capacity (litre). When public baths are used more regularly, they might need water replacement daily (HPA, 2016: online).

Figure 11.21: Ventilation benefits for indoor pool (Author, 2022).

Ventilation

Ventilation is essential for pools inside buildings. SANS requires natural ventilation to be 5% of the floor area. 20m3//h of fresh air is proposed per person to enter from outside and exist via a fan or vent. Ventilation is needed to bring clean oxygen into the building to replace the CO2 and foul odours. An extractor fan can be used to ventilate the building, or for natural ventilation with louvres on the roof (Teddington, 2022: online). Where possible natural ventilation is implemented in the design through louvres installed on the roof.

Circulating air through an indoor pool room helps to prevent condensed air. Cold surfaces require more air circulation to avoid condensation if not adequately insulated. While fresh air is allowed in from the outside, the exhaust air must be allowed to exit the building to avoid overpressure (Dantherm, n.d: online).

Insulation

Sound insulation is needed where pools are inside buildings. Roof and wall insulation must be installed to accommodate damp rooms. High-density compressed polystyrene insulation is proposed along with water-repellent plasterboard (Teddington, 2022: online).

Dehumidification

Buildings with indoor pools need to be dehumidified to prevent mould and damage to structure over a long-term period. A dehumidifier will keep the air healthy, the windows clean, and the structure viable. A dehumidifier works by recycling air to avoid entering cold air and generate natural heating (Teddington, 2022: online). The best solution in commercial pools is to use a ventilation dehumidifier to extract moisture, dampness and odour out of the building and allow fresh air to enter. Using a dehumidifier can also regulate water temperature in the pool and the air in the room (Dantherm, n.d: online).

Figure 11.22: Diagram of services (Author, 2022).

Sanitary drainage

With no municipal sewerage line, the sewerage is all directed into a two tank Biorock wastewater treatment plant. Three of these plants are placed at different locations at the bottom of the slope (figure 10.16).

Non potable water

The water supply for non-drinking or cooking purposes comes from the hot spring and is pumped to all the relevant water services from the main pump room. Electrical geysers heat the water for the showers and the kitchen.

Drinking water

The natural spring water is not suitable for drinking and needs to be filtered for the kitchen and water drinking fountains throughout the site.

With basic construction methods, the design reacts to local architecture. The site conditions, location and existing buildings shape the proposed design and spatial arrangement. Water is the most important characteristic of Toorwater and therefore receives a lot of attention in this section to ensure the functionality of the wellness retreat.

Investigating the various factors that need to be considered when designing commercial and indoor pools assisted in understanding both the highly technical considerations, as well as what is necessary to give bathers the best experience possible. After understanding the practical side of the hot pool, it assisted in designing the pools while thinking about where the system will be located and how it will function. Construction-related questions are answered through the technical investigation into the functioning of pools and therefore contribute to the design scheme and the practicality behind it.

CHAPTER 12 | Conclusion

Figure 12.1: Toorwater station name (Author, 2022).

Conclusion

As the sun sets over the Swartberg mountains the last strands of sunlight throw long shadows on whitewashed walls. The sound of water cobbling in the background creates a sense of peace as the cricket's song starts to become in sync with the sound of the flowing water. There is a calmness in the air as another day end in the Klein Karoo.

The dissertation answers the research question:
How can narrative architecture and regionalist placemaking be used to transform the stories flowing from Toorwater into a wellness retreat, and re-spark the narrative of the place?

The stories of Toorwater live on through the people that come to restore their wellness in the natural landscape of the Klein Karoo. Intrigued by the natural phenomenon, the story of Toorwater is passed on to the visitors on the journey through Toorwater and new stories are sparked to contribute to the narrative of place. The oasis in the middle of the Klein Karoo becomes a breakaway from the busy life to the quiet natural landscape. With the assistance of locally inspired architecture, water is experienced in different forms leading to more mysterious interpretations of Toorwater.

Drenched in stories old and new, Toorwater provided a place to promote wellbeing while appreciating the beauty of the Klein Karoo landscape. Narrating the story of Toorwater through architecture preserves the identity of the place while sparking new stories about the mystery of Toorwater.

Reflection

Starting the dissertation, I believed that the natural phenomenon at Toorwater was the most noteworthy character of the place. It was only during my research and site visits that I discovered what shaped the character of Toorwater. The stories sparked by the natural phenomenon are what define Toorwater. Without the stories, Toorwater is just another natural hot spring similar to the other hot springs found in South Africa. What makes Toorwater unique is the narrative of place and how the stories can be traced back over the years.

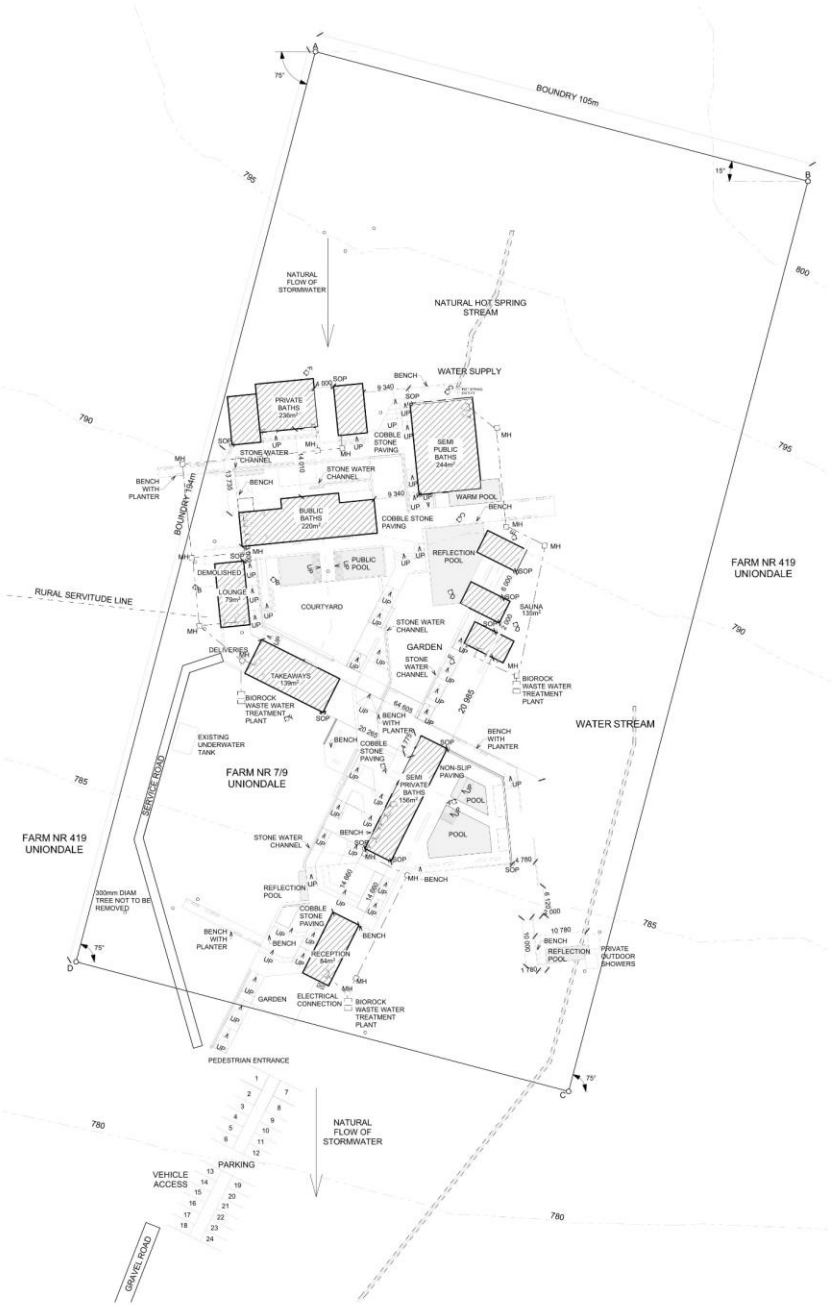
A valuable lesson learned from this dissertation is that stories help us make sense of our world and contribute to our identity. As stories convey the character of a place, architecture also has the ability to do the same. By making people aware of the place, architecture can spark new stories about the place.

Figure 12.2: Representation of Toorwater (Author, 2022).

CHAPTER 12 | Technical documentation

Figure 12.1: Toorwater station name (Author, 2022).

LOCATION PLAN
SCALE 1:2000



SITE PLAN
SCALE 1:500

ARCHICAD EDUCATION VERSION

KEY PLAN

Areas
GROUND FLOOR AREA
1200m²

NOTES
○ TREE NOT TO BE REMOVED
ALL RAMPS CONSTRUCTED TO RATIO 1:12
UNLESS OTHERWISED SPECIFIED

UNITS

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRICT MUNICIPALITY

Drawn by
Inge Johnston
Date
15 November 2022

Student number
2017088538

Drawing Name
LOCATION PLAN, SITE PLAN

Drawing Scale
1:2000, 1:500

Layout ID
A101

ROOF PLAN
SCALE 1:200

ARCHICAD EDUCATION VERSION

GROUND FLOOR AREA
1760m²

N

TSOMWATSE WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

EDEN DISTRIC MUNICIPALITY

EDEN

15 November 2022

ROOF PLAN

1:200

A1SD

GROUND LEVEL FLOOR PLAN
SCALE 1:100

ARCHICAD EDUCATION VERSION

KEY PLAN

Areas
GROUND FLOOR AREA
1200m²

NOTES

UNITS
RECEPTION

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRICT MUNICIPALITY

Drawn by
Inge Johnston

Date
15 November 2022

Student number
2017089538

Drawing Name
GROUND LEVEL FLOOR PLAN

Drawing Scale
1:100

Layout ID
A102

FIRST LEVEL FLOOR PLAN
SCALE 1:100

ARCHICAD EDUCATION VERSION

KEY PLAN

Areas
GROUND FLOOR AREA
1200m²

NOTES

UNITS
SEMI PRIVATE BATHS

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRICT MUNICIPALITY

Drawn by
Inge Johnston

Date
15 November 2022

Student number
2017080538

Drawing Name
FIRST LEVEL FLOOR PLANS

Drawing Scale
1:100

Layout ID
A102

SECOND LEVEL FLOOR PLAN
SCALE 1:100

ARCHICAD EDUCATION VERSION

KEY PLAN

Areas
GROUND FLOOR AREA
1200m²

NOTES

UNITS
LOUNGE
TAKEAWAY
SAUNA

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRICT MUNICIPALITY

Drawn by
Inge Johnston

Date
15 November 2022

Student number
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Drawing Name
SECOND LEVEL FLOOR PLAN

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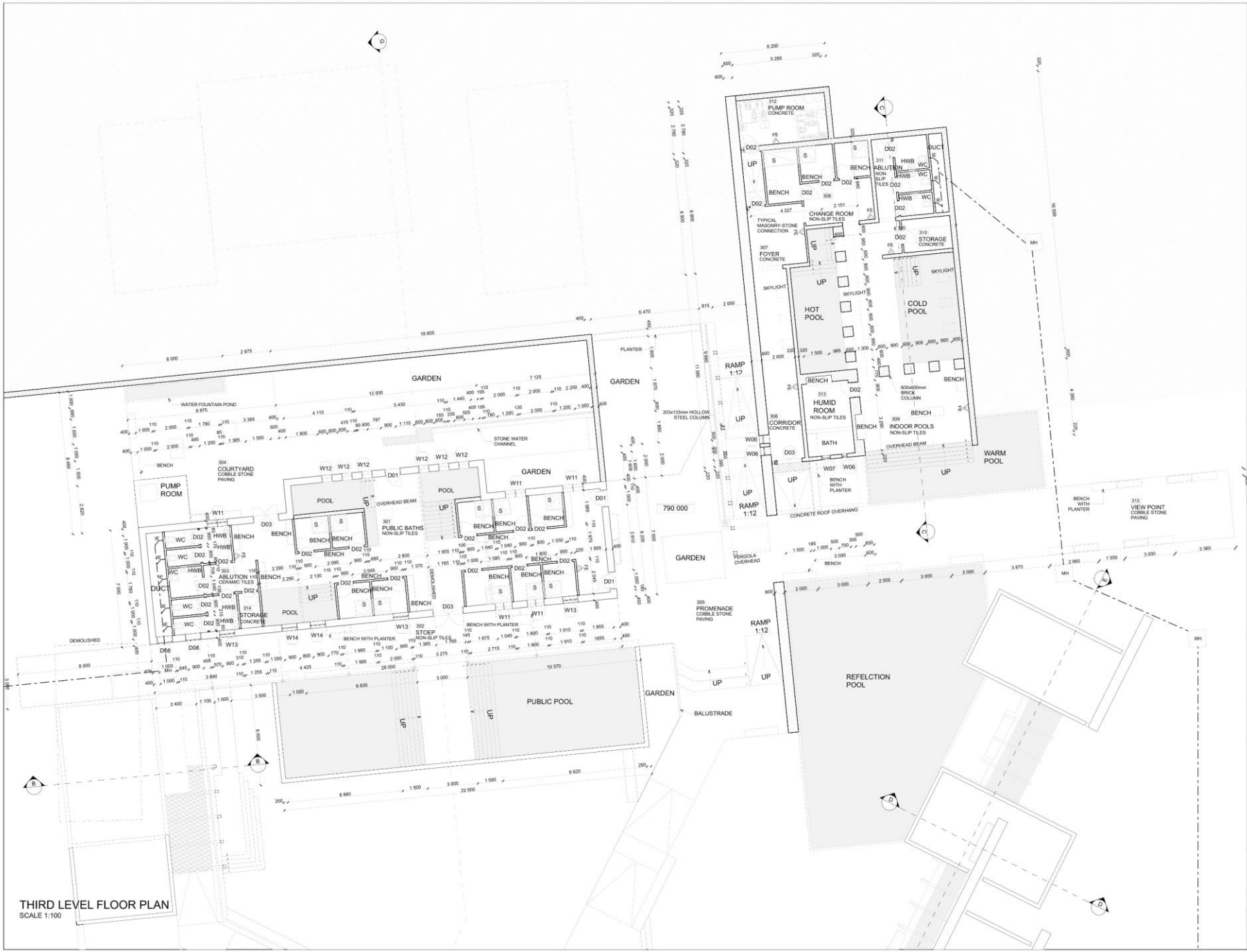

THIRD LEVEL FLOOR PLAN
SCALE 1:100

ARCHICAD EDUCATION VERSION

KEY PLAN

Areas
GROUND FLOOR AREA
1200m²

NOTES

UNITS
PUBLIC BATHS
SEMI PUBLIC BATHS

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRICT MUNICIPALITY

Drawn by
Inge Johnston

Date
15 November 2022

Student number
2017080538

Drawing Name
THIRD LEVEL FLOOR PLAN

Drawing Scale
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Layout ID
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FOURTH LEVEL FLOOR PLAN
SCALE 1:100

ARCHICAD EDUCATION VERSION

KEY PLAN

Areas
GROUND FLOOR AREA
1200m²

NOTES
PRIVATE BATHS

UNITS

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRICT MUNICIPALITY

Drawn by
Inge Johnston

Date
15 November 2022

Student number
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Drawing Name
FOURTH LEVEL FLOOR PLAN

Drawing Scale
1:100

Layout ID
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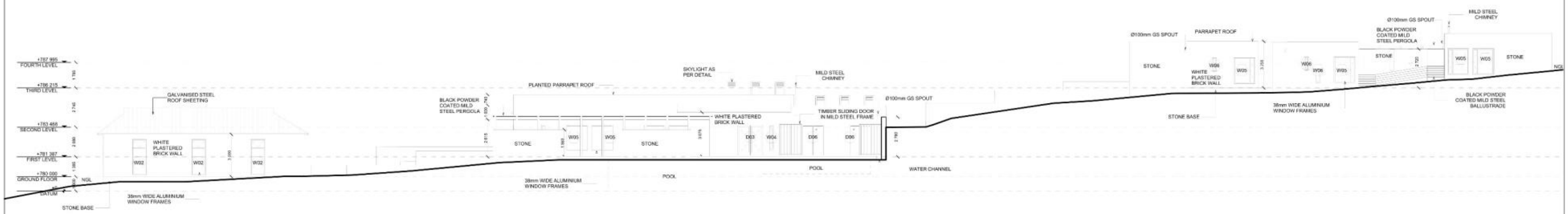
ARCHICAD EDUCATION VERSION



SOUTH EASTERN ELEVATION
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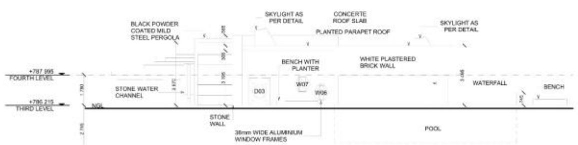
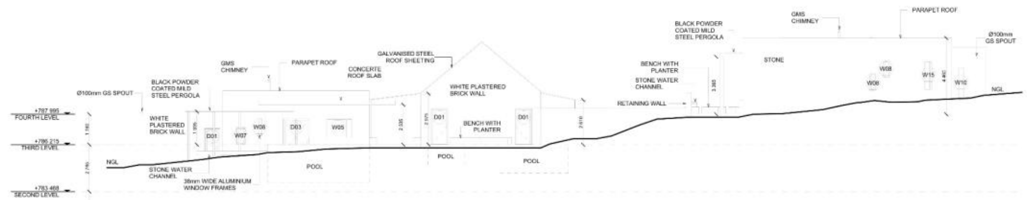
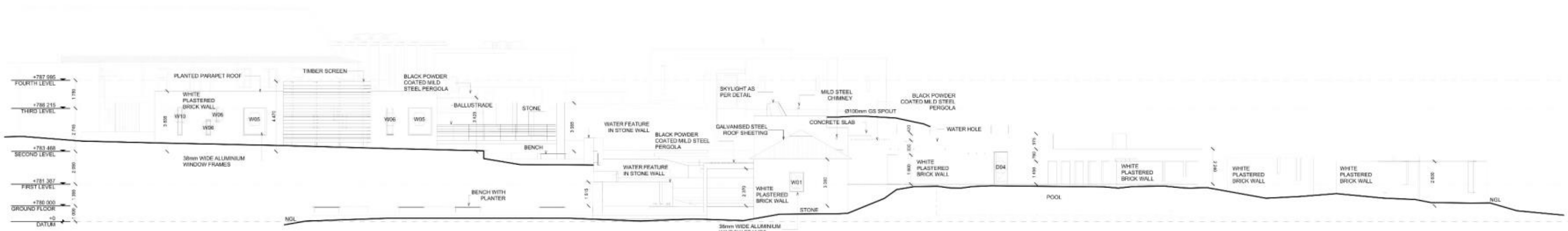


SOUTH ELEVATION OF SEMI PUBLIC INDOOR BATHS
SCALE 1:100



EAST ELEVATION OF LOUNGE
SCALE 1:100



NORTH WESTERN ELEVATION
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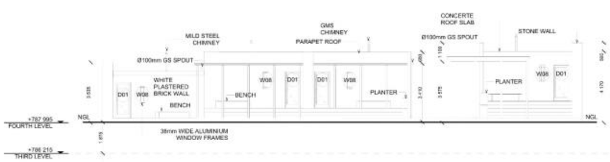
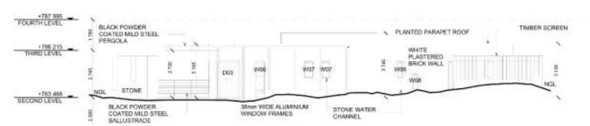


SOUTH ELEVATION OF PRIVATE BATHS
SCALE 1:100



NORTH ELEVATION OF TAKEAWAY
SCALE 1:100

Areas
GROUND FLOOR AREA 1200m²

NOTES

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRIC MUNICIPALITY

Drawn by
Inge Johnston

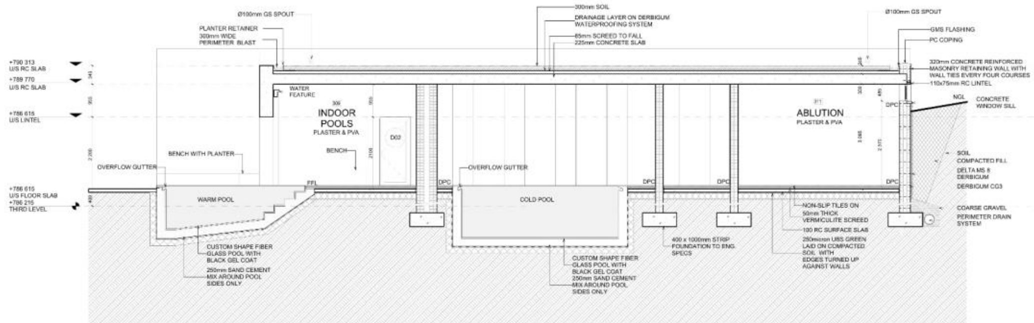
Date
15 November 2022

Student number
2017066538

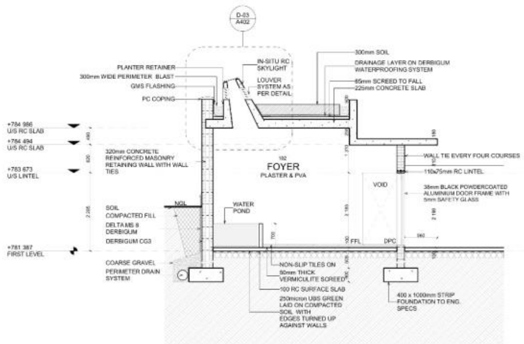
Drawing Name
SOUTH ELEVATION OF PRIVATE BATHS, NORTH WESTERN ELEVATION, NORTH ELEVATION OF TAKEAWAY, SOUTH ELEVATION OF SEMI PUBLIC INDOOR BATHS, EAST ELEVATION OF LOUNGE

Drawing Scale
1:100

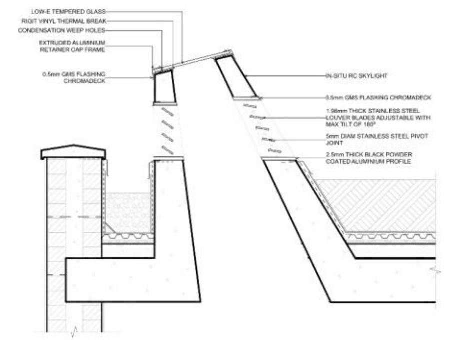
Layout ID
A201



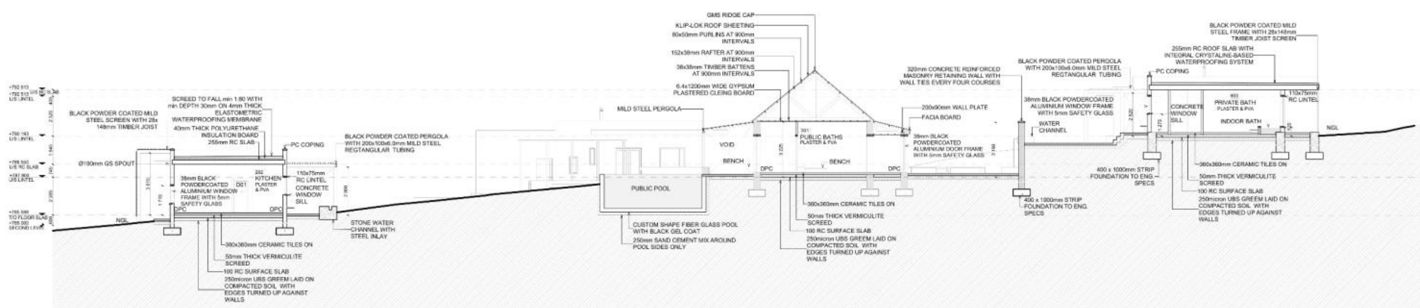
SECTION CC
SACLE 1:50



SECTION AA
SACLE 1:50



DETAIL SECTION 01 OF SKYLIGHT
SACLE 1:10



SECTION GG
SACLE 1:100

Areas
GROUND FLOOR AREA
1200m²

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRIC MUNICIPALITY

EDEN

Drawn by
Inge Johnston

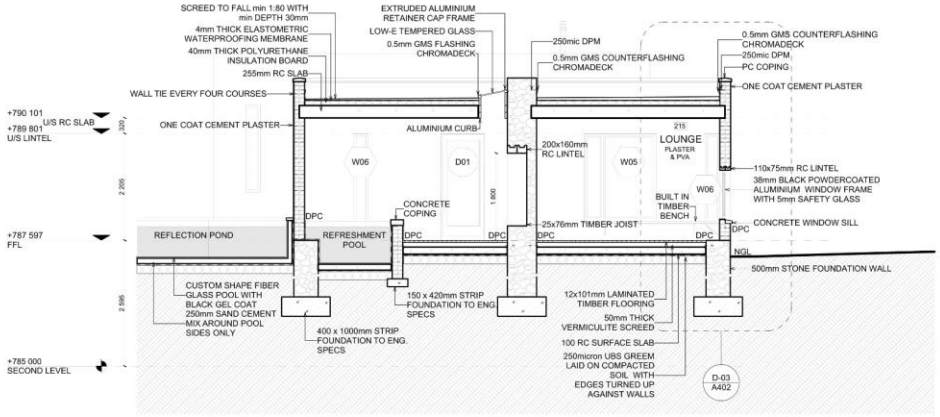
Date
15 November 2022

Student number
2017068538

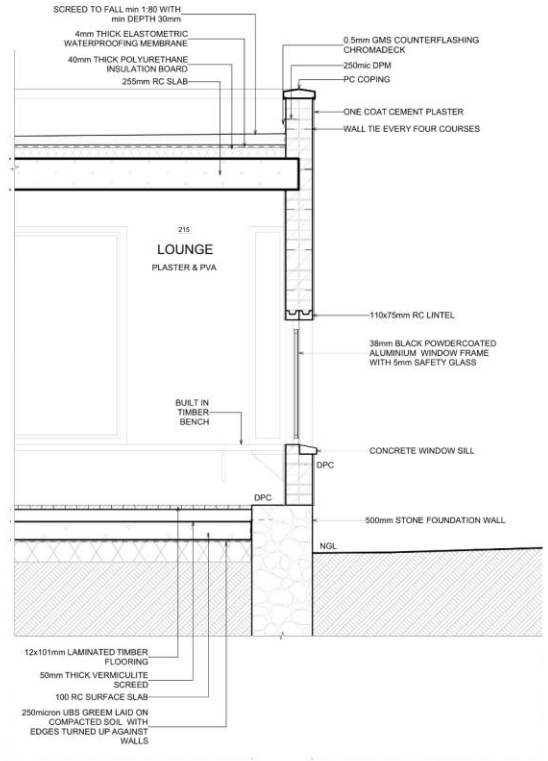
Drawing Name
SECTION GG, SECTION CC, SECTION AA, DETAIL SECTION OF SKYLIGHT

Drawing Scale
1:100, 1:50, 1:10

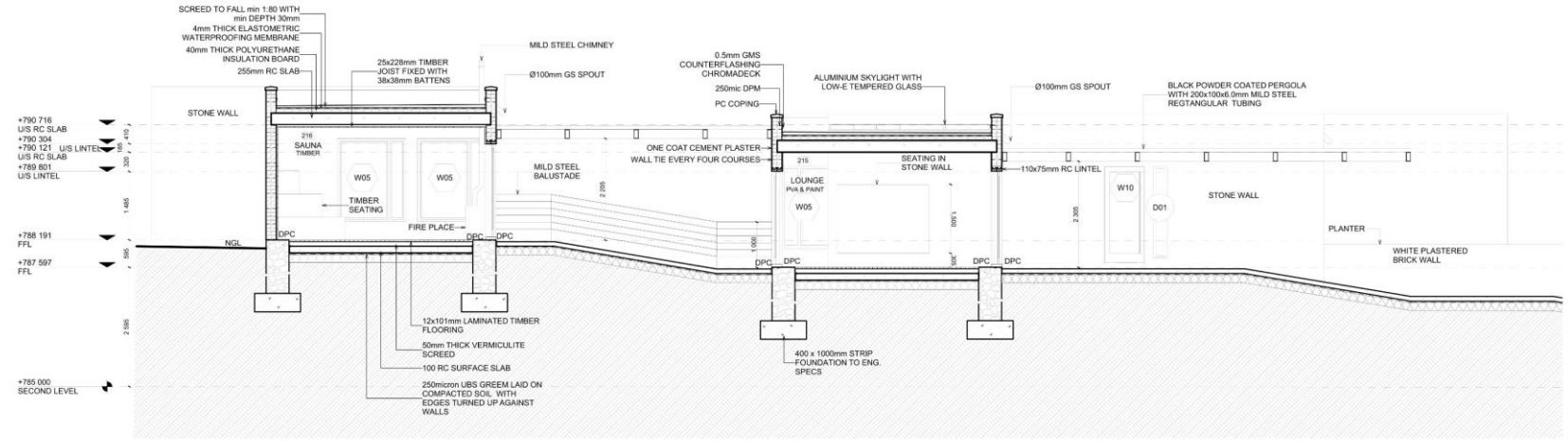
Layout ID
A402



SECTION DD
SACLE 1:50



DETAIL WALL SECTION 03
SACLE 1:20



SECTION EE
SACLE 1:50

ARCHICAD EDUCATION VERSION

Areas
GROUND FLOOR AREA
1200m²

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRIC MUNICIPALITY

Drawn by
Inge Johnston

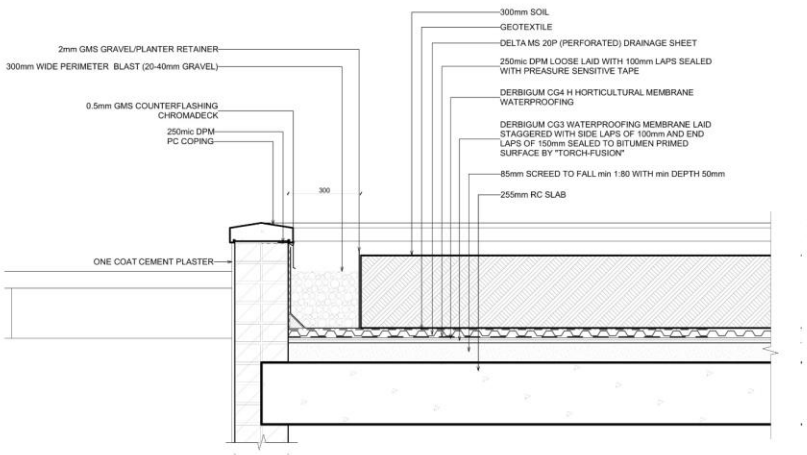
Date
15 November 2022

Student number
2017089538

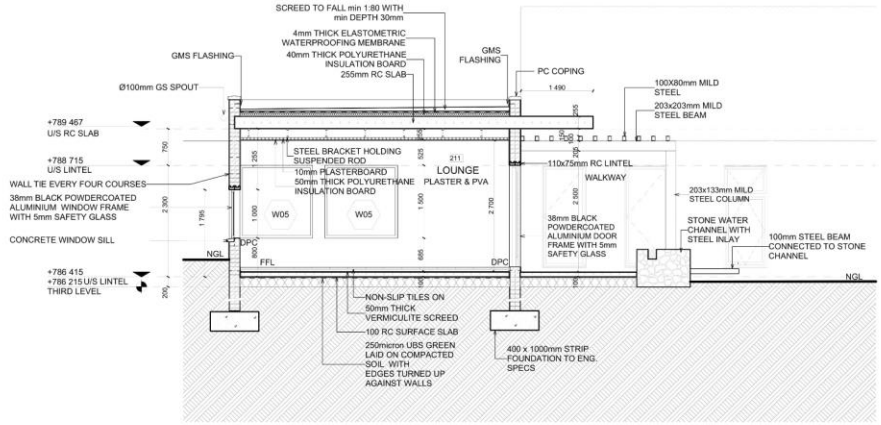
Drawing Name
SECTION DD, DETAIL WALL SECTION, SECTION EE

Drawing Scale
1:50, 1:20

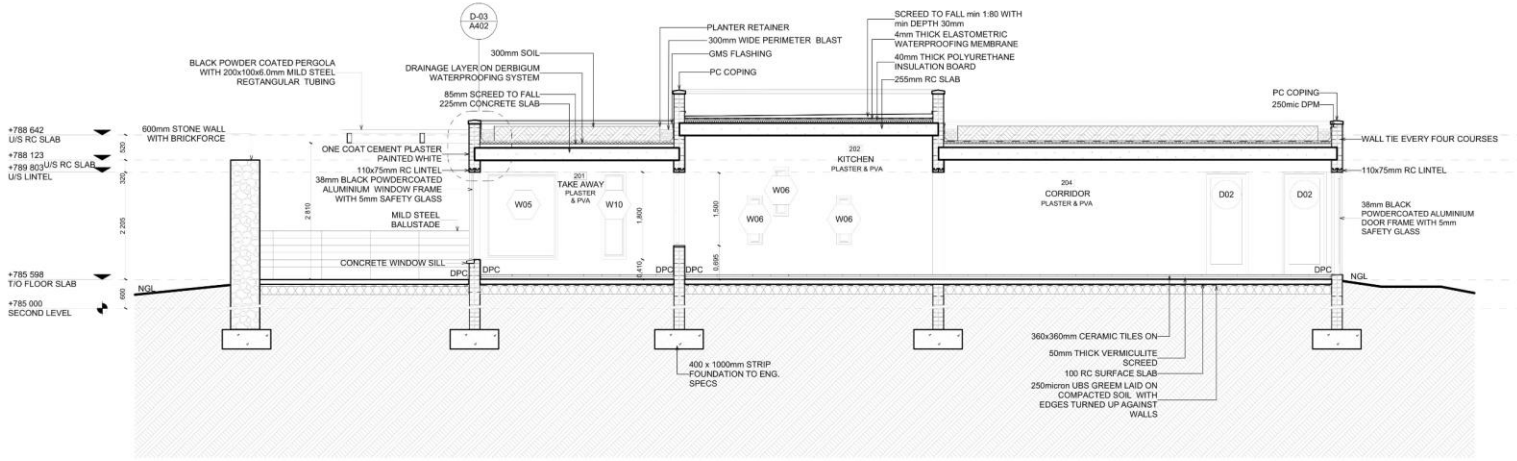
Layout ID
A402



DETAIL SECTION 02 OF PLANTED ROOF
SACLE 1:10



SECTION BB
SACLE 1:50



SECTION FF
SACLE 1:50

ARCHICAD EDUCATION VERSION

Areas
GROUND FLOOR AREA
1200m²

N

Project title
TOORWATER, WELLNESS RETREAT, WESTERN CAPE, SOUTH AFRICA

Unit

Client
EDEN DISTRIC MUNICIPALITY

Drawn by
Inge Johnston

Date
15 November 2022

Student number
2017089538

Drawing Name
DETAIL SECTION OF PLANTED ROOF, SECTION FF, SECTION BB

Drawing Scale
1:10, 1:50

Layout ID
A402

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