

The ephemeral aroma of the mysterious beauty plant

A hyacinth aroma and incense market at Roidam, Lourier Park, Bloemfontein.

RQ: How can we reactivate the Roidam through an aroma and incense market conceptualised through the metamorphosis of the hyacinth plant?

Figure 1: Hyacinth fibre & leaf (author, 2023).

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This dissertation is submitted in partial fulfilment of the requirement for the degree MArch (Prof), Masters in Architecture. All the work contained in this document is my own except when acknowledged otherwise.

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

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PROLOGUE - The water HYACINTH

You may be seen as a dictator,

roaming on top of the water

while terrorizing fish at home.

You may be judged for your negative effects,

BUT

stand tall with your crown-like flowers.

Don't be afraid,

show yourself off.

Give them a chance to see your beauty,

let them experience your ephemeral aroma.

I promise you,

they will see you in a new light.

They will see you as a mysterious beauty plant.

They will see you as I do,

THAT,

I promise you...

-Carien Sander

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ABSTRACT

Rooidam is located on the outskirts of Bloemfontein and is a forgotten terrain indicative of what Edward Relph, a Canadian geographer, would state as a non-place. The inexplicable landscape consists of a floral wonder [hyacinth] which has the potential to be transformed into an ephemeral yet tangible body of experiential aroma. The main research question is: How can we reactivate the Rooidam through an aroma and incense market conceptualised through an interpretation of metamorphosis of the hyacinth plant? Past efforts to reactivate the area have not succeeded, due to the lack of care; it was simply left to become a dystopian landscape. By introducing a project that will propel commercial viability, create haptic experiences, enhance communal enclaves and attract people to interact with the neglected landscape, past failures can be rectified. The proposed design intervention will be guided by haptic senses, how experiences are created in spaces together with the production of space as memories. The intervention proposed argues that a hyacinth aroma and incense market has the power to reactivate and reinvigorate the landscape, unify the community while changing the perceptions of Rooidam.

Keywords: scent | Rooidam | reactivation | non-place | metamorphosis | incense market

01

CHAPTER 1: SOURCING MATERIALS

1.1 INTRODUCTION

The proposed architectural intervention is a hyacinth aroma and incense market. Hyacinths are known as the 'mysterious beauty plant' and are classified as the worst weeds on earth. They are invasive alienated plants, which create a dense mat that covers the water surface – it alters the chemistry and composition of the water, extracting oxygen, nutrients and sunlight, thus destroying all living organisms (Crampton, 2021: online).

Delacourte stated that 'there is something magical about perfume: it evokes poetry, dreams, arouses emotions in those who smell it or wear it, by telling a story. As in a poem or a symphony, it is the creator's technical mastery that allows us to embark on a real olfactive journey'(delacourte, n.d.:online).

However, it's noteworthy to point out that most of the perfume factories in South Africa lack that magical element due to the fact that perfumes are only created via mass production methods. Furthermore, in some cases, only base oils are bought from mass producers which results in a pre-mixed culture taking away the artistic and experiential element. Materials are not local and are imported in bulk mostly from Grasse, France; otherwise known as the capital of fragrances. By doing so the communities feel alienated from the incense production and the industrial, unwelcoming look and feel of the factories don't contribute any positive feeling towards it.

The aim of this architectural intervention is not only to reactivate Rooidam, otherwise seen as an inexplicable landscape located on the outskirts of Bloemfontein but also to support and involve the local community. This will create an opportunity for not only the nearby community, Lourierpark but also the community as a whole [Bloemfontein] to get involved and be educated on the whole production process, which will remove the [possibly] alienating aspect of an industrial incense factory. Hopefully, it will result in more locally produced perfumes and oils, limiting the import elements and bringing the magical element of perfume back, allowing the community to embark on a true South African olfactive journey.

Theoretical lenses and overriding themes for this reactivation of the site, will be supported by Pallasmaa's haptic senses, the production of space (Lefebvre,1991), experiencing architecture (Rasmussen,1993), sensation and perception (Wolfe, 2009), smellscapes and lastly scent and psyche otherwise known as aromachology (Herz, 2021). The themes are important because, the experience of the user and the way the architectural intervention is being perceived is a very essential element. The understanding of the current state of the site will be observed through the ideas of Place and Placelessness (Relph,1980).

The document consists of 10 Chapters. Chapter 1 is all about an introduction to Rooidam and the incense and aroma program; Chapter 2 will analyse the site in three parts – Macro, Mezzo and Micro; Chapter 3 will discuss the conceptual development; The theoretical discourse will be discussed in Chapter 4; Brief & program development will be discussed in Chapter 5, followed by the design development in Chapter 6. Chapter 7 consists of the technical section, which will be followed by the conclusion in Chapter 8. Chapter 9 is a personal reflection and Chapter 10 is all the work cited.

1.2 CLIENT & BRIEF

The client for the proposed program is Saint d'Ici, a botanical perfumery located in Cape Town, South Africa. They are artisanal-driven; from sowing, cultivating, and harvesting to blending, filling, and packaging. An important aspect is that all the botanical ingredients are sourced from small-scale farmers across the African continent. The products are inspired by ancient traditions, and the understanding of natural botanical practices is supported by the anthropology of scent and rituals of different cultures (Saint d'Ici, n.d.:online).

The brief for the architectural intervention for the aroma and incense market consists of:

- Harvesting area
- Extracting oils
- Production of perfume- mixing
- Retail space
- Market and experiential lab

1.3 SITE & LOCATION

Rooidam located in Lourierpark, Bloemfontein
Located between Geelhout drive and the M13
GPS: -29.188097, 26.178871



Figure 2: Macro view and location of site (openstreetmap edited by author,2023).



Figure 3: Zoomed - in micro view (Google Earth,2023: online).

1.4 AIMS AND THEORETICAL STANCE

The topological aim is to reactivate the site (Rooidam, Lourierpark, Bloemfontein) by re-integrating the hyacinth as an experiential driver. A place to experience space, through the aid of the scent of the hyacinth. Possible challenges include motivating the community to get involved and invest in the intervention as a whole because without the community the entire program will be unsuccessful. By removing the urban boundary and unhomely feeling, people all over Bloemfontein will feel more at ease to cross the boundary and experience the intervention as well.

The typological aim is to create spaces that function successfully but more importantly, allow sensational experiences to take place. The challenge that is being faced is that the functionality of the program will overrule the experience aspect of the spaces.

The morphological aim is to introduce a building that forms part of the landscape and nature. More importantly, it involves moving away from the traditional industrial and factory aesthetic and feel. This will result in a welcoming, inviting and more homely feel. The challenge will be using materials in a new way so that the logistics of the building can take place as normal but without giving an alienated and cold feeling, for example, using steel.

The main research question is: How can we reactivate the Rooidam through an aroma and incense market conceptualised through the metamorphosis of the hyacinth plant?

1.5 CONCLUSION

In conclusion, Chapter 1 summarised the general overview of the proposed hyacinth aroma and incense market program. Section 1.1 gives a quick overview of the program aims and theoretical lenses which will be used in the document. An introduction to the client and brief was given in section 1.2. Section 1.3 deals with the site and location. Lastly, section 1.4 is a quick discussion of the proposed program aims and the theoretical stance. In the next chapter, the Macro, Mezzo and Micro aspects of the proposed architectural intervention will be discussed.

02

CHAPTER 2: ACCUMULATING MATERIALS

2.1 MACRO, CONNECTION BETWEEN FLOWERS AND BLOEMFONTEIN

Bloemfontein, a medium-sized city, reigns as the capital of the Free State which was known as a trading post and was named for its spring and abundance of flowers, due to the thousands of rose bushes stretching along the streets. The orchid house and a small nature reserve in the middle of the city clearly indicate that nature, especially flowers, played an enormous role in the area (Brand South Africa, 2002: online). One theory regarding the name is that when the Brits family settled in Bloemfontein, flowers surrounded the fountain, thus the family decided to name it Bloemfontein, which has a literal meaning of “fountain of flowers”. The fountain is also a very important element because it was also an original water source which allowed water to be accessible at the water points (South African History, n.d.:online). Thus, the proposed architectural intervention has great significance due to the rich history of flowers in and around Bloemfontein. The use of flowers [hyacinths] is very much applicable and suitable.

Founded in 1846 by Major Henry Warden this trading post would become the venue for several significant events. Four key topographical elements, Naval Hill, Signal Hill, Fort Hill and the dolerite ridge influenced the siting and development of the city. The dolerite ridge acted as a natural barrier to drain the water from the west, which resulted in a marshland. The original Bloem Fountain was fed by the pressure which was built up in the semi-dammed area. A narrow gap in the dolerite ridge allowed the water to drain and be transported eastward, connecting as *Bloemspruit* (Auret, 2016:196).

The development of Kings Park was seen as feasible after the flood in 1904, which widened and deepened the narrow opening in the ridge; this opening was where *Bloemspruit* usually flowed through (Auret, 2016:202). Rooidam has an overflow system located on the southern side (Figure 4). This system overflows into the extension of the original *Bloemspruit* leading the water to the Tierpoortdam area. In the same way this natural barrier was punctured, the hyacinth plant has the potential to replicate similar results with regards to the nearby neighbourhood, but more importantly Bloemfontein as a whole.

The importance Flora and Fauna played in Bloemfontein can be seen in the wide array of geometrically organised botanical wonders which was scattered throughout Bloemfontein. The city was decorated with a variety of orchards and gardens. This can be seen in the 1936's aerial map (Figure 5), which clearly indicates that Kings Park remains the largest and most prominent public park in Bloemfontein.

However, the layout of this park was influenced by "The Willows". "The Willows" was the first recreational space created in Bloemfontein. The space was created by Carl E. Fichardt (Auret, 2016:205).

A large fountain was introduced in 1906; this became the main feature in the east-west axis of the park. In 1929 an official opening ceremony took place for the reception area and 3 000 rose bushes in the Prince's Rose Garden were planted (Auret, 2022:18). The rose garden's layout was described as irregular and it was a much-admired venue within the larger park. At that time this rose garden was known as even more impressive than the largest rose garden in America (Auret, 2019:7). However, it's noteworthy to say that besides the central reception area, nothing much is left of the original garden.

The ordering system together with the historic urban fabric systematically weakened and dissolved over time; this is visible when one looks at the green spaces. When one looks at the 2015 aerial map of Bloemfontein (Figure 6), the systematic destruction and fragmentation of Kings Park are clearly visible. The same motion of fragmentation took place between Rooidam and Bloemfontein due to the shifting and changing ordering system. Kings Park became a symbol of a versatile space which consists of moments of care, while fulfilling an existential purpose. The purpose of being a large urban gesture clarifies the concerns of the population and the place.

Stores of water are clearly present in the early maps of Bloemfontein; thus, one can argue that the great amount of water allowed the city's people to create botanical wonders. By planting flowers, it created a rootedness amongst the people. This allowed an attachment to the place, where a deep sense of care for this specific place was formed (Relph, 1980:37). Thus, a meaningful place was created where the people's care for the city could be celebrated and a sense of belonging blossomed.

In the same manner through the controversial botanical wonder, the hyacinth, the proposed architectural intervention aims to also create a meaningful place where care is present while pushing the urban boundary limits.



Figure 4: Illustration the overflow system on site (author,2023).

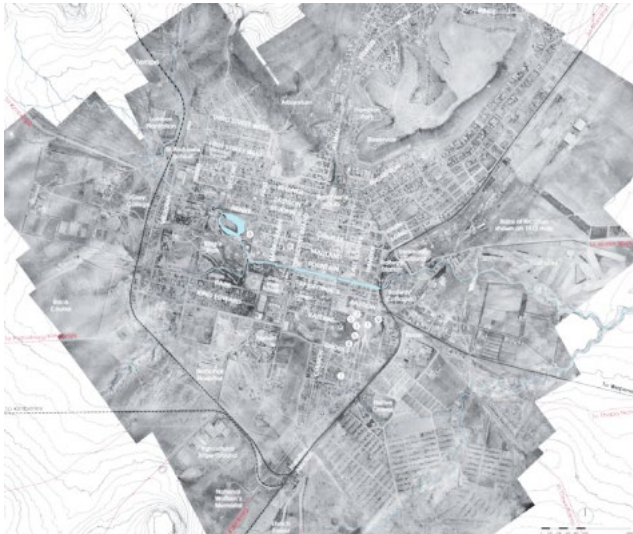


Figure 5: 1936 aerial map of Bloemfontein (Auret, 2016).

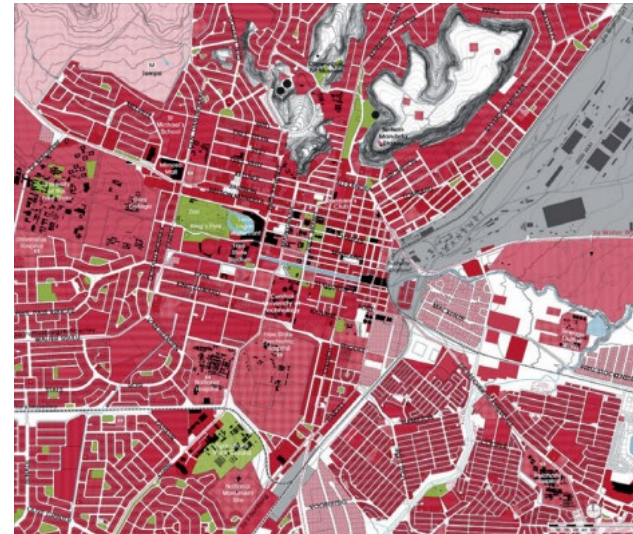


Figure 6: 2015 aerial map of Bloemfontein (Auret, 2016).

2.2 MEZZO ANALYSIS, VAGUENESS

Roodam is located on the outskirts of Bloemfontein and can be classified as Placelessness, which is a weakening of the identity of a place. It results in the neglect of the place to the point where it doesn't look or feel alike. A place where only bland experience possibilities can take place (Relph,1980:90).

When one looks at the relationship between the site, area and the rest of Bloemfontein, one can see a clearly fragmented characteristic. Existing on the outside of the city's effective circuits and productive structures, a feeling is set free, that a piece of the city broke off and randomly landed on the present location, disconnected from the rest of the city, unable to reconnect and grow into something bigger. Its dream of joining up with the city rapidly disappeared into thin air when it realised that it would never be seen as part of the city ever again; it is where the city no longer exists (Figure 7).

Ignasi de Solà-Morales Rubió, (1995:120), stated that to understand the evocative potential of a city's terrain vague, it is important to understand the relationship between the absence of use, of activity, and the sense of freedom and of expectancy. Voids, absence, yet also promise, the space of the possible, of expectation (de Solà-Morales Rubió, 1995:120). Thus, the area can be classified as unheimlich, an individual experience of dislocation and displacement.

As counter-spaces, terrain vagues can be seen as containers of fragmented shared history, illuminating the imperfect process of memory that constantly attempts to recall and reconstruct the past (Barron and Mariani, 2013:1). We as human beings consist of contemporary sensibility, we feed on memories and expectations. Terrain vague indeed, contains within it a multitude of possible connotations and is thus well suited to serve as a collective term for various subtypes of leftover land within the edges of the pale boundaries that as they proliferate are also increasingly difficult if not impossible to delineate (Barron and Mariani, 2013:6).



Figure 7: Map of Bloemfontein indicating the urban boundaries (Google Earth edited by author, 2023).

2.3 MICRO ANALYSIS, REACTIVATING THE SITE- SPIRIT OF SPACE

The Loots family originally owned the farm Rooidam. In 1920 Bennie Raath bought the farm from the family. The original homestead was situated on the eastern side of the dam however, unfortunately, it was demolished over time. In the Volksblad of 10 July 1987, an article was written about the neighbourhood Flora, better known as Lourierpark.

The enlargement of the Rooidam and the concrete boundary wall which is still in all its glory was part of the first phases which was planned by the municipality at that stage. The ultimate goal was to create a fun park, where people can relax and spend time together doing some water activities like 'seilplankry' and fishing. The state of the Rooidam as present is known as an unpleasant place. It is seen as a scary, dangerous and smelly place that one needs to stay far away from. People who used to go there are shocked about the present state.

Thus, the aim of the proposed architectural intervention is to reactivate the site by re-integrating the hyacinth as an experiential driver. A place where old memories, as remembered by previous generations, can be revisited and new ones can be created. All with the helping root of the scent of the hyacinth. Due to terrain vagues the invisible boundaries in and around the site are very visible. As Michel de Certeau stated, 'Terrains vagues are everyday areas that expose the stratified or palimpsest nature of all places, especially those with the appearance of codified stability where there exists, (1984) puts it, a sense of "immobility" and "an illusory inertia"' (Barron and Mariani, 2013:20). This simply means that a sense of motionless and unchangeability is present.

Due to the vagues of the site, the area is inactive, thus is happening since the vagues give a meaning of 'indeterminate, imprecise, blurred, uncertain' qualities to a site expectation (de Solà-Morales Rubió, 1995:120). Thus, the expectation of the site is difficult to define and see clearly, it can be seen as mysterious while lacking exactness and accuracy of expression. The site's inactiveness is not only limited to the activity or user on the site but the dam itself has no life element due to the hyacinths which extract all the nutrients out of the water. The site can be classified as completely lifeless, in and around the area.

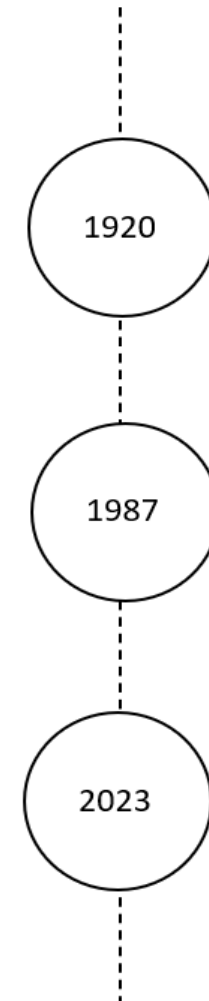


Figure 8: Timeline of site (author, 2023).

2.4 SITE ANALYSIS

During this process of analysis, a better understanding of all the elements involved on and around the site was gathered.

Figures 9-12, indicate the surrounding suburbs, the roads, surrounding places, and the contours together with an indication of the activity taking place on and around the site. The calculations for the amount of oils which can be extracted daily and yearly, the wind direction, sun pattern and the potential workforce of the nearby neighbourhood are indicated in figures 13-16.

Site experiences were collected by people in the area, figure 17, illustrates that it was a lovely space for fishing and watersports, figure 18, watching the sunrise with a loved one, figure 19, a great picnic space but not anymore, figure 20, spending time in nature while birdwatching, lastly figure 21, scary and dangerous place.

Lastly, figures 22-27, are imprints of the vegetation on and near the site.



Figure 9: Analysis indicate the surrounding suburbs (openstreetmap edited by author, 2023).



Figure 11: Analysis indicate the surrounding places (openstreetmap edited by author, 2023).

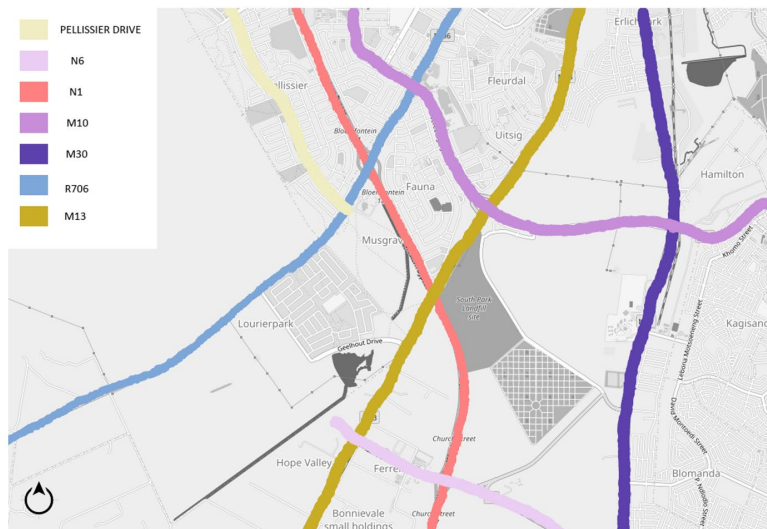


Figure 10: Analysis indicate the surrounding roads (openstreetmap edited by author, 2023).

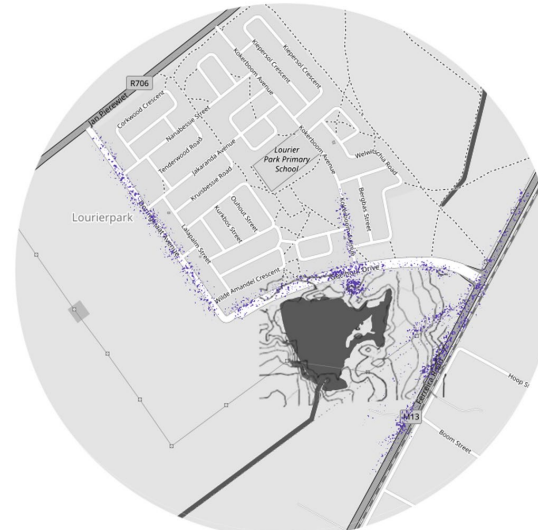


Figure 12: Analysis indicate the contours with an indication of the activity taking place on and around the site (openstreetmap edited by author, 2023).



Dam = 23,4 hectar = 32 192 kg/year
 = 11 750 076 kg = 5,5 l/day (90,43 kg of hyacinths)
 = +- 1958 l = +- 110 l/ month

Figure 13: Analysis indicate the amount of oils which can be extracted daily and yearly (openstreetmap edited by author, 2023).

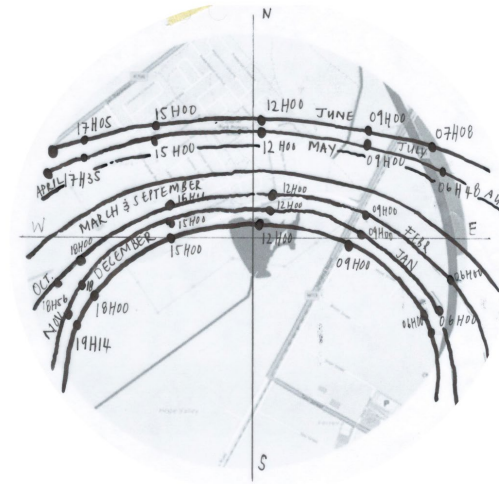


Figure 15: Analysis indicate the sun pattern (openstreetmap edited by author, 2023).

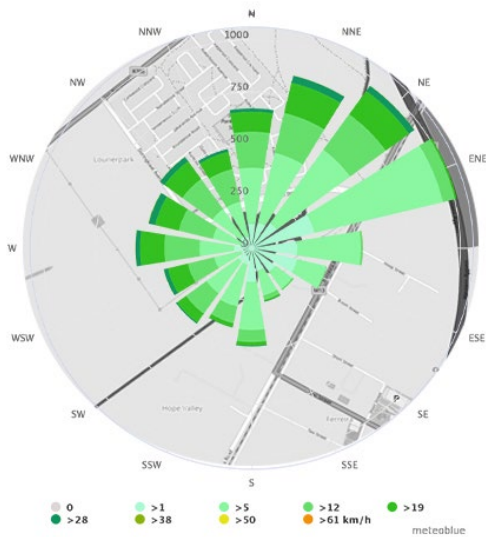


Figure 14: Analysis indicate the wind direction (openstreetmap edited by author, 2023).



Area - Lourierpark = 2,22 km² (population = 3 177 people)
 = 1 457 people (Age 20 - 44)
 = +- 104 (able to do work)

Figure 16: Analysis indicate potential workforce of the nearby neighbourhood (openstreetmap edited by author, 2023).



Figure 17: Site experiences (author, 2023).

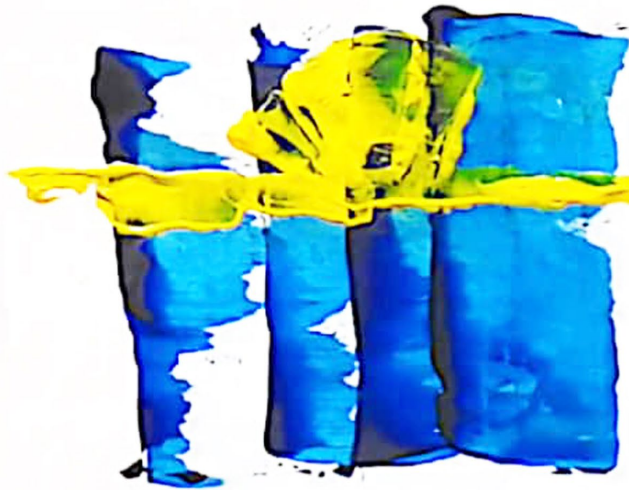


Figure 18: Site experiences (author, 2023).



Figure 19: Site experiences (author, 2023).



Figure 22: Vegetation of site (author, 2023).



Figure 23: Vegetation of site (author, 2023).



Figure 24: Vegetation of site (author, 2023).



Figure 20: Site experiences (author, 2023).

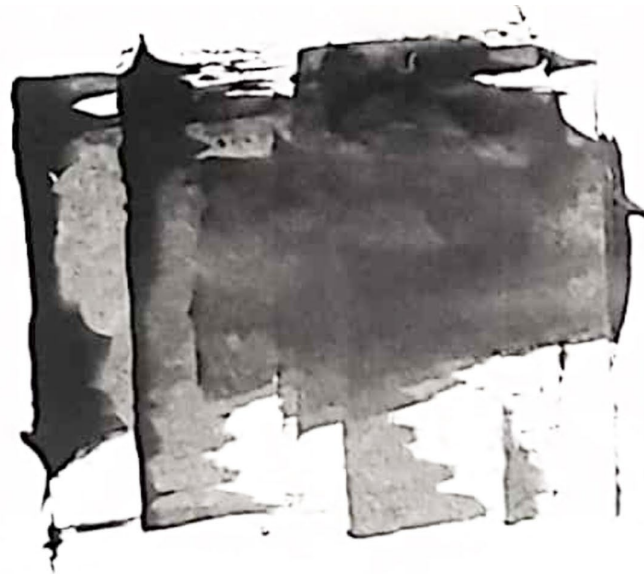


Figure 21: Site experiences (author, 2023).



Figure 25: Vegetation of site (author, 2023).



Figure 26: Vegetation of site (author, 2023).

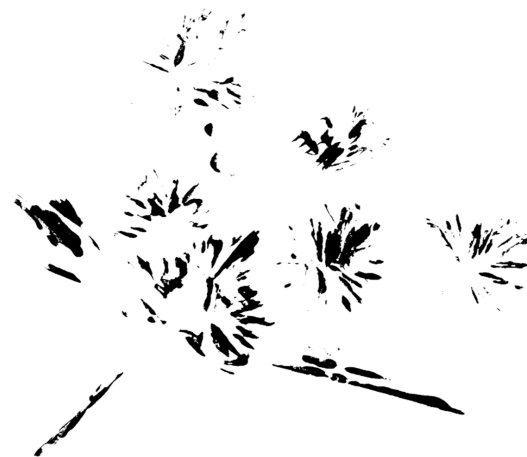


Figure 27: Vegetation of site (author, 2023).

2.5 CONCLUSION AND CONTRIBUTION

The macro analysis of Bloemfontein gives one a glimpse of how the city looked during the early years and it showcases the strong link between Bloemfontein's fauna and flora. Opportunities for moments of care were present, which created meaningful places.

The mezzo analysis broadens our conception of the urban, environmental and social ecology. It also gives spatial clues pertaining to the site.

Lastly, the micro-analysis contributes a lot of information. The analysis suggests that there is a relationship between the site's lifelessness and the hyacinth's extracting the life and nutrients from the water. However, together new life can be blown into the site due to the hyacinth, removing the lifelessness and placelessness. Resulting in a reactivated and meaningful place where care is present.

Chapter 3 will handle the conceptual development.

03

CHAPTER 3: EXTRACTION

3.1.1 OVERALL INTRODUCTION

A touchstone is an abstract representation of the theoretical and conceptual themes. It is a clear way to synthesise a powerful characteristic of the desired aspirations for the project. Louis Kahn's famous question explains a touchstone perfectly: 'What does the project or site want to be?' (Sisson, 2019: online).

3.1.2 TOUCHSTONE

Through the use of the touchstone, it is shown that this project consists of a whole intertwined system, the proposed intervention is integral to the hyacinths and the community. The proposed intervention will reactive the area, create jobs and remove the hostile stigma. Thus, it represents the essence of reactivating the area while drawing the community together through the scent of the hyacinth (Figures 28-30).

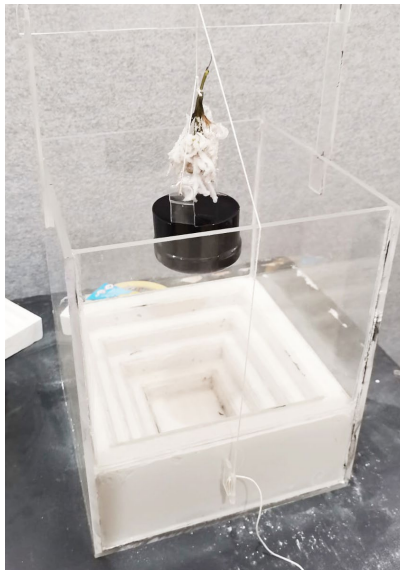


Figure 28: Touchstone before action took place, bottom represents the site and community, and the black ink the architectural intervention (author, 2023).



Figure 29: Crystallised hyacinth hanging above the black ink, representing the architectural intervention (author, 2023).



Figure 30: The effect the architectural intervention had on the site- reactivation started (author, 2023).

3.1.3 CONTRIBUTION AND CONCLUSION

In essence, the touchstone enabled the understanding that the reactivation effect which the proposed architectural intervention is aiming for, is time-sensitive and will take time to get there, due to the complexity. The most important element to understand is that the community needs to commit and believe in the project; without the community, reactivation will not take place.

This reactivation simply refers to the fact that the site was originally used for different activities previously mentioned in section 2.3. However, over time the site became inactive otherwise known as a non-place. The architectural intervention aims to attract not only people of the community but the whole of Bloemfontein, transforming the site into a functional place.



Figure 31: Ripple effect of insence market (author, 2023).

3.2 CONCEPTS

3.2.1 Fragments

The notion of fragments in this document is understood as the method by which the hyacinth reproduces (Voiland, 2016: online), but also the effects of the proposed intervention, which will be fragmented into and through the community. It also illustrates the harvesting process where the plant is pulled out of the water. The aim is that it will hopefully transform the perceptions of Rooidam and the community itself; by reactivating the site, the community will make a meaningful place of the site. The photo of the site is fragmented (figure 32) – moving past the frame in some cases indicates the extension of the project, thus the hyacinth is located on a fragmented site, but it draws people to its essence; the incense and aroma market.



Figure 32: Fragments concept model (author, 2023).



Figure 33: Fragments concept sketch (author, 2023).



Figure 34: Fragments concept sketch, placed on site (author, 2023).

3.2.2 Metamorphosis

One of the aims of this intervention is to introduce a transformation of the site and community through the transformation of the hyacinth into something beautiful – incense and aroma. The mechanism of understanding the site and the intervention is conducted through a model. The model represents the hyacinth as being located at the crux of the project with the presupposition that, through its movement or reaction, something beautiful will be revealed through the site to the community (Figures 35-36).



Figure 35: Metamorphosis concept model (author, 2023).



Figure 36: Metamorphosis concept model, reveal (author, 2023).

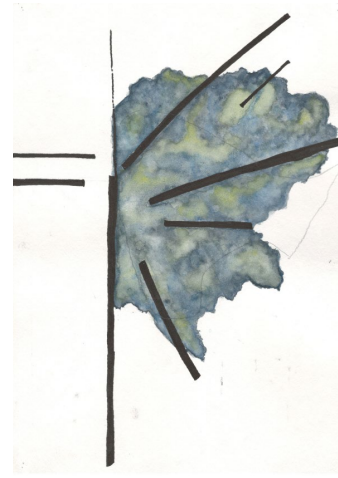


Figure 37: Metamorphosis concept sketch (author, 2023).



Figure 38: Metamorphosis concept sketch, placed on site (author, 2023).

3.2.3 Perfume Organ

A perfume organ is a device or system that the perfumer uses to mix the scents together, orchestrating something beautiful. It functions as an operating system and one can divide it into three parts being a scientific part, a poetic part (the scents) and a spatial part (Figure 39).

The model represents the three different parts (Figure 42). Precision and a fine balance are required during the mixing process. One walks in the proverbial shoes of the perfumer when one is busy figuring out the perfect balance point in the model. It also represents the balance that is needed between the intervention, site and the community. A cascade effect can take place and a beautiful symphony will be created.

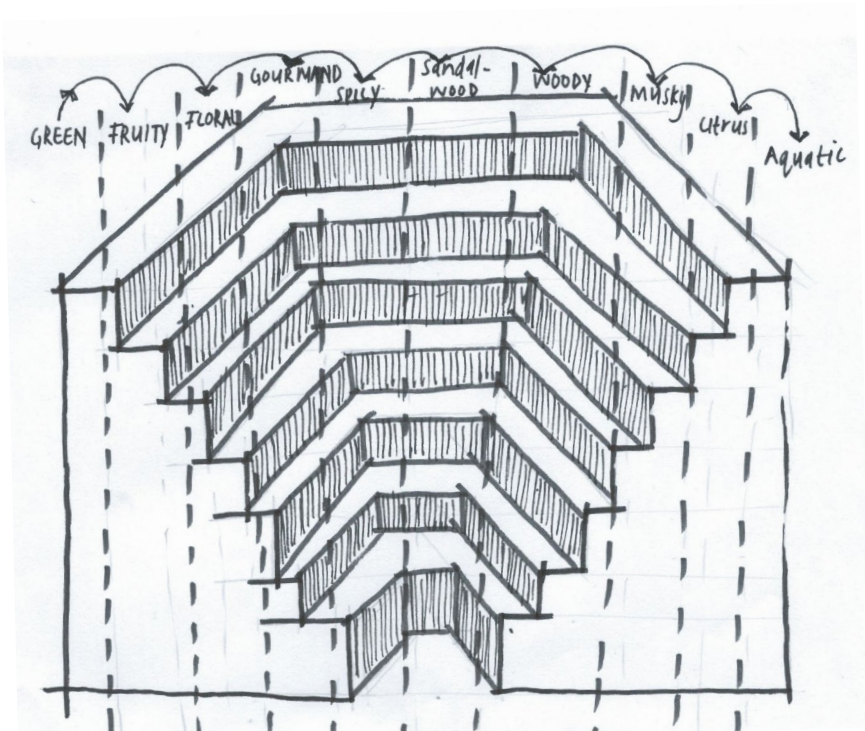


Figure 39: Perfume organ, illustrating all scent types (author, 2023).



Figure 40: Perfume organ concept sketch (author, 2023).



Figure 41: Perfume organ concept sketch, placed on site (author, 2023).



Figure 42: Perfume organ concept model (author, 2023).

3.3 CONTRIBUTION AND CONCLUSION

All three concepts have contributed to the proposed architectural intervention. Fragments contribute to the form of the intervention, creating the thick elements on the western side, allowing the building to be seen as different fragments while representing the harvesting process. Thus, a coherent relationship is created between the site, building and process. Metamorphosis of the hyacinth will take place, from immaterial to material. Transforming the floral beast [hyacinth] into something beautiful [incense]. Lastly, the perfume organ will act as guidance in organising spaces on site, especially the incense experience through and in different spaces and parts of the building. This allows the whole site to become an incense and aroma market and not just the building alone. An opportunity is created for the user to step into the perfumers' shoes while becoming part of the whole process.

04

CHAPTER 4: MASTERY OILS

Glossary:

- *Olfaction – a sense of smell*
- *Olfactory physiology- olfactory sensations are called odours*
- *Odour- a general smell sensation of a particular quality*
- *Olfactory hedonics- the response we have to an odour, whether we like it or not.*

During this chapter, different philosophical and scientific elements will be discussed such as, Topology through urban boundaries, uncanny, placelessness and non-place; Typology through the production of space, hapticity and time; Morphology through aesthetic theories, the olfactory system and smellscapes. Overall, these elements will assist in achieving the topology, typology and morphology aims, previously mentioned in section 1.4 with the main research question in mind.

The main research question is: How can we reactivate the Rooidam through an aroma and incense market conceptualised through the metamorphosis of the hyacinth plant?

4.1 TOPOLOGY-SITE

4.1.1 Urban Boundaries

Inesa A. Kurtinaitienė (2021:39) stated that the phenomenon of physical boundaries is not unambiguous, and its nature in the city can be both natural (formed by nature) and dictated or created by man. In the case of Rooidam, it is clear that the boundary is man-made.

Traditionally, urban boundaries are defined as where the city ends and the countryside starts, however nowadays it is more accurate when one says it is where the fashionable neighbourhood and the old, non-fashionable, industrial neighbourhood separates. Leading to the urban structure being fragmented. It is mostly justified due to protection purposes but actually it acts as a separation between the two different groups, resulting in social issues which will not be dealt with here. This boundary affects not only people's lifestyles but also the further development of the city.

A dynamic movement can be created, movement through circulation routes and urban interventions. This will allow a transition to the edge conditions, moving the edge back to its original place.

Moulding the two different groups together while demolishing the separation. This creates unity, where the city can further develop.

Rooidam is currently circulating the edge condition, being excluded from the boundary, and pushed outside – to be forgotten. A boundary determines the character of the city, thus Rooidam is characterised as unhomely, a non-place. To overcome this characteristic, an intervention is needed; the aim of the incense market is to reactivate the site by creating an attraction for not only the neighbourhood but the whole city, shifting the boundary and moving the site away from the edge. People will get invested in the area and want to spend time there, which means that the space will become once more, a place. Boundaries can be shifted, however it takes a community which stands behind their neighbourhood, an inactivated, non-place and a dynamic movement (Figures 43- 45).

4.1.2 Uncanny

The word uncanny is an understanding between something which was familiar, heimliche, once but on return was repressed to something unfamiliar, unheimliche, in other words, a structure which understands the relations between homely and unhomely. However, this is an example where the uncanny was pretending; it is almost like a forgotten space, where the work of memory needs to remove the 'block' of unfamiliar from the unremembered or uncanny space.

It can almost be seen as an identity crisis where a spiritual fear of space is being created. To remove this fear a space needs to be created where more natural empathetic buildings are created, to form part of the surroundings. This will prevent a building from feeling alienated in relation to its surroundings (Vidler, 2002:23).

Anthony Vidler, an architectural historian and critic, recognises that the uninhabitable character will be removed together with the forced circulation on the edge. A new identity will be created, and a sense of belonging will take place. This will encourage the neighbourhood to interact with the site, fall back on their memory and claim the space back as a familiar and homely space – their space.

In the same manner, Rooidam can be seen as an uncanny space; it is sitting on the edge of town and the neighbourhood avoids the space. It is clear that a familiarity aspect is present, but because of the fear which is roaming around the site it becomes unfamiliar and the identity gets lost.

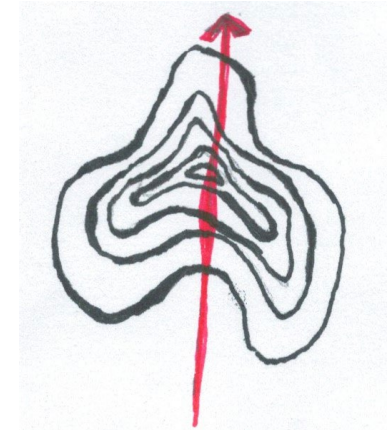


Figure 43: Boundary shifted (author, 2023).

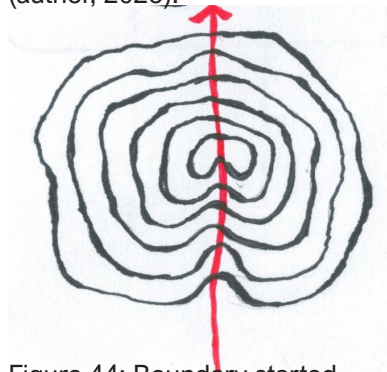


Figure 44: Boundary started shifting (author, 2023).

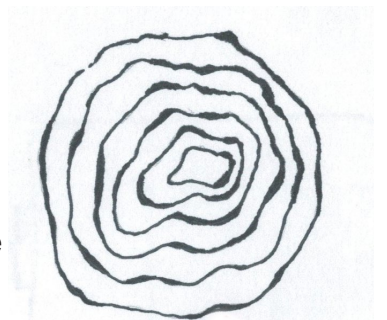


Figure 45: Original boundary (author, 2023).

The proposed architectural intervention creates an opportunity for the community to reactivate the site, recreate a new identity and claim the space back as they remembered it. The attraction of the space will increase, especially when the fear factor is removed.

4.1.3 Placelessness/non-place

Heidegger, a German Philosopher, suggests that for a human to experience a place, one needs to be internally aware or conscious, in other words, being there or Dasein, and not disclosed. By doing this the place will reveal itself and will allow the characteristics of the human existence to be set free (Encyclopedia Britannica, n.d.:online).

'Place as a concept relates to being, somewhere, to here, there, elsewhere, home, roots and rootlessness, disembedding, placemaking, placeness, branding, and dwelling '(anon,2023: online).

Rootlessness simply means that one has no ties with a particular place or space. The only way to overcome this element is when one experiences the space, becomes one and creates a place with meaning (Collins Dictionary,2007: online). By doing so, placemaking will flourish and strengthen the human connections which include cultural and social elements (Ellery, Ellery and Borkowsky, 2020). Disembedding (Oxford Dictionary,1989:online) is present when modernisation takes over and removes or declines traditional and social ties. However, even though this sounds like a positive thing, this can lead to placelessness. It is important to understand that an experience of a place is only possible when one appreciates the cultural element which is embedded in the landscape. This contributes to the character of the place. Branding of a space is important due to the fact that it is the believed-in method of how things are being done, however, branding needs to be adaptable. It still needs to be applicable even when moving across time and space. Furthermore, the richness of history cannot be forgotten and thrown out the window. All the cultural and historical richness contribute to the character of a place. The character creates a meaningful place and enables one to experience embodied experiences. These elements are a necessity for creating a dwelling, a dwelling where one wants to stay and spend time (Bida, 2018).

To experience the insideness of a place means that one feels safe and enclosed. This allows one to form an identity with that place. Relph suggests that one's identity will grow stronger as the person feels more profoundly inside a place. Outsideness however is when a place has an alienated feeling to it. This can be seen when one looks at Rooidam itself, the community is completely separated from the site.

No one wants to interact with it, due to the hostile feeling towards that specific area. When one looks at the mezzo structure it is clear that Rooidam is alienated and separated from the whole city, therefore occupying an outsidersness.

The most important element to understand is that inside and outsidersness constitute a dialectic which is fundamental in spatial experience. This allows different individuals to experience different identities which are being created and taken on by different places. This creates different qualities of feeling and meaning for each individual. Insideness has the ability to act as a seam, a seam which pulls the community and city together creating one community and one place.

Casey stated that people will always need a meaningful place because having and identifying with a place are integral to our identification and orientation as human beings (Seamon and Sowers, 2008).

Elements of culture and nature intertwined together involve place. Fred Lukerman, a former dean of the College of Liberal Arts, stated that each place has its own order, its special ensemble, which distinguishes it from the next place (Relph, 1980). Thus, it implies that a unique establishment is present at every place. When a place's location is integrated with everything that is being occupied at that location a meaningful phenomenon is created, thus a place is more than just the 'where' of it. It's a place which is complex and constantly developing further through the flow of people and goods to other places (Relph, 1980:3).

Relph notes that, according to Heidegger, 'place places man in such a way that it reveals the external binds of his existence and at the same time the depths of his freedom and reality' (Relph, 198:6). After this statement, it can be seen that places are a fundamental part of the aspect of man's existence in the world. Thus, it is important to cherish and preserve places, not to get lost, through means of experiencing, creating and maintaining the significance of places.

Existential space, otherwise known as lived-space, appears to us and forms part of a cultural group in our concrete experiences of the world. Dardel stated that place is a space in which human interaction inscribes itself on the earth (Relph, 1980:12). Thus, these spaces can be classified as the inner structure of space. It is important to grasp the concept that it's a passive space, it is constantly being created and remade by human activities, and it does not wait to be experienced (Relph, 1980: 12). It is however important to realise that the specific space is not going to be meaningful and significant for every cultural group, some considerable effort of understanding is needed (Relph, 1980:14).

Spaces can intentionally and unintentionally give direction to experiences (Relph, 1980: 16). Norberg-Schulz suggested that '... perceptual space is essential to his identity as a person, existential space makes him belong to a social and cultural totality, cognitive space means he is able to think about space and logical space, which offers him a tool to describe others'. However, the meaning of space originates from the relationship between existential and perceptual spaces of immediate experience. Heidegger has written: 'spaces receive their being from places and not from 'the space'... Man's essential relationship to places, and through them to space, consists in dwelling.. the essential property of human existence.' (Relph, 1980:28).

One needs to understand that places in our lived reality are not experienced as independent, it is a complex system which is open to many interpretations. Thus, a place can be seen as a multifaceted phenomenon of experiences, these experiences contribute to the sense of place, which forms part of authentic place-making (Relph, 1980:29). Places help to order our experiences in the world (Relph, 1980:43). Even though a place undergoes changes, the spirit of places allows us, the outsiders, to recapture the significance of the place through the act of memory (Relph, 198:31).

The 'spirit of place' of Norberg-Schulz which is being referred to simply means that an environment can be transformed into a place through emotional and spiritual experiences. These experiences are possible through the non-material elements which extract the character of a space. However, it is important to understand that the historical and natural setting is interlinked with the character of a space. Embodied experiences can take place and one exists through those embodied experiences. This statement is supported by Merleau-Ponty's statement: 'Our own body is in the world as the heart is in the organism, it keeps the visible spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system,' and '[s]ensory experience is unstable and alien to natural perception, which we achieve with our whole body all at once, and which opens on a world of interacting senses' (Pallasmaa, 2012:44).

This thought is supported by the fact that memories and experiences are linked to a specific space or place. This creates a meaningful element to someone. This element walks hand in hand with visual, auditory, and olfactory sensations which are present in a human being, and consist of present circumstances and purposes, past experiences and associations, which form part of experiences and memories (Relph, 1980,17).

4.2 UNDERSTANDING THE INCENSE AND AROMA MARKET TYPOLOGY

4.2.1 Ordering spaces through Lefebvre's production of space

It is clear that modern urbanisation has created social imbalances, which create conflict between the spaces and the environment, whereas Lefebvre believes that society and its environment need to be in harmony.

Lefebvre identified three main dimensions for producing spaces, these dimensions are perceived space, conceived space and lived space. Perceived space is produced through daily interaction due to the spatial practice of the users; conceived space is the space produced through ideologies and knowledge, and lastly lived space – otherwise classified as a subjective dimension – which embraces complex symbolisms and can be seen simply as where communities and the environment interacts like an open marketplace (Wiedmann and Salama, 2019:4).

By removing these different spaces, the identity of the place gets lost leaving it as an alienated, non-place. The spaces together with the community need to evolve through time, this will ensure that those constructed spaces are experienced and nurtured, and the rootness of the place will remain.

It is important that the cultural and ideological values need to remain the shapers for the production of spaces; this will allow the identity of the space to remain. The space will remain, a rooted place with meaning where people can relate and still feel united even through the change of time and space. Balance will be present and the community together with the spaces and place will evolve over time allowing the environment and space to remain in harmony with each other (Wiedmann and Salama, 2019:14).

Social spaces are important, due to the fact that they allow the users to carry over the history and cultural values of the place but also to create the opportunity to enrich those values and to evolve together with the time and space.

4.2.2 Hapticity and time

Nowadays, the technological culture of speed and control tends to standardise the environmental conditions through instantaneous imagery and distant impact. Thus, it seems as if the buildings have appeared sterile and lifeless as if they lost their opacity and depth, sensory invitation and discovery,

mystery and shadow. Haptic architecture on the contrary promotes slowness and intimacy by moving away from geometric purity and reductive aesthetics and rather moving towards weathering and decay, which expresses their age and tells the story of their origins. This element transports one into a temporal continuum, a world of ideas while strengthening the experience of time (Vicol, n.d.: online).

Pallasmaa established that materials and surfaces have a unique one-of-a-kind language, which evolves and changes over time. Bricks have the ability to let one think of the ageless traditions of construction while one thinks of gravity, earth and fire. Weathering elements allow one to enter into the passage of time by experiencing it through its patina. The last element consists of two existences and time scales, wood speaks of his first life – growing as a tree and the second - entering as a human artefact being transformed into something special by a caring hand (Vicol, n.d.: online). We are able to move away from the visual and masculine air we encounter in modern architecture to a more sensitive, feminine and tactile architecture. This will allow the space to move from a perspectival to a simultaneous space, in other words, to enclose and enfold the user in its embrace rather than keeping the user as an outside observer. Thus, the space allows one to experience it as a place, a fully embodied sensation with meaning.

Maurice Merleau-Ponty emphasises this simultaneity of experience and sensory interaction as follows: 'My perception is [therefore] not a sum of visual, tactile, and audible givens: I perceive in a total way with my whole being: I grasp a unique structure of the thing, a unique way of being, which speaks to all my senses at once' (Vicol, n.d.: online).

We are able to move away from the visual and masculine air we encounter in modern architecture to a more sensitive, feminine and tactile architecture. This will allow the space to move from a perspectival to a simultaneous space, in other words, to enclose and enfold the user in its embrace rather than keeping the user as an outside observer. Thus, the space allows one to experience it as a place, a fully embodied sensation with meaning.

Pallasmaa strengthens this statement by declaring that: 'Focused vision makes us mere outside observers; peripheral perception transforms retinal images into a spatial and bodily involvement and encourages participation' (Vicol, n.d.: online). Thus, sensory experiences become integrated through the body and being. This approach is one which the intervention aims to achieve.

4.3 MORPHOLOGY- BUILDING FORM

4.3.1 Aesthetic theory

It is important to understand that there would be no identity of place without historical remembrance. The history gives the landscape culture and depth, which contributes to the experience. A sense of unity and the Heideggerian idea behind *being-in-itself* in nature will flourish when designing with aesthetic theory.

Sensorial experience

A genuine experience needs a shiftable dimension; this dimension is present in nature. Nature evolves and changes constantly – the aim is to design in such a manner that the building changes with nature, much so that the architecture and nature unifies and become one. Thus, an aesthetic spiritualisation will be present. The way of an object, such as architecture – an aesthetic experience – can become a living experience (Adorno, 2002:175).

Experiential experience

The architectural intervention aims to form part of the landscape; natural elements will be used and the building will change together with nature over time. This will ensure that the building will not read as alienated, which will have a positive effect on the space to become a familiar, homely place. Experience is important, due to the function of the building. When working with scent, experiences are very important in helping to convey a feeling through spaces. Thus, the user will experience every scent when moving on site. The whole site becomes an incense market, not just the buildings alone, tying the landscape and architecture together while creating a unity which functions together – as one.

4.3.2 Smellscapes

Smellscapes enable us to get a better understanding of how people make sense of their emotions which are triggered by smells. It also reveals the interrelationship which is present between smells, spaces and emotions. To understand how we feel about ourselves in the space, we need to have sensorial experiences (Xiao, Tait and Kang, 2020).

Smell is seen as an exteroceptive sense, meaning that an external stimulus relating to an organism is present. Even though odours have distal properties they lack experience of the smell since it is located within external space which is relative to us.

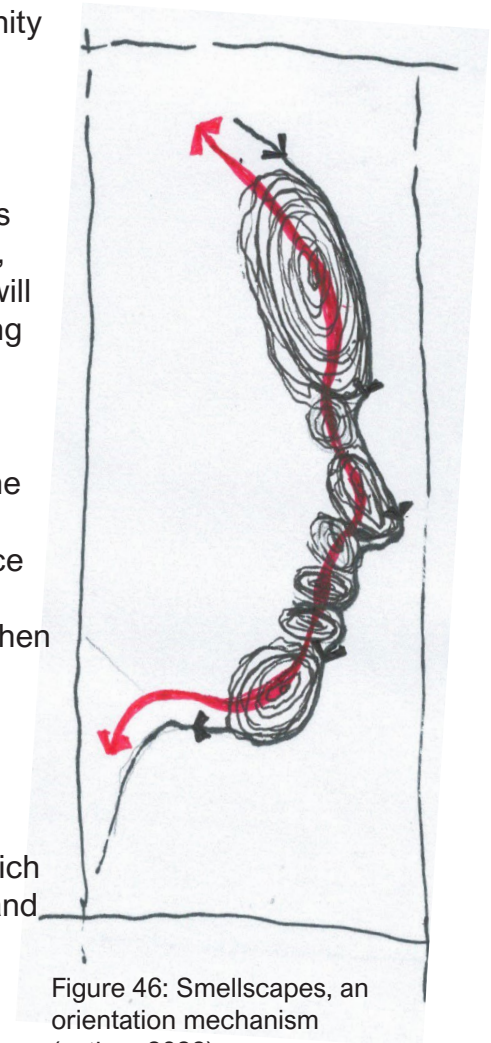


Figure 46: Smellscapes, an orientation mechanism (author, 2023).

It is important to understand that scents have spatial aspects to them – meaning a spatial locatedness – and they don't act in the same way within the same temporal perspective as our visual counterparts.

Lefebvre (1991) stated that individual understanding of spaces is constructed through movements of sensorial body and mental reactions. Sensory stimuli – smells, sounds, and colours – are essential to bring about emotional reactions in places (Xiao, Tait and Kang, 2020).

It enables us to experience a location allowing us to create memories which can be re-experienced when revisiting the location. Thus, smells can bring distinct identities to places. These identities create an emotional connection between people and those places. Pallasmaa (2012:58) stated that the nose makes the eyes remember. It is shown that emotions act as the centre of all human experiences, thus deep meanings for these places are created.

Smellscapes are representations of individuals' imaginations of places, triggered by smells in a space-time structure. Smell-triggered emotions encode spaces with meaning and power which link people with their movement within the space. New thinking and actions are formed due to the interactions between body, space and smell. As a result, the cognitive process is being activated.

The emotional and imaginative features of smells can empower spaces to set boundaries and engineer people's impressions of cities (Xiao, Tait and Kang, 2020). Rodaway (1994) stated that olfaction allows interactive navigation through an environment of sensory geographies. This enables us to trace smell, acting as an orientating mechanism. Personal meanings are being created. Therefore, it can be seen as a sense-making of emotions (Young, 2020) (Figure 46).

4.3.3 The olfactory system

One of our most powerful senses, also known as olfaction, is responsible for identifying and detecting molecules which are located in the air, otherwise known as our smell sense. A drug-like effect is present when a scent activates the brain, however, it is mainly our psychology which acts as the root for the reaction. To see that this effect take place, a few conditions are needed. These conditions are; one needs to be slightly aware of the smell, and therefore it needs to be at a detectable level. When the smell complies with these conditions, a response can be created. Thereafter the scientific and psychological mechanisms are present which form part of a neuroscientific sense (Mindalt, 2021: online). Cranial nerve signals are sent to the brain after the sensory organs detect the molecules or smell. These signals are then processed by the brain.

4.3.3.1 Odour pathways

The system consists of two different odour pathways as the scent moves through the top of one's chemical receptors of the nose, and the retronasal pathway, which connects the top of the throat and the nasal cavity. The molecule binds with the receptors, which sends a signal and reaches the olfactory bulb, a little projection at the bottom of the brain. The signal travels further into the brain, until it reaches the limbic system and after that, the amygdala-hippocampal complex. This is where one's emotions and memories are seated. Emotional memory and emotions are processed in the amygdala. Associations are formed in the hippocampus (Mindalt, 2021: online) (Figure 47).

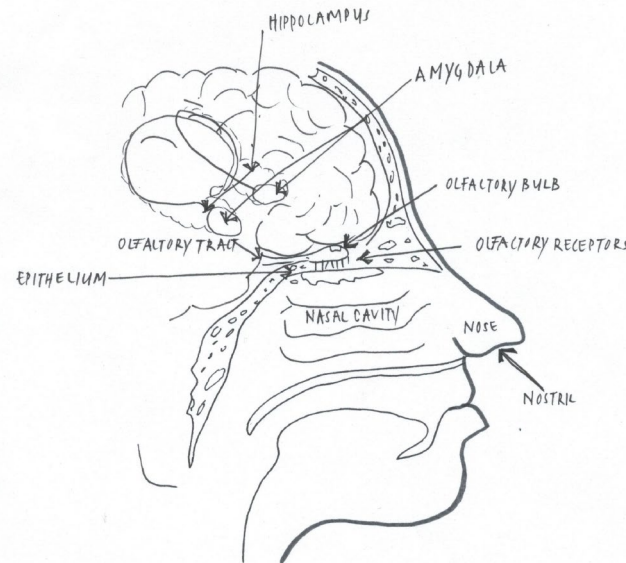


Figure 47: Illustrate olfactory system (author, 2023).

4.3.3.2 Experience affected

Rachel Herz, an American psychologist, and cognitive neuroscientist, suggests that a psychological mechanism is involved and that it stems from the brain's response to scent (Mindalt, 2021: online). Thus, our moods and behaviours can be influenced by our sense of smell; it also can ignite memories, old and new. It is clear that emotions, smells, and memories are tightly intertwined within each other.

The retronasal pathway allows a closely linked relationship where our sense of smell and taste rely on the perception of molecules. This is clear due to the fact that one detects flavours in food through the sense of smell. There are two main chemical detection systems, the floating molecules in the air otherwise

known as olfaction, and the gustation, which relates to the molecules we put in our mouths. It is important to understand that a trigeminal system is present during the experience of smell and taste (Wolfe et al., 2009: 331).

Smellscapes also demonstrate that an emotional expression can influence our olfactory senses. The piriform cortex located in the brain is responsible for this action; it is all about the activity in that specific area. The piriform cortex is also responsible for processing visual information, which allows the creation of expectations and the experience of perceiving a smell – it influences how one perceives a smell or odour, pleasant or unpleasant. For example, one will automatically expect an unpleasant odour, even before smelling it, when someone has a disgusted facial expression while walking in the area.

4.3.3.3 Understanding reality

Wolfe stated that one's understanding of reality, and even your sense of imagination, is restricted to those things that one can perceive through your senses (Wolfe et al., 2009:4). Heraclitus, a Greek philosopher, supports this statement through his famous statement, 'You never step into the same river twice'. This can simply be seen as a metaphor that everything is always changing. Thus, to draw it back to experiences; two experiences will never be the same, because it is clear as earlier mentioned that the first experience influences the second experience which we experience it. The perceiver has changed after the first event or experience (Wolfe et al., 2009:4). Olfactory hedonics are responsible for forming a response to any odour. The experiences which we associate certain smells with are determined by their emotional value (Wolfe et al., 2009:349).

The amygdala was recorded as more active when the smell of a specific perfume related to a significant personal memory was detected – after only looking at the perfume bottle. Thus, one can agree that our hedonic and emotional reactions to stimuli have their origin in the sense of smell. Emotions and olfaction can enable one to react in various ways to the environment, thus both are functionally analogous (Wolfe et al., 2009:354). People respond differently to things such as perfumes.

4.3.3.4 Perfume terminology

A well-constructed perfume, in one instance, consists of three different types of notes: top, heart and base notes. Each of these different notes overlaps and responds to each other. The notes are placed in a specific order due to their evaporation structure. The top notes are known as the first expression of the fragrance or the 'flight of the perfume' (delacourte, n.d.: online).

They usually consist of fresh and sparkling notes, citrus or lavender, these notes invite one to discover the other notes. The heart notes, consisting of full-bodied aromatic florals like cinnamon and jasmine, give softness and comfort to the perfume. It introduces new scents which deepen the experience. These notes usually evaporate between 15 to 20 minutes after the fragrance is applied. The base notes, vanilla and woody notes are known as the soul and memory of the perfume, it consists of the deepest notes, thus forming part of the densest and most intense part of the fragrance. These notes deliver the main message of the fragrance, and it is the scent which lasts for the longest time on your skin or clothing (delacourte, n.d.: online) (Figure 48).

To create a more evolving or alive perfume, more natural notes are required. The use of synthetic products will create a more linear type of perfume. However, every type has its place; the synthetic materials give stability and hold to the fragrance, whereas the natural notes give soul to the fragrance which leads to a surprise.

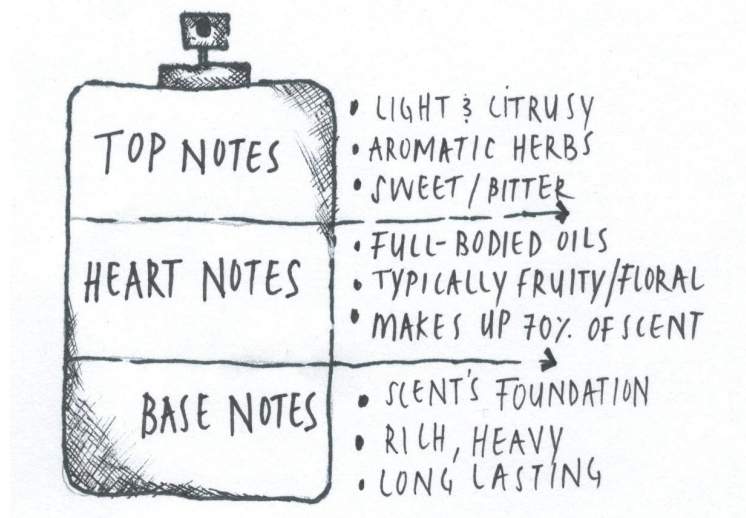


Figure 48: Illustrates top, heart and base notes (author, 2023).

4.3.3.5 Over stimulation

When one experiences constant stimulation, one's senses can adapt. This is usually very clear when one visits a new place. One may detect a strong scent when one first enters the space, but if one spends a bit of time in that space, no detection of that scent is present anymore. This is only possible due to the olfactory system, which adapts (Wolfe et al., 2009:6). Stable background scents can be filtered out

through the adaptation of the olfactory; active sniffing can increase the filtering ability. Active sniffing means deliberate quick inhalations that enable us to separate components of an olfactory scene. It thus creates an opportunity to differentiate between foreground and background smells or scents (Wolfe et al., 2009:487). Interestingly we cannot smell the molecules that make up the air we breathe. Thus, for the molecules to be smelled, they need to be able to float through air [volatile], be small and be repellent to water [hydrophobic].

4.3.3.6 Sensory experiences

Thomas Hobbes, a British philosopher, believes that human nature relies entirely on experience. He thought that sensory experiences which were old and faded were memories. The connections between memories were seen as thinking because in his view there was nothing more to the mind than sensory experiences (Wolfe et al., 2009:8).

A memory is recalled when we smell an odour which we associate with, good or bad. When the experience is too vague it can attach itself onto a feeling. The most distinctive feature of olfaction is that personal recollections, usually the most emotional, are evocative. Thus, odours can be seen as the 'best cues' to memory. This can transport one back to the original place and time where the memory is formed (Wolfe et al., 2009:353).

The olfactory system created a clear understanding of how the whole system works - how we experience scents and that certain scents are connected to certain memories. It shared knowledge about how the whole perfume pyramid works which strengthened the whole process of the production of the incense and that overstimulation can take place. Neutralisation spaces or areas are needed for the visitor before entering a new smell pod.

4.4 CONCLUSION

The complexity of the topological, typological and morphological elements is gathered through this chapter. It is clear that the boundary at which Rooidam find itself needs to be shifted in order to attract people and remove the placelessness of the site. A few principles need to be followed to achieve the specific function of the intervention, furthermore, it will assist in creating the desired embodied experience.

It is clear that Rooidam consists of many layers and complexities. And thus, it is not a simple task. It will take time to achieve the aim of the architectural intervention. However, these theoretical lenses act as a support system to achieve the desired aims.

The brief and program development will be discussed in the next chapter.

05

CHAPTER 5: BLENDING OILS

5.1 BRIEF

The main objective is to create a reactivated site at Rooidam, where the hyacinth will act as the sensorial, spatial and experiential driver. This will serve as a magnetism effect, attracting the community and Bloemfontein as a whole. The architectural intervention, an incense and aroma market, will give the users the opportunity to enter into an ephemeral embodied experience. The building design, programme and materials focus mainly on sensory experiences, during the incense production, together with educating the user about the production elements.

5.2 AROMA& INCENSE PRODUCTION PROCESS

Making a perfume involves collecting ingredients, extracting oils, blending, ageing and quality control (Davis, 2023: online). Different ways of extracting oils are being used; some methods work better with certain plants than others. These methods include Enfleurage, Maceration, Expression, Solvent extraction and Steam distillation.

The enfleurage method is when the plant is placed between two large glass sheets containing a grease layer. The sheets are placed in tiers between wooden frames (Figure 49). The flowers are then moved by hand, being replaced until the grease is able to absorb the fragrance (Davis, 2023: online).

The enfleurage extraction system, the layering of the glass and grease which is then placed in tiers, inspired the layering of the wood and glass elements in the architectural intervention (Figure 50).

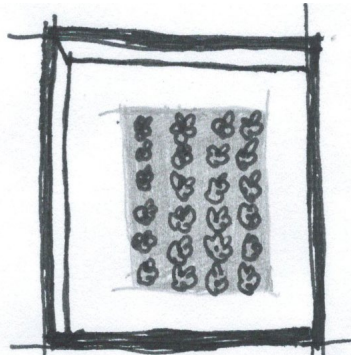


Figure 49: Illustrates enfleurage method (author, 2023).

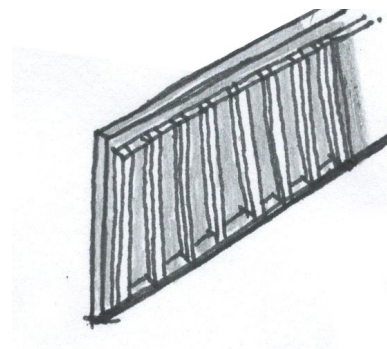


Figure 50: Illustrates architectural element (author, 2023).

The maceration method is very similar to the enfleurage method (Figure 51). However, the fats are being warmed up, which soaks up all the fragrances as opposed to the grease. To obtain the oils, the fats are dissolved in alcohol (Davis, 2023: online).

During the maceration method, a dark strip forms. This element inspired the use of the wooden slats, strip-louvres on the eastern side of the building. (Figure 52).

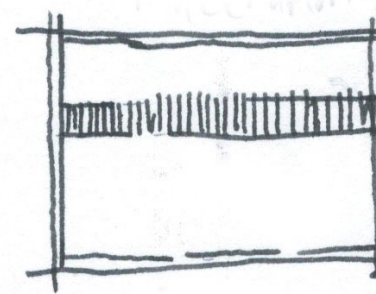


Figure 51: Illustrates maceration method (author, 2023). Figure 52: Illustrates architectural element (author, 2023).

Expression is one of the oldest forms of extraction. This method involves pressing the plant until all the oils are extracted, this can be achieved manually or mechanically. This method is mainly used for extracting citrus (Figure 53).

The structure element, which is used in the expression method, inspired the double layeredness of materials, some translucent and others solid (Figures 54 and 55).

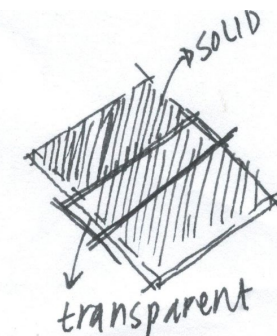
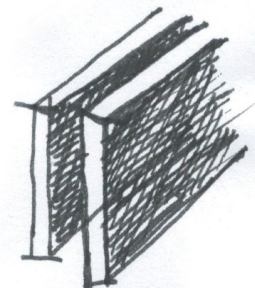
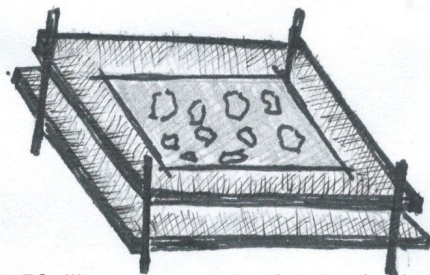


Figure 53: Illustrates expression method (author, 2023).

Figure 54: Illustrates architectural element (author, 2023).

Figure 55: Illustrates architectural element (author, 2023).

For solvent extraction, the plant is covered with petroleum and placed into rotating drums. A waxy substance which contains the oils is left behind after the plant materials dissolve completely in the solvent in which it was placed. The substance is thereafter placed in ethyl alcohol, which allows the oil to dissolve into the alcohol. The last step is to burn off the alcohol which allows a highly concentrated perfume oil to be available (Davis, 2023: online) (Figure 56).

The solvent extraction system inspired the implementation of smell chambers in the architectural intervention (Figure 57).

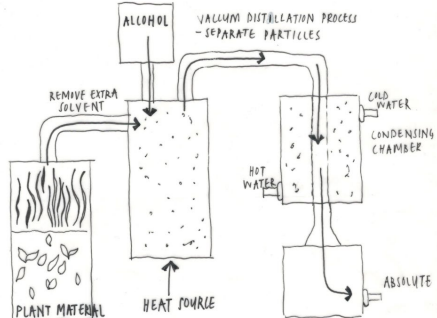


Figure 56: Illustrates solvent extraction (author, 2023).

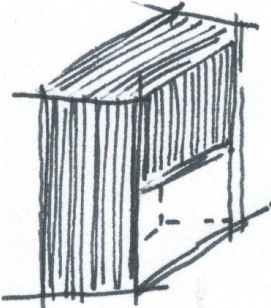


Figure 57: Illustrates architectural element (author, 2023).

During steam distillation, stems and flowers are loaded into a tank which is sealed. Low-pressure steam begins to flow through the tank. During this process the steam causes the plant oil glands to erupt. This allows the oil to evaporate into the steam. The steam is routed on its way to the condenser, where cold water cools the steam down. This condenses it back to a high-grade liquid of oil and hydrosol (Agri Farming, 2019: online) (Figure 58).

The importance of good ventilation throughout the spaces was highlighted by the steam distillation process, especially how the steam moves through the system (Figures 59 and 60).

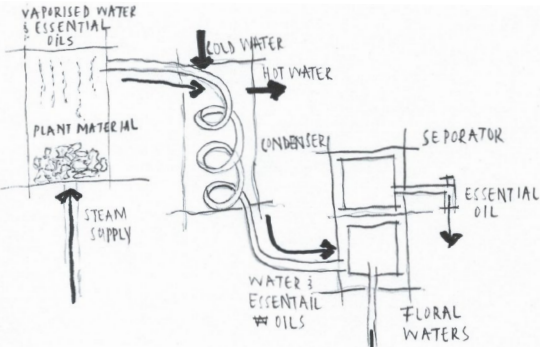


Figure 58: Illustrates steam distillation (author, 2023).

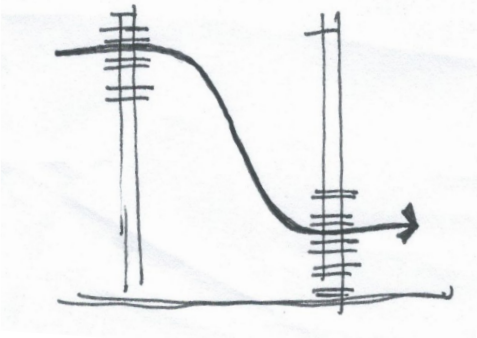


Figure 59: Illustrates ventilation element (author, 2023).

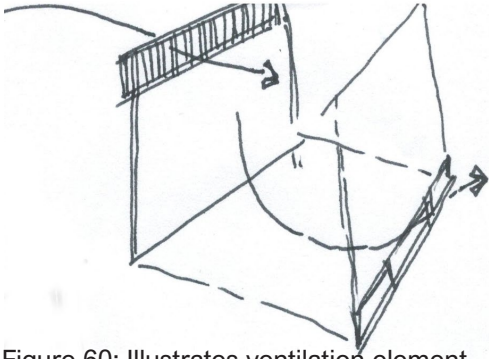


Figure 60: Illustrates ventilation element (author, 2023).

For the hyacinth plant, steam distillation will be best suited, due to the fact that the flower and plant are both very delicate. A maximum quantity and highest quality of oils will be ensured during the extraction process. This will act as the base product for the incense and dermatological products.

5.4 REFINED ACCOMMODATION AND PROGRAM

The program of the architectural intervention consists of the harvesting of the plant material straight through to the extraction of the base oils, which includes the whole production process. The extracted base oils will be further reworked during the incense and dermatological production units. The dermatological section includes the production of essential oils, soaps, and skincare. A retail compartment allows easy access to pre-mix incense and dermatological products. However, an opportunity is created for the user if the pre-mix incense scents are not the user's desire; a custom blend can be produced per request. Market spaces allow independent vendors the opportunity to sell their custom aroma blends under strict regulations.

As previously mentioned in section 1.4, the typological aim, it is important to understand that even though the intervention needs to be very functional, due to the industrial and production aspects, the sensational experience is the most important element.

The accommodation list consists of:

- Reception [80 m²]
- Admin [114 m²]
- Ablutions [48 m²]
- Retail space [30 m²]
- Incense Production [164 m²]
- Dermatological Production [41 m²]
- Harvest area [115 m²]
- Lab process space [174 m²]
- Security [9 m²]
- Service areas [82m²]
- Orientation towers [46 m²]
- Smell pods [71m²]

Total - [974m²]

5.4 CONCLUSION OF CHAPTER

In conclusion, Chapter 5 gives a better understanding regarding the brief, program and accommodation list of the architectural intervention. The incense production process is discussed which contributes to the overall understanding regarding the process, the development of the program and the functionality of the intervention as a whole.

In the next chapter, the design development will be discussed.



06

CHAPTER 6: AGING

6.1 OVERARCHING IDEA AND AIM

The aim of the architectural intervention is to reactivate, reinvigorate, and unify the community which shifts boundaries and changes the perception of Rooidam, through the transformed, once-known beast, the hyacinth. The overarching idea runs parallel to the aim; however, the most important element is the sensational experience of the user.

The production line consists of a whole system. Each part is dependent on the previous part; this system will be as follows. The plant material will be harvested and moved to the process lab – the extraction and base oils will be produced, and the base oils will be transported to the dermatological and incense production lab. The final product will either move to the storage, retail or despatch area (Figures 61-62).

The main research question is: How can we reactivate the Rooidam through an aroma and incense market conceptualised through an interpretation of metamorphosis of the hyacinth plant?

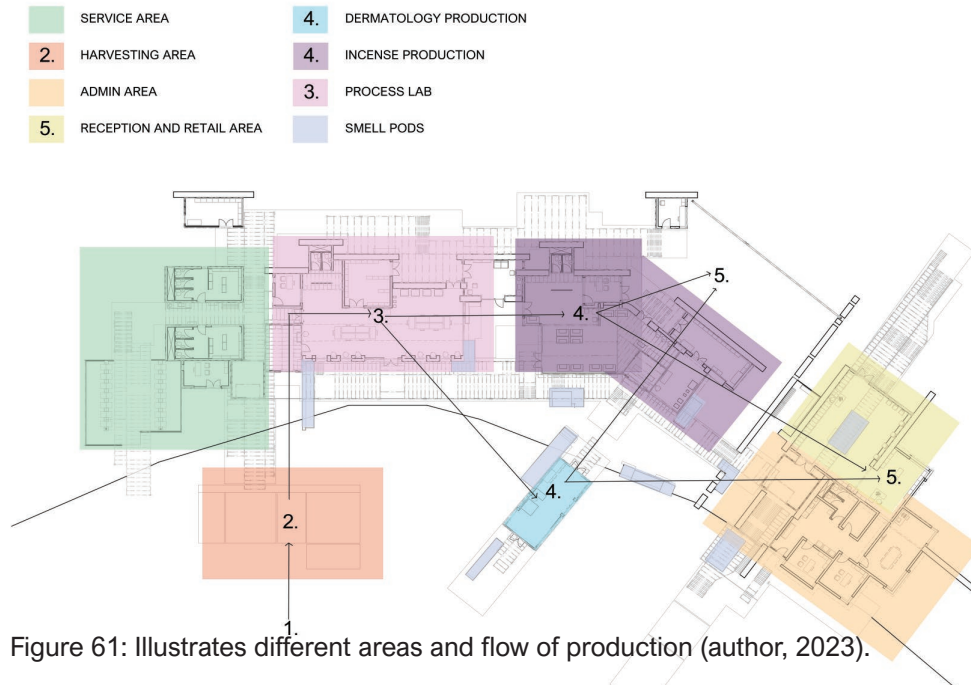


Figure 61: Illustrates different areas and flow of production (author, 2023).

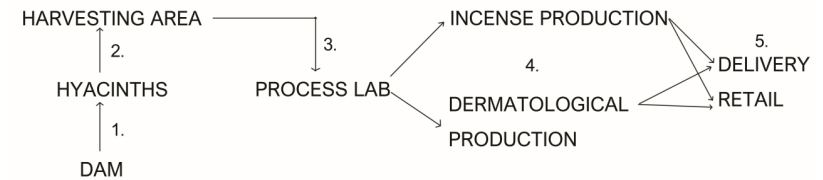


Figure 62: Illustrates flow of production (author, 2023).

6.2 PRECEDENT STUDIES

6.2.1 Forum Homini Boutique Hotel, Muldersdrif SA, GREENinc Landscape Architecture, 2006

The relationship between the building, landscape and water mass (Figure 63) influenced the placement of the architectural intervention, the incense and aroma market (Figure 64). It is clear that harmony is necessary between these elements; this harmony will prevent the building from looking alienated in the landscape. The use of natural materials like wood and stone (Figure 65) can enhance this harmony, a more natural feeling will be given to the building which acts sensitive toward the landscape. An illusion can be created where it appears as if the building is arising from the landscape. The materials used for the intervention were influenced by the environment. The material palette consists of wood, reed screens and adobe bricks. The design of the proposed intervention can possibly employ natural materials like wood and stone used in the Forum Homini Boutique Hotel to give the building a natural feeling.

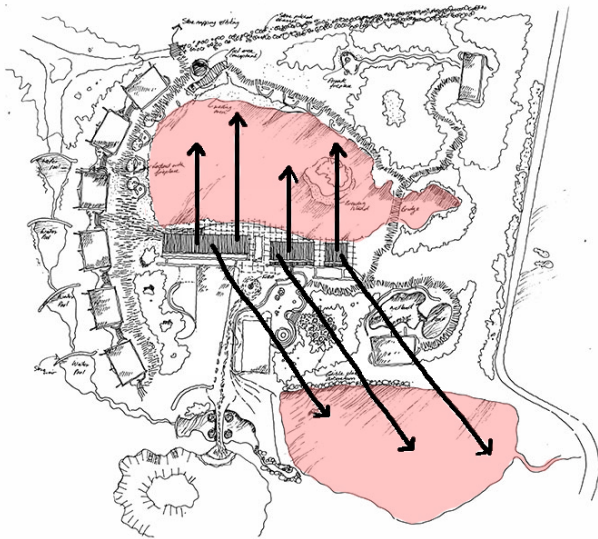


Figure 63: Illustrates relationship between building and landscape (Landezine edited by author, 2023).



Figure 64: Illustrates placement of building in landscape (Landezine edited by author, 2023).



Figure 65: Illustrates use of natural materials (Landezine edited by author, 2023).

6.2.2 Bombay Sapphire Distillery, Hampshire UK, Heatherwick Studio, 2014

The distilling process, which is visible (Figure 66), together with the greenhouse system which acts as an overhead structure (Figures 67 -68) allows the user to experience the system but also to be part of it. This illustrates that an overhead structure, stretching over the walkways along the building, can assist by leading the user through the site and building. To allow the users to form part of the experience, especially a sensory experience, an investigation of visual access points for the distilling process can add value. The proposed intervention can possibly make use of an overhead structure while allowing the visitor to be part of the system, in a similar manner to Bombay Sapphire Distillery.



Figure 66: Illustrates visible distilling process (Baan edited by author, 2023).

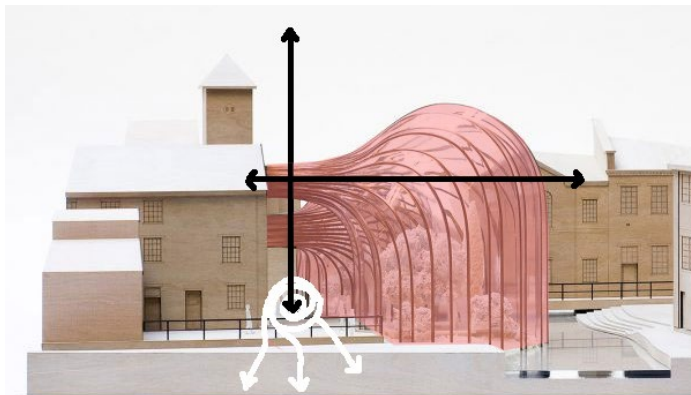


Figure 67: Illustrates the greenhouse system (Baan edited by author, 2023).

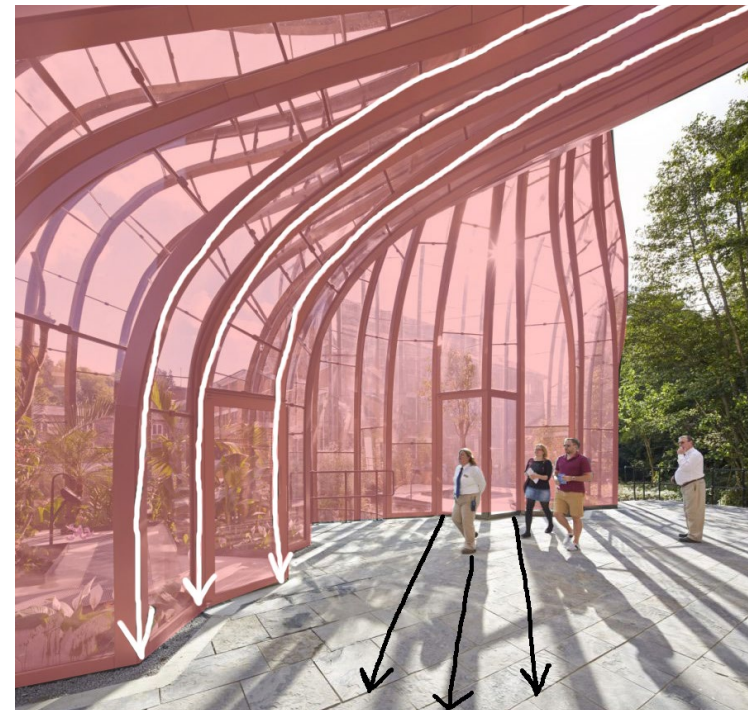


Figure 68: Illustrates overhead structure (Baan edited by author, 2023).

6.2.3 Kresge College, Santa Cruz, Moore & Turnbull, 1971

The characteristic of peeking out (Figure 69), the part of the building which reveals itself (Figure 70), leads the user through the site. It acts as a journey (Figure 71); the user doesn't know how the rest of the building looks or where it will lead. This can be an alternative for guiding the user through the site, the interesting part is that the user needs to trust the buildings, due to the fact that it is an uncertain journey. In the same manner, the proposed intervention can create a sensory journey which guides the user through the site.



Figure 69: Illustrates characteristic of peeking out (Turnbull Griffin Haesloop Architects edited by author, 2023).

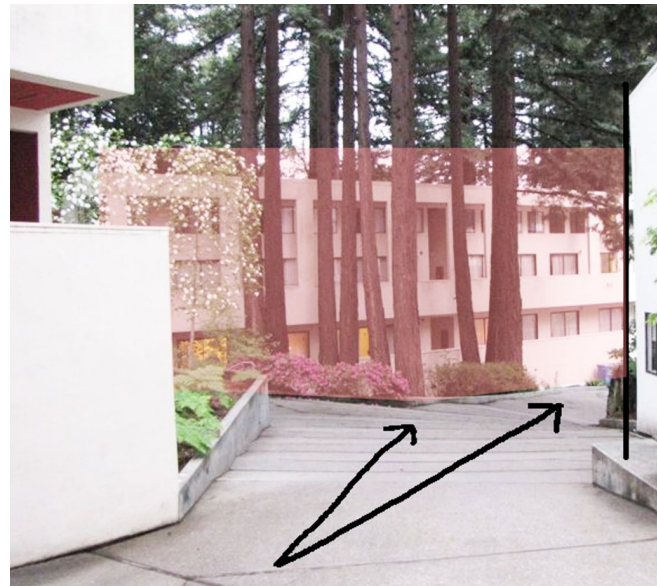


Figure 70: Illustrates building revealing itself (Waymarking.com edited by author, 2023).



Figure 71: Illustrates the journey (Turnbull edited author, 2023).

6.2.4 Katima Mulillu market, Namibia

The setting of the market even though it is informal, is very functional. A simple design with undercover working surfaces, a double roof system (Figure 72) and detail around how the column is situated inside a concrete element act as inspiration regarding such detail (Figures 73 and 74). The proposed architectural intervention can possibly consider a double roof system while keeping the setting informal in a traditional industrial setting.



Figure 72: Illustrates double roof system (Pompert edited by author, 2023).



Figure 73: Illustrates column-concrete element (Pompert edited by author, 2023).

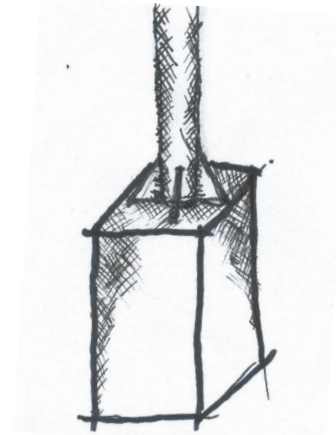


Figure 74: Illustrates column detail (author, 2023).

6.2.5 Basotho Huts

The whole close-knit character of the culture is symbolised in the architecture, the community is fenced off (Figure 75), keeping the dangerous elements on the outside. Natural materials like reed screens and wood elements (Figure 76), the construction of the huts (Figure 77) with the colourful decorations (Figure 78) on the outside all give a better understanding of the culture and how the systems work.

These elements contributed to a greater understanding of spatial organisation and place-making while aspiring an architectural intervention to function as a community. This is applicable due to the fact that Lourierpark, the nearby neighbourhood where the site is situated is mainly Sotho culture. The idea is to incorporate cultural elements into the architectural intervention to eliminate possible alienation.



Figure 75: Illustrates fenced off community (Panos Pictures edited by author, 2023).



Figure 77: Illustrates hut construction (KMB architects edited by author, 2023).



Figure 76: Illustrates natural materials - reed screens (Central Data Core edited by author, 2023).



Figure 78: Illustrates colourful decorations (Ndebele edited by author, 2023).

6.2.6 Olfactory Installation -an olfactory archive by Jorge

The project celebrates smell and is being devoted to the reconstruction and preservation of historical places celebrating harness scents, essences and fragrances (Figure 79). Experiencing different scents, which can transport someone to another time and space is an interesting element to explore in the proposed intervention. It gives the user the opportunity to fully experience sensory elements.



Figure 79: Illustrates scent exhibition (CCA Architecture History Theory Experiments edited by author, 2023).

6.2.7 'lifecommunity' - artwork of Ernesto Neto

This is an installation art piece which activates all five senses of the viewer. The idea is that a sensory journey will take place when one moves around the piece. The experience stimulates the human sense which is closely linked to memory (Figure 80).

This element contributes to considering including a sensory journey, allowing the different smellscapes to form part of the site and the experience as a whole. to form part of the site and the experience as a whole.

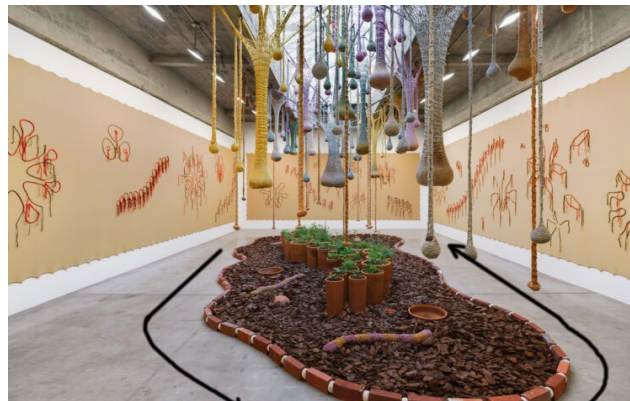


Figure 80: Illustrates installation art piece (Bradica edited by author, 2023).

6.3 DESIGN DEVELOPMENT



Figure 81: Illustrates device situated in hyacinths (author, 2023).



Figure 82: Hyacinths with remaining ink (author, 2023).

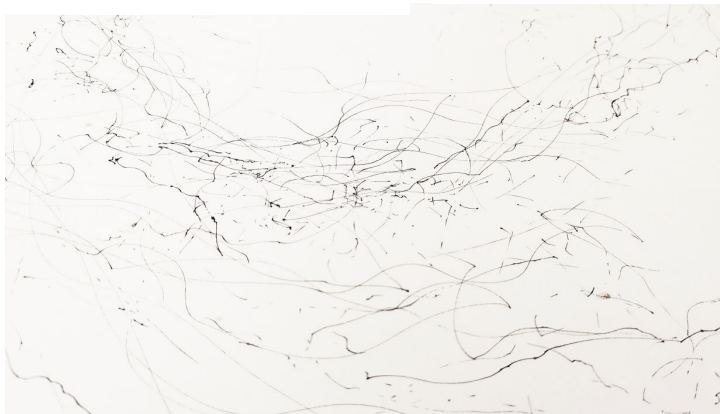


Figure 84: Illustrates documentation of wind conditions (author, 2023).



Figure 83: Illustrates documentation process (author, 2023).



Figure 85: Illustrates underneath documentaion of movement of plants (author, 2023).



Figure 86: Illustrates overlay of both documentations (author, 2023).

Figure 88



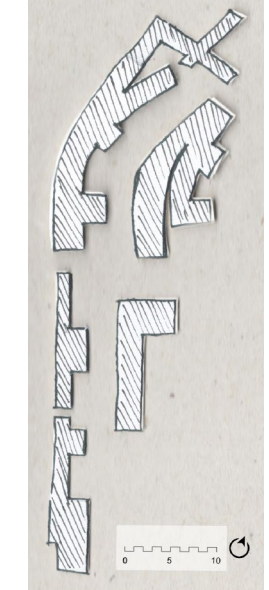
Figure 89



Figure 90



Figure 91



Figures 88-91: Exploration of possible form-giving (author, 2023).

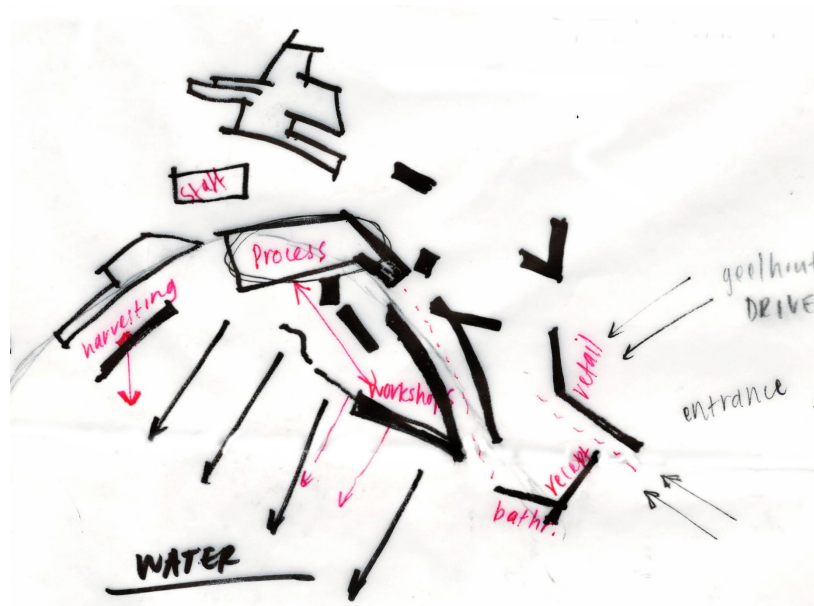


Figure 87: Illustrates exploration of possible form-giving and placement (author, 2023).

Figure 92

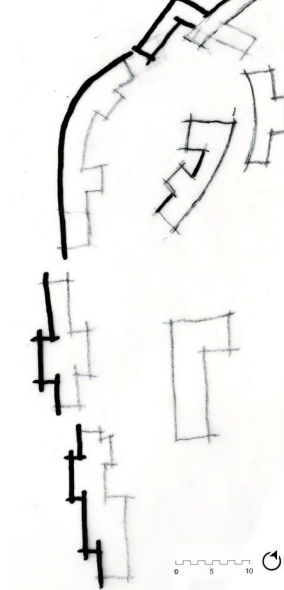


Figure 93

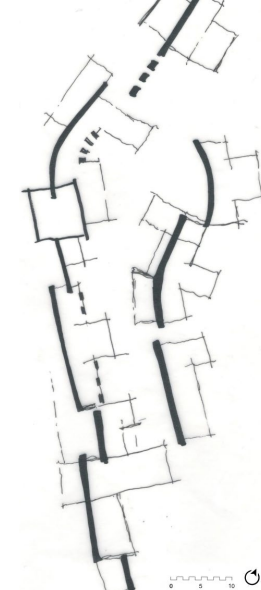
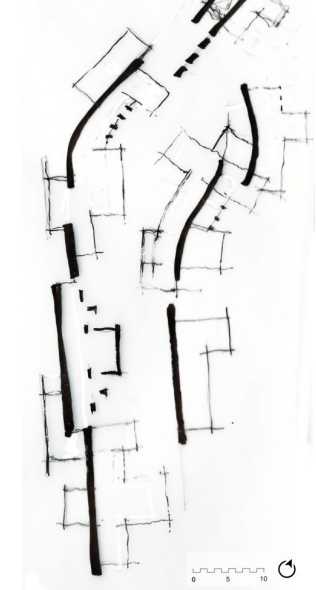


Figure 94



Figures 92-94: Exploration of possible placement by implementing concepts (author, 2023).

6.3.1 First iteration, the shapes gathered from the site data were simplified and altered to fit the accommodation list. Practical changes, like additional bathrooms, admin spaces and a service area, were made between this iteration and the next (Figure 95).

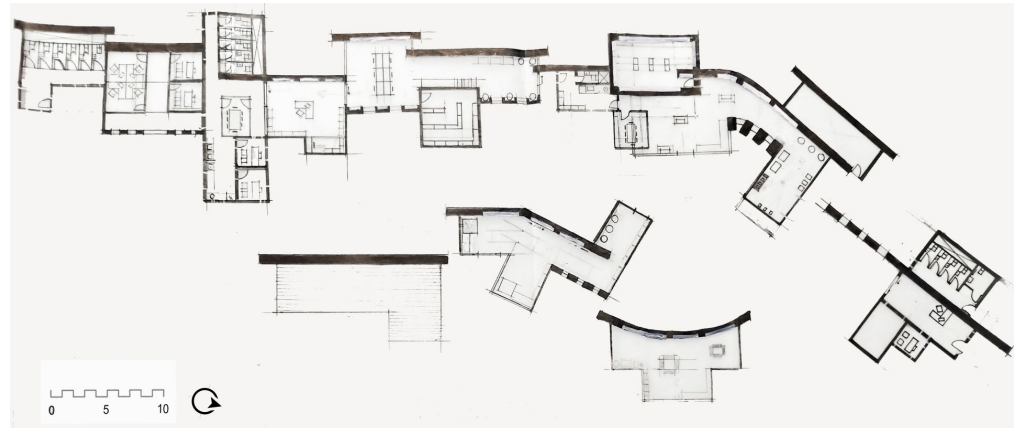


Figure 95: Illustrates first iteration (author, 2023).

6.3.2 In the second iteration, the orientation of the reception area changed from north to west-facing. Some elements were shifted and pulled apart which allowed the building to breathe. Smell walls were introduced where the user experienced different scents (Figure 96).

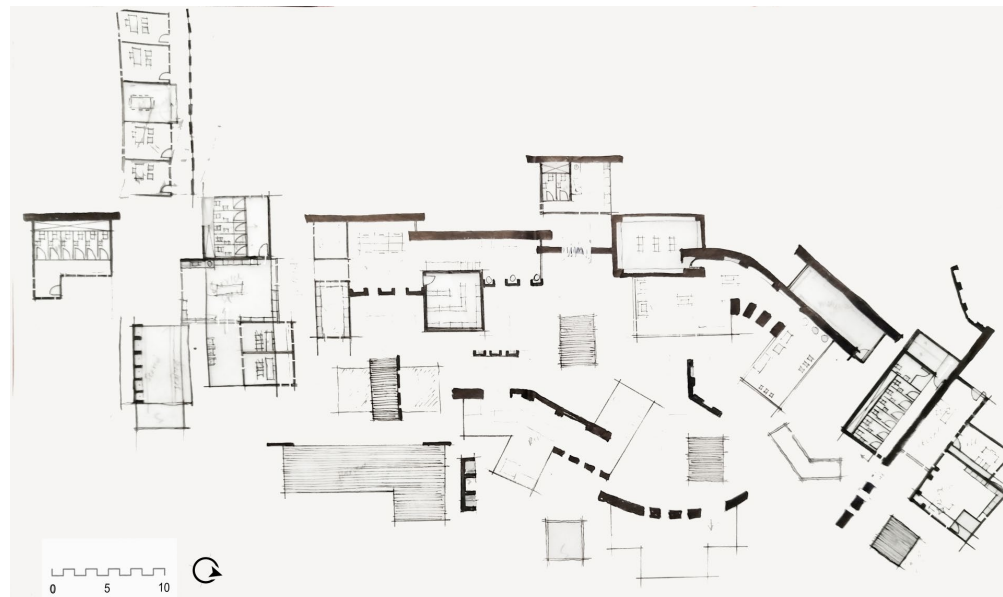


Figure 96: Illustrates second iteration (author, 2023).

6.3.3 In the third iteration, practical changes were made like orientation and organisation to ensure that maximum natural light will flood the spaces and the functionality of the whole process will be efficient. The smell walls evolved into chambers together with seating spaces. The whole idea behind this was that it acted as guidance, which led the user through the building and site (Figure 97).

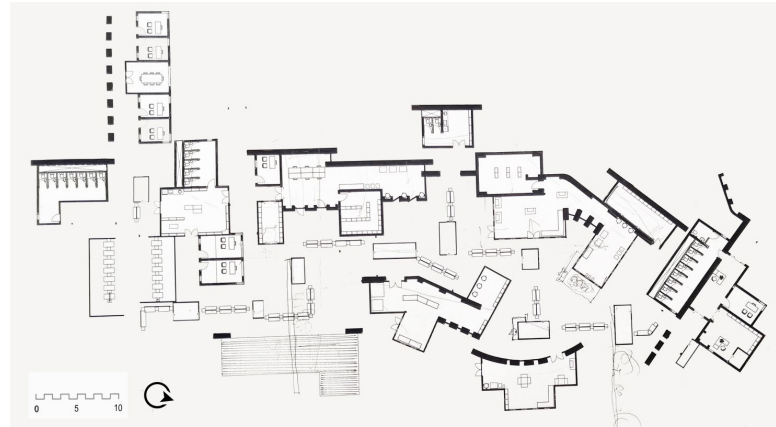


Figure 97: Illustrates third iteration (author, 2023).

6.3.4 Iteration four, the concepts, mentioned in section 3.2, assist in the fragmented characteristic of the intervention. Thus, the building is fragmented on site, this represents the reproduction method of the hyacinth. It also illustrates the harvesting process, where the plant is being pulled out of the water (Figure 98).

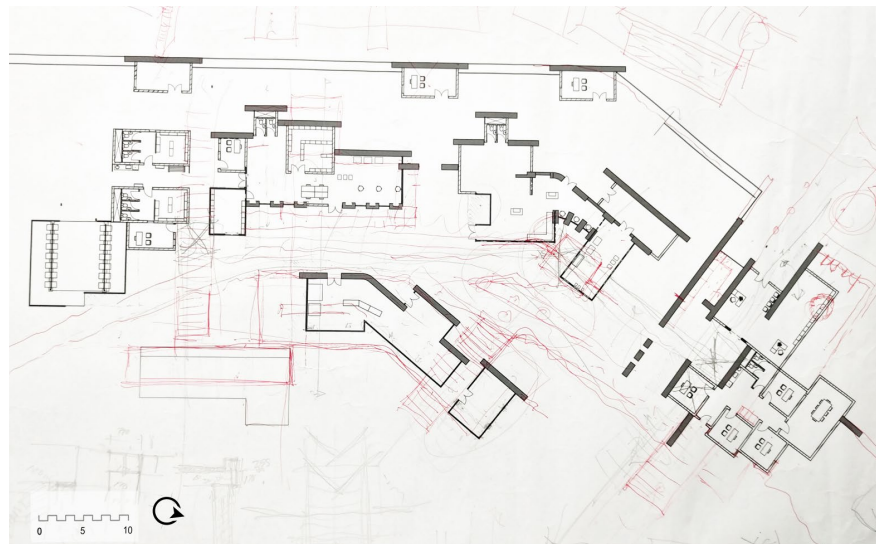


Figure 98: Illustrates iteration four (author, 2023).

6.3.5 Iteration five, the entrance wall was simplified, and the admin part of the building moved to the front part of the intervention. This allows easier access for all enquiries and deliveries. Two extra elements are added on the western side, eliminating confusion about the location of the entrance. Due to two different architectural languages, between the dermatological - workshop space and the rest of the building, on the eastern side. The building form was changed to create coherence between the different elements. The service areas were separated into male and female together with the ablutions, which were simplified and distributed into smaller parts throughout the site. (Figure 99).

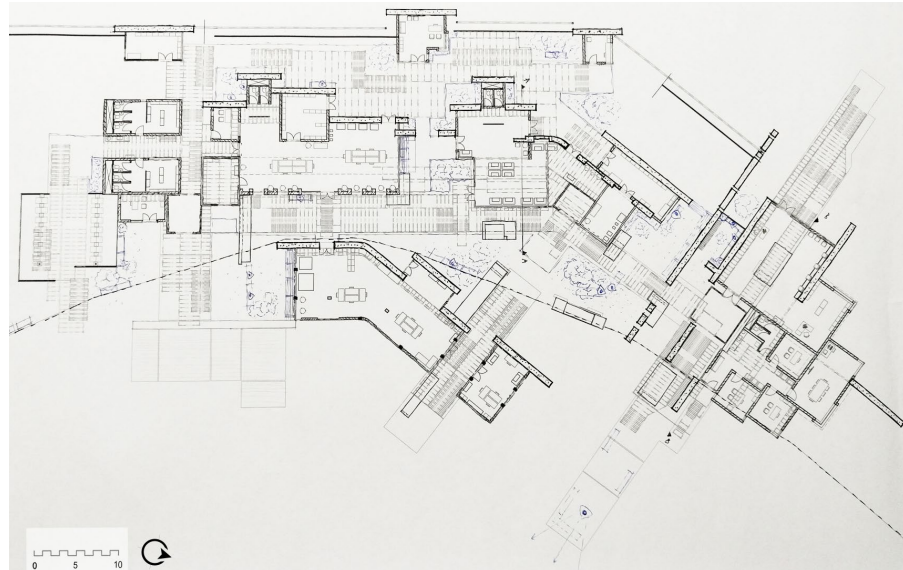


Figure 99: Illustrates iteration five (author, 2023).

6.3.6 In iteration six, the building appeared too fragmented and read as many different loose elements, rather than one building fragmented. An overhead structure was added, linking the different parts together and acting as orientation and guidance for the user which were previously lacking. To enhance the orientation, three tower elements were added. Located where the character of the building changes, at the entrance, the incense and production lab and the service and harvesting area. Refinement of building forms took place and a service walkway at the western side of the building was added. Market spaces were introduced, allowing informal aroma trading. Lastly, the smell chambers developed into smell pods. The pods are integrated to form part of the building and not just loose elements. Representing the perfume organ's scent allows the whole site to become an incense and aroma market and not just the building itself (Figure 100).

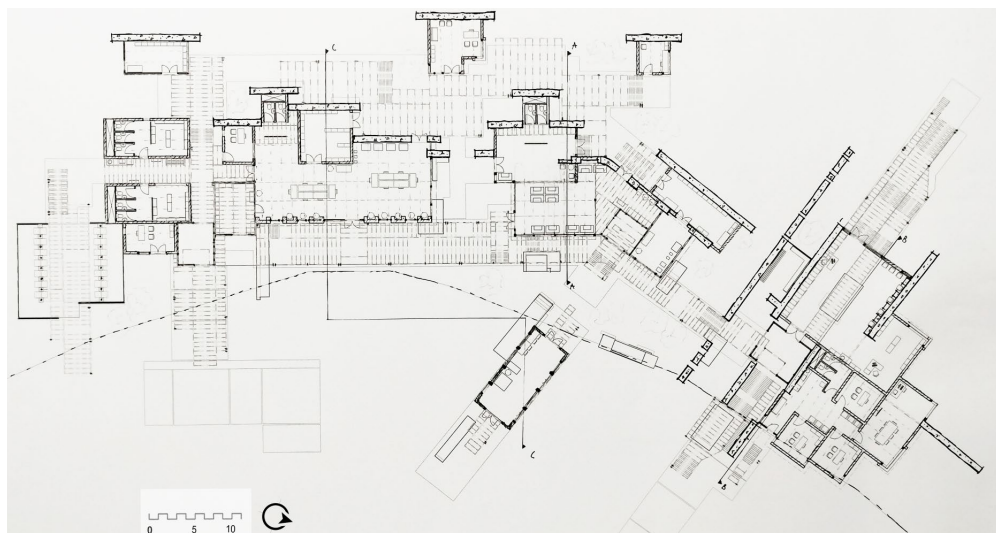


Figure 100: Illustrates iteration six (author, 2023).

6.3.7 Iteration seven, the overhead system is simplified, to prevent a cluttered feeling. The harsh boundary wall was removed due to the fact that it went against the whole idea of pulling the users of the community into the building together with the theoretical lenses previously mentioned in Chapter 4. The form-giving of the dermatological area was competing against the rest of the intervention; thus, it was simplified (Figure 101).

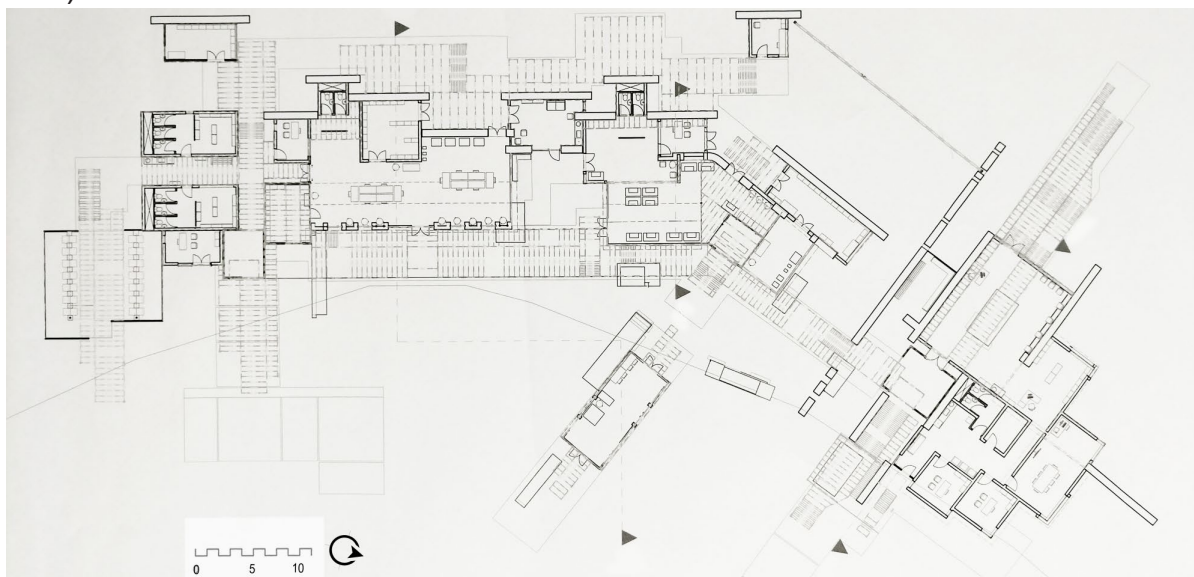


Figure 101: Illustrates iteration seven (author, 2023).

6.3.2 Sections explorations

The roofs are more refined, the storage and service spaces are lower than the others. Wooden slats are added where different roof heights are present, thus allowing for ventilation through the spaces. Double roof systems are added to lower the scale of the spaces and in some places to allow light into the building. Originally strip footings were used but it was switched out to raft foundations (Figures 102-104,129-130).

6.3.2.1 Section AA exploration

Figure 102

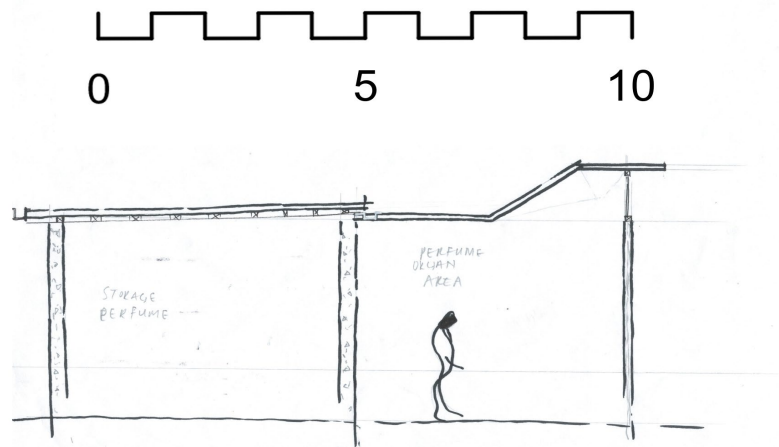


Figure 103

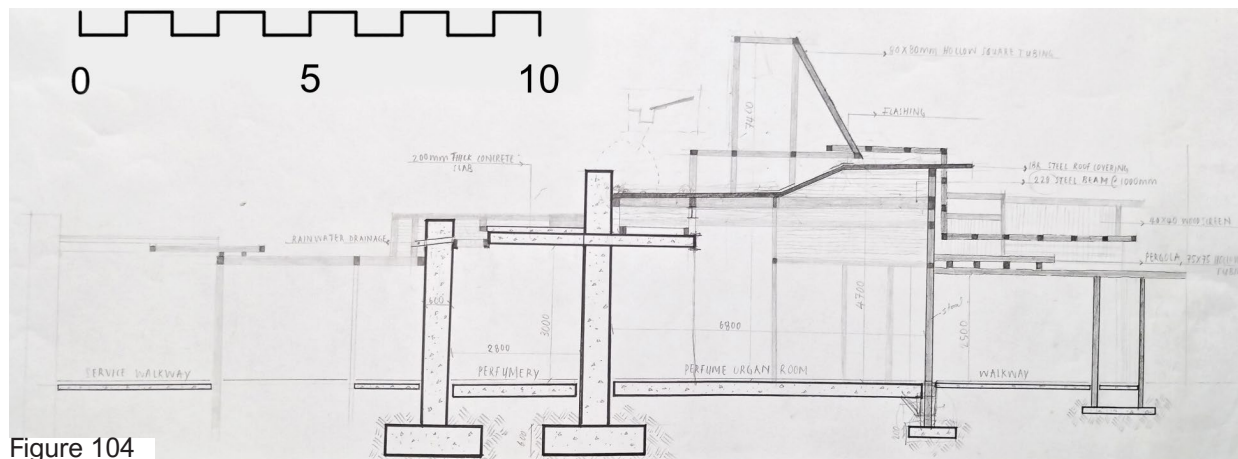
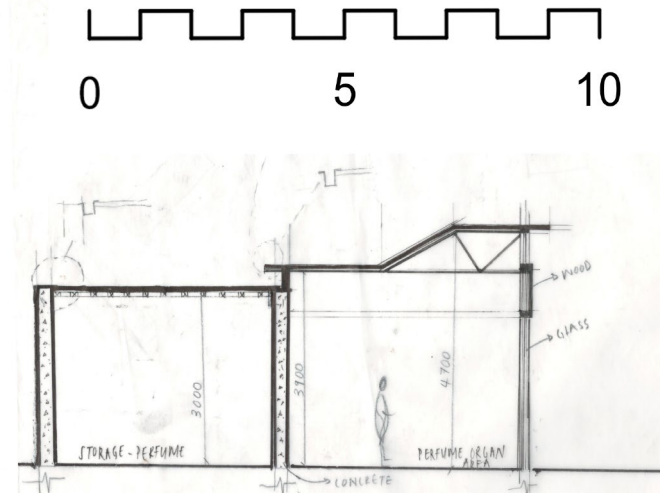


Figure 104

Figures 102 - 104: Illustrates the sectional development of section AA (author, 2023).

6.3.2.2 Section BB exploration

Figure 105

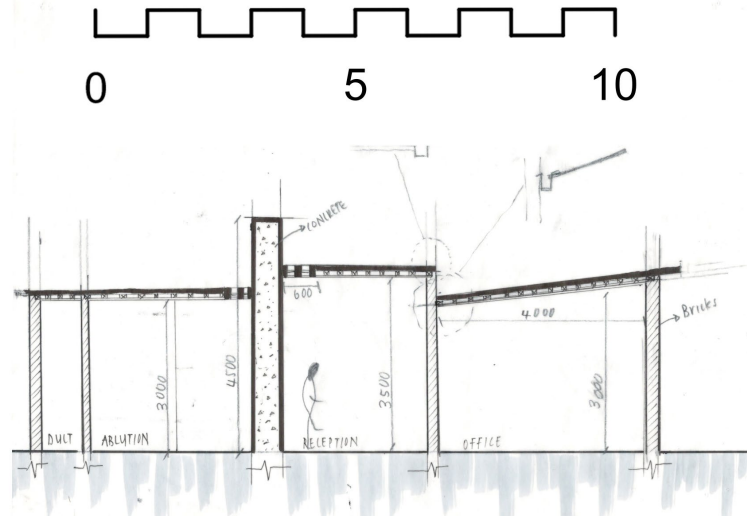


Figure 106

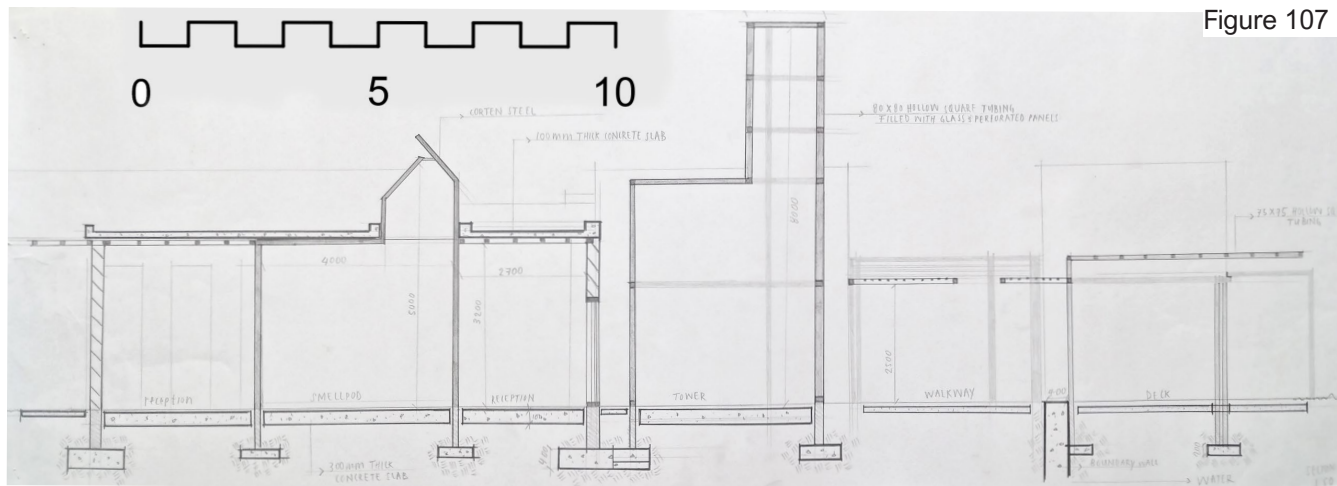
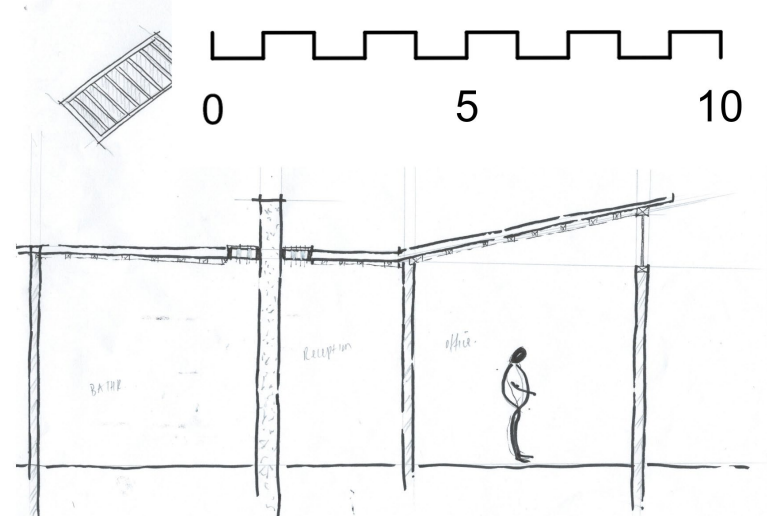


Figure 107

Figures 105 - 107: Illustrates the sectional development of section BB (author, 2023)

6.3.3 Elevations explorations

The necessary changes were made to be more applicable to the weather conditions, orientation and incense process. Wooden slats were added to soften the harsh light while solid building materials are used for the light-sensitive areas, like the incense storage area. Smell pod glass boxes were switched to corten steel, allowing the ageing. Concrete was switched out for softer materials like adobe bricks (Figures 108-116, 120-124, 131-135).

6.3.3.1 First elevation exploration

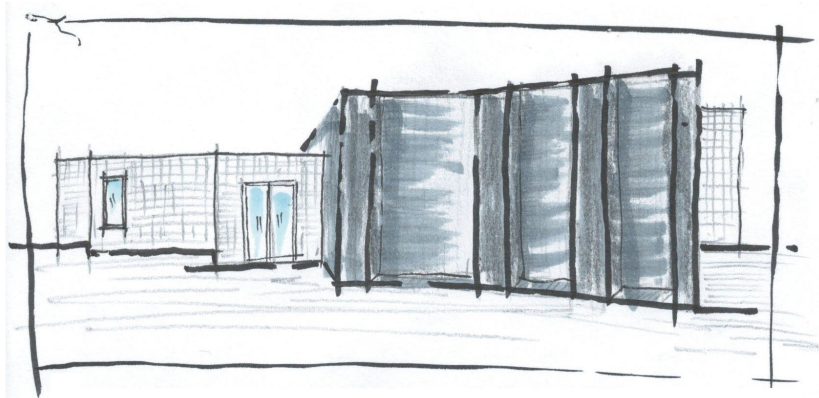


Figure 108: Illustrates the entrance (author, 2023).

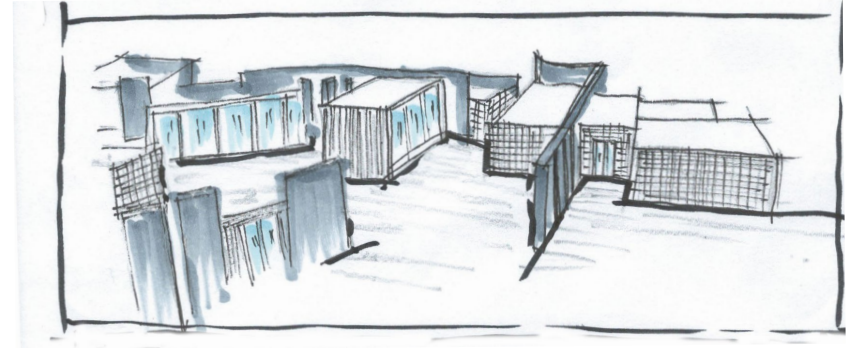


Figure 109: Illustrates the view from water - looking towards west (author, 2023).

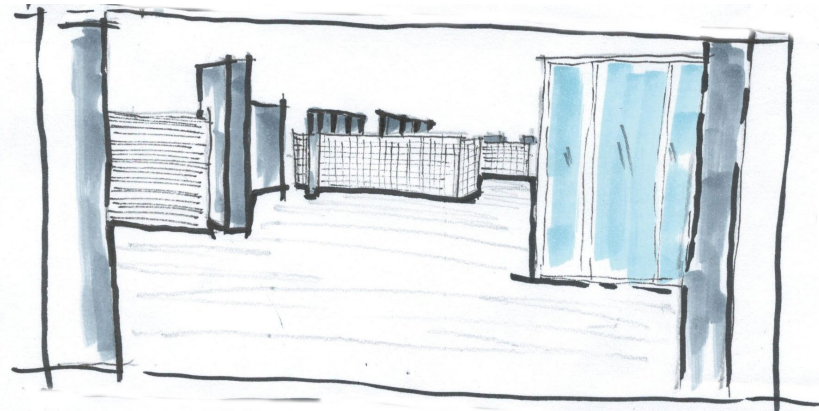


Figure 110: Illustrates the view from the entrance wall - looking towards south (author, 2023).

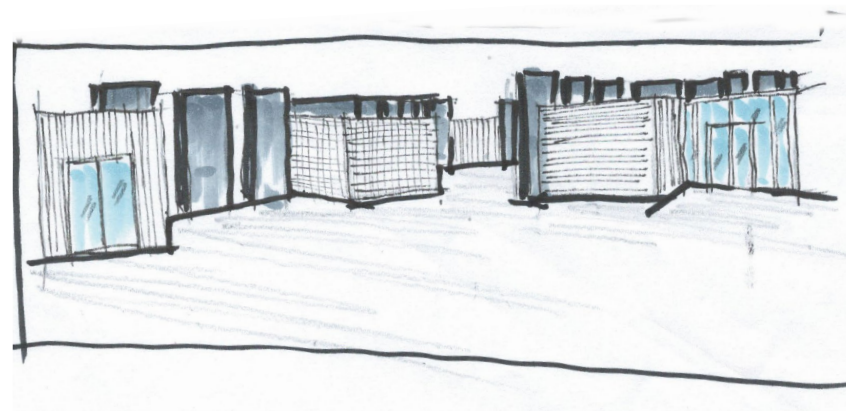


Figure 111: Illustrates the view of the process and dermatological spaces- looking towards north (author, 2023).

6.3.3.2 Second elevation exploration



Figure 112: Illustrates the entrance (author, 2023).



Figure 113: Illustrates bird's-eye view from the entrance wall - looking towards west (author, 2023).



Figure 114: Illustrates smell pod aesthetic- looking towards the processing lab (author, 2023).



Figure 115: Illustrates the view from the harvesting deck - looking towards west (author, 2023).



Figure 116: Illustrates the view from water - looking towards the dermatological space (author, 2023).

6.3.3.2.1 Physical model of exploration



Figure 117: Illustrates the bird's-eye view - looking towards south (author, 2023).



Figure 118: Illustrates the bird's-eye view - looking towards north (author, 2023).



Figure 119: Illustrates the composition of the building as a whole, the siteplan (author, 2023).

6.3.3.3 Third elevation exploration

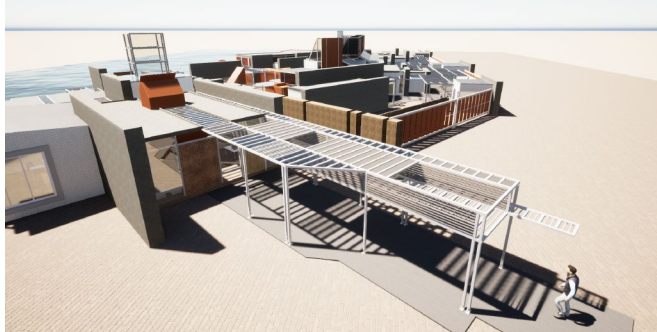


Figure 120: Illustrates the entrance (author, 2023).



Figure 121: Illustrates the view from the entrance wall - looking towards south (author, 2023).



Figure 122: Illustrates the view from roof level - looking towards south (author, 2023).



Figure 123: Illustrates the view from the harvesting deck - looking towards the south-west orientation tower (author, 2023).



Figure 124: Illustrates the view from water - looking towards the dermatological space (author, 2023).

6.3.3.3.1 Physical model of exploration



Figure 125: Illustrates the bird's-eye view from the water- looking towards west (author, 2023).

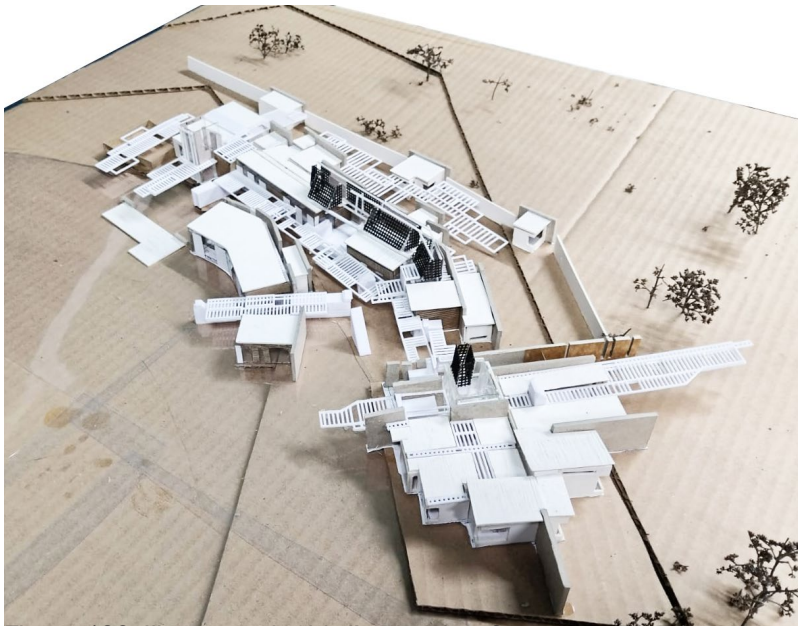


Figure 126: Illustrates the bird's-eye view from the entrance- looking towards south (author, 2023).



Figure 127: Illustrates the composition of the building as a whole, the siteplan (author, 2023).

The elevation explorations indicate the design development, like material changes, the incorporation of the smell pods and orientation elements. Further explorations took place regarding the practicality of the intervention together with weaving the building together with the overhead structures.



Figure 128: Final design composition - the siteplan (Google Earth edited by author, 2023).

6.4 Final proposal

In the final proposal, some refinement took place. For example, the entrance guidance wall shifted. Previously, it created confusion about where the entrance was located. The harsh boundary except at the delivery point was brought back due to security reasons. Vegetation was used for the rest of the western side; thus, a softer element was created. The middle office space on the western side was pulled between the incense and lab production space, eliminating the competition between hierarchies. This creates unity between the two buildings, incense and process lab, and decreasing the contamination possibility. Easier access to service space is also achieved.

As previously mentioned, the building is fragmented on the site, to imitate the reproduction method of the hyacinths but also illustrates the harvesting process where the plant is pulled out of the water. Basotho cultural elements are intertwined into the intervention, due to the Basotho culture of the nearby neighbourhood. Introducing these cultural elements will eliminate the possibility of an alienated aspect. Elements include reworking the traditional village where it's fenced off around the village, keeping the village safe and danger out. Transformation of this element took place, keeping the strong boundary elements – the strong wall elements – but opening up the intervention, drawing the users closer.

The overhead system together with the orientation points acts as guides, leading the user through the site and buildings. The overhead systems grid was inspired by the construction framework of the Sotho hut. The patterns on the outside of the huts influenced the use of transparent and solid elements placed throughout the overhead structure.

More Sotho culture-inspired elements include the use of more natural materials, like wood and reed screens. The communal area traditionally in a village was reincorporated into the relaxing service area.

The main idea behind the choice of building materials is to create an illusion that the building and the landscape are one, creating a harmony between the landscape and the intervention. The building will read as sensitive towards the landscape and will prevent alienation from taking place. The material will age and develop over time together with the landscape, building and site.

Smell pods are placed throughout the site. The idea is that the whole site embodies a perfume organ and becomes an aroma and incense market and not just the building itself. Every pod has a different scent and is placed in the same order as a perfume organ:

- | | | | | |
|----------|-------------|-----------|-------------|-------------|
| 1.Green | 2. Fruity | 3. Floral | 4. Gourmand | 5. Woody |
| 6. Spicy | 7. Oriental | 8. Musky | 9. Citrus | 10. Aquatic |

This will allow the visitor to be part of the perfume organ and the scent-making process. Neutralising space is placed in between the pods – which helps to cleanse the olfactory system before entering the next pod.

The material pallet is illustrated in the section. Natural materials like wood, reed screens and adobe bricks showcase the relationship between the intervention and the landscape. A sensitive and aesthetically softer morphology is given to a preconceived aesthetic of an industrial building. The rest of the materials like bricks, steel, glass and Klip-lok roof sheeting are well-known materials. It will help to prevent the possibility of alienation. Natural light plays an important role in the contribution of experience. Thus, the glass panels, light strips and clear m-lok panels will allow natural light into the building to achieve the desired experience and atmosphere.

FLOORPLAN

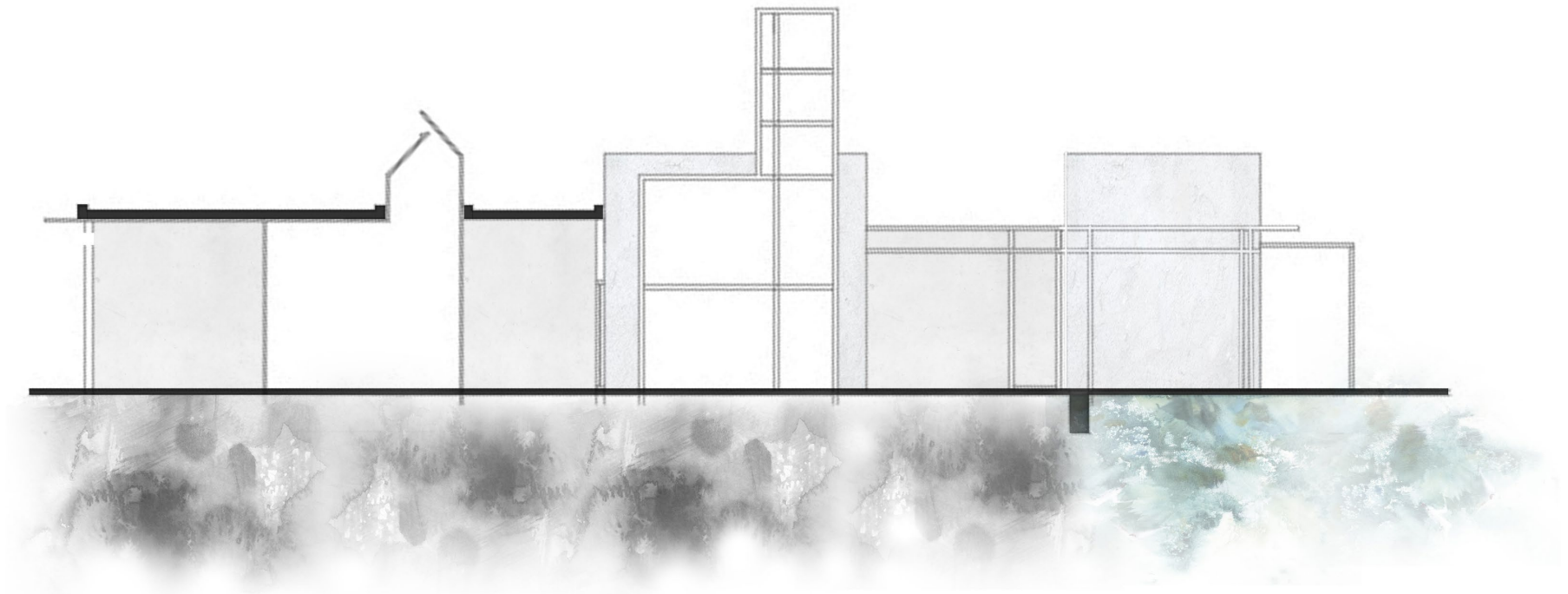


Figure 129: Section AA (author, 2023).

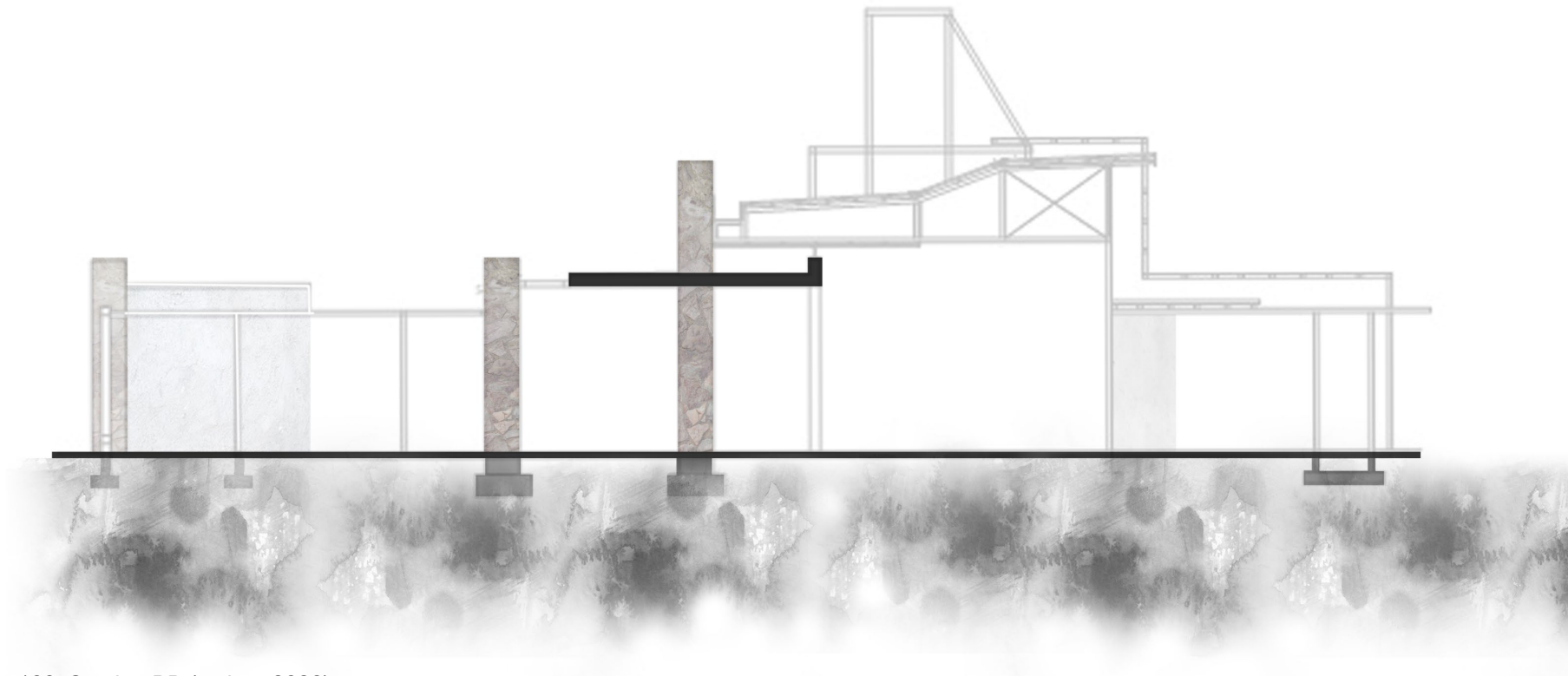


Figure 130: Section BB (author, 2023).



Figure 131: The entrance - looking towards the water (Google Earth edited by author, 2023).



Figure 133: View from the harvesting deck - looking towards the south-west orientation tower (Google Earth edited by author, 2023).



Figure 132: View from the entrance wall - looking towards south (author, 2023).



Figure 134: View from water - looking towards the dermatological space (Google Earth edited by author, 2023).

Figure 135: View from roof level - looking towards south (author, 2023).



FINAL PHYSICAL MODEL:



Figure 136: Illustrates the bird's-eye view from north- looking towards south (author, 2023).



Figure 137: Illustrates the aerial view(author, 2023).



Figure 138: Illustrates the bird's-eye view from south- looking towards north (author, 2023).

6.5 CONCLUSION

In conclusion, the different iterations enable the best-suited sensitive intervention which accommodates all the necessary needs to ensure that the intervention will function properly.

During chapter 7 the technical aspects will be discussed.

07

CHAPTER 7: QUALITY CONTROL

The following section investigates the construction resolution of the proposed architectural intervention. This investigation consists of specific technical and practical aspects relevant to the project. Aspects such as the structural touchstone, structural precedents, and structural system including the roof, top, and substructure with material choices and services will be discussed.

7.1 STRUCTURAL TOUCHSTONE

The aim of the structural touchstone was to illustrate the relationship between the building on land [solid element] and the pause spaces on the water [transparent] (Figure 139).

The original idea was to create an illusion of a moveable floor; however, for practical reasons, it is more applicable to create the illusion of a floating floor or building. The pause spaces and decks will float above the water. This illusion is achieved by first draining the water, which makes the construction work possible. After the footings are cast, the water mass is allowed to return. This will allow the water to reach the building, which will have the effect of a floating building. In the same manner as the Portage Bay Float Home by Studio DIAA in Seattle (Figure 140).

A screen system comprising Corten steel panels is located on the western side. The moveable panels will evolve and age with the building as a unit (Figures 141 -142).



Figure 139: Construction touchstone, relationship between solid[land] and less solid [water] (author,2023).



Figure 140: The Portage Bay Float Home (Scott edited by author,2023).

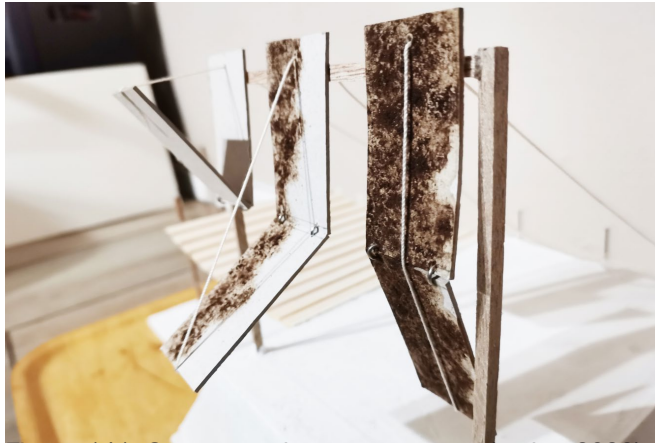


Figure 141: Corten steel screen systems (author,2023).

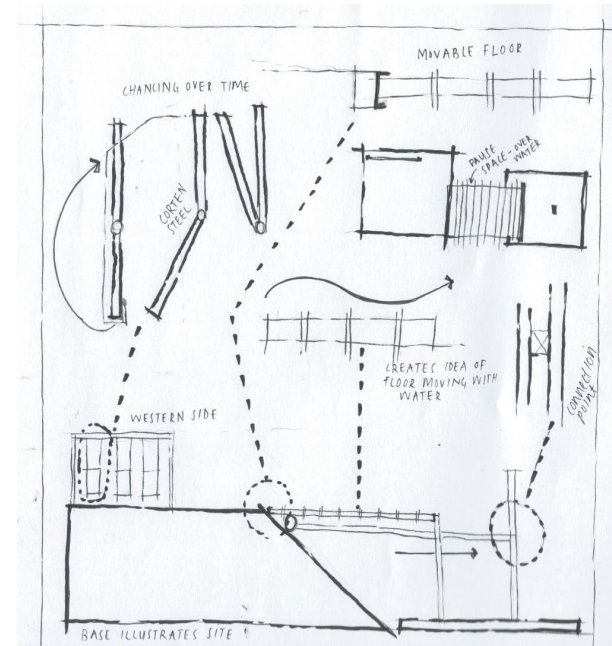


Figure 142: Illustration of the idea and how the system works (author,2023).

7.2 PRECEDENTS

Three structural analysis studies are investigated in this section. The applicable structural elements are discussed along with the application thereof in the architectural intervention.

7.2.1 Terraza RSC by Antumbra studio in Mexico (ArchDaily, 2022: online)

Investigated elements:

- The relationship between heavy [stone] and lighter [steel] materials. This gives a solidness and transparency characteristic to the building (Figures 143-145).
- The double roof element, placing the roof structure inside the steel frame (Figure 146).

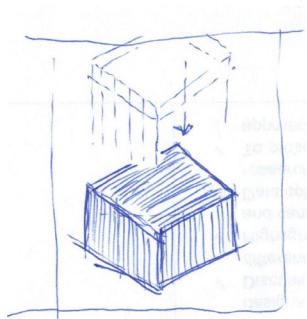


Figure 143: Sketch illustrating the relationship between the steel frame and solid elements (author,2023).



Figures 144-145: Illustrates the different uses of material (Anaya edited by author,2023).

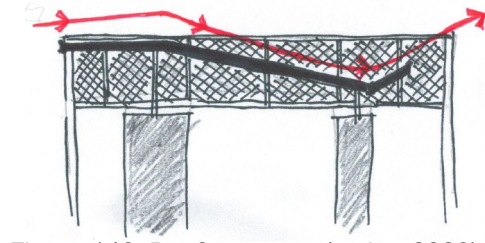


Figure 146: Roof structure (author,2023).

The investigated elements listed, inspired the use of heavy and light materials in the design. More specifically the use of various materials, such as thick adobe brick walls and steel frameworks with glass and wood panels. The double roof element contributed to the use of a double roof system.

7.2.2 Barcelona Market by MIAS Architects in Barcelona (ArchDaily, 2011: online).

Investigated elements:

- Emphasising the entrance through the use of an extended roof which draws the user into the space (Figure 147).
- The screen system on the facades of the building (Figure 148)
- The connection detail between the paved surface and the steel columns' footing of the roof (Figure 149).



Figure 147: Roof structure, emphasising the entrance (Goula edited by author,2023).



Figure 148: Screen system (Goula edited by author,2023).

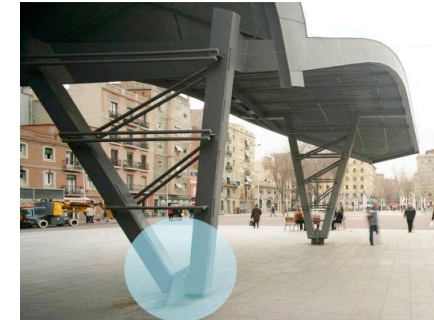


Figure 149: Footing detail (Goula edited by author,2023).

Figures 147-149 had an influence on the overhead steel structure design. Emphasising the entrances of the spaces through different heights. The connection between the steel columns and the walkway surface.

7.2.3 Burkina Institute of Technology by Francis Kere in Burkina Faso (Kéré Architecture, n.d.:online).

Investigated elements:

- The roof structure which allows light and air ventilation into the buildings (Figure 150).
- Semi-private spaces are created by using reed screens. Limiting the natural elements but allowing light to enter (Figure 151). Air ventilation systems, for good air circulation, especially during the warmer days and months (Figure 152).

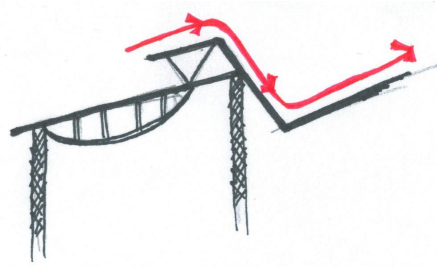


Figure 150: Roof structure (author,2023).

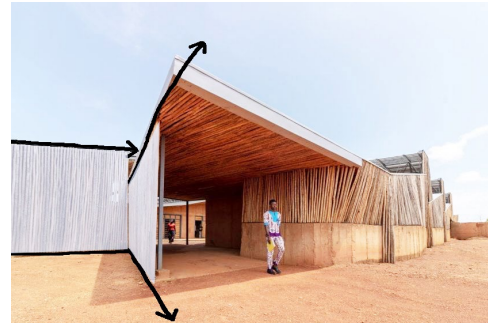


Figure 151: Reed screens (Kéré Architecture edited by author,2023).



Figure 152: Reed screens (Kéré Architecture edited by author,2023).

The investigated elements listed, inspired the form-giving of the two main buildings' roofs. These buildings are the lab process and incense production buildings. The use of reed screens to create semi-private spaces and the air ventilation elements were inspired by the example.

7.3 STRUCTURAL SYSTEMS

This section discusses the sub, top and roof structures, intertwined with the material uses separately.

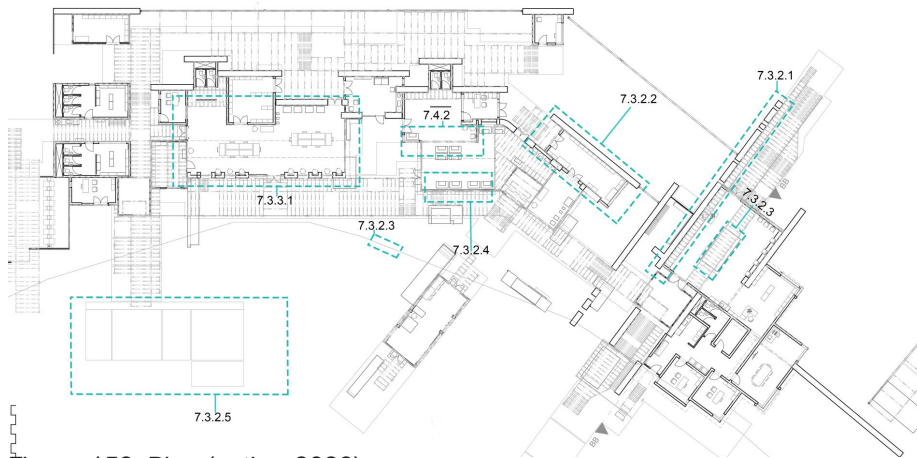


Figure 153: Plan (author,2023).

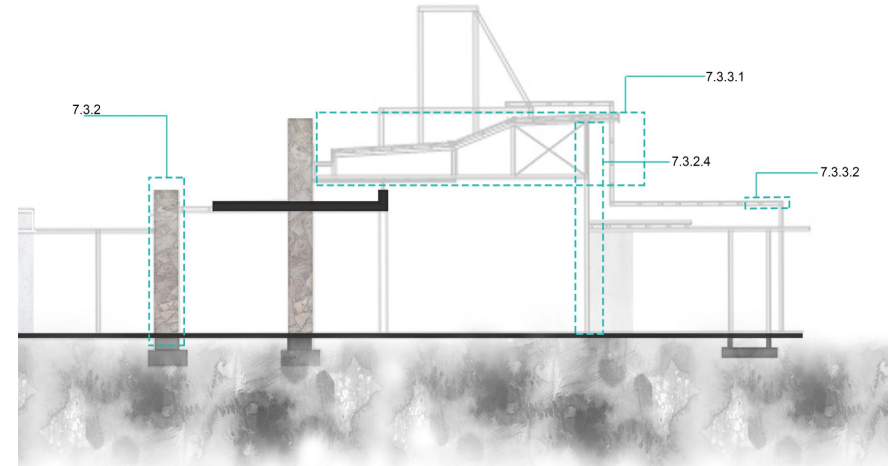


Figure 154: Section BB (author,2023).

7.3.1 Substructure

Due to the clay characteristics of the soil present at the site, a 500 mm compacted gravel platform above the waterline is created, and strip foundations are placed into the platform. For the construction works to take place, draining the water from the area is a necessity. A thick retaining wall will prevent the water from reaching floor level. After the foundations are cast, the water is allowed back (Figure 155). This will enable the water to reach the edge of the building and decks, creating the desired floating illusion.

To ensure that the concrete elements are water resistant, a low water-to-cement ratio, high strength and proper cured elements are required. A cement waterproofing compound, more specifically, *Cemcretes' water-repellent cement additive* will be added to the concrete slabs and footings concrete mixture before casting.

The wall and floor elements will be cast as separate elements. *Jointex* will be placed between the different elements. It will act as an expansion joint; it will ensure that movement can take place and cracks don't appear (Figure 156).

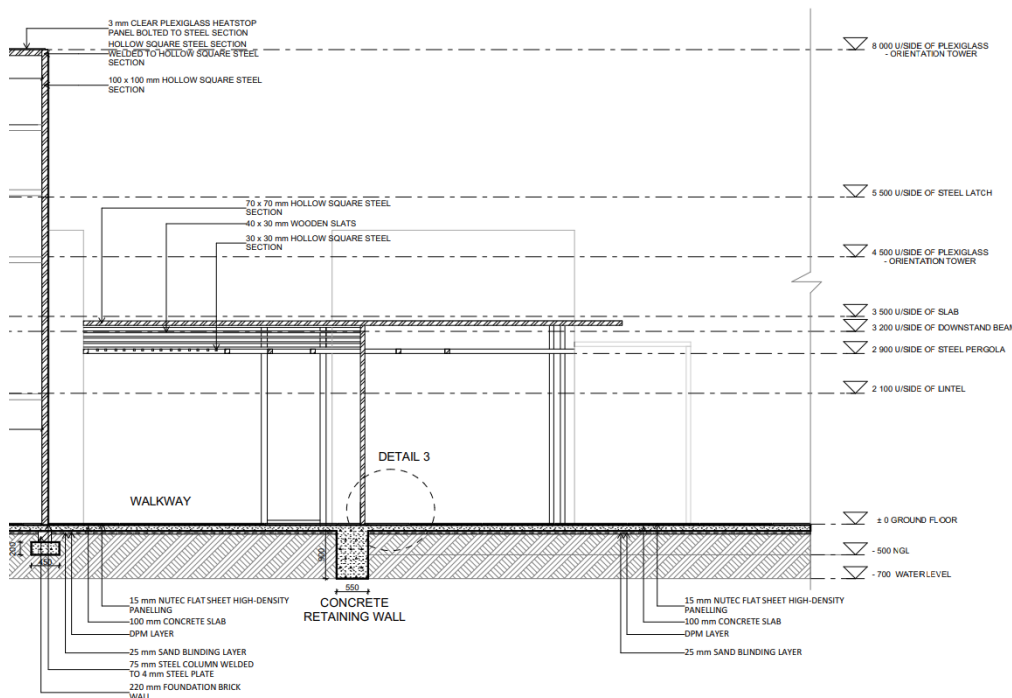


Figure 155: Foundation of the building (author,2023).

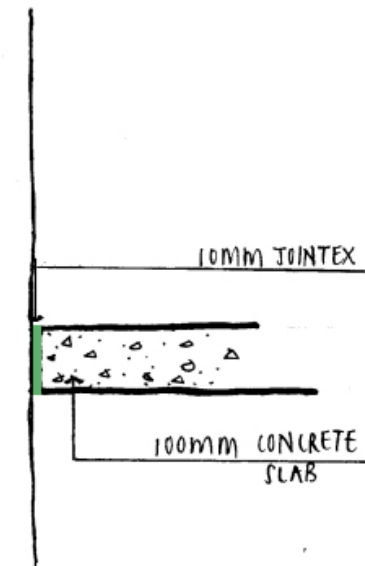


Figure 156: Expansion joint illustrated (author,2023).

7.3.2 Top structure

A mixture of different materials is used in the intervention. These materials and the construction thereof will be discussed in this section.

7.3.2.1 Heavy materials are balanced with lighter materials like steel, glass, reed- and wood screens. 350 x 225 x 100 mm adobe bricks, the project's heavy element, are used to construct 600 mm thick cavity walls. Hyacinth fibres with 5 to 10% cement are added to the mixture before casting. This will ensure a sturdy and stable structure. The first course consists of fully stabilized bricks with 15 mm cement mortar. For the rest of the bricks, 15 mm mud mortar is used together with brickforce every fourth course. A 100 mm reinforced concrete coping will be cast on top of the wall, this will protect the adobe bricks against weather elements like rain. Storey poles and mason lines are used to keep the wall level, straight and true (Figure 157).

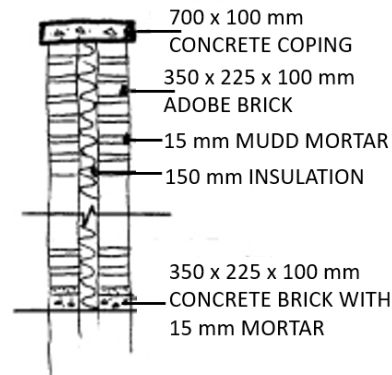


Figure 157: Adobe brick wall construction (author,2023).

7.3.2.2 The light-sensitive areas consist of Corobriks' silvergrey satin FBX bricks. These areas are the administrative, dermatological, incense production and storage areas (Figure 158).



Figure 158: Slivergrey satin FBX bricks (Corobrik, n.d.).

7.3.2.3 The smell pods consist of 75 x 4 mm corten steel fins welded to 4 mm thick corten steel panels. The pods are situated throughout the site. These pods consist of a 8mm steel cable mechanism which opens a 3mm corten steel latch. The latch allows the scent to be released from the pod. Allowing the whole site to form part of the aroma and incense market (Figure 159).

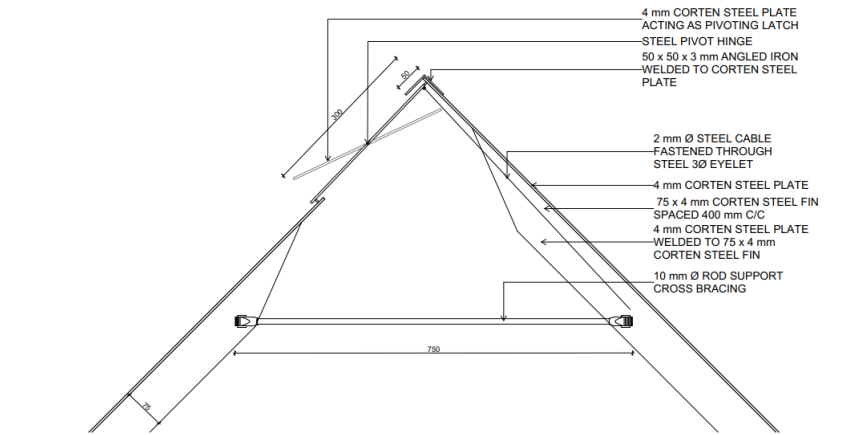


Figure 159: Adobe brick wall construction (author,2023).

7.3.2.4 To ensure easy accessibility to all machinery, when replacement or services are required. A 100 x 100 mm hollow square steel section frame with 3210 x 2250 x 10 mm clear float glass panels open up. The glass panels are alternated with 40 x 30 mm wood slat screens. These screens control natural light, temperature and airflow (Figure 160).

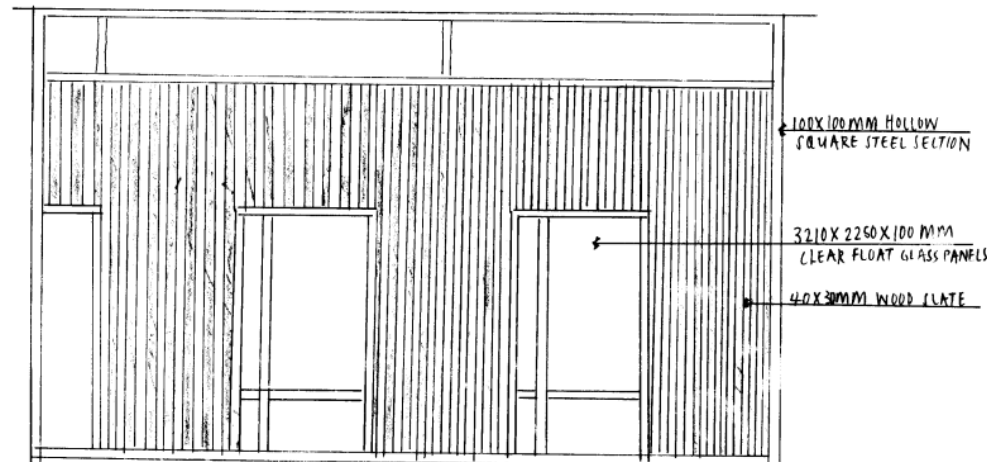


Figure 160: Illustrates a façade with glass and wood slat screens (author,2023).

7.3.2.5 The harvesting deck consist of a 100 x 100 mm hollow square steel section grid structure @ 600mm c/c (Figure 161), allowing the 15mm *Nutec flat sheet high-density panneling* the be bolted down. The grid structure is welded to a 100 x 100 mm steel section framework. This framework consists of 880 x 630 mm plastic barrels, allowing the platform to float on the water (Figures 162- 163). The deck is divided into smaller pieces for easier accessibility. Furthermore, it is more manageable and efficient. 60 x 40 x 3 mm and 50 x 25 x 3 mm hollow rectangular steel sections are welded to the grids' end plates. Allowing the platforms to attach and detach. The platforms slide into each other and to the main anchor wall. A 20 Ø steel rod will secure the platforms to each other (Figures 164).

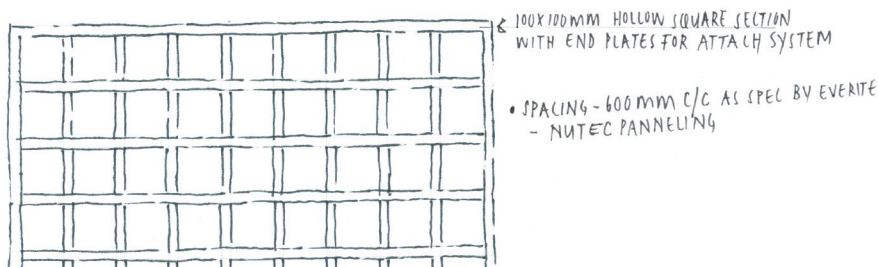


Figure 161: Grid structure (author,2023).

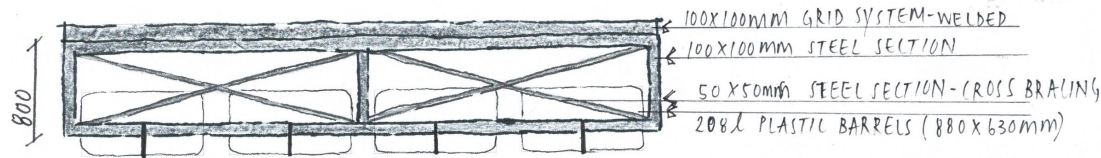


Figure 162: Steel section framework with plastic barrels (author,2023).

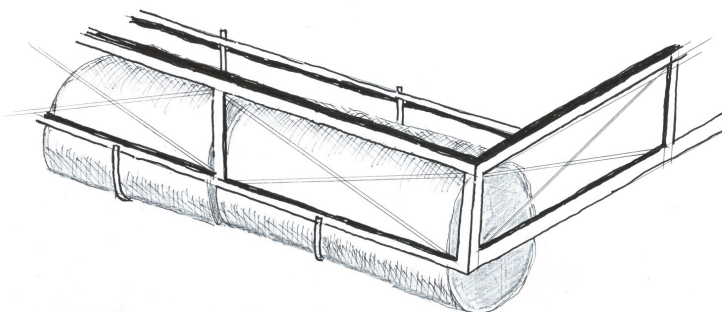


Figure 163: Steel section framework with plastic barrels (author,2023).

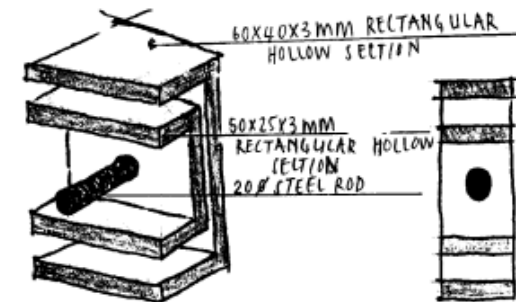
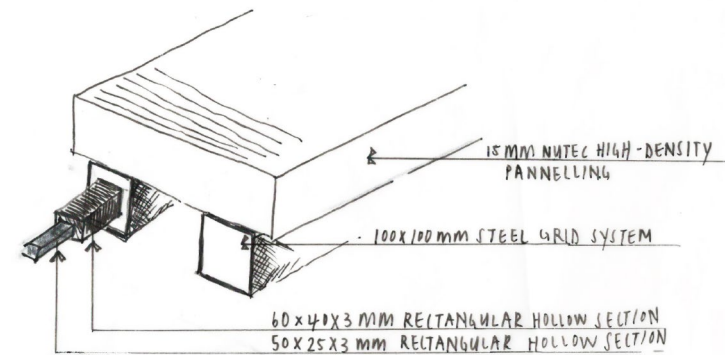


Figure 164: Sliding mechanism of platforms (author,2023).

7.3.3 ROOF STRUCTURE

Different roof types are implemented into the design. *Klip-lok 700 hi-strength* roof at a 1-degree angle, concrete roofs with a 25mm screed, prominent roofs and 75x75 hollow square steel section pergolas (Figure 165).

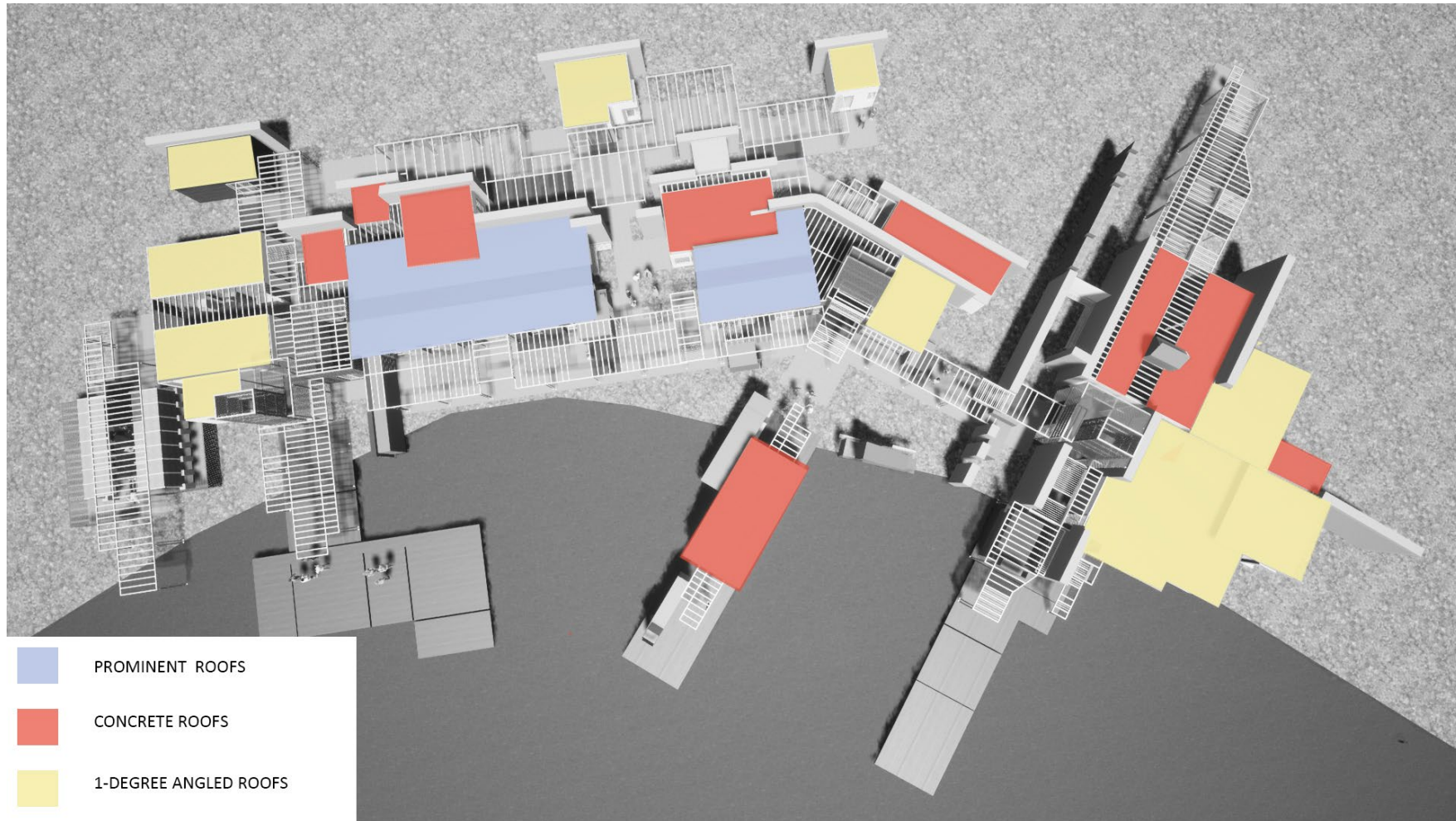


Figure 165: Illustration of different types of roofs (author,2023).

7.3.3.1 The prominent roofs are located at the two main buildings, the incense and the processing lab. The roof structure is supported by a 200 x 100 mm hollow rectangular steel section truss. A 300 x 200mm IPE steel beam supports the truss (Figure 166).

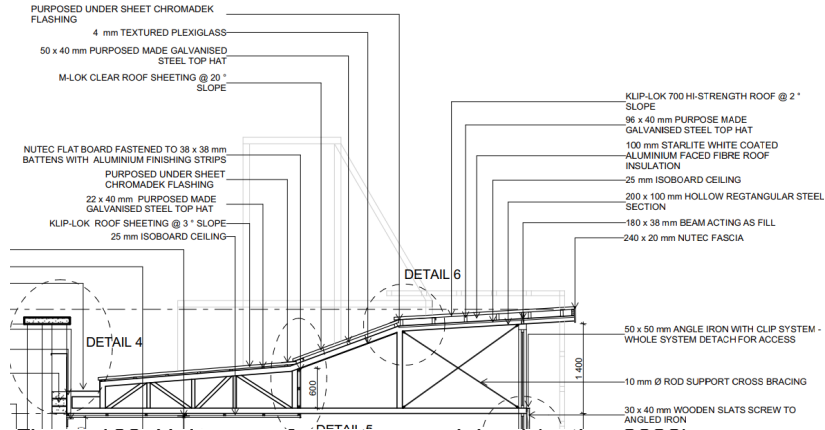


Figure 166: Unique roof structure explained (author,2023).

7.3.3.2 The transparent and solid coverings rest on a 3 mm flat iron which is welded to the 75 x 75 mm hollow square steel section pergolas (Figures 167-168).



Figure 167: Render illustrates steel pergola (author,2023).

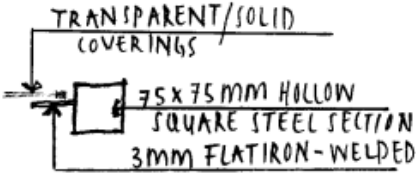


Figure 168: Steel pergola detail (author,2023).

7.4 SERVICES

7.4.1 Solar panels are added to the site. This ensures that the production process can continue without any disruptions when the municipal power fails.

7.4.2 Ventilation is an important aspect when it comes to the extraction of oils and the production of incense. Height differences between certain roofs, especially those located at the production areas are present. A 200 x 100 mm hollow rectangular steel section framework with an infill of 40 x 30 mm wooden slats and a 3 mm glass panel. The glass panel slides, keeping the unwanted elements outside when necessary. The whole element acts as a ventilation system (Figures 169-170).



Figure 169: Ventilation structure (author,2023).

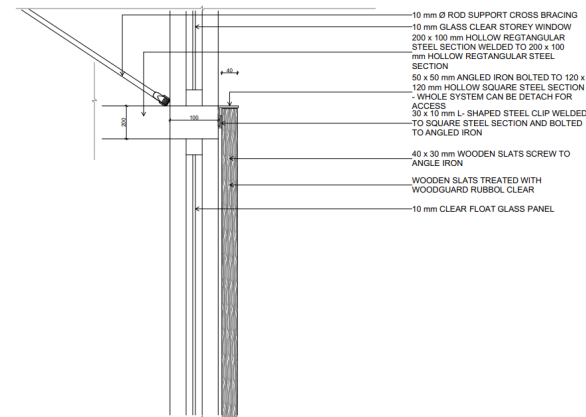


Figure 170: Ventilation structure detail (author,2023).

7.4.3 All the building's drainage and sewage are connected to the present municipal line.

The document as a whole will be concluded in the next chapter, Chapter 8.



08

CHAPTER 8: AROMATIC EXPERIENCE

The design attempted, with support of the theory discussed in Chapter 4, to answer the main question: How can we reactivate the Rooidam through an aroma and incense market conceptualised through the metamorphosis of the hyacinth plant?

The architectural invention of the incense and aroma market ignited a change. By transforming the beast [the hyacinth] into a beauty [incense] the site reestablishes an identity, the identity of being an uncanny and nonplace to a special, homely place. The boundary shifted and roaming the edge disappeared. The intervention forms part of the landscape, by implementing natural material, which allows the building to change together with nature over time. The sensitivity of the material and placement of the building removed any alienation aspects.

Sensory experiences are activated and the whole site acts as an intertwined system, a sensory experience journey. It will become a living experience.

Placing the Hyacinth as the experiential driver, allowed the intervention to answer the main research question. In the end, Rooidam was reactivated by an aroma and incense market conceptualised through the metamorphosis of the hyacinth plant.

A personal reflection will be discussed during the next chapter.



09

CHAPTER 9: PERFUMER'S COGITATION

The following section of the document is a reflection of the project written from a personal point of view, as an individual reflection of the design process.

Due to an agricultural background, it is extremely important to utilise every possible part of nature. Thus, when I saw this inactivated site, I got the desire to create a dynamic movement which will potentially reactivate the site.

Stepping into unknown territory, not only through the production of incense but also through the community – more specifically the Basotho culture and how to design appropriately for the community and their needs without an alienation aspect – was a major motivating factor.

Throughout the project, many decisions were made, and I believe that with every mistake I have made during the development stages, an opportunity to design something better revealed itself.

However, even through the challenges and difficulties, I enjoyed this project immensely. It allowed me to discover new ways of designing and pushed me to new limits. It also highlighted the importance of sensitive design and slowing down, creating a place of care intertwined with a sensory experience journey. I believe that in the end the research question was successfully answered and that the site was reactivated by placing the hyacinth as the experiential driver.

Chapter 10 consists of all the work cited for this project.

10

CHAPTER 10: PERFUMER'S CREDITS

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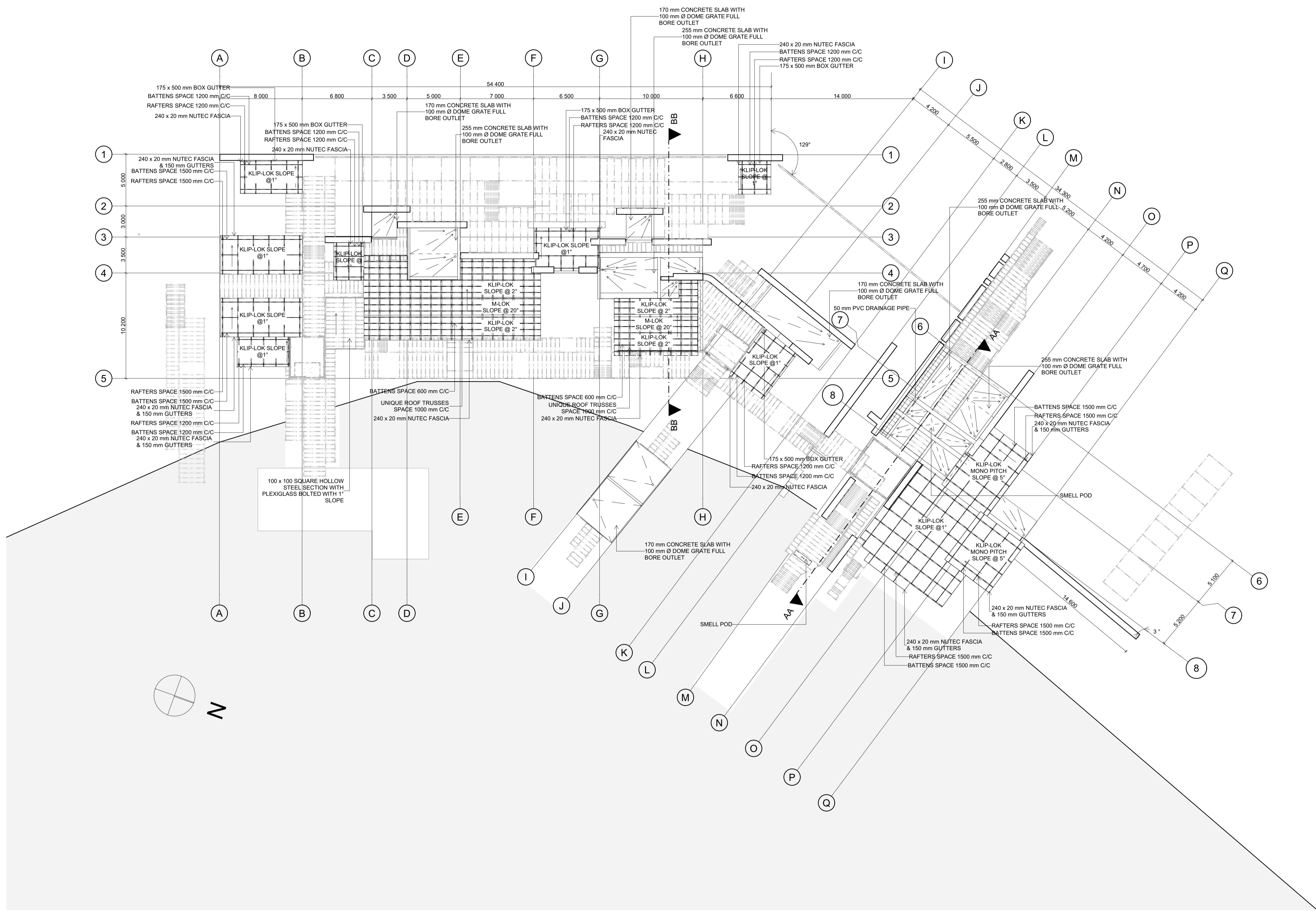
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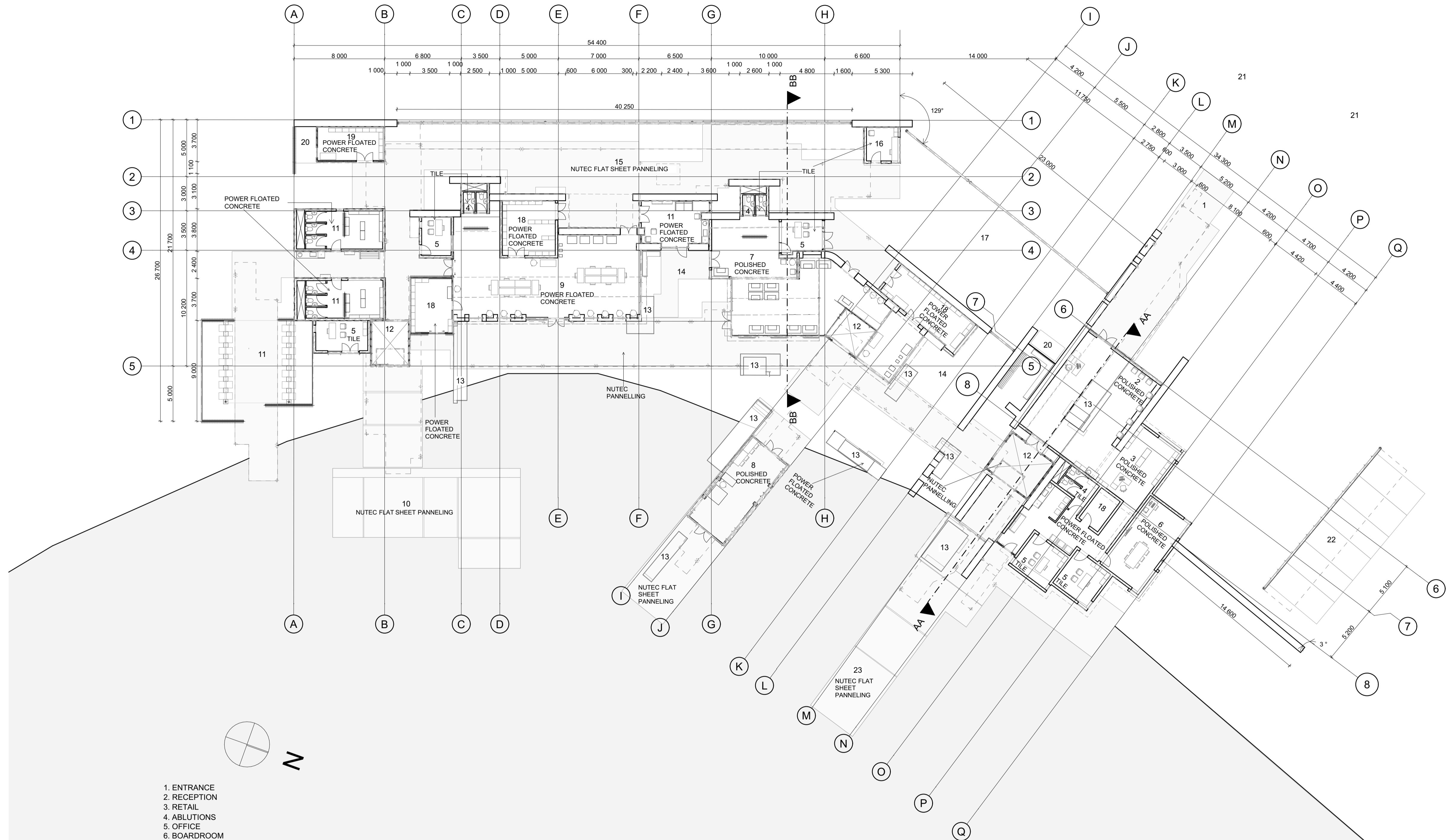
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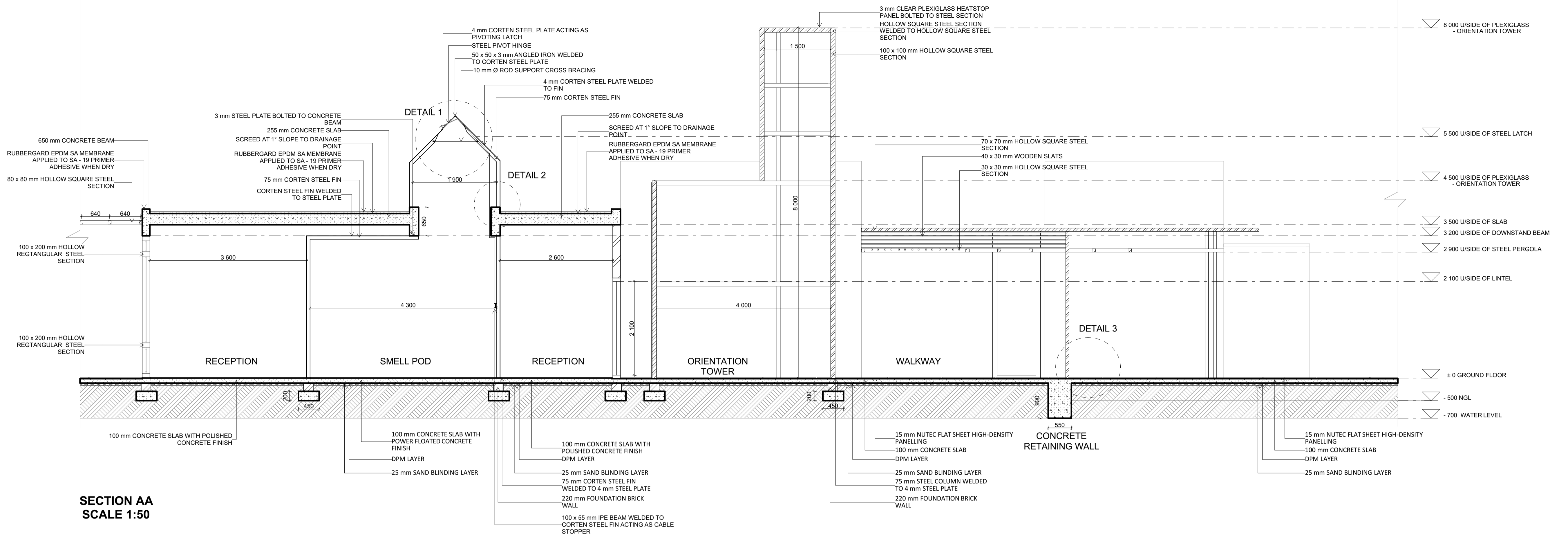


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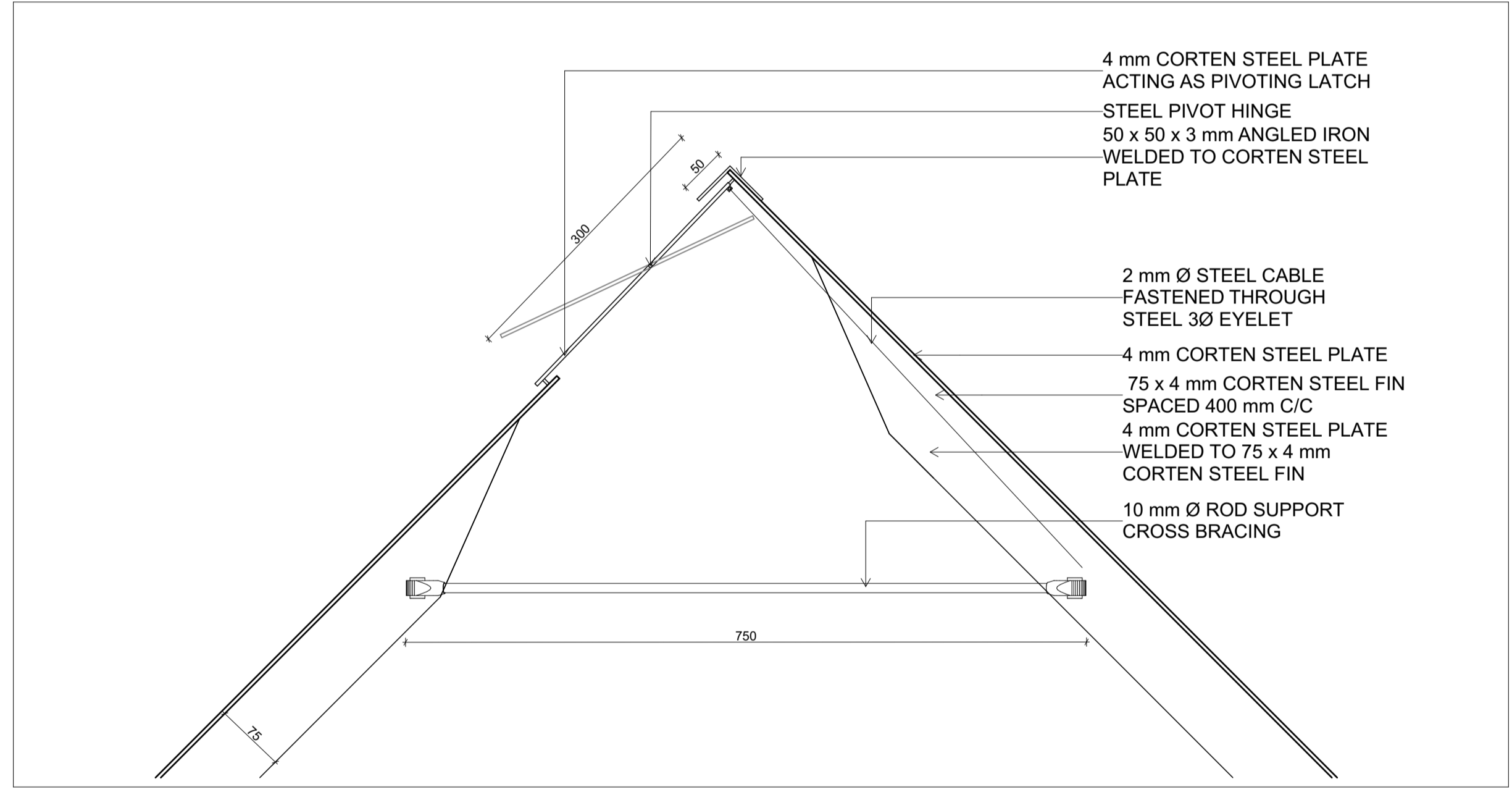


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- 2. RECEPTION
- 3. RETAIL
- 4. ABLUTIONS
- 5. OFFICE
- 6. BOARDROOM
- 7. INCENSE PRODUCTION
- 8. DERMATOLOGICAL PRODUCTION
- 9. PROCESS LAB
- 10. HARVEST DECK
- 11. SERVICE AREA
- 12. ORIENTATION TOWER
- 13. SMELL PODS
- 14. AROMA MARKET
- 15. SERVICE WALKWAY
- 16. SECURITY
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- 20. WASTEBIN
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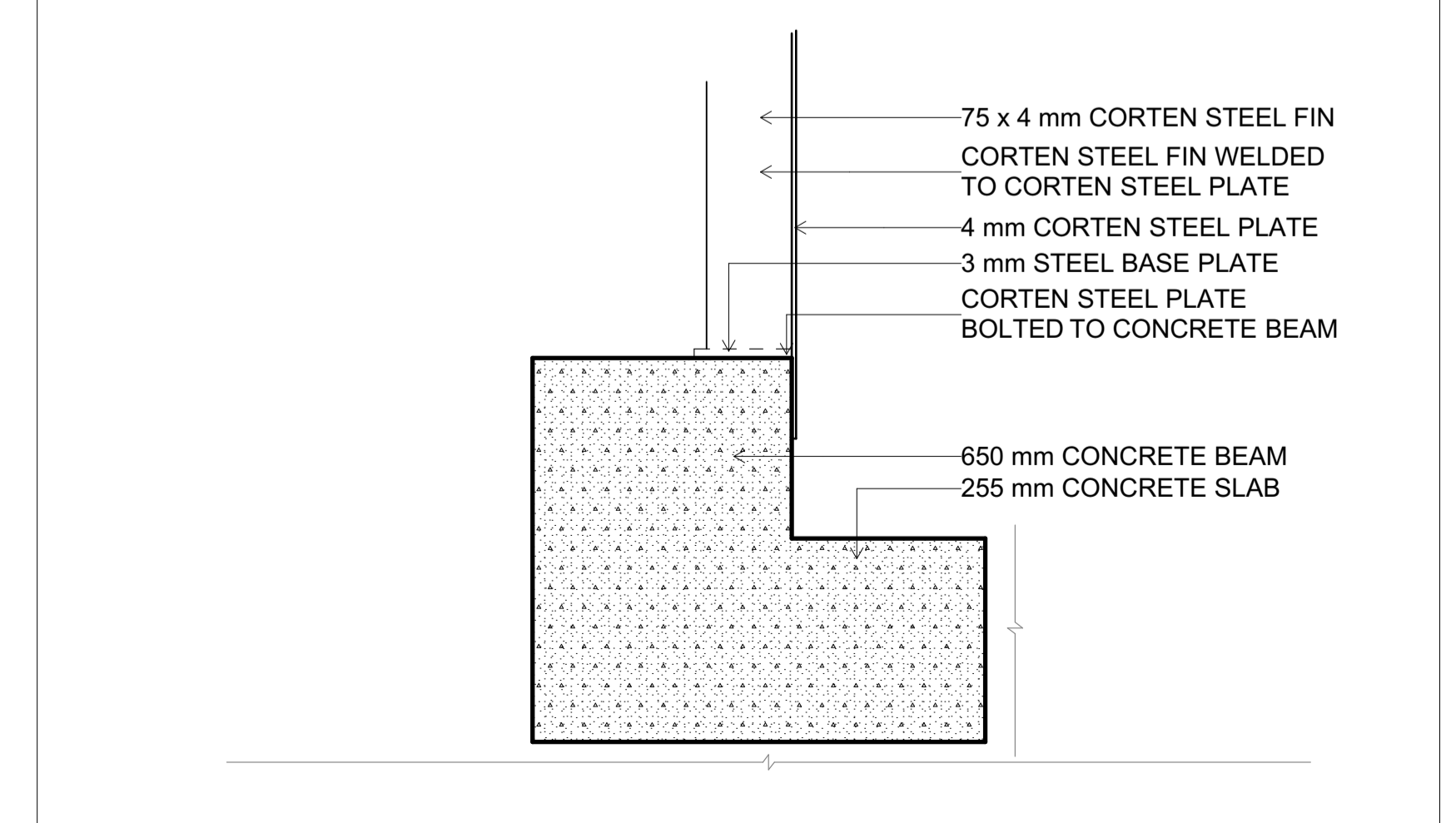
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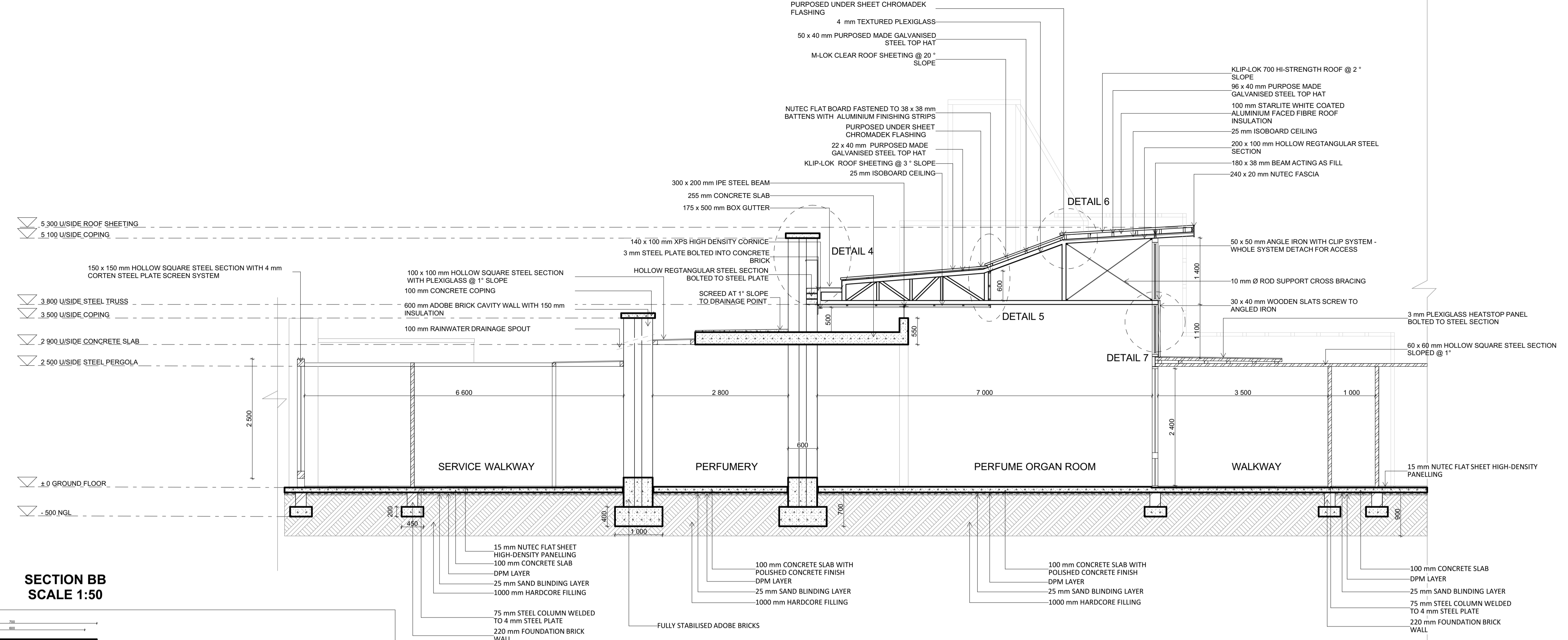
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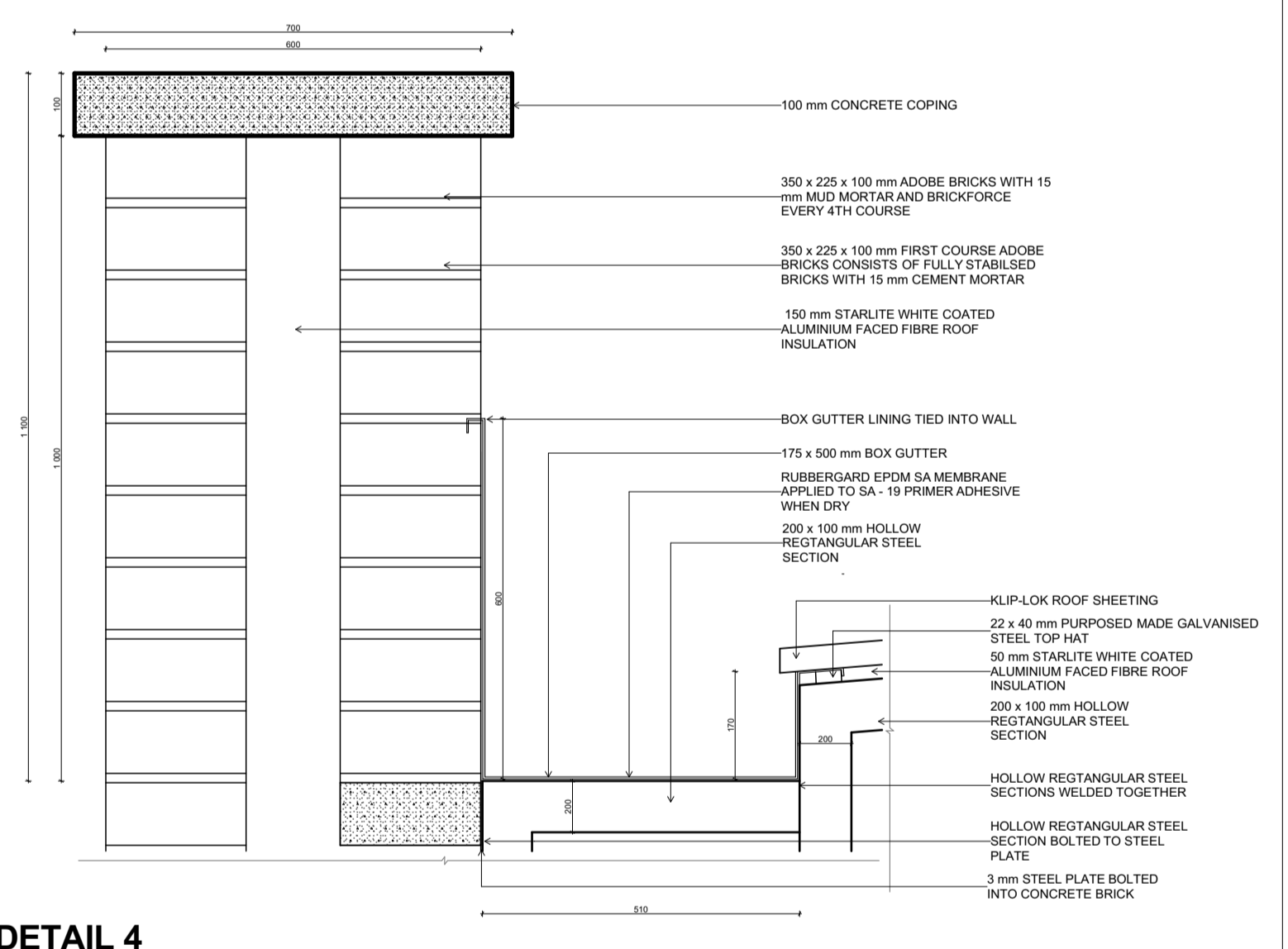
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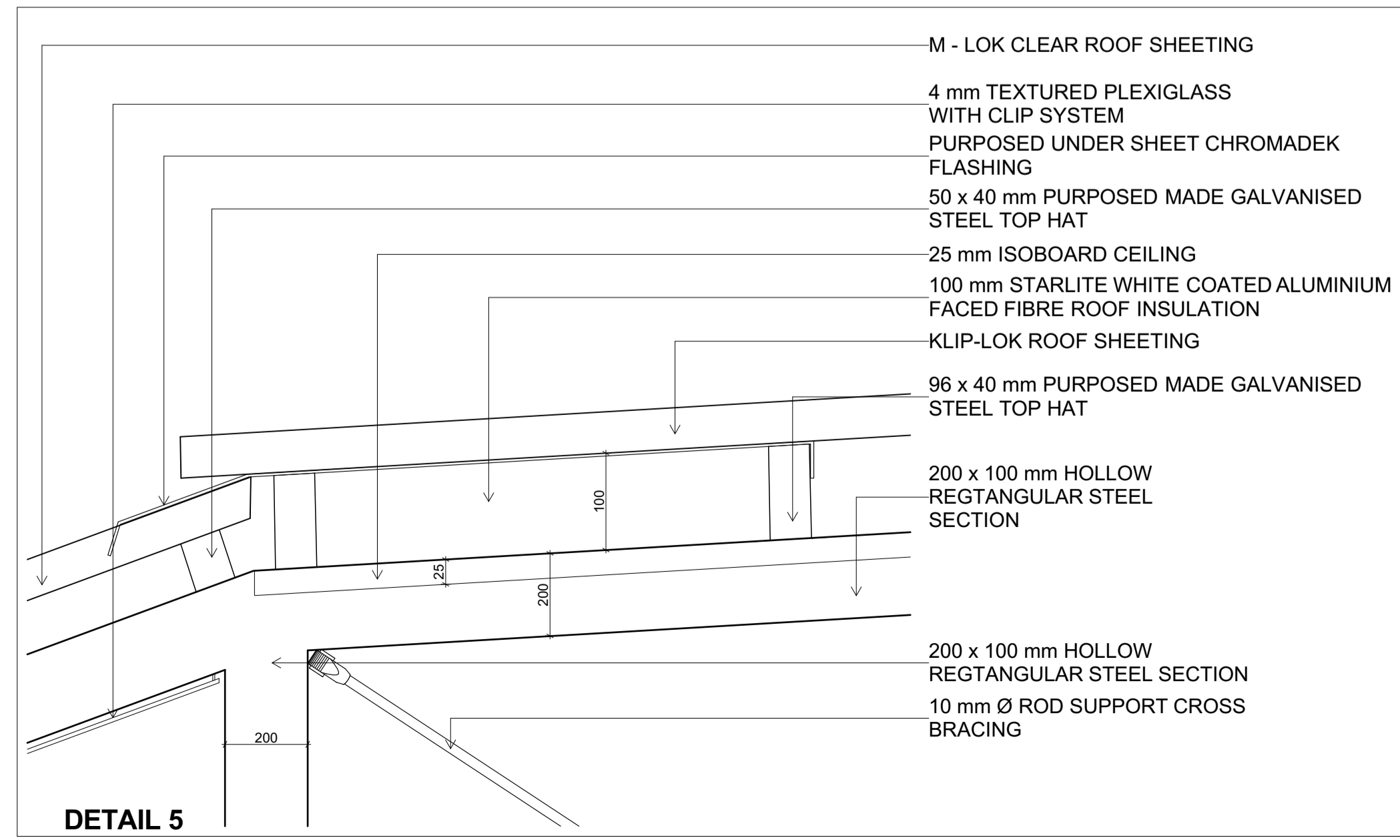
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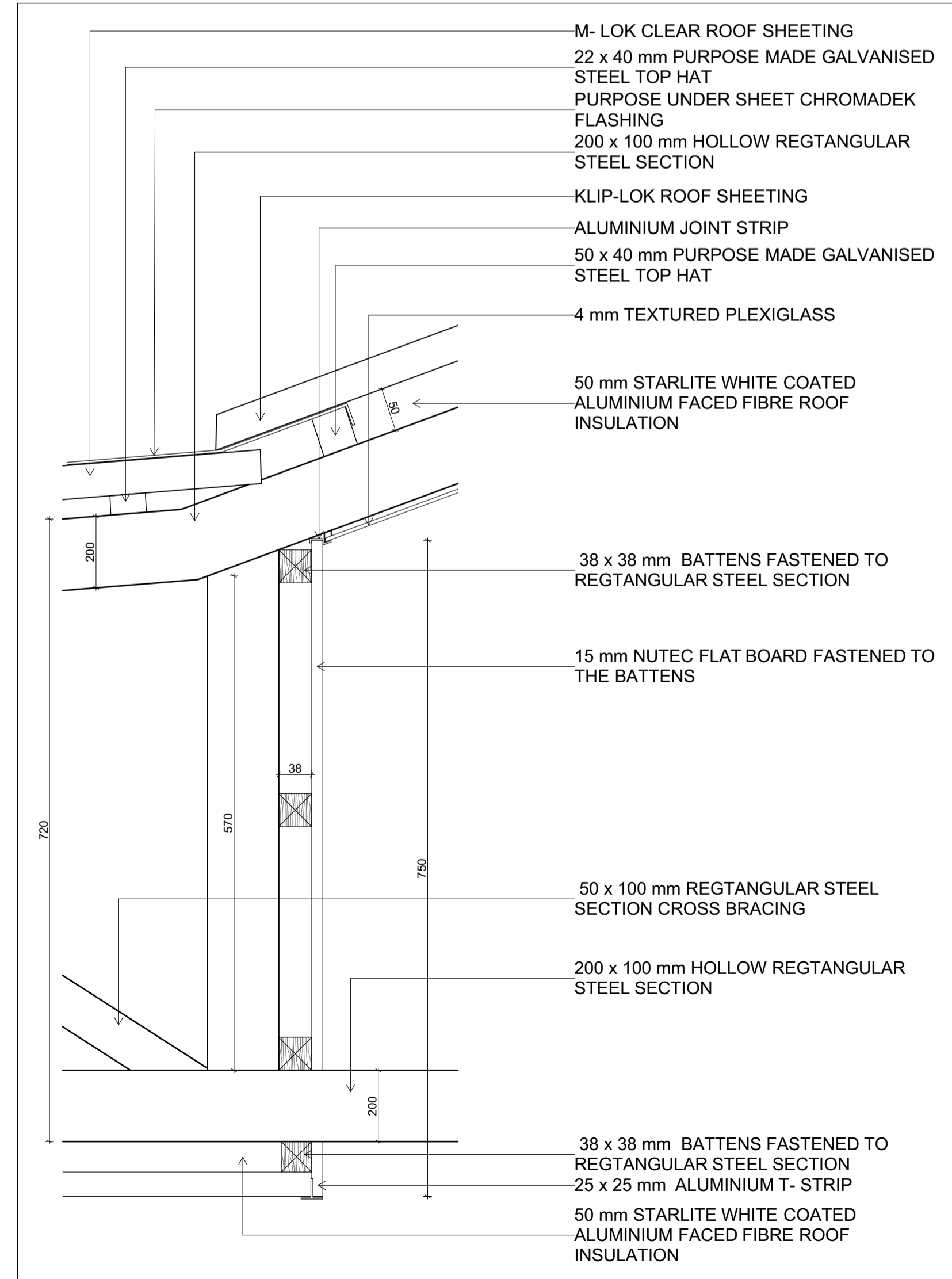
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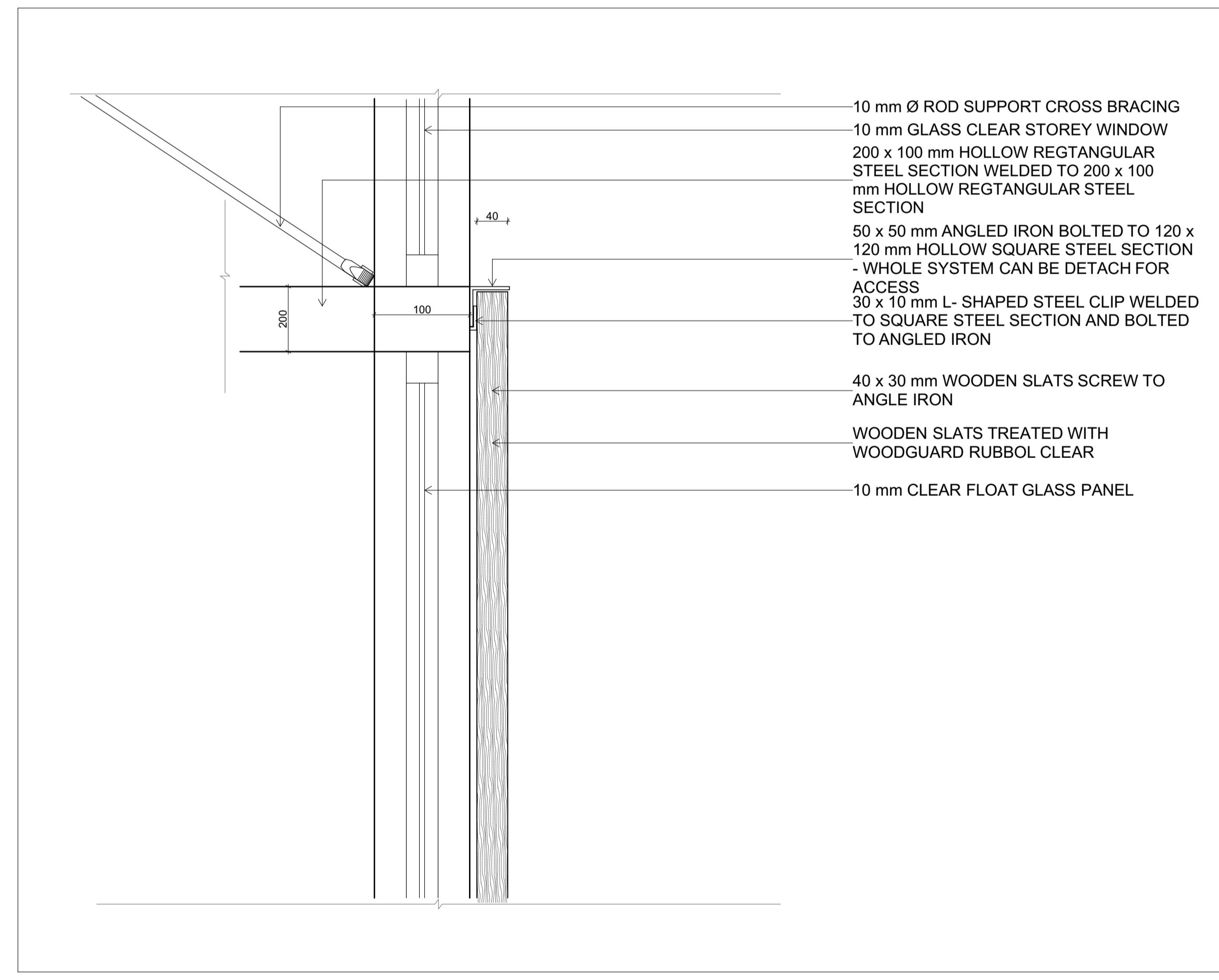
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DETAIL 5
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DETAIL 6
SCALE 1:5



DETAIL 7
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