

The Forgotten Pursuit

A Carpentry Centre in Karatara welfare settlement forged from the memories of woodcutters.

Taline Roos | 2018176442

M.Arch (Prof) Dissertation 2023

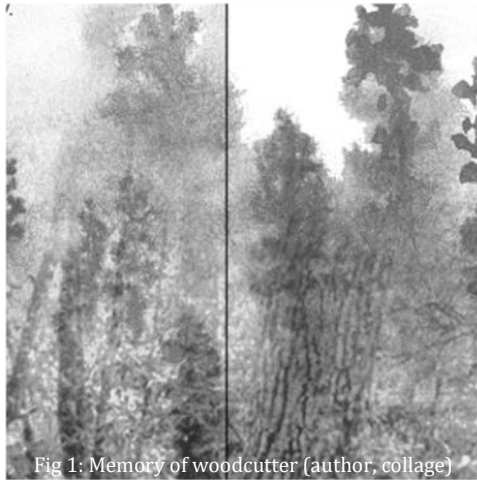
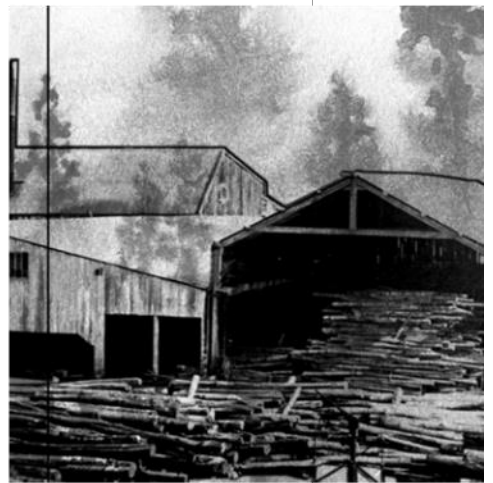


Fig 1: Memory of woodcutter (author, collage)

THE FORGOTTEN PURSUIT

CARPENTRY CENTER

DECLARATION

This document contains the Master Design Dissertation made and submitted by the applicable guidelines which are required for the March (Prof) degree. All work within this document is created by Taline Roos and all sources are acknowledged.

Student information:

Taline Roos | 2018176442 | roostaline@gmail.com

Department of Architecture, Faculty of Natural and Agricultural Sciences

University of the Free State

Supervisors:

Prof. JD Smit, Mrs. P. Smit, , Miss. O. Mosidi.

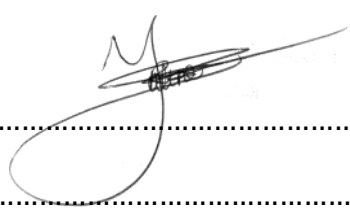
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(My supervisor) - Her words of encouragement, guidance, and advice kept me motivated throughout the year. Allowing and encouraging me to construct a thesis in my own way using my strengths. Being there whenever I needed it.

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God

(The God)– For my talent, motivation and keeping me strong.



Fig 2: Karatara locals (Collage).

The 'Forgotten' does not refer to Karatara as a forgotten place or a place given to people who were meant to be forgotten. It is about the municipality's efforts towards the place that has become forgotten. It's about the goals and dreams that have deteriorated over the years. Karatara, as described by the locals in interviews, used to be a beautiful place with 'order'.

In *Karatara: A story of poverty, people and plantations*, Philip Caveney writes that he was surprised at the lack of available information regarding Karatara, “almost as if it was intended for the settlement to be forgotten.” (Karatara, A story of people & plantations, 2016)

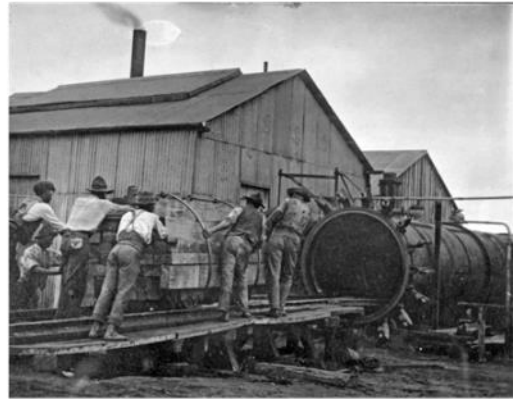


Fig 3: Lives of woodcutters (Collage).

Abstract

This project embarks on an exploration and interpretation of the memories and narratives carved by the woodcutters and plantation laborers of Knysna.

These memories serve as the foundation for the design of a carpentry centre, intended as a means for the upliftment of the welfare settlement, Karatara situated in the Western Cape.

Many settlements near Knysna were established to address the forestry and welfare needs of the timber industry. The resulting question of this thesis: How can the creation of a Carpentry centre in Karatara be approached through the lens of recalling memories, archetypal references, and their integration within the existing community? This methodology seeks to delve deeper into the essence of place by investigating its historical underpinnings, with the aim of not only enriching the collective memory of Karatara but also anchoring this transformation through archetypal associations. This endeavour aspires to restore a sense of pride and ownership in a settlement that stands as a remnant of large industrial exploitation.

In order to grasp the essence of Karatara, this research includes investigative approaches such as; personal stories, interviews, books and contemporary interpretations informed by the visual cues derived from collective memories of Karatara.

Research approach

This thesis is the result of extensive testing and exploration of various theories and ideas to arrive at a well-considered conclusion.

Over time, the project evolved through systematic testing and refinement. Each section starts with a clear statement of the final decision. The approach emphasizes design through testing and experimentation, leading to many developments.

It is noteworthy that this document's structure deviates from the conventional thesis format, prioritizing the chronological sequence of the project's evolution over the organisation of ideas. This unconventional approach aligns with the belief that the journey of creation is as significant as the final product. The chronological sequence of the project is implemented through the three experiments with the last experiment being the final design.

The purpose of documenting the changes and developments within this project is to provide valuable insights into its evolution and to emphasise its vital role in shaping the final outcome.



The maker approach

Maker culture emphasises the importance of acquiring knowledge through hands-on experiences which includes woodworking (Fiore, Montresor & Marchese 2021).

The maker's approach finds profound relevance within the context of this design endeavour. The extensive testing and systematic refinement of the project underscore the essence of hands-on creation and iterative design, emblematic of the maker's philosophy.

This methodology, emphasising experimentation and innovation, serves as a robust framework to continually enhance the project. The departure from conventional document structure, in favour of a chronological representation of the project's evolution, resonates with the maker's ethos, spotlighting the value placed on the creative journey.

Furthermore, the meticulous documentation of alterations and developments within the project imparts valuable insights, strengthening the argument for the vital role this approach plays in shaping the project's final outcome.

In essence, the maker's approach enriches this design process, fostering adaptability and innovative problem-solving skills that are indispensable for the project's ultimate success.

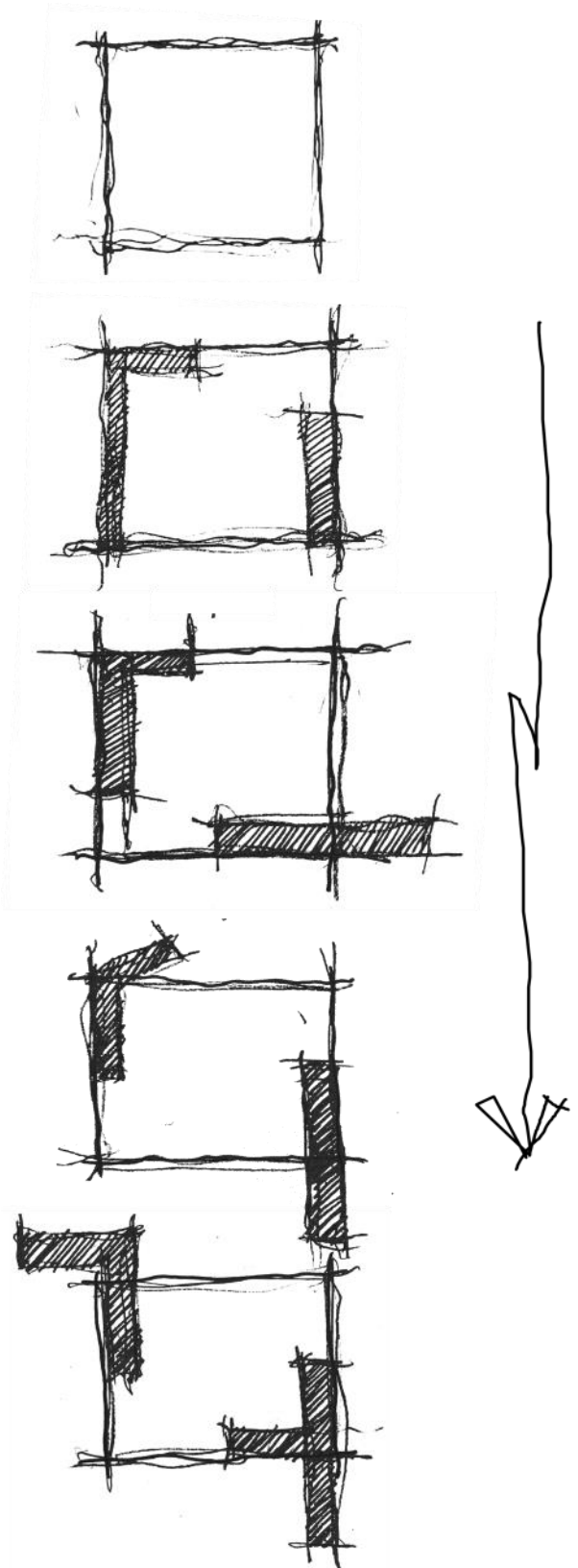


Fig 5: makers approach extensive testing (Author).

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Grounding essay contents page

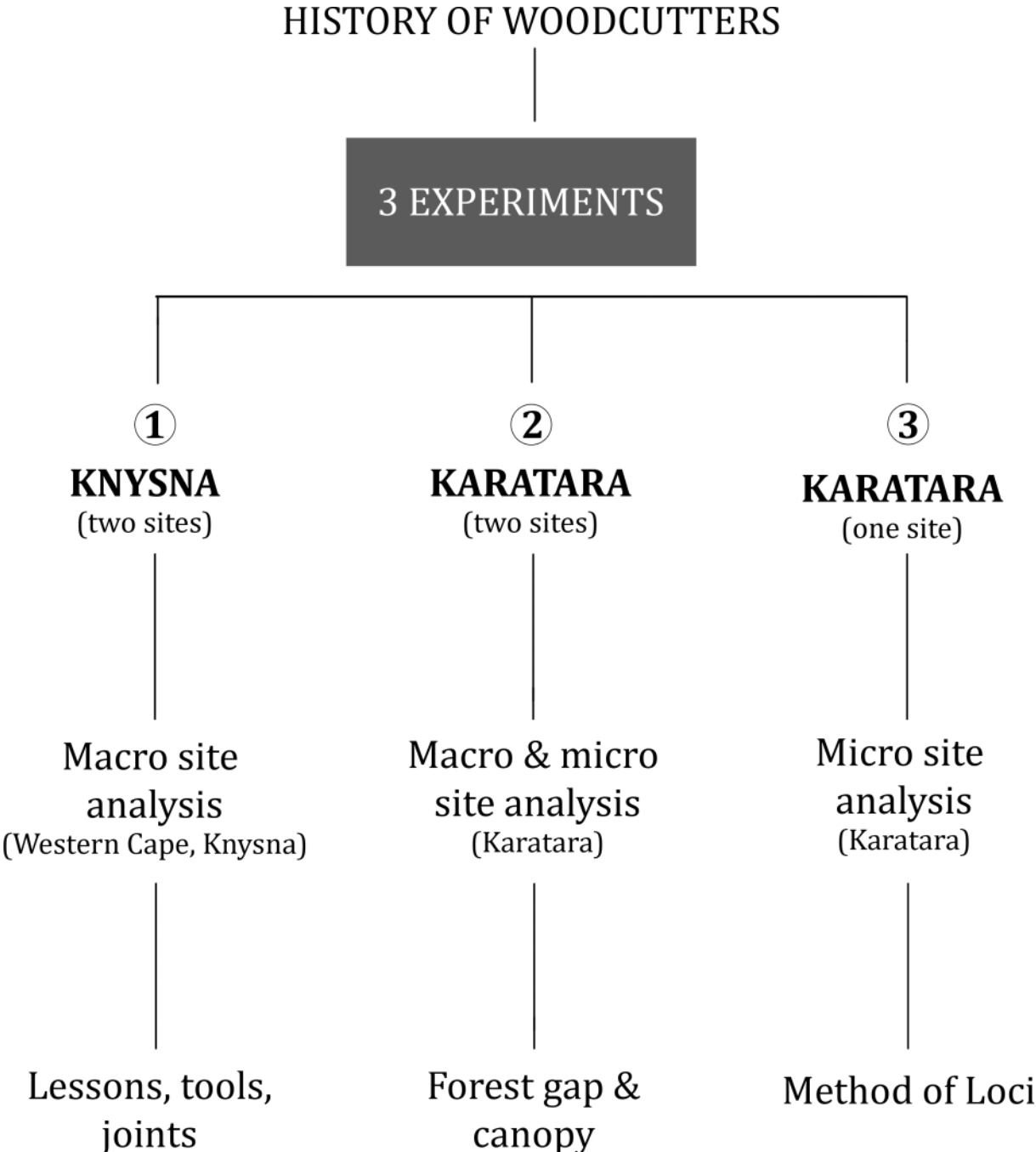


Fig 6: Grounding contents (Author).

1. Grounding essay

The grounding essay will investigate the history of woodcutters and this will deal with the essence of this project. This historical inquiry offers insights into the transformation of Knysna over time and the growth of various settlements linked to the timber industry. The study investigates the memories of woodcutters and how it could be interpreted today.

As the exploration of Knysna and its woodcutters unfolded, the project unveiled numerous insights, prompting corresponding adaptations and evolutions. The project celebrates the journey and its process. To aid in understanding this document, it has been organised into three distinct experiments (figure 6).

The theoretical approach in each experiment aimed to include the history of woodcutters. The concepts in the first experiment derived from narratives about the woodcutters. The concepts in the second experiment were much more site related. In the third experiment, the concept was changed to focus on remembering the history of woodcutters through the method of loci.

The final proposed project is in Karatara close to Knysna in the Western Cape. Each experiment has its own site analysis in conjunction with the chosen site which provides a deeper understanding of the woodcutters. Karatara is one of the settlements that started solely because of the timber industry. Establishing a carpentry factory in Karatara, inspired by the woodcutters, aims to foster a unique identity for the small town while simultaneously generating employment opportunities. This ignited an architectural intervention aimed at integrating the narratives of the woodcutters, allowing visitors to engage with their stories. The program is based on the process wood follows to become a finished object. There are also additional functions that support this project.

1.1 Introduction

In the mysterious forest of Knysna we find the woodcutters who lived, worked, and explored there. The forest became their home which they would occasionally leave to sell their wood. It was the only place they knew.

Woodcutters were exploited for their hard work and had to sell a lot of timber to make an income for themselves. The rate at which timber was being harvested had a serious impact on the forest, leading to deforestation. It became clear to woodcutters and timber merchants that these forests could not last forever. In the 1880's the forests became prey to overcutting.

Woodcutters had to register for their rights to fell trees and there after they were removed from the forest.

In 1917 the Department of Forestry initiated a housing scheme in order to solve the housing problem. The housing was located near forestry stations so that plantation workers lived close to their work. It is true that saving the forests is a critical matter, however it seemed that the woodcutters' and plantation workers' lives were not that important.

Just like woodcutters, plantation workers worked under extreme conditions for the European laborers. Strict rules governed their day-to-day lives, such as not being allowed to own a car or being required to work six days a week with two afternoons off, allowing them time to attend to their gardens (P,Caveney: 2016).



In 1922, Karatara was proposed as a new labour settlement for plantation workers and construction would follow shortly after. Two years later, a decision to place registered woodcutters in the George & Knysna Settlements was introduced. A small portion intake was made up of indigent farm squatters and some woodcutters from the Knysna area. In 1941, Karatara was planned as a social welfare settlement (P Caveney, 2016, p17).

Allocations of new cottages were given to fit and able Karatara plantation workers (Forestry need) and to old and disabled woodcutters and plantation workers as well as their families (Welfare need).

There were many plans for the development of Karatara. Most plantation workers were not previously woodcutters.

The settlement of Karatara became simply a location where disabled woodcutters and plantation workers migrated to.

From personal interviews it seemed there was a time that the people of Karatara were very proud of their town and their own gardens that they carefully tended. They still enjoy living there and will continue to do so for a very long time. Throughout the interviews, it became clear that there is a sense of pride that faded due to lack of care and support from the municipality (personal communication, April 2023).



1.2 Essence of project

1.1 Introduction

In *Kringe in 'n Bos*, written by Dalene Matthee, the protagonist, Saul Barnard walked back into the forest, after leaving his home behind. He felt like he was moving back in time. Reliving his past. He was overwhelmed by all the memories he experienced. Suddenly he was 14 again, cutting the Kalander tree and coming across a big elephant, Ou Poot (*Kringe in 'n Bos*, Dalene Matthee). The mental images submerging were tied to a specific location that Saul Barnard knew. These places, which was of significant meaning to him, had a powerful effect on his memory and became tied to specific events, emotions, or experiences.

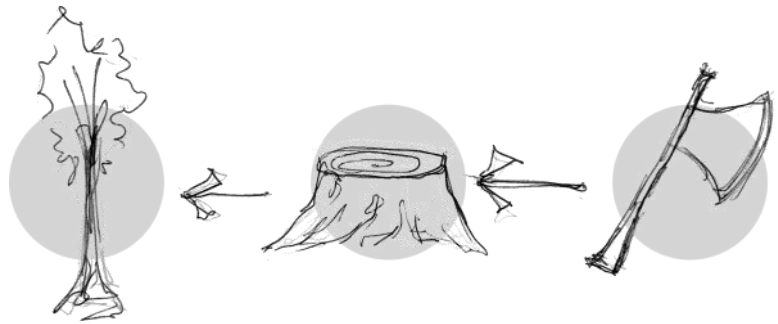


Fig 8: object igniting memories (Author).

His surroundings allowed his memories to resurge and were connected to elements he encountered (figure 9). It acted as a catalyst that brought these memories to light. Figure 8 is another example to illustrate how one can see an axe and be reminded of cutting down a specific tree that was of importance once.

This inspired the creation of a touchstone, focused on evoking memories from the past.

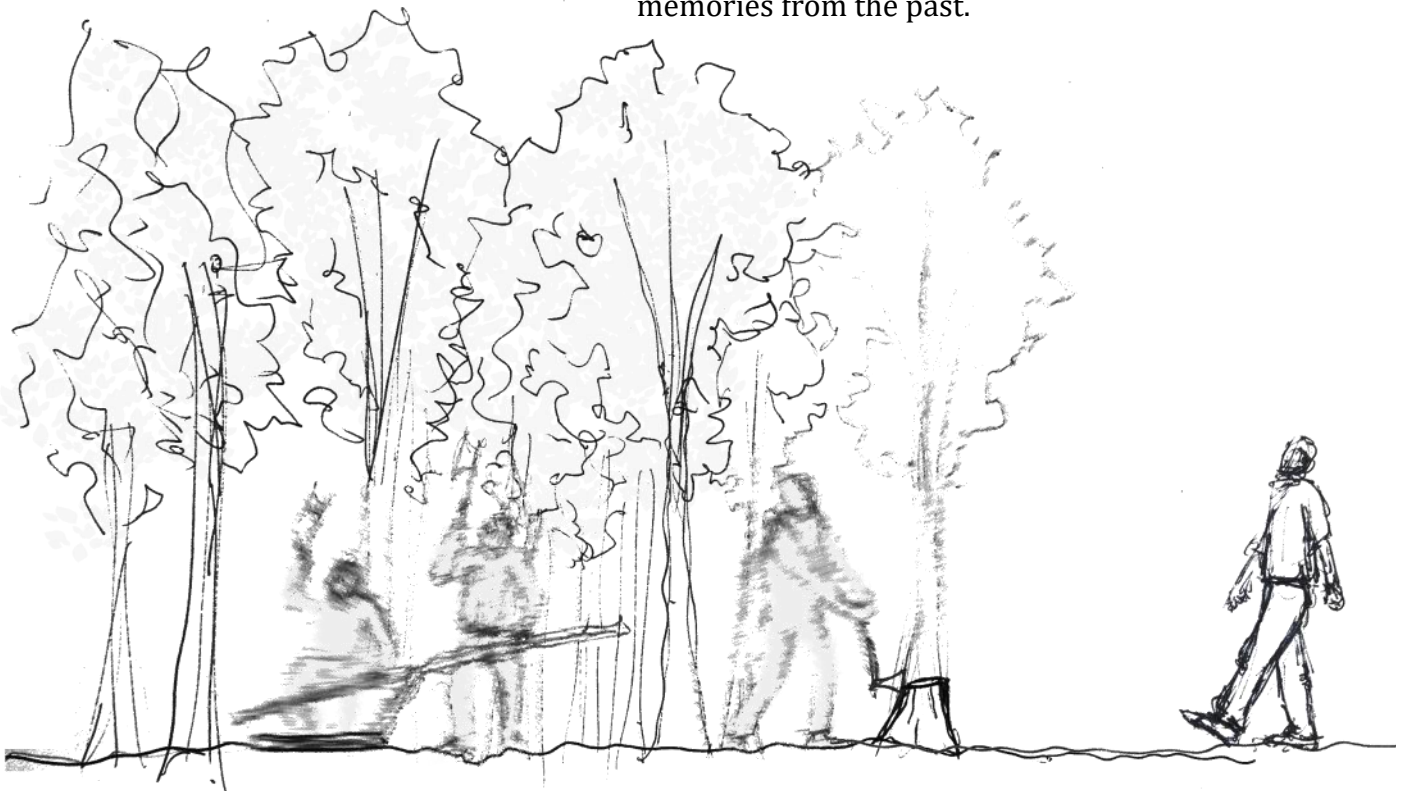


Fig 9: Walking into your memories (Author).

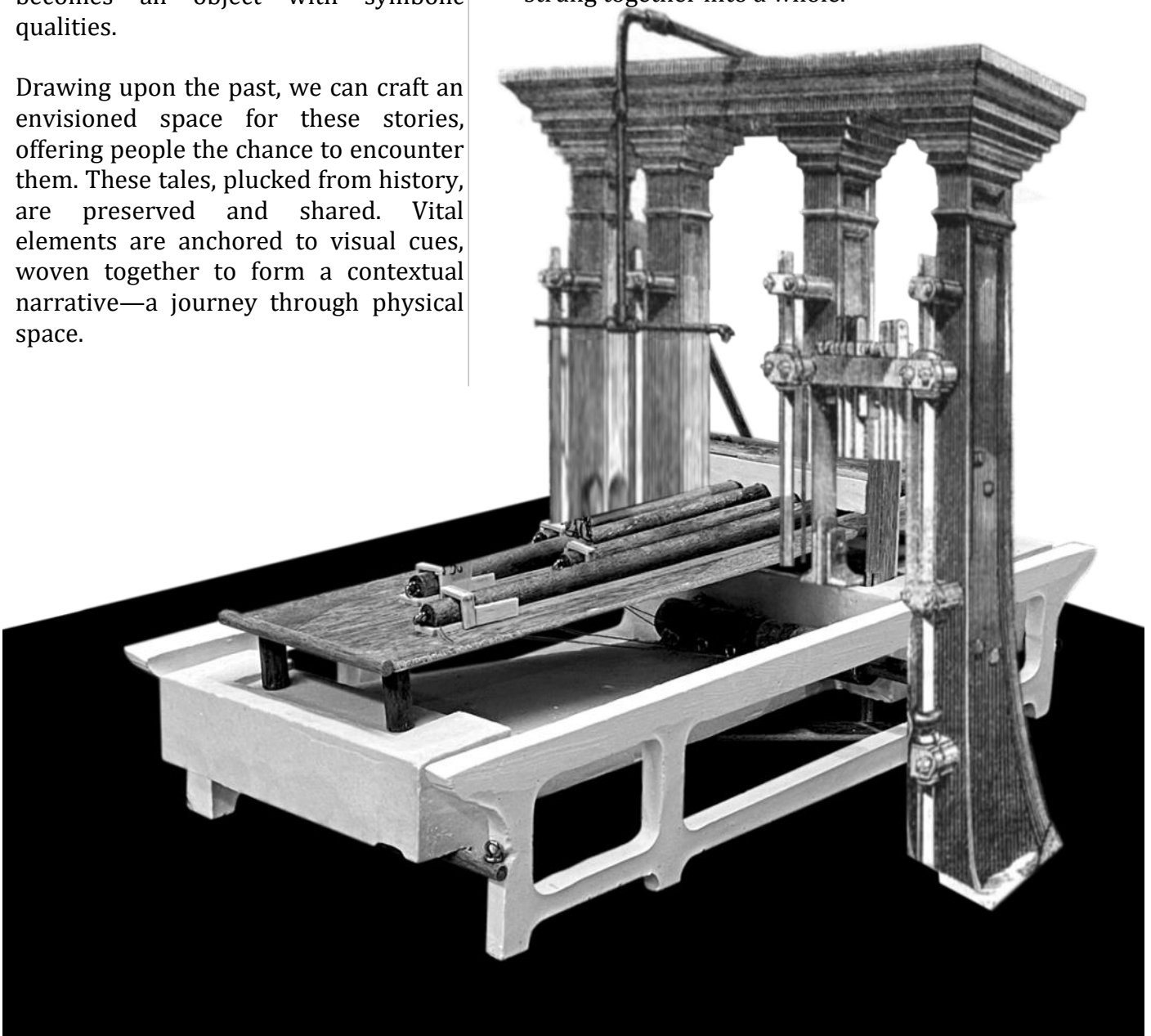
1.2.2 Reversed sawmill

Touchstone

The reversed sawmill (figure 10) aims to bring elements together as opposed to cutting it in pieces. It captures the essence of historical sawmills, taking visual cues from its form to its vertical movement. One can identify the archetypal elements of an historical view in this touchstone. When focusing on the inherent meaning and not the physical object itself, the touchstone becomes an object with symbolic qualities.

Drawing upon the past, we can craft an envisioned space for these stories, offering people the chance to encounter them. These tales, plucked from history, are preserved and shared. Vital elements are anchored to visual cues, woven together to form a contextual narrative—a journey through physical space.

The idea of the reserved sawmill is to capture the elements of the memories of woodcutters and plantation workers to create a unified image. The fragmented memories of woodcutters and plantation labourers are strung together into a whole.



Touchstone

1.2.3 Architectural insights

After making the touchstone, it is analysed for possible design ideas. The touchstone, which is inspired by a sawmill, revealed that it has many parts and connections throughout the structure. There are many joints and different materiality that connect which could be explored in the design.

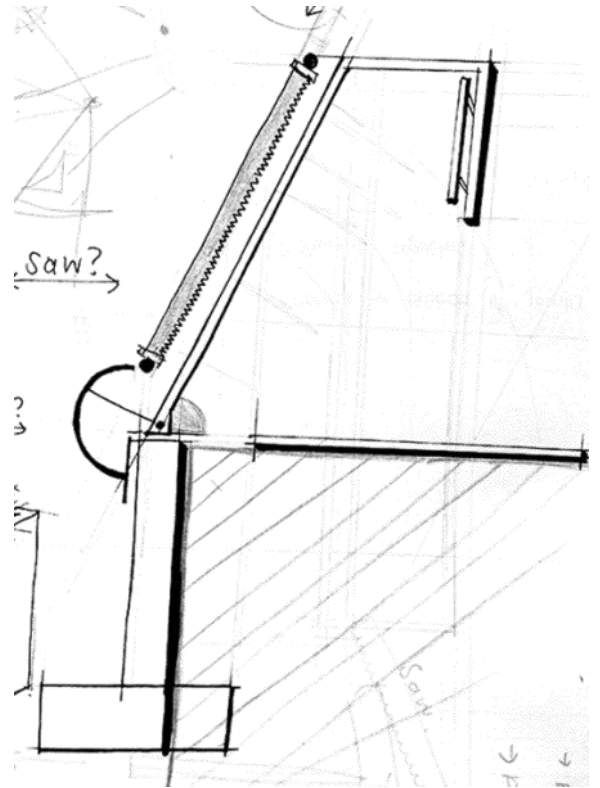


Fig 11: sawmill typology (Author).

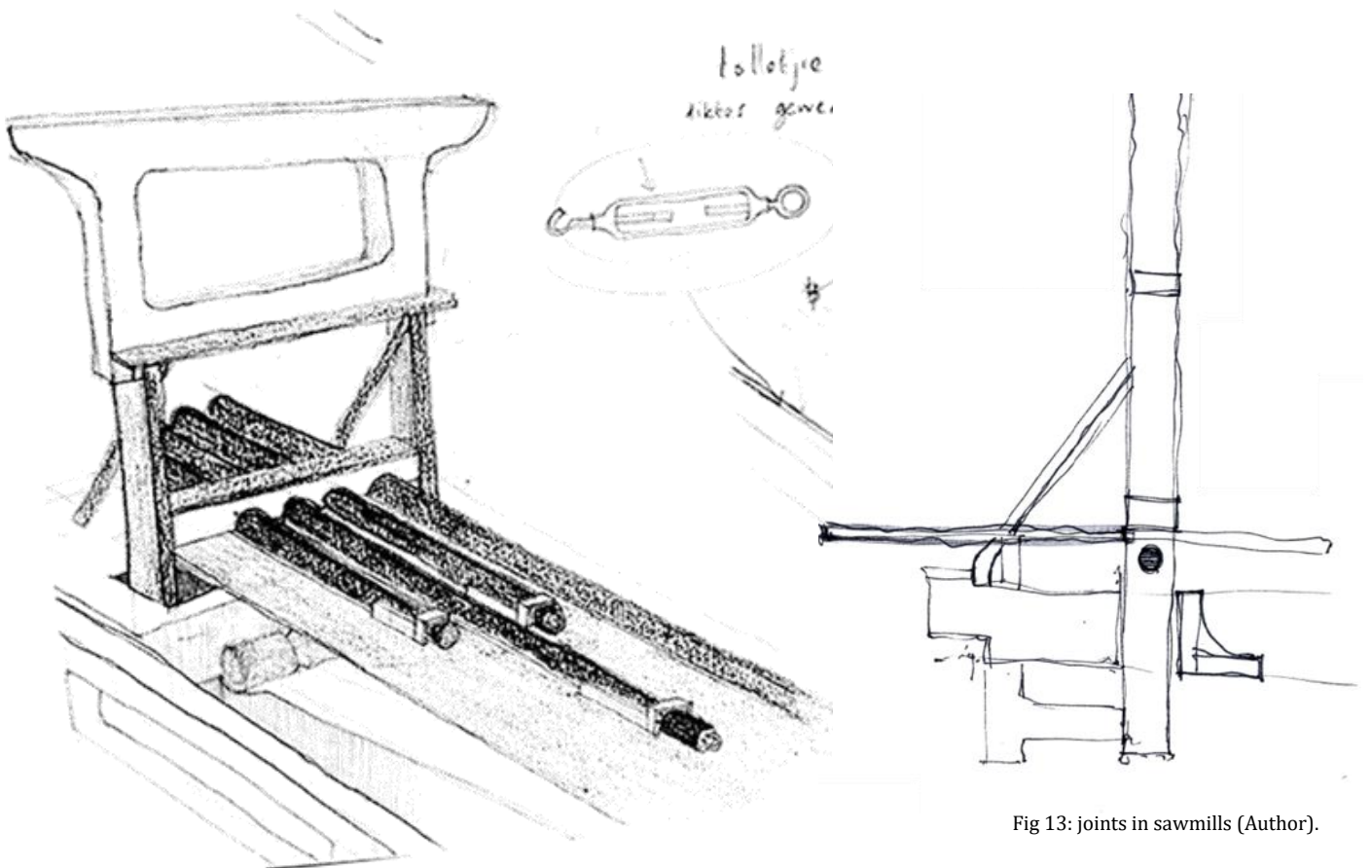


Fig 13: joints in sawmills (Author).

Fig 12: Perspective of sawmill (Author).

The section through the 'reversed sawmill' (figure 16) revealed that there is a process occurring throughout the object. This linear quality could be explored in the design (figure 15).

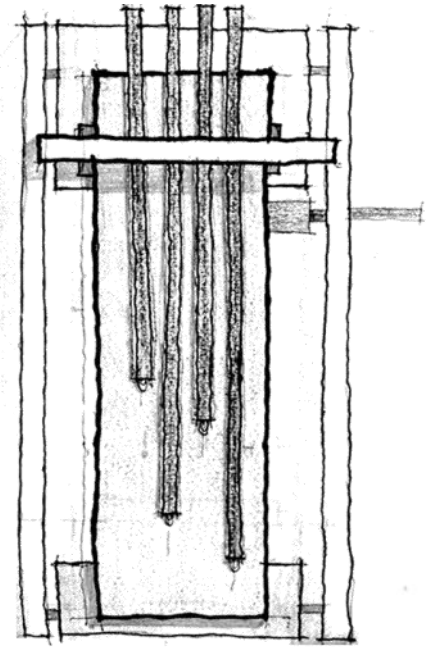


Fig 14: top view of sawmill (Author).

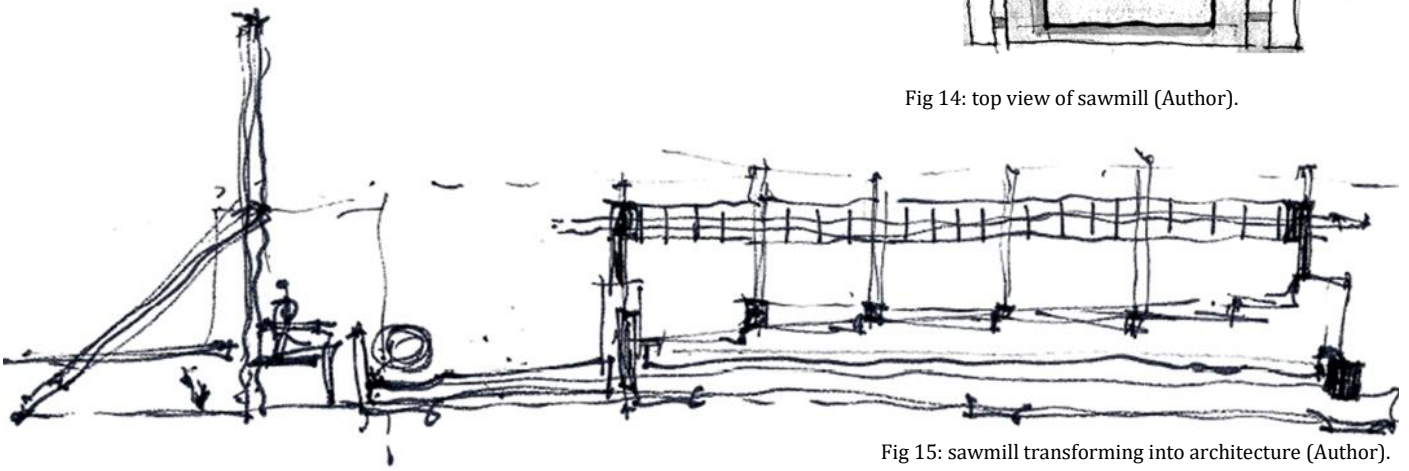


Fig 15: sawmill transforming into architecture (Author).

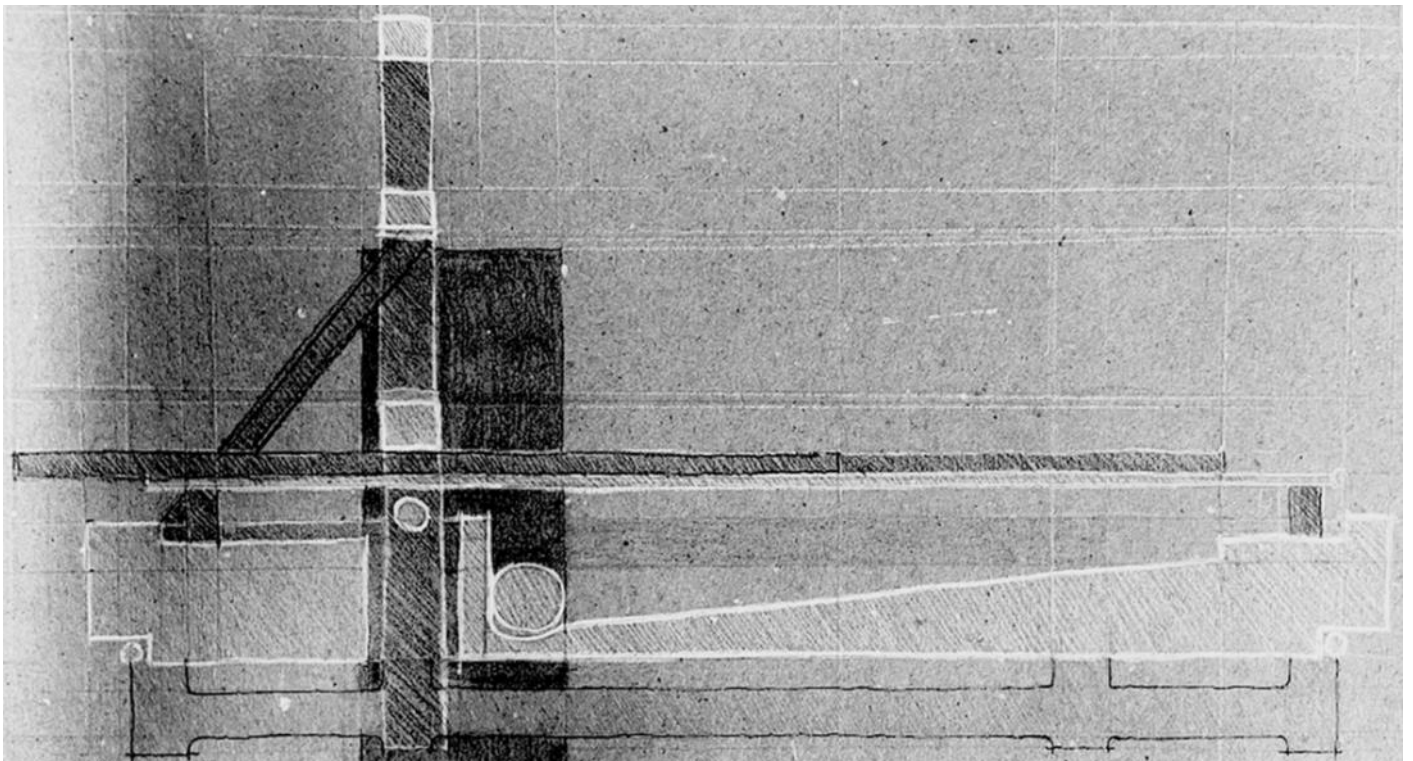


Fig 16: section of sawmill (Author).

1.3 Theoretical underpinning

1.3.1 Experience architecture through memory and senses

In Peter Zumthor's book "Thinking Architecture", he talks about the first time he experienced architecture in his childhood without thinking about it. He explains that "I can almost feel a particular door handle in my hand, a piece of metal shaped like the back of a spoon" (P. Zumthor, p9). Peter Zumthor articulates how his architecture is derivative from his memories.

Usually, only architects understand the deeper meaning behind some architectural elements. Others who are not acquainted with the profession understand it through their own experience of it. Similar to what Peter Zumthor said, he experienced it "without thinking about it". His memories of architecture were deeply rooted in how he experienced these spaces through his senses.

Memory isn't only something that happens in our brains, but could also be products of our experiences with buildings and physical spaces.

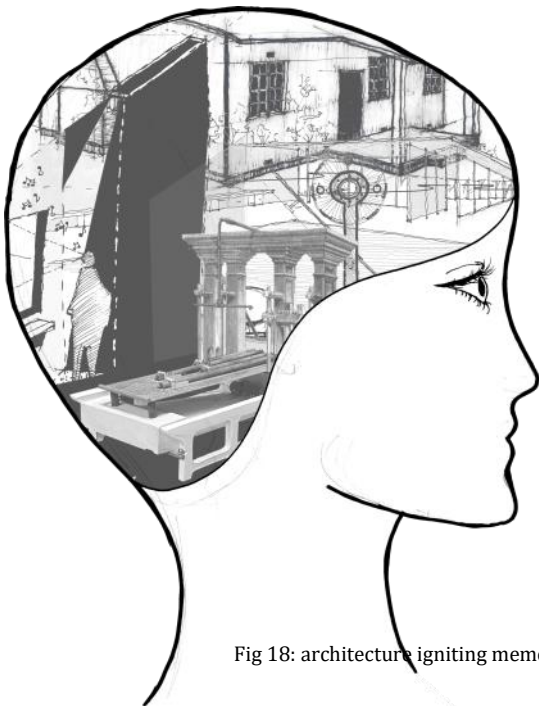


Fig 18: architecture igniting memories (Author).

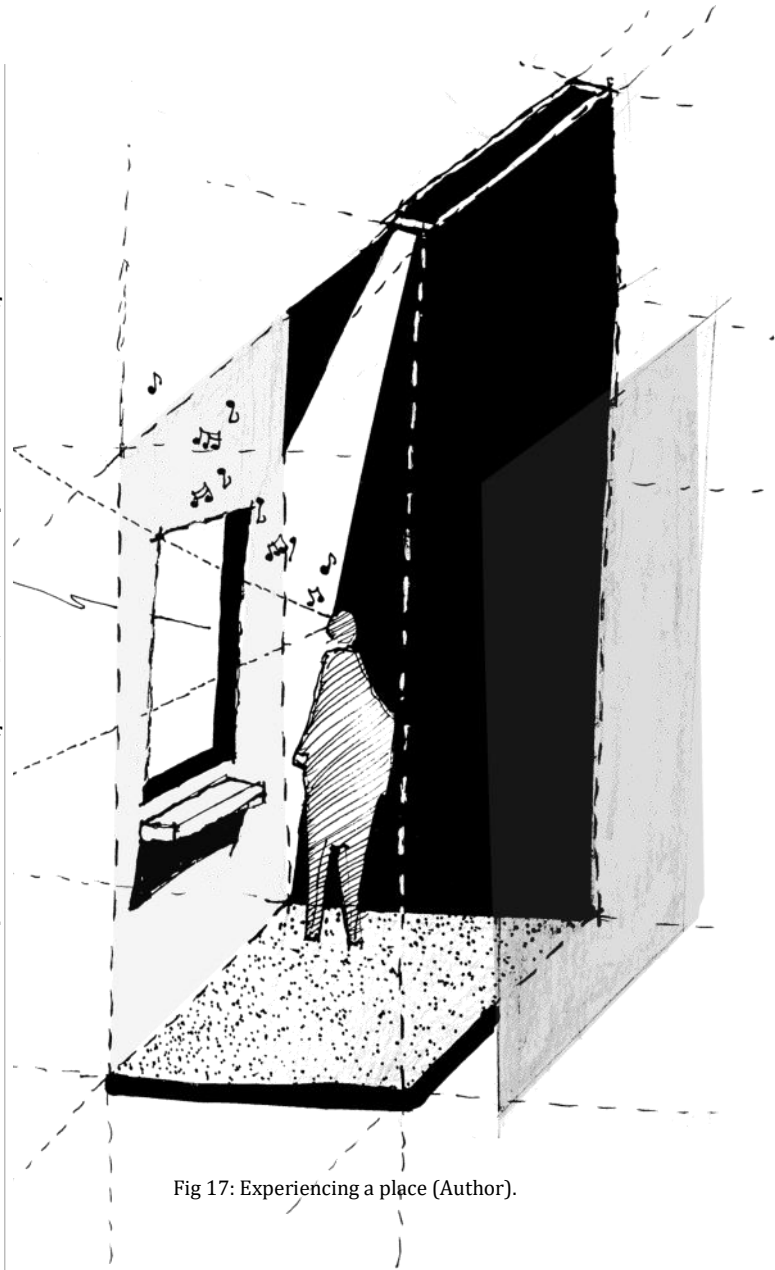


Fig 17: Experiencing a place (Author).

While buildings themselves cannot remember, they can become reminders which holds many memories. When we enter these buildings, we are reminded of things that occurred. These references we receive by the mind transforms our sensation of the structure into a memory. Maybe we can use references to design a building which can remind the users of the woodcutters.

Theoretical underpinning

1.3.2 Memory time capsule

The past provides us information that we can become inspired by. We can recollect architectural works and imagine how it can be recreated in architecture.

Our experience of architecture is rooted in a deeper understanding of references. Architectural works are not made by only one person. It is a combination of many memories built up over years of time, even if it is done unintentionally. We are continuously learning from our past to create structures for the future. We are evolving.

In *'Entretiens sur l'Architecture'*, Viollet le Duc, French architect and writer states; "In architecture, there is no invention 'ex nihilo' (out of nothing). We must necessarily have recourse to the past to originate to the present" (Eugène-Emmanuel Viollet-le-Duc, 1863). (Lecture VI, 173).

Imagination becomes crucial because we use this in conjunction with our references and concepts to transform these ideas into architecture. In turn, when we look at architecture our imagination allows us to reveal the meaning in these structures.

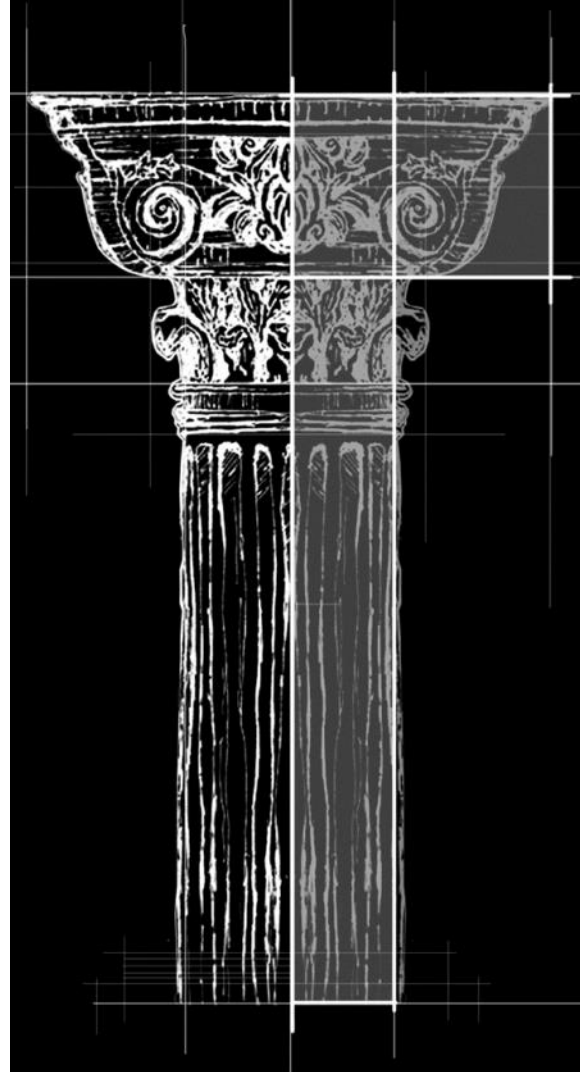


Fig 19: column archetype (Author).

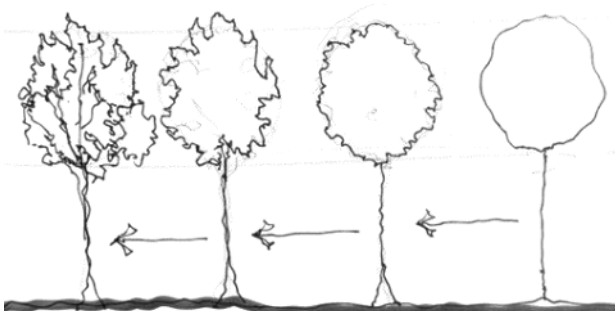


Fig 20: familiar symbols (Author).

We learn from things that happened in the past and do things for the future based on what we have learned. When we preserve memories and displace them in another time and place, it acts as a time capsule.

Similar to how we all know what figure 20 illustrates. Our imagination allows us to group these different elements and discern that this is a tree.

1.4. The Woodcutters

1.4.1 Introduction

In Hjalmar Thesen's book *Country Days* he writes about the woodcutters; *"The Woodcutter's day started with the sun. He would either walk the few miles of forest trail to the tree upon which he was working or wake up beside it to the smell of a smouldering ironwood fire and old ash and the clean scent of fresh wood-chips. Soon there would be the fragrance of coffee and tobacco smoke and then, with the first shafts of sunlight, the ringing of axes would begin again. A man and his sons might spend as long as a month working a giant yellowwood or stinkwood tree."* (Hjalmar Thesen 1974).

Woodcutters were tough. They lived with a sense of pride and stubbornly clung to their independent lives in the forest rather than to be relocated. The forest was their home. It was the place they knew best.

Woodcutters lived in extreme poverty and crude huts. They were 'prisoners of their culture' who could not (or would not) adopt to a modern economy. They were trapped by work that nearly tore the muscles off a grown man's back as well as by an economic system that made the woodcutters slaves to the English wood buyers.

John Barrow, Secretary to Cape Governor George Macartney, wrote in 1797: "...the only class of people, in the whole colony, that deserve the name of being industrious. To fell the large trees... and then to drag them out, is a work of labour and toil; and their profits are so trifling..." (Hjalmar Thesen 1974).



1.4.2 Woodcutters early 1800's to late 1900's

Industrial-level exploitation started in Knysna when George Rex bought Melkhoutkraal in 1804. Rex owned 33 slaves and had a license for 400 woodcutters by 1811. In 1834, slavery had been abolished but remained apprenticed for four more years.

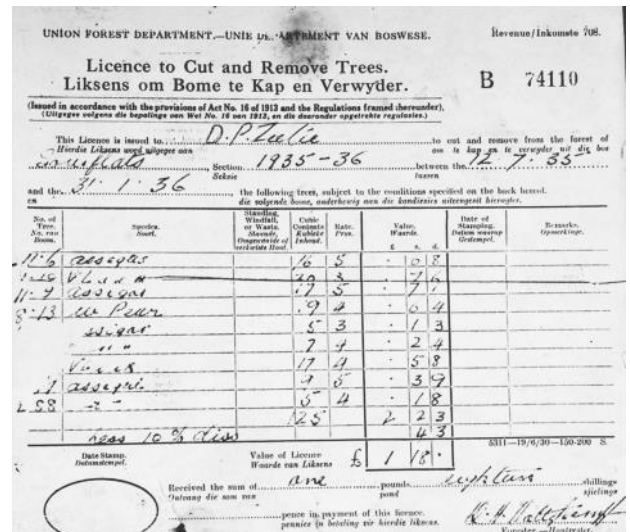


Fig 20: License to cut and remove trees (Knysna museum)



Fig 22: timeline of Knysna 1 (Author).

By the late 1800's the forest was being cut down faster than it could replenish itself. Conservation measures were put in place to regulate and minimise the exploitation of the forests. This was already too late, and a lot of damage had been done. By the early 1900's an alternative to felling trees were proposed. Exotic trees grow much faster and put less stress on native trees.

Woodcutters had to register to be able to purchase trees for felling (fig 20). This made the woodcutters' lives more difficult as they were already being paid next to nothing. To make their lives even more difficult, the woodcutters' rights to cut down the trees was nullified in 1939. Woodcutters received a small pension.

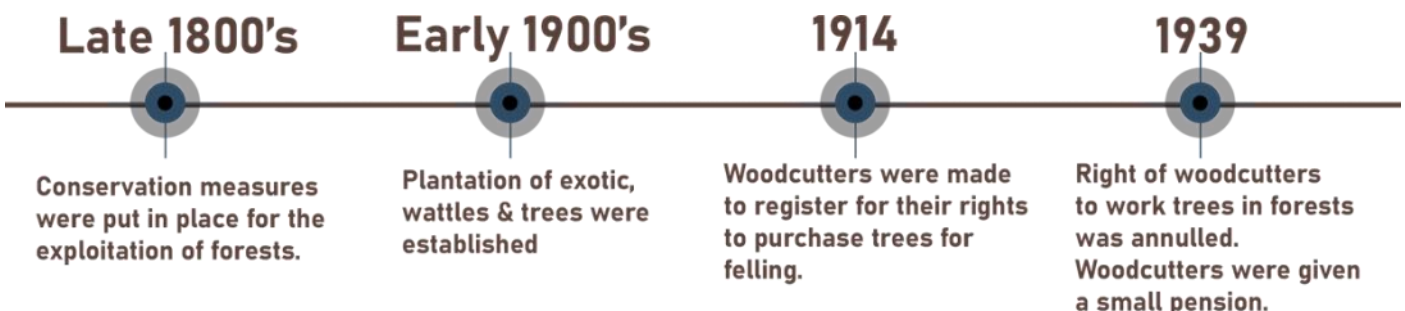


Fig 23: timeline of Knysna 2 (Author).

2. Three Experiments

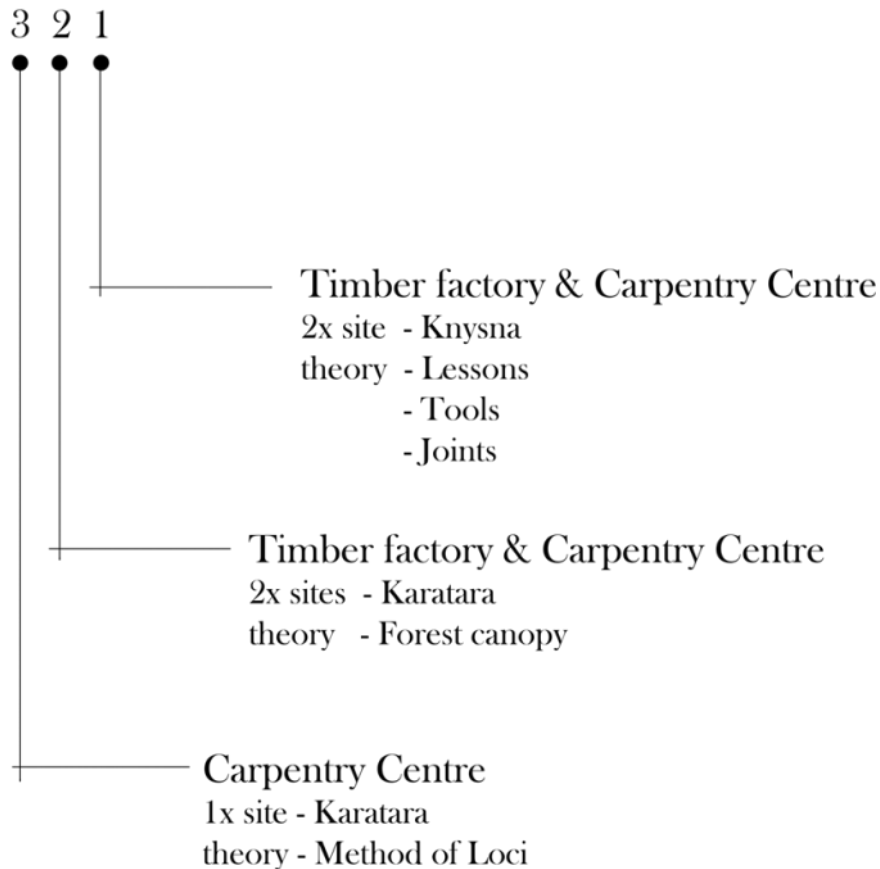


Fig 24: Diagram of experiments (Author).

2.1 Introduction

This project consists of 3 different experiments, with the third experiment being the final design. Each experiment is vital to the transformation of the project.

As stated before, the document addresses the process of the project in chronological order. The '3 experiments' is a way to organise the sequence of the different ideas and where the most important points of change occurred.

At the conclusion of each experiment, there is a reflection on the process and an examination of why the project needed to change.

The diagram (figure 24) shows how each experiment consists of different theories. When the project relocated to a different site, it was necessary for the theory to change as well.

Figure 24 illustrates the main ideas each section is made of, but there is still an overlap of ideas in some cases.

There was something to be learned at each experiment and ideas were kept even if a different experiment initiated.

2.2 Contribution of experiments to final design

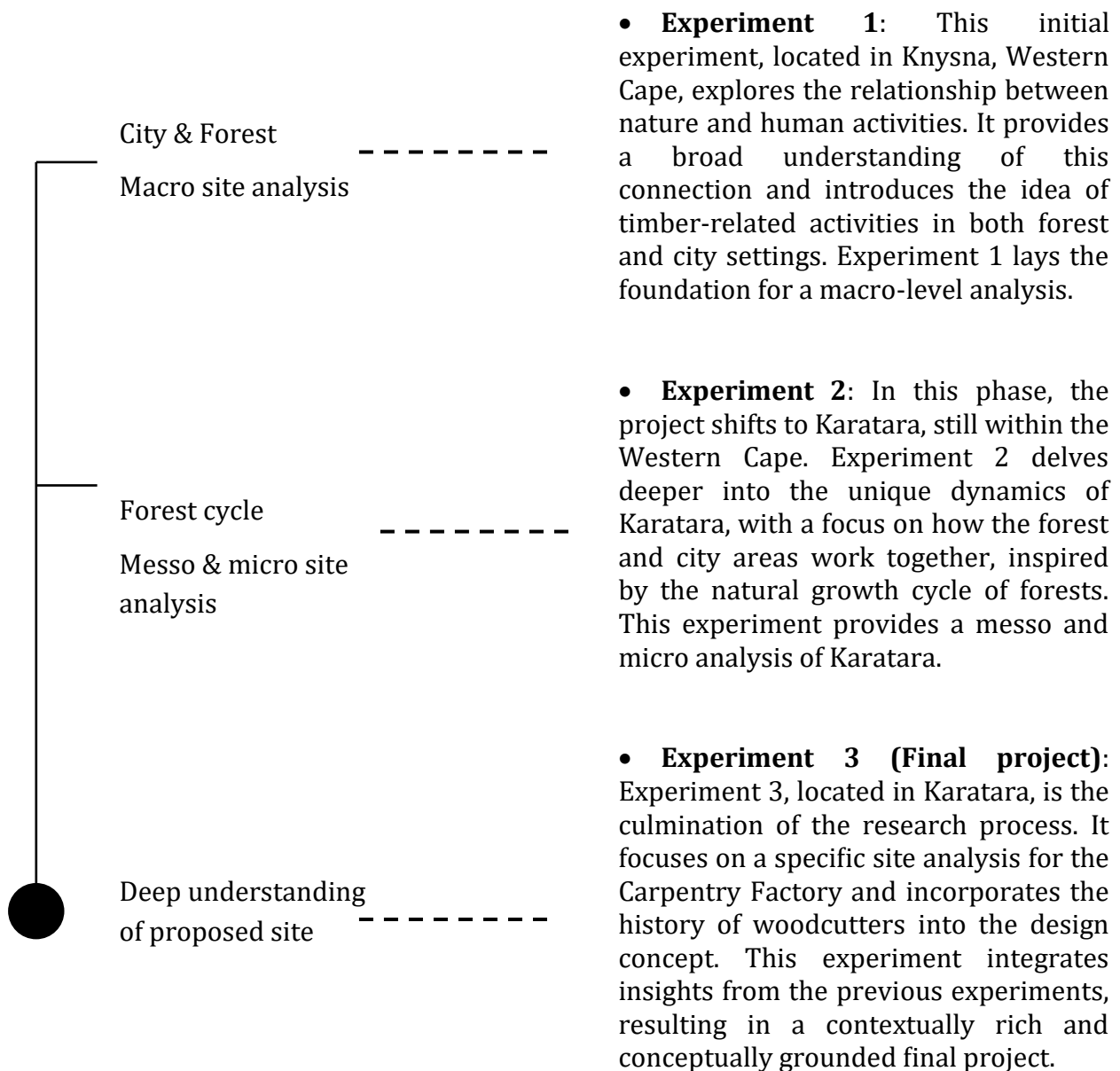


Fig 25: Diagram of contributions from experiments (Author).

3.1 EXPERIMENT 1

SITE ANALYSIS

SITE DATE

THEORETICAL PLANNING

CONCLUSION

REFLECTION

Experiment 1

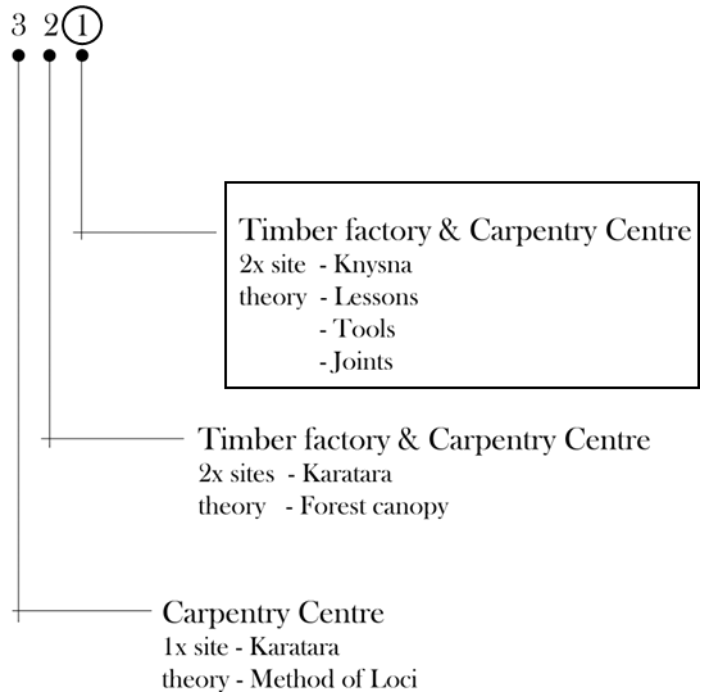


Fig 26: Diagram of experiment 1 (Author).

3.2 Introduction

The first experiment is located in Knysna, Western Cape. Two sites for this project are chosen. One within the serene forest and other nestled within the town. This experiment explores the relationship between the natural and urban environment and how these contrasting environments could theoretically harmonise.

The theme of this experiment centres on forest memories, seeking to capture the moments within the forest and reflect them in the city. It is done to foster a symbiotic relationship between nature and humanity. This exploration will be conducted through extrapolating concepts from narratives in the forest and its effect on the city.



Fig 27: Knysna forest (Author).



Fig 28: coastal area (Author).

3.3 Climatic conditions

Knysna, Knysna municipality

Macro analysis

General description

Temperate coastal

Oceanic (marine) climate

Summer

Average high temperatures

Warm to hot summers with average humidity and strong winds (Weather Atlas, 2023: online).

Winter

Mild temperatures with medium to high humidity

Rainfall

Rainfall volume presents a diverse spectrum.

Constant rainfall in winter

Rain in summer possible



Fig 29: Western Cape (snazzymap; 2023: Author adaptations).

3.4 Site context

3.4.1 Western Cape, South Africa

Western Cape is a coastal province located in South Africa, bordering the Indian and Atlantic oceans. Compared to the other eight provinces in South Africa, the Western Cape draws in millions of visitors in each year (SA-Venues 2019).

The timber industry in South Africa's Western Cape began in the 18th century when European settlers recognised the region's abundant indigenous forests,

including valuable species like yellowwood and stinkwood. These settlers initiated timber harvesting for various purposes, such as shipbuilding and construction.

These forests were harvested at a faster rate than it could replenish itself. Many conservation methods were set in place and in 2009 the Garden Route was established which protected this area (Joubert, 2018).



Fig 30: Knysna area and garden route (snazzymap; 2023: Author adaptations).

Site context

3.4.2 Garden Route National Park

The Garden Route runs parallel to the coastline which starts in Mossel Bay and ends at Storms River and is one of South Africa’s most popular holiday destinations (SA-Venues 2019).

The vision outlined by SANParks for the Garden Route focuses on the integration of a protected area to preserve interconnected terrestrial, freshwater, estuarine, and marine ecosystems, along with landscapes and cultural heritage. (SANParks, 2012: Online).



Fig 31: SANPark Logo (sanparks, 2023: Online).



Site context

Fig 32: Knysna and forest (snazzymap; 2023: Author adaptations).

3.4.3 Knysna, South Africa

Knysna is situated between George and Plettenberg Bay. This town is surrounded by a beautiful natural environment. The lush indigenous forests played an important role in Knysna’s rise to fame particularly in the timber trade. Due to its beautiful surroundings and scenic landscapes it is a very popular vacation destination.

This narrow coastal strip of indigenous forest in the Southern Cape, was the main source of income for generations of woodcutters, Knysna being the principal town as far as the timber industry was concerned. Until well into the 20th century the entire economic life and structure of Knysna revolved around the timber trade (Knysna Woodcutters 2017).

3.5 History of Knysna

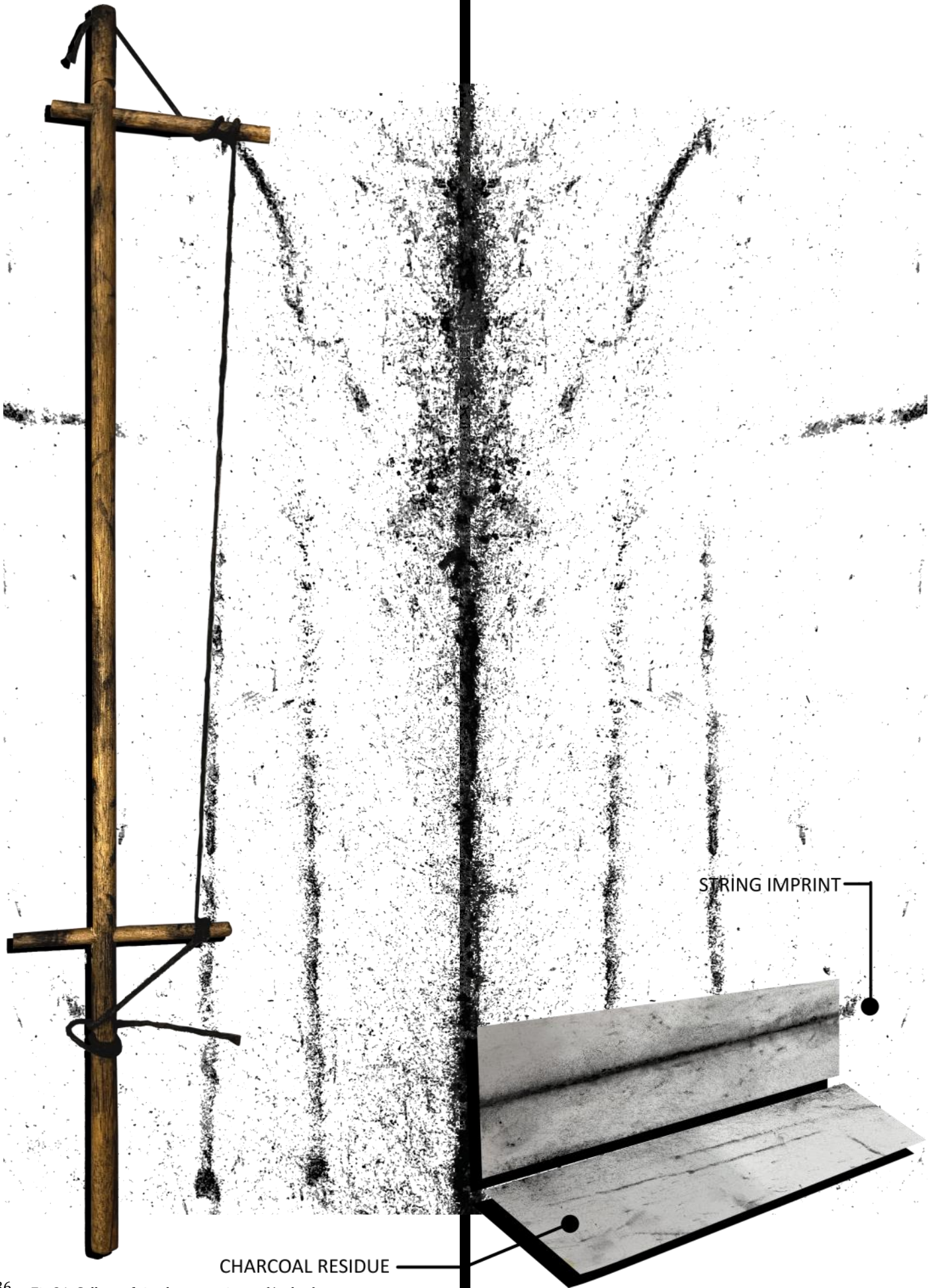
Melkhoutkraal

Melkhoutkraal, located in Knysna, holds a significant place in history. The earliest recorded history of Knysna traces back to 1760, when Stephanus Jesaias Ter Blans became the first settler in the region. He established the farm Melkhoutkraal in 1770, situated along the eastern bank of the Knysna River. This vast farm extended from the shores of the Indian Ocean to what is now Long Street (M 2022).

In 1805, George Rex bought and resided on this land, ultimately becoming the town's founder. Recognising Knysna's immense timber potential, Rex played a pivotal role in shaping the town's destiny. As a result, Knysna rapidly gained fame as a hub for the timber trade.



Fig 33: Melkhoutkraal (J. Schuacher, 1778: Painting).



STRING IMPRINT

CHARCOAL RESIDUE

3.6 Site date

The nature of things

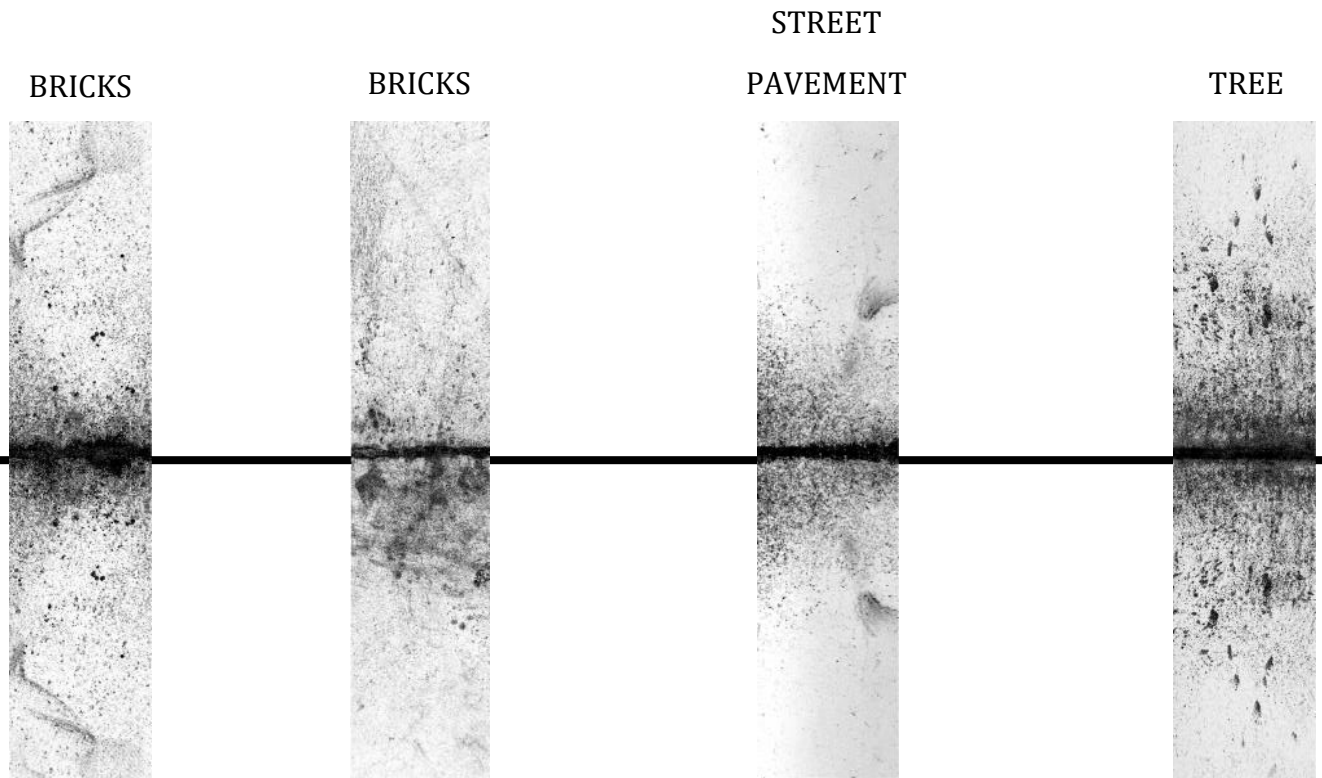
The site date is an intimate site analysis executed in Knysna which allowed unexpected events to arise. The goal of the site date was to experience the site in a different way.

Woodcutters would use a twine to ensure that they saw wood straight. They would cover the twine with charcoal and when released onto a log, would leave an imprint of charcoal. This project explores the nature between the string and objects. The device is placed onto chosen objects on site. A string covered with charcoal is attached to the device which allows the user to pull the string.

However, there is a piece of paper below this device which catches the residue of charcoal. The essence of the action between string and object is left behind on a piece of paper (figure 35). It is not the replication of the string or the object nor the replication of the action that is important. It represents this action in a different manner by capturing the spirit of the event.

Through experimenting with a certain effect, a realisation dawned that every action would in turn have a reaction. This idea is utilised in the theoretical approach which has to accommodate both the forest and city. How would the design in the forest affect the city of Knysna and vice versa?

Charcoal residue:



3.7 Conceptual planning

3.7.1 introduction

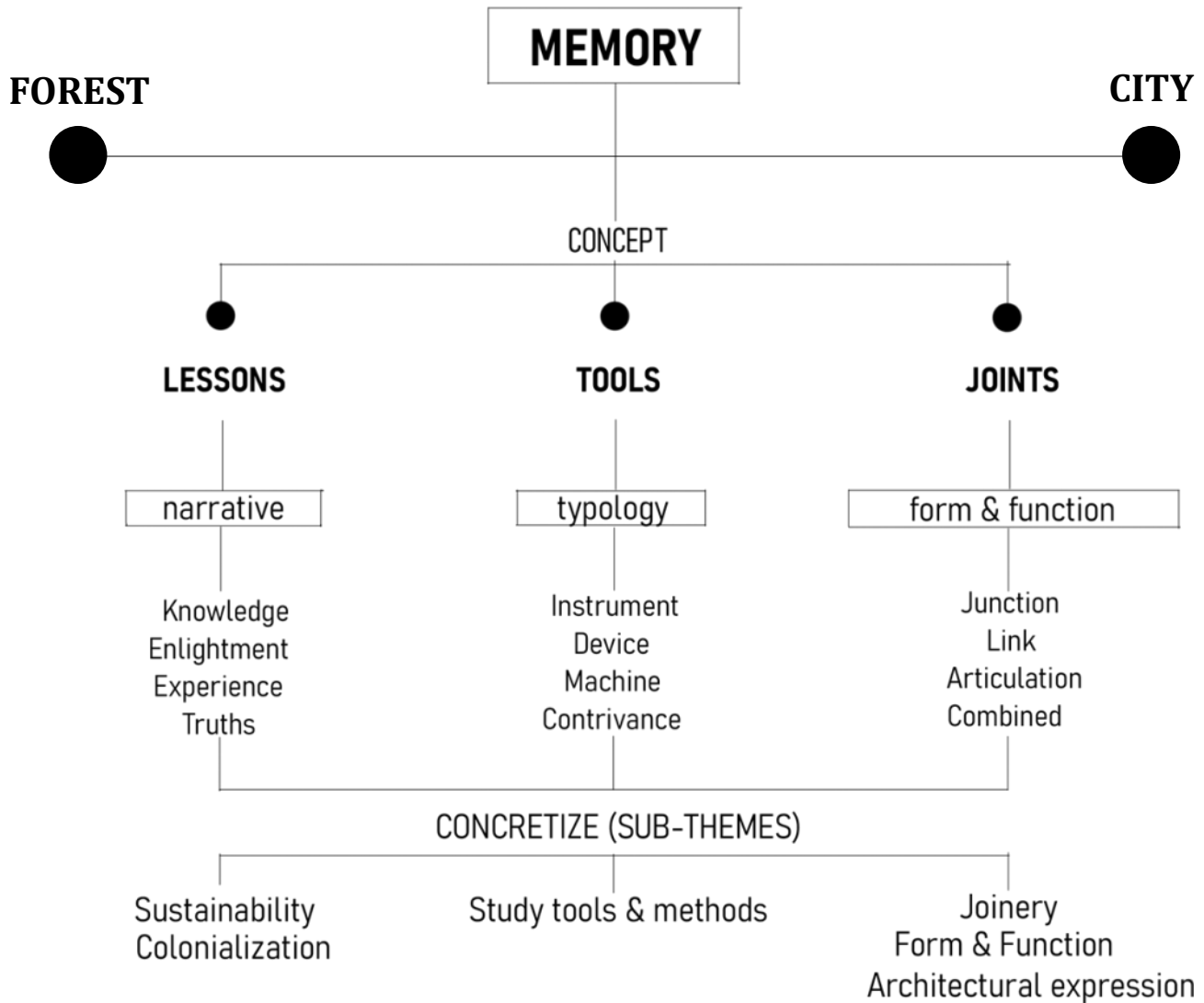


Fig 36: Conceptual planning diagram (Author).

The conceptual approach is extracted from a narrative. The concepts try to connect with the rituals of the woodcutters.

The three concepts 'lessons', 'tools' and 'joints', are translated in an architectural methodology such as, 'narrative', 'typology' and 'form and function'.

Lessons (narrative) revolve around the concept of transformation. Tools (typology) serve as guiding instruments aiding in the design process by providing references. Joints (form and function) deal with articulation of different elements and understanding their underlying reasons for coming together.

3.7.2 Conceptual inspiration

Concepts derived from the narrative

Kringe in n Bos written by Dalleen Mathee is a re-creation of the primitive world of the Dutch woodcutters who worked in the forests of South Africa's Cape during the 10th century. A narrative of woodcutters derived from this book is used to extrapolate conceptual approaches.

Lessons (transformation)

Narrative

In this book the main character, Saul Barnard learns lessons to survive against the dangers of the forests. The superstitious woodcutters never utter the word 'elephant' for the fear of angering the animals, but with the arrival of manhood, he also learns what it means to be trapped by the superstition that makes the word 'elephant' taboo, by work that nearly tears the muscles off a grown man's back and by an economic system that make the woodcutter slaves to the English wood buyers.

Tools (guiding instrument)

After many years of exploiting the forest, the woodcutters couldn't see the Knysna forest for the trees and the wood buyers only saw gold. Woodcutters used tools to create a life for themselves. The instruments they had available unlocked possibilities and allowed them to form their daily rituals. Instruments assist us in understanding and making sense of the world. It is a tool which we can use to manifest reality.

Joints (articulation)

Woodcutters would have to transport the wood they cut into the city to try and sell it. For Saul Barnard, this was a very uncomfortable experience, and he would wish to return to the forest immediately.

Figure 37 illustrates the conceptual models which will be examined in the following pages.



Fig 37: conceptual models (Author).

3.7.3 Connection between forest and city

Two distinct sites have been chosen in Knysna, one nestled within the forest and the other situated in the city. It is important to find a way that these two sites could resonate with one another. The timber factory is set to be situated amidst the forest, while the carpentry centre finds its place in the heart of the city.

It is evident that Knysna's forest has profoundly influenced the development of the city, shaping it into what it is today. The stories and wood sourced from the forest have become integral components of Knysna's identity.

The theoretical approach aims to adapt to the unique characteristics of both sites. In figure 39, the concepts attributed to the forest are depicted in group A, while group B represents the city and are inverted versions of the original sketches.

Group A emphasises what each image conveys, while group B uses the original sketches as a point of reference, illustrating the effect that this image has on its surrounding. This serves as a means to establish a connection between the city and the forest.

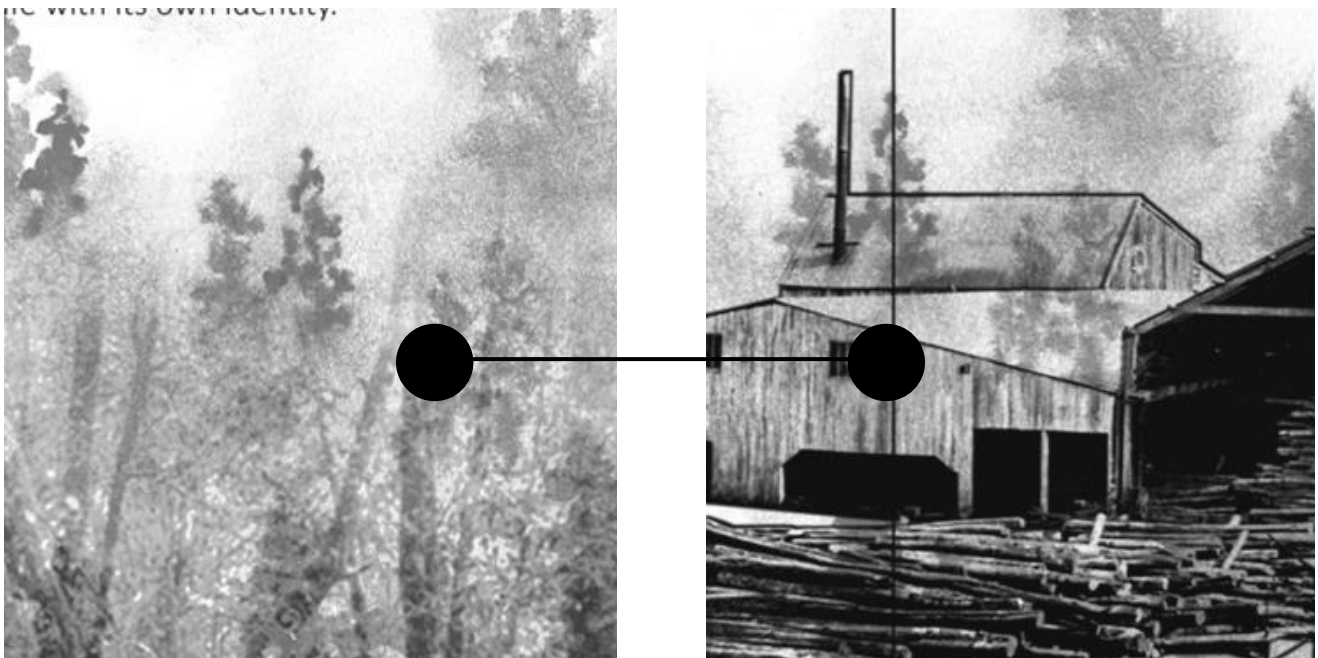
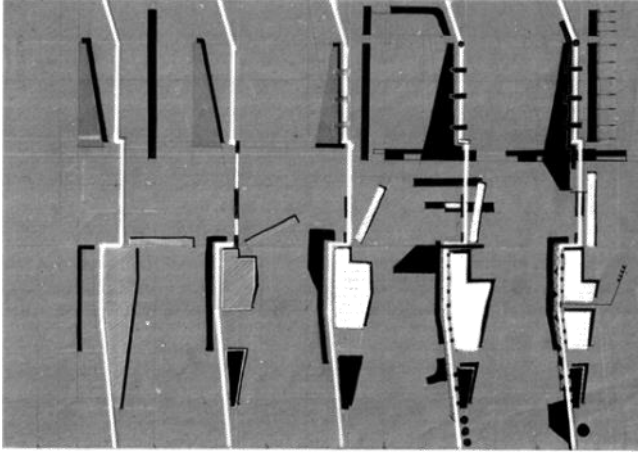


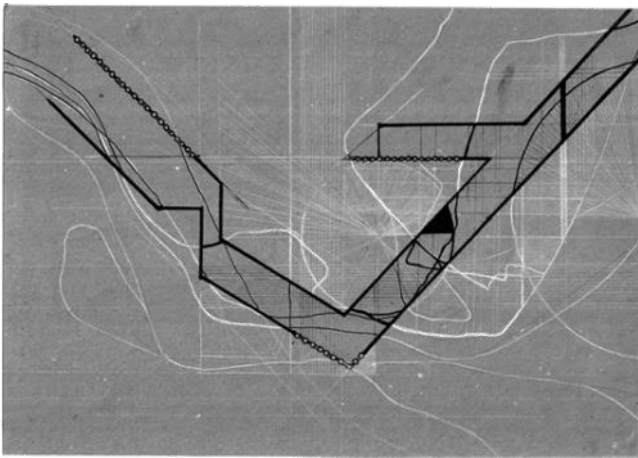
Fig 38: connection between forest and city (Author).

3.8 Concepts

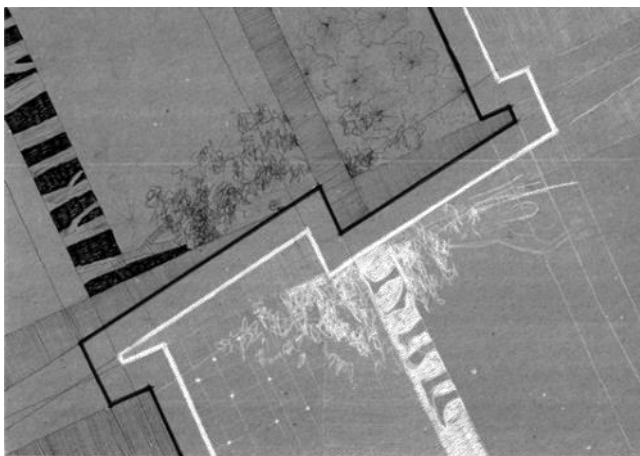
Forest - GROUP A



Lessons (transformation)

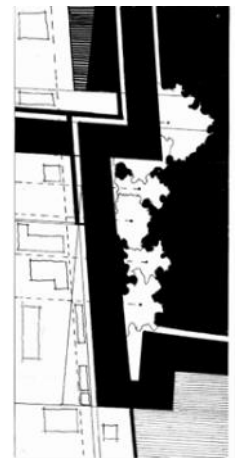
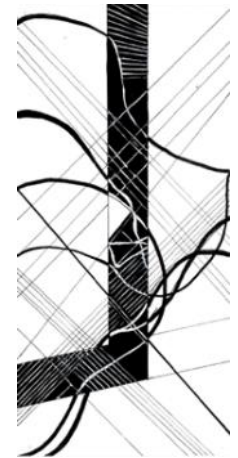
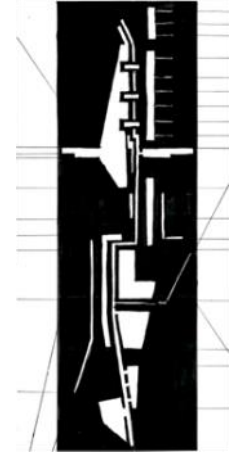


Tools



Joints

City - GROUP B



3.8.1 Lessons

Transformation

The concept “lessons” can be translated to architectural transformation.

Just like the superstitious beliefs of woodcutters there are some architectural conventions that can be shattered and challenged. A desirable end in this structure would promote harmony between human habitation and the natural world. Figure 40 illustrates a transformation happening from a basic layout. The transformation is not independent from its original source.

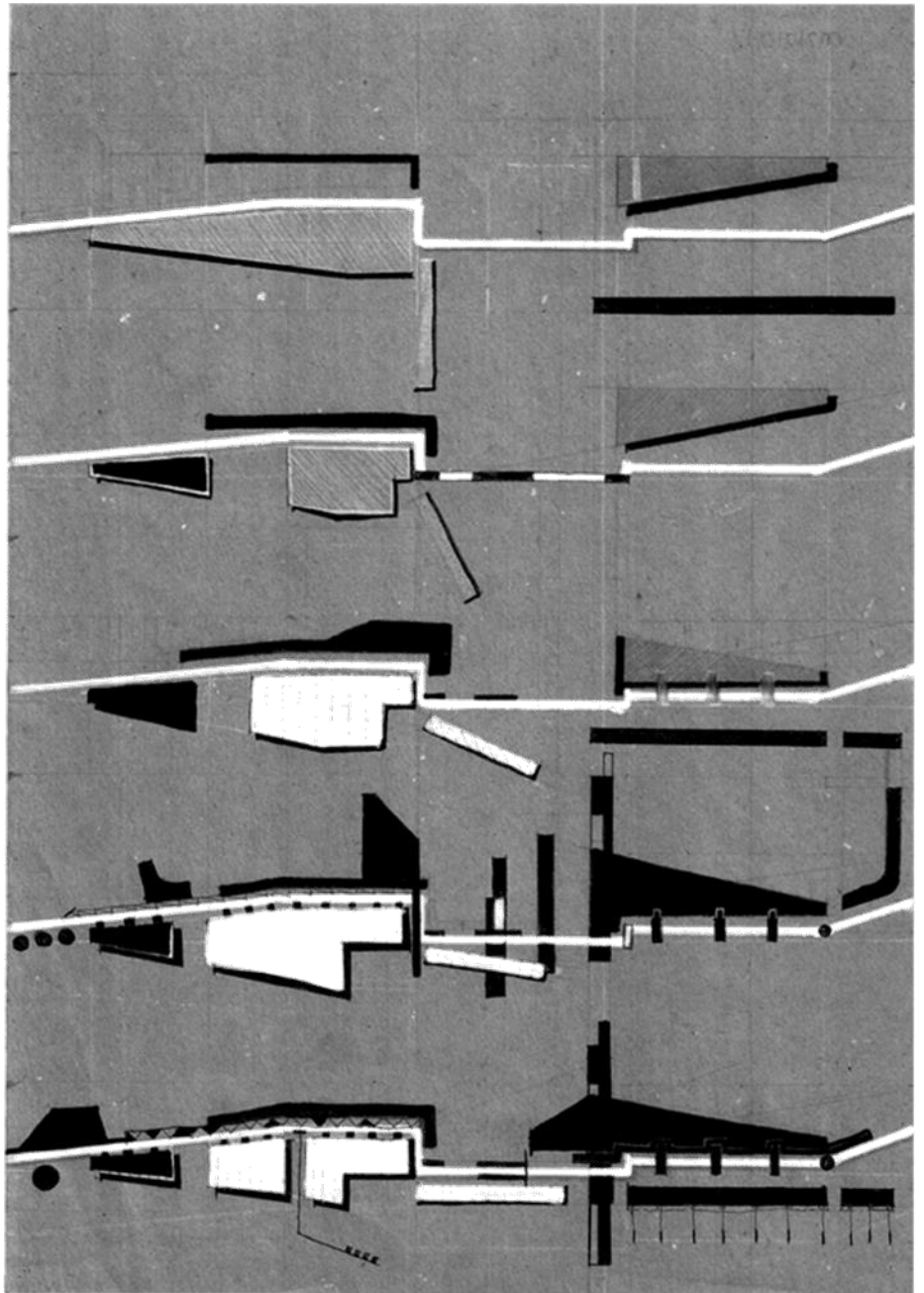


Fig 40: Transformation (Author).

Figure 41 is an inverted image of figure 40. This is done for every concept to illustrate a opposite reaction. This is done to create a connection between two sites.

The transformation of architectural explorations in the forest can be placed in the city and the effect of this could promote certain design opportunities.

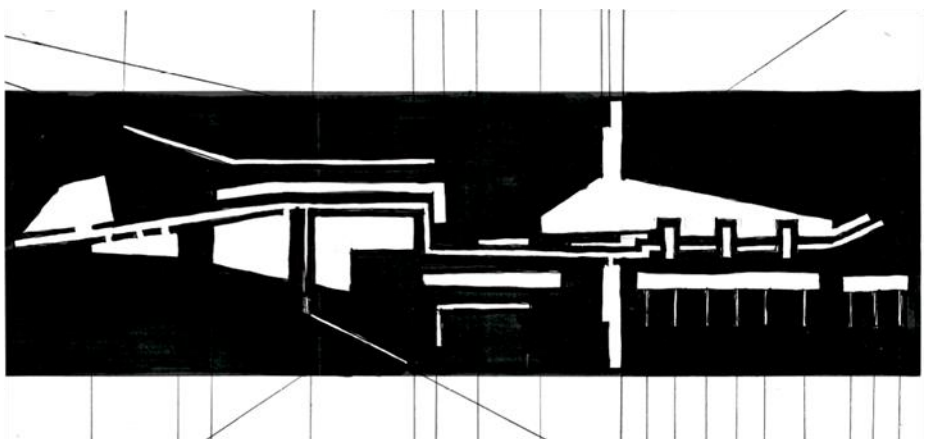


Fig 41: imagine extending directives (Author).

The concept model illustrates a transition happening. Each layer becomes more evolved from its previous layer and become more connected with the base it rests upon.

The idea is to show how the evolving images do not just evolve from its own nature, but also becomes more connected with its surrounding.

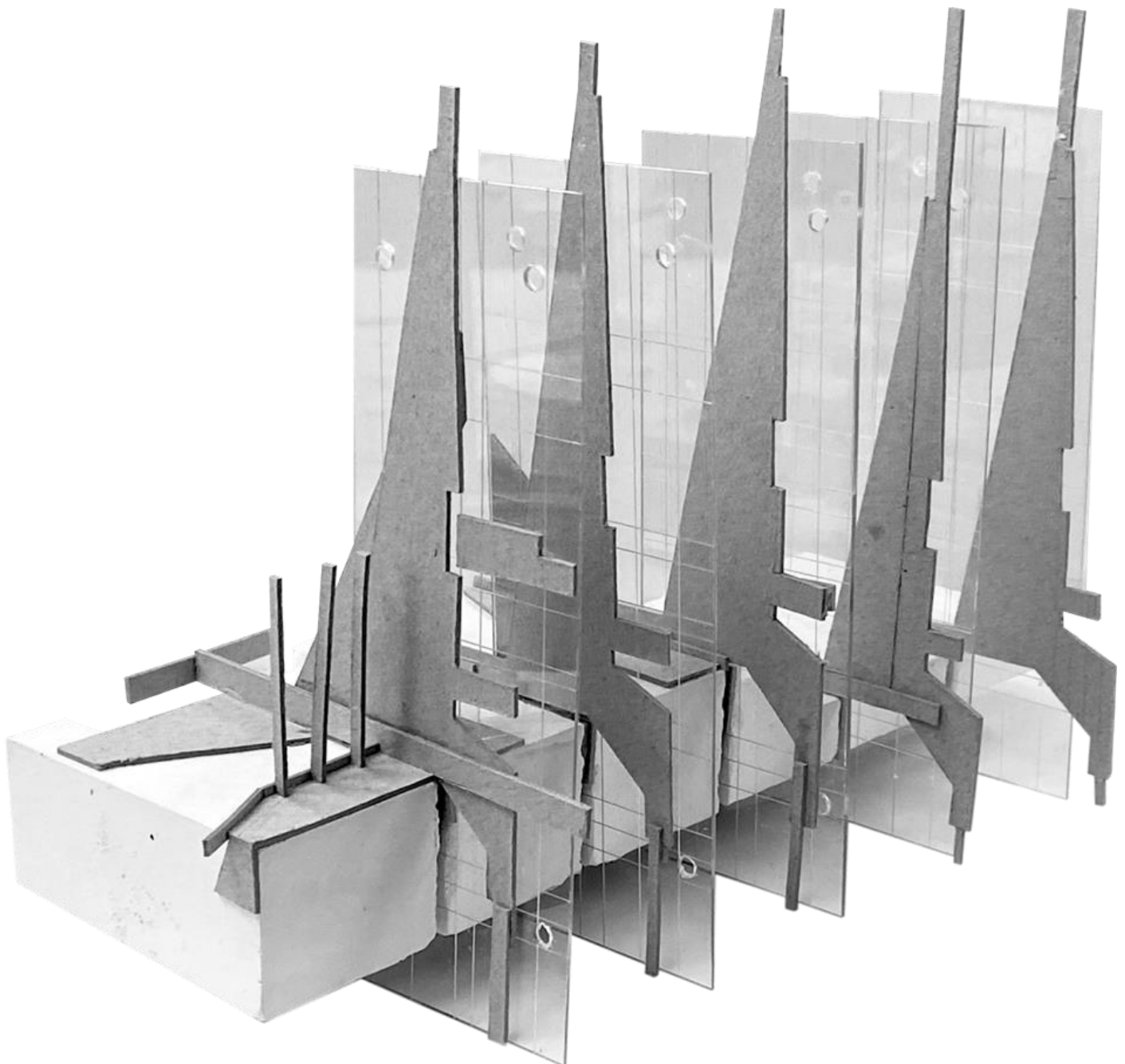


Fig 42: Lessons model (Author).

3.8.2 Tools

Guiding instrument

The concept shows the act of using a tool. The tool that we use fades, and the act of revealing is expressed using the tool. *Techne* reveals whatever does not bring itself forth and does not yet lie here before us. This revealing gathers together the different aspects in advance with a view to the finished vision as completed, and from this gathering determine its construction. This concept tries to reveal the narratives created in the forest and bring forth the existing identities. This could lead to finding a tool for studying the forest and guiding the poesis (truth).

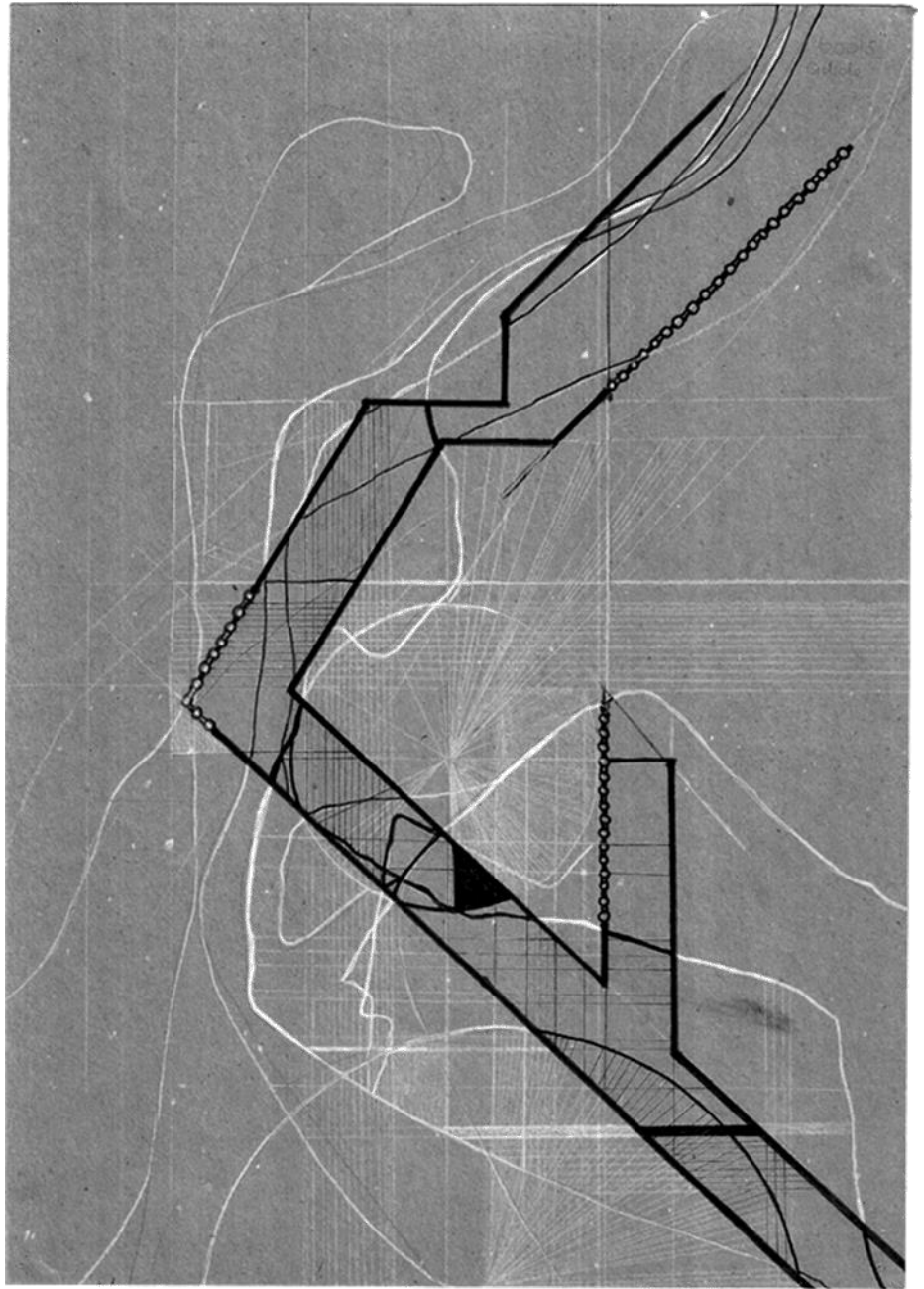


Fig 43: guiding instrument (Author).

The inverted image show how the darker part of the image creates guidelines outward and focuses on the effect that it creates, rather than the image itself. Things such as design resolutions reached in the forest could become a starting point and a guideline to use in the city.

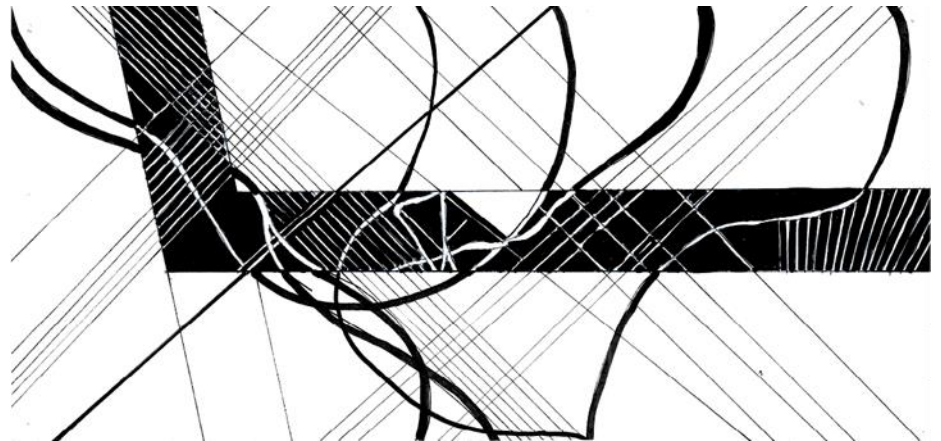


Fig 44: imagine extending directives (Author).

The concept model acted as a 'pit saw', which was used horizontally to cut lumber in the forest.

The idea is to carve a piece of charcoal on the blade and pieces would fall onto the piece of paper. The paper is dragged through a narrow opening which smudges the charcoal onto the paper and leaves a print on it. This model tries to show the effect a tool can have on things when using it.

Fig 45: pit saw (Author).



3.8.3 Joints

Articulation

The concept of joinery become important when dealing with two sites with heavy contextual clashes which sit in juxtaposition to one another. In the forest, the goal is to capture the narrative that existed there and honour the environment. In the city the goal is to capture the memory of the forest and promote harmony between nature and city. A way in which this could be achieved is to address these fragile contextual issues with an architectural intervention that acts like a joint on multiple theoretical levels, furthering our understanding of how architecture can contribute to the landscape, establishing a narrative between two conflicting conditions.

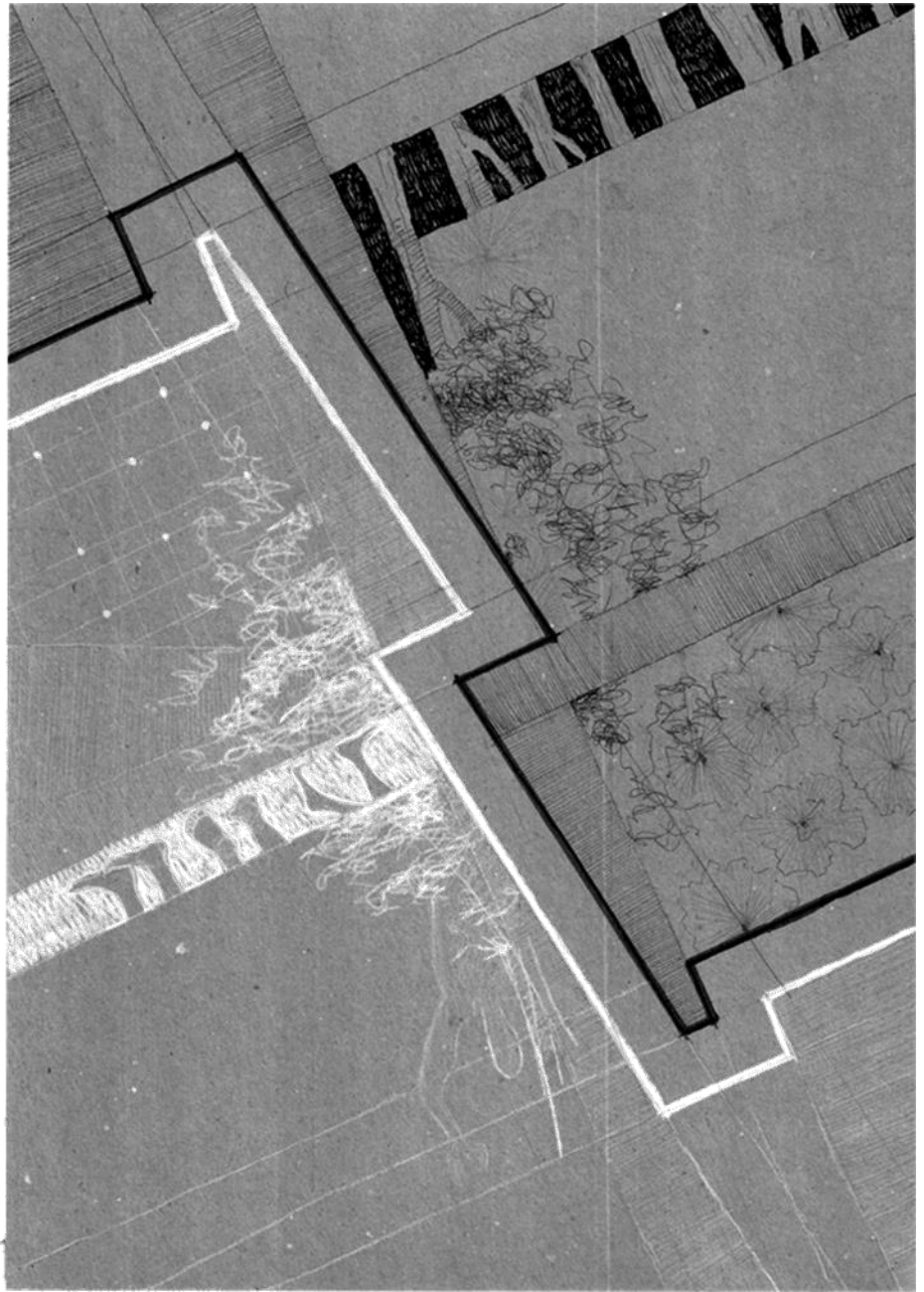


Fig 47: Articulation (Author).

The inverted image shows how the joint then in turn responds to the surrounding. The joint tries to reach out to the surrounding.



Fig 48: imagine extending directives (Author).

The concept model was an exercise of creating different joints and how these joints were used together.

The base consisted of a dovetail joint carved out of the wood and a connecting piece made of plaster of paris.



Conclusion of Experiment 1

Experiment 1 initiated the search for an appropriate site offering a macro analysis of the area from which the final site derived. The theoretical planning opened the conversation of using these

REFLECTION

After deciding that Knysna was the chosen site, an intimate site analysis and formation of conceptual ideas followed which concludes experiment 2. A specific site was never chosen because before finalising the site in Knysna, the decision to relocate the proposed site to Karatara had already emerged. This does however still give a good overview of the timber boom in order to understand the start of the Karatara welfare settlement.

It became clear that today, Knysna may not be the most appropriate site when dealing with the social issues that resulted from Knysna's timber boom. This is because Knysna became such a large tourist centre and there are plenty of opportunities for more expansion.

Knysna houses many historical stories, and it is because of Knysna that we had this history and experienced woodcutters. However, there are still other settlements that suffer under the consequences of the timber boom. It became a choice between further praising Knysna for its forests and the woodcutters or assisting the remnants that occurred because of the timber boom and its attempts to resolve the exploitation of Knysna's forests.

This led to the investigation into a settlement close-by, Karatara. This project shifts from being focused on wood crafting to a social and community upliftment in the welfare settlement.

4. EXPERIMENT 2

SITE ANALYSIS

THEORETICAL PLANNING

DESIGN DEVELOPMENT x2

PRECEDENT STUDY

CONCLUSION

REFLECTION

4.2 Introduction

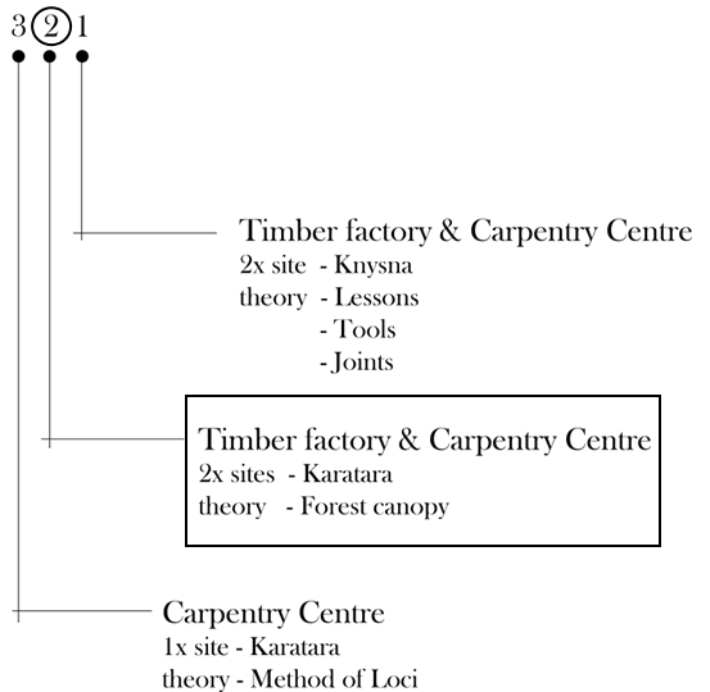


Fig 50: Diagram experiment 2 (Author)

Experiment 2 involves the establishment of a Timber Factory and Carpentry Centre within separate sites in the welfare settlement of Karatara. As with Experiment 1, it continues the exploration of the relationship between natural environments and man-made structures. This phase entails a comprehensive analysis of the proposed site and its surrounding infrastructure.

Furthermore, Experiment 2 delves deeper into the interplay between the Timber Factory and Carpentry Centre. The theoretical framework, developed from a site-specific perspective, elucidates the conceptual and practical interconnections between these two structures and draws parallels to natural forest processes. This conceptual foundation serves as the basis for initial design development stages.

4.3 Karatara origins

The Department of Forestry initiated a housing scheme in 1917 to create European Settlements for plantation workers, situated conveniently near forestry stations. This was not specifically aimed at improving the living conditions of woodcutters.

Initially using surplus war tents and huts, they later transitioned to sod houses with two or three bedrooms, dining areas, kitchens, wooden windows and doors, and earthen floors. Eventually, these sod houses were replaced by timber and corrugated iron cottages. (P, Caveney, p22).

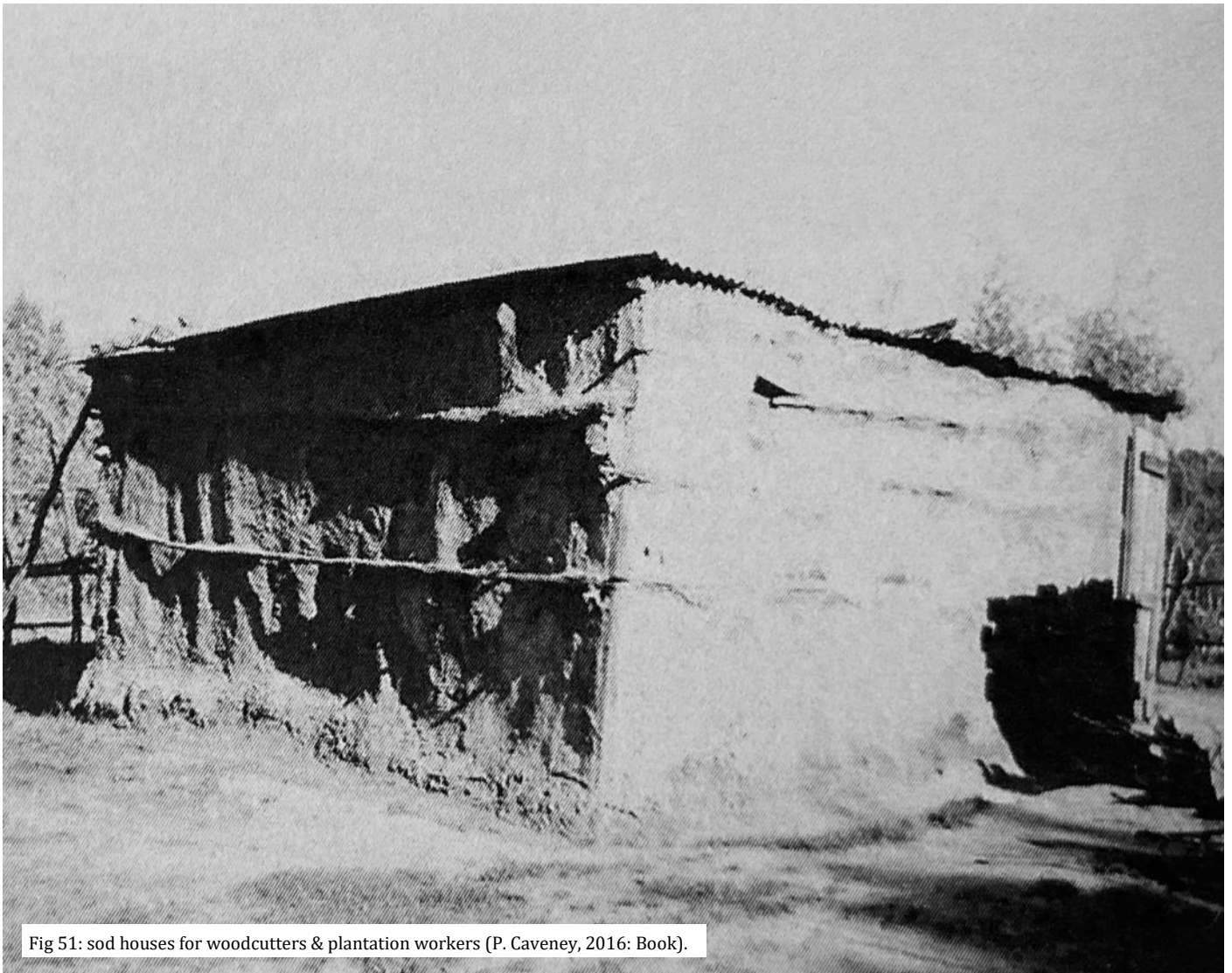


Fig 51: sod houses for woodcutters & plantation workers (P. Caveney, 2016: Book).

In 1922, Sir Thomas Smartt, a former South African politician, visited the George-Knysna area to finalise the location for the upcoming labour settlement in Karatara. Construction began shortly thereafter, with the majority of labourer cottages in Karatara being constructed from iron and wood (P, Caveney, p26).

By March 1924, 129 families had settled in the Karatara settlement. Additionally, a decision was made to relocate registered woodcutters to the George and Knysna settlements.

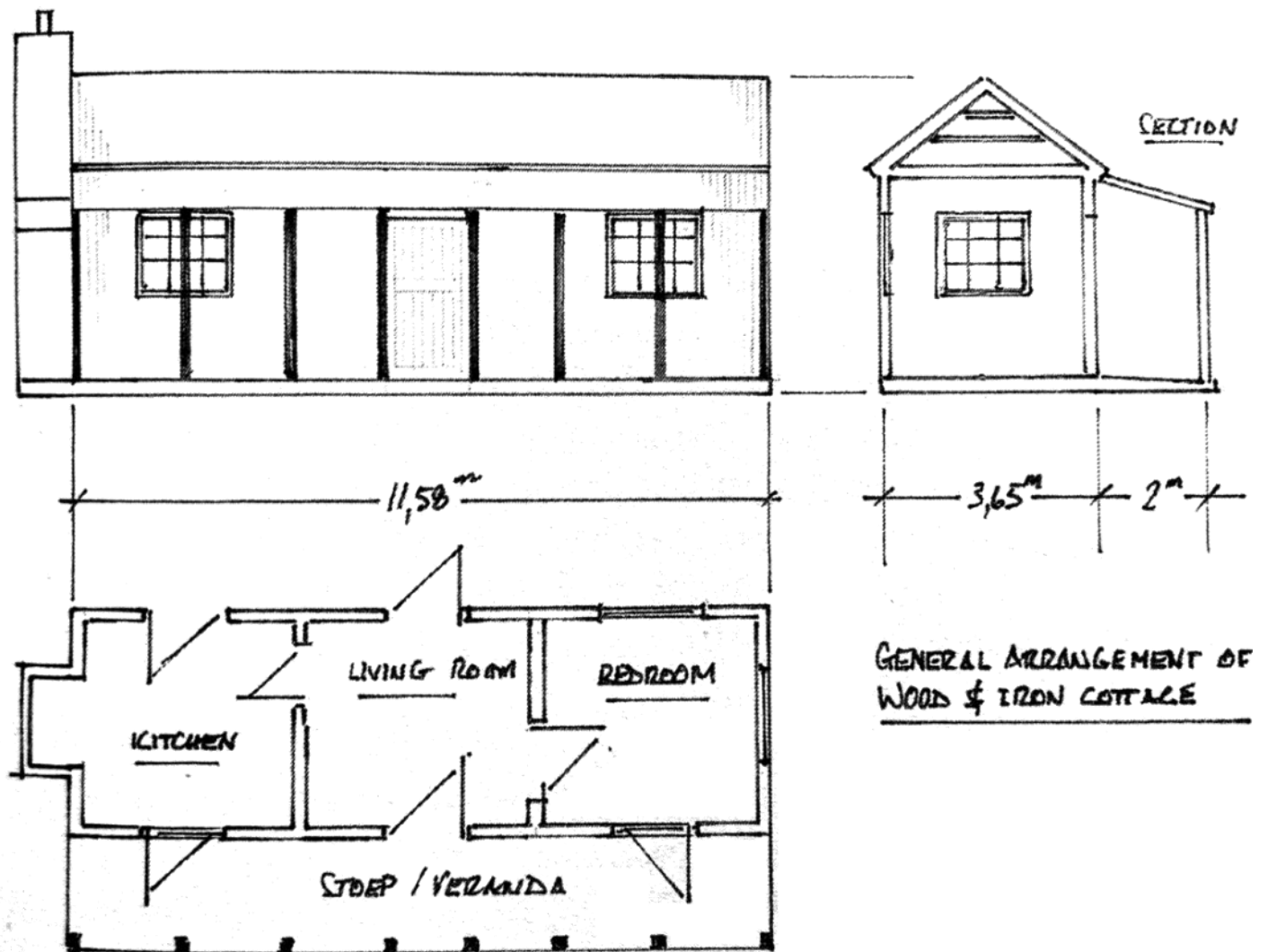


Fig 52: wood and iron cottage (P. Caveney, 2016: Book).

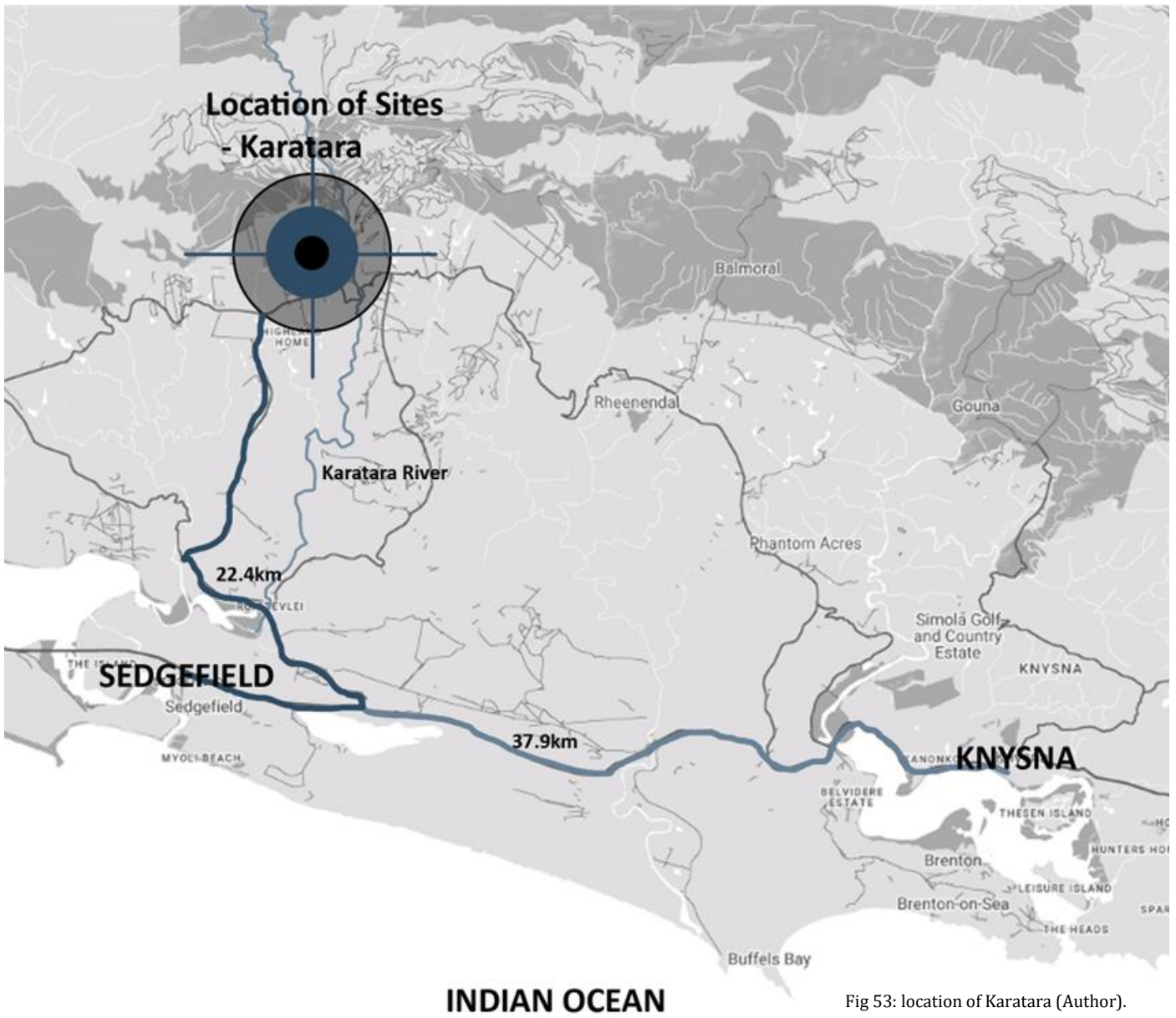


Fig 53: location of Karatara (Author).

4.5 Site context analysis

4.5.1 Macro site analysis

Karatara is a Welfare Settlement located close to Knysna and Sedgfield. Karatara is part of the Knysna Local Municipality which is also a part of the Garden Route.

This settlement lies on top of a plateau and approximately 37km north-east of Knysna. It is surrounded by beautiful farmland and indigenous forests.

Many years ago, woodcutters felt that they were being banished to this town. In 1939, the decision was made to close the forests in order to safeguard them from total destruction, and many woodcutters were subsequently relocated to Karatara (P, Caveney, 2016).

Site context analysis

4.5.2 Messo site analysis

Karatara is part of the famous Seven Passes Road, which is a desired scenic tourist route. It is nestled in a forest glade. There are farms around the area where both work and residential arrangements exist for some people who travel to Karatara to find jobs.

However after a personal conversation with S, Vogel on 8 April 2023, it appears that most younger people in Karatara have to travel to Sedgelyield and accept low-income jobs. A large population of Karatara's residents are pensioners.

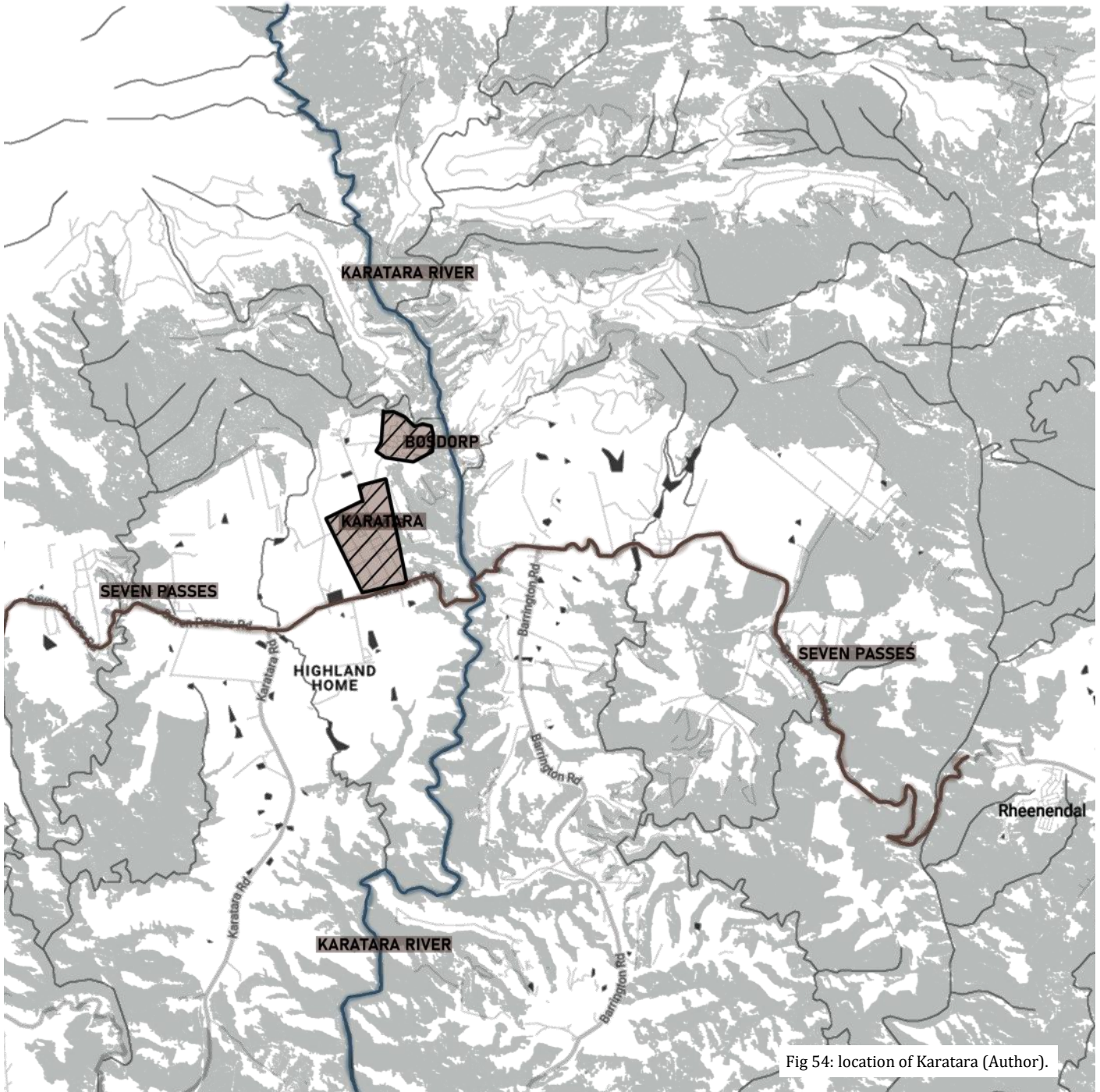


Fig 54: location of Karatara (Author).

Messo site analysis

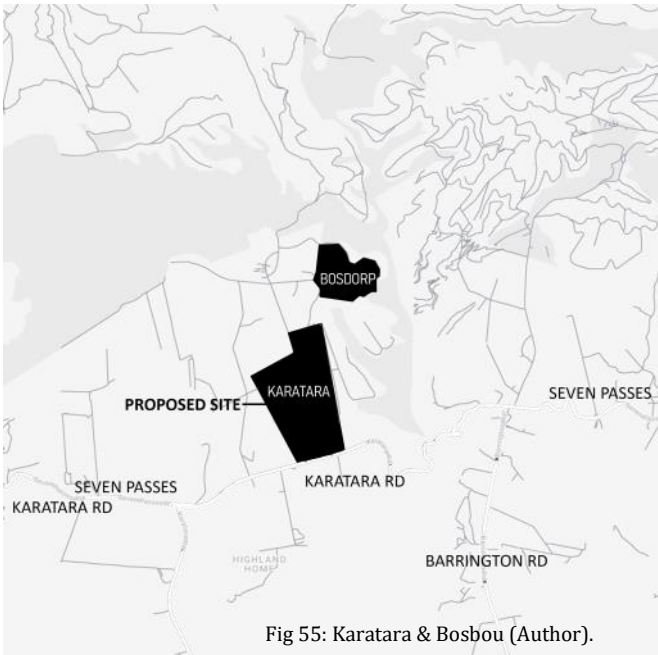


Fig 55: Karatara & Bosbou (Author).

Karatara and Bosbou settlement

The area is made up of Karatara Welfare Settlement and Bosdorp.

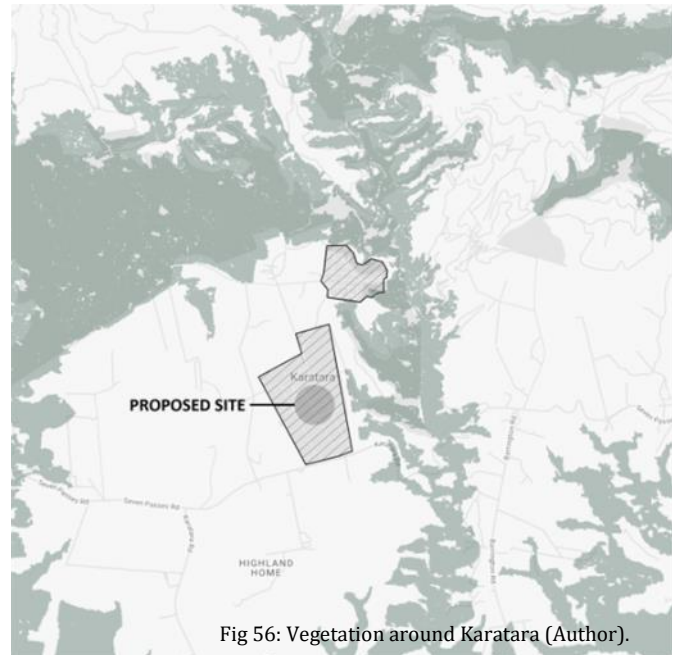


Fig 56: Vegetation around Karatara (Author).

Vegetation

Karatara is located in-between a forest. Making Karatara the center of a forest glade. In these forests, there were some woodcutters who cut wood close to this area.

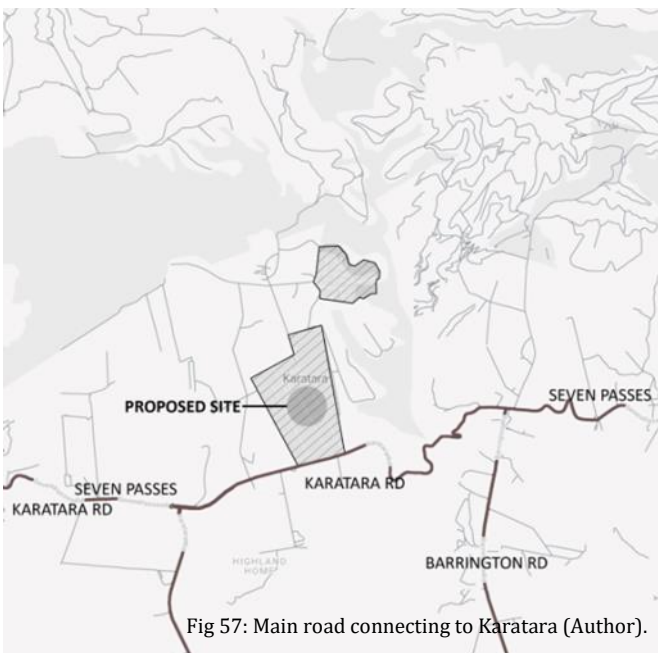


Fig 57: Main road connecting to Karatara (Author).

Main roads

There is only one main road that moves perpendicular to Karatara, 'Karatara Road'. This road is also part of the Seven Passes Road (Karatara Pass). Karatara can be entered from Segdefield or Knysna's side.

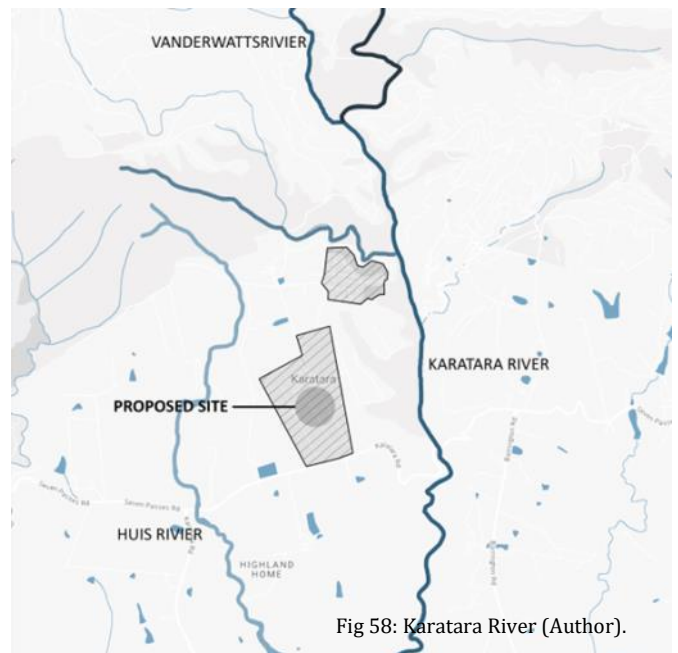


Fig 58: Karatara River (Author).

Rivers

Karatara got its name from the Karatara River that runs close by (P.Caveney, Karatara; 2016).

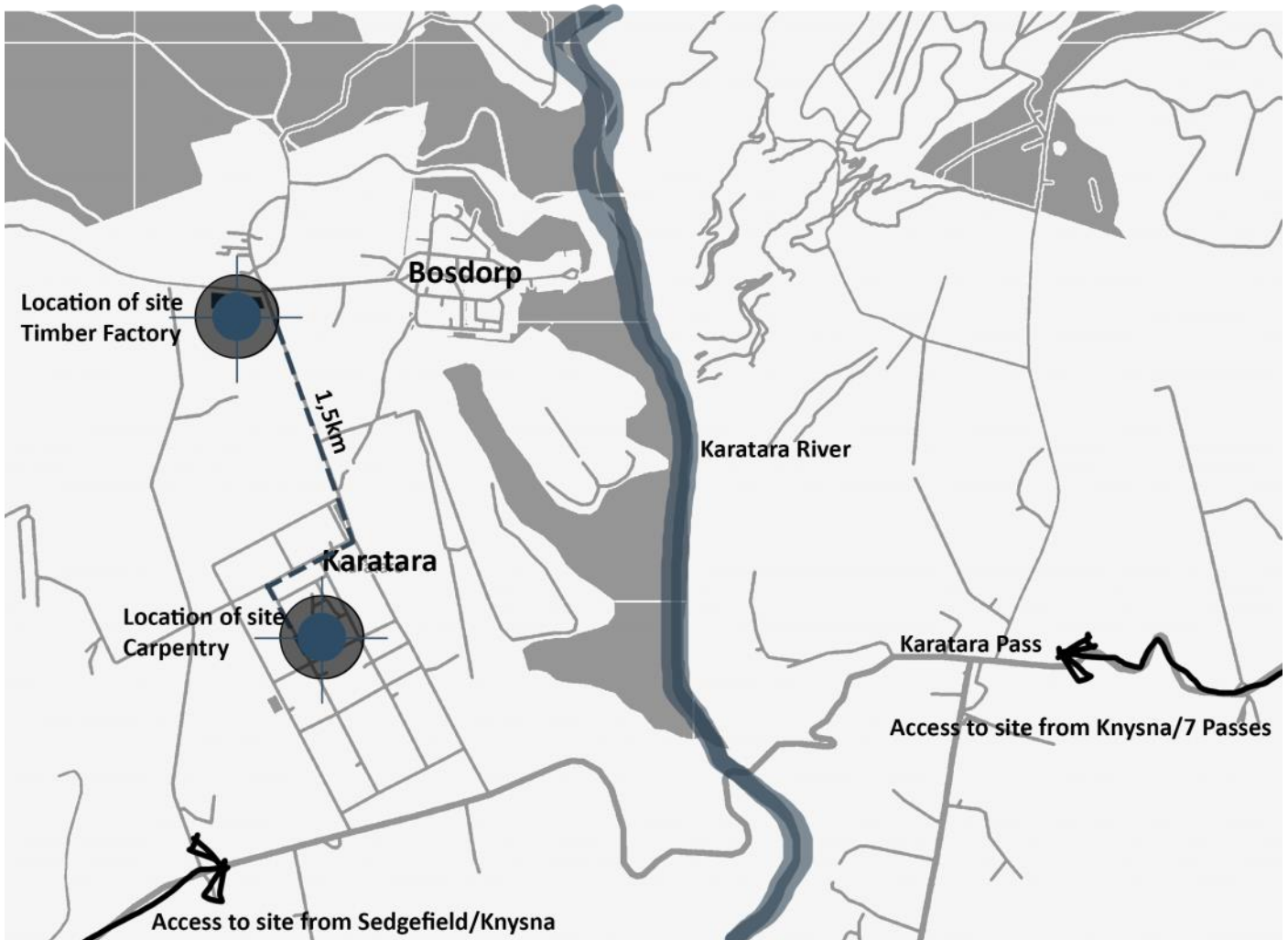


Fig 59: Two proposed site in Karatara (Author).

Site context analysis

Messo site analysis

The town started as a plantation site, to aid the exploitation of forests and later became a social welfare town to aid in the housing problem. In 1939, when the rights of woodcutters to work in the forest was annulled, they were given a small pension and were also relocated to Karatara.

This experiment consists of two sites. The carpentry centre is located in the middle of Karatara and the timber factory is located closer to Bosbou. The two sites are approximately 1.5km from one another.



Fig 60: Karatara timeline (Author).

4.6 Site location 1 - Timber Factory

4.6.1 Micro site analysis

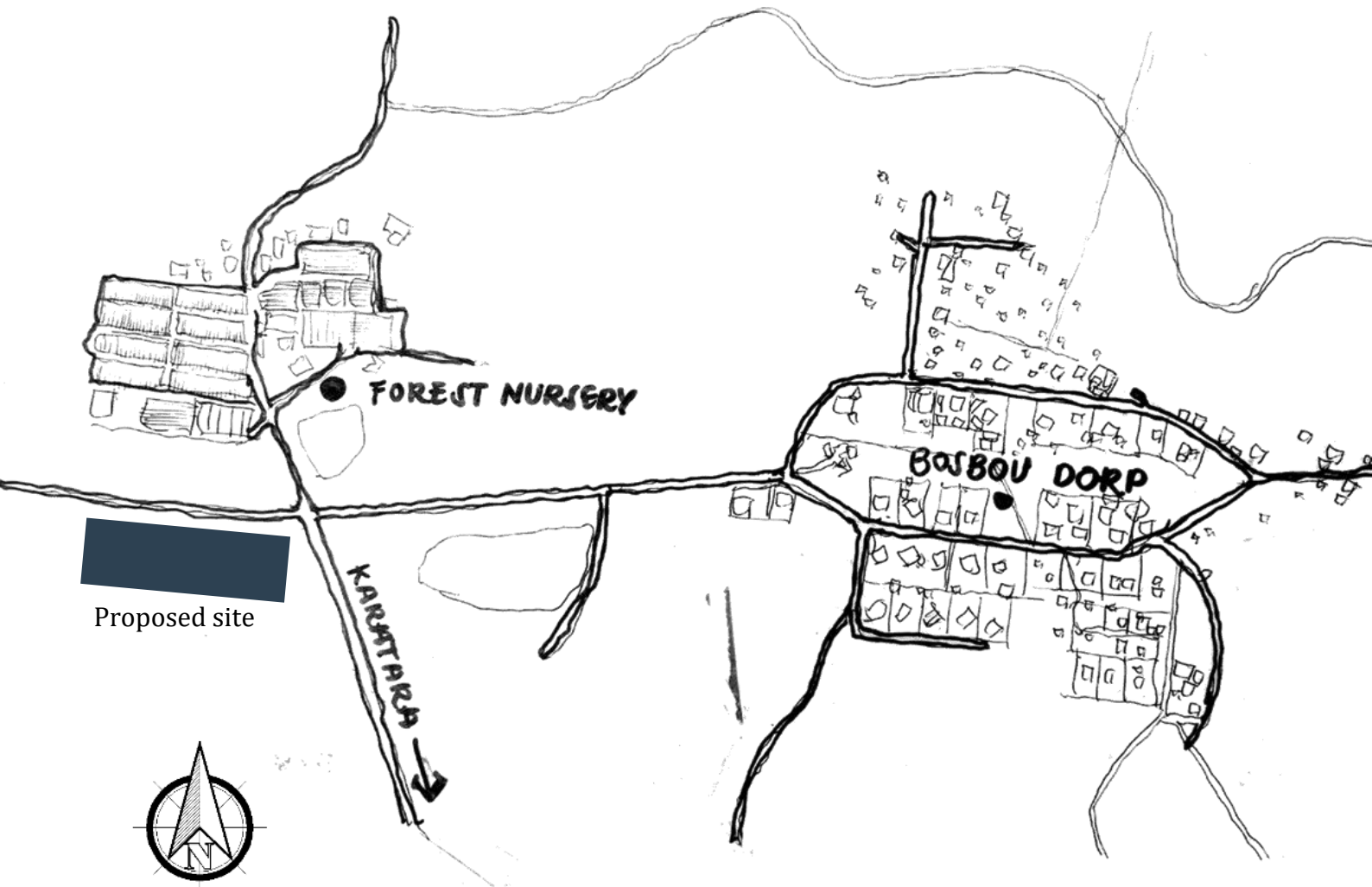


Fig 61: First proposed site near Bosbou settlement (Author).

The first proposed site is located further away from the small town due to concerns about potential noise from the timber factory. Additionally, it is also located in close proximity to forested areas which could serve to be helpful where trees could be planted and harvested.

This is so that over time, the factory would be self-sufficient. The first proposed site is located close to a forest nursery. The nursery could assist the Carpentry factory in creating a plantation where trees can be harvested and used.

4.7.2 Surrounding buildings

Bosbou settlement

The structures in Bosbou village are notably less developed compared to the Karatara area. In Bosbou, timber is commonly used for crafting gates, fences, buildings, and window frames and doors. It remains a delight to behold the intricate details in some of these structures and the skilful manner in which timber has been employed.



Fig 64: timber details (Author).



Fig 65: Timber fence (Author).



Fig 66: timber frames (Author).



Fig 67: timber structure (Author).

FOREST NURSERY LOCATED
CLOSE TO PROPOSED SITE

PROPOSED SITE 1

BOSBOU SETTLEMENT

BOSBOU ROAD

PROPOSED SITE 2

KARATARA ROAD

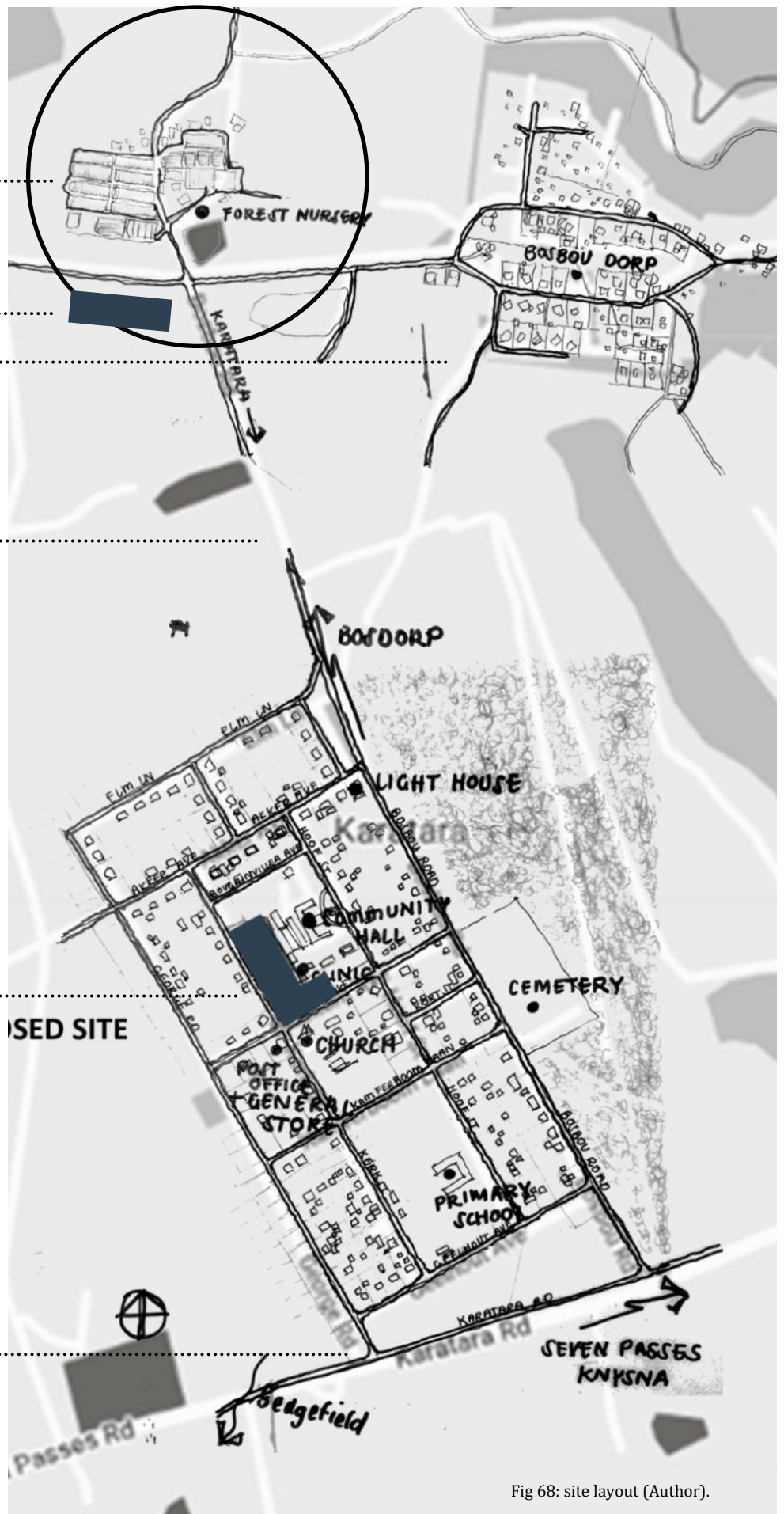


Fig 68: site layout (Author).

Forest nursery

Karatara research centre and production nursery is owned by Ezigro seedlings. This group owns and operates eight nurseries across South Africa (Ezigro Seedlings, 2023: Online).

This is a historic nursery for the industry and the Tree Protection Co-operative Programme (TPCP) because it is one of the last that still grow *Pinus radiata* (Monterey pine) in South Africa (Slippers, 2020).



Fig 69: Forest nursery (Author).

4.7 Site location 2 - Carpentry Centre

4.7.1 Micro site analysis

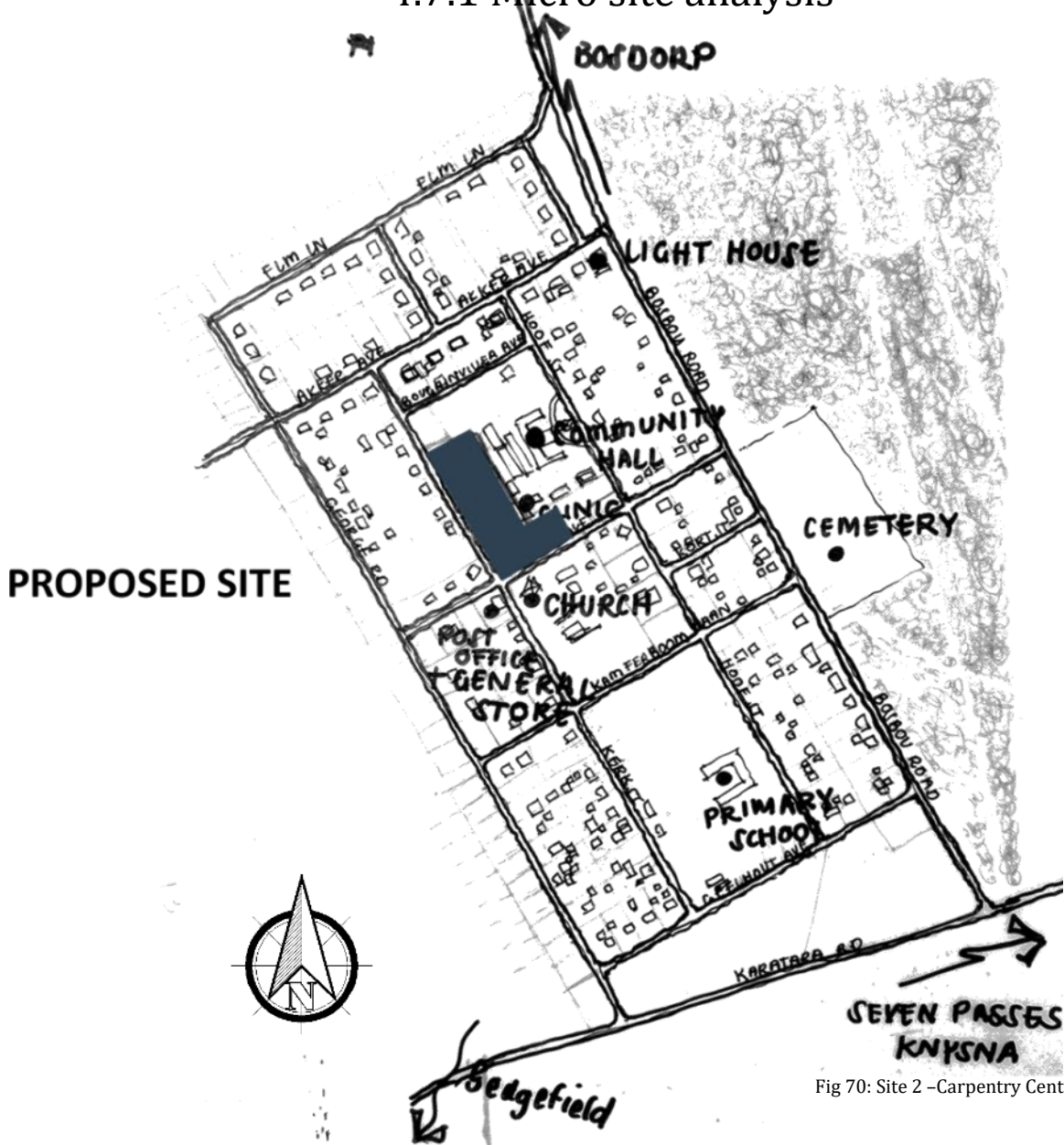


Fig 70: Site 2 -Carpentry Center (Author).

The second proposed site for the Carpentry Center is located in the centre of Karatara. This might assist in connecting with the surroundings and enhance engagement amongst the people of Karatara.

The settlement is made up of a church, primary school (grade 1-7), post office, small general store, community hall, clinic and the light house. The community hall used to be a nursing home and after that a college. Today it is a community hall which is used to allocate housing to people that go to the Knysna municipality.

DUTCH REFORMED CHURCH

BLOEKOM AVENUE

PROPOSED SITE



Fig 71: corner of site (Author)

VIEW FROM CHURCH
TO PROPOSED SITE

CLINIC

PROPOSED SITE

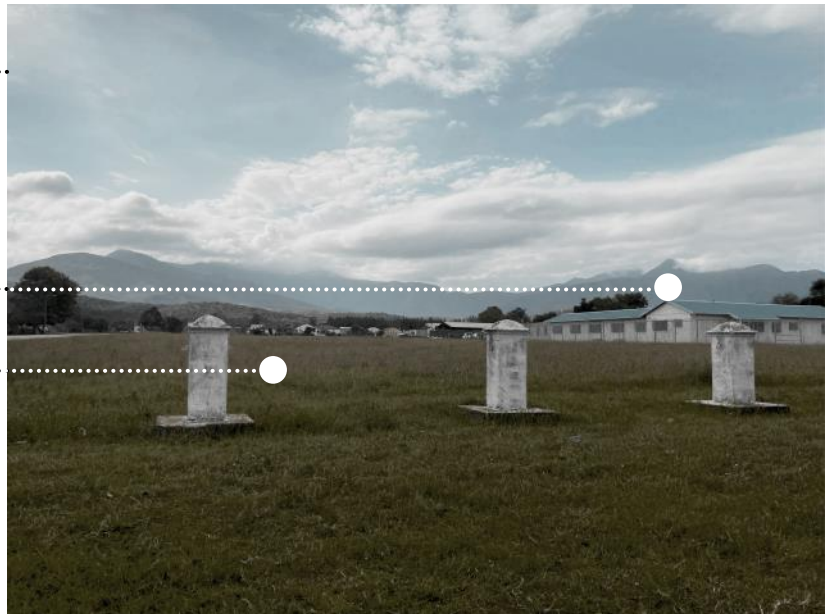


Fig 72: site from Bloekom avenue (Author).

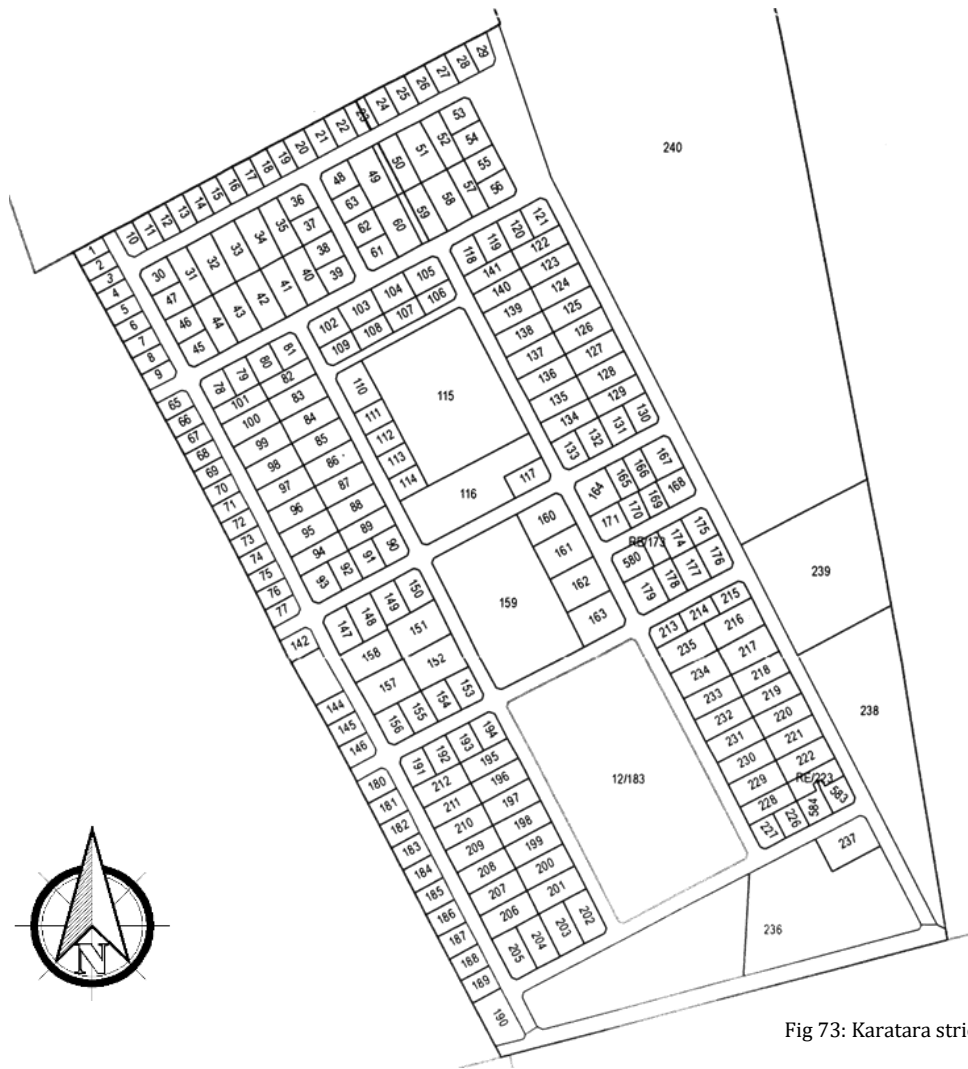


Fig 73: Karatara strict layout (Author).

4.7.2 Surrounding buildings

Experiential impoverishment

In a small town like Karatara, which is laid out in a very formal grid with similar housing designs, experiential impoverishment may manifest in various ways due to the homogeneity and limited variety in the environment.

The layout may not encourage social interactions, and residents could struggle to form a sense of community, leading to social isolation and a lack of social support networks. This design has the potential to foster community engagement by occupying the town's central area.

Homogeneous housing



Fig 74: Collage of homogeneous housing (Author).



Fig 75: Karatara site layout (Author)

Surrounding buildings

Homes

Most structures in Karatara are houses. The design of the houses is simplistic. Some consist of a passage, bedrooms, bathroom, a living room pantry and kitchen.

Most houses in Karatara have a veranda attached to the entrance of the building creating an extended threshold into the houses (figure 78).

Characteristics noticed from existing buildings:

- Simplicity
- Symmetry
- Few rooms
- Order
- Similarity

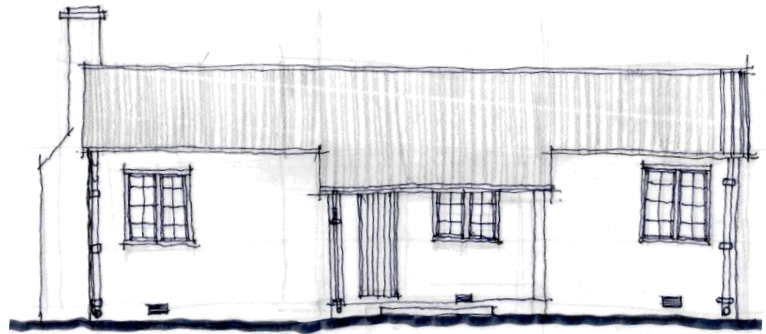


Fig 76: Karatara house elevation (Author)

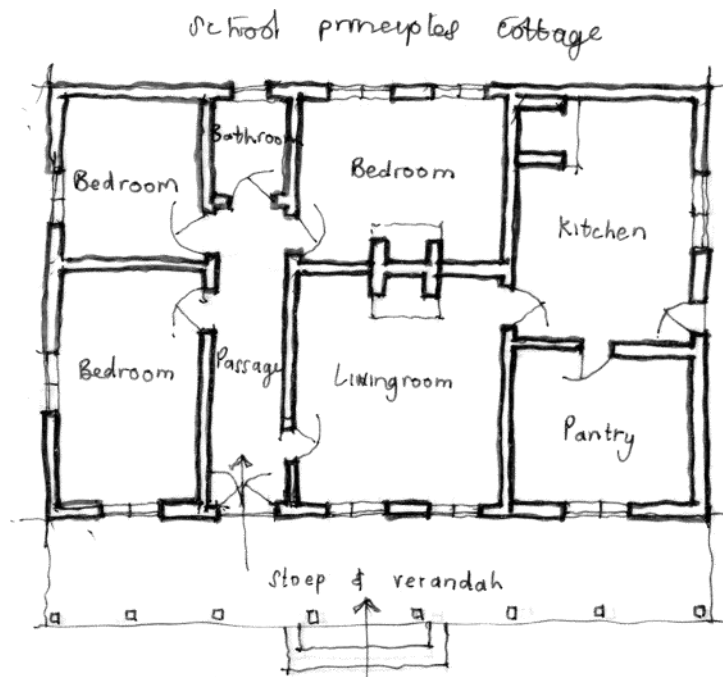


Fig 77: Karatara house plan (Author)

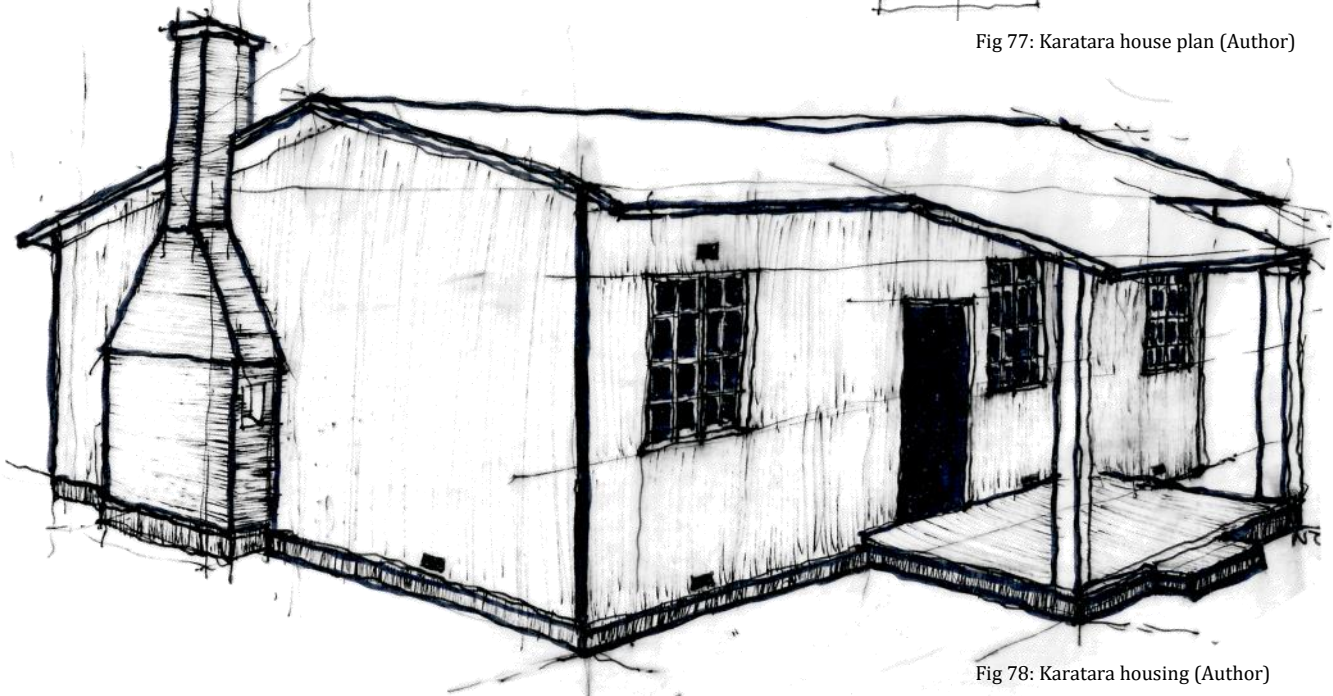


Fig 78: Karatara housing (Author)

Surrounding buildings

Dutch Reformed Church

The second proposed site (Carpentry) is situated between a Dutch reformed church with a view towards the mountains.

The Dutch Reformed Church on Bloekom Avenue, on the southern side of the site, faces towards the proposed site and creates a strong axis and hierarchical point through its long tower. The church will have a large influence on the site and how people address the southern point of the proposed site.

Next to the proposed site is also a clinic.

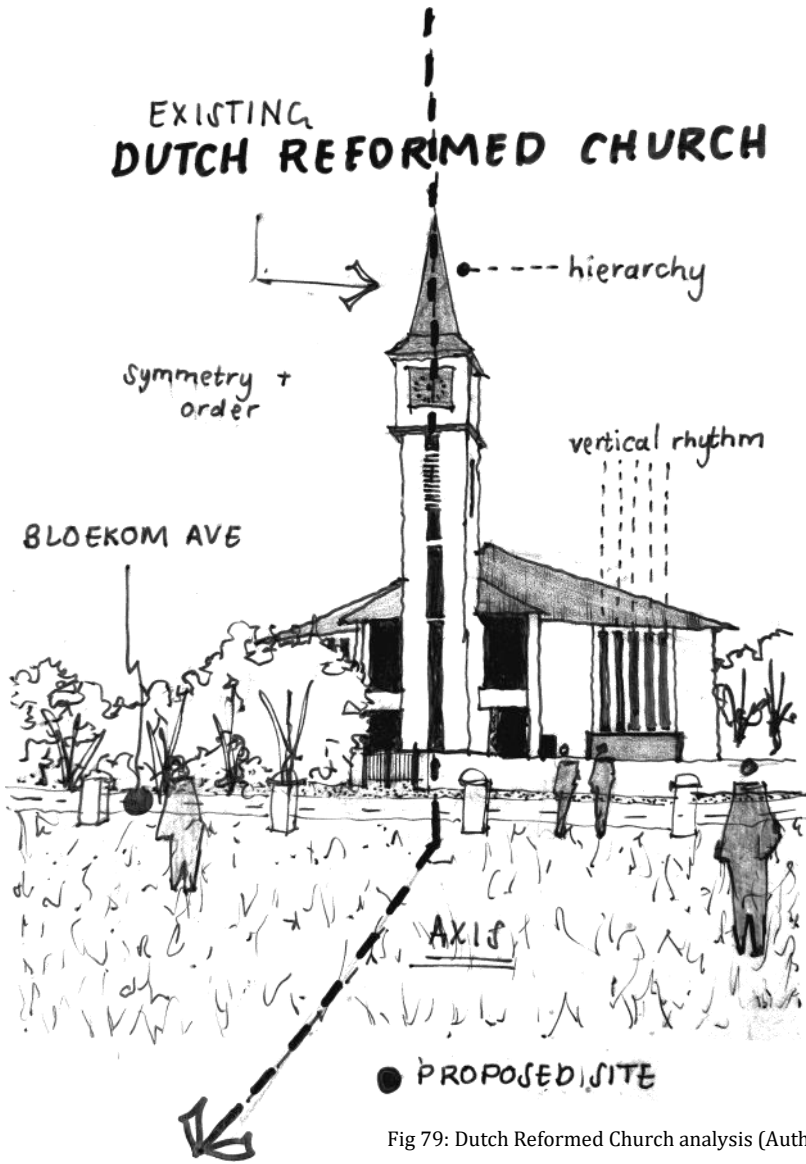


Fig 79: Dutch Reformed Church analysis (Author).

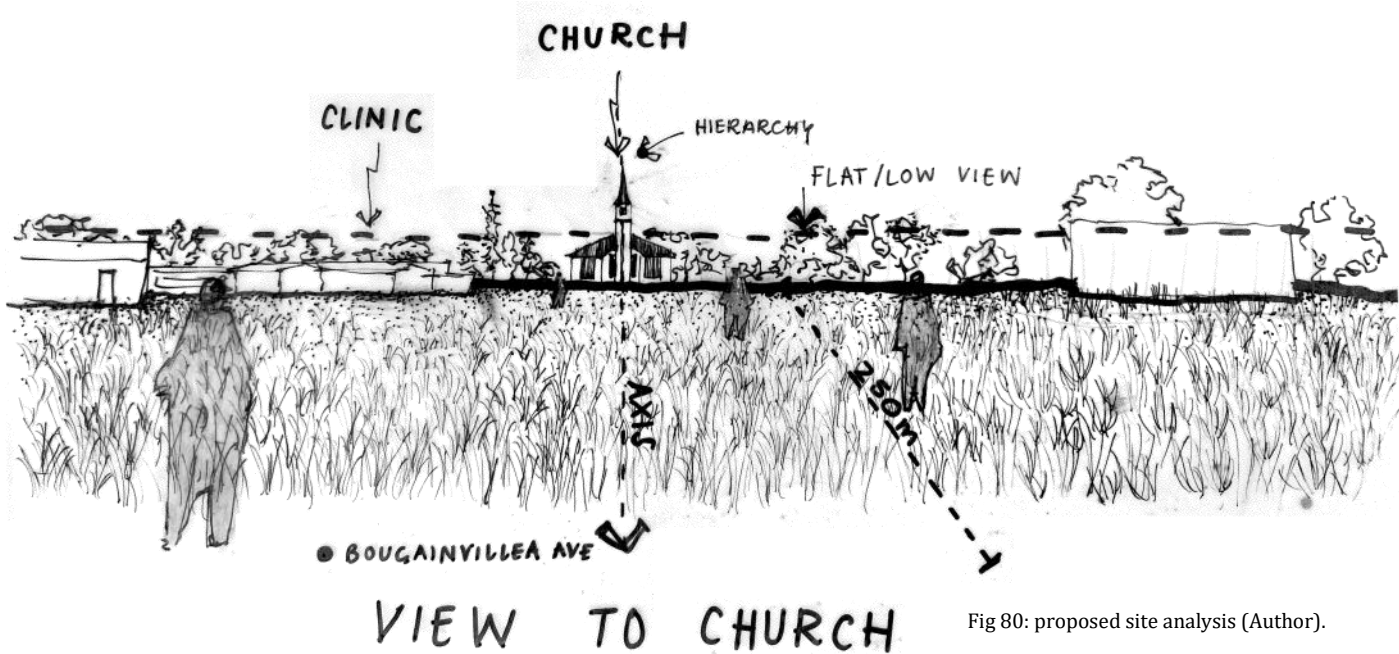


Fig 80: proposed site analysis (Author).

Surrounding buildings

Clinic

The clinic is open only once a week and with inconsistent operating hours. As seen in figure 81 (of clinic), the area around the clinic is not user friendly. This compels many to wait outside for their turn to enter the clinic, with no shading devices or seating areas.

Since the clinic is located very close to the proposed site, it is a possible design opportunity. The project can become an extension to the community, including spaces that they may utilise.

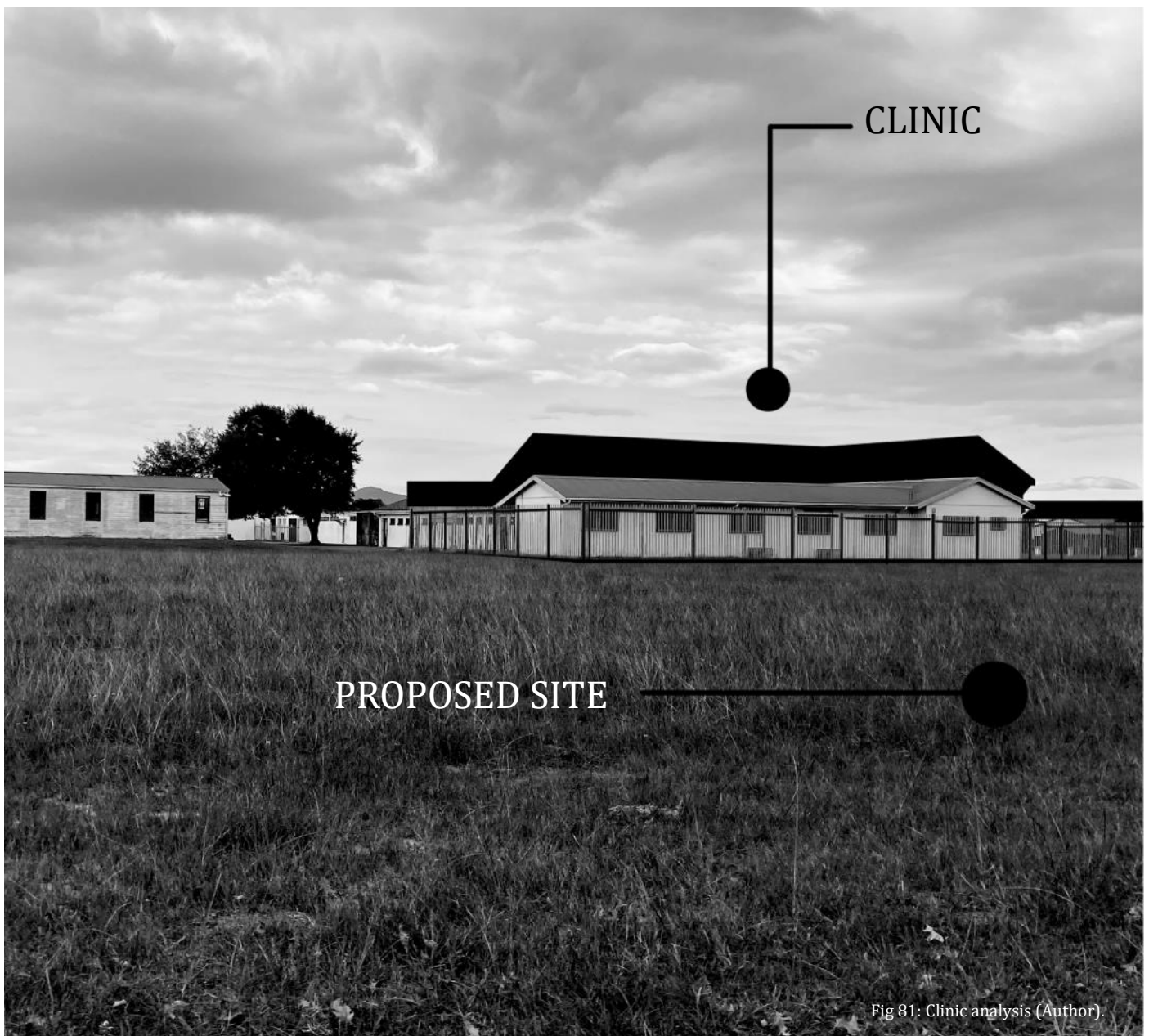


Fig 81: Clinic analysis (Author).

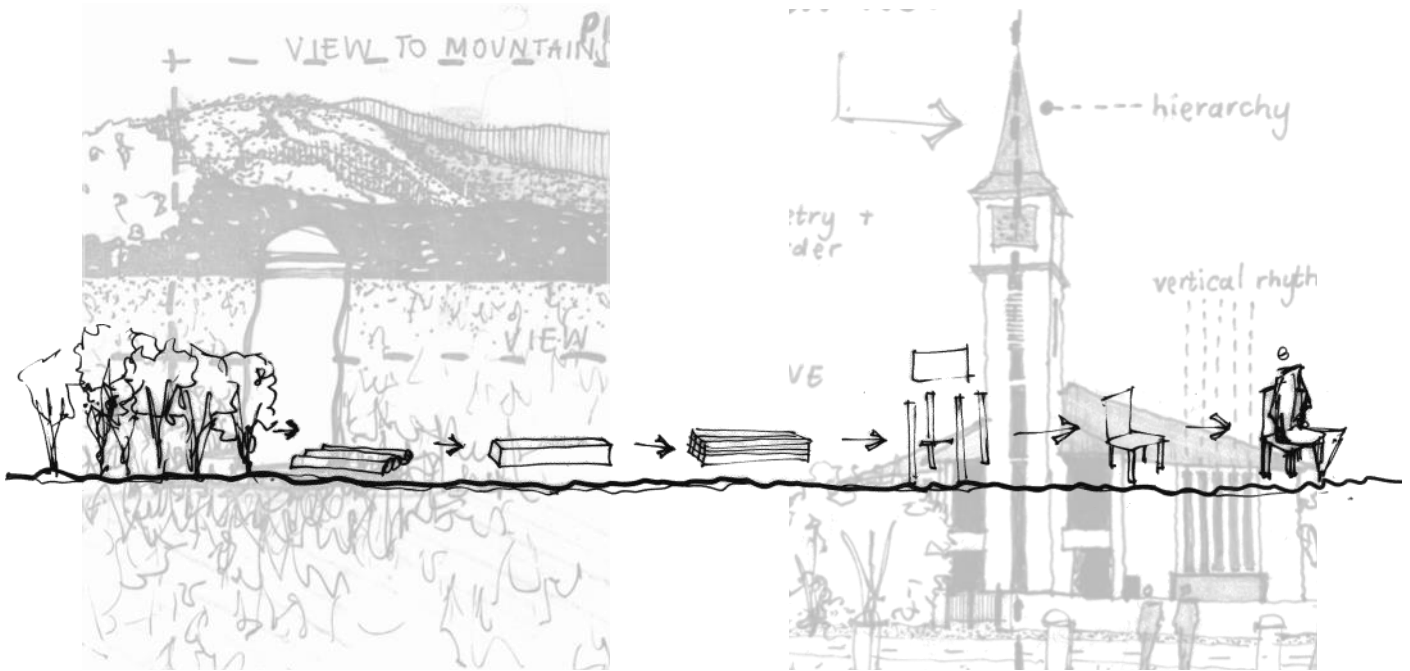


Fig 82: nature & human connection (Author).

4.7.3 Wo(man) - Nature

There is an opportunity to link the natural landscape to man-made structures since the proposed site sits between a church and a view to the mountains.

This links closely to the idea of transforming natural resources (timber) into something that can be used by people.

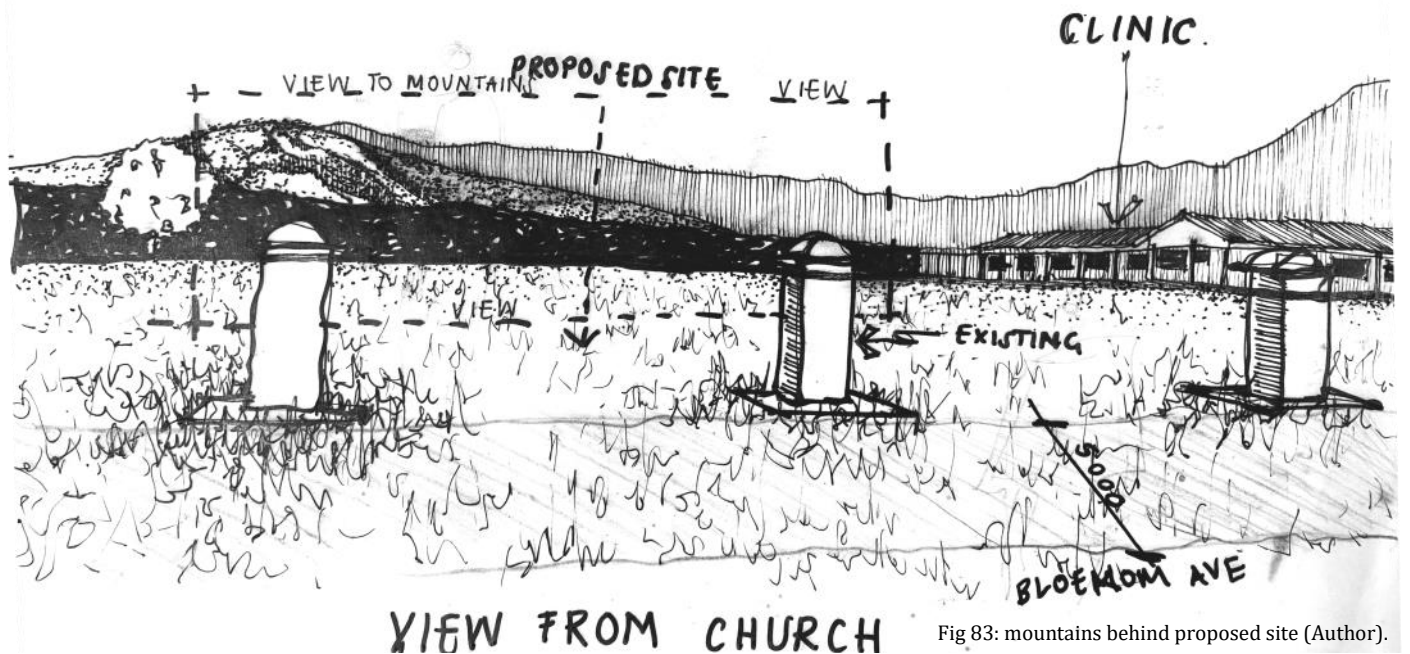


Fig 83: mountains behind proposed site (Author).

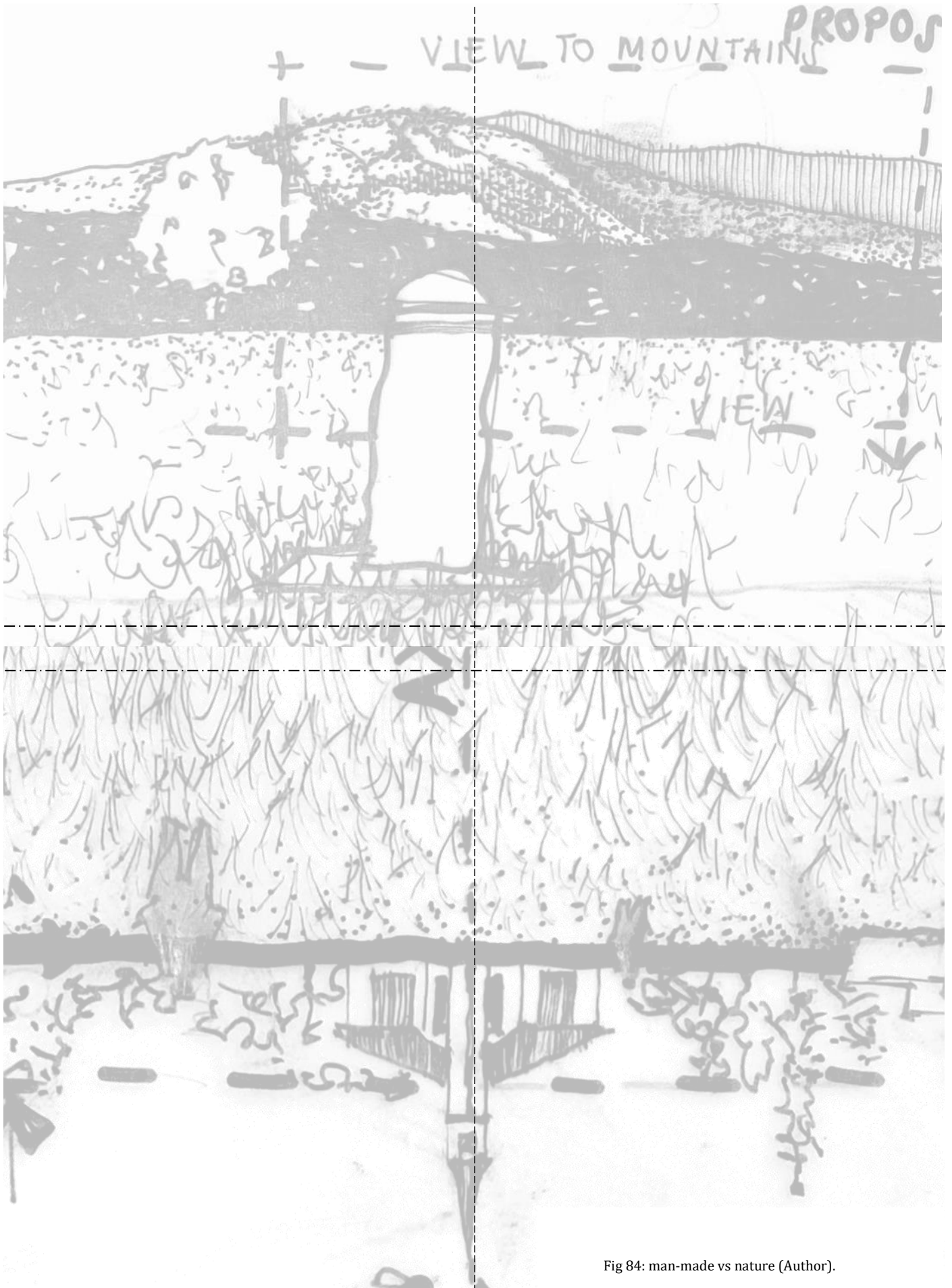


Fig 84: man-made vs nature (Author).

4.7.4 The gap in the forest canopy

Theoretical inspiration

Karatarra derived its name from the Karatarra River close by. Many have speculated over the origin of the name Karatarra. One possible meaning derived from the Khoi word karaa, signifies a forest glade (Caveney, 2016: 9). A glade is a grassy open area that is surrounded by a canopy of trees.

When natural circumstances, such as a windstorm, forces a tree to fall, a gap is left behind. The gap in the forest allows sun to filter through which allows seedlings the chance to grow.

Seedlings will fight to survive and only few will grow. The survivors will fill the gap that was once there, and the forest may start to mature again. This is the cycle of the forest.

On the Circles in a Forest Trail Walk in Knysna, SAN Parks explains that this forest growth cycle can be divided into three parts: gap, building and mature. The gap formed from the fallen tree, the seedlings battling in the building stage and the climax species which will eventually mature to close this gap.

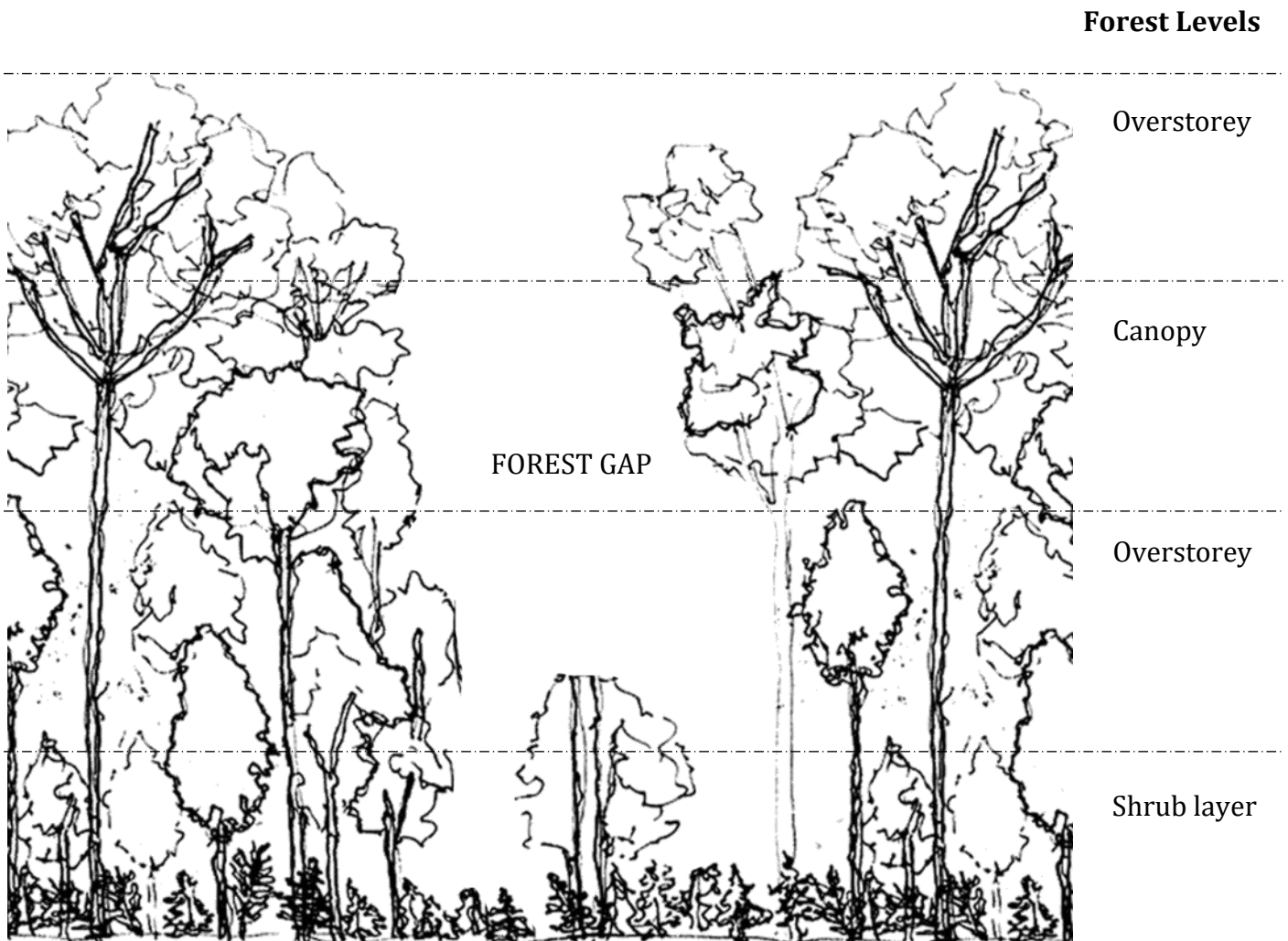


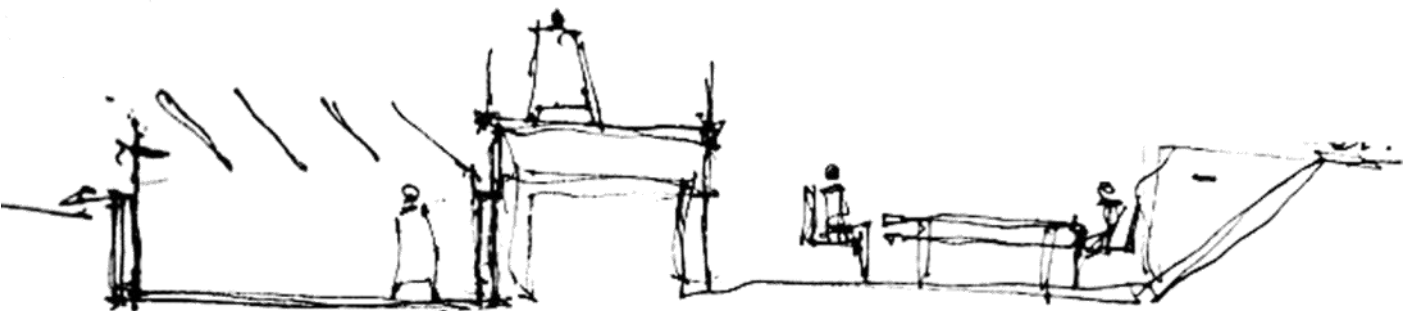
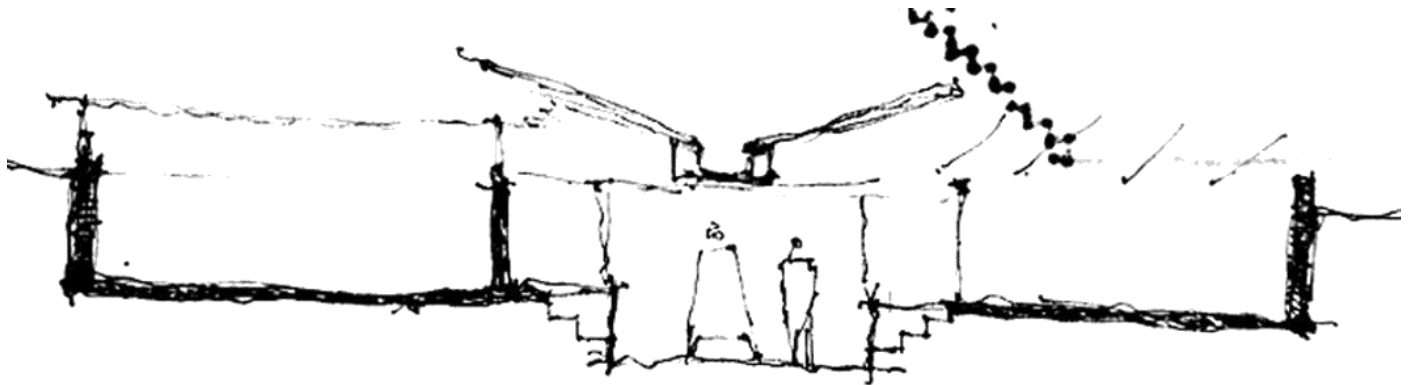
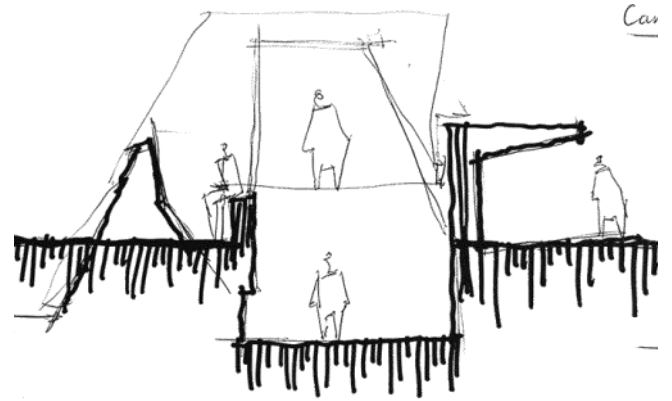
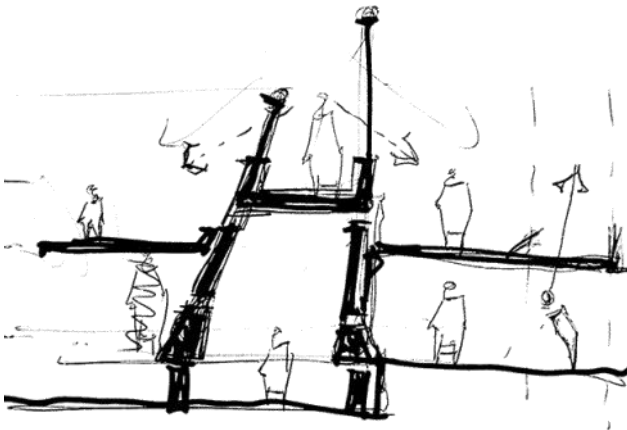
Fig 85: forest levels (Author).

Forest Levels

architectural insights

The levels in the forest can be architecturally used.

Levels are illustrated through walkways, sunken or heightened floors



4.7.5 Theoretical planning

4.7.5.1 Introduction

An investigation into the theory followed after the site changed.

The theme of Karatara being a forest glade was used as the theoretical approach to the design.

This experiment tries to include the theory that was done in experiment two. The forest growth cycle, which has three parts, is divided into the concepts created in experiment one.

The 'joint' concept merges with the first part of the growth cycle, gap. 'Connecting the gap'. Because the forest gap can be seen on plan, it is associated with the topography of the site. This could become an investigation to how the plan is treated through courtyards or connected spaces. The second concept, 'tools' merges with 'building'. It becomes "Instrument guiding the building". The third concept 'transformation' merges with maturing and becomes 'enlightened maturing'.

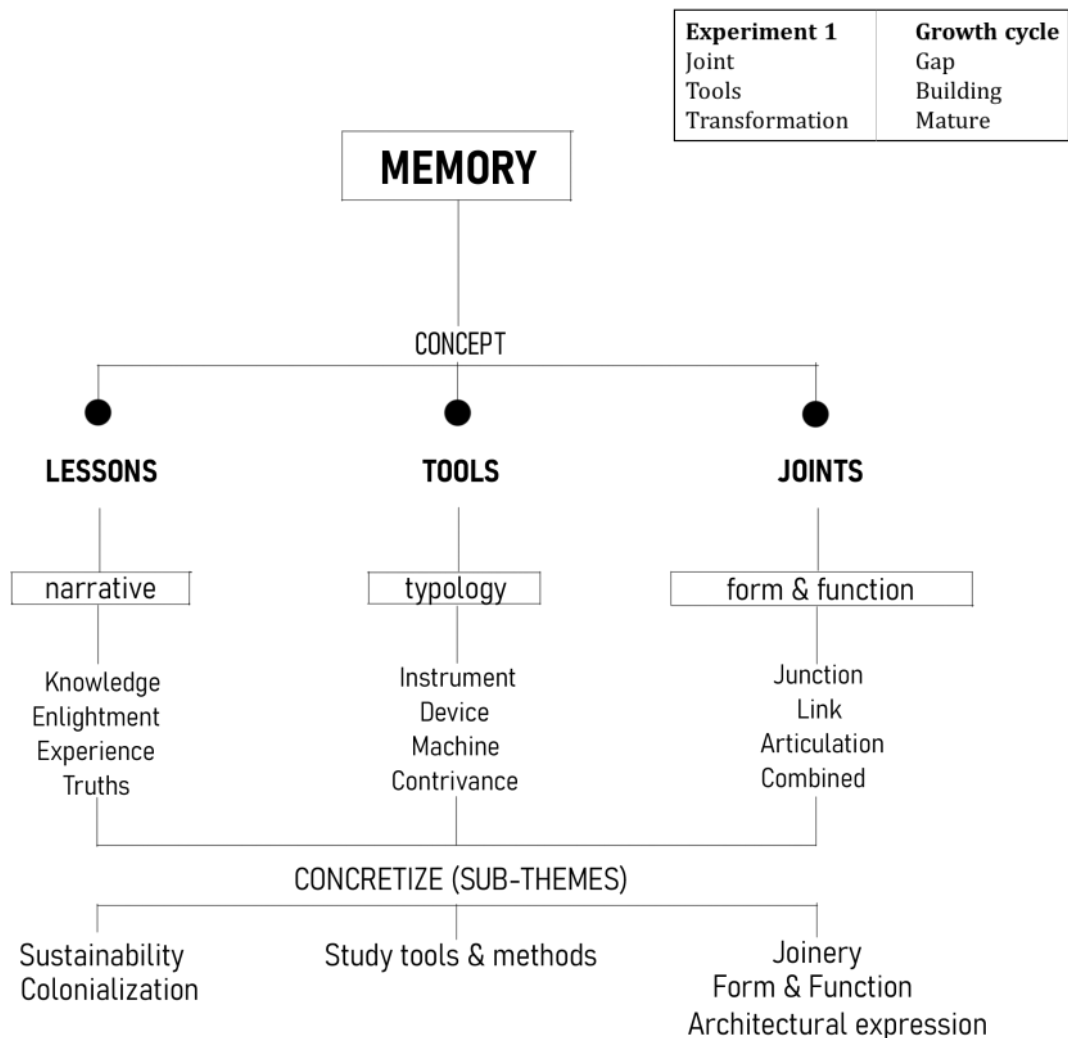


Fig 90: theoretical planning experiment 2 (Author).

Theoretical approach

4.7.5.2 Two sites and a theory

“Contrasts themselves are the very basis of architectural experience. The experience of a quality is sharpened and made tangible by connection with its bipolar opposite. Coolness is experienced in relation to a sense of warmth and cozy containments is experienced in relation to soaring openness. The awareness of light is anchored by darkness.” (Jacobson, Silverstein & Winslow 1990).

Because there are two sites and one theory, the theory is modified to address both projects (figure 91).

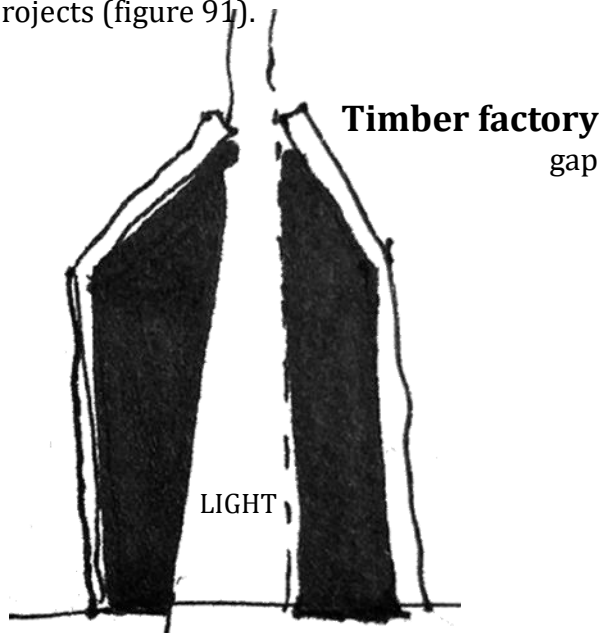


Fig 92: Forest gap (Author).

The Timber factory shows the initial stages of the process. By felling trees and preparing them to be used in the carpentry factory, it provides the opportunity for the timber to become something. The Carpentry centre ‘fills this gap’ by transforming the timber into objects which can be used by people. It bridges the gap between nature and wo(man). The theory responds to both sites and show a co-dependent relationship between both projects.

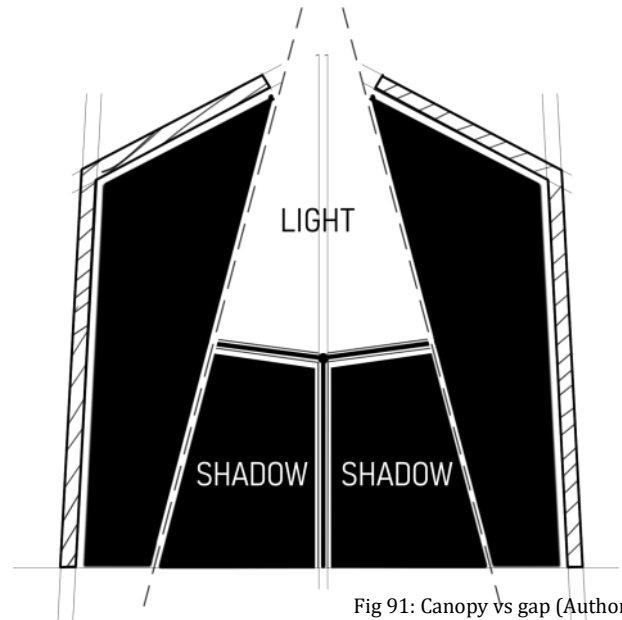


Fig 91: Canopy vs gap (Author).

The Timber factory and carpentry center should appear as one unit. This theory connects both sites through comparing the forest growth cycle with the process of the timber factory and carpentry centre. These two projects work together. Just like a forest gap allows tree lings to grow by providing sunlight in the gap.

Carpentry center

Canopy

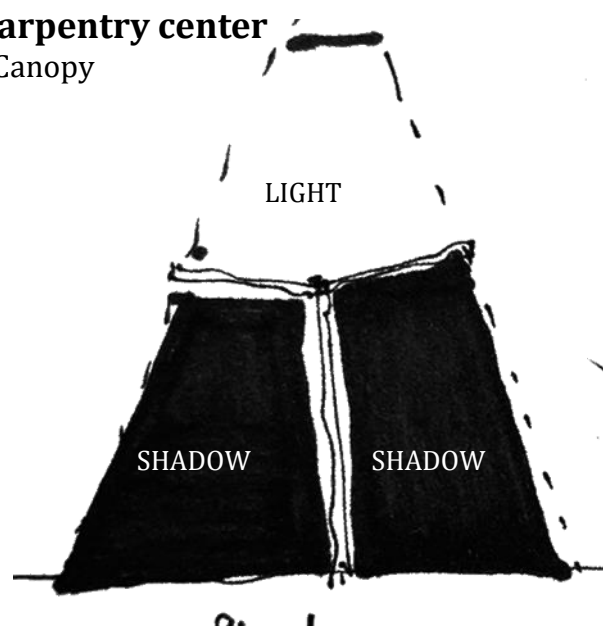


Fig 93: canopy (Author).

4.8 DESIGN DEVELOPMENT

4.8.1 Site 1: Timber Factory

4.8.1.1 Translating the theoretical approach

The timber factory assists in feeding the carpentry centre. Theoretically it is seen as the gaps in the forest canopy which allows light to filter in allowing smaller plants to grow.

This can translate to in-between spaces, like creating courtyards or light wells (figure 95).

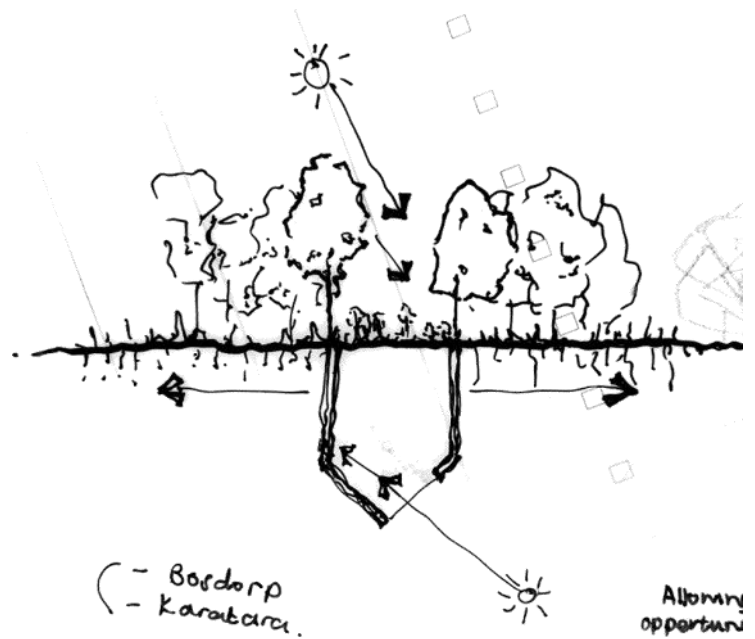


Fig 94: timber details (Author)

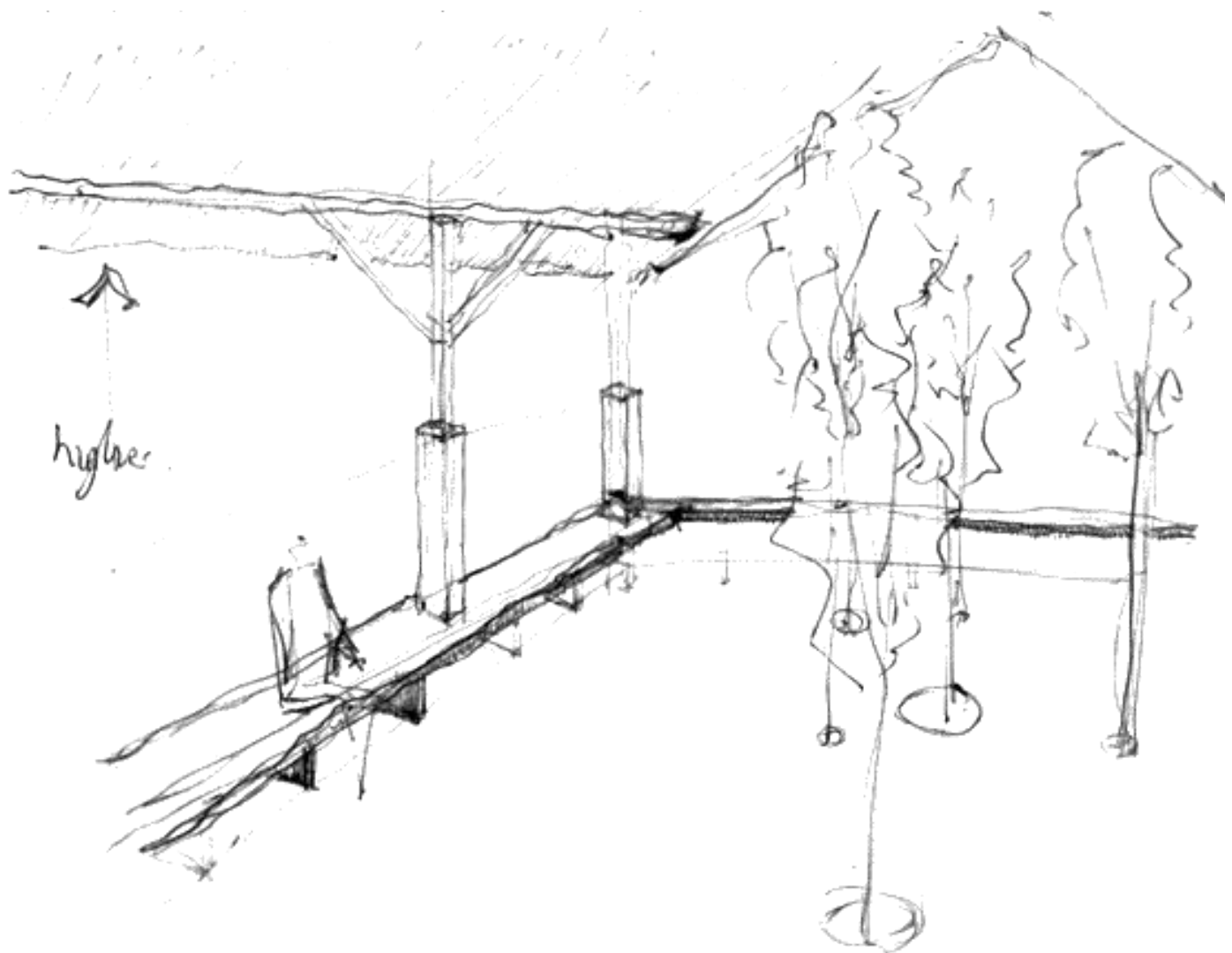


Fig 95: in-between courtyard spaces (Author).

4.8.1.2 Precedent study

Tofu Factory – DnA Design

Typology - Factory

Location – Lishui, China

Year – 2018

The factory is both a production and exhibition space of traditional heritage of the Caizhai village.

The covered walkway accommodates visitors exploring the factory with a tasting hall facing an open plaza (figure 96).

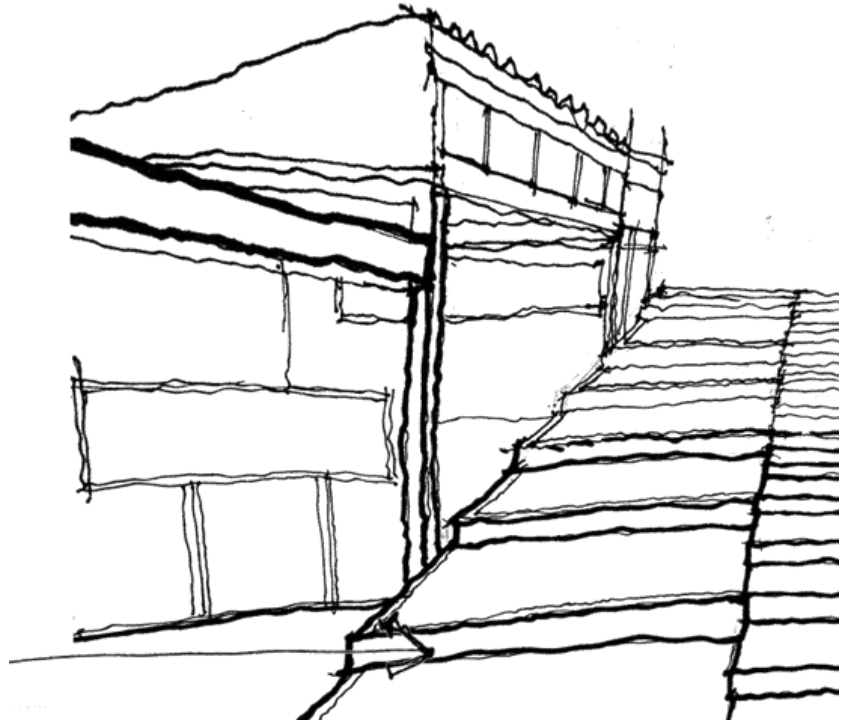


Fig 96: tofu factory public walkway (Author).

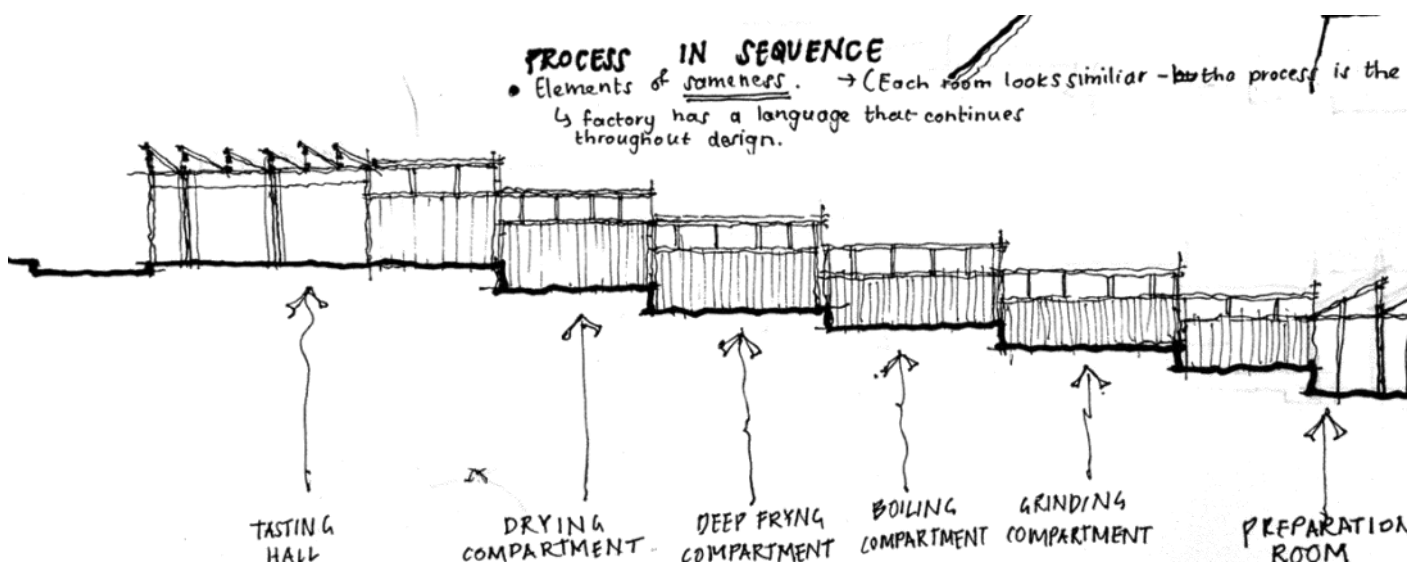


Fig 96: tofu factory process (Author).

The process that occurs happens in sequence. Each room feeding into the next. The linear layout follows the process of making the tofu.

The building is divided into 6 rooms consisting of;

- preparation room,
- grinding compartment,
- boiling compartment,
- deep-frying compartment,
- drying compartment, and
- tasting hall.

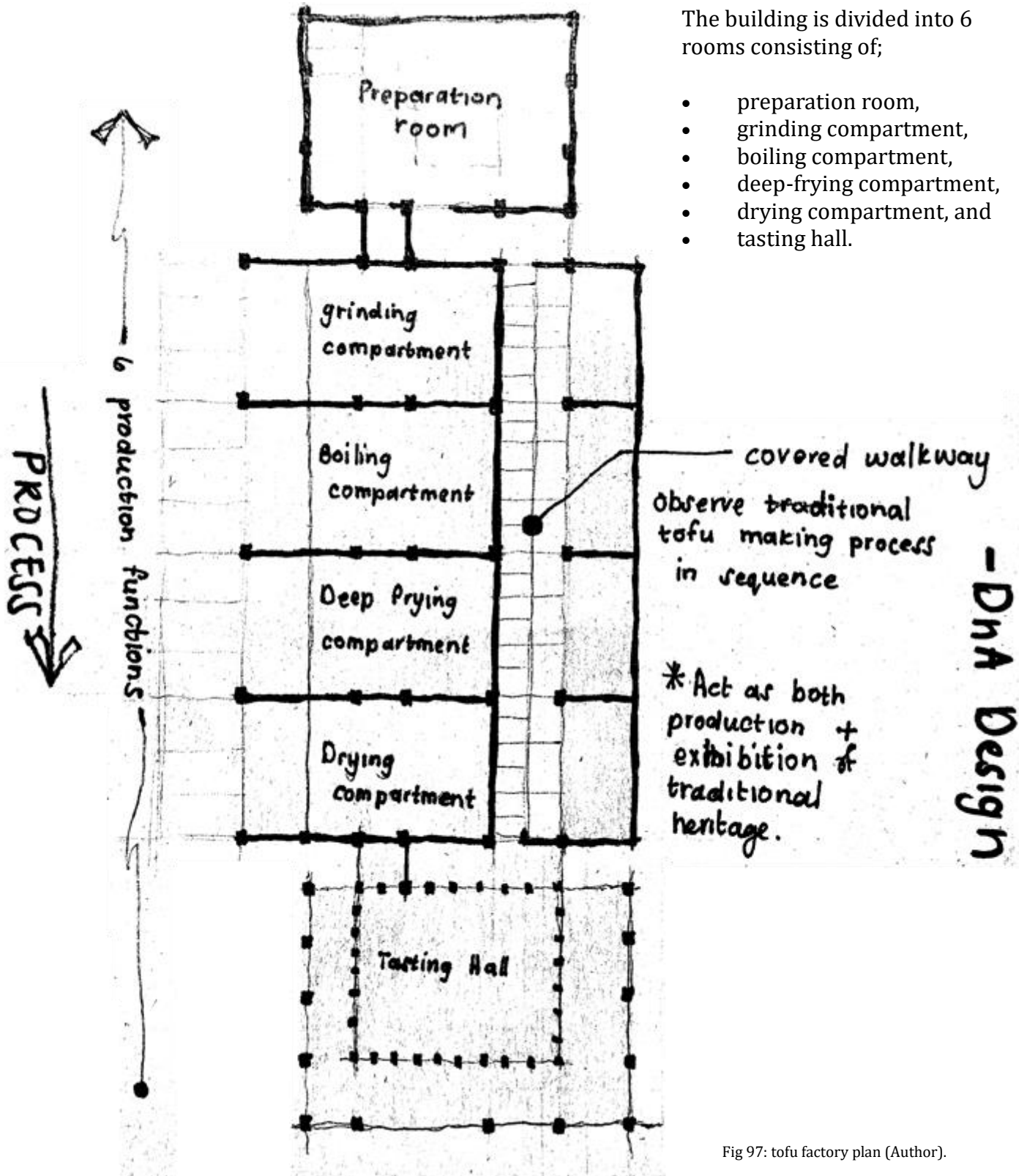


Fig 97: tofu factory plan (Author).

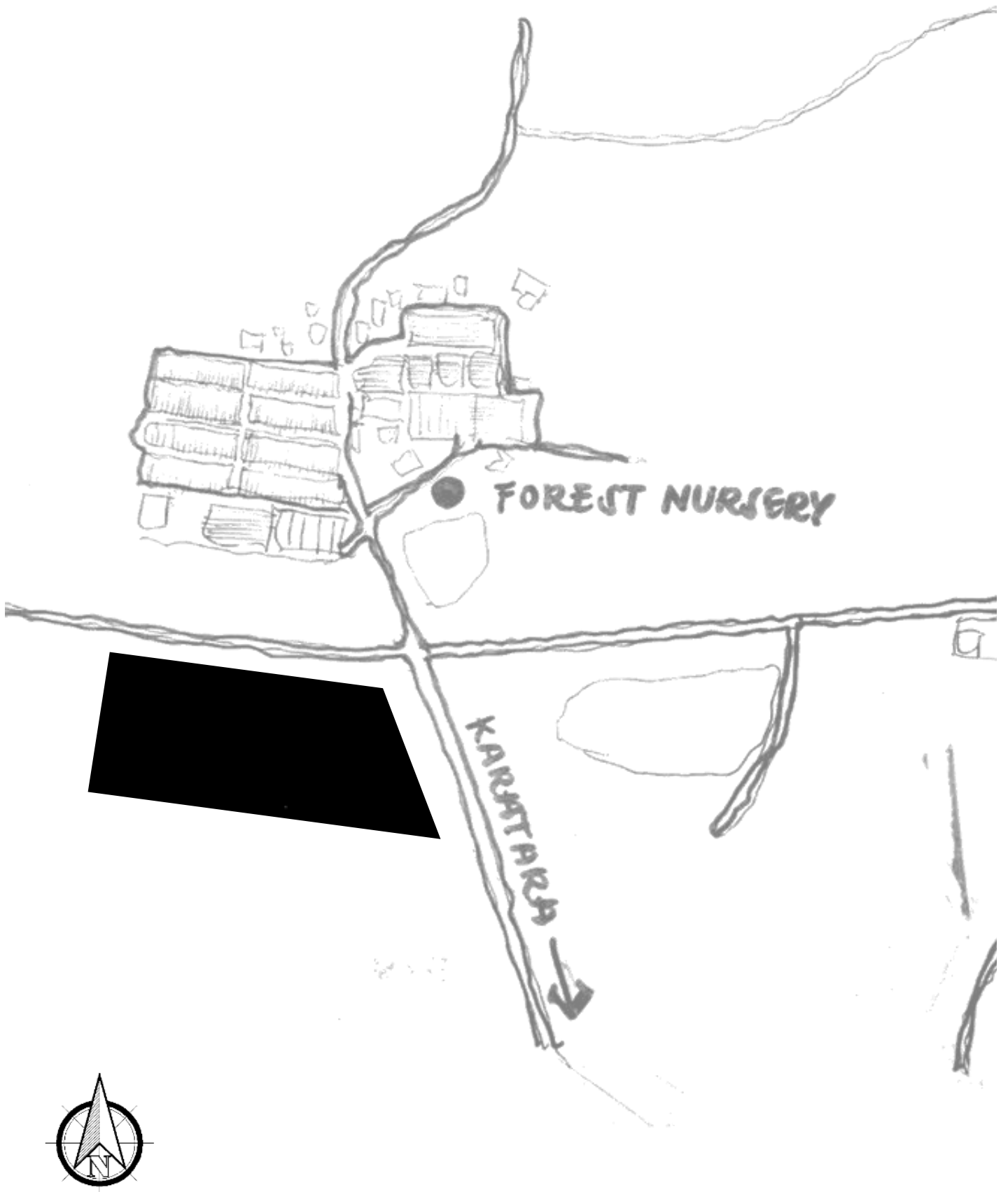


Fig 98: timber factory location (Author).

4.8.1.3 Plan development

The plan of the tofu factory inspired the exploration of the Timber factory. The layout follows a similar linear path. This allows the timber factory to follow a certain process in sequence until it reaches the final product.

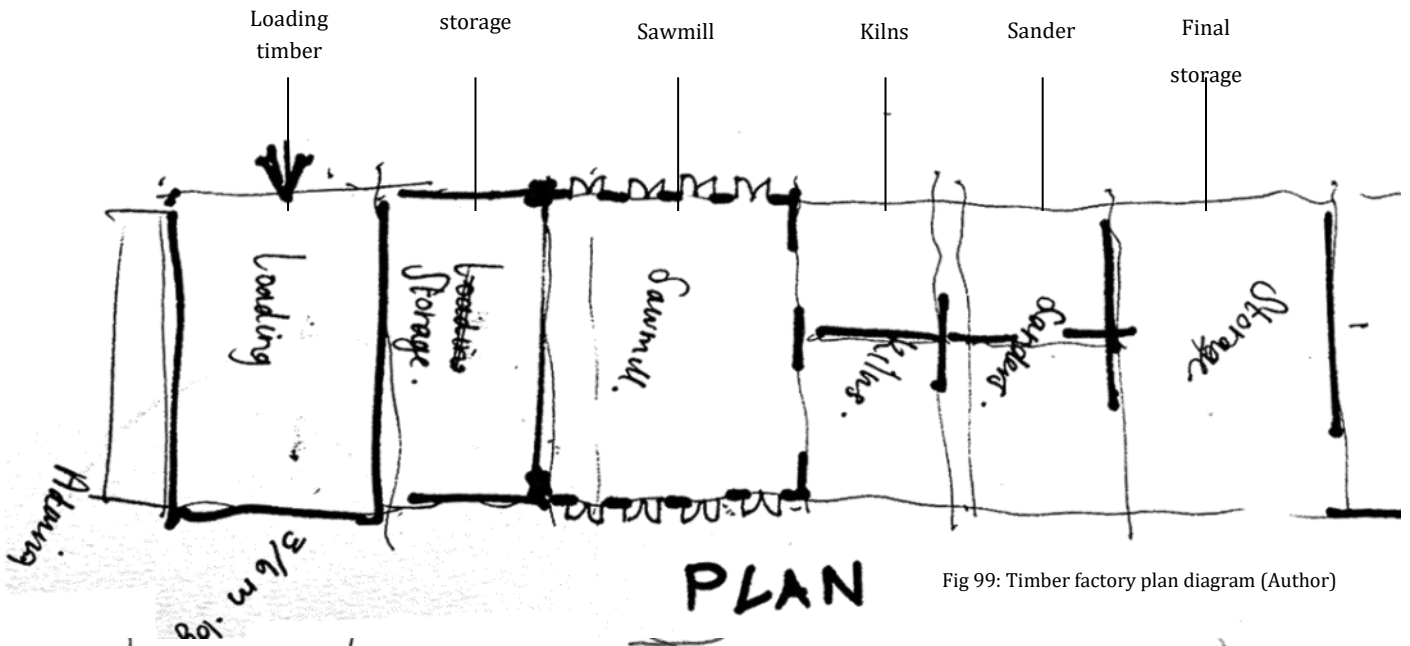


Fig 99: Timber factory plan diagram (Author)

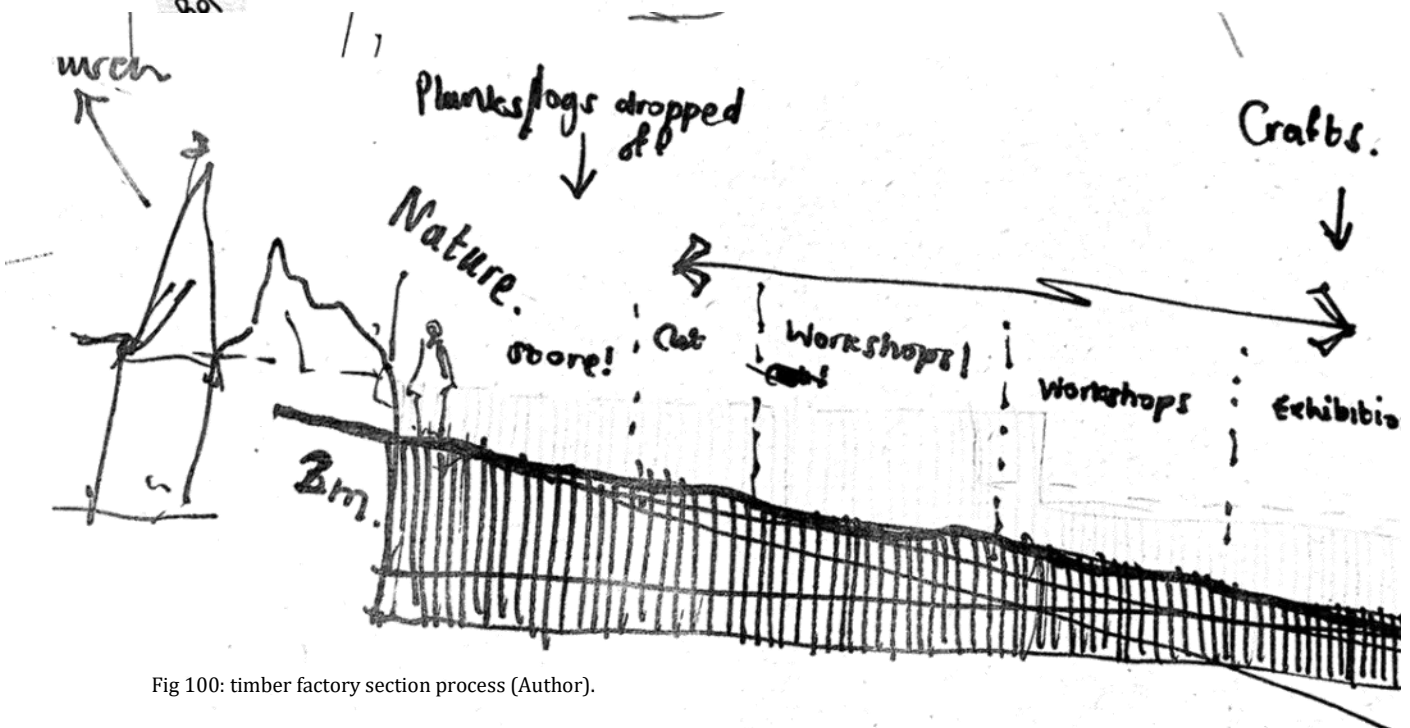


Fig 100: timber factory section process (Author).



The first plan (figure 101) mapped out the basic spaces required. Similar to the Tofu Factory, the Timber Factory adopted a linear plan to follow the process that would happen throughout the structure.

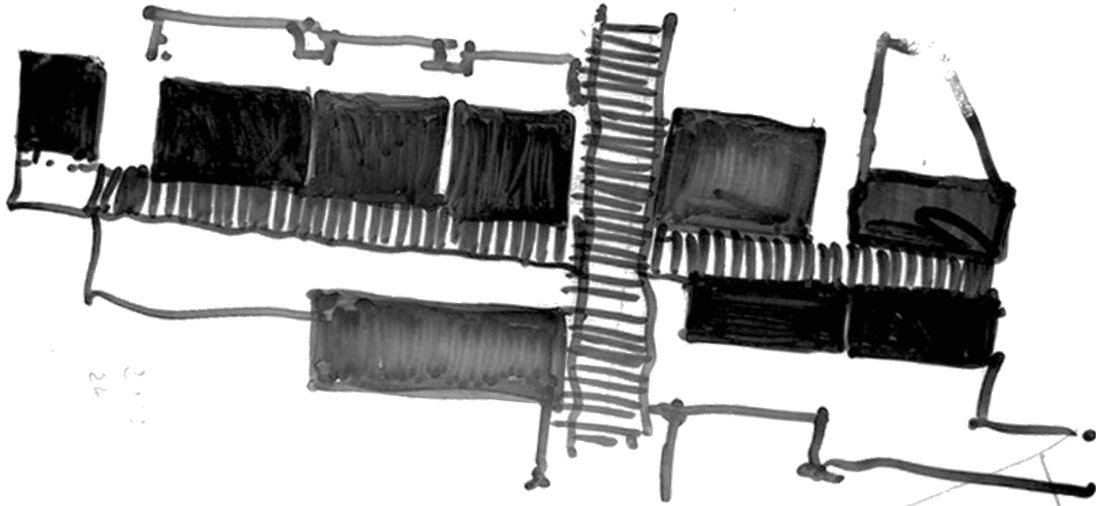


Fig 101: timber factory plan 1 diagram (Author).



The second plan (figure 102) evolved from the foundational massing of the initial plan. A central walkway has been established for visitors to engage with the process.

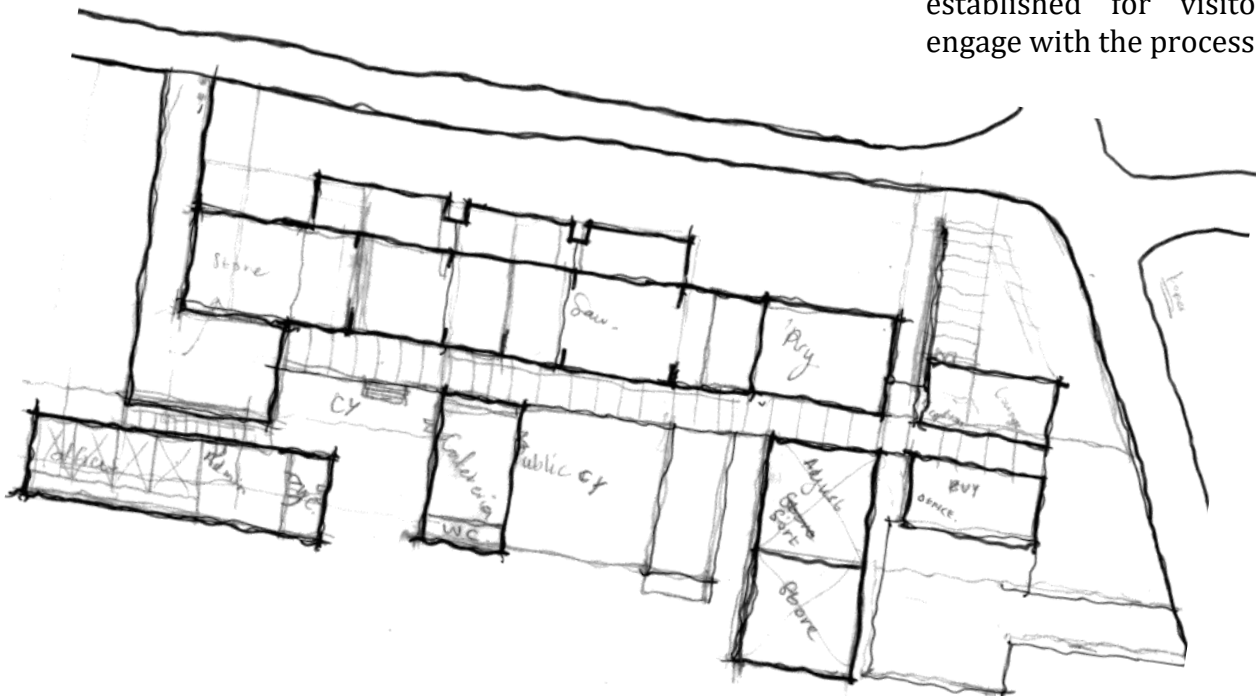


Fig 102: timber factory plan 2 (Author).

The third plan (103) delved into in-between spaces, with a particular focus on incorporating the concept of 'forest gap'.

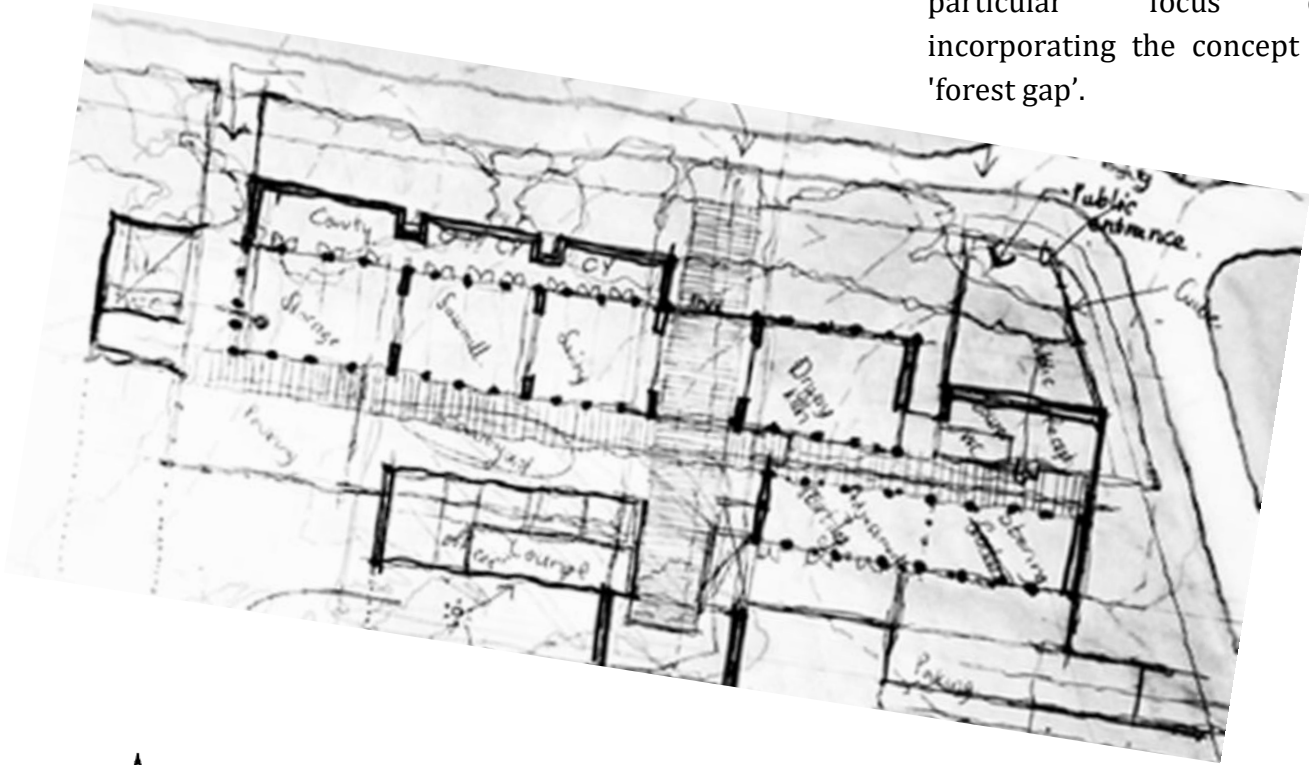


Fig 103: timber factory plan 3 (Author).



The final plan (104) started to focus on how the spaces would function cohesively.

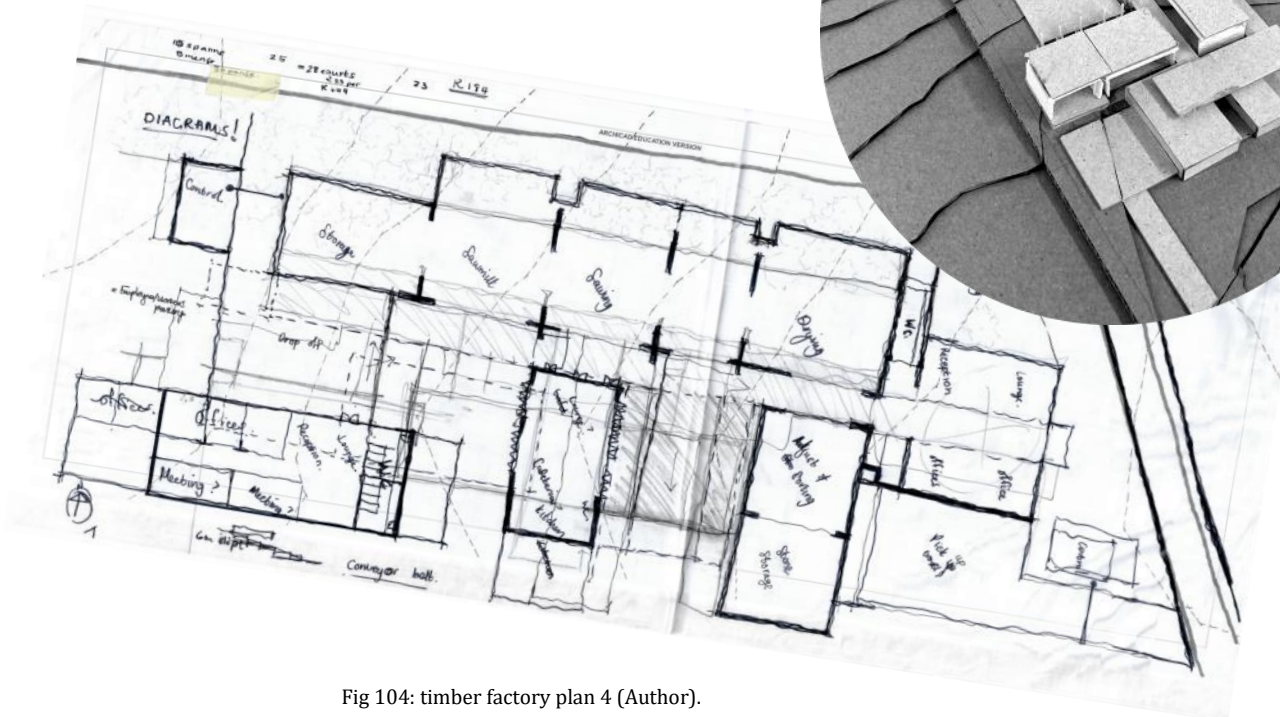
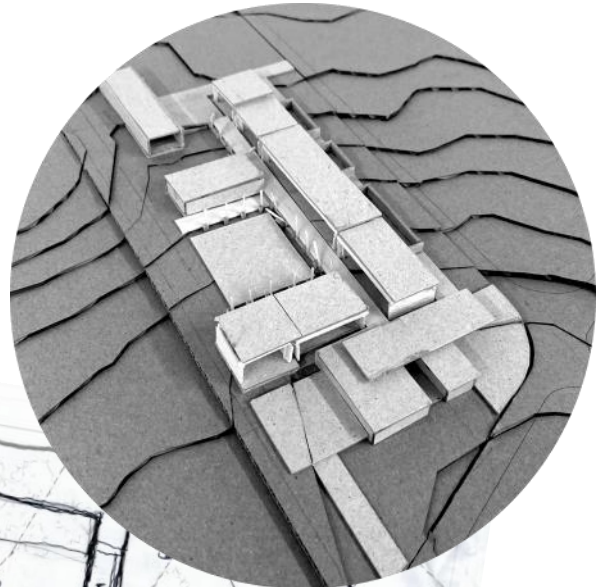


Fig 104: timber factory plan 4 (Author).

4.8.1.4 Elevations

The elevations tried to include many vertical lines in order to resonate with the surrounding trees. The design tries to explore solutions to accommodate for the 3 metre slope (fig 107-109).

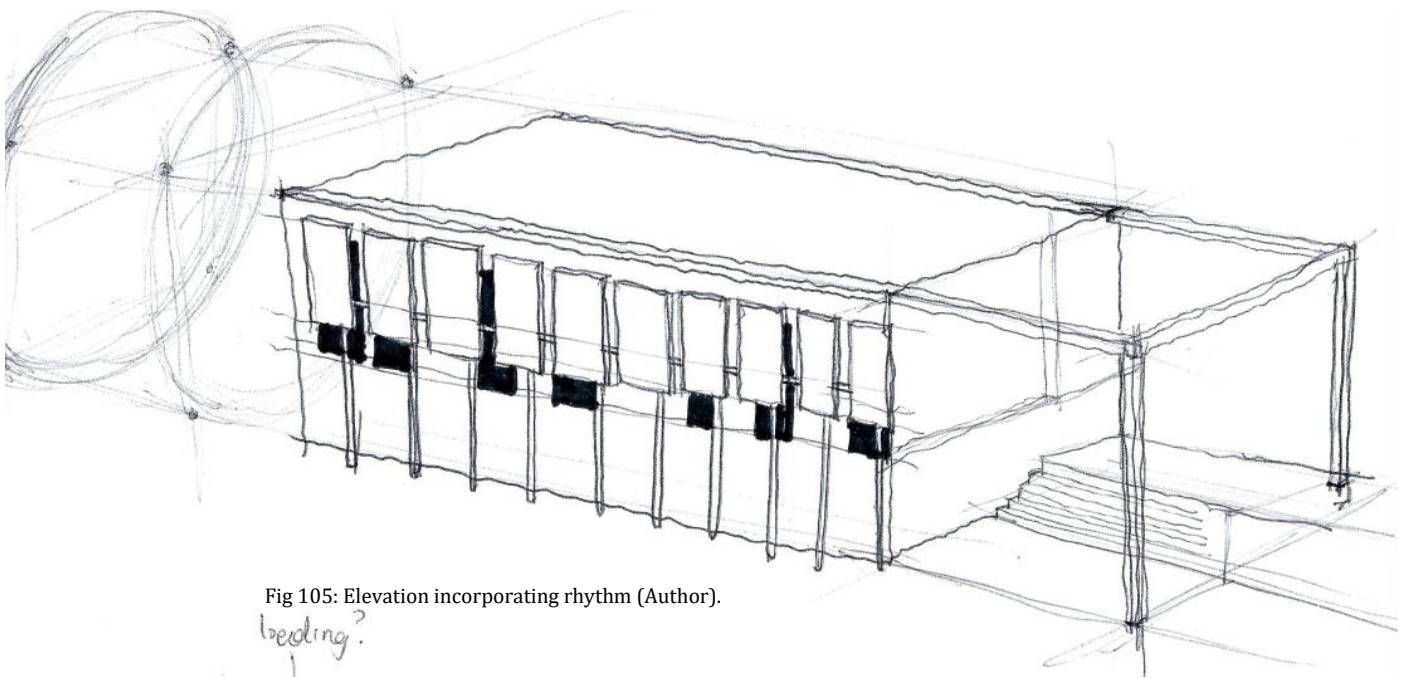


Fig 105: Elevation incorporating rhythm (Author).
bedding?

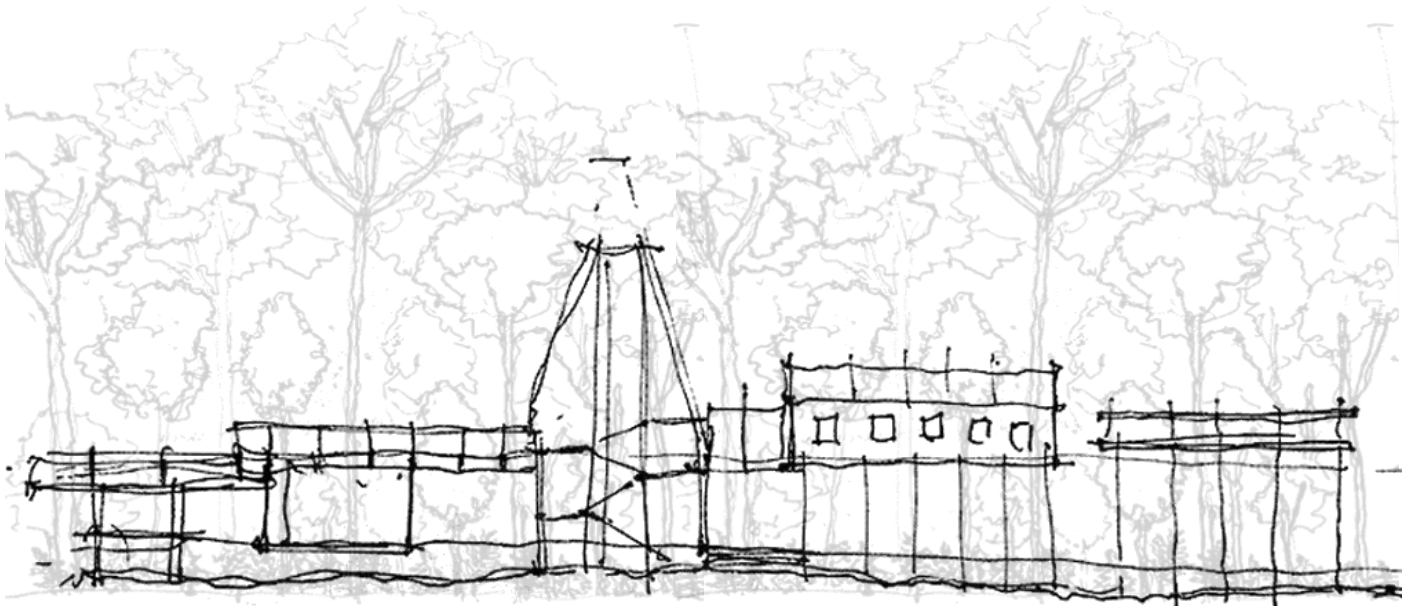


Fig 106: Elevation imitating surrounding (Author).

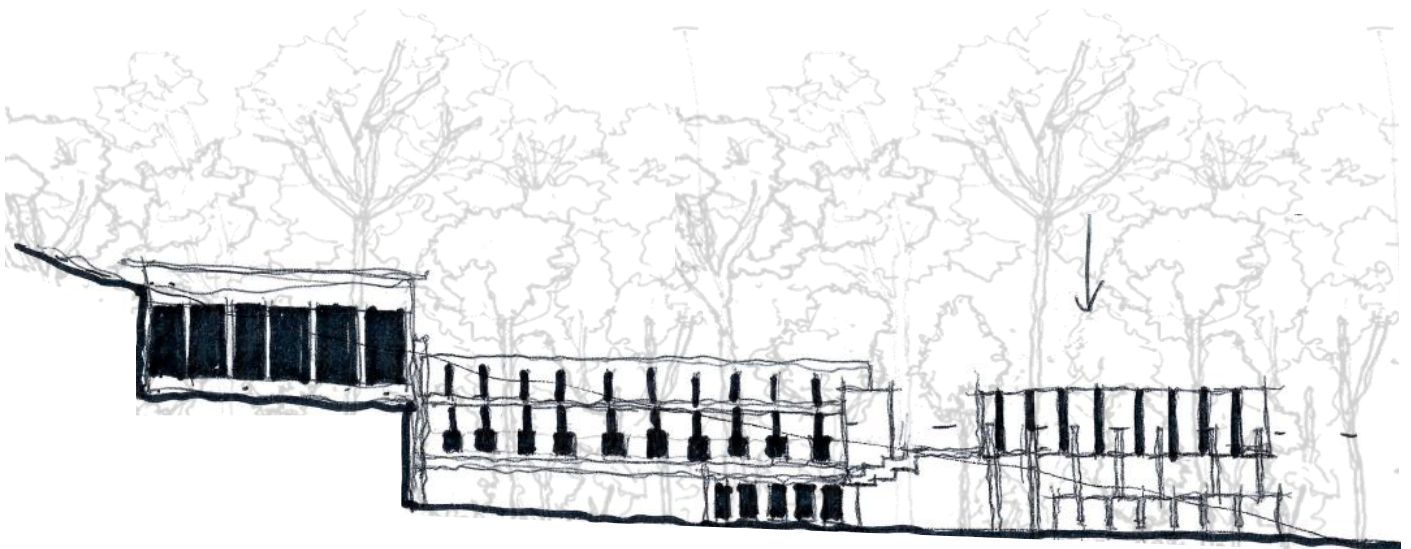
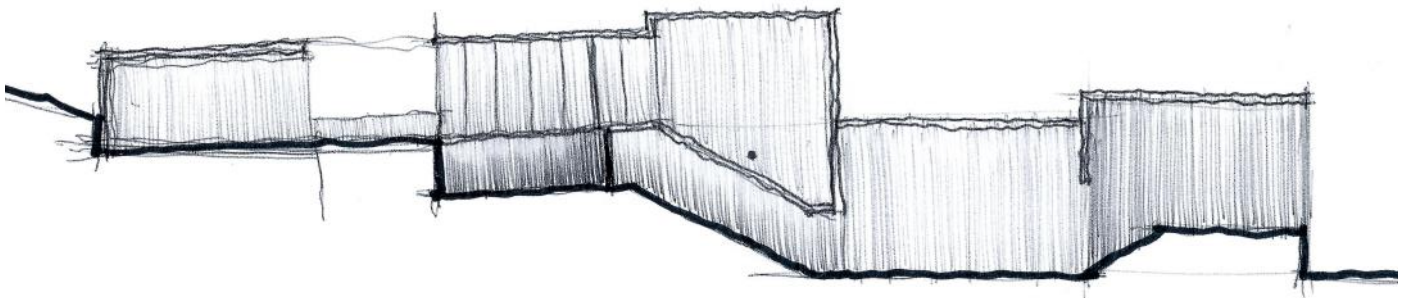
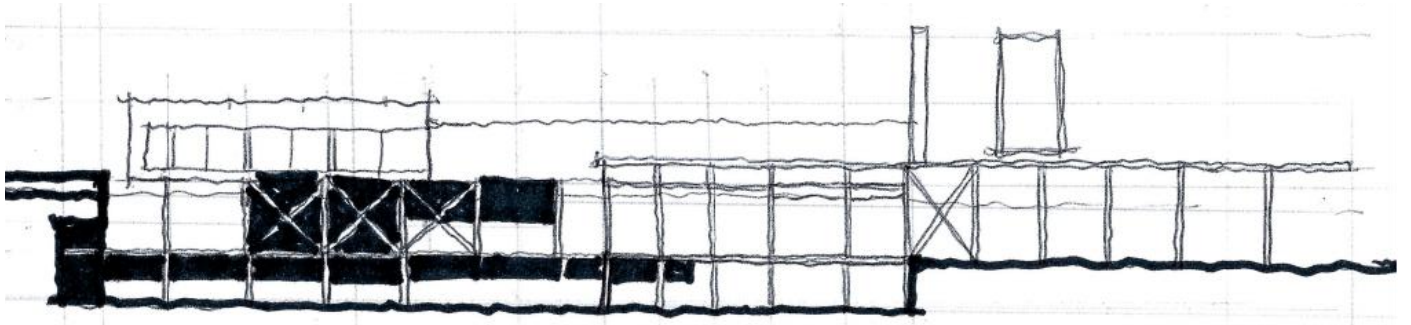


Fig 107-109 : Elevation experimenting with slope (Author).

DESIGN DEVELOPMENT

4.8.2 Site 2: Carpentry Centre

4.8.2.1 Translating the theoretical approach

The Carpentry centre, which represents the forest canopy, explores how light can filter through buildings. Different trusses can be explored to see how light could filter in.

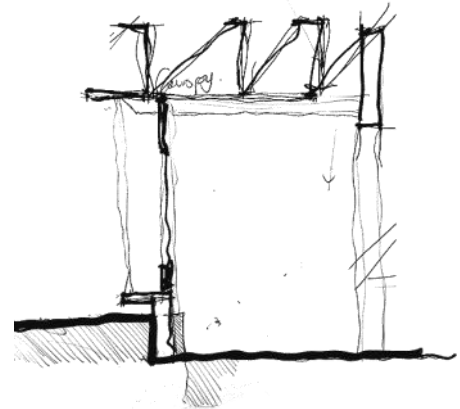
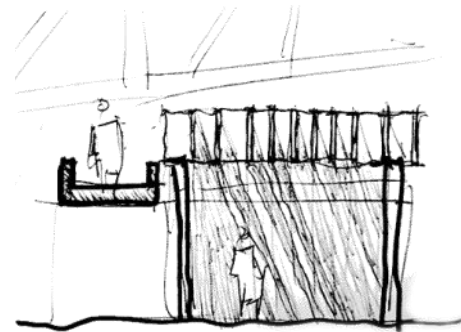
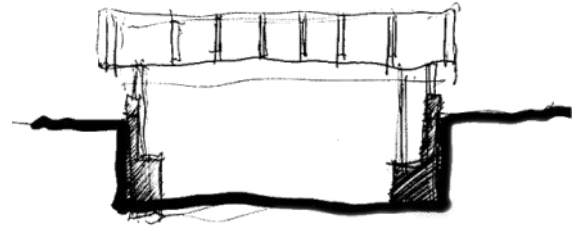


Fig 110-112: roof truss exploration (Author).

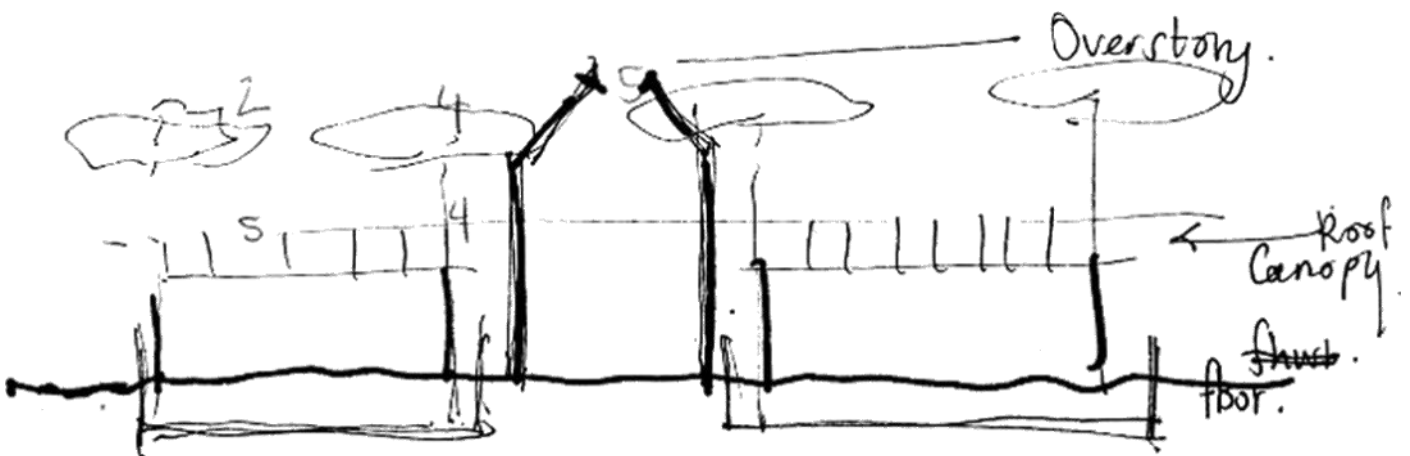


Fig 113: section diagram exploring forest levels (Author).

4.8.2.2 Forest Canopy

The forest levels are integrated into the design to provide visual cues from which the sections are extrapolated. In figure 114 the forest canopy is translated into a covered walkway in the center of the design.

The forest canopy level is reimagined as the design's roofing structure.

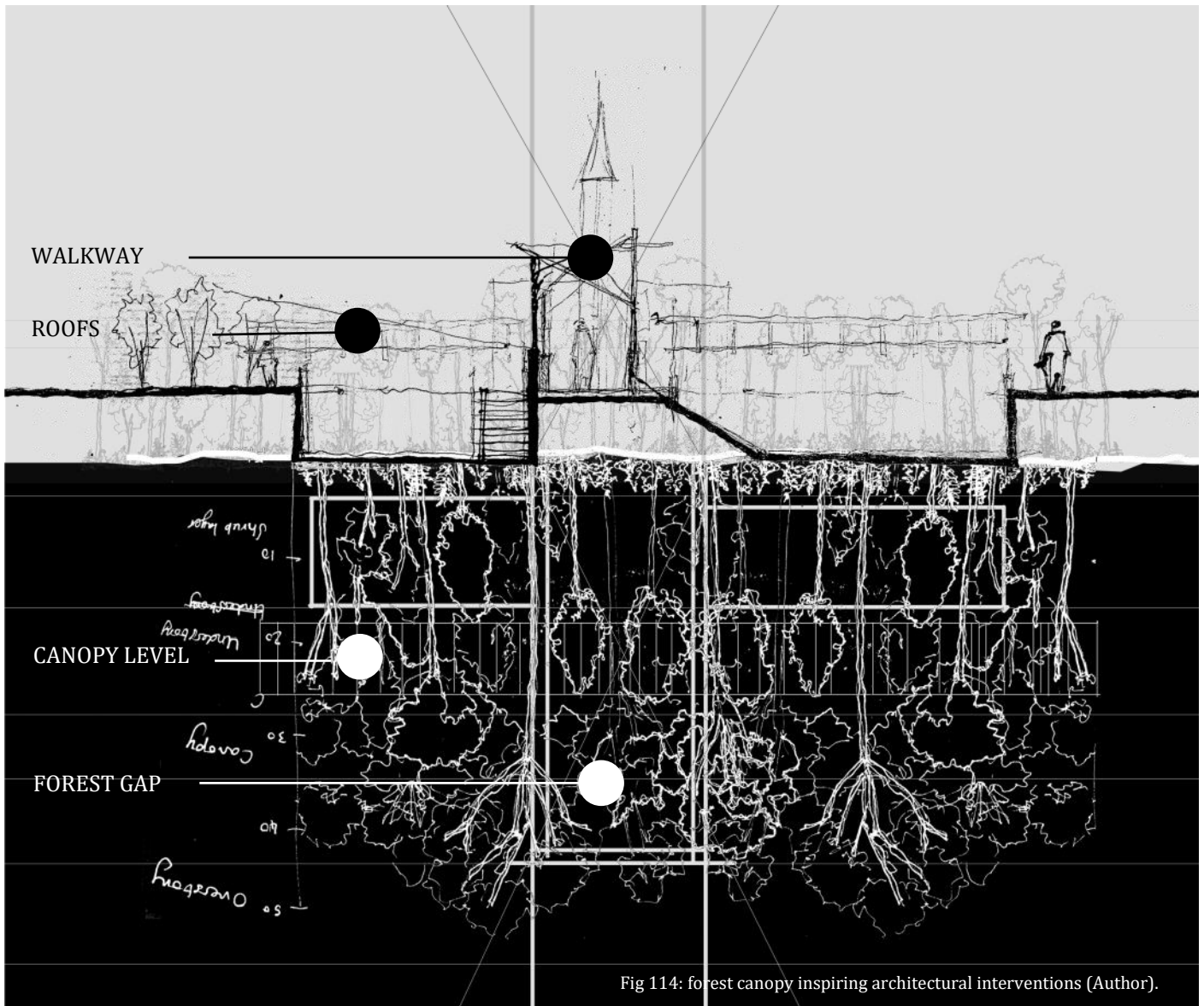
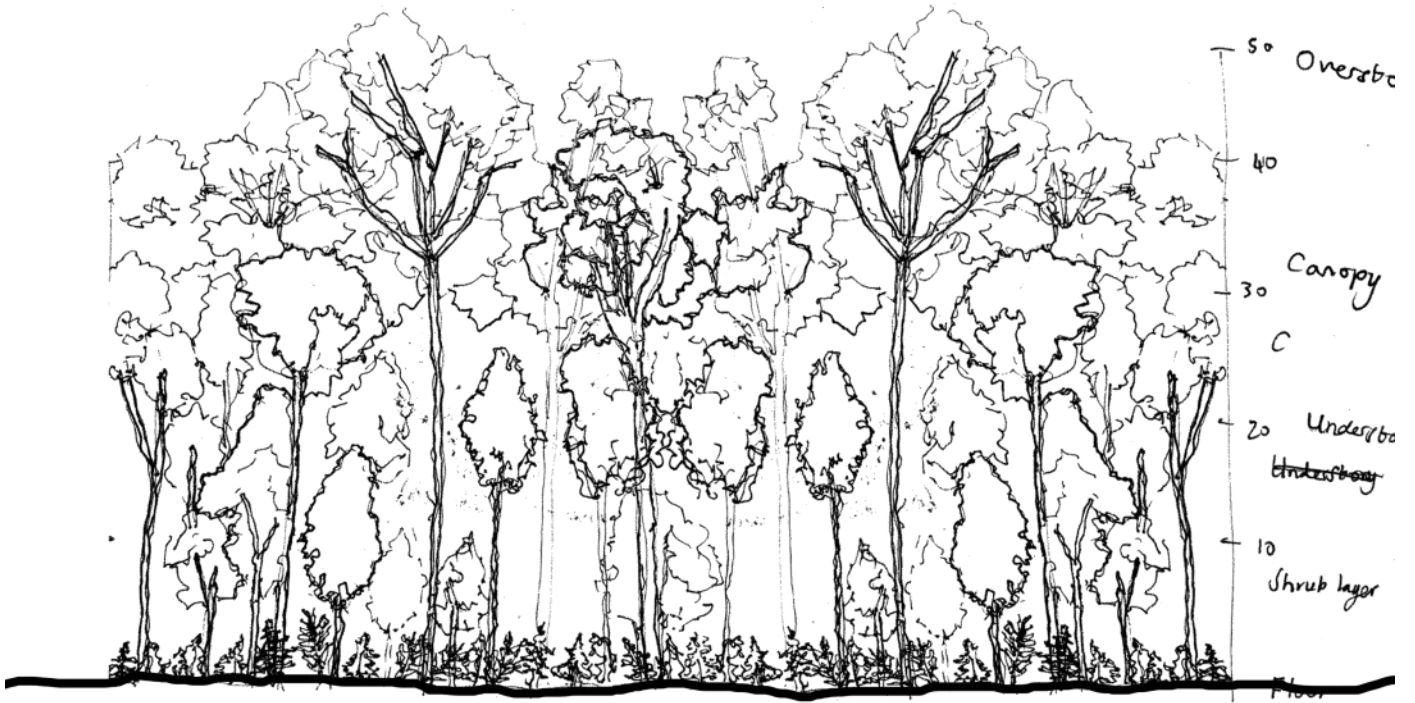
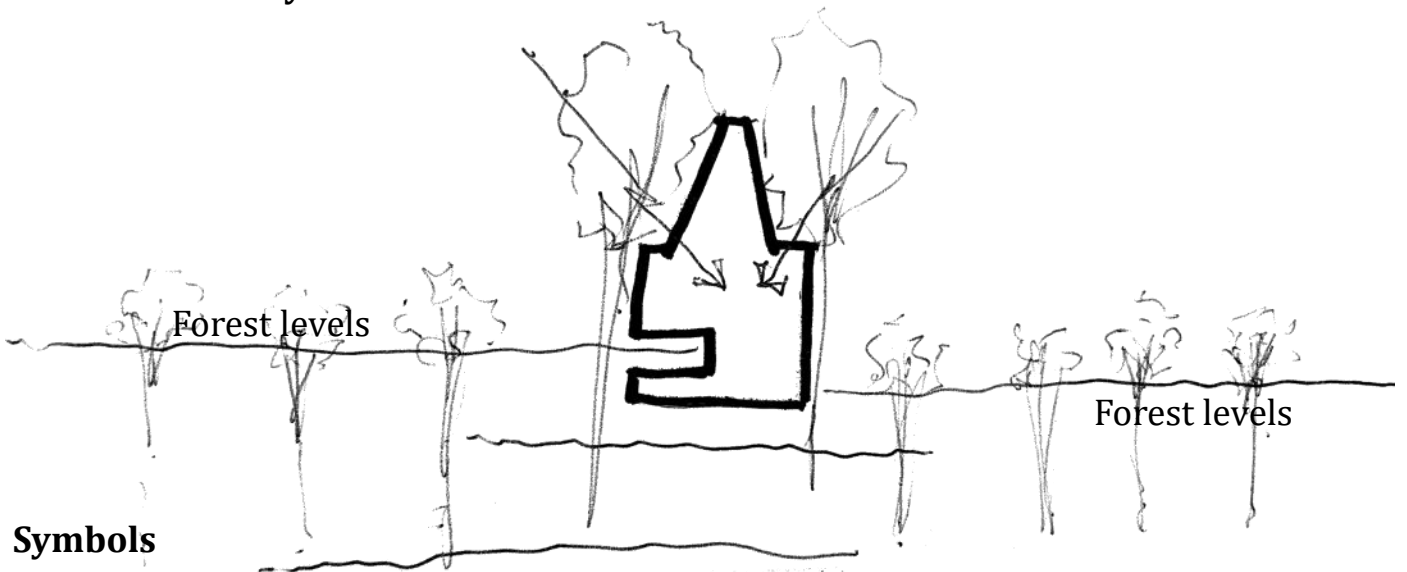


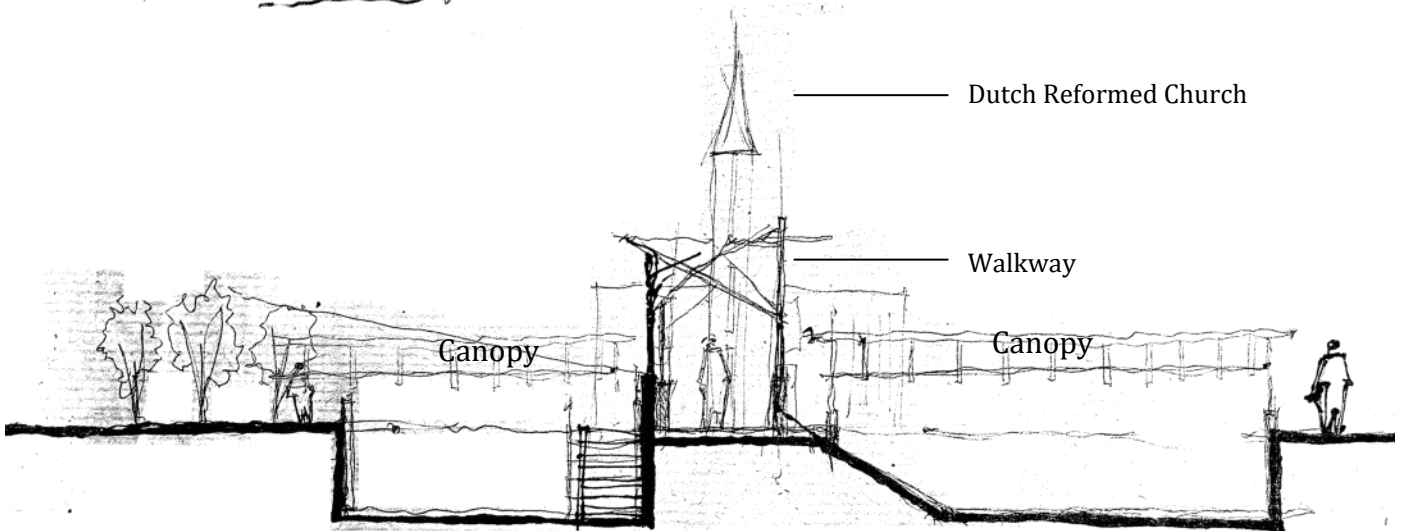
Fig 114: forest canopy inspiring architectural interventions (Author).



Forest Growth Cycle



Symbols



Translate to architecture

Fig 115: forest levels transformation into architecture (Author).

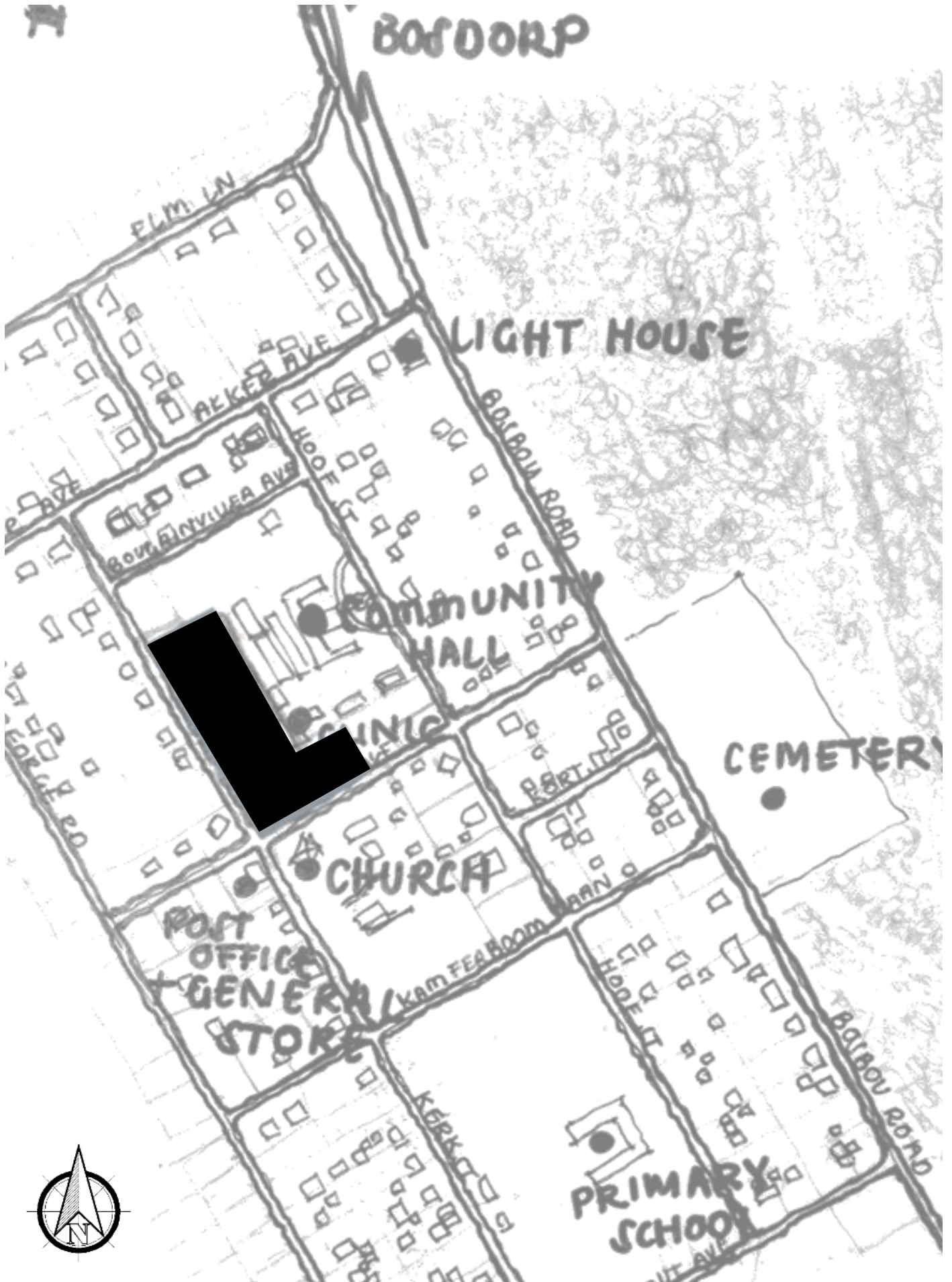


Fig 116: location of carpentry factory (Author).

4.8.2.3 Plan development

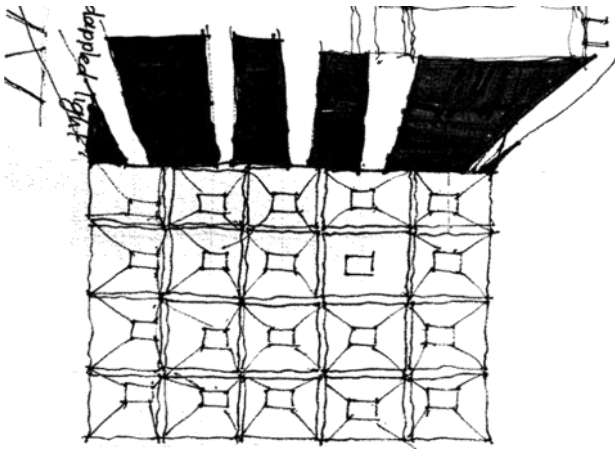


Fig 117: waffle truss (Author)

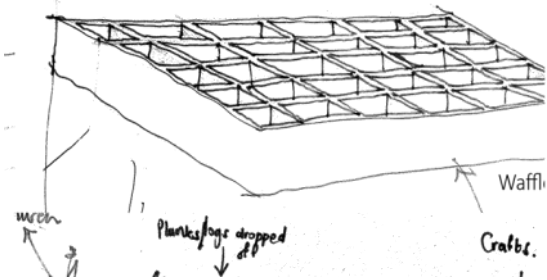


Fig 118: waffle truss (Author)

The development of plans for the Carpentry tries to translate the forest gap into openings, such as courtyards.

Roof structures, such as waffle trusses can also give the effect of light filtering through trees.

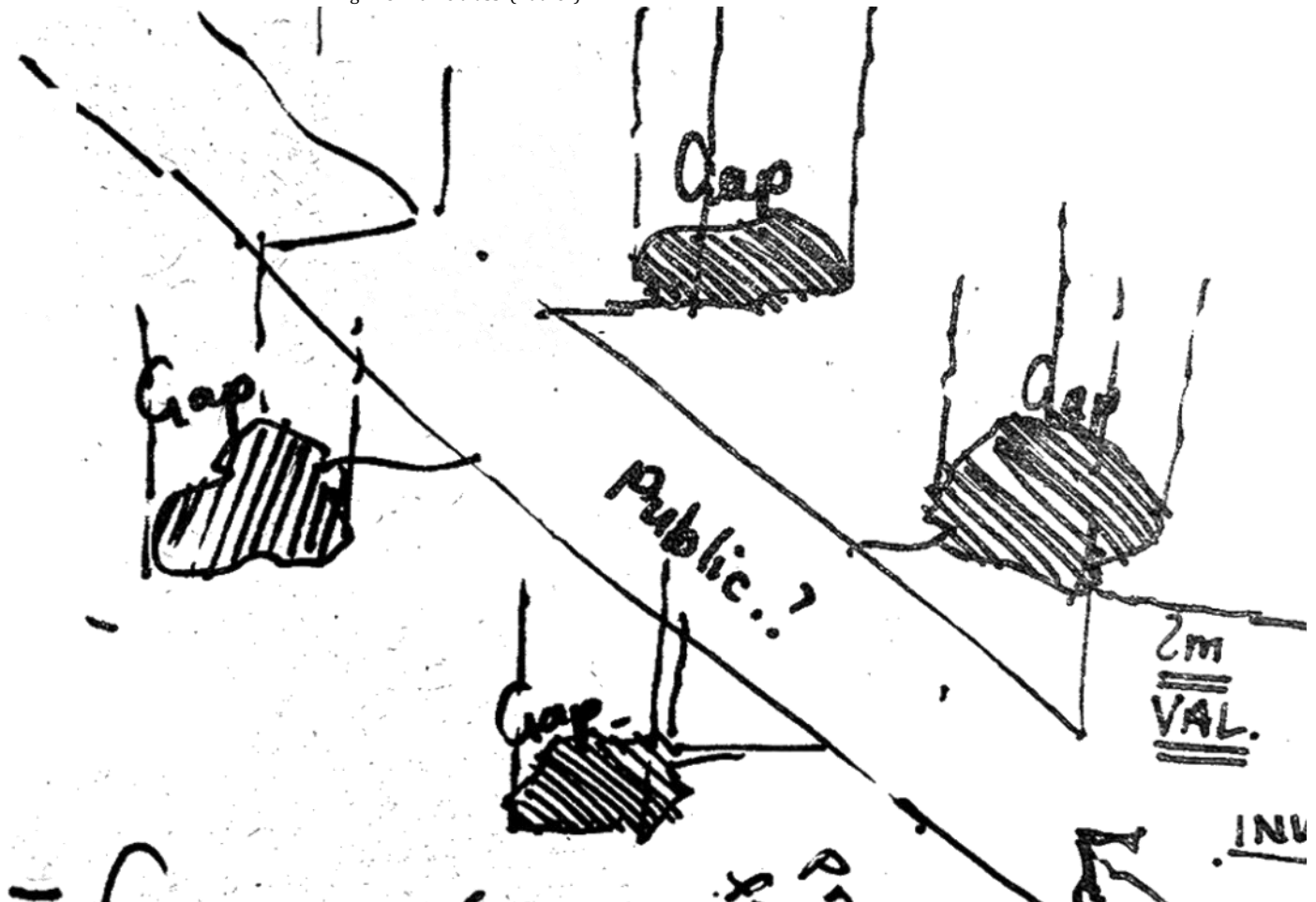


Fig 119: theoretical spatial development (Author).

The first plan took clues from the timber factory. It is organised in a linear way because it also has a certain process which it follows.

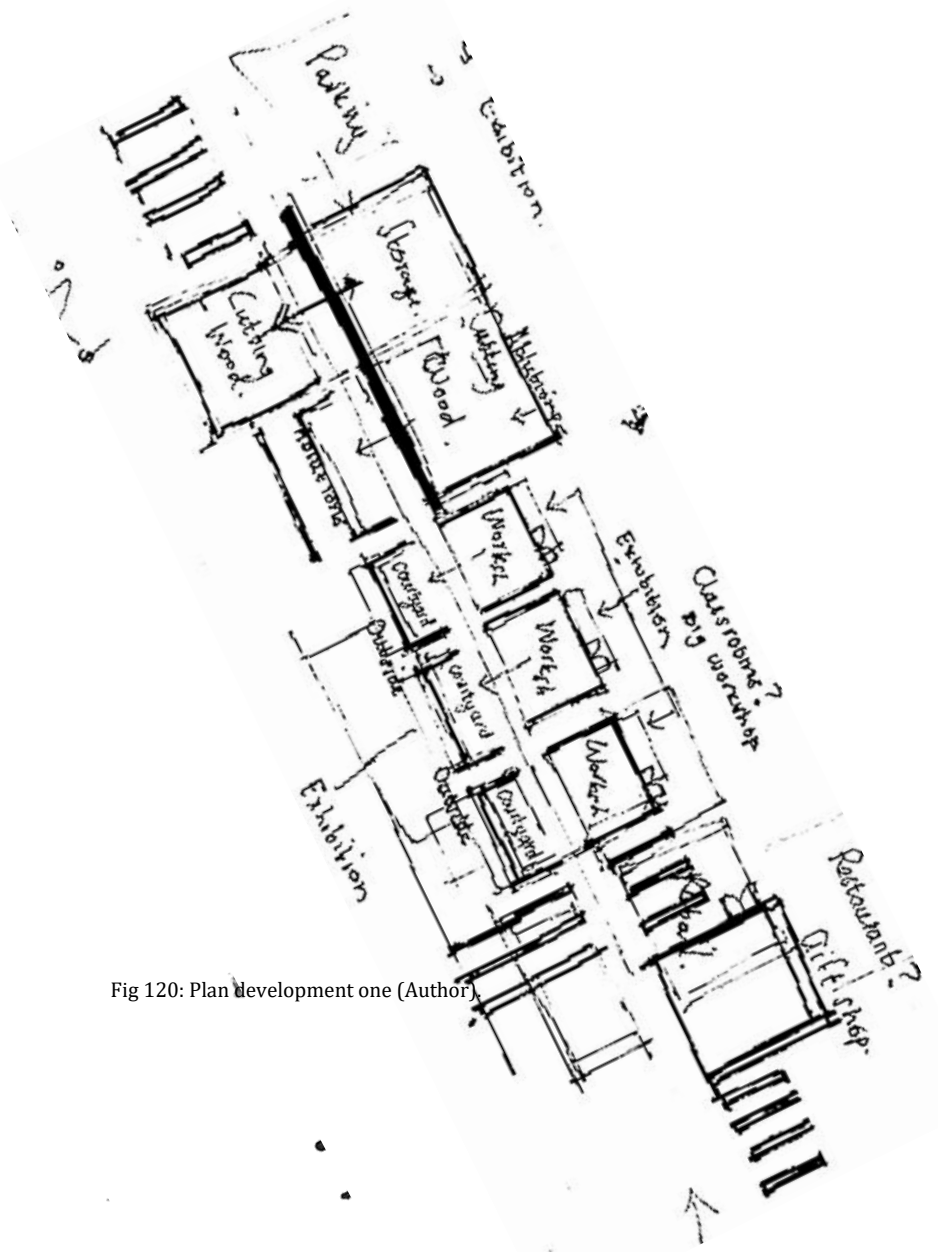
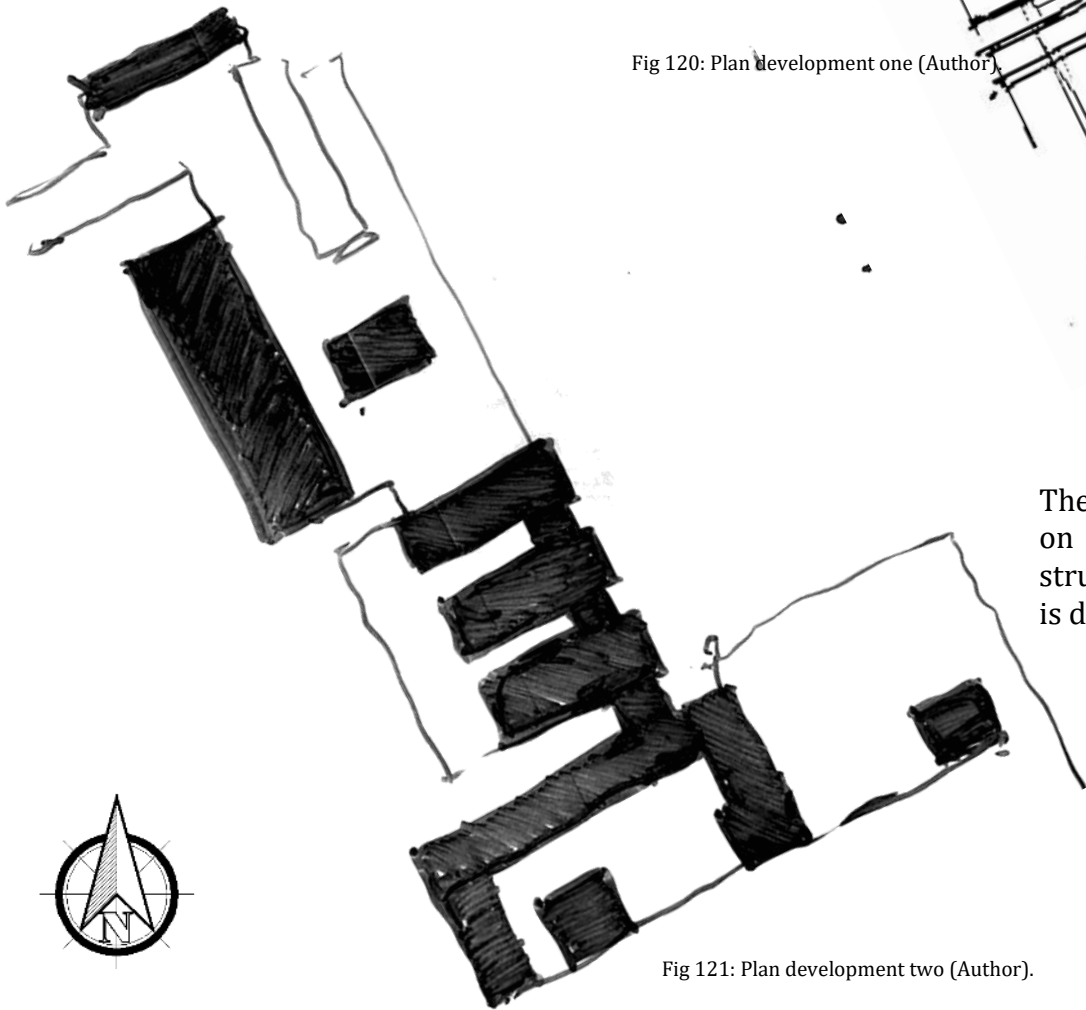


Fig 120: Plan development one (Author).



The second plan focused on the massing of the structure. The linear plan is distorted.

Fig 121: Plan development two (Author).

The third plan focused on the functions of the design and how they would work together.

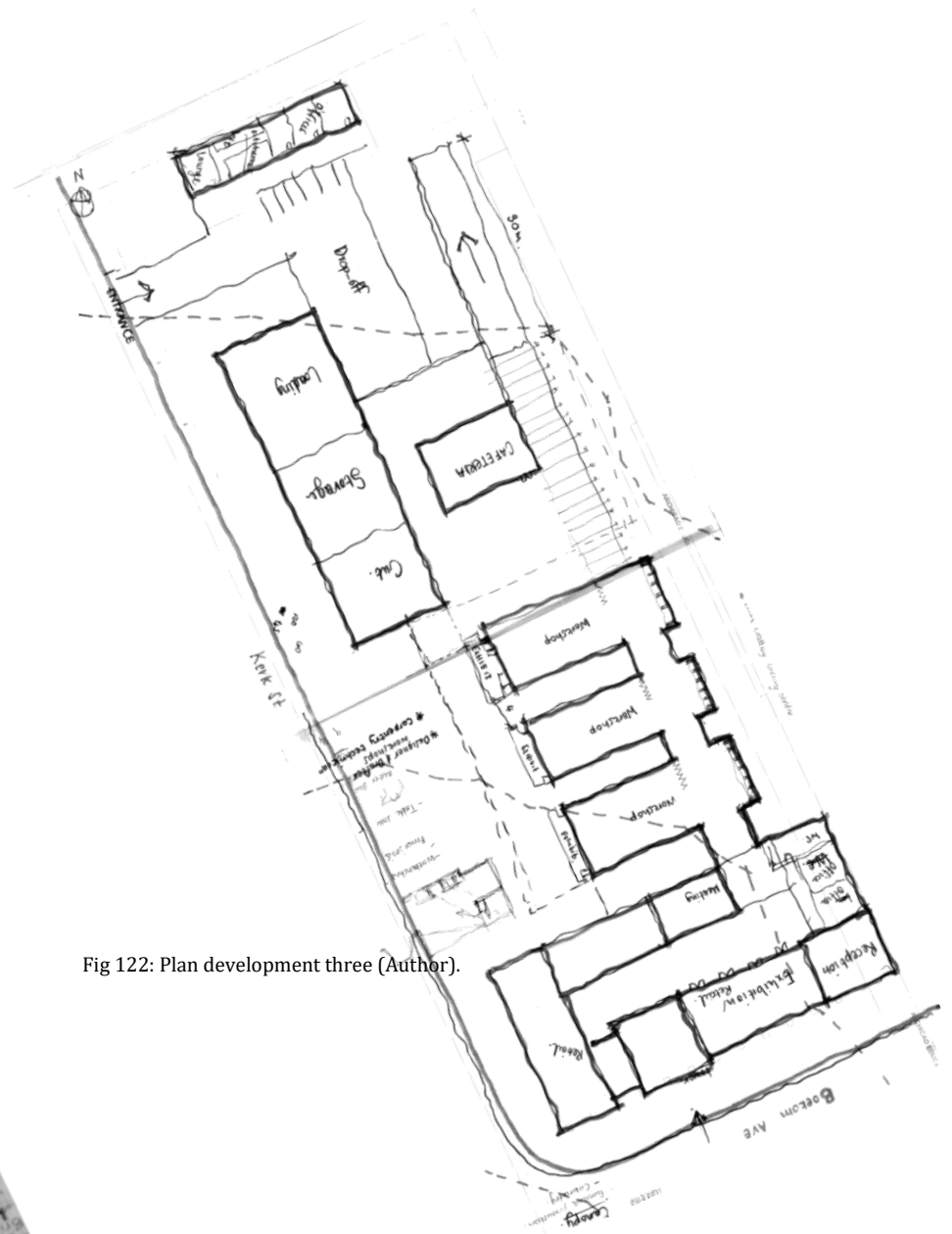


Fig 122: Plan development three (Author).

The final plan refined some of these spaces and focused more on parking spaces.

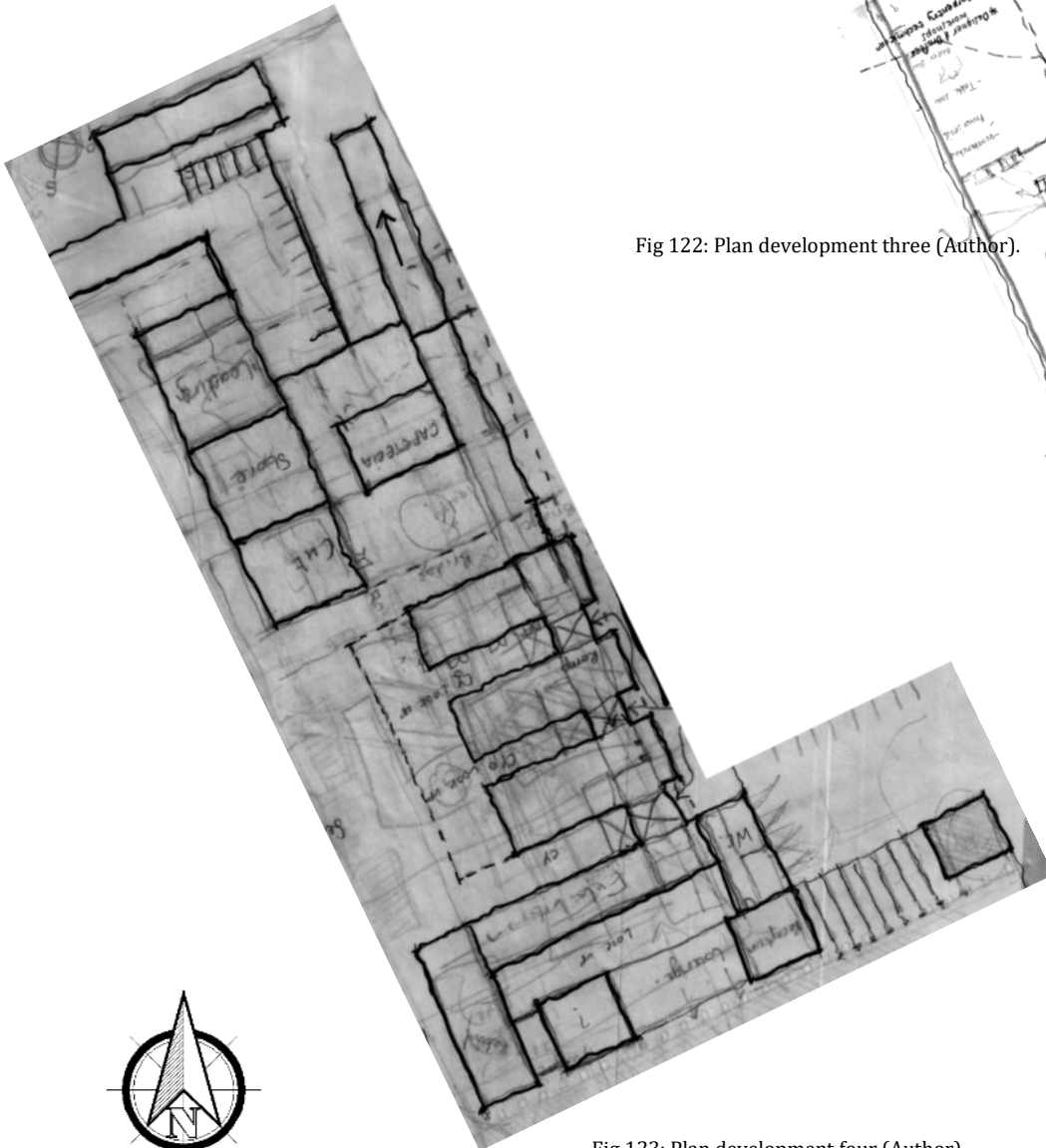
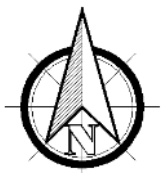


Fig 123: Plan development four (Author).



Conclusion of Experiment 2

Experiment 2 provided both a comprehensive and detailed analysis of Karatara. This experiment focused much more on how the theoretical approach could shape and stimulate specific design solutions.

REFLECTION on experiment two

The idea of having one site already started to emerge in 'Experiment 2', when the project relocated to Karatara.

After receiving more exposure with a timber factory and carpentry centre, I quickly learned that the project would become too large, and I could not give enough attention to both projects. There are also not enough people in Karatara to support both the timber factory and a carpentry centre.

A woodworking centre may help individuals to create more specified items for their houses and for further developing houses. Therefore, I only continued with the second program, the 'Carpentry Centre'.

Because the project only continues with the Carpentry centre, there is no connection to the forest anymore. The project would therefore solely be influenced the town. Because the focus of this project is the woodcutters, the site had to move closer to the forest. I also realised that the concept 'forest growth cycle' does not have a strong link to the essence of the project which is 'memory', specifically focusing on celebrating the woodcutters. Experiments 1 and 2 focused too much on the connection between two buildings instead of a connection between history and site.

On page 91, visual cues were used to transform a forest canopy into a design. This was an interesting revelation which is further explored in experiment 3.

5. EXPERIMENT 3

SITE ANALYSIS

THEORETICAL PLANNING

THEORETICAL PRECEDENT

CONCEPTS

DESIGN DEVELOPMENT

CONCLUSION

REFLECTION

5.1 Introduction

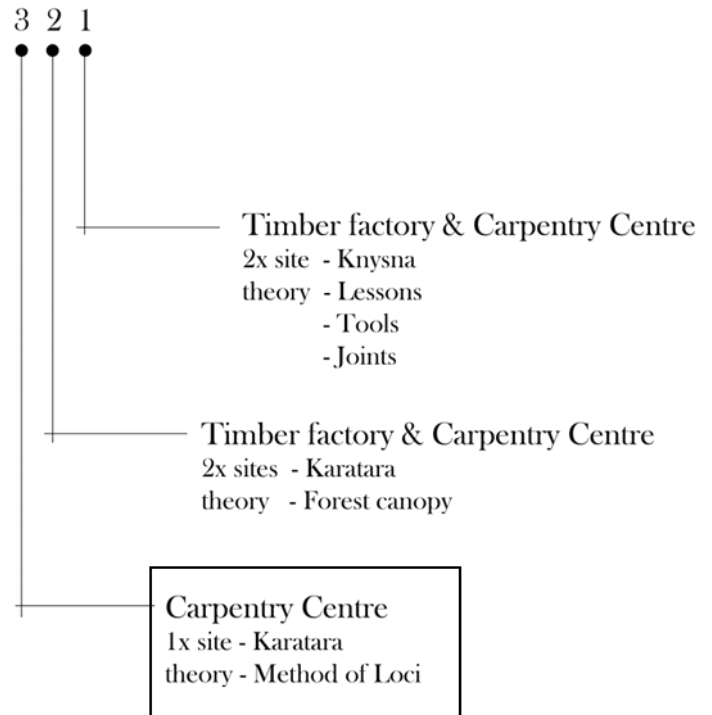


Fig 124: Diagram experiment 3 (Author).

Experiment 3's designated location remains within Karatara, mirroring the site chosen for Experiment 2. While Experiment 2 conducted a comprehensive site analysis of Karatara as a whole, Experiment 3 focuses exclusively on the site analysis specific to the proposed site.

The theoretical framework has evolved, placing a stronger emphasis on the integration of historical narratives related to woodcutters.

As experiment 3 represents the final phase of design, it encompasses the entire design development process,

including the accommodation list, client considerations, and precedent studies.

The primary objective of this experiment is to fulfil the initial goal of identifying a unique location in need of intervention and developing appropriate conceptual ideas rooted in a deeper understanding of the place gained through research and experimentation, particularly drawing from the history of woodcutters.

5.2 Forest tale

Dreamforest (Toorbos)

Synopsis

Dreamforest (Toorbos) is a novel written by Dalene Matthee that delves into the complex relationship between Karoliena Kapp, an initiated 'forest woman,' and the forest itself, which she considers her primal mother. Karoliena, a beautiful woman, marries Johannes, a former forest dweller now living in the village. The story explores the stark contrast between the mystical forest and the money-driven village, with Karoliena craving the former's ecstasy. Despite her love for Johannes, she quickly realises that her decision to marry him and leave the forest was a mistake (Matthee 2005).

Feeling trapped and fearful in the village, she returns to the forest, leaving behind her newfound but suffocating life.

Throughout many of Dalene Matthee's stories, it becomes evident that the forest's inhabitants resist leaving because it is their true home.

This project delves into the history of the woodcutters, and as such, it cannot be detached from the forest. In experiment 3, the project's focus shifts to the forest itself, celebrating the lives of the woodcutters and seeking a better understanding of their existence.

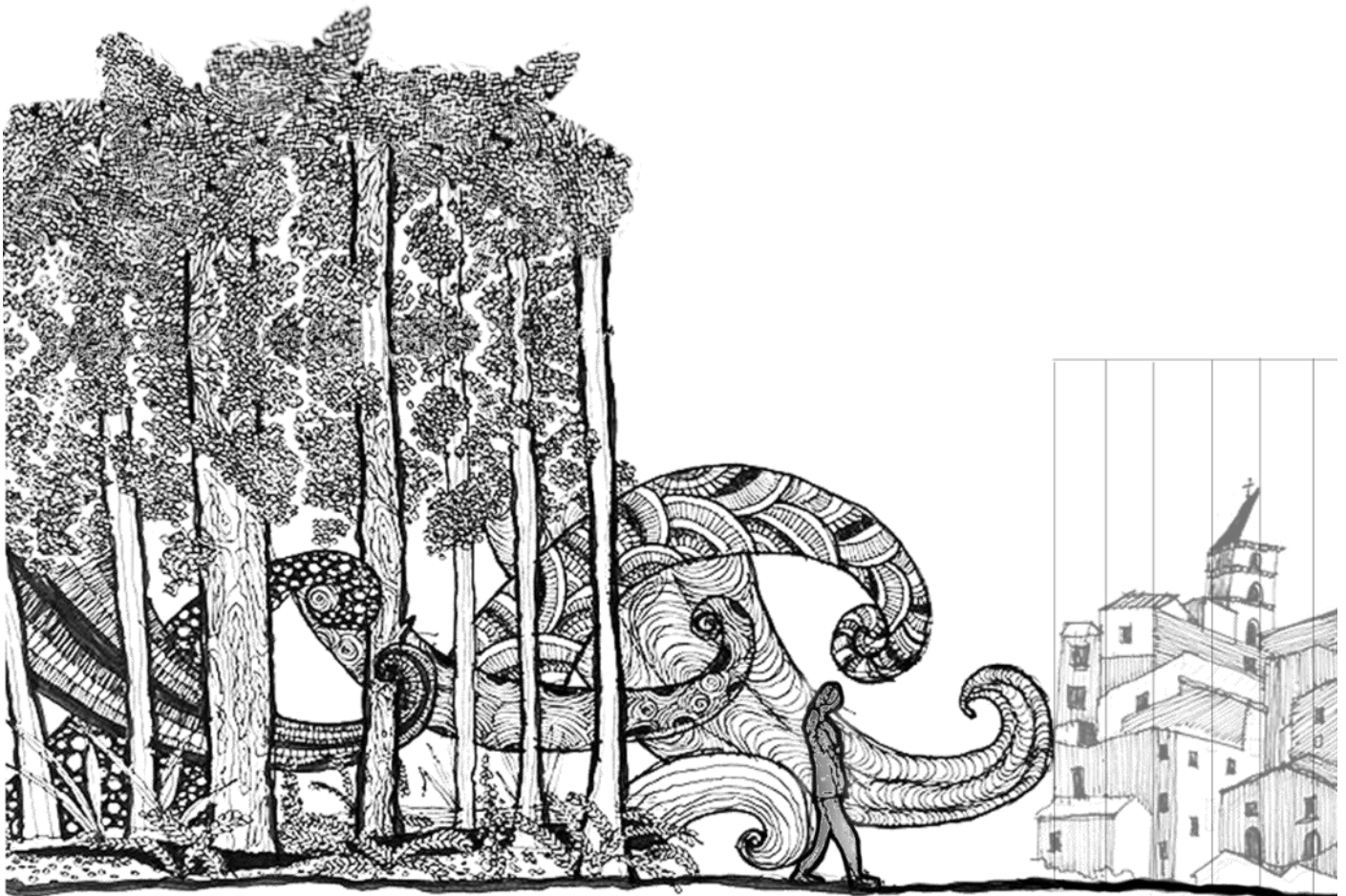


Fig 125: The forest calling for Karolina (Author).



Fig 126: Proposed site location (Google earth, 2023: own adaptations).

5.3.1 Proposed site

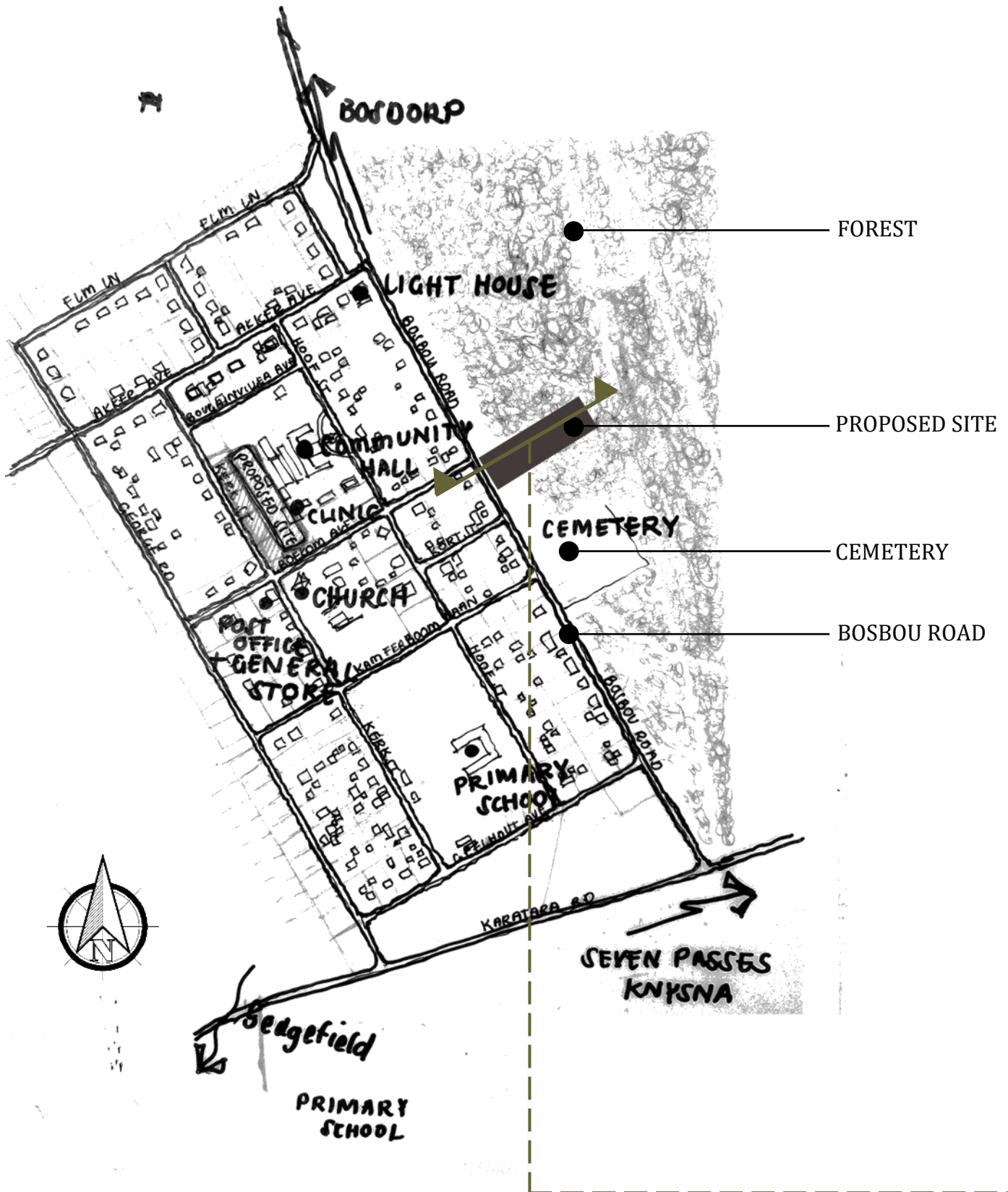


Fig 127: Karatara proposed site location (Author).

5.3.2 View of site (Bosbou Road)

MOUNTAINS IN FAR
BACKGROUND

FOREST RECESSED

OPEN FIELD

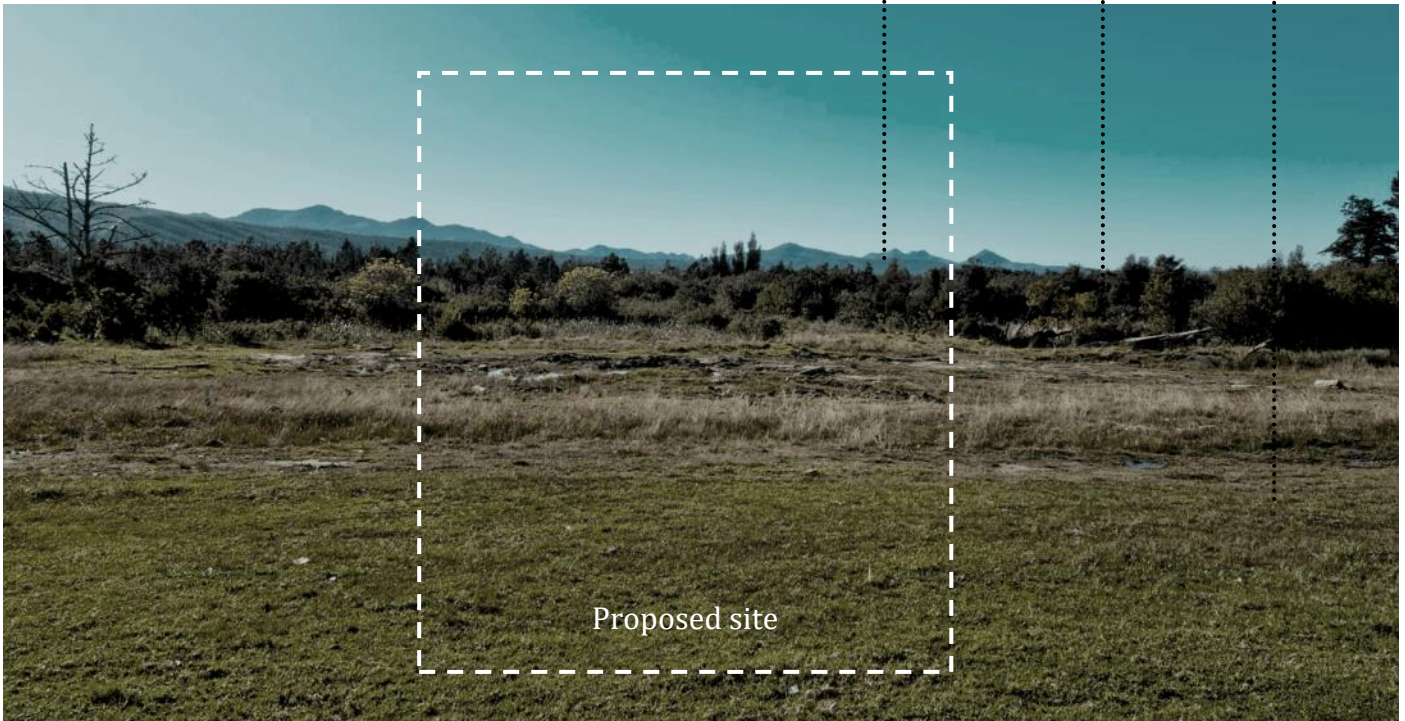
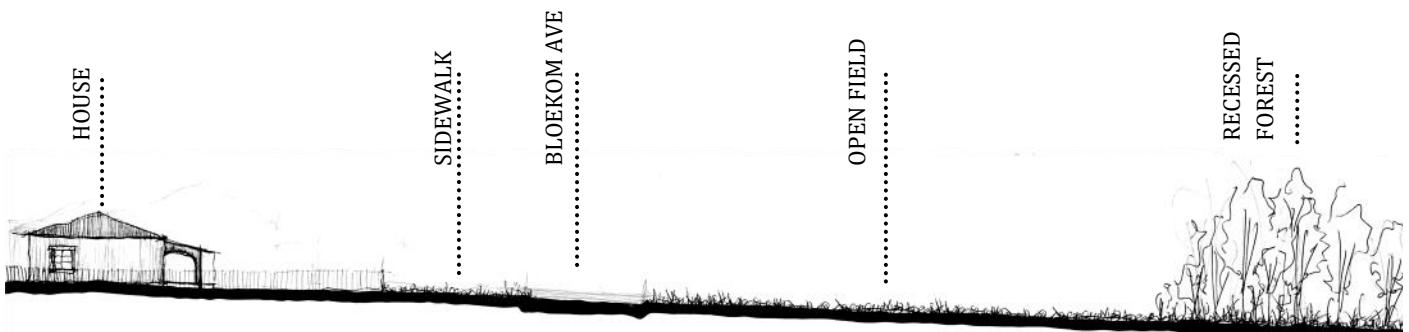


Fig: Perspective of proposed site (Author).

The proposed site is moved into the forest where the design could be free from the direct influence of the settlement. It is still close enough to Karatara to have an influence on the settlement.

The site sits on the edge of Karatara and acts as a connection between the town and the forest. The proposed site is situated on Bosbou road approximately 130 metres north of the cemetery.



5.4 Conceptual planning

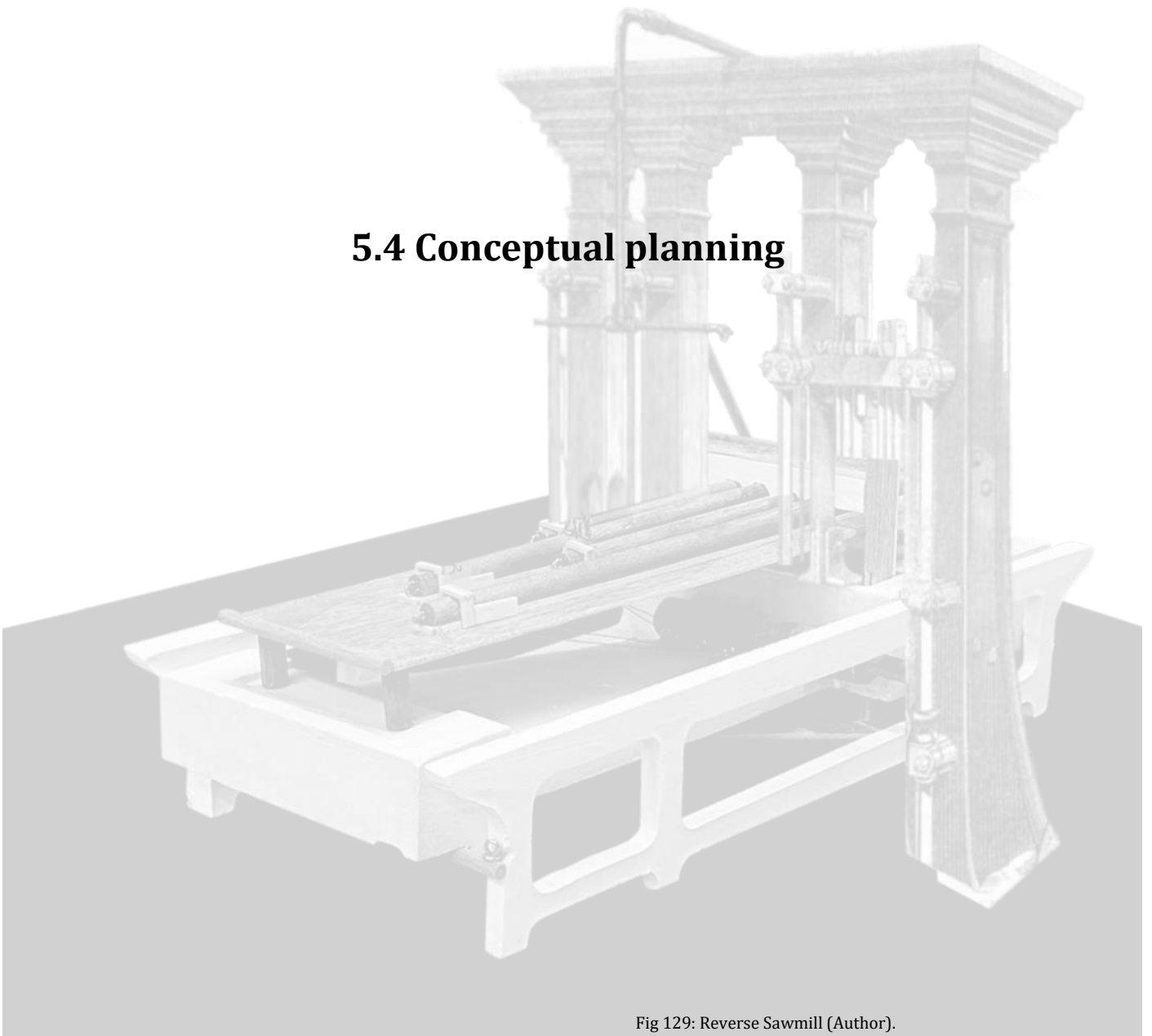


Fig 129: Reverse Sawmill (Author).

5.4.1 Introduction

The theoretical approach in this project has evolved to become more closely intertwined with the core theme of memory, particularly focused on capturing and preserving the history of woodcutters and forest exploitation. This concept of memory has been further refined and segmented into three subheadings: 'Memory Palace', 'Architectural Metonymy' and 'Adapting to the Community'.

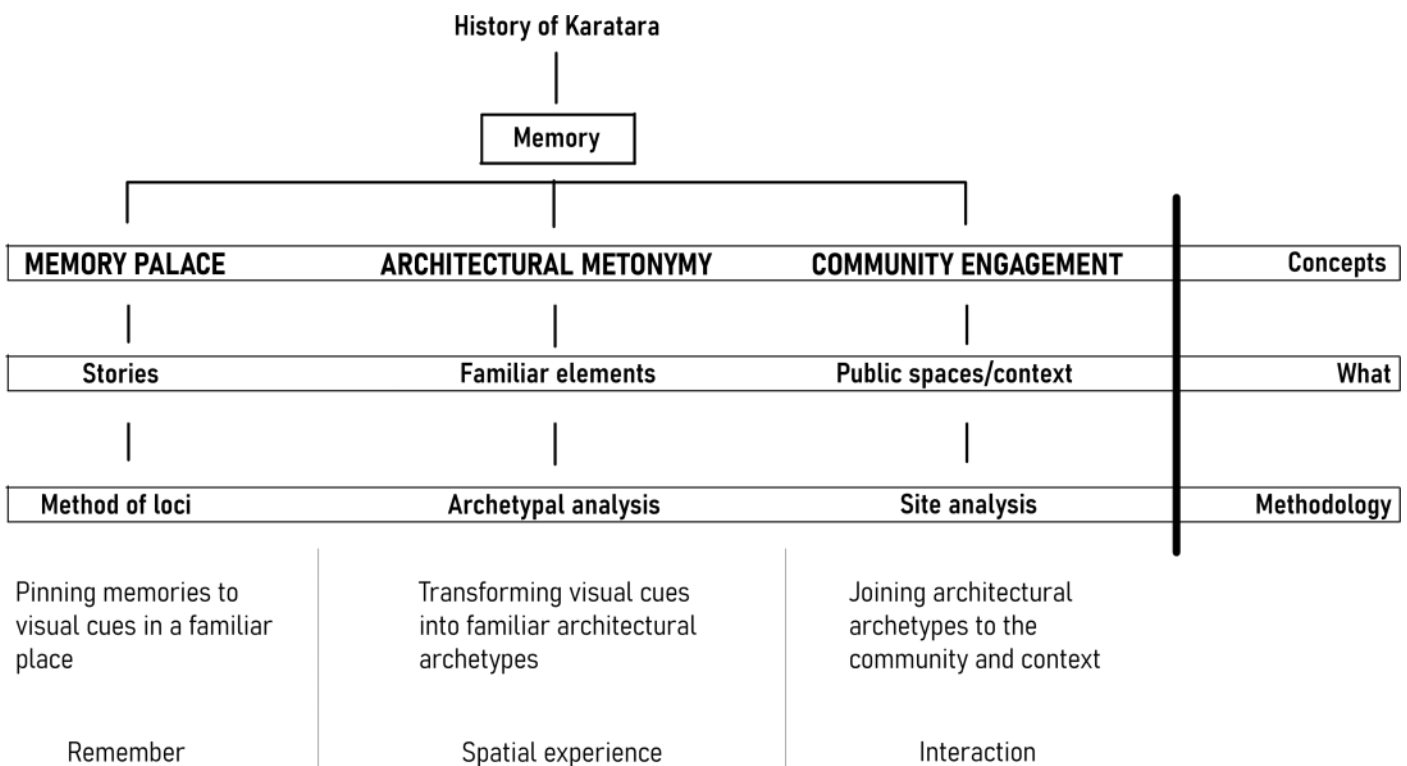
1. 'Memory Palace' involves the process of extracting the narratives of woodcutters and utilising the 'Method of loci' to anchor these stories through visual cues. The goal is to recall these stories and enable their translation into architectural elements.

1. 2. 'Architectural Metonymy' represents the subsequent phase, where visual derived from these memories are

infused with recognisable archetypes to shape them into architectural components. This transformation aims to create a spatial experience that serves as a powerful reminder of history.

1. The final stage 'Community Engagement', plays a vital role in the project's social aspect, focusing specifically on the proposed site. The architecture, inspired of its location, must seamlessly resonate with its surroundings, making a meaningful impact on the community and promoting interaction.

The following pages will deal with the concepts in more depth.



5.4.2 Theoretical precedent

Plato – The Allegory of the Cave

Plato says that 'true reality' is not that which is physical but rather abstract concepts or ideas (Plato 2017).

The idea is for the visitor to be reminded of Karatara's history when they enter the building. To evoke specific memories in architecture, we can associate these memories with architectural explorations.

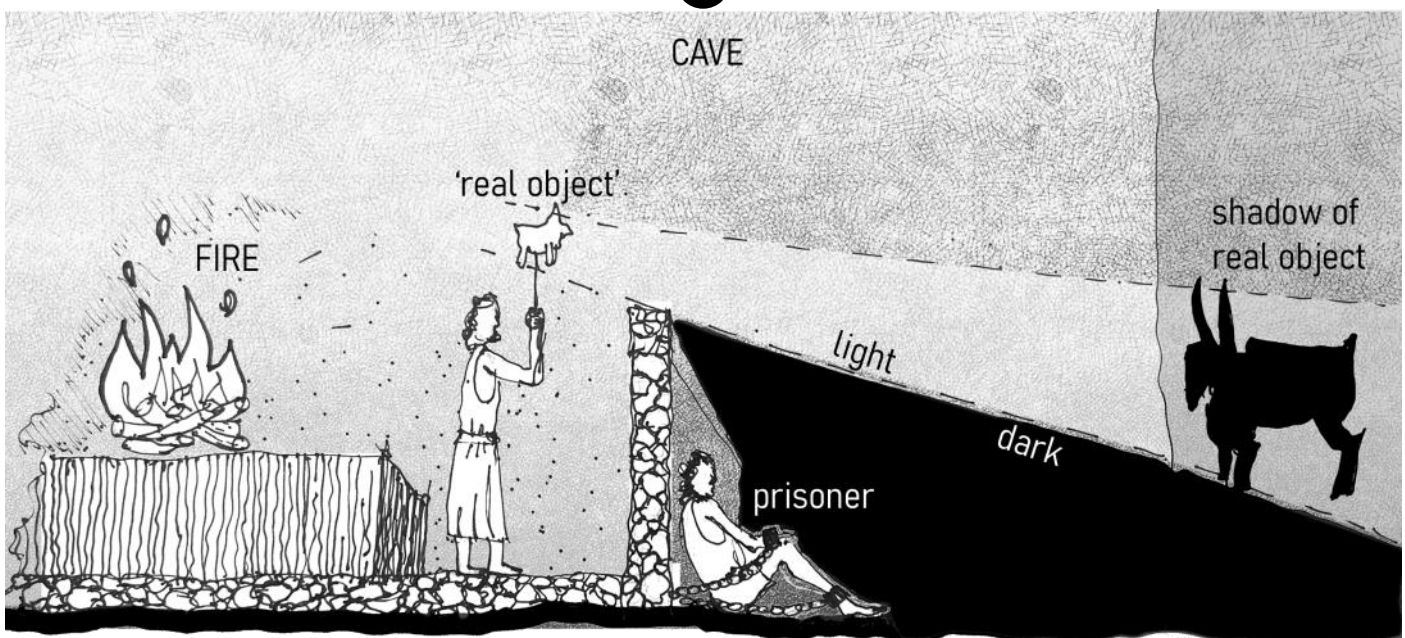
Plato's Theory of forms is a way of thinking about the relationship of two things. The one we access through our senses and the other through intellect.

Plato uses prisoners that have been in a cave their whole lives as an example. Prisoners cannot move their heads and are chained to the ground. A fire behind them casts a shadow on the wall in front of the prisoners.

When objects are moved in front of the fire, all that the prisoners can see is the shadows of the objects. This is their true reality. When a prisoner is released, he sees what is happening behind him and he can never go back to believing that the shadows is the true reality. He may feel as if now he has an even better understanding of the world (Hubbard,2020).

In this example, Plato states that reality is split into two dimensions; the real objects and how we experience the world through our senses (shadow). The design is not the fundamental reality of the woodcutters but rather an experience and reference of it. The stories give meaning to the architecture.

THEORY



“Plato’s cave analogy is a famous depiction of his Theory of Forms:

people initially see mere shadows (appearances) but
eventually can perceive real objects illuminated by the sun (true Forms)” (Luke, 2023).

architecture
stories meaning

Fig 132: Architectural analysis of the Allegory of the Cave (Author).

Plato – The Allegory of the Cave

Relating to architecture

Architecture is seen as the ‘shadows’ that the prisoners saw in the cave (figure 132). It is a fragment of reality and not an accurate presentation of the woodcutter’s ‘real world’. The ‘real objects’ are the stories of the woodcutters.

This is similar to the Carpentry Factory. It is meant to evoke memories of the woodcutters and is only a fragment of the ‘real world’ that the woodcutters experienced.

When the released prisoner sees both the ‘real object’ (stories) and the ‘shadow of the real object’ (architecture) they know the meaning behind the structure. This can help users to understand the experience of the structure.

The following section will explore three concepts which can assist in incorporating the history of woodcutters in architecture through imagery.

ARCHITECTURE

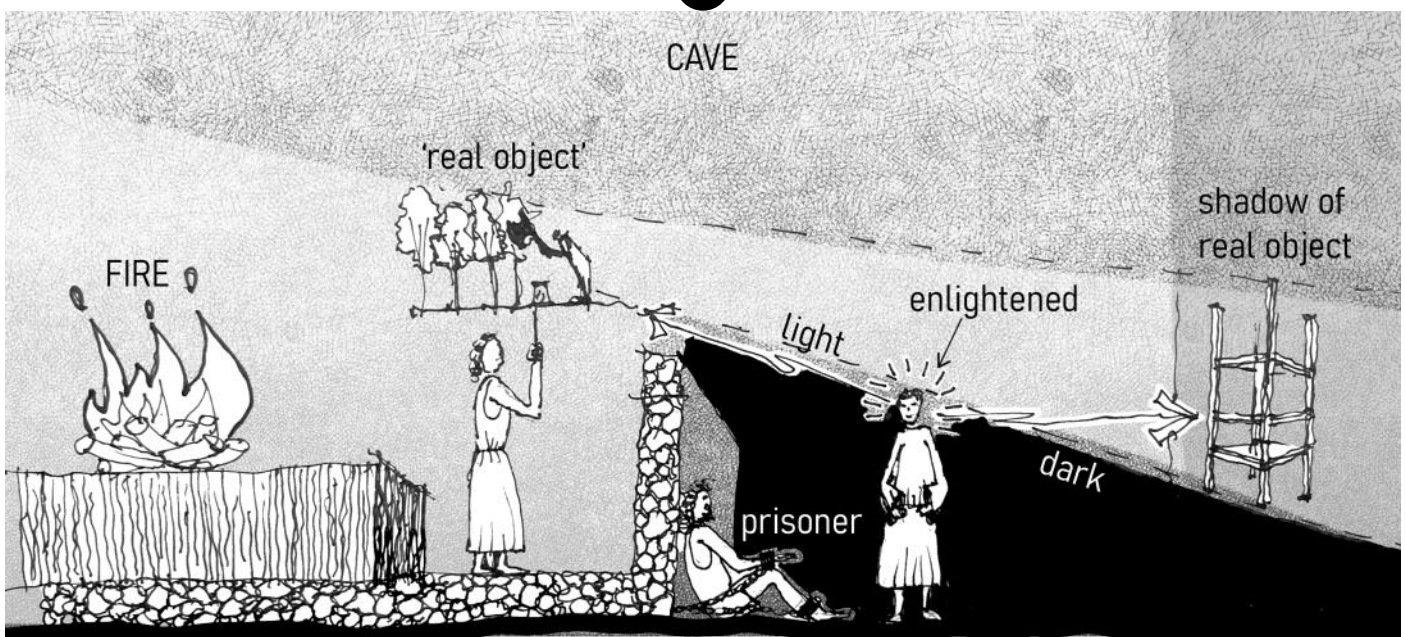


Fig 133: Architectural analysis of the Allegory of the Cave (Author).

5.4.3 Concept 1: Memory Palace

Memory

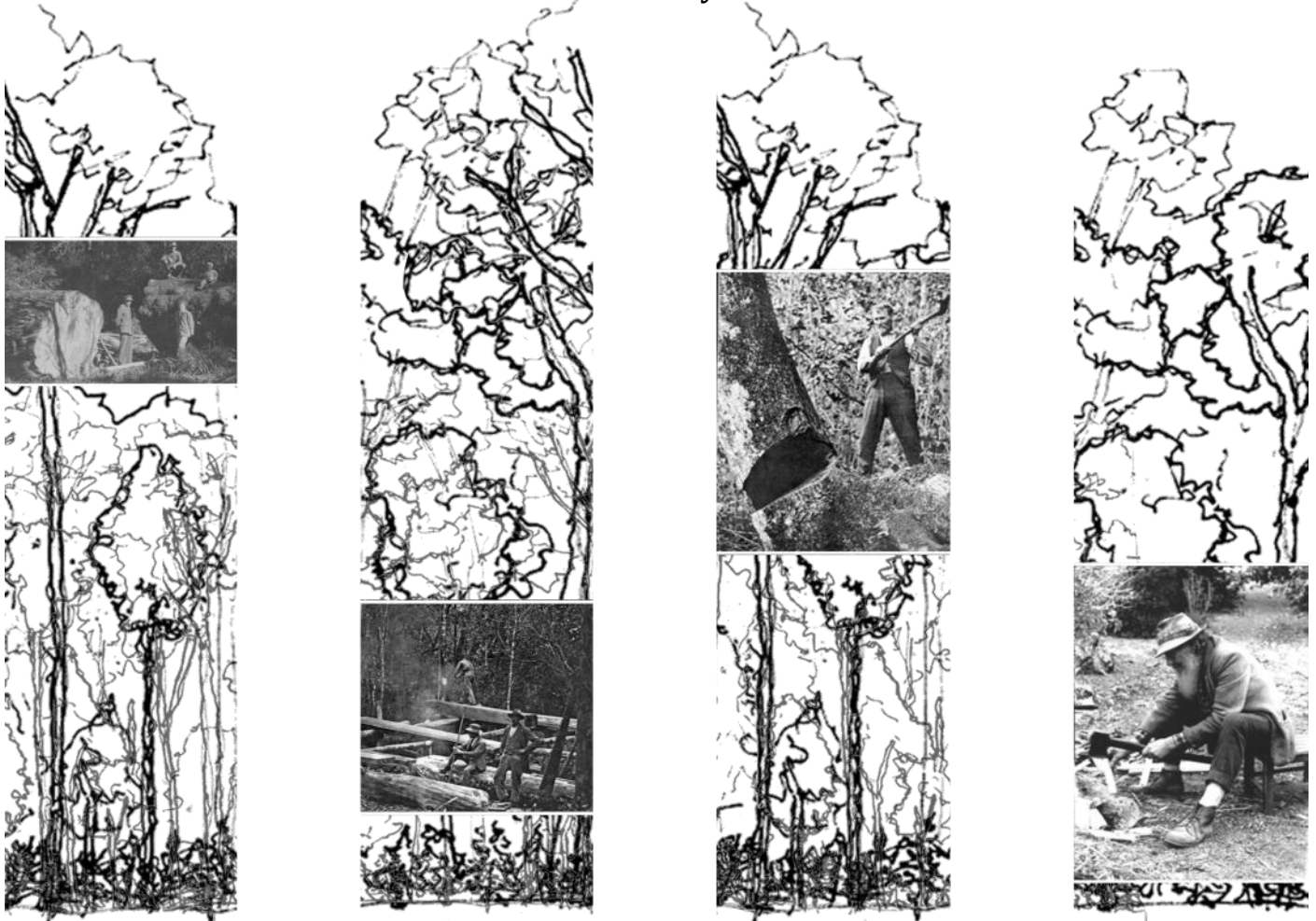


Fig 134: present forest & past narratives (Author).

“Architecture, like memory, is composed of images. Memory, like architecture, constructs through a relationship between images, a framework for understanding space and time” (Hopkins, 1996).

Figure 134 illustrates the way in which the forest could possibly be understood as visual images. The images of woodcutters symbolise a specific point of reference in time.

When we see the images of the woodcutters and the forest, we realise their relationship with one another, and we can understand the forest in this specific time. The fragmentation between past and present disappears as one place through imagery.

This concept uses sketches as a language to translate memories of woodcutters living in the forest into visual images.

Memory Palace

The mind's blueprint

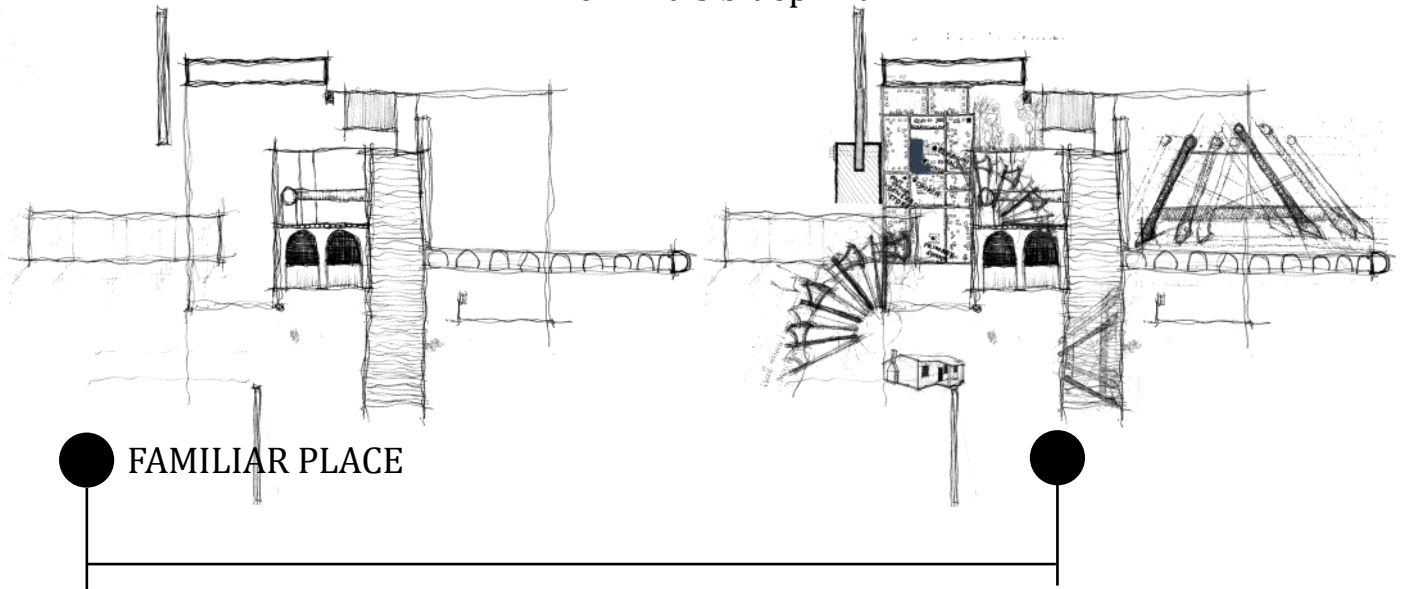
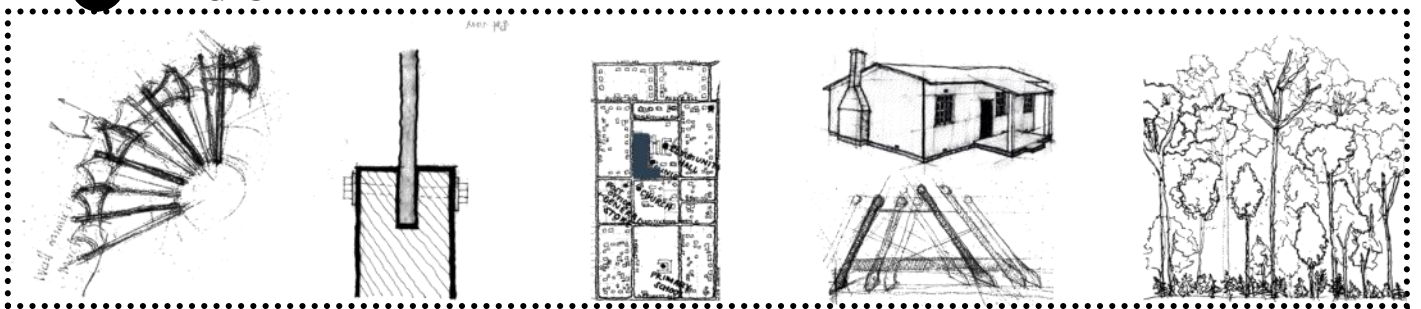


Fig 135: Executing the method of loci (Author).



Method of Loci is a strategy for memory enhancement. It is a mnemonic device used to recall and remember information through visual cues. According to an ancient Greek myth, this technique was invented by poet Simonides of Ceos after he attended a banquet. The building collapsed when he stepped outside, and he had to identify who was in the building based on where he sat at the table. Thus, the method of loci was invented (Zielinski, 2014).

The method of loci requires one to pin certain things that should be remembered to a familiar loci (location) in the mind. The familiar location is based on each person's own personal place that they choose.

One can 'walk', (usually in sequence) through this loci and recall these items again which needed to be memorised.

The method of loci becomes a guiding tool which could assist in recalling the history of woodcutters and Karatara. Through imagery we can recall these memories and find a connection between past and present. We can take certain memories and place them in the familiar place (architecture). This architecture symbolises a point of reference in time. When we walk through this familiar place, we are reminded of woodcutters.

This concept assists in designing a structure that is derived from a deeper understanding of its environment.

5.4.4 Concept 2: Architectural Metonymy

Translation device

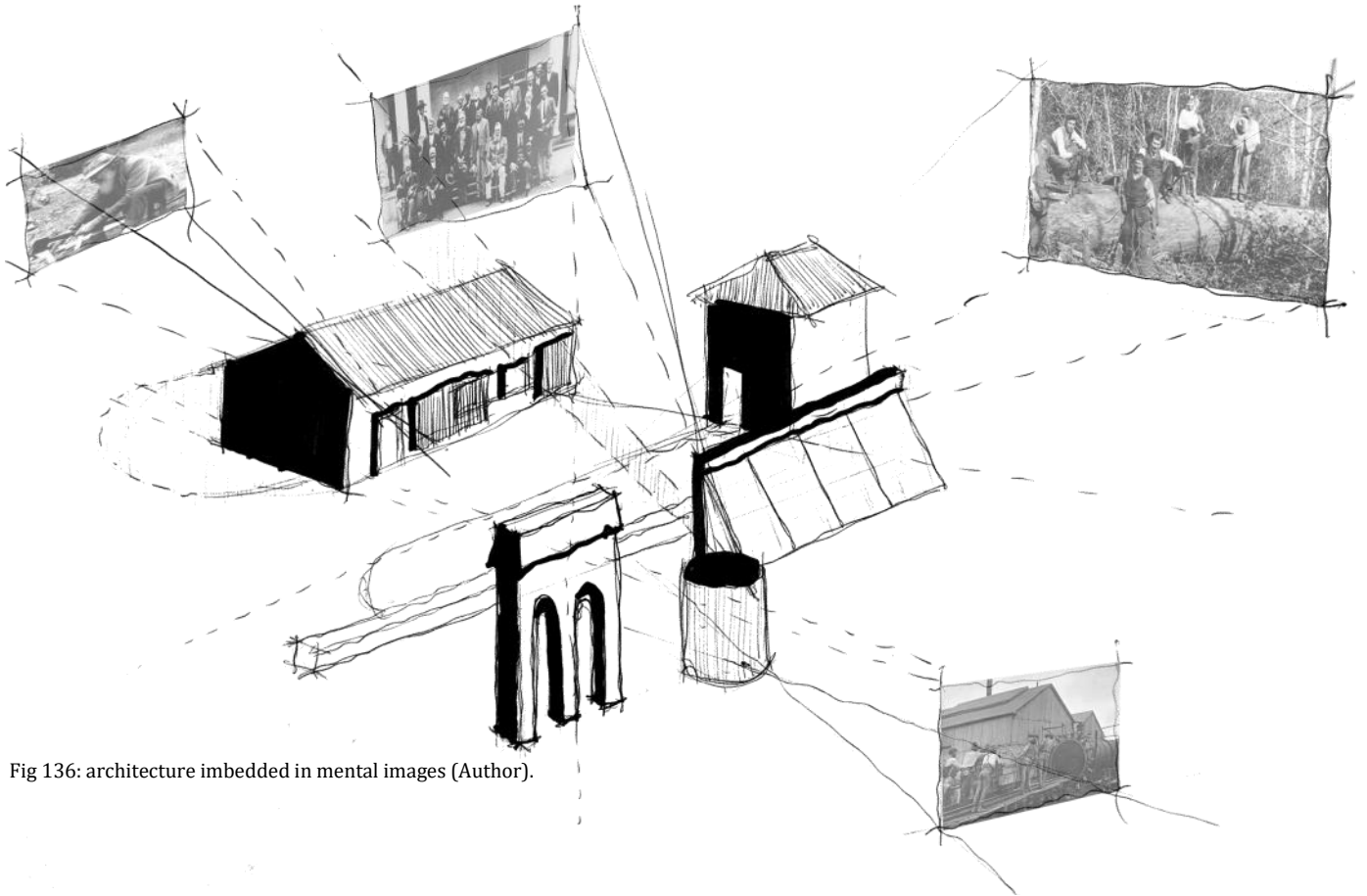


Fig 136: architecture imbedded in mental images (Author).

Once these memories have been recalled, we need to transform it into architecture.

This concept draws inspiration from the work of Gaston Bachelard, who believed that the images in our minds have a powerful impact on how we experience buildings.

Bachelard places a strong emphasis on the role of imagination in shaping our perception of architectural spaces.

He recognizes that our mental images and memories can be a powerful source of inspiration. By tapping into these visual memories, architects can create designs that are not just functional but also evoke emotional and sensory responses (Bachelard 2014).

Bachelard's focus on imagination and memories in architecture underscores the ability to craft spaces that resonate, fostering stronger connections between people and their environment.

Architectural Metonymy

Transforming Memory Palace into architecture

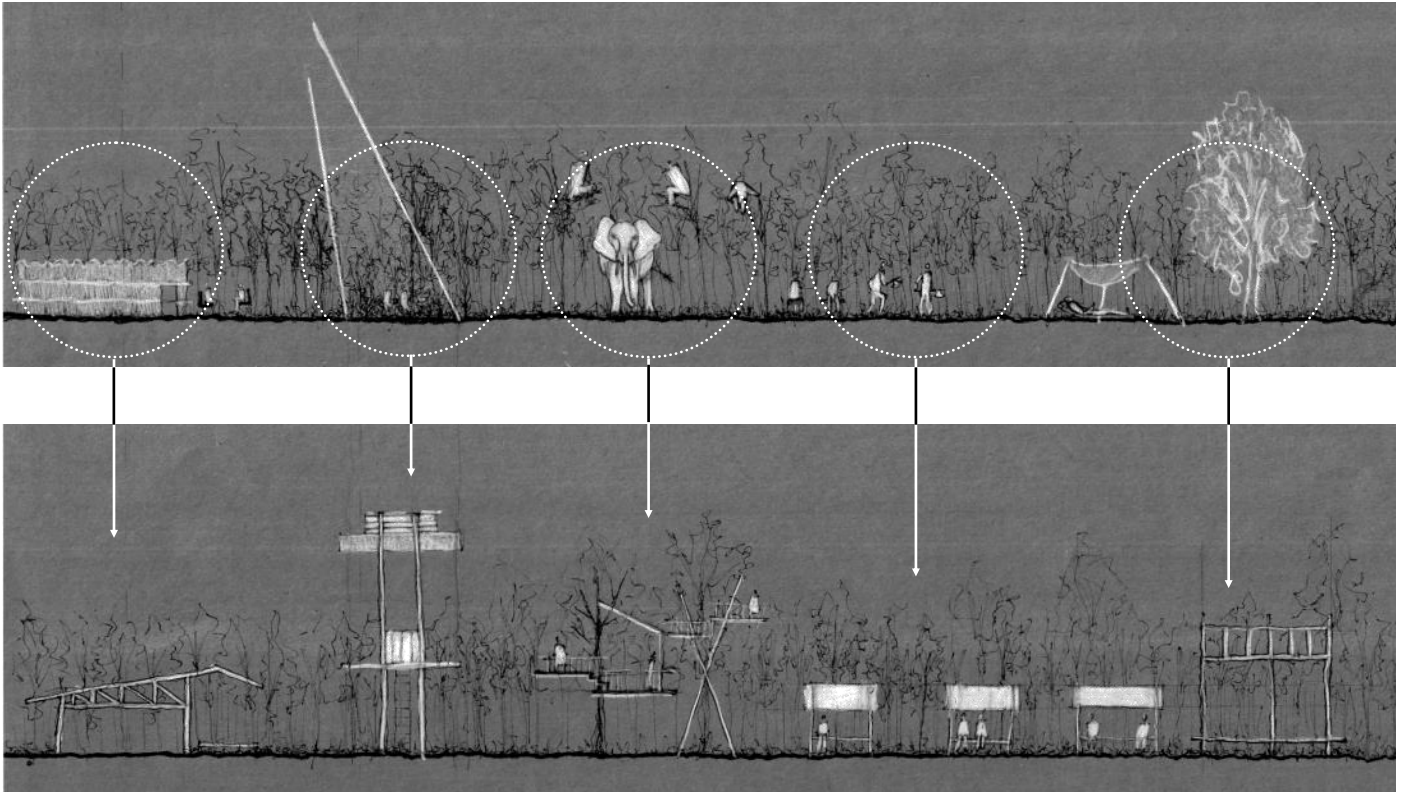


Fig 137: transforming narratives into architectural elements (Author).

Metonymy is a figure of speech. It substitutes the word used for an object or idea with another name that is closely associated. Within the realm of architecture, metonymy serves as a tool for translating specific concepts into architectural designs to preserve the qualities of the concept. These archetypal elements represent the concept's essential characteristics.

The theory can be understood by using a story of woodcutters living in the forest and their rituals. The tale begins with a woodcutter's hut and follows the woodcutters as they traverse the forest, encounter an elephant, seek safety in the trees, potentially rest, and ultimately

construct a temporary shelter near the tree that they will cut down.

In the subsequent phase, we witness the transformation of these narrative elements into architectural manifestations. The humble hut evolves into a modern structure. The once-empty forest clearing takes on the form of a towering structure, extending into the upper reaches of the tree canopy. The scene depicting woodcutters seeking refuge amid the trees inspires the creation of treehouse-like structures. Thoughtfully designated resting areas are incorporated into the design. Ultimately, the journey concludes with the possibility of a chosen tree being converted into a pavilion.

5.4.5 Concept 3: Community Engagement

Site analysis

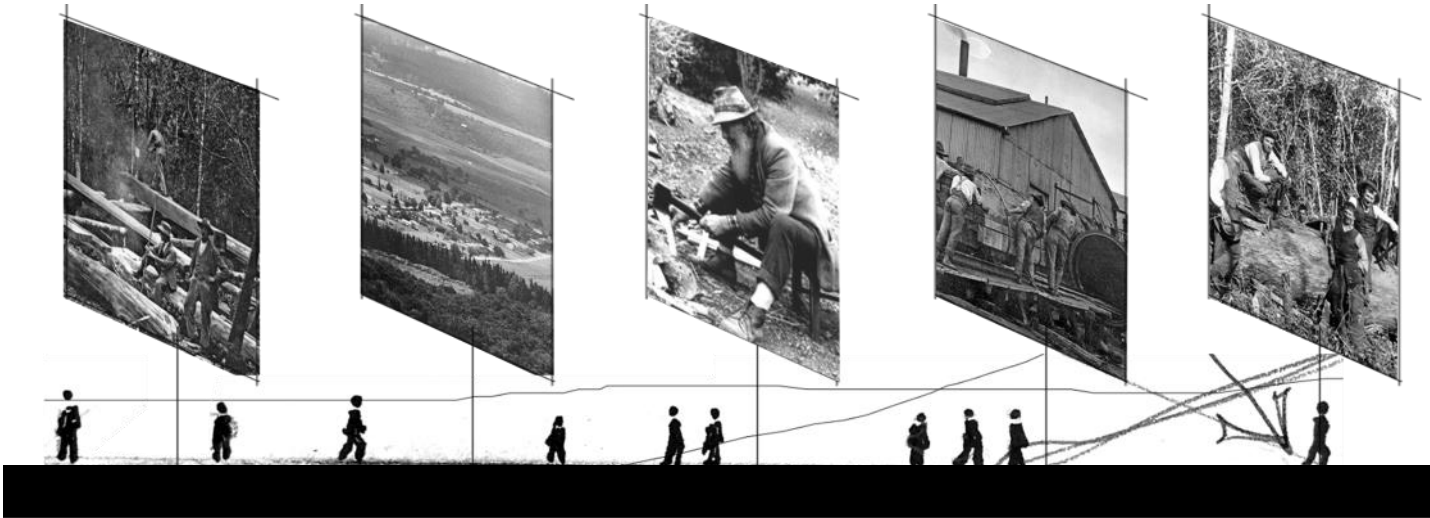


Fig 138: creating engaging spaces derived from memory (Author).

Theorist Gaston Bachelard insights emphasized the poetic and emotional dimensions of space. This concept recognizes that architecture goes beyond the structure and it becomes a living narrative that interacts with the community it serves.

Similar to Bachelard's vision of architecture resonating with personal and collective memory, here, the aim is to create spaces that are not only functional but also steeped in meaning, spaces that people identify with, spaces where they can forge their memories and stories.

Concept 3: Community Engagement

Archetypal analysis

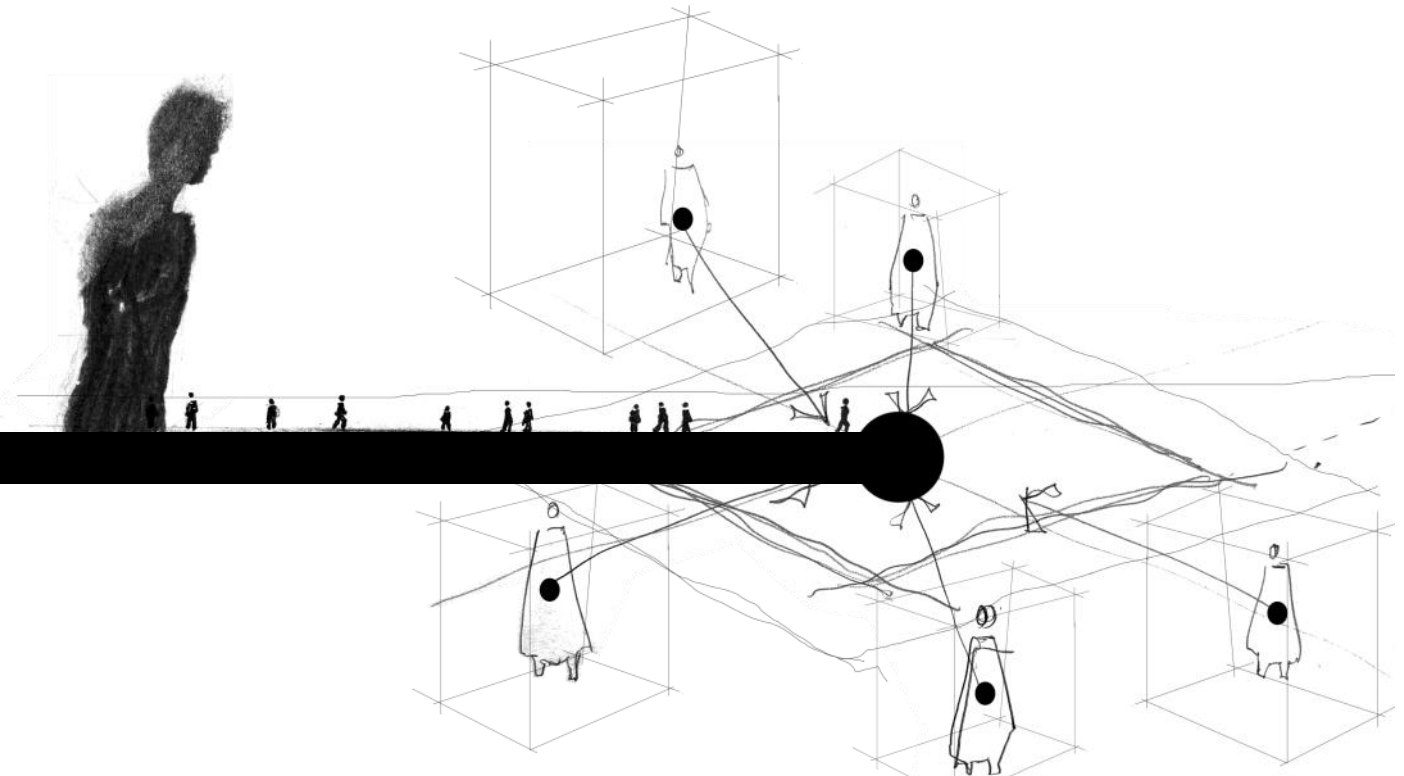


Fig 139: architecture which evokes community engagement (Author).

This concept tries to address the disconnection of experiment 2, which was to create both a timber factory and carpentry center in a settlement with few resources and people living there.

The goal of this concept is to integrate the previously mentioned archetypal elements of concept 2 'Architectural Metonymy' into the community. This is done in order to promote engagement amongst visitors.

This adaptation isn't limited to the final phase but can be interwoven throughout the entire process. This architectural intervention could be explored through the addition of public spaces that engage and invite the community to participate. In doing so, the architecture transforms into a catalyst for fostering stronger connections, ultimately enriching the collective memory and identity of the community.

Conclusion

Theoretical methodology offers a framework for translating the historical narratives of woodcutters into architectural design, enabling the development of a project deeply rooted in its environment.

6.1 Design development

Introduction

Client

Accommodation list & brief

Model 1

Model 2

Model 3

Model 4

Model 5

Final model

Conclusion

6.2 Introduction

How can the creation of a Carpentry center in Karatara be approached through the lens of recalling memories, archetypal references, and their integration within the existing community?

The Carpentry Center plays a pivotal role in providing employment opportunities and skill enhancement for the community of Karatara. The rich heritage of woodworking and woodcutting is deeply intertwined with the history of Knysna, making this establishment a valuable bridge between the present and the past.

The concepts are born out of the notion of memory and are architecturally sculpted through an investigation into the history of the site. The architecture is shaped as a reminder of the site's history from recalling the memories and integrating it into the site.

The spaces that accommodate the public are designed to include visitors and give meaning to the carpentry center by being more than just a place that offers employment - it reminds us of the woodcutters who were one of the first residents of Karatara.

6.3 Client & Brief

Knysna Municipality

Client

Karatara forms part of Knysna Municipality. Knysna Municipality's vision is to ensure that there are inclusivity amongst the community. Knysna Municipality's mission is to "provide affordable quality services, alleviate poverty, and facilitate social and economic development in the Greater Knysna municipal area through integrated development planning, skills development and the sustainable use of resources." (Knysna Municipality, 2023).

Funding for this project can be sourced from the Knysna municipality, yet the primary clients could be considered the residents of Karatara.

The Carpentry Center has the potential to not only generate employment opportunities but also fortify Karatara's distinctive identity, thereby contributing to poverty reduction, promoting social and economic progress, and enhancing the residents' skill development.

Brief

The project is a multifaceted initiative that leverages history, community, and economic development. By bridging the gap between history and present, this project has the potential to leave a lasting impact on the community of Karatara while celebrating its unique heritage.



Fig 141: Knysna Municipality Logo (Knysna Municipality, 2023: Online).

6.4 Accommodation list

<p>Reception & Admin: Reception area Printing room Kitchenette General office area HR office Finance office Manager’s office Electric storage room File storage room</p> <p>Hardware shop: Sales area Equipment storage Staff room Ablution Storage Office</p> <p>Educational carpentry: Workshop area Tools storage area Tools sharpening room Timber storage Finish and dry area Office</p>	<p>Gift shop: Sales area Office Storage Ablution</p> <p>Staff area (giftshop & educational carpentry): Breakroom Lockers Shower Ablution Office Storage Timber storage Furniture storage</p> <p>Café : Kitchen Outdoor public seating Public ablutions Staff ablution</p> <p>Staff room (café): Office Lounge Kitchenette Storage</p>	<p>Carpentry Factory: Timber storage area Machine room Assembly area Finishing area Final storage area Waste material storage Tools sharpening room Ablutions First aid room Manager’s office Tools storage area Dust extractor Temporary storage area</p> <p>Staff amenities (factory staff): Reception (scan in) Lounge Kitchen Office Lockers Showers Ablutions Generator room Saw dust storage</p>
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6.5 Organized areas and functions

The Carpentry factory focuses on making window and door sills. This idea was inspired by Bosbou settlement which had beautiful crafted items (page 60). The mass production in window and door sills may sell quicker because of higher demand and assist in future developments in Karatara.

EDUCATIONAL
CARPENTRY

CAFE

COURTYARD
TO CONNECT
THESE SPACES

CARPENTRY FACTORY

ADMIN

HARDWARE SHOP

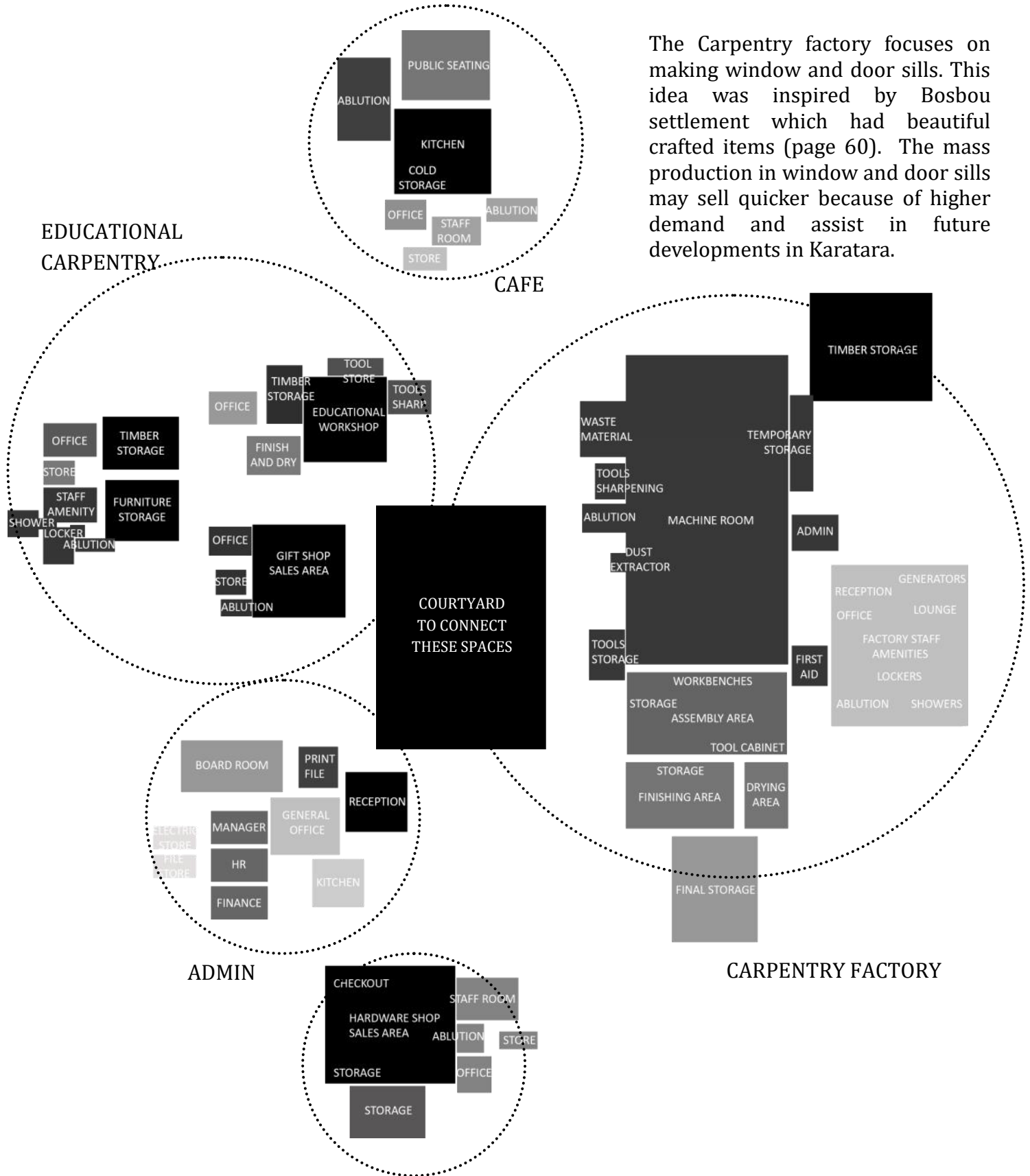


Fig 142: Diagram of spatial arrangement (Author).

6.6 Typical carpentry factory process

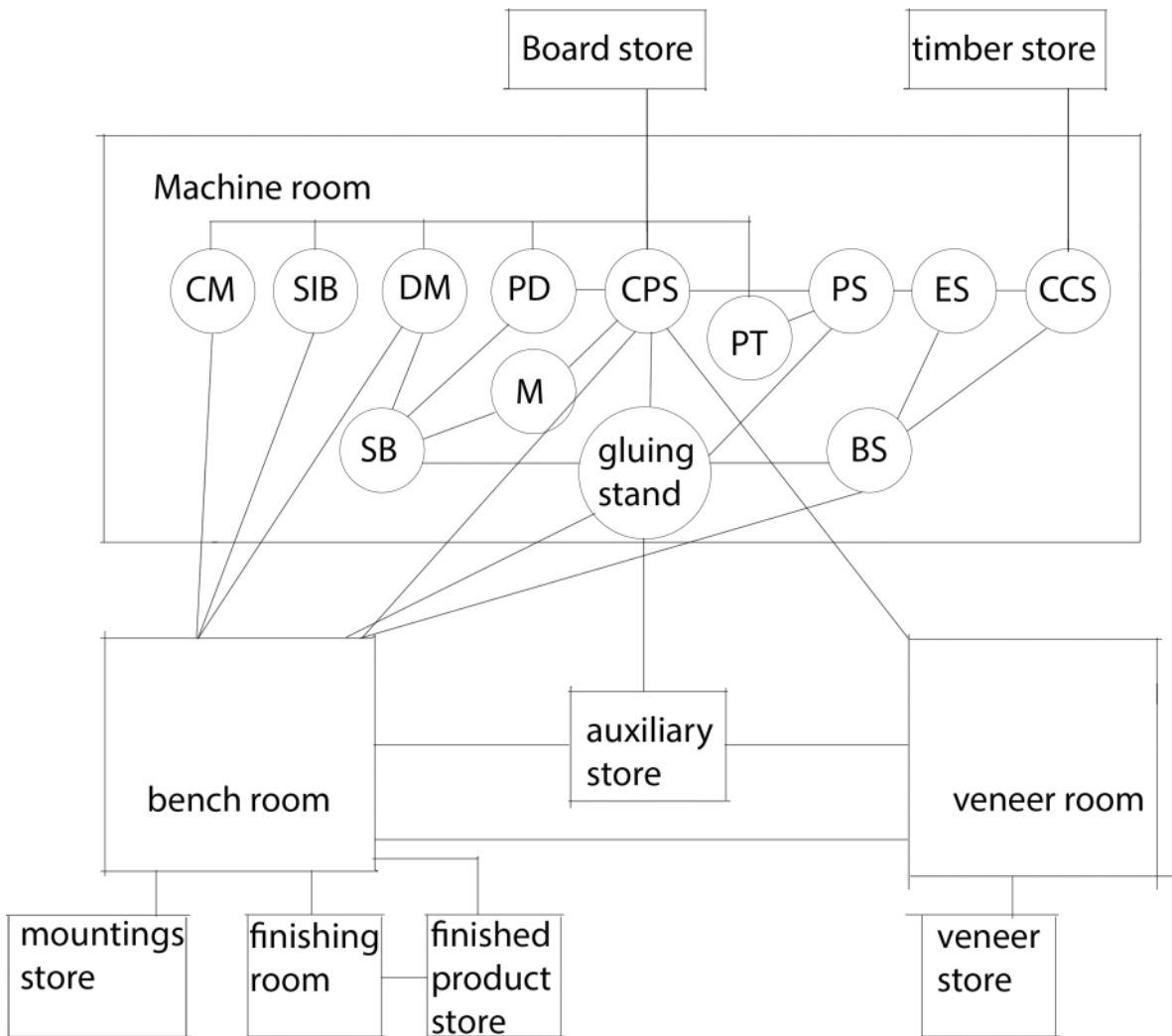


Fig 143: Diagram of timber factory spatial arrangement (Author).

CM chain machine

SIB slot boring

DM dovetailing/
mortising

PD pin drill

CPS circular panel saw

PT thickness planer

PS surface planning

ES edging circular
saw

CCS cross-cut saw

M milling machine

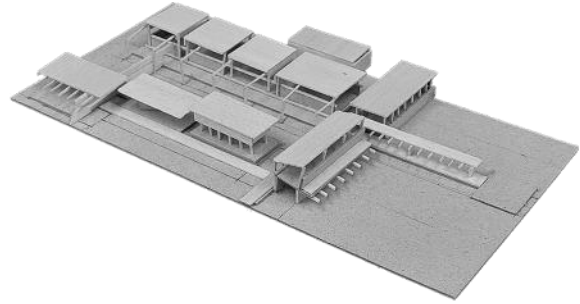
SB belt sander

BS band saw

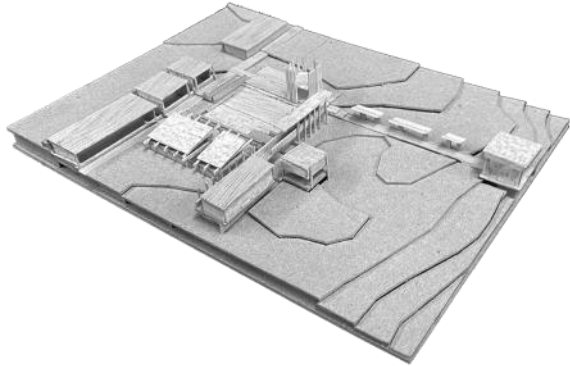
A typical carpentry factory would need a timber storage area, machine room, bench room and a finishing room. The bench room should not only have enough space for the workers but also enough space where items can be assembled.

6.7 Stages of design development

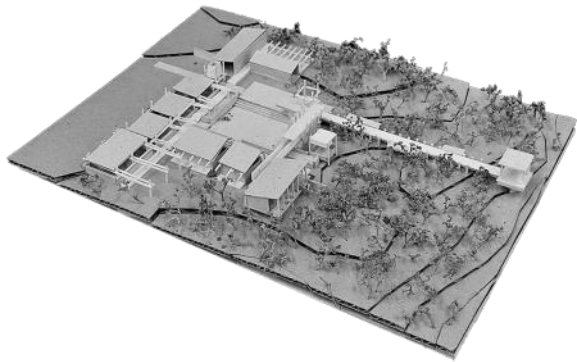
MODEL 1



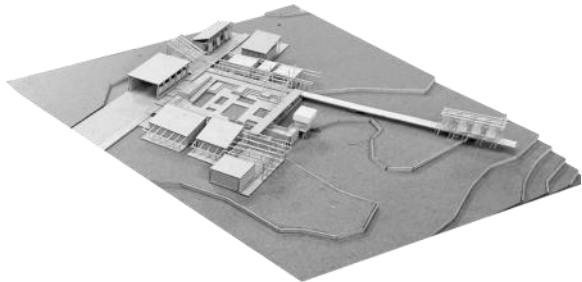
MODEL 2



MODEL 3



MODEL 4



MODEL 5

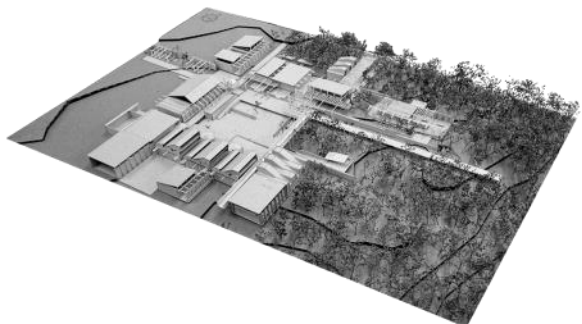
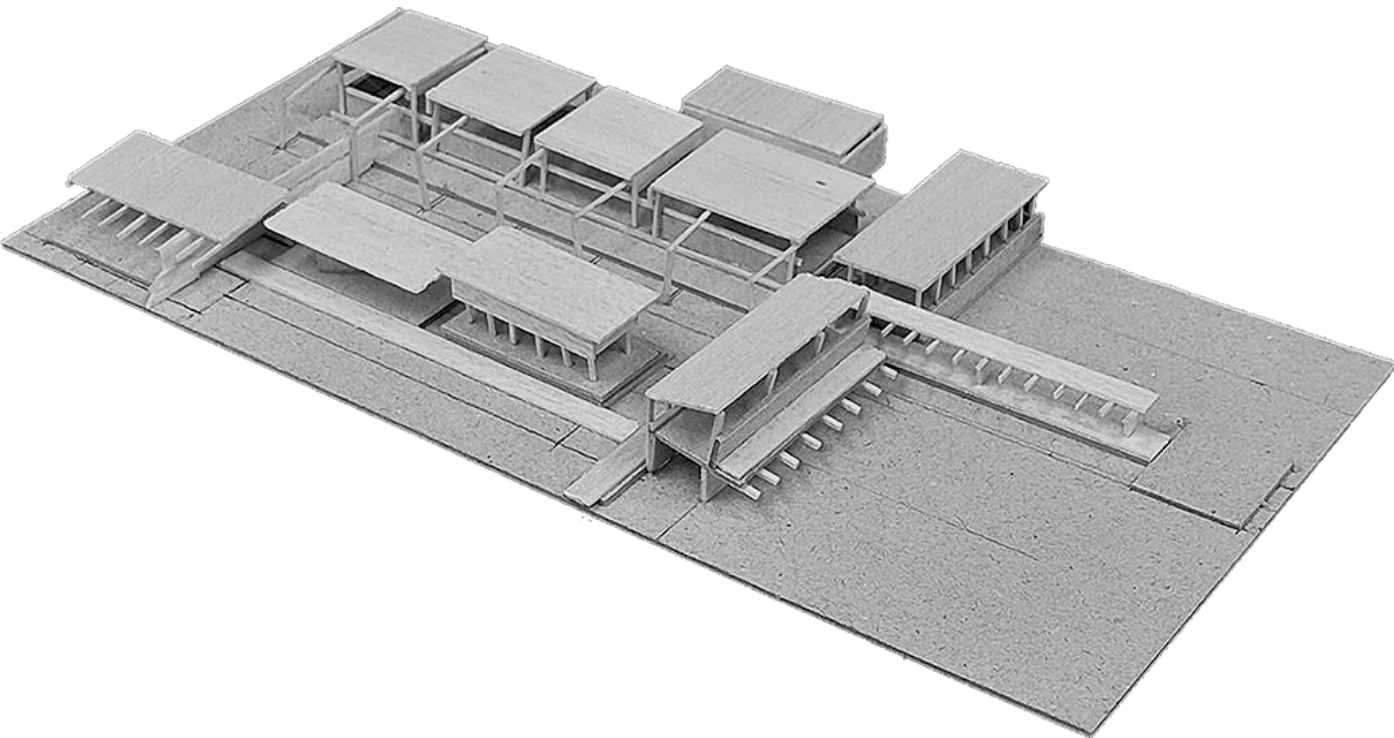


Fig 144: Models illustrating design development (Author).

6.7.1 Model 1





Precedent study

Pine Park Pavilion | DnA

Location – Lishui, China
Project year - 2017

This pavilion in Huangya serves as a resting spot for villagers and is seamlessly integrated into the walkway used by tourists cycling and hiking. It provides insights into traditional resin production methods for passersby. It also provides information about the area, connecting the past and future.

The structure employs a concrete base to support the light pine resin, with the vertical columns flawlessly blending into the surrounding environment (Wong 2018).

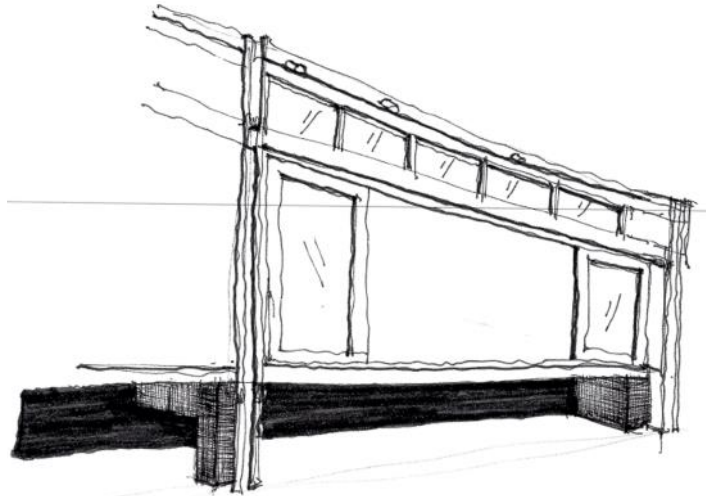


Fig 147: Pine Park Pavilion façade (Author).

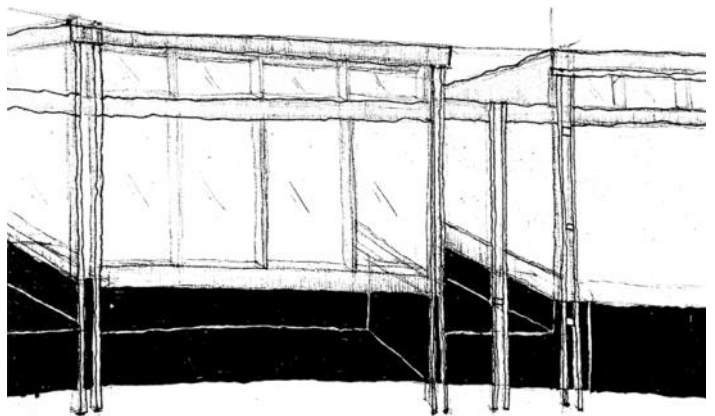


Fig 148: Light structure on heavy mass (Author).

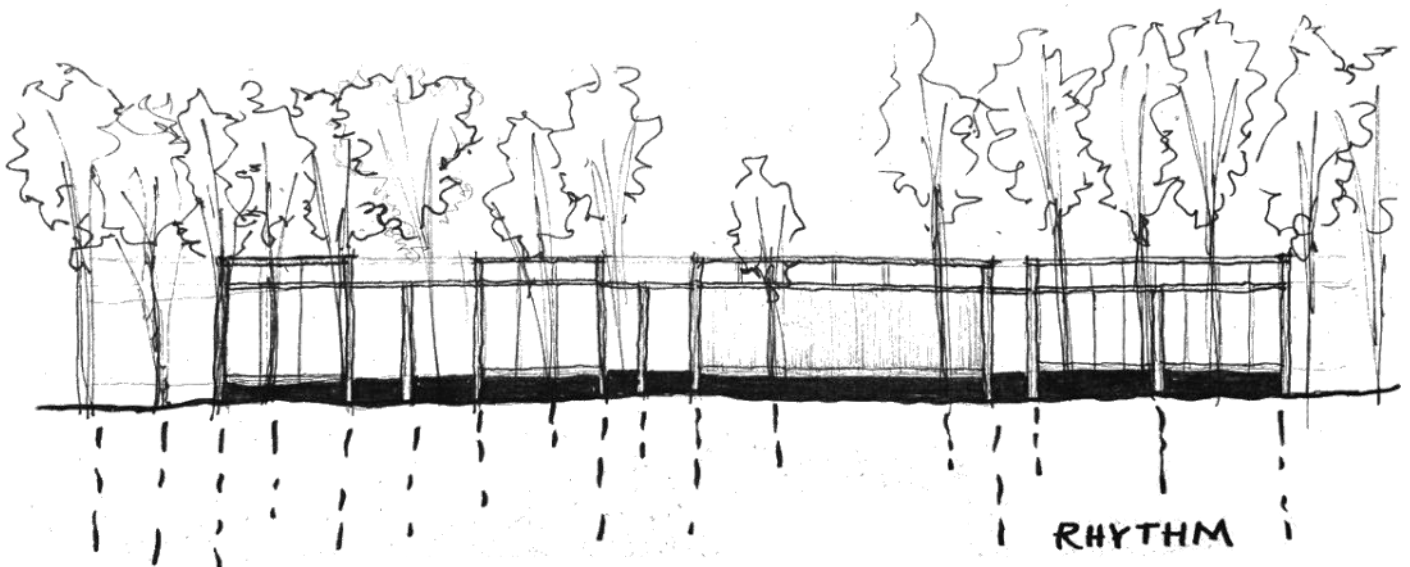


Fig 149: Elevation resonating to surrounding rhythm (Author).

Model 1

Linear layout

The following section focuses on the initial conceptual ideas for the structure.

The linear layout tries to signify the passage of time in a sequential manner. This is intended to demonstrate that a specific process is unfolding and can be understood in a sequential manner.

The following design elements were disregarded in the initial stages of the design:

- Scale of the building
- Slope of site
- Structural limitations of materials

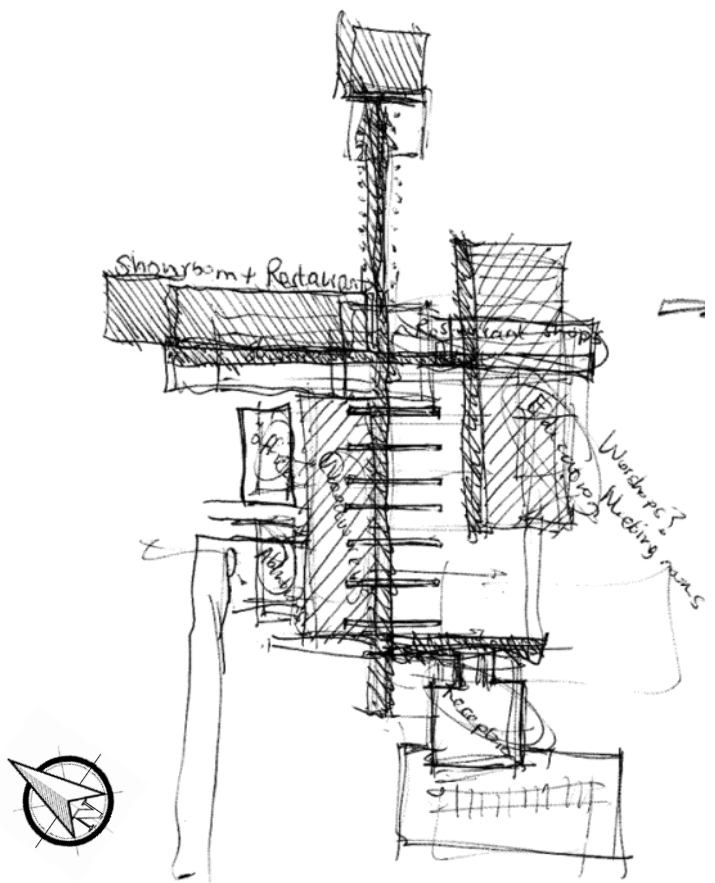
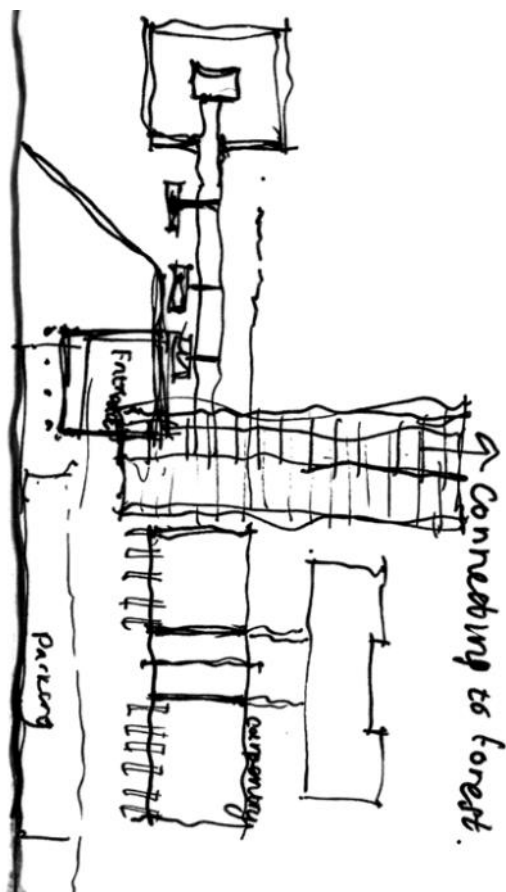
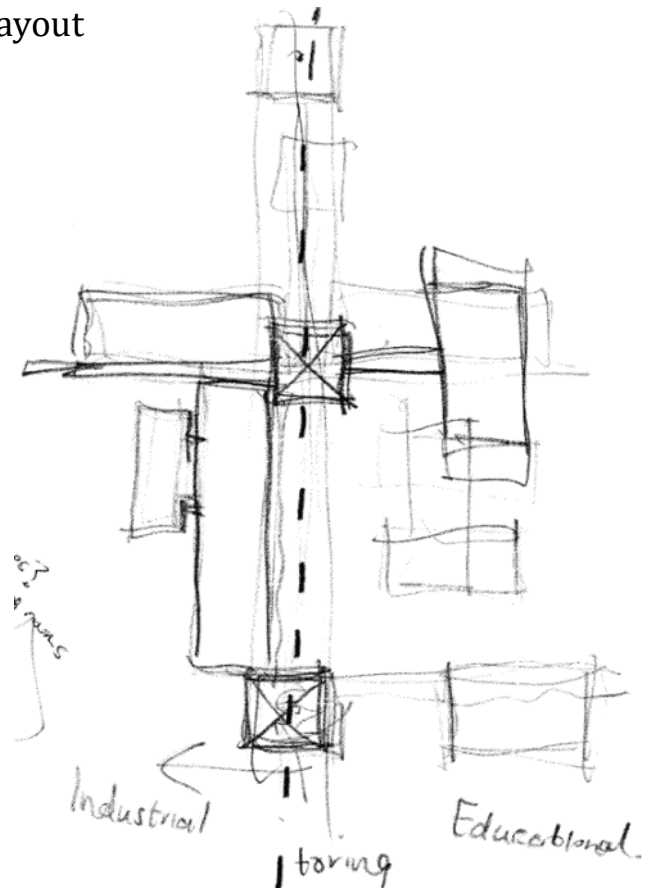


Fig 150-152: Linear development (Author).

Model 1

The initial model prioritised spatial organization, drawing inspiration from Pine Park Pavilion. It created a linear layout effortlessly connected to a public walkway, enabling visitors to interact with the timber factory and witness the production process.

In an effort to harmonise with the surrounding forest and settlement, the design embraces simplicity in its structures, avoiding competition with the natural environment.

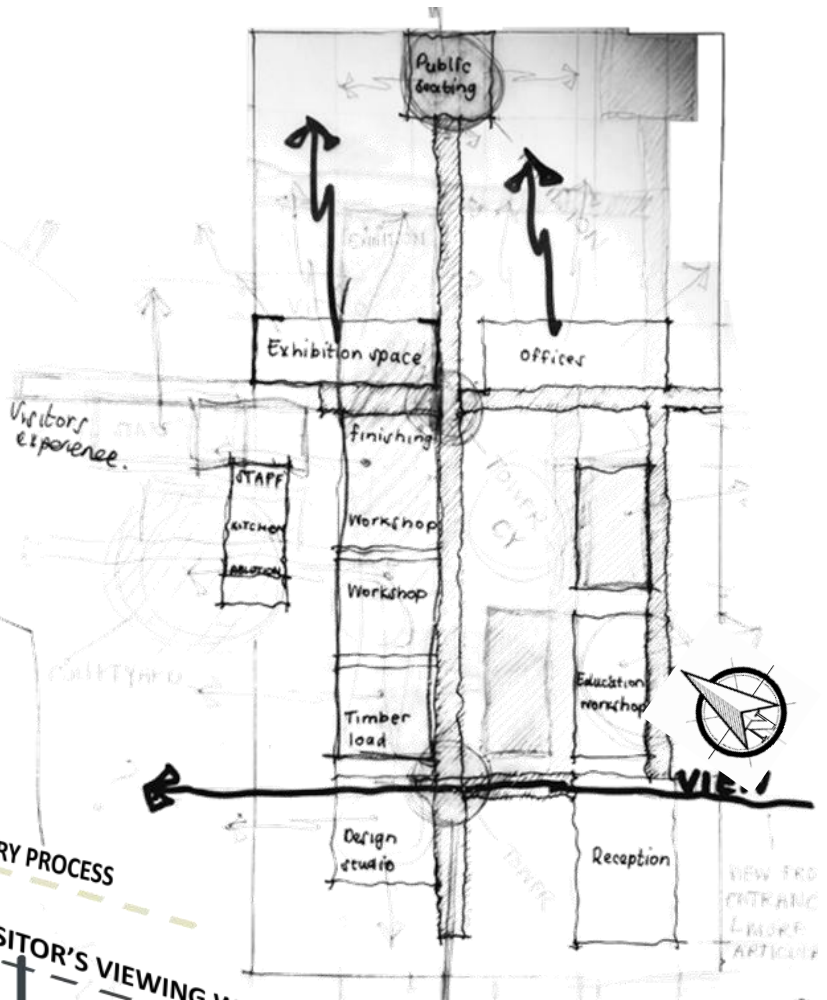


Fig 153: model 1 plan (Author).

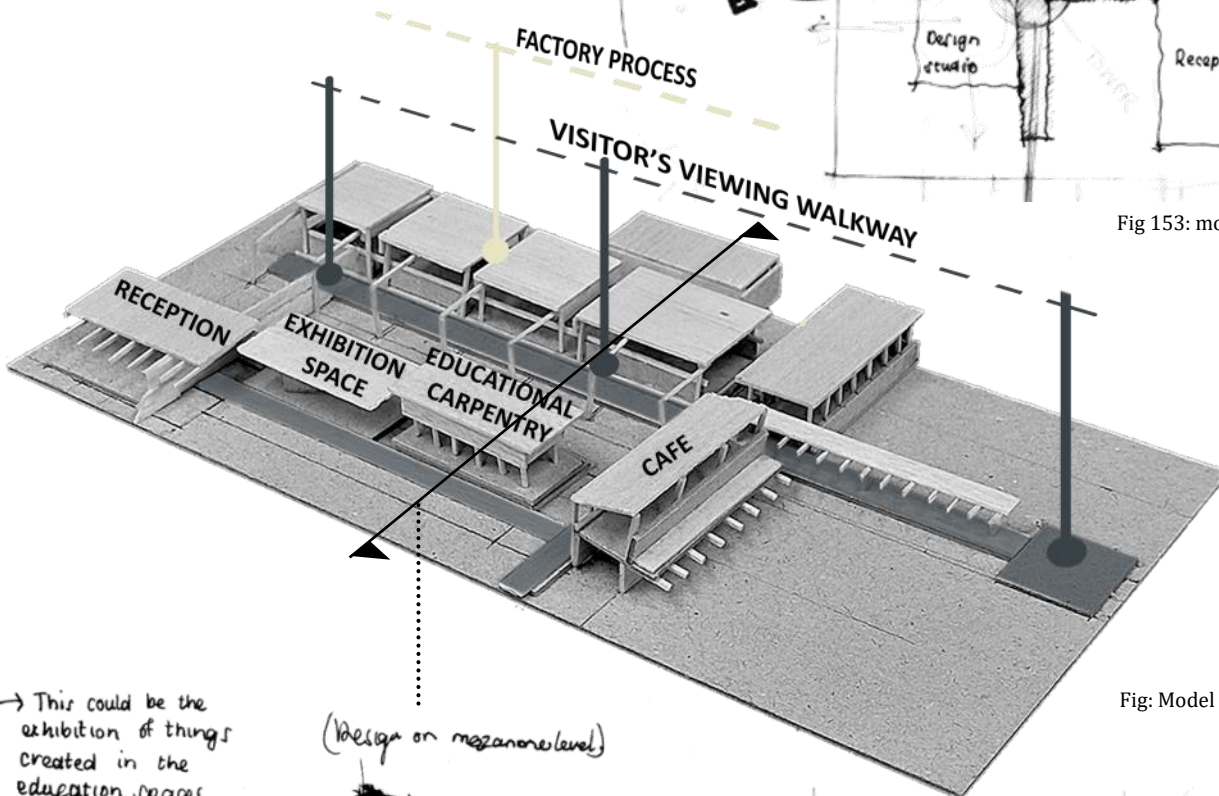


Fig: Model 1 (Author).

→ This could be the exhibition of things created in the education spaces.

(Design on mezzanine level)

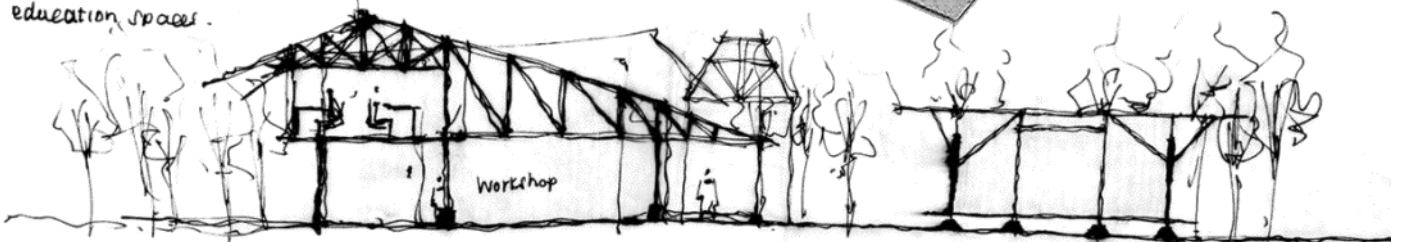


Fig 154: section through factory and educational carpentry (Author).

Model 1

Exploring tower typologies.

The idea of creating towers emerged. This created hierarchy in the forest and articulates moments of change throughout the design.

- Towers are triangular. Shape tries to connect to the sky.
- Towers allow light to filter in.
- Towers also assist in connecting spaces together and articulating the transformation from one space to another.

Although towers still appear too stereotomic and does not interact with its environment.

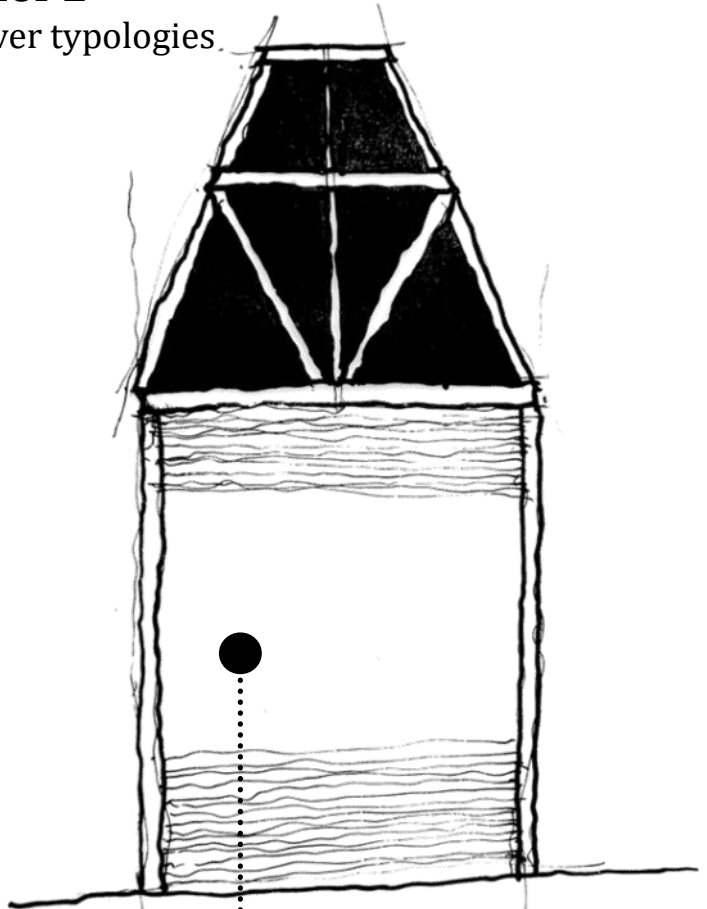


Fig 155: tower typology (Author).

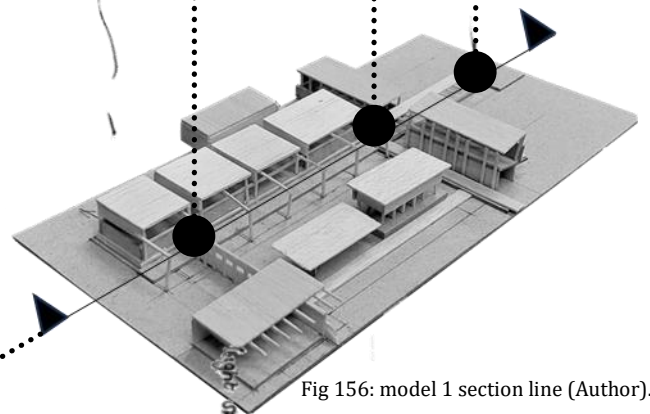


Fig 156: model 1 section line (Author).

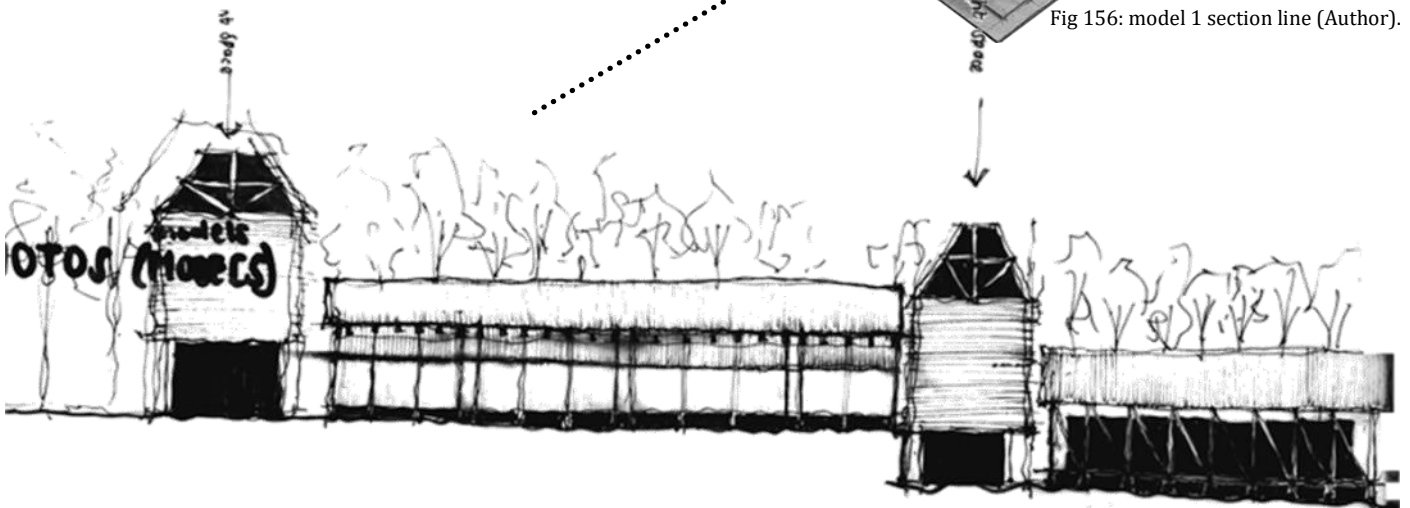
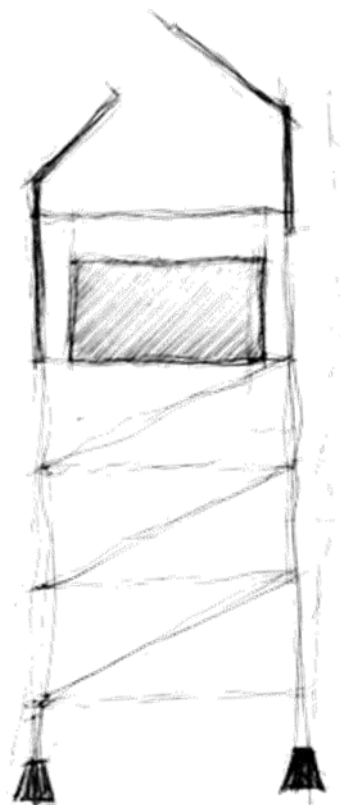
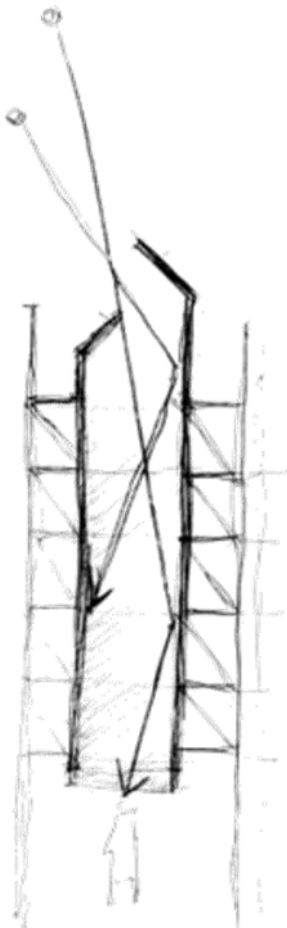
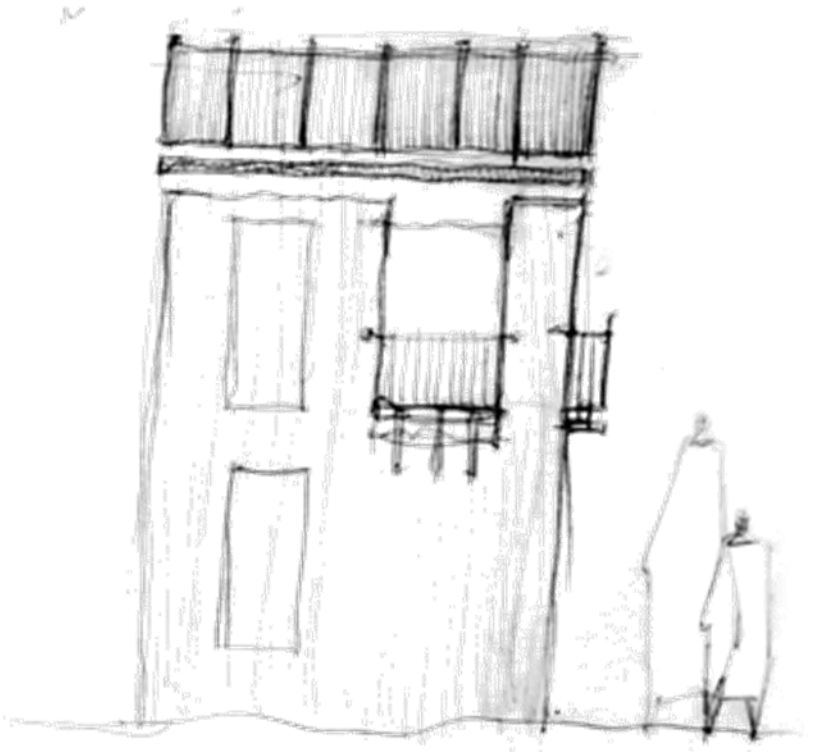
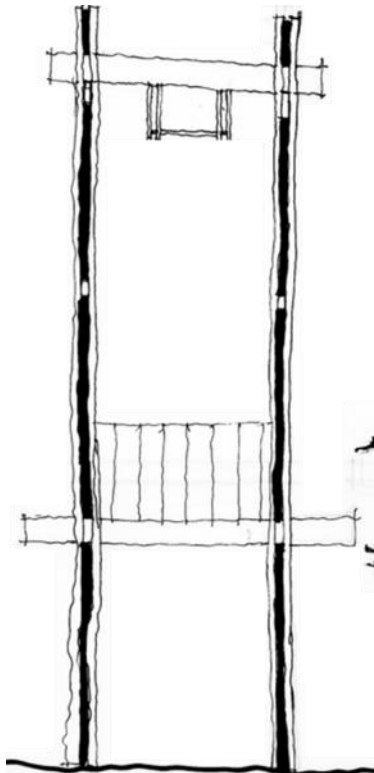


Fig 157: sectional elevation (Author).

Model 1

Exploring tower typologies



Things considered for the following model

- Tower exploration
- Need more public spaces
- Integrate design into site
- Design with slope of site
 - Bridge design

6.7.2 Model 2

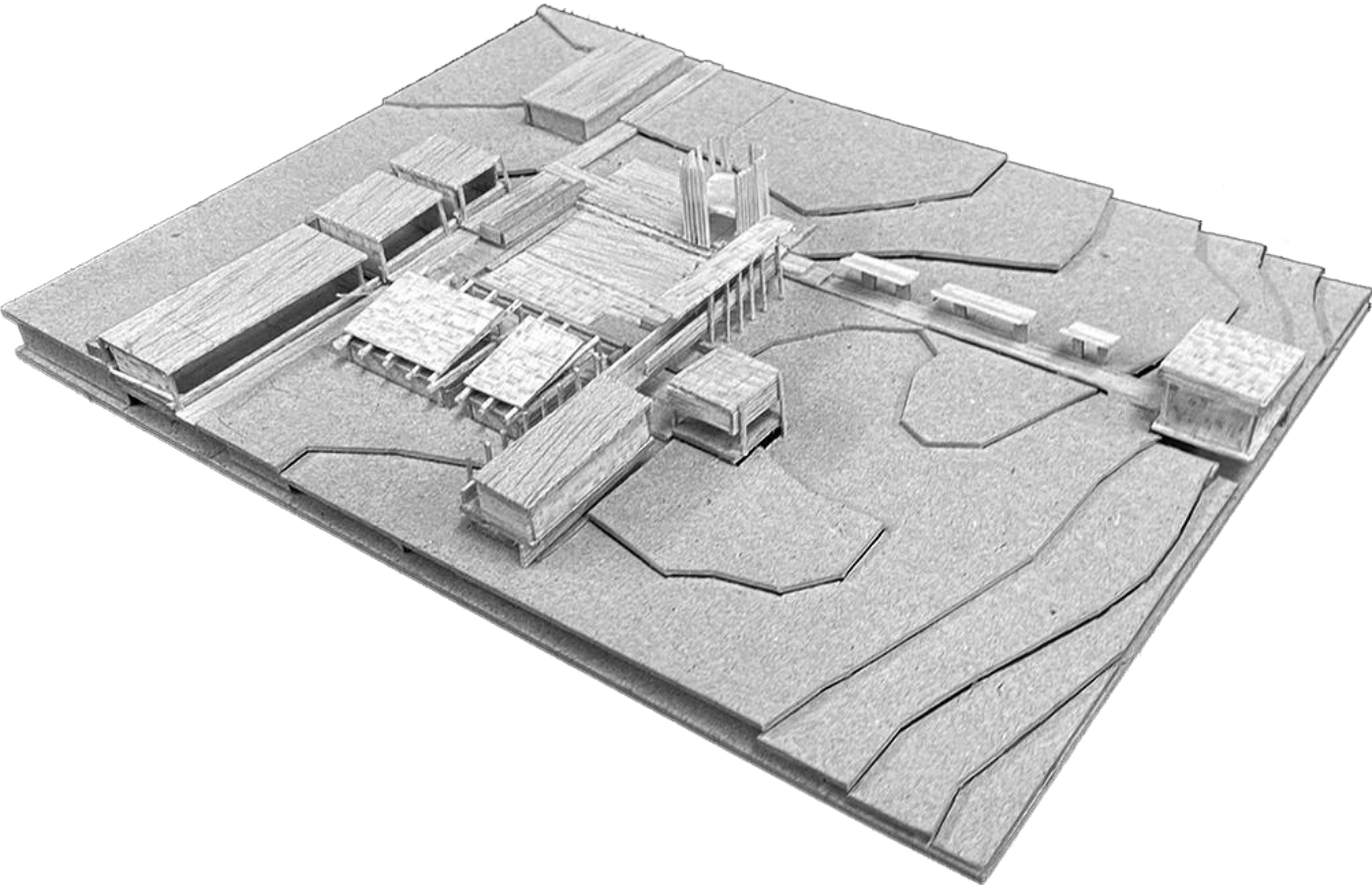


Fig 162: Model 2 (Author).

Model 2

Model 2 actualises the theoretical approach outlined on page 109 by transforming the narrative of the woodcutters in the forest into architectural elements. The linear layout of the plan traces the path that a woodcutter follows into the forest.

The initial tower serves as an introduction for visitors to the predominantly forested structure. The second tower incorporates a staircase, symbolising the memory of a woodcutter climbing into the trees to seek refuge from the elephants. Continuing along this path, one encounters public seating, ultimately culminating at the final tower nestled deep within the forest.

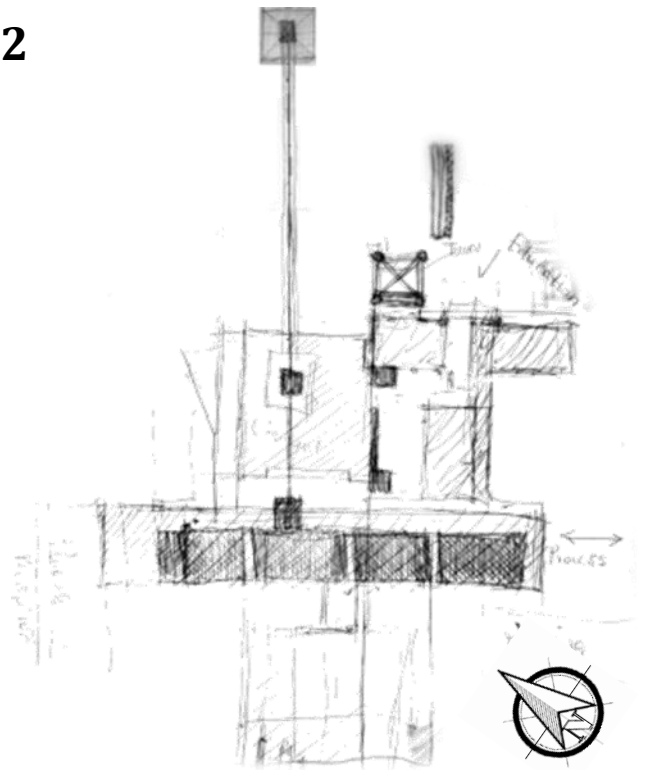


Fig 163: model 2 floor plan (Author).

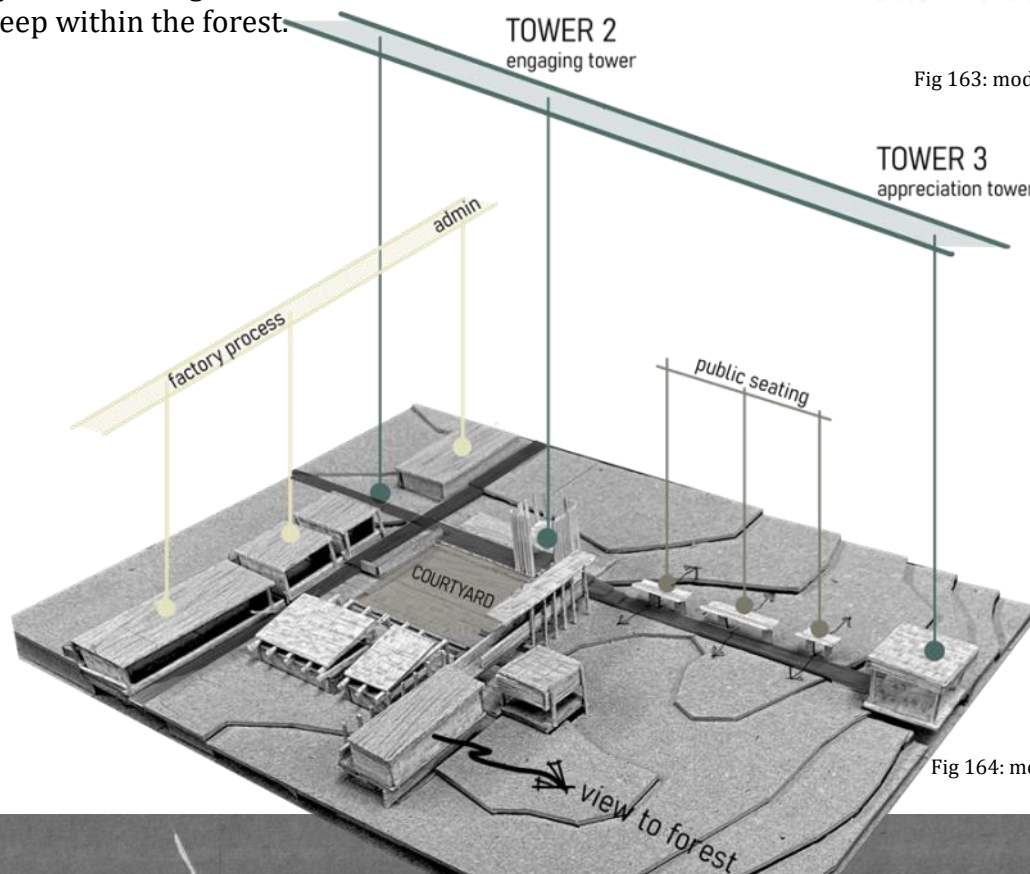


Fig 164: model 2 diagram (Author).



Fig 165: forest narrative (Author).

Model 2

The Carpentry Factory is situated perpendicularly to the main axis and maintain a linear sequence.

Additionally, intermediary spaces are emerging to enhance the experience for the public.

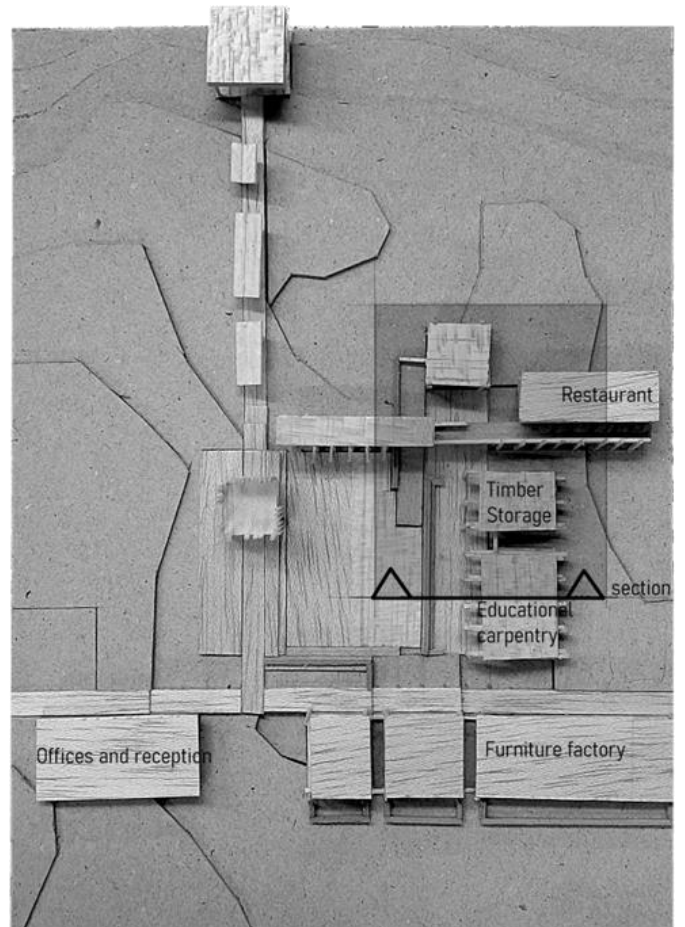


Fig 166: model 2 section line (Author).

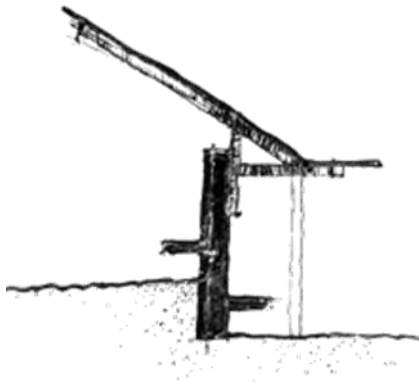


Fig: (Author).

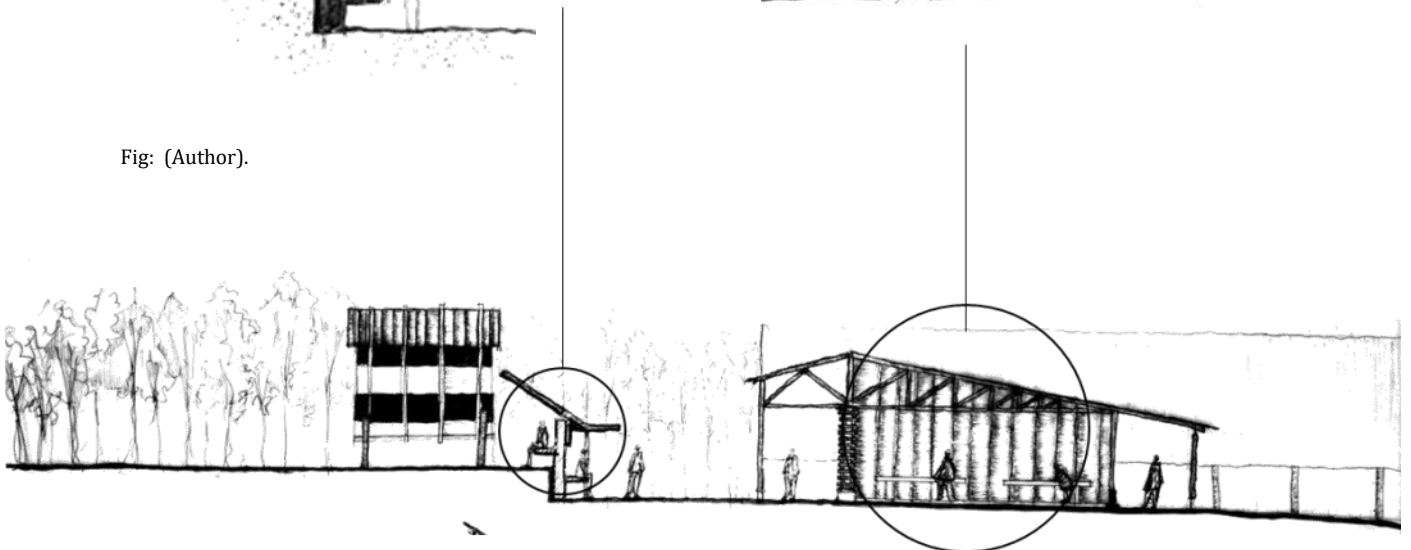
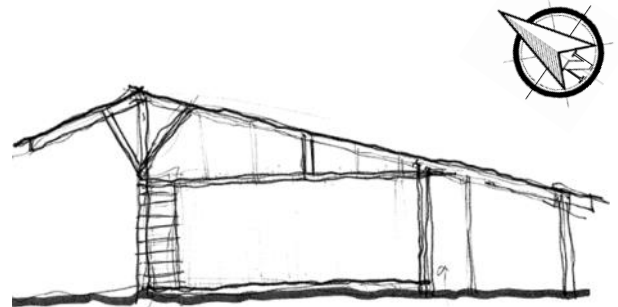


Fig 167: section through educational carpentry (Author).

Model 2

A lookout point is designed to foster a connection with the natural surroundings. This structure forms a secluded enclosure where individuals can immerse themselves in the natural environment. This enclosure is elevated from the ground and can be accessed via a ramp. A horizontal opening at eye level height provides privacy for those inside while framing views of the surrounding landscape.

An elevated bridge spans the courtyard, linking to the adjacent restaurant area and bridge. This provides an alternative circulation to visitors and a view over the courtyard. The design of the bridge harmonises with the rhythmic elements found in the forest backdrop.

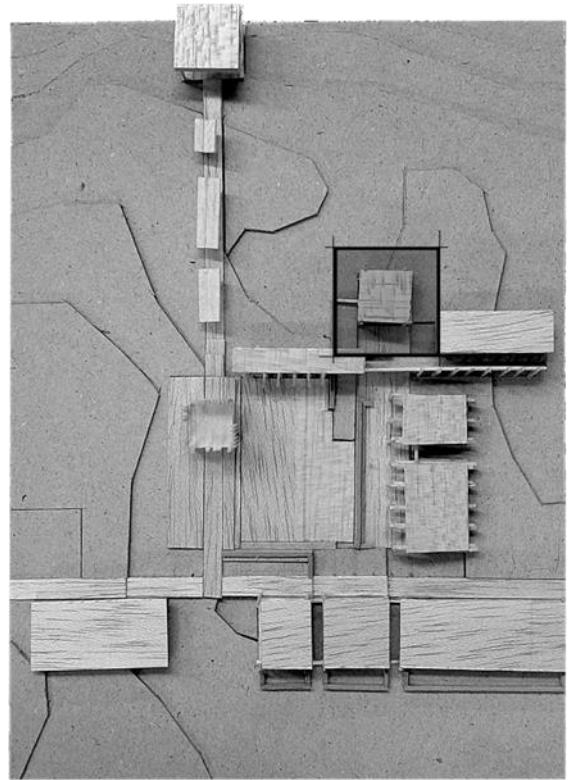


Fig 168: lookout point (Author).

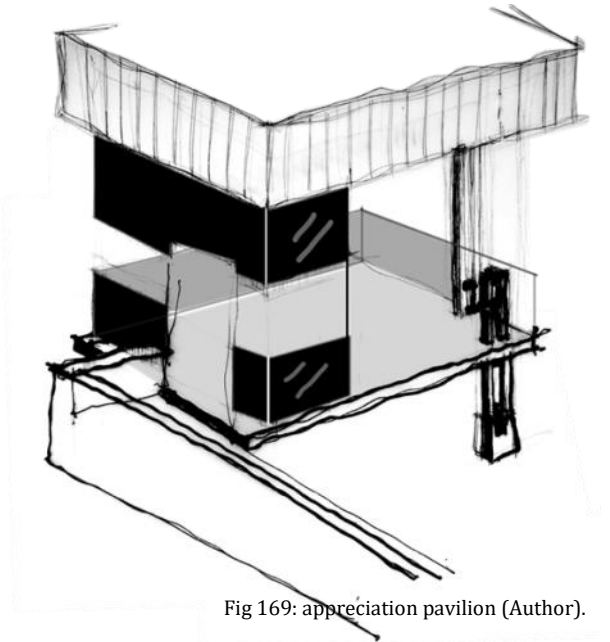


Fig 169: appreciation pavilion (Author).

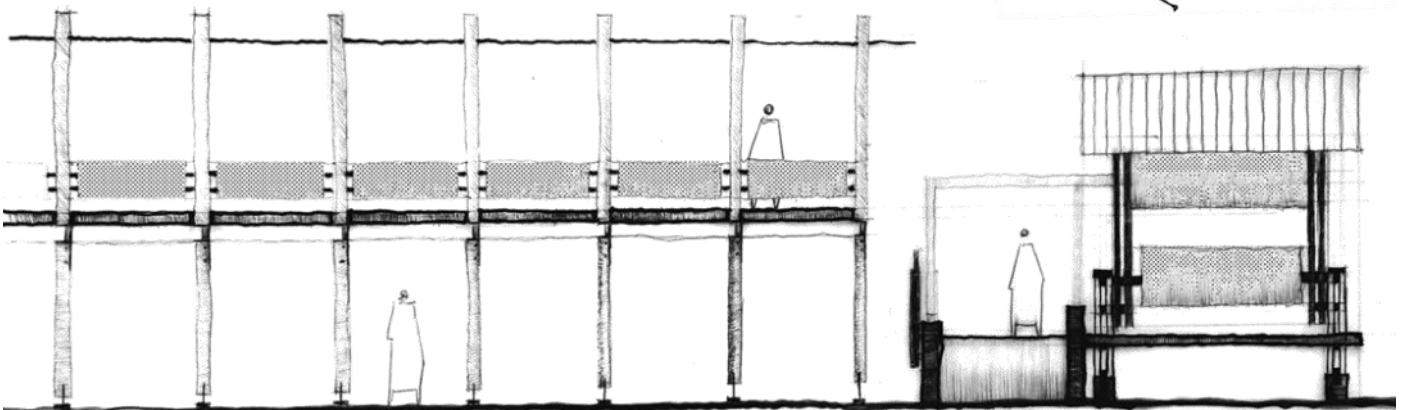


Fig 170: appreciation pavilion & bridge (Author).

Figure 171 & 172 provides an exploration of the design's arrangement, shedding light on a crucial aspect: the necessity for the incorporation of additional spaces such as offices and staff amenities.

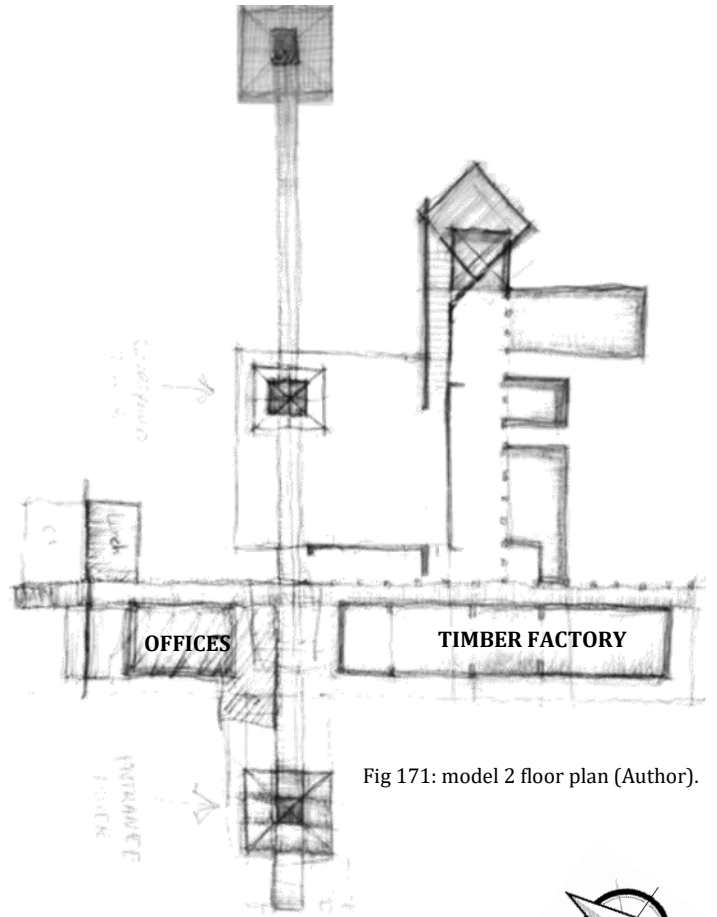


Fig 171: model 2 floor plan (Author).

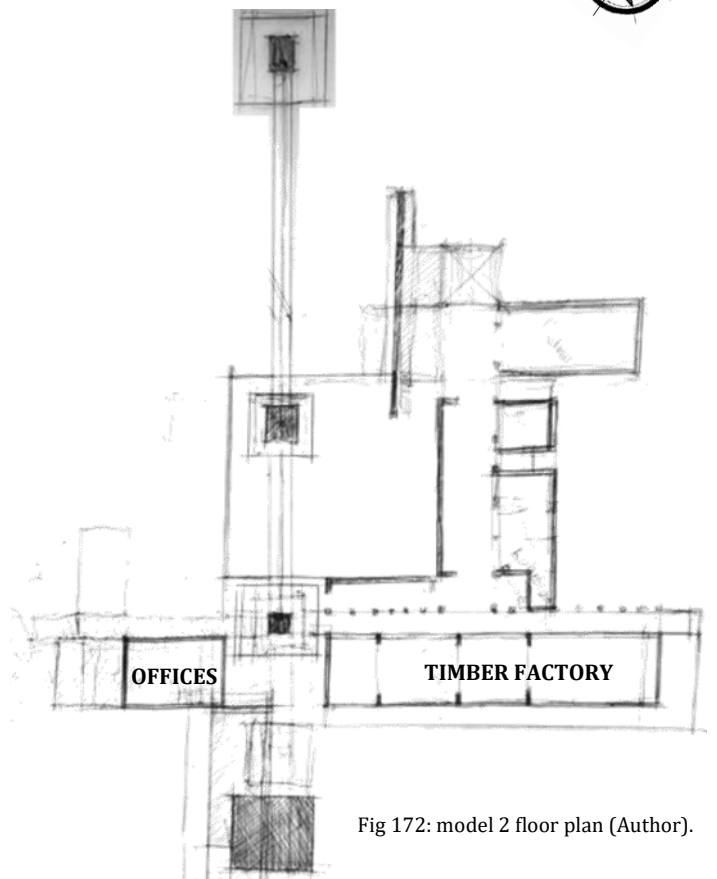


Fig 172: model 2 floor plan (Author).

Things considered for the following model

- Influence of the forest on design
 - Need more staff amenities
- Tectonic experience/exploration

6.7.3 Model 3

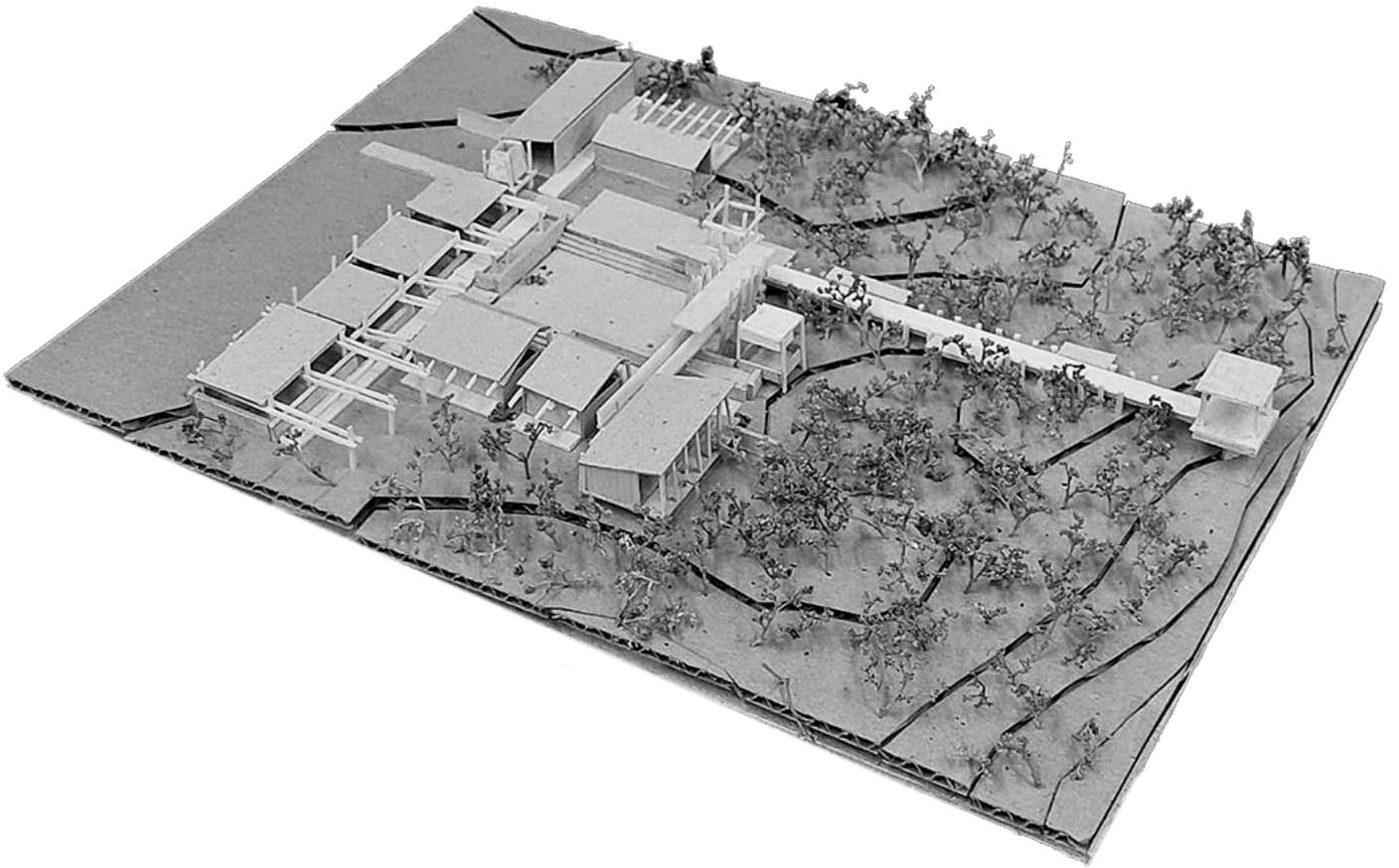
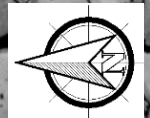


Fig 173: model 3 (Author).

SITE PLAN

The plan is predominantly located within the forest, with the building's edge positioned along the forest's boundary. This placement ensures visibility from the street and serves as a linkage between the settlement and the surrounding forest.



Model 3

The third model retained the majority of the layout from model 2 while enhancing the surrounding spaces. Additionally, this model placed a greater emphasis on the tectonic structures and the integration of the design within the site.

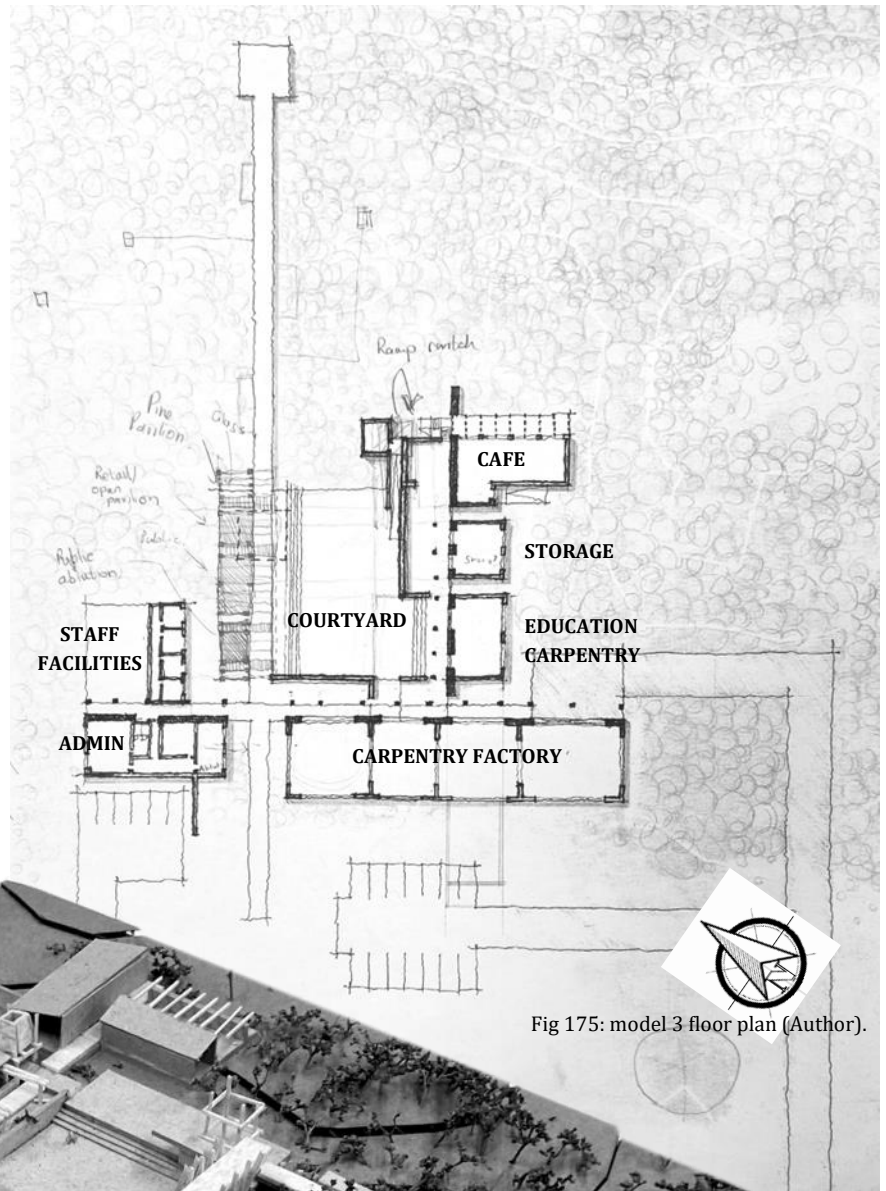
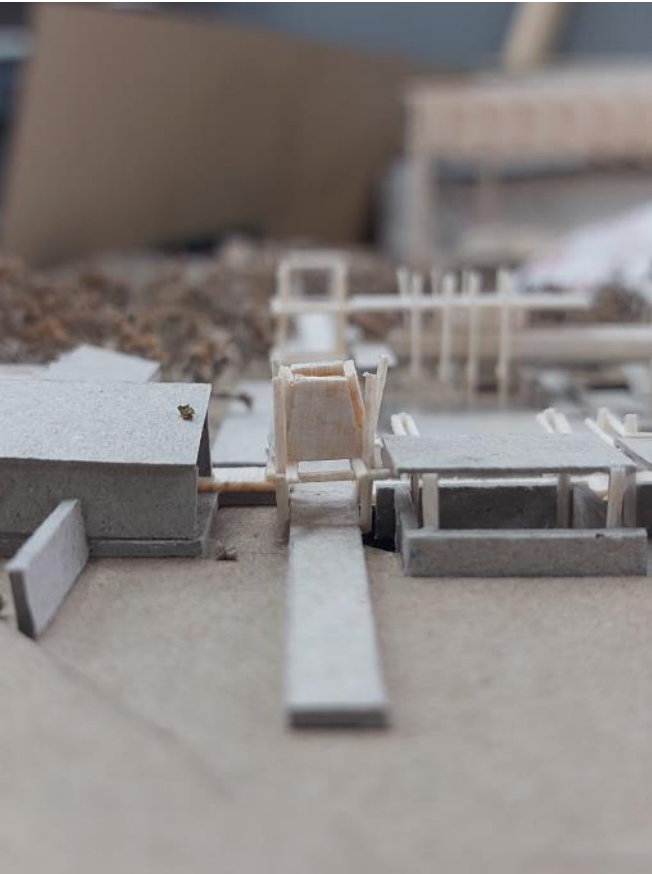


Fig 175: model 3 floor plan (Author).



Fig 176: model 3 (Author).

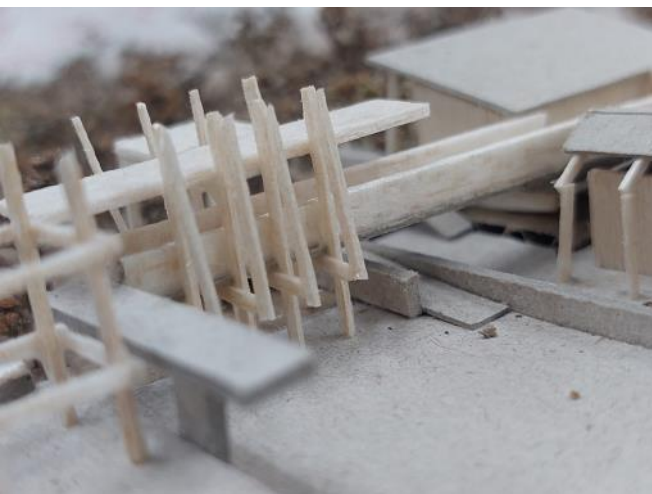
Entrance tower (first tower)



Engaging tower (second tower)



Second tower & bridge



Engaging tower (second tower)



Pavilion (final tower)



Timber delivery yard & Factory



Carpentry factory public walkway



Appreciation pavilion & bridge



Fig 178 - 185: Photos of model 3 (Author).

Things considered for the following model

- Tectonic experience/exploration
- The layout becomes important
 - Refining spaces
 - Exploring courtyard space
- Situation of the carpentry factory

6.7.4 Model 4

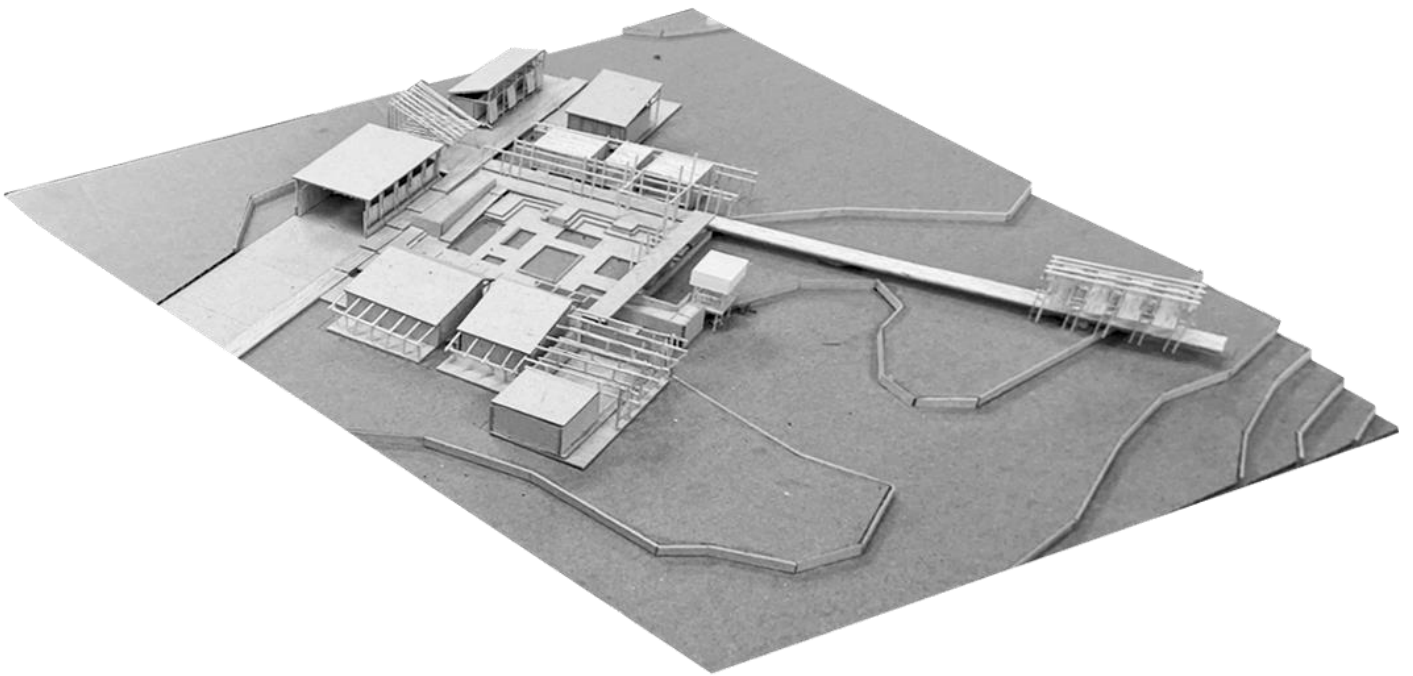


Fig 186: model 4 (Author).

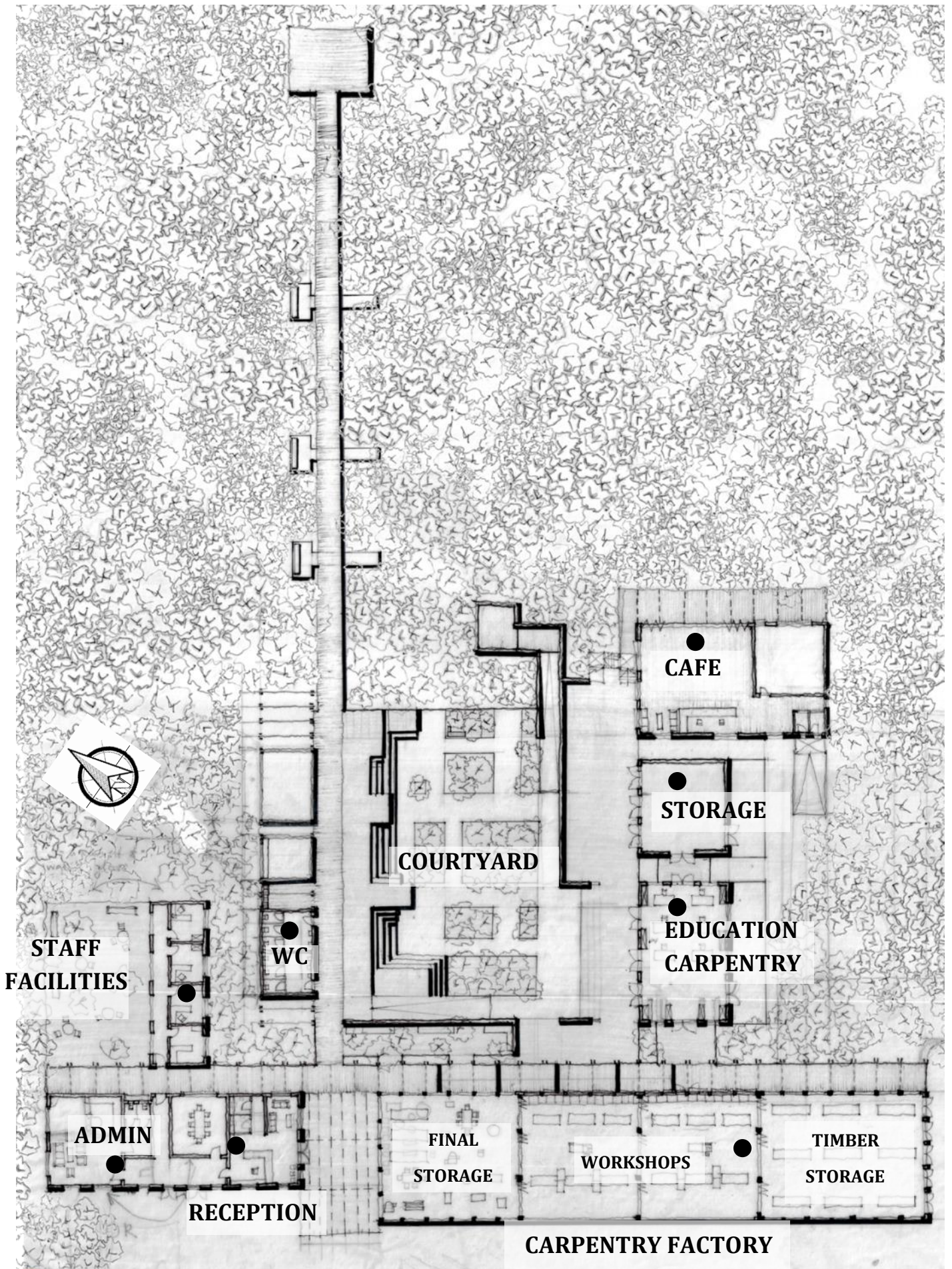


Fig 187: model 4 floor plan (Author).

Model 4

Model 4 features a more intricate courtyard design, with public restrooms conveniently located near the reception area.

Given that the timber factory is oriented towards the street, the placement of the timber delivery yards facing the street prompted an inquiry into the possibility of relocating the factory.



Fig 188: courtyard space (Author).

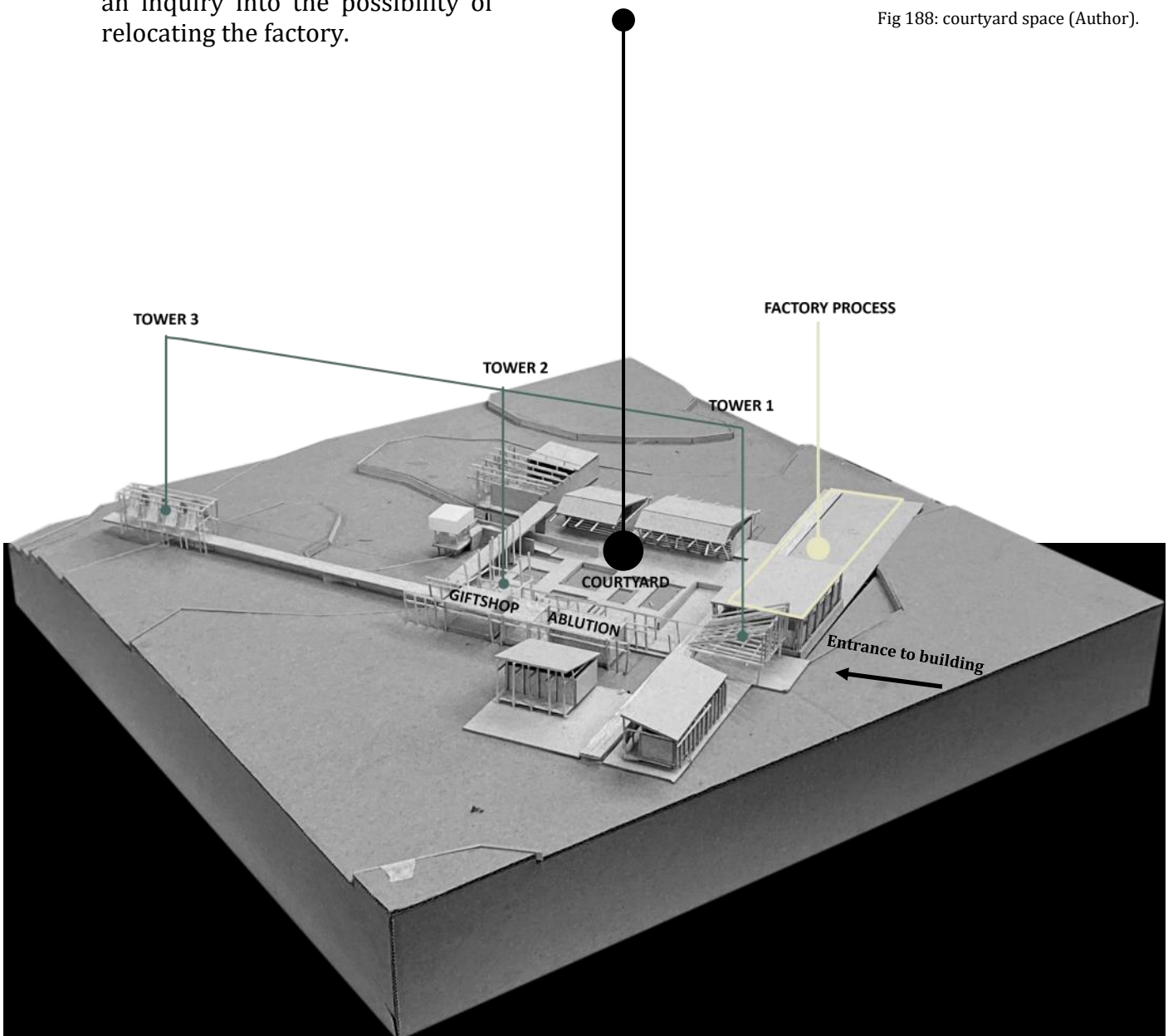




Fig 190: abstract floor plan (Author).

This floor plan aimed to solve the previous issue by relocating the carpentry factory, which, in turn, required the movement of other functions.

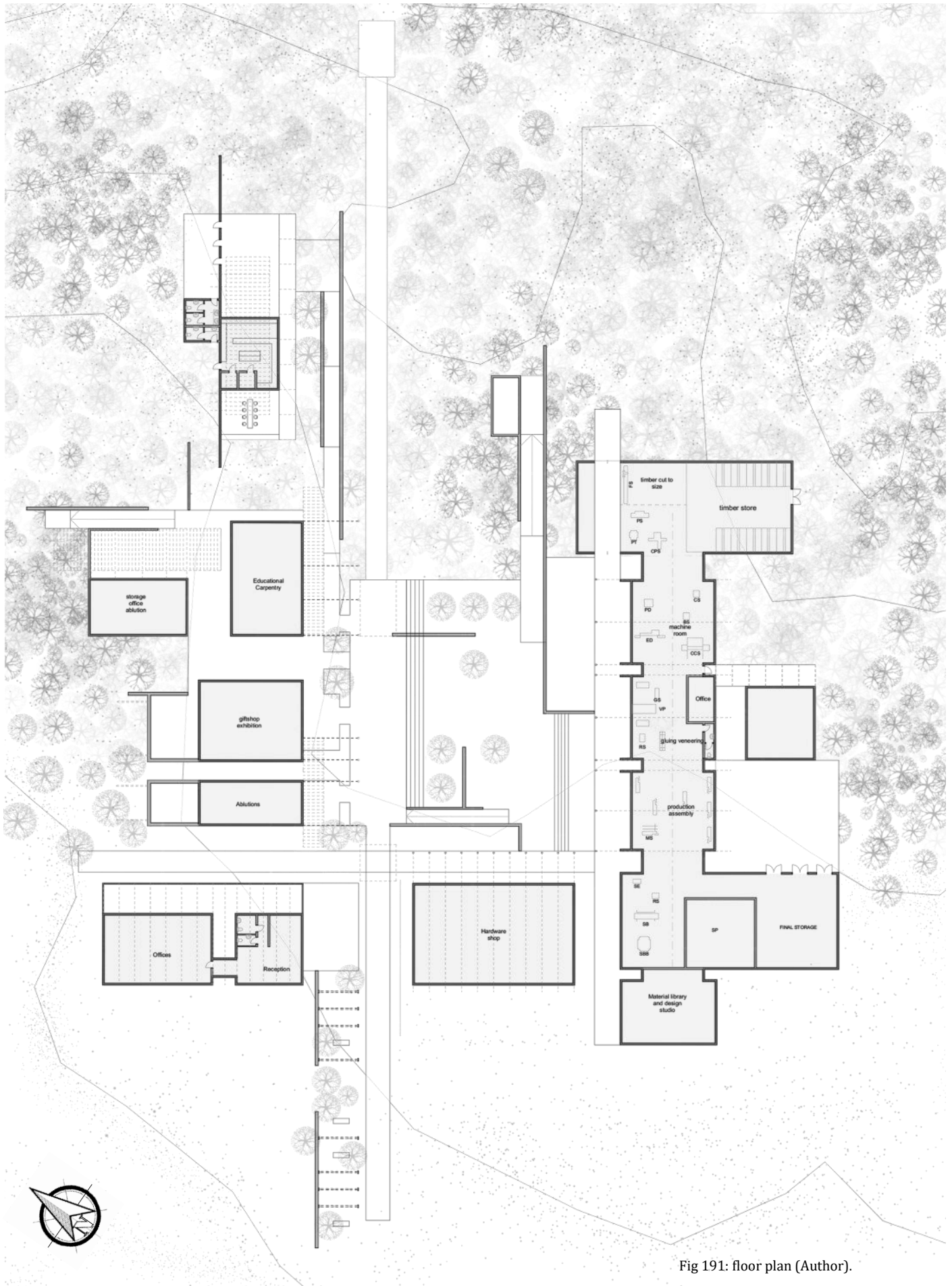


Fig 191: floor plan (Author).

Things considered for the following model

- Tectonic experience/exploration
 - Refining spaces and 3D's
 - Exploring courtyard space
 - Embed theory in design
 - Parking
 - Precedent studies

6.8 Model 5

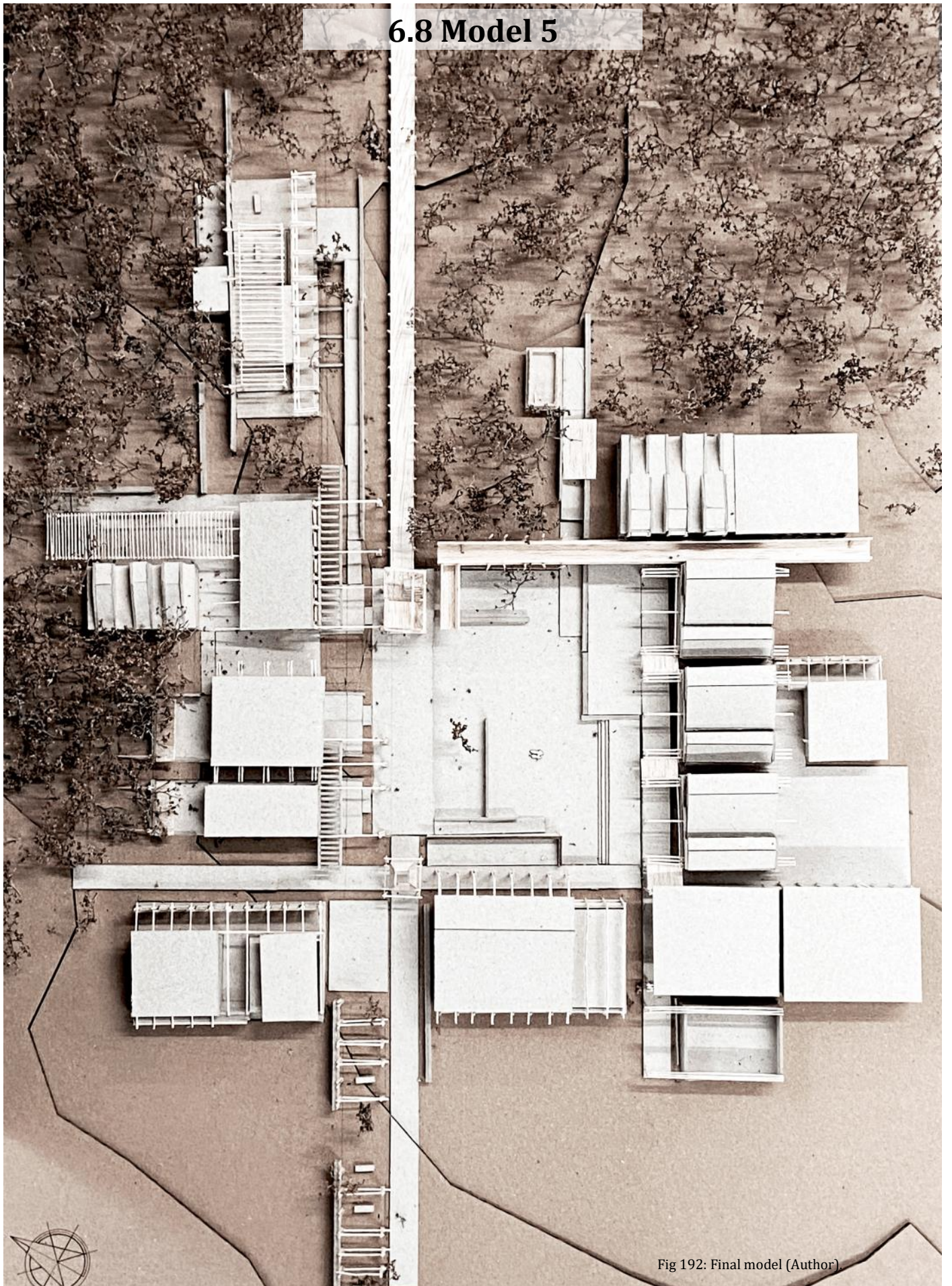


Fig 192: Final model (Author)

6.8.1 Introduction

In the final model many of the 3D explorations were examined in detail and finalised.

The final design exploration includes floor plans, site plan, precedent studies, perspectives and models.



Fig 193: final model (Author).

6.8.2 Bird's-eye view: Spatial arrangement

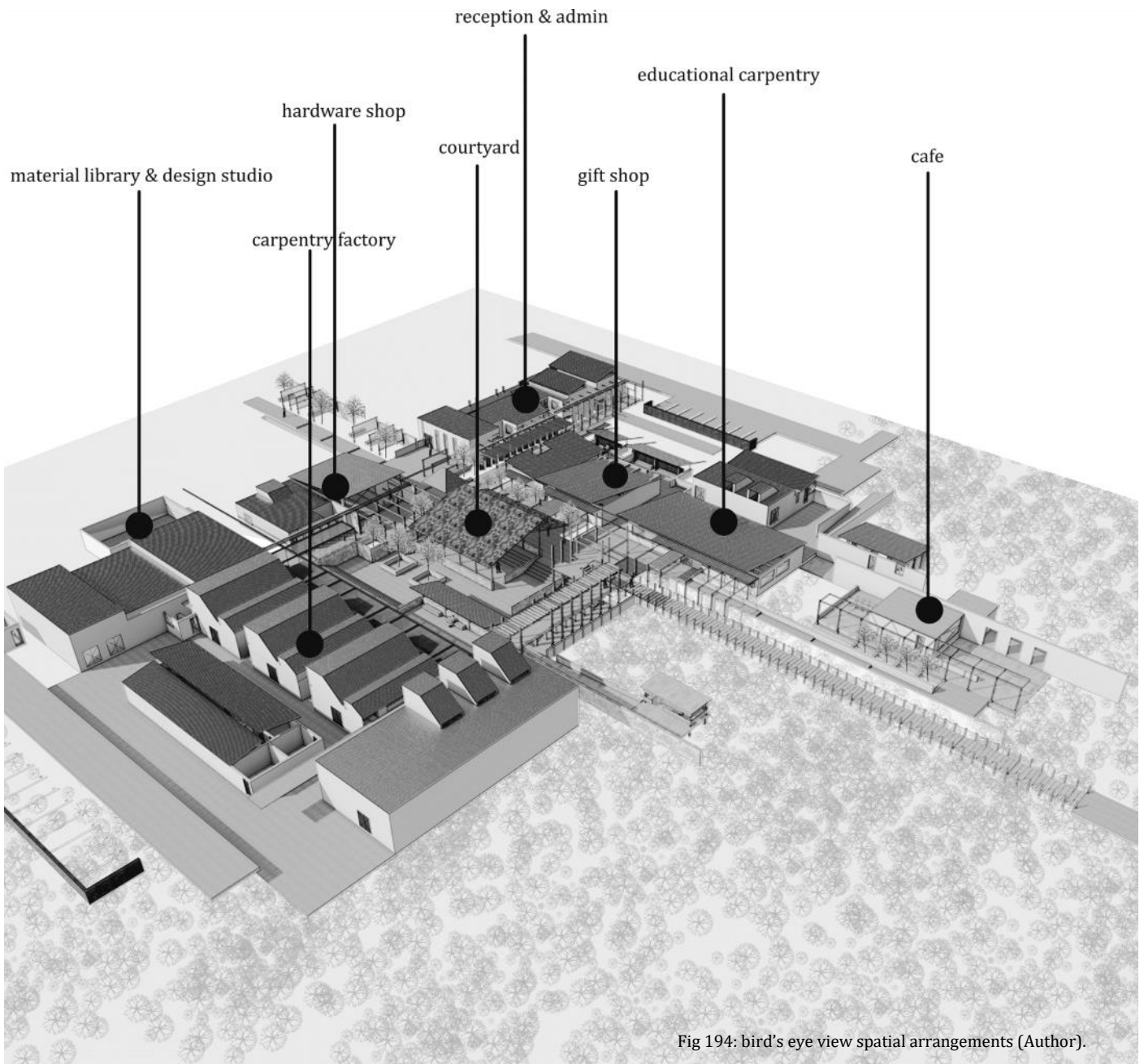


Fig 194: bird's eye view spatial arrangements (Author).

6.8.3 Context plan

The plan sits on the border of the forest and acts as a joint between the forest and settlement.

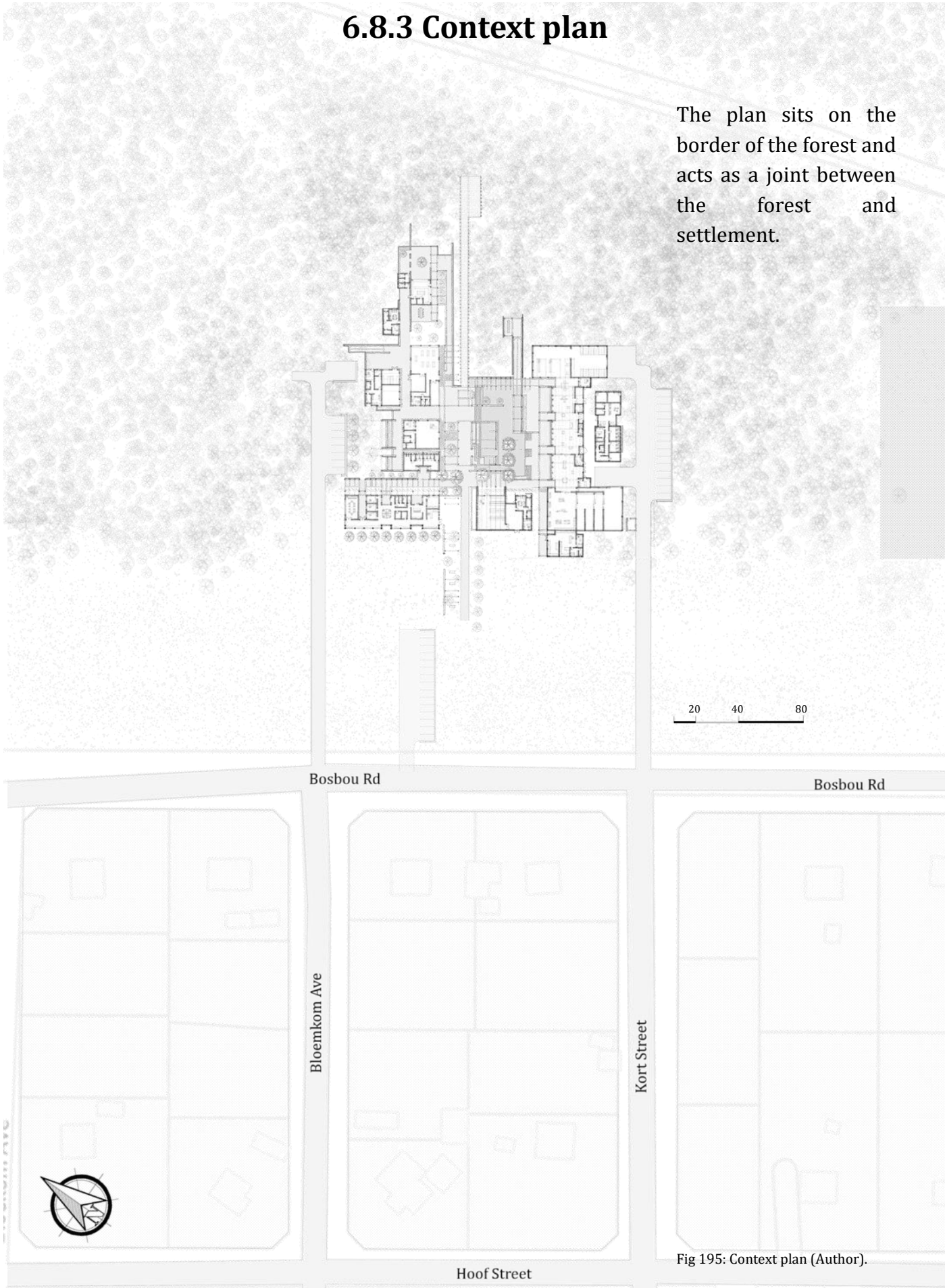


Fig 195: Context plan (Author).

6.8.4 Floor plan

- | | |
|-----------------------------|-------------------------------|
| 1. Reception | 14. Cut timber to size |
| 2. Offices | 15. Equipment area |
| 3. Public ablution | 16. Sanding area |
| 4. Staff parking | 17. Assembly area |
| 5. Gift shop | 18. Finishing area |
| 6. Timber storage & offices | 19. Final storage |
| 7. Educational carpentry | 20. Pick-up area |
| 8. Staff amenities | 21. Staff amenities |
| 9. Ablutions | 22. Staff parking |
| 10. Café | 23. Security |
| 11. Reflection pavilion | 24. Material library & studio |
| 12. Delivery yard | 25. Hardware shop |
| 13. Timber storage | 26. Public parking |

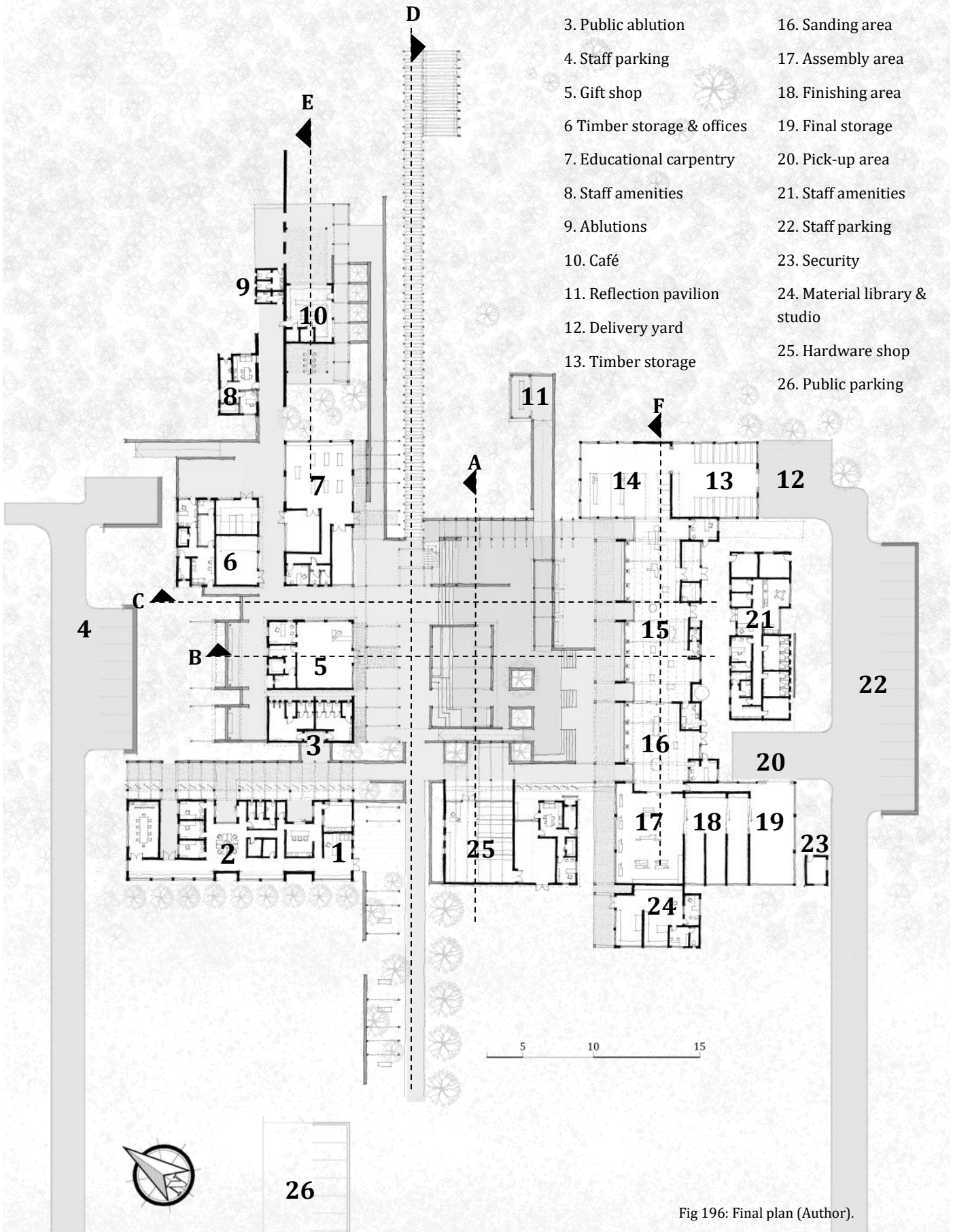


Fig 196: Final plan (Author).

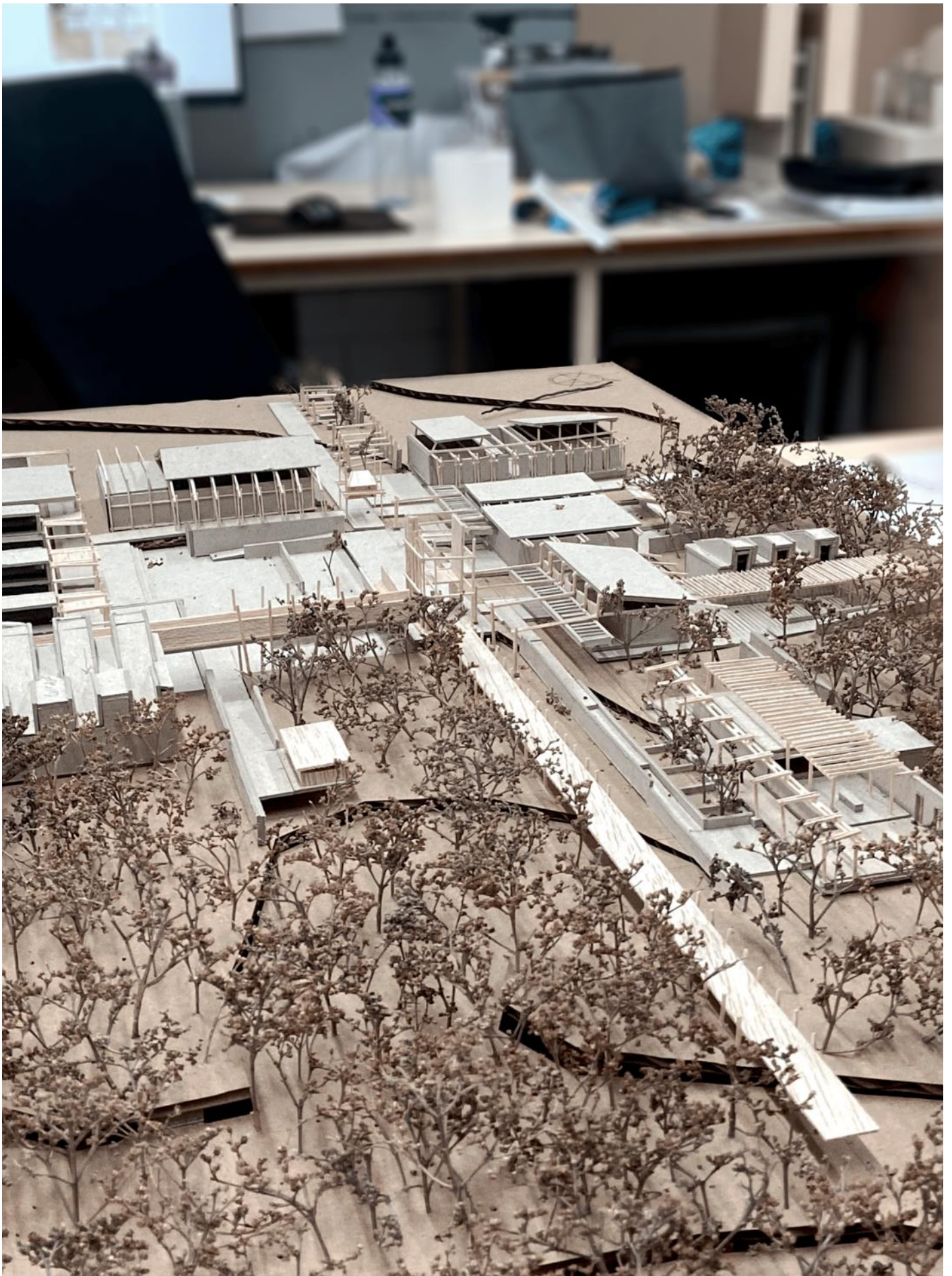
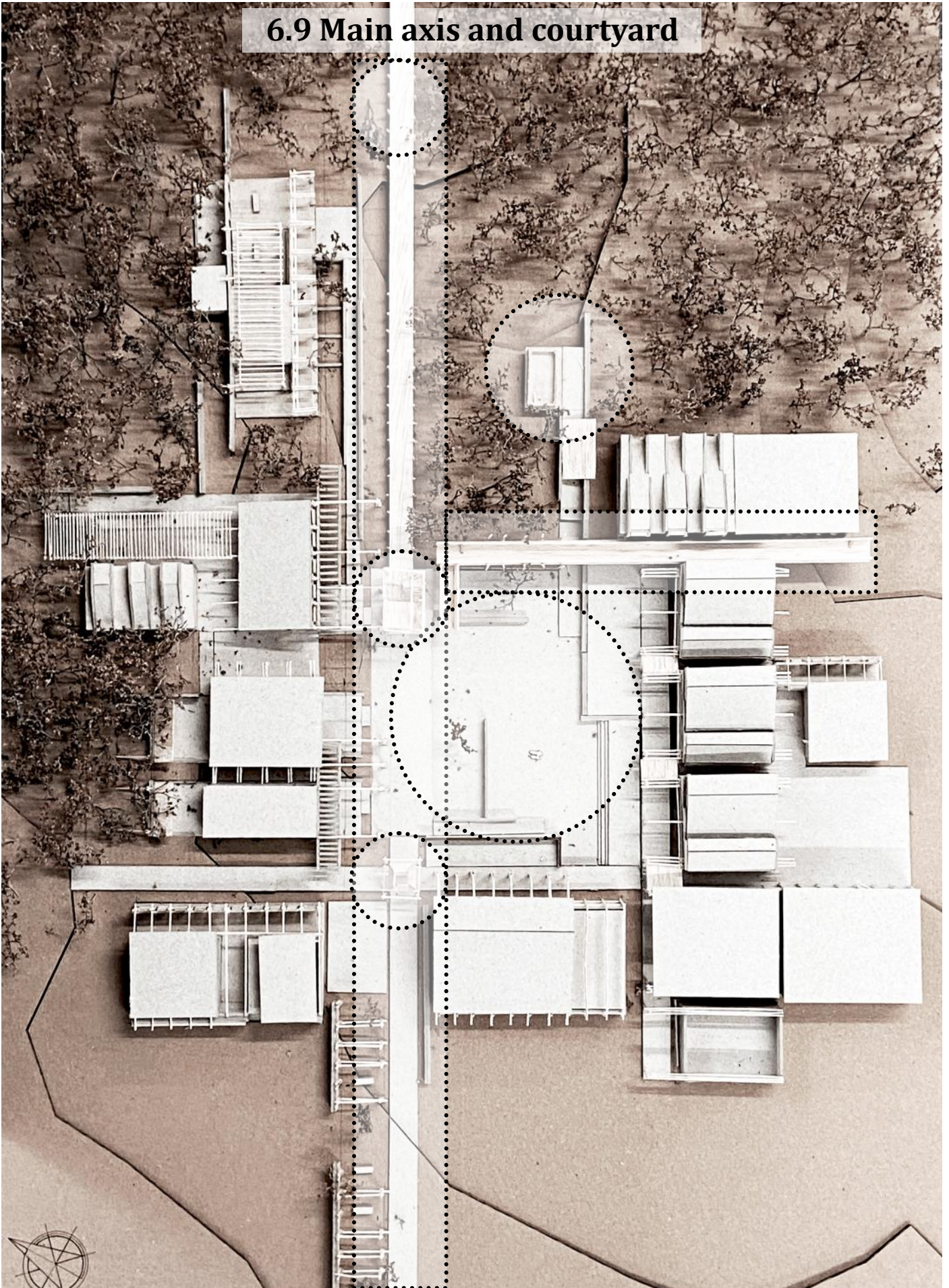


Fig 197: axis path in model (Author).

6.9 Main axis and courtyard





6.9.1 Precedent study

Lixiang Village Public Space | AESEU Architectural Technology and Art studio

Location: Nanjing, China
Project year - 2019

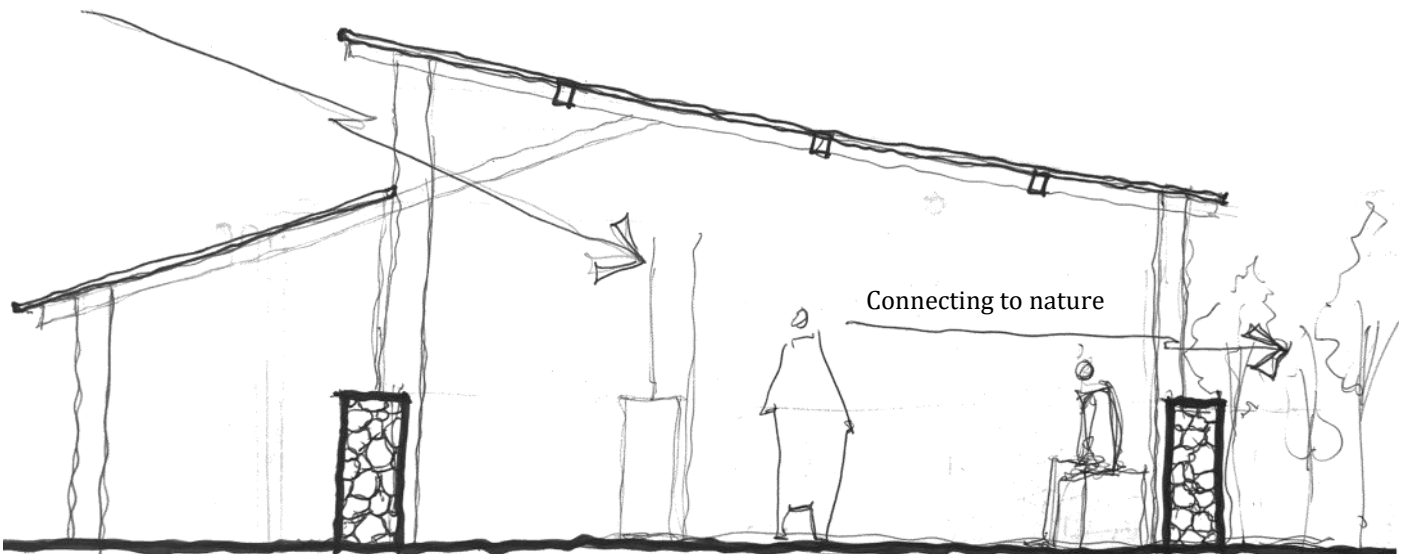
The ATA design team transformed abandoned village houses into a lively alley with tourist services, dining, exhibitions and shops. This revitalisation attracted former residents back to their hometowns, enriching both tourism and community life by merging public spaces and tourist amenities to improve villagers' quality of life.

At the entrance there is a semi-outdoor public space where villagers can handle affairs. These areas offer a connection to nature and allow them to observe passing visitors, serving as a source of information and fulfilling the desires of nostalgic travellers (ArchDaily 2021).

Semi outdoor space

Natural light

Connecting to nature



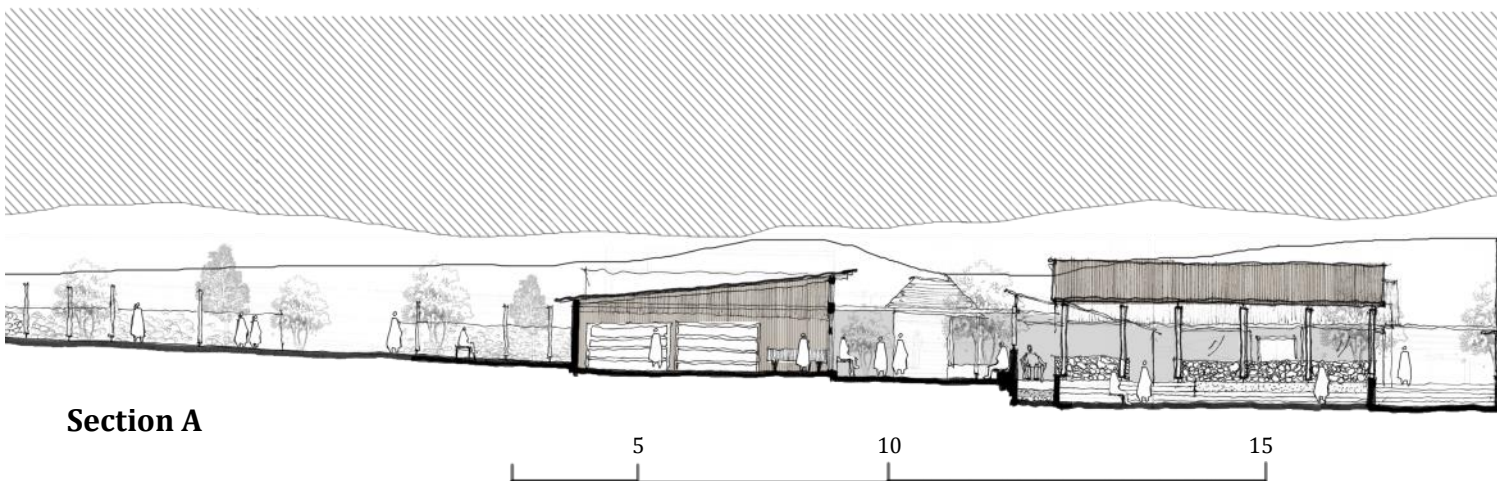
6.9.2 Entrance to building

The building's entrance sets the initial spatial impression as visitors arrive. Upon reaching the entrance, guests will encounter timber frames adorned with resin-printed images of woodcutters.

The trees positioned between these frames create an illusion of woodcutters actively engaged in the forest, offering visitors an immersive experience of the woodcutters' rituals through visual imagery.



Fig 200: Entrance structure (Author).



Section A

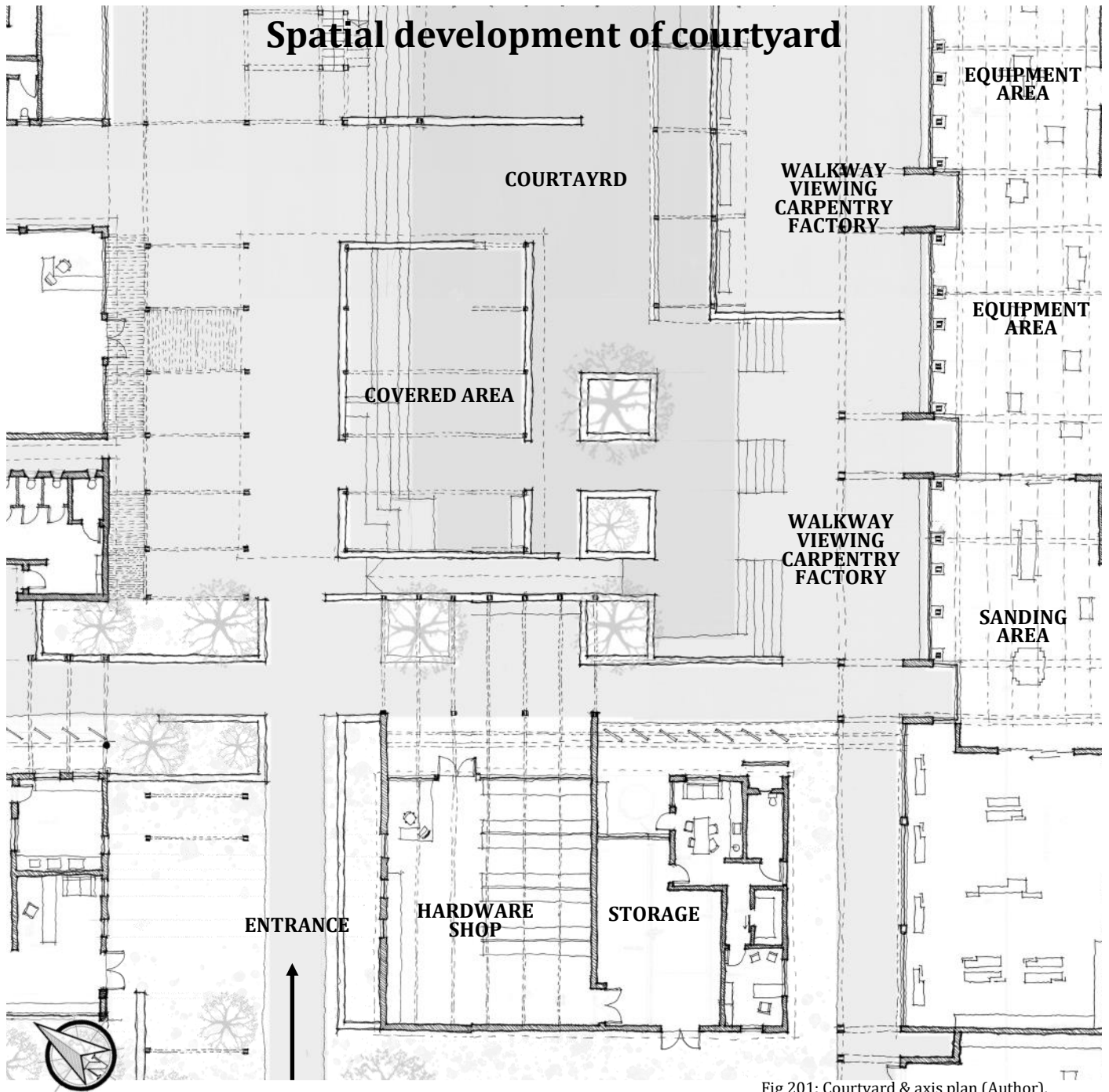


Fig 201: Courtyard & axis plan (Author).

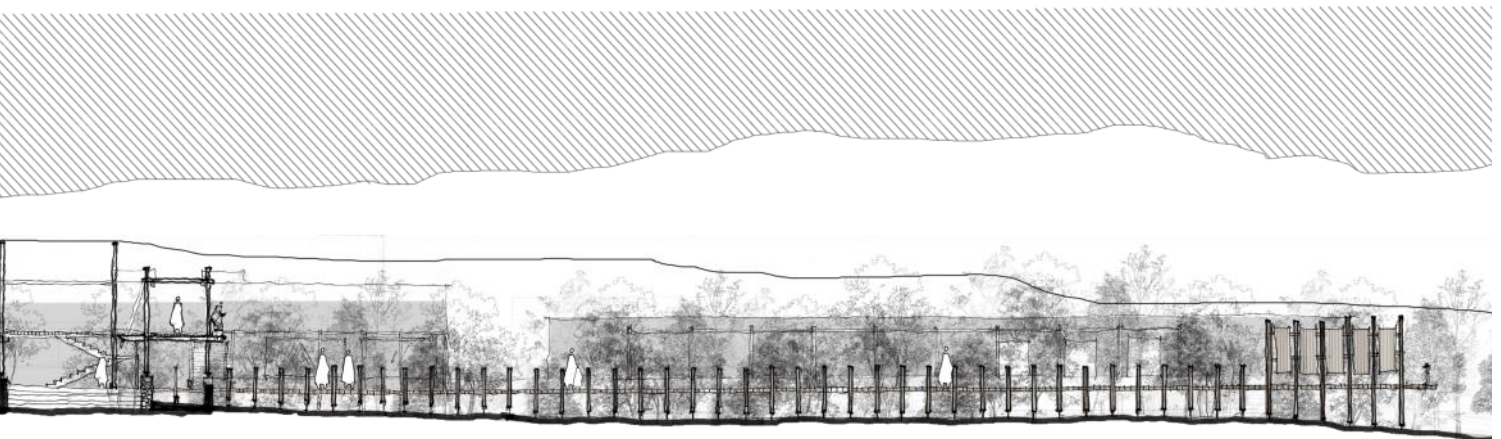


Fig 202: section through courtyard (Author).

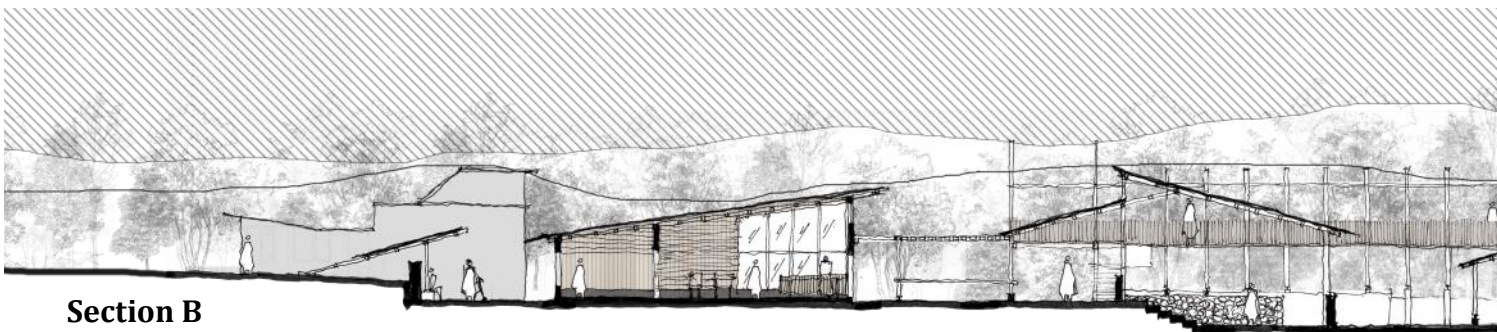
6.9.3 Spatial development

Karatara's community hall where members of the public could previously meet up, was changed into temporary shelter for people without housing. Thus, the courtyard space could be introduced as a possible space that the public could use.

During busy tourist days, this space could be used as an exhibition and market space where locals could sell their crafts.



Fig 203: Semi-enclosed courtyard (Author).



ENCLOSED COURTYARD
 CONNECTING SPACES
 AROUND IT

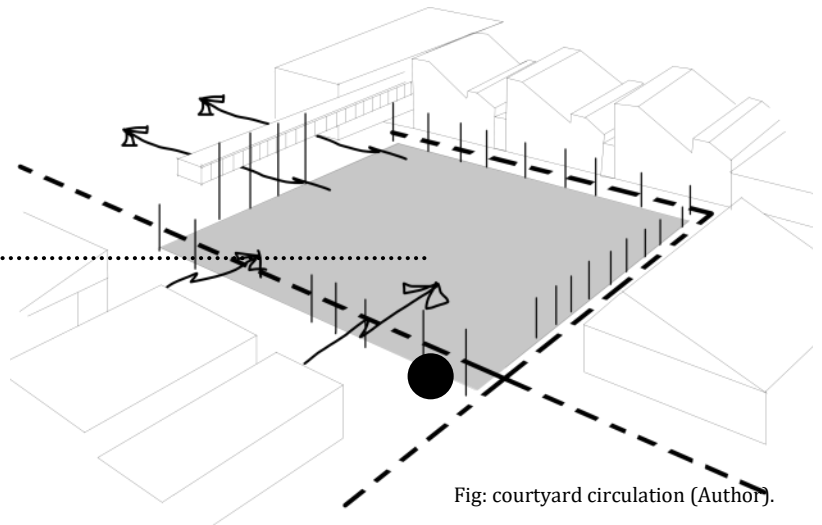


Fig: courtyard circulation (Author).

TOWER 2 - Elephant
 haven & bridge

COURTYARD

TOWER 1—canopy
 entrance

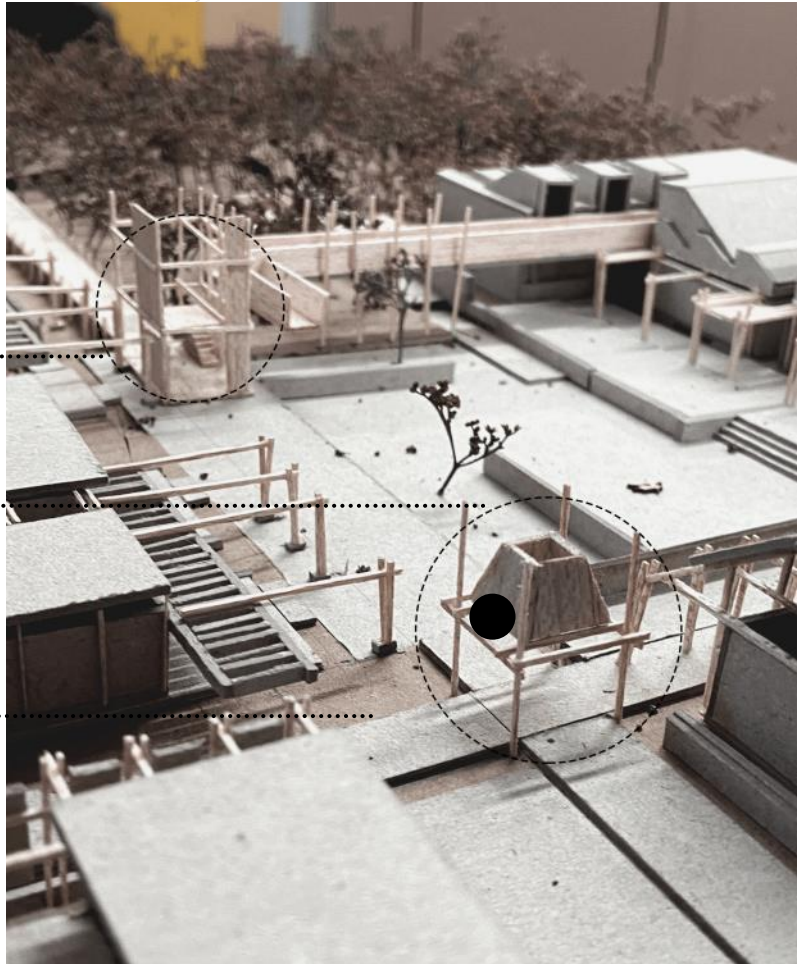


Fig 204: courtyard & towers (Author).

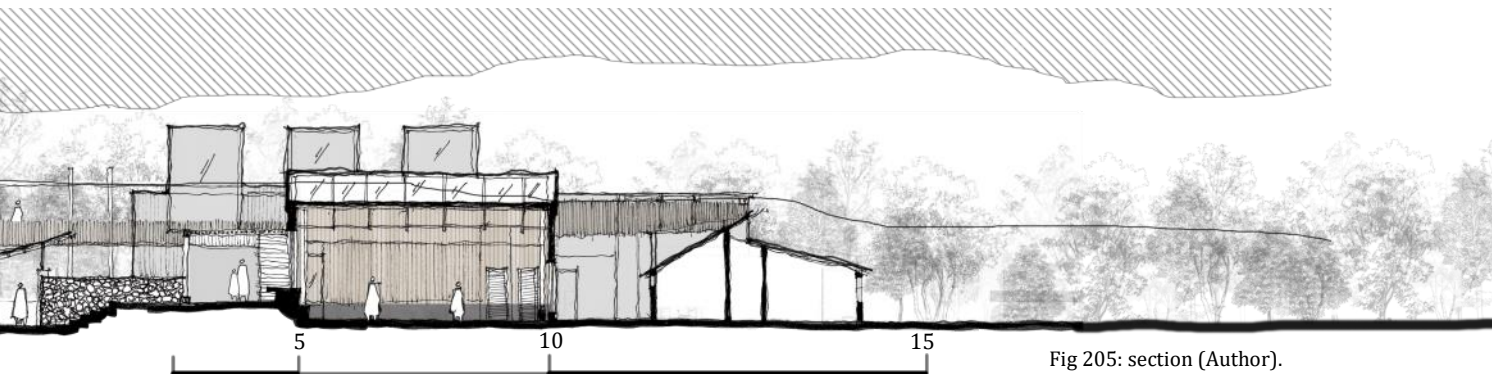


Fig 205: section (Author).

6.9.4 Precedent study

Allmannajuvet Rest area & Museum | Peter Zumthor

Location – Norway
Project year - 2016

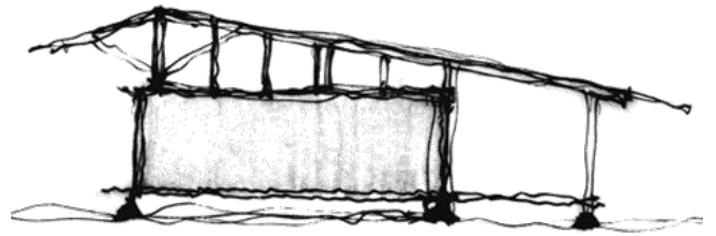


Fig 206: Allmannajuvet rest area (Author).

Fig 207: Allmannajuvet rest area (P. Berntsen, 2016).

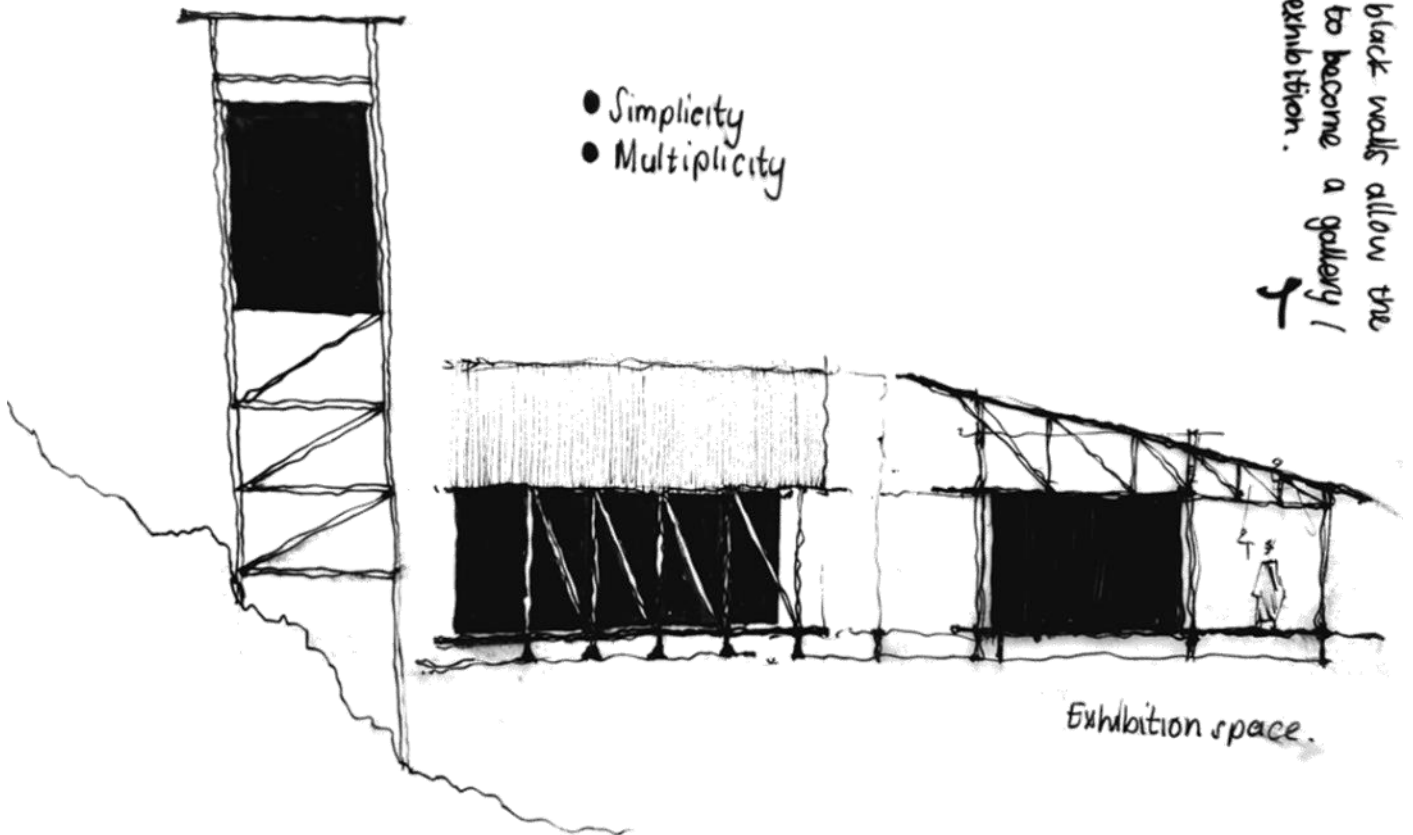
The Allmannajuvet Rest Area & Museum, designed by Peter Zumthor, is a minimalist architectural complex in Norway that combines a rest area with a museum on zinc mining history (ArchDaily 2016).

Peter Zumthor explains that the multiplicity of objects is revealed when those who coexist with them can discern their individual components while simultaneously perceiving the entirety of their collective purpose. Zumthor uses architectonic dramatisation to reach memory because it evokes emotions in people. These sketches explore simple structures which might evoke memories in its users.



The black walls allow the space to become a gallery / an exhibition.

- Simplicity
- Multiplicity



Exhibition space.

6.9.5 Elephant haven

Elephant haven is the second tower on the main axis and it is connected to a bridge. This is constructed from the conceptual idea of woodcutters climbing in trees to hide from elephants.

The bridge extends to the carpentry factory and allows visitors to view the inside from this height.

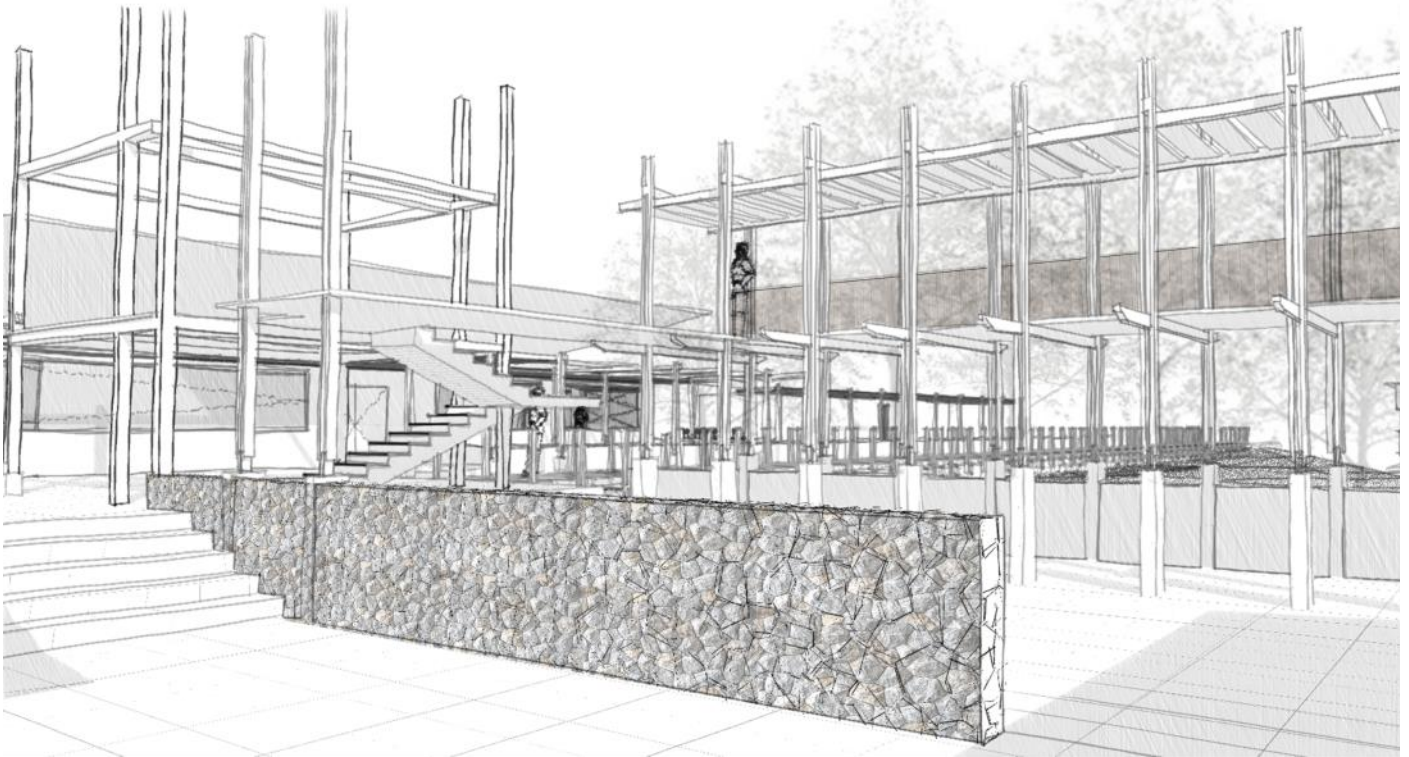
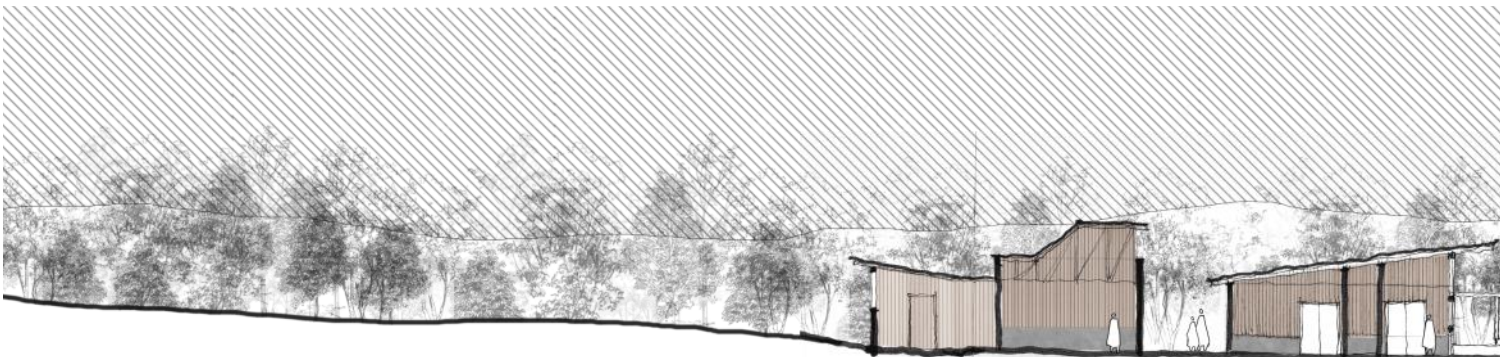


Fig 214: engaging tower & bridge (Author).



Section C

Fig 216: section (Author).

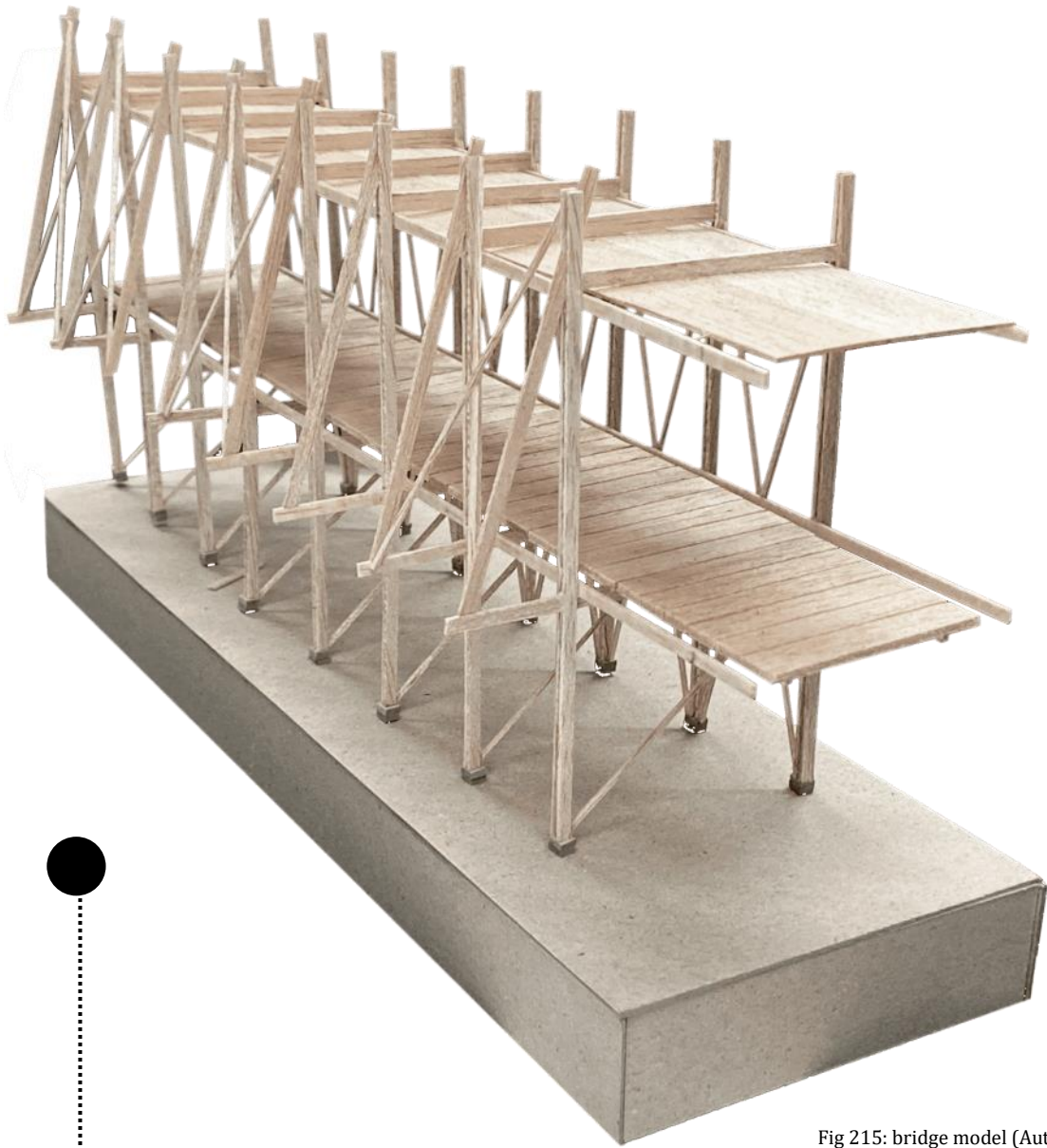
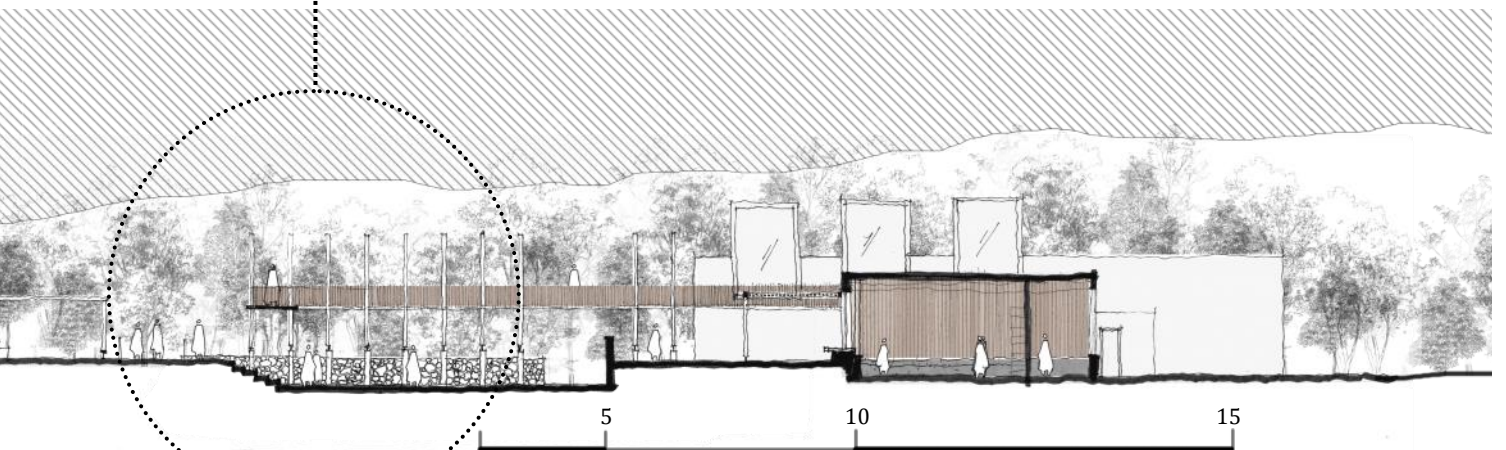


Fig 215: bridge model (Author).



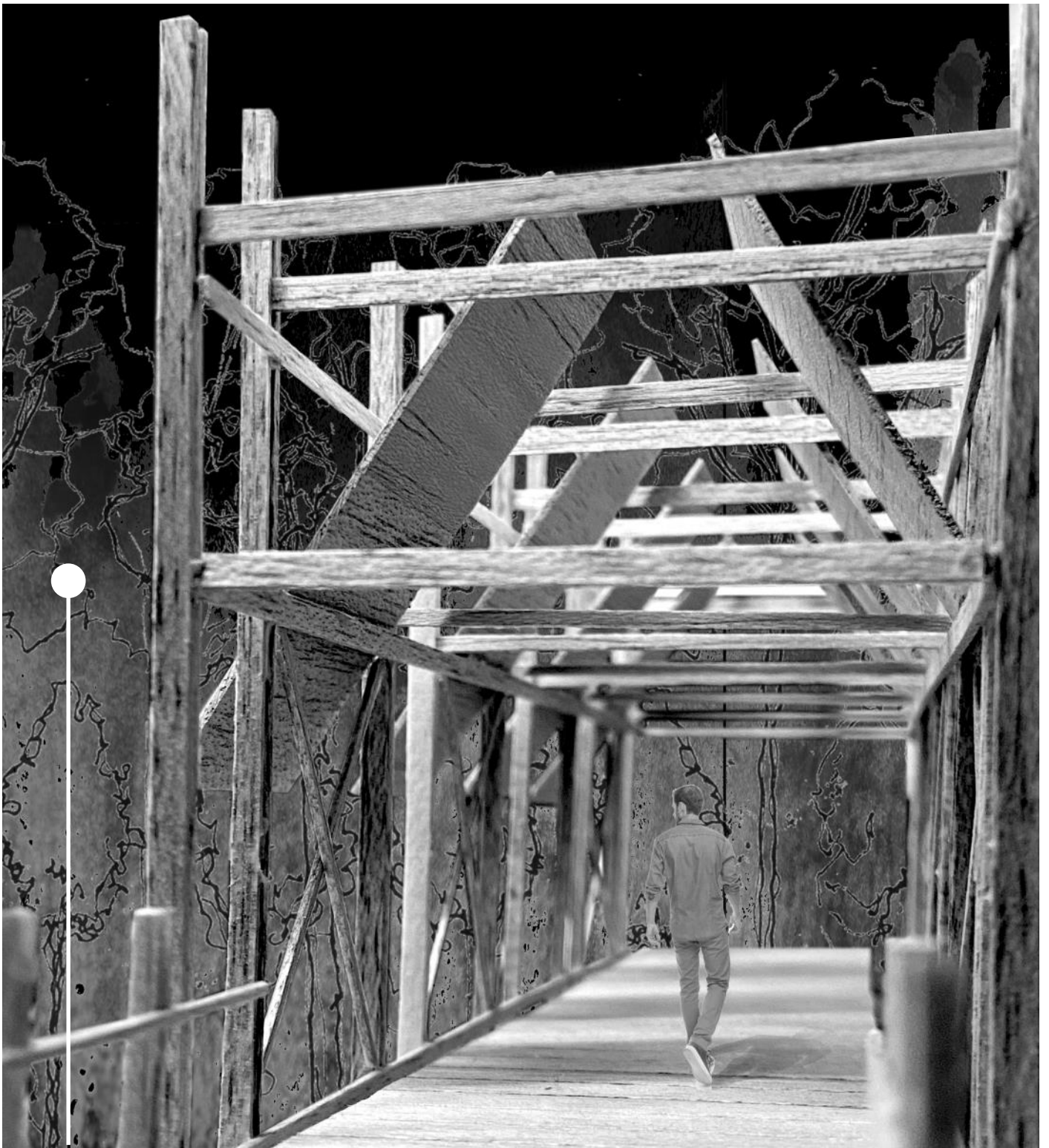
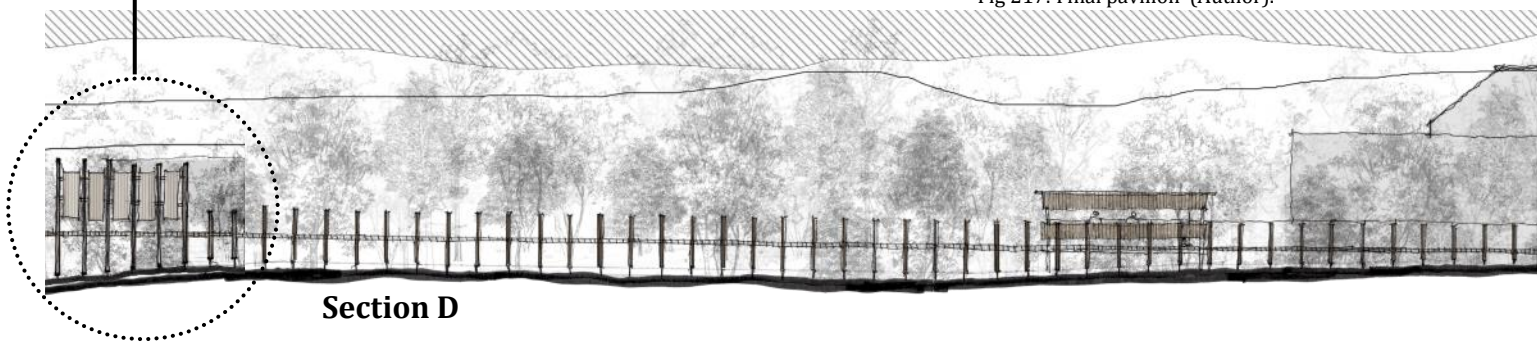


Fig 217: Final pavilion (Author).



Section D

Fig 218: Section (Author).

6.9.6 Final destination

The final pavilion is situated at the end of the main axis and symbolises the final destination for woodcutters who journey deep in the forest to harvest a selected tree. This pavilion tries to enhance the experience of the forest by imitating it.



Fig 219: Final pavilion model (Author).

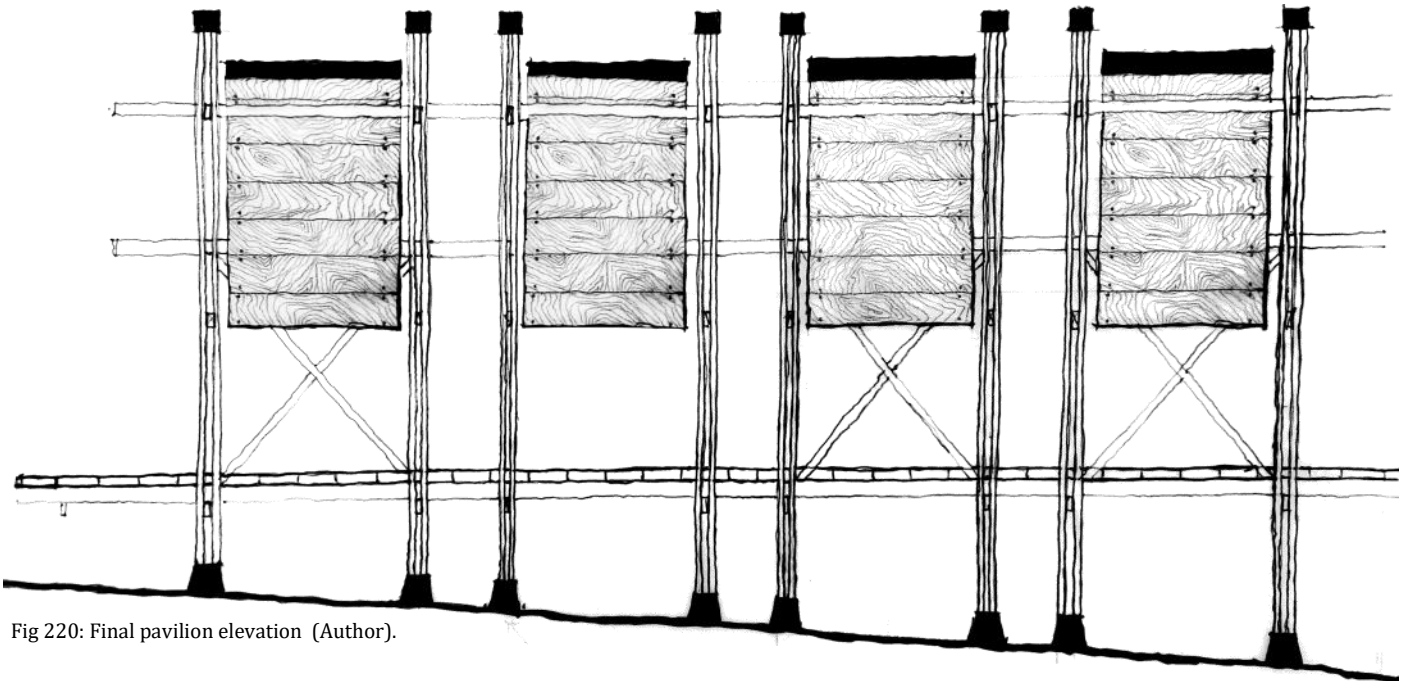


Fig 220: Final pavilion elevation (Author).



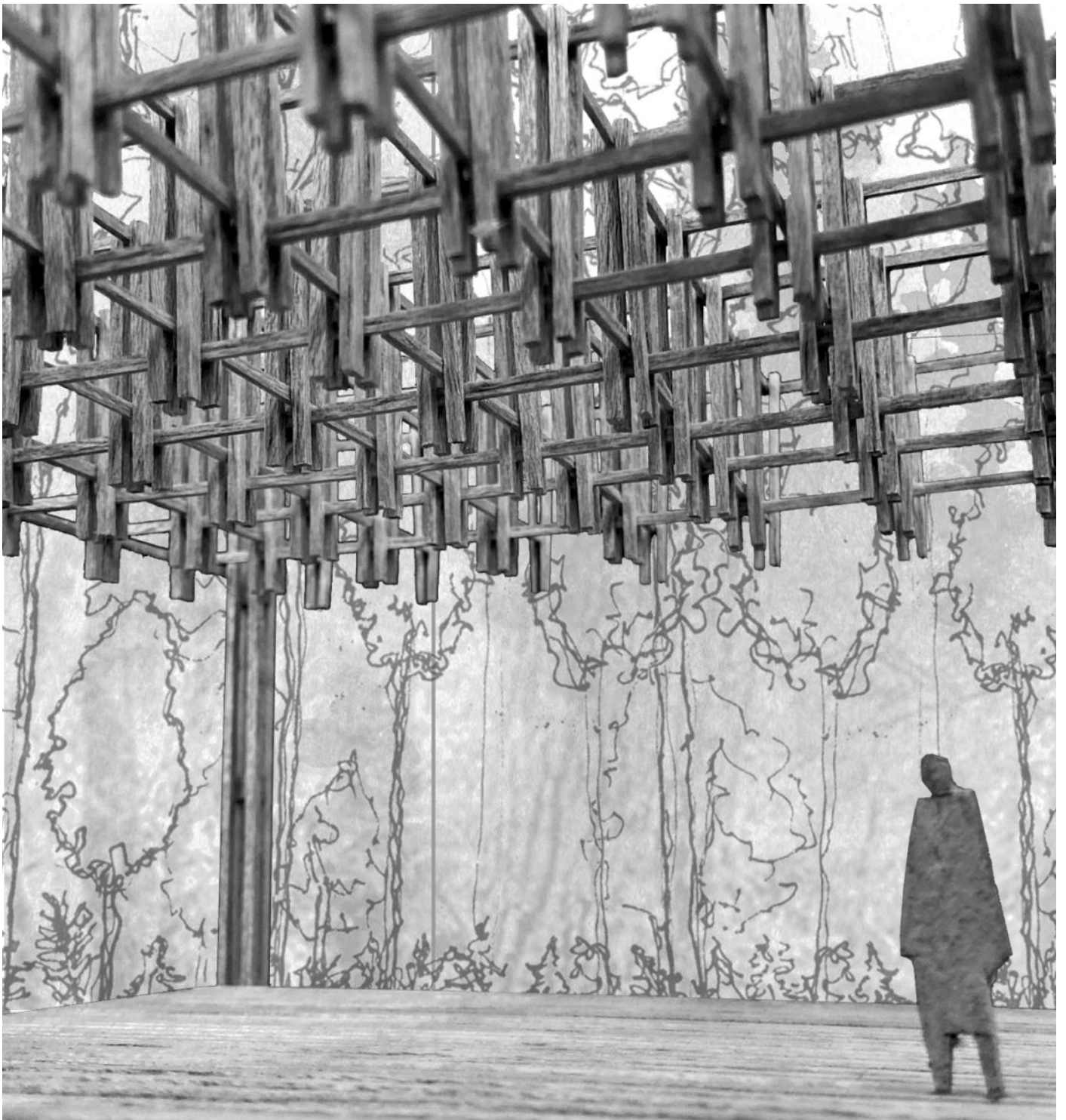


Fig 221: appreciation pavilion (Author).

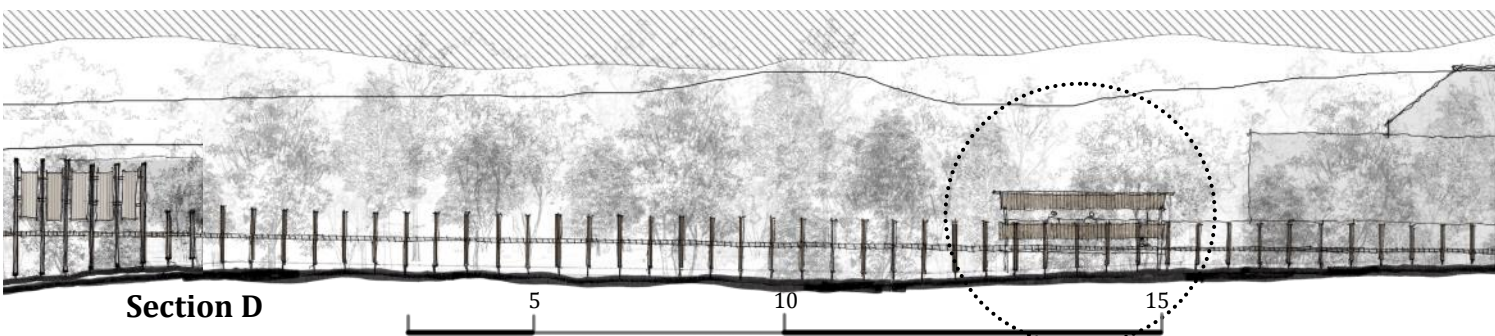
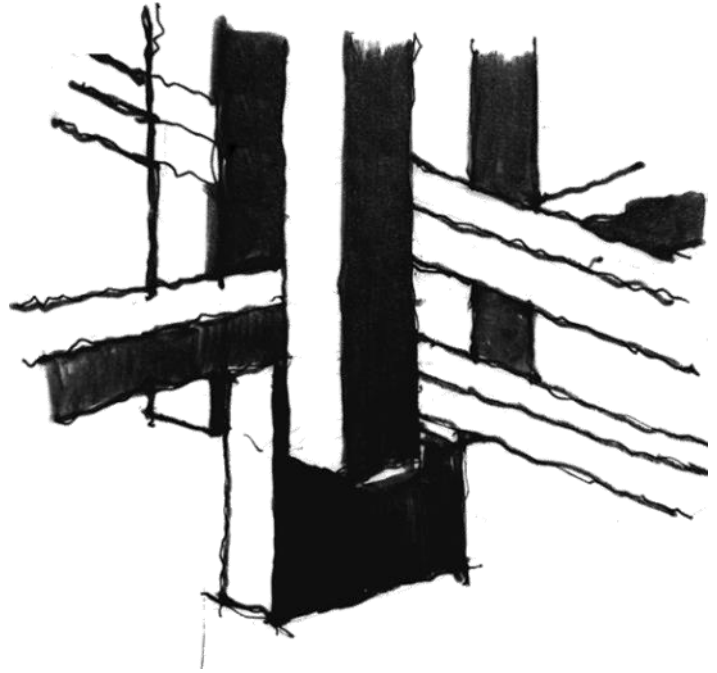


Fig 222: section (Author).

6.9.7 Forest appreciation

This pavilion serves as a semi-private structure which allows visitor to engage in personal reflection and form a connection with the natural environment.



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Fig 223: appreciation pavilion detail (Author).

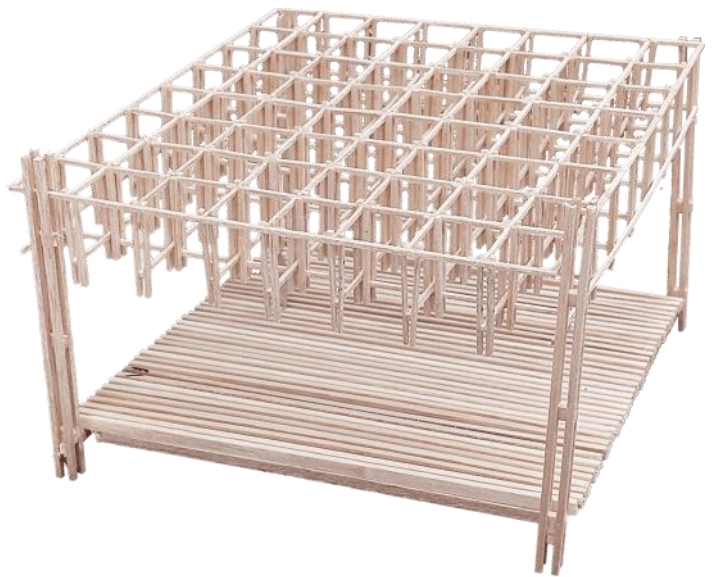


Fig 224: appreciation pavilion (Author).





Fig 225: office & hardware shop model (Author).

6.10 Reception & Hardware shop

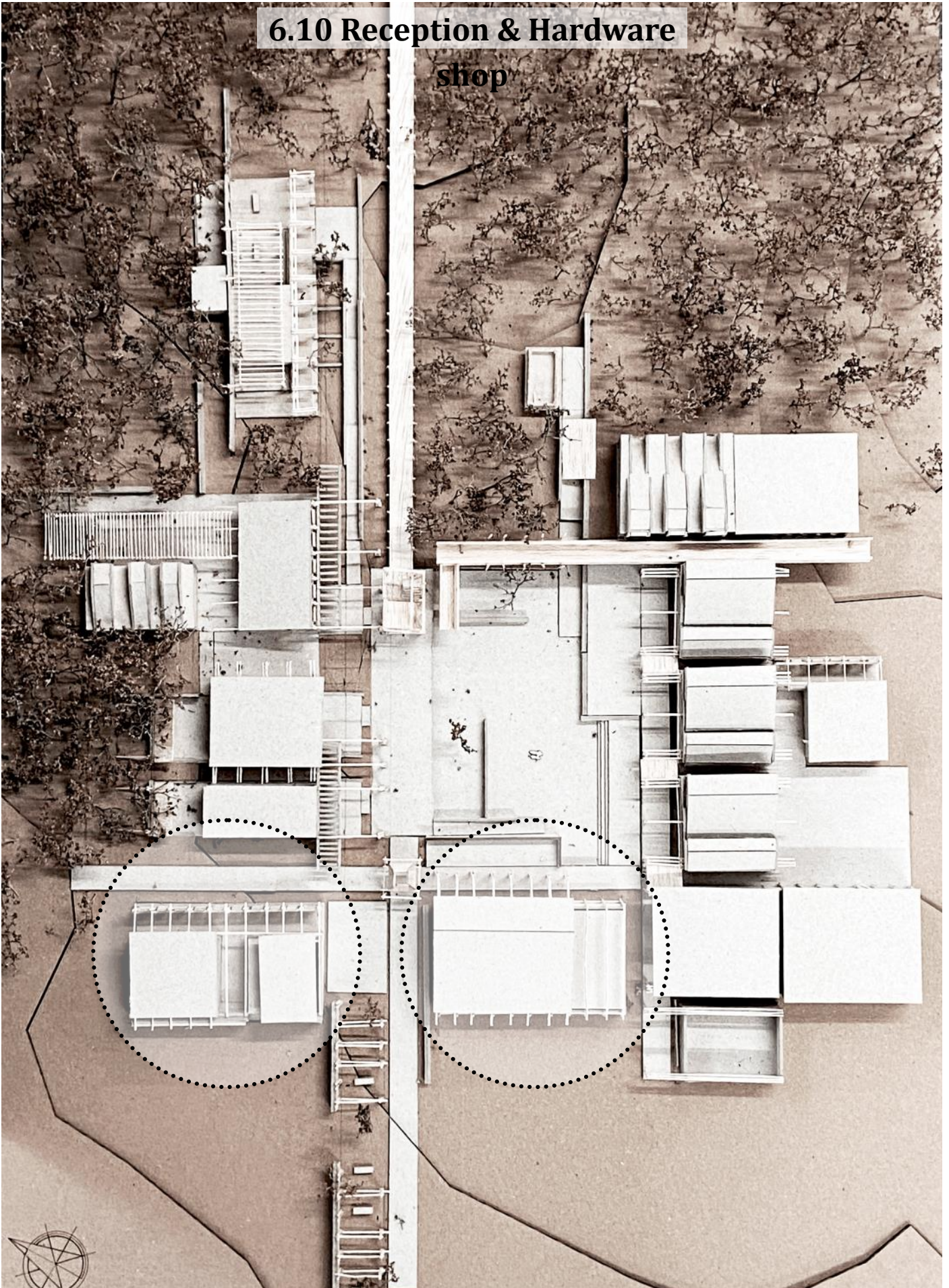




Fig 227: Shibori Office 21 (P. Vinay, 2021).

6.10.1 Precedent study

Shibori Office 21 | The Grid Architects

Location – Gandhinagar, India
Project year - 2021

Circulation is located on the western side with a row of trees providing shade to the glass façade.

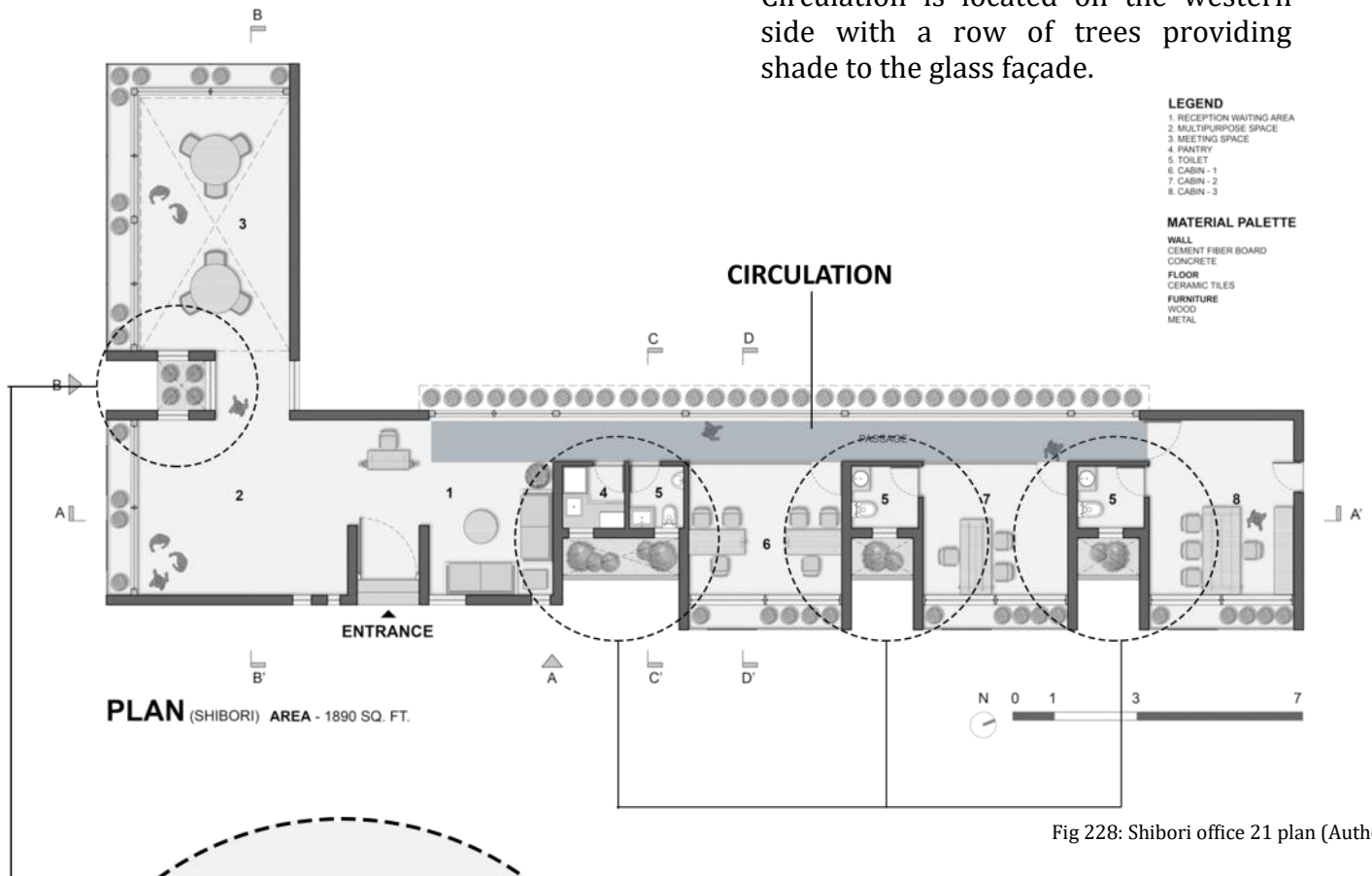


Fig 228: Shibori office 21 plan (Author).

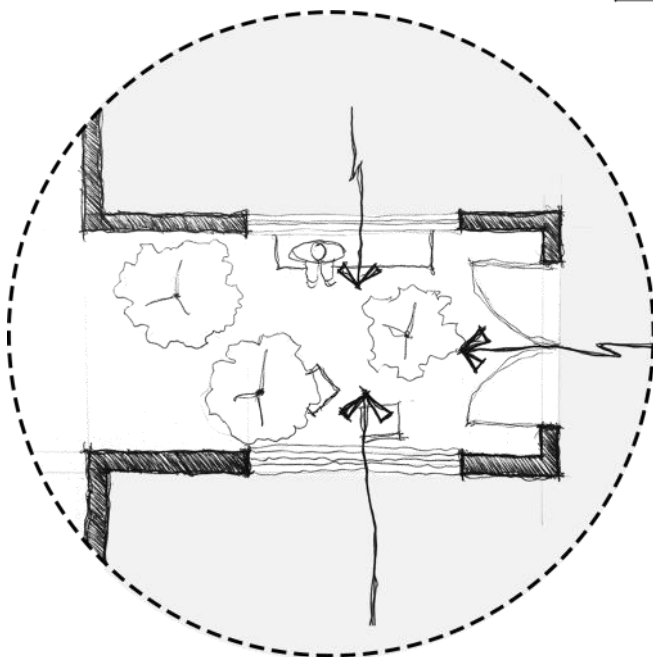


Fig 229: interpretation of Shibori Office 21(Author).

This was manifested as architecture that invited the sun to create a spatial experience underpinned by a play of light and shadow. The structure transformed a site office into a dynamic asset for the company and a landmark for the city.

6.10.2 Spatial development of Reception & Offices

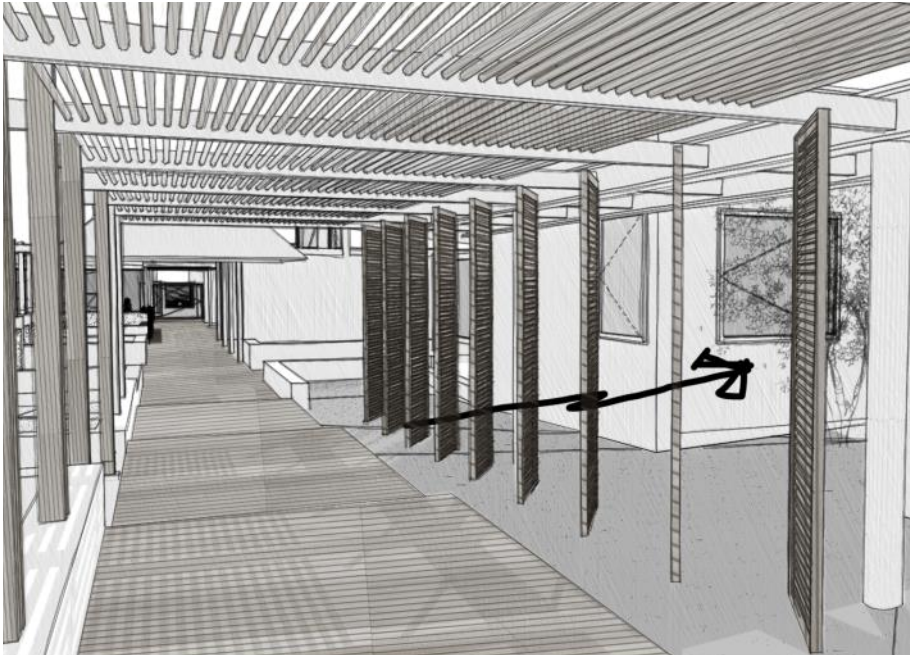


Fig 230: Public walkway against office space (Author).

The design of the offices and admin spaces draw inspiration from Shibori Office through incorporating public spaces which push into the structure to create small courtyard spaces.

Courtyard space integrated in layout to incorporate nature and spaces for pause.

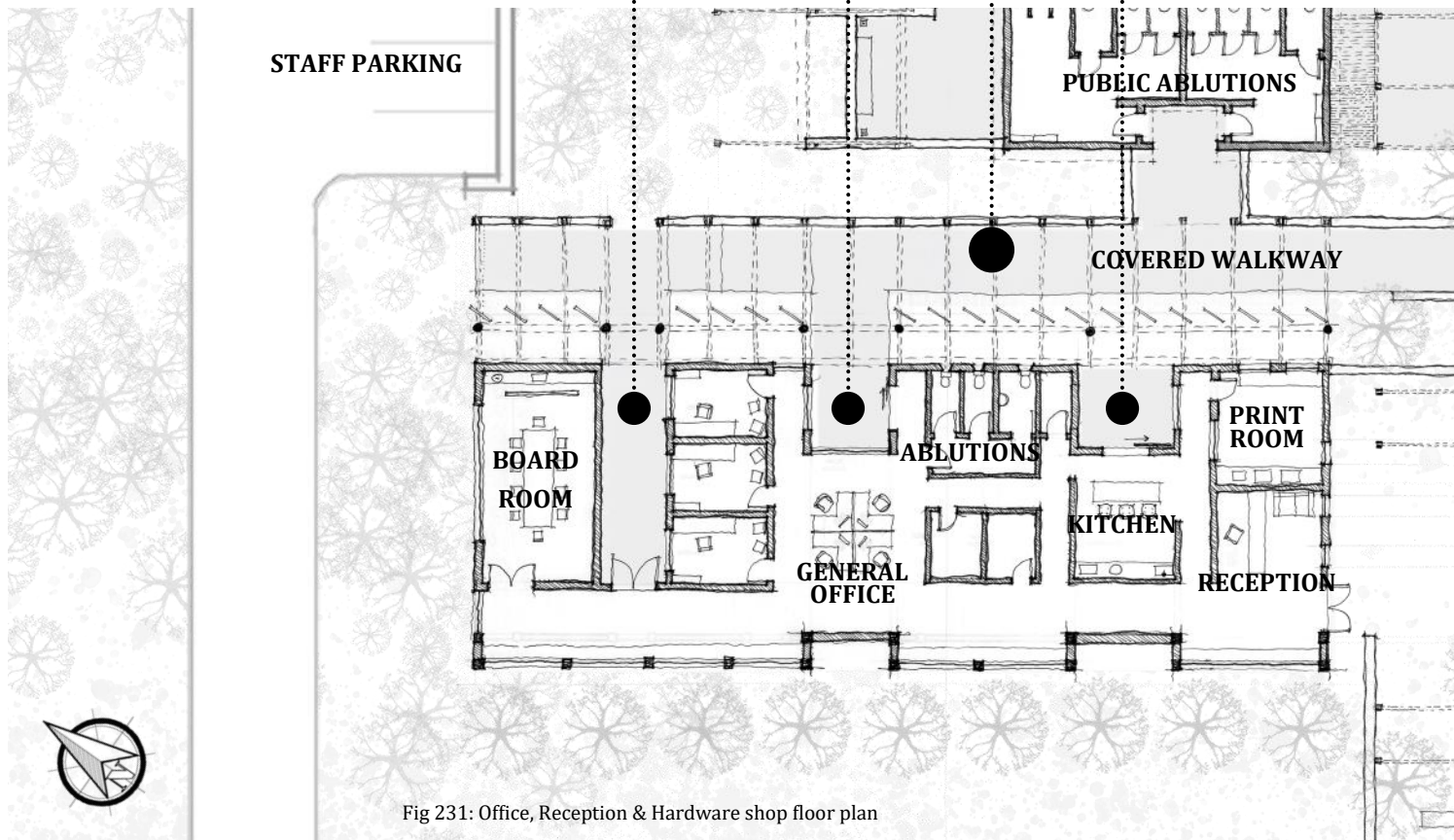


Fig 231: Office, Reception & Hardware shop floor plan



Fig 232: Public seating outside hardware shop (Author).

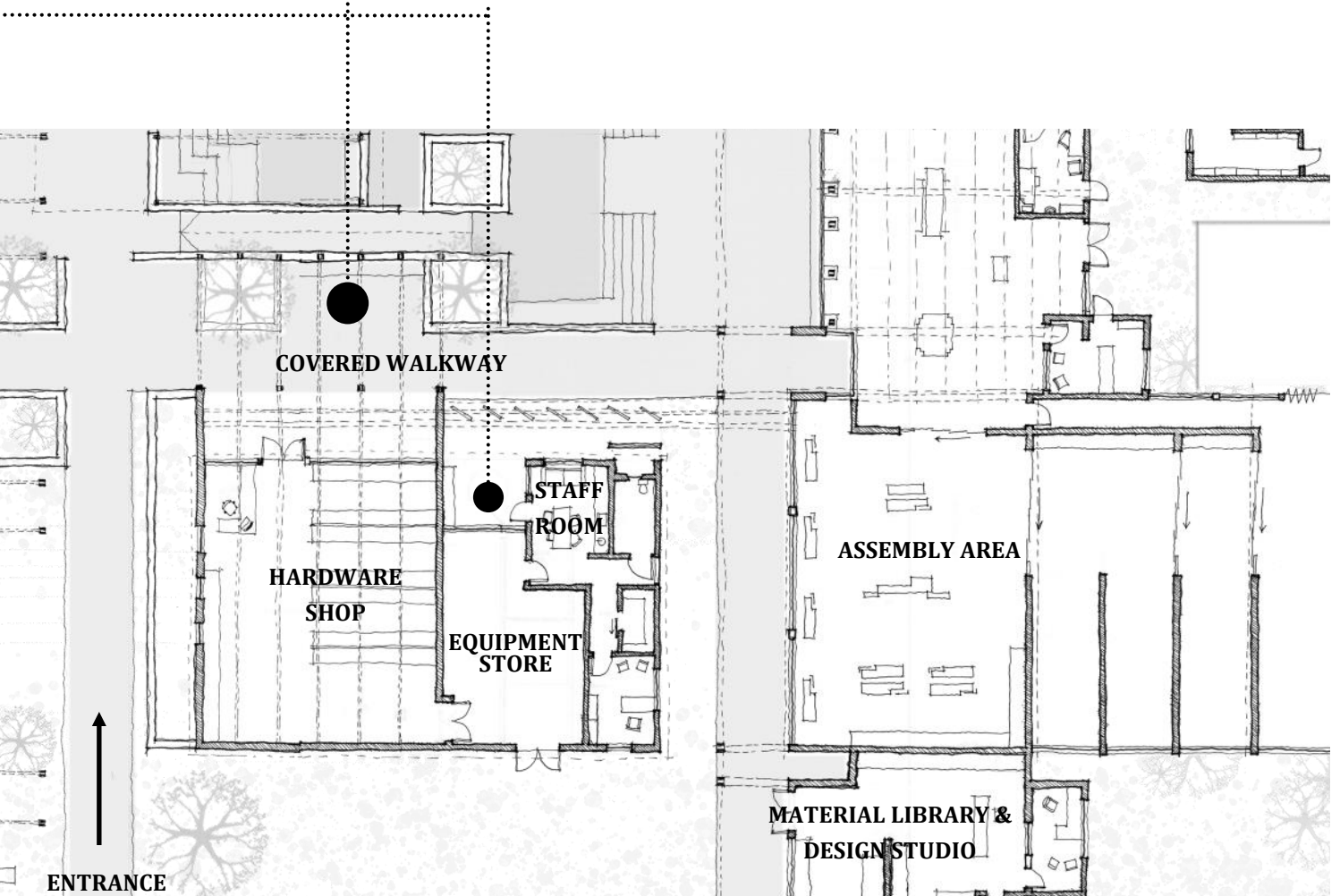
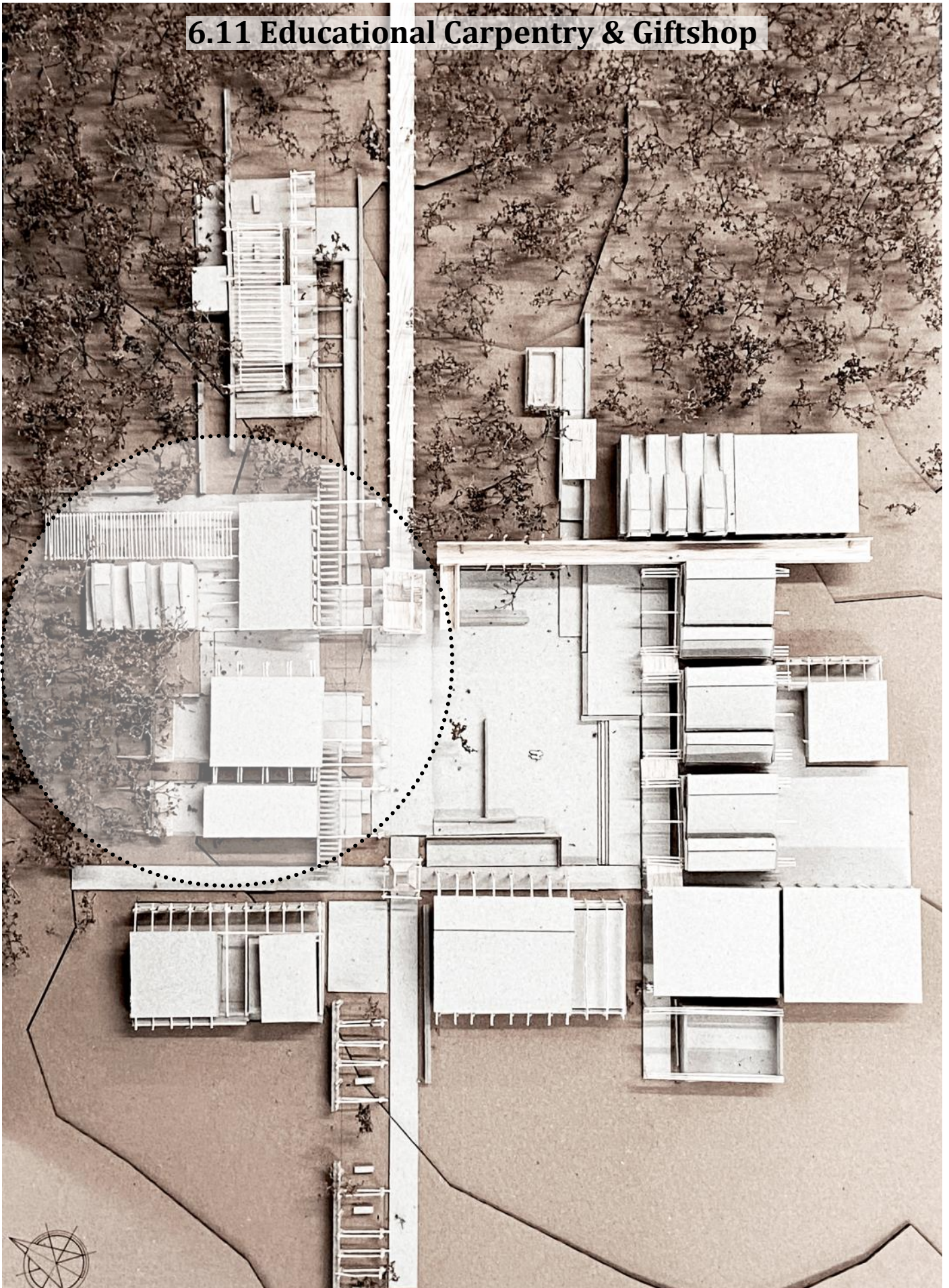




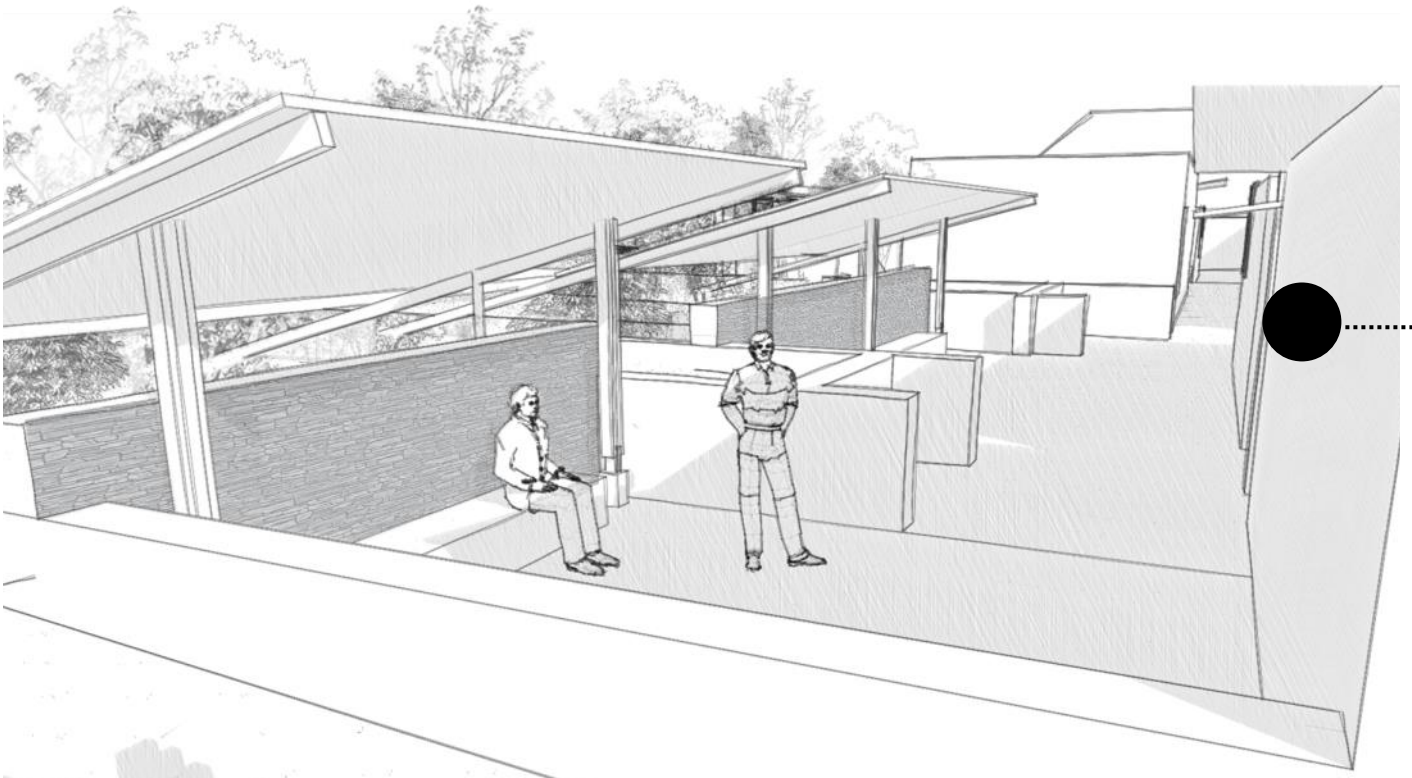
Fig 233: educational carpentry model (Author).

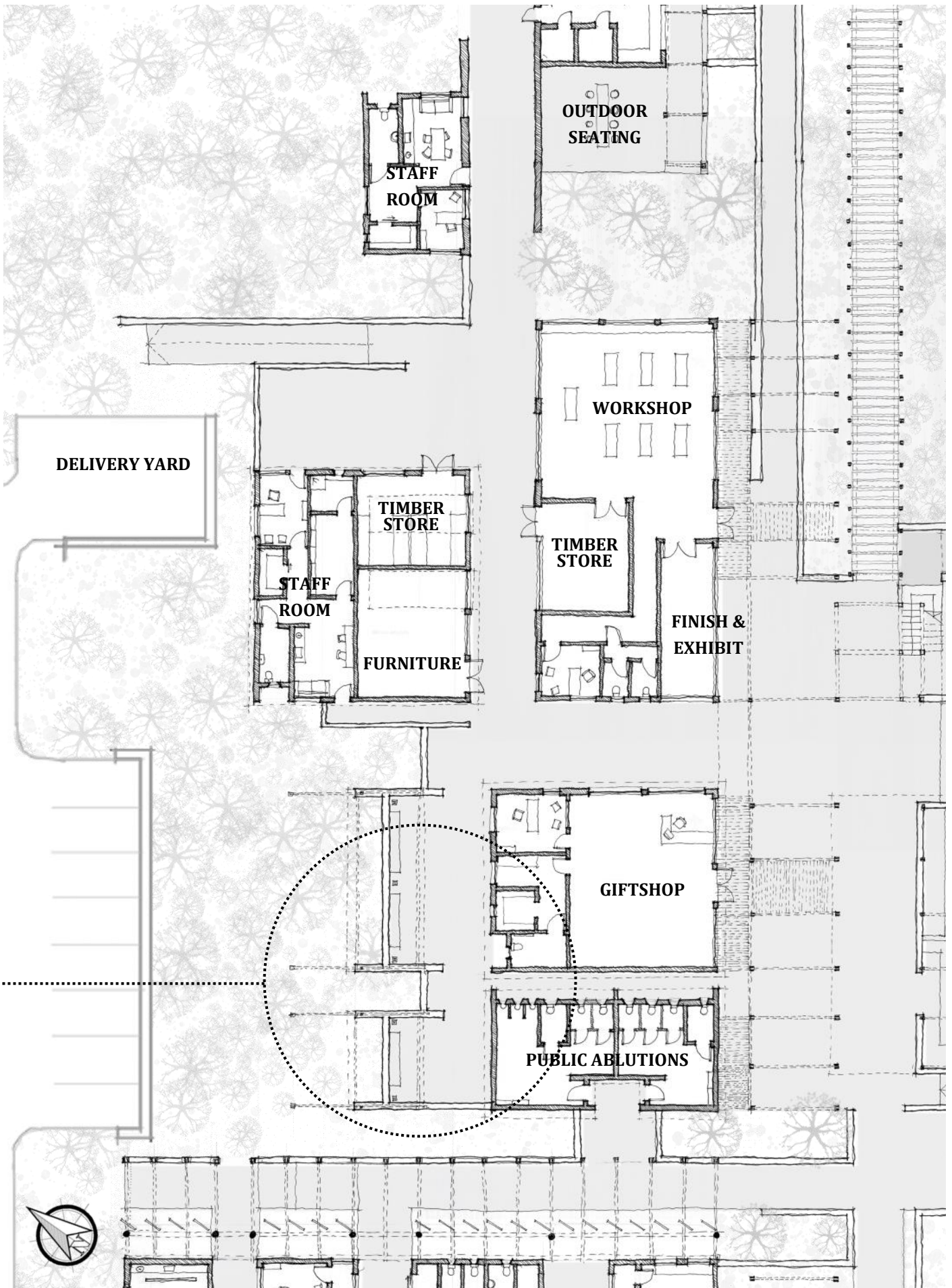
6.11 Educational Carpentry & Giftshop

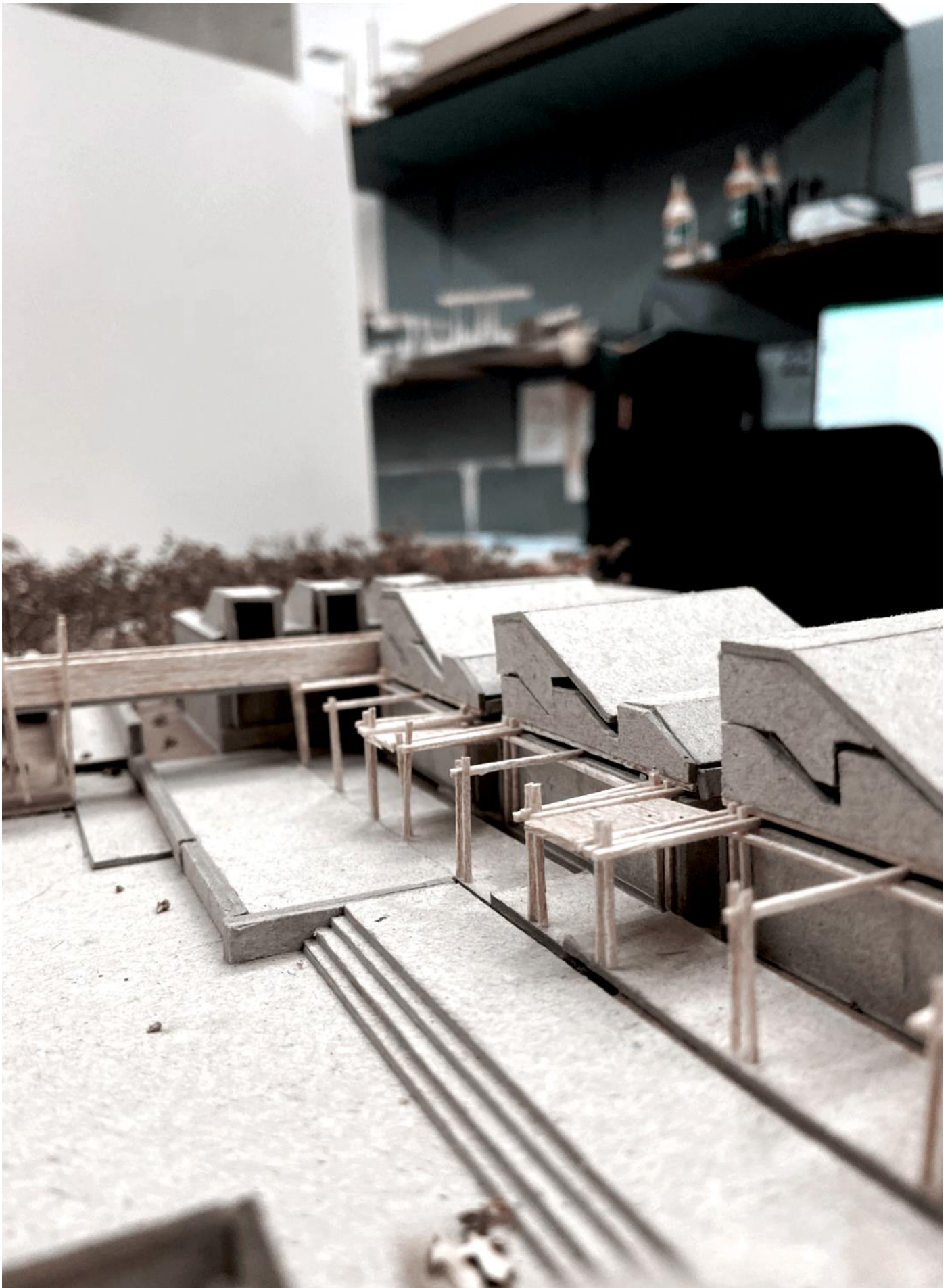


6.11.1 Spatial development

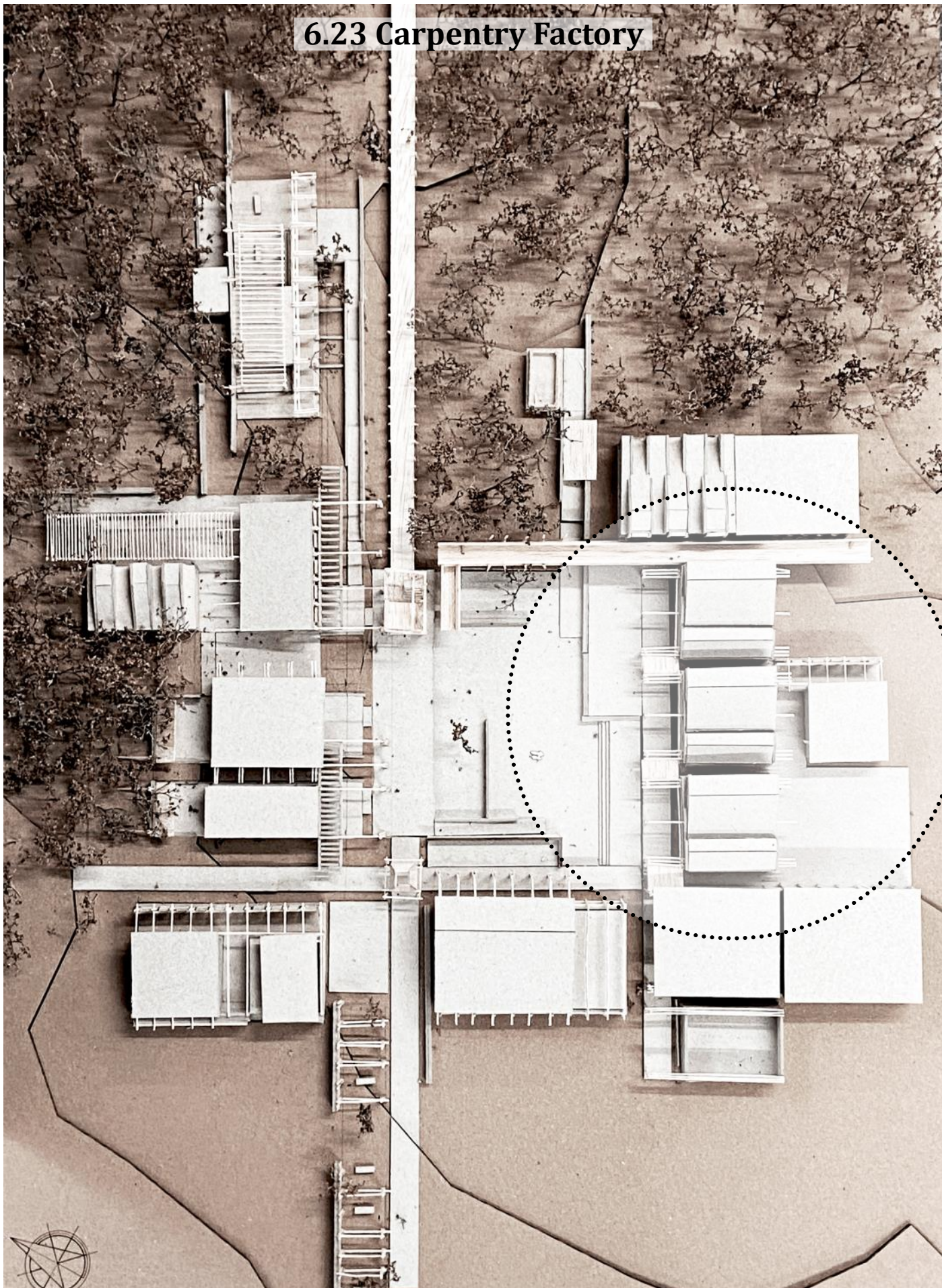
The education carpentry, giftshop and admin room all function as one entity. The admin building accommodates the main office and provides storage space for timber and furniture crafted in the educational carpentry. The gift shop facilitates the sale of items produced in the educational carpentry to visitors.







6.23 Carpentry Factory



6.12.1 Spatial development

The carpentry factory follows a linear process from the delivery yard to the pickup yard.

The walkway against the carpentry factory allows visitors to have a view into the building. Visitors cannot access this building.

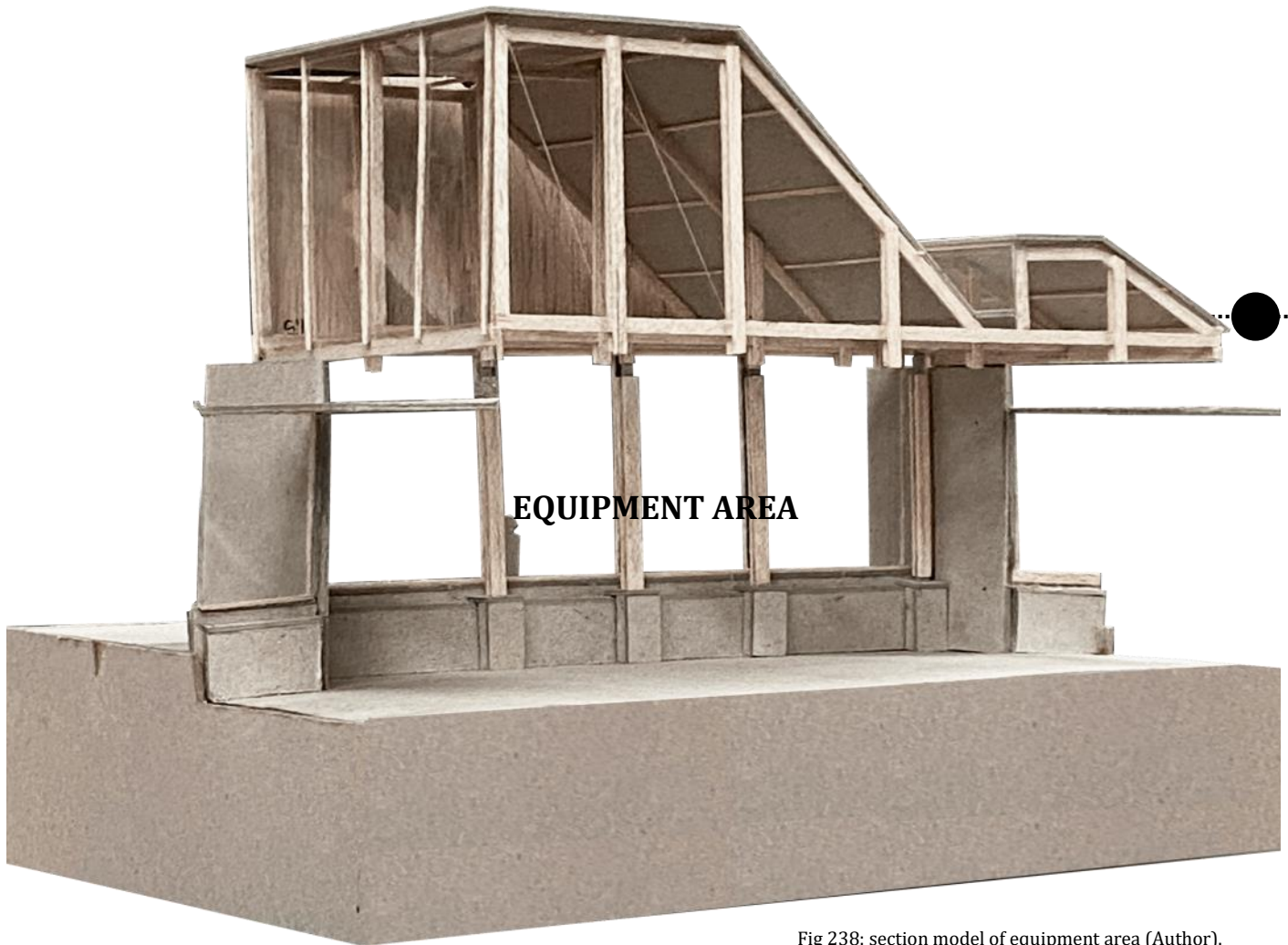


Fig 238: section model of equipment area (Author).

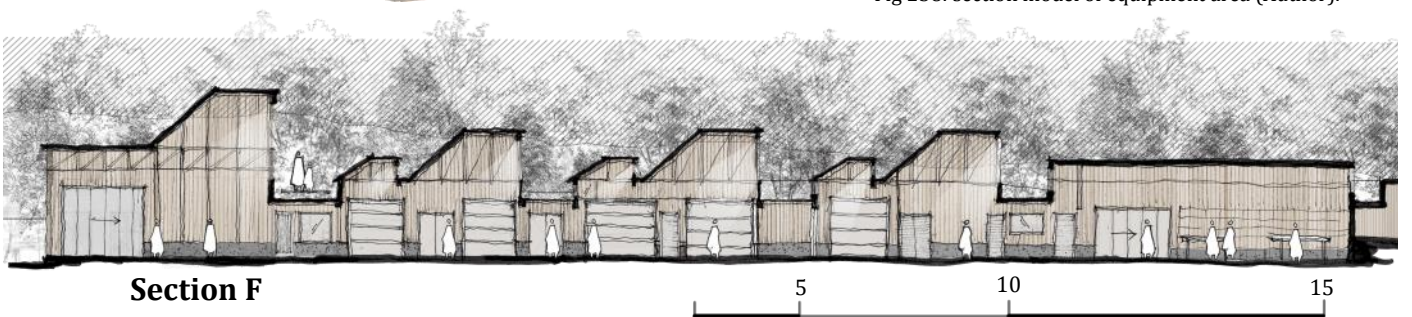


Fig 239: carpentry factory equipment room section (Author).

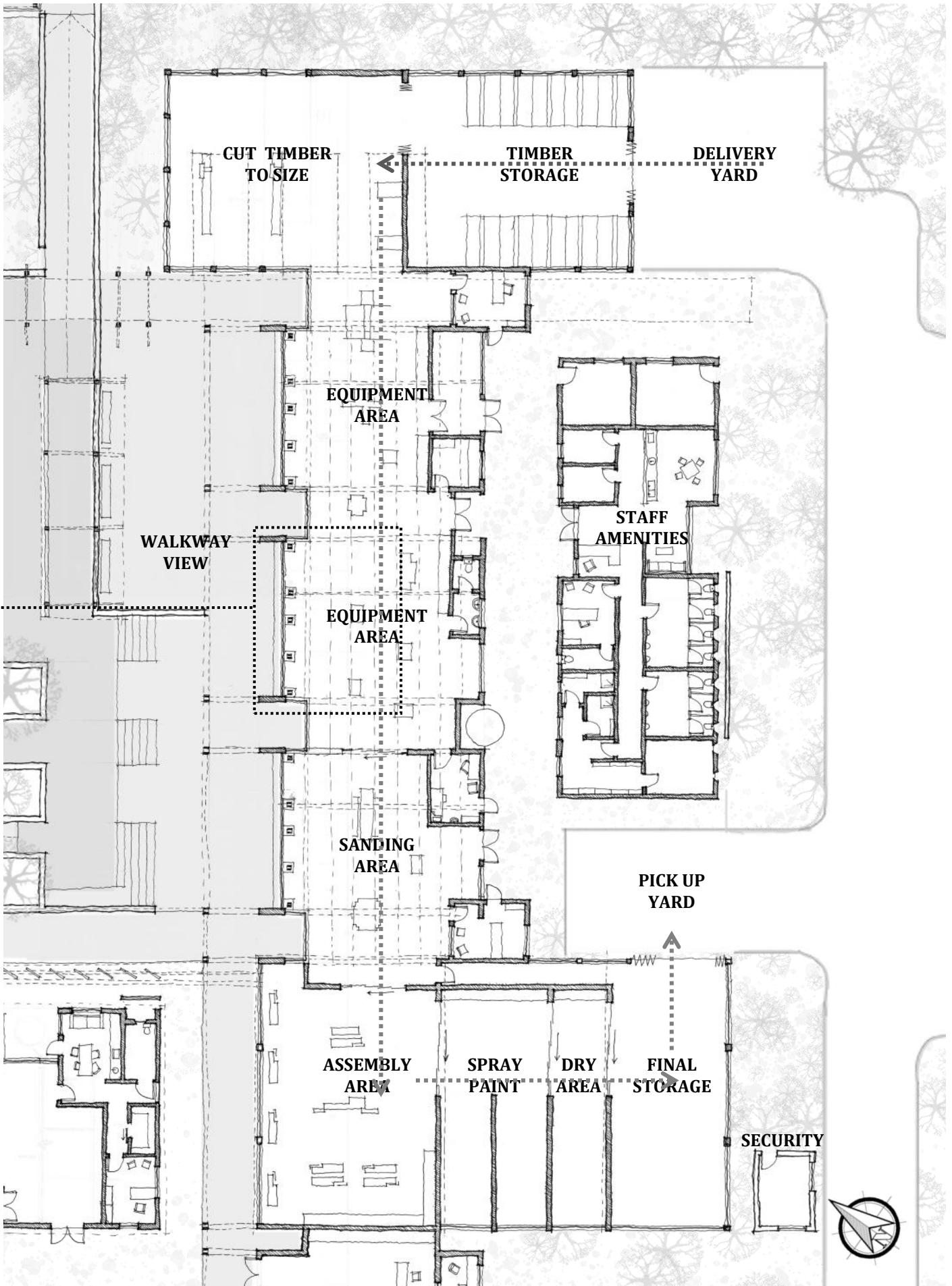
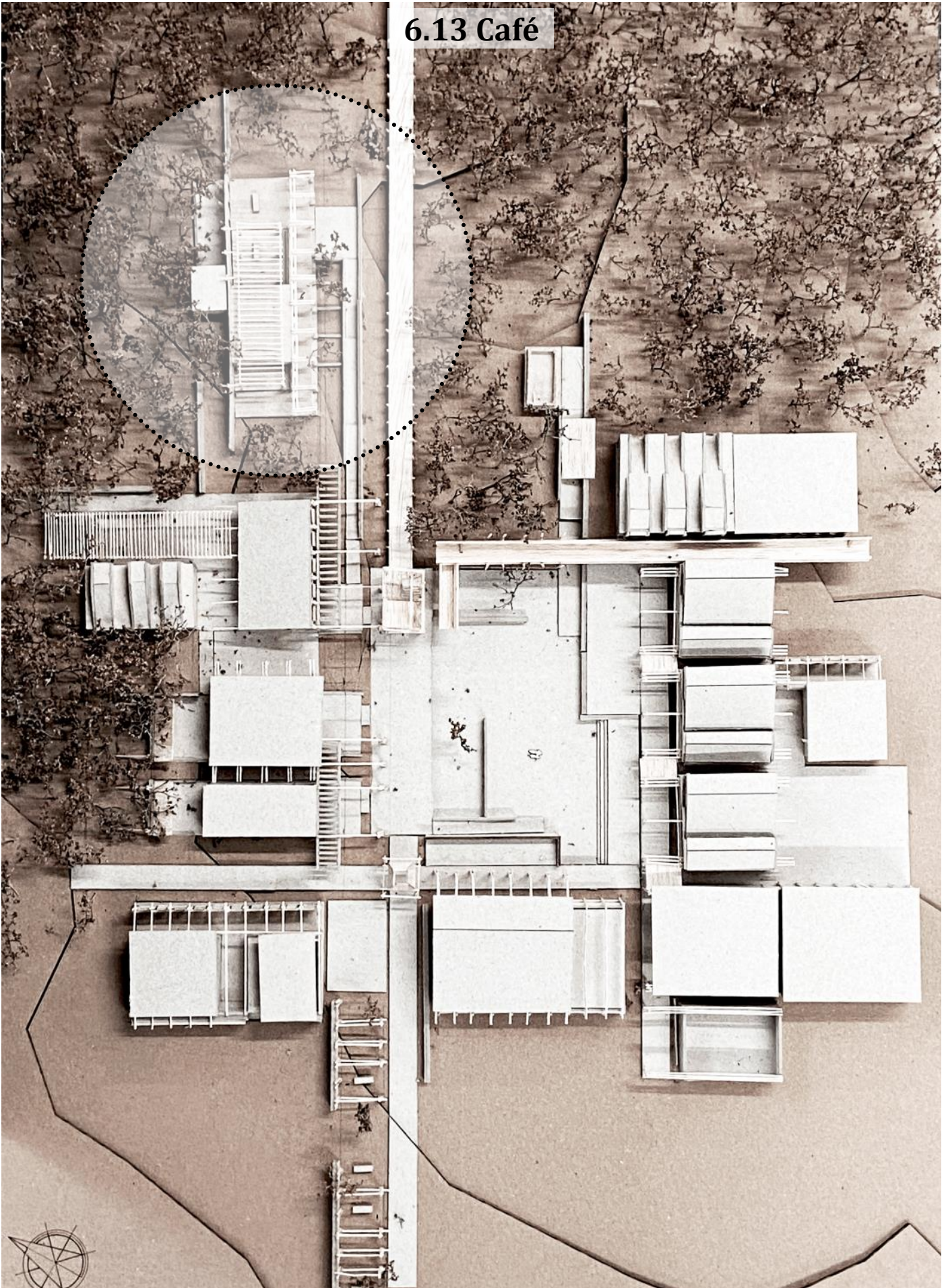
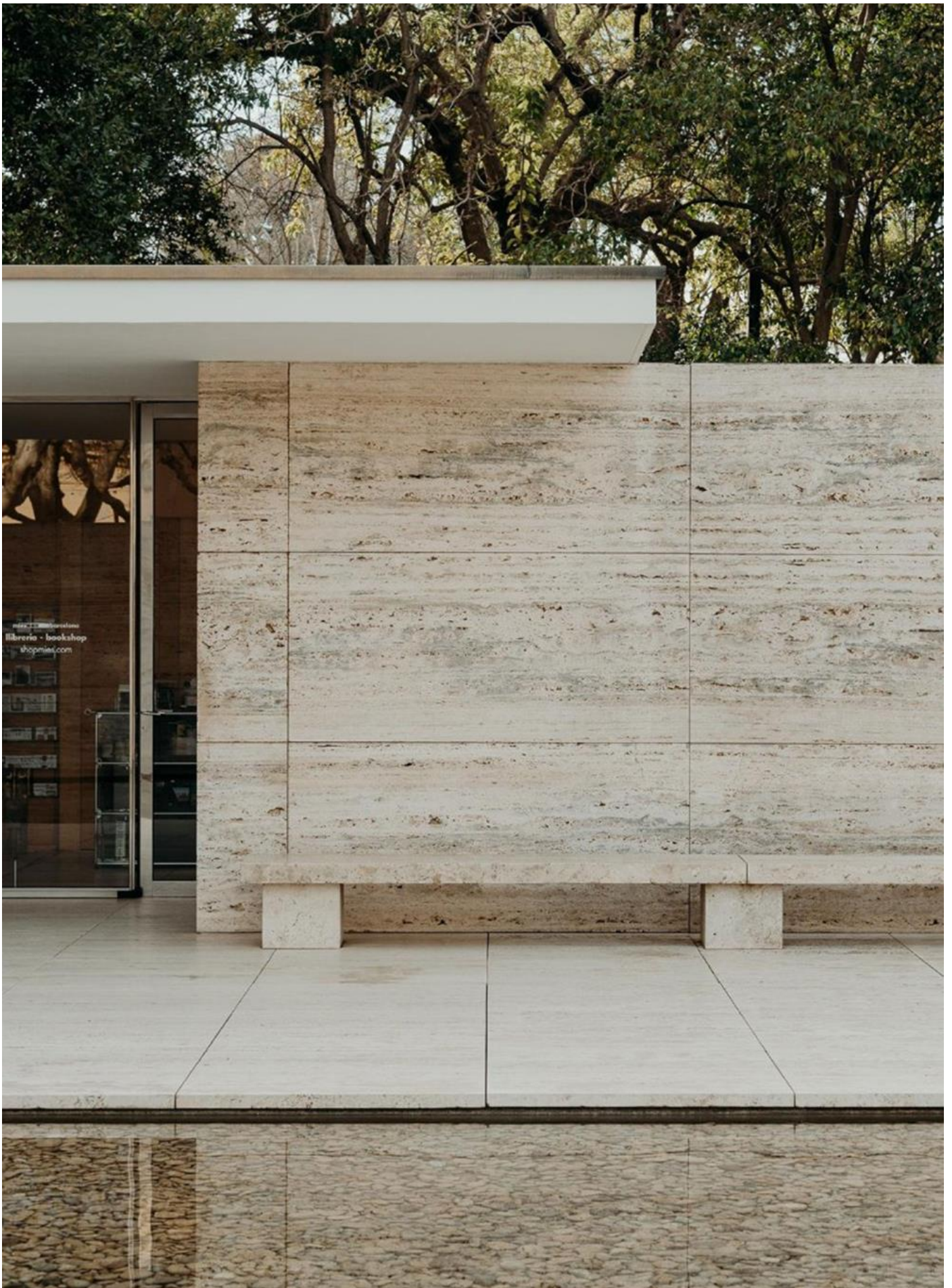




Fig 241: model of Cafe (Author).

6.13 Café





6.13.1 Precedent study

Barcelona Pavilion | Mies vd Rohe

Architect – Ludwig Mies van Der Rohe
Location – Barcelona, Spain
Project year - 1929

Mies van der Rohe's Barcelona Pavilion illustrates modernist architecture. It was designed for German government for the 1929 International Exposition in Barcelona.

What makes the Barcelona Pavilion remarkable is that it acts as an art piece as well which allows for a sensory experience through its play of light and shadow, reflections and textures.

Materiality

The materiality blends both industrial and natural materials. Natural material like marble is used. The floor to ceiling glass windows give the space a sense of modern industrialism.



Fig 244: Connecting to nature (M. Jczyk, 2023: Online)

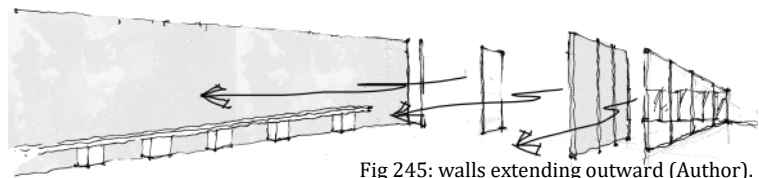


Fig 245: walls extending outward (Author).

Geometry and space

This building relies on a minimalistic approach. It doesn't try to be complex or innovative. The spaces blurs between interior and exterior spaces which allows the environment to amalgamate with the design. The fluid spaces allow for smooth transition from one space to another. This creates an unending sense of place with allows users (eyes) to wander freely through the pavilion.

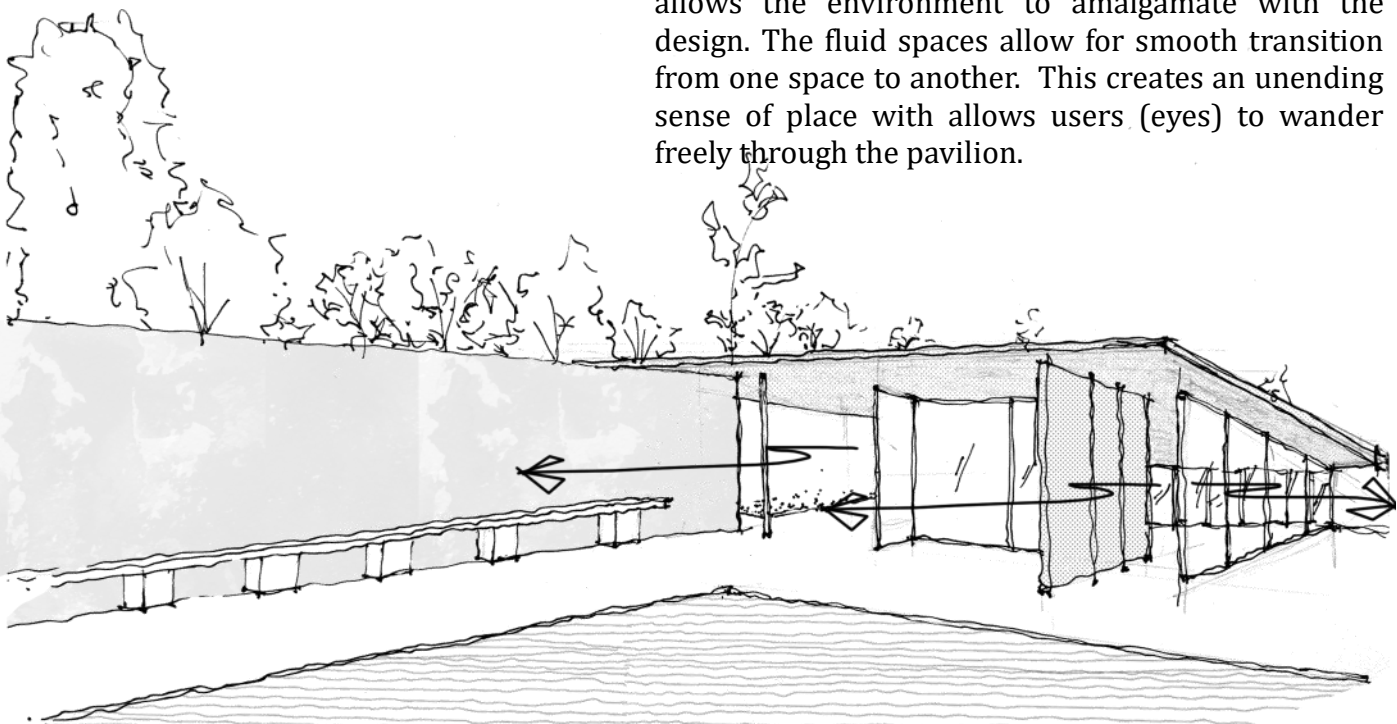
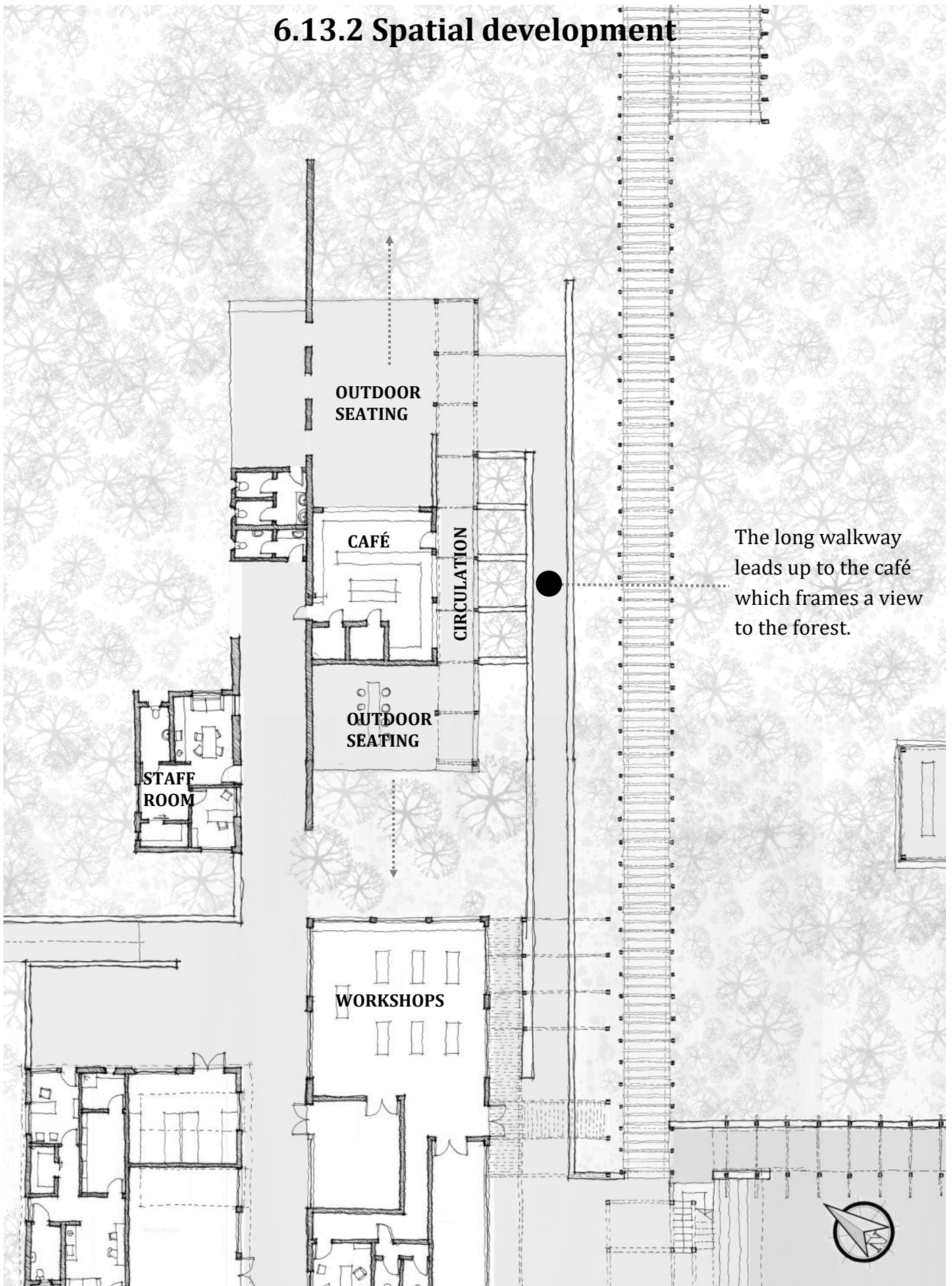


Fig 246: walls extending outward (Author).



Fig 247: model of Cafe (Author).

6.13.2 Spatial development



6.13.2 Spatial development



Fig 249: café outdoor seating & walkway (Author).

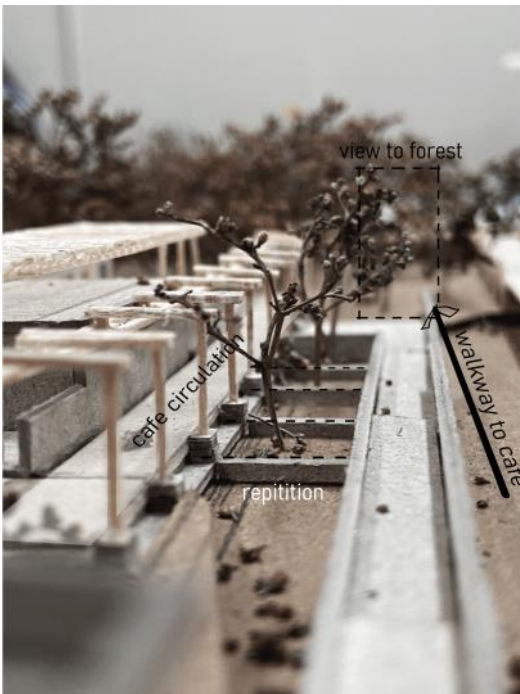


Fig 250: café circulation & walkway (Author).

The café breaks the mass of the structure and pushes into the forest. This building is mostly surrounded by the forest and tries to connect to it.

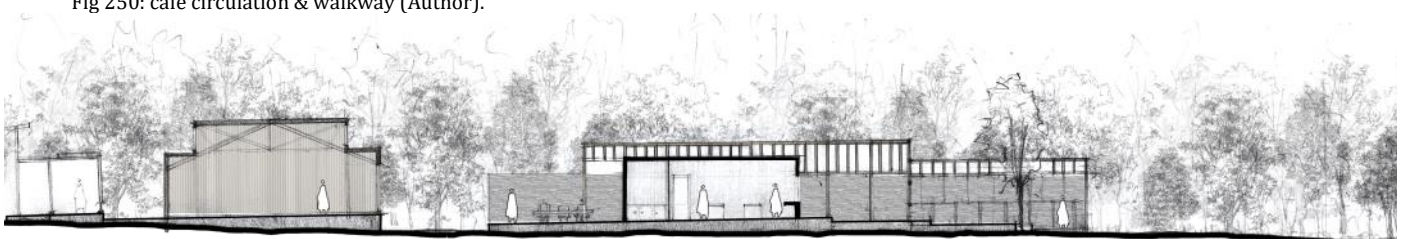
It uses principles from the Barcelona Pavilion. Walls continue from the inside to the outside. This creates an interlocking condition.

Main seating spaces are located at both ends of the structure. The north-eastern side connects to the landscape and the south-western side allows for a view into the educational carpentry.

The walkway to the forest is separate from the building and celebrates a view to the forest. While walking down to the café, one looks out to the forest.

The circulation located in the café makes use of louvres and columns imitation a repetition effect of the surroundings.

This louvre also breaks the heavy mass and tries to make the café a lighter tectonic structure.



Section E

Fig 251: café section (Author).

Meaning of the joint

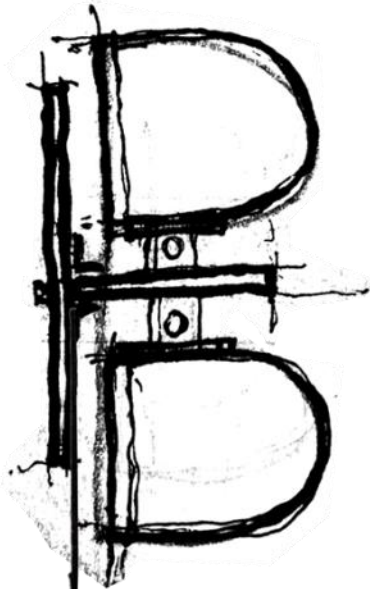
6.14 Meaning of the joint

In 'Theorizing a new agenda for architecture', Marco Frascari states the following; "Each detail tells us a story of its making; of its placing and of its dimensioning."

It is the detail that conveys its own story. Through joints we might find the union of how it was built and how it can be understood.

When we join elements together it is important to

Cele



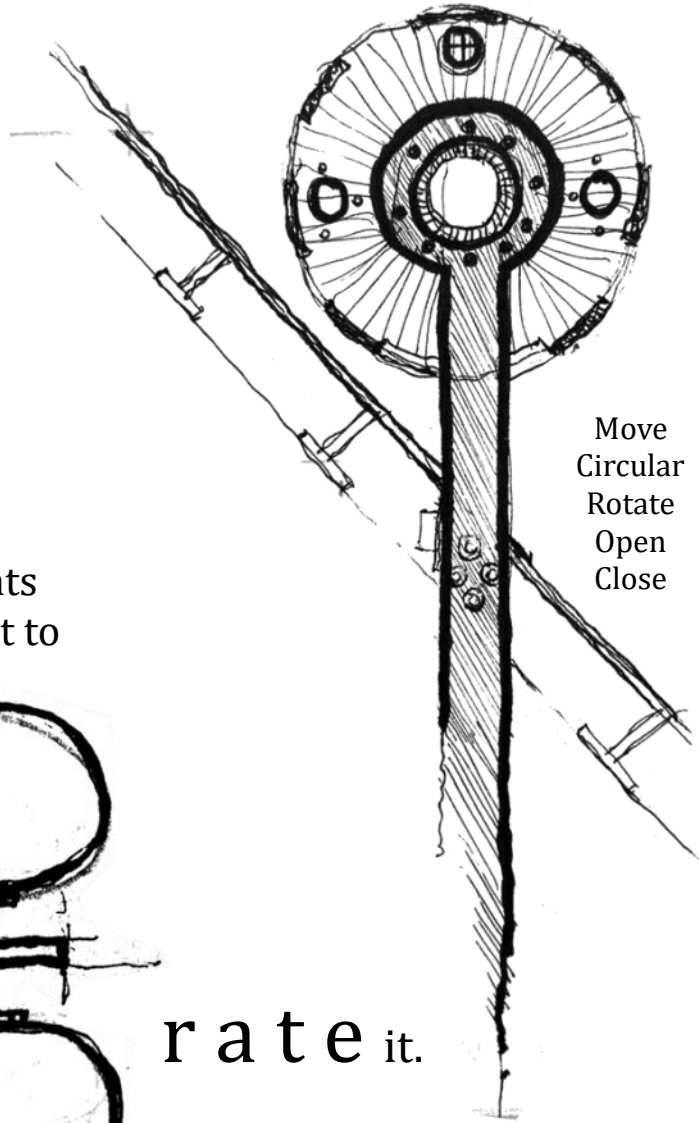
brate it.

Make it a l m o s t touch to show the tension

it never

touche

S



Move
Circular
Rotate
Open
Close

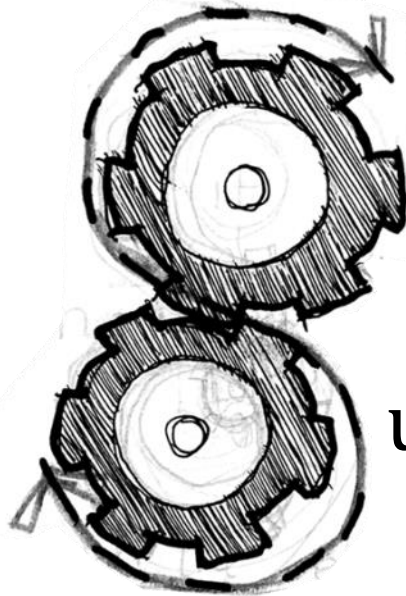
Fig 252: expressing the joint (Author).

Here is where it is in need of

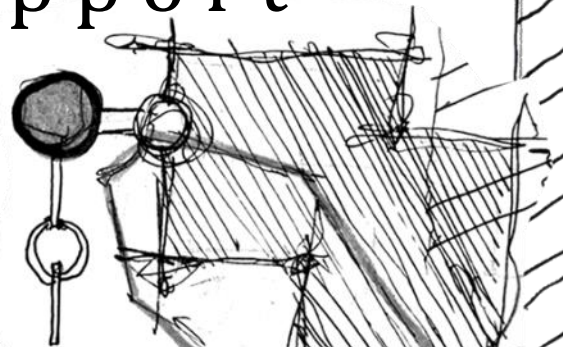


Because it

Need



support



And a railing that
understands the action for
its making

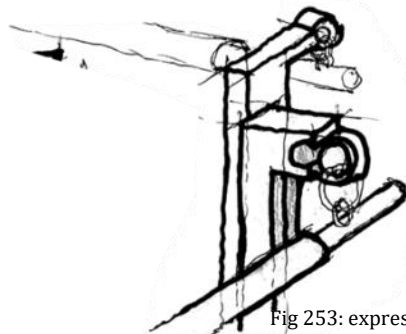
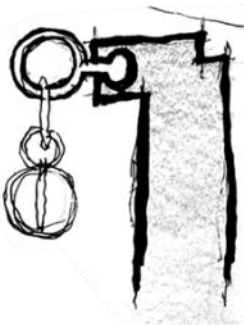


Fig 253: expressing the joint (Author)

6. 14 Meaning of the joint



Fig 254: woodcutter's theoretical ritual (Author).

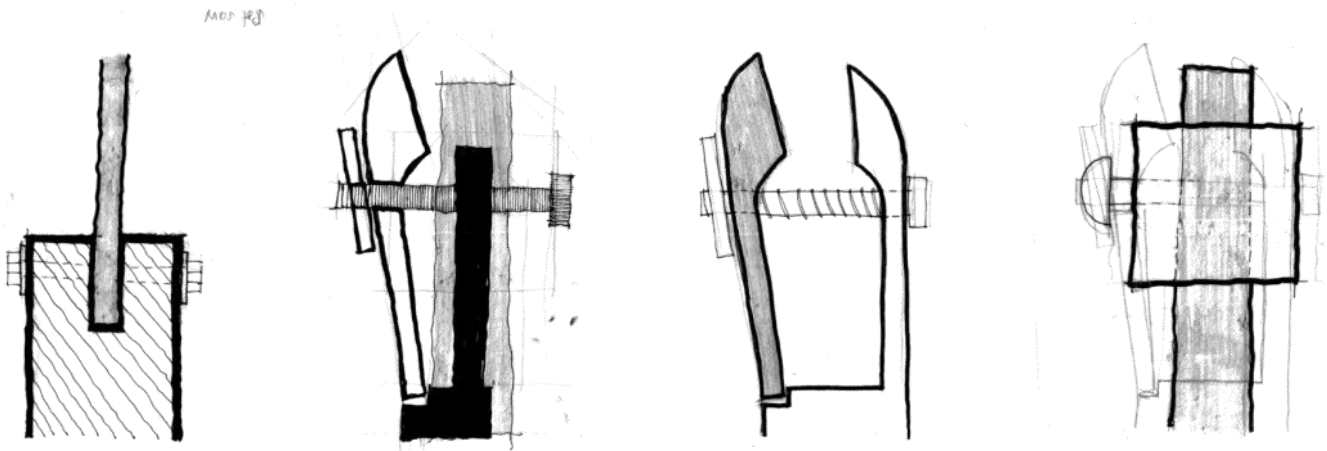


Fig 255-258: woodcutter's tools (Author).

The column connection is inspired by the story of a woodcutter splitting the stump in two pieces.

Many woodcutter tools were forged by connections holding the elements together. This column does the same through using coupling nuts as the joint that runs through the column.

This column is a product of translating narratives and visual imagery into an architectural element.



Fig 259: column connection model (Author).

Design synthesis

Context Plan
1:1000





Ground floor plan - Linear journey

Theory applied in design

- A. Public parking
- B. Staff parking
- C. Delivery yard
- D. Staff parking

1. Reception

- 2. Offices
 - Printing room
 - Kitchenette
 - Storage
 - Electric room
- General offices
- HR, Finance & Manager offices
- Boardroom

3. Public Ablutions

- 4. Giftshop
 - Storage
 - Ablution
 - Manager office

5. Educational Carpentry

- Timber storage
- Ablutions
- Office
- Exhibition storage

6. Staff facilities

- Timber storage
- Furniture storage
- Kitchenette
- Ablution
- Store room
- Office
- Locker
- Shower

7. Staff facilities

- Kitchenette
- Office
- Storage
- Ablutions

8. Cafe

- Kitchen
- Cold storage
- Dry storage
- Order counter

9. Staff facilities

- Check in counter
- Lounge
- Kitchenette
- Sawdust storage
- Generator room
- Office
- Ablutions
- Lockers
- Showers

10. Delivery yard

11. Timber storage

12. Cut timber to size

13. Machine area

14. Machine area

15. Sanding area

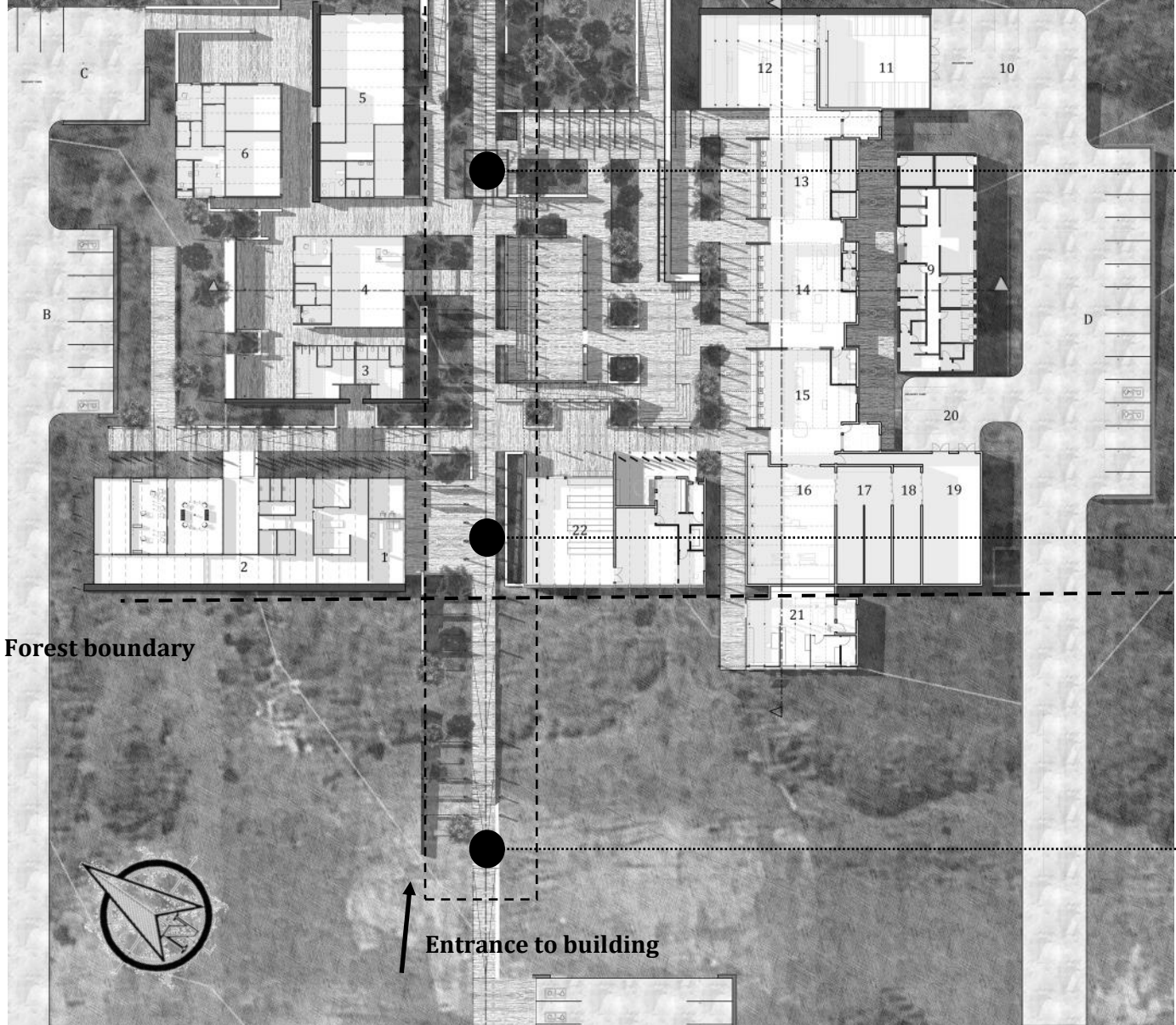
16. Assembly area

17. Spray paint area

18. Dry area

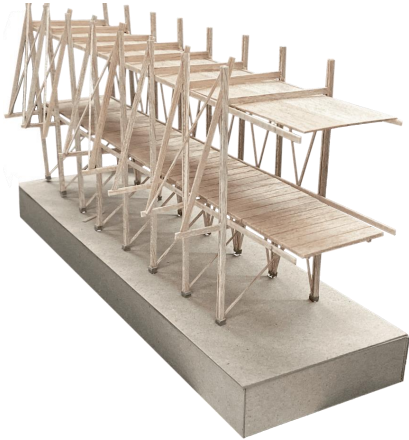
19. Storage

20. Pick-up yard





Final destination



Elephant haven



Entrance to forest

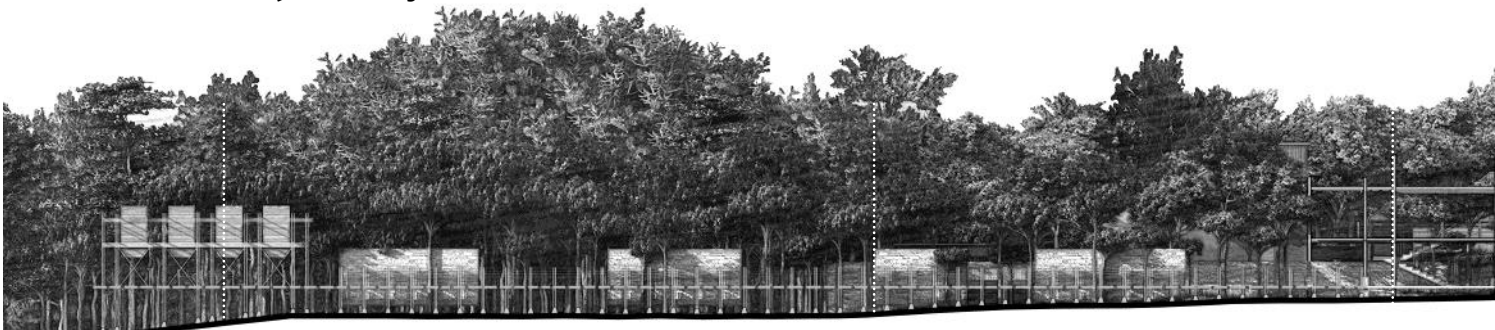


The woodcutters





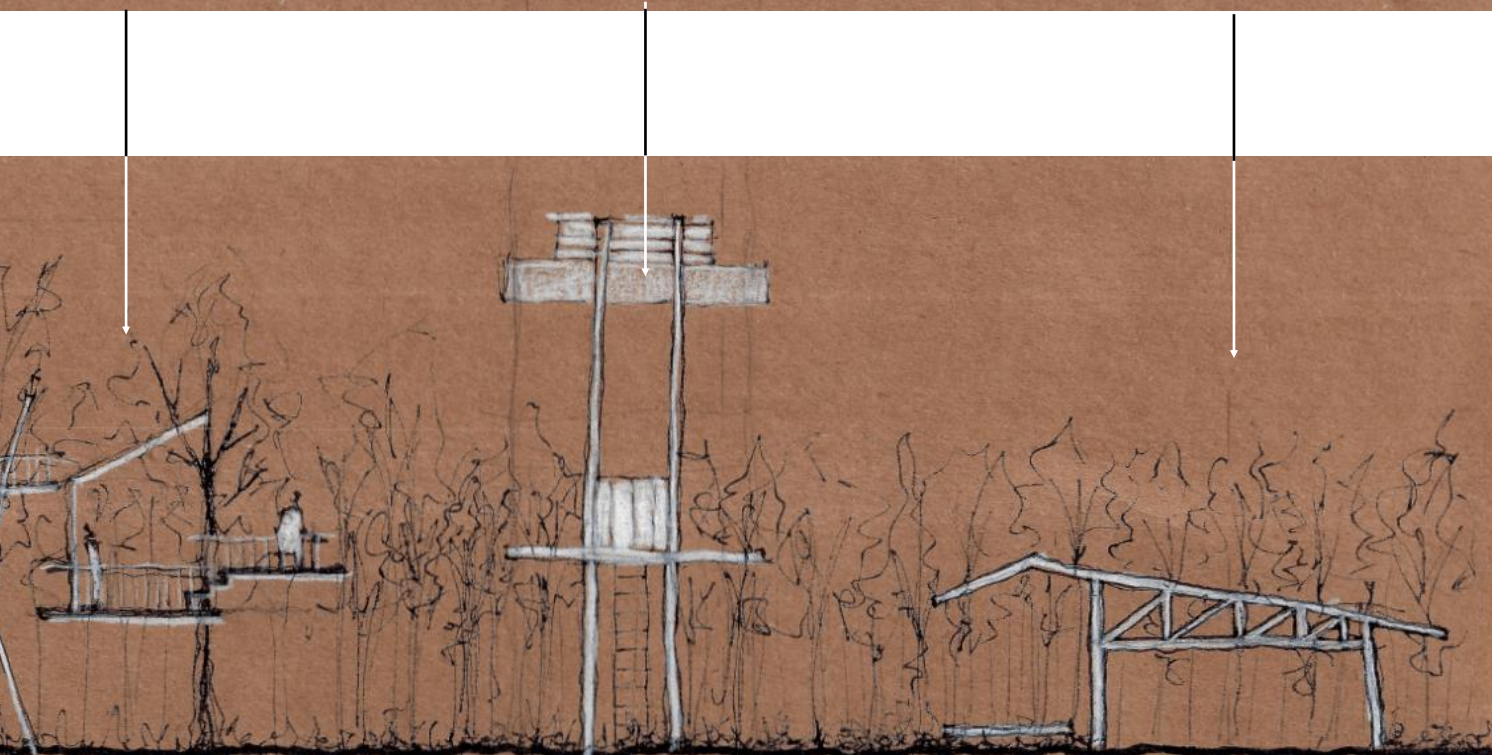
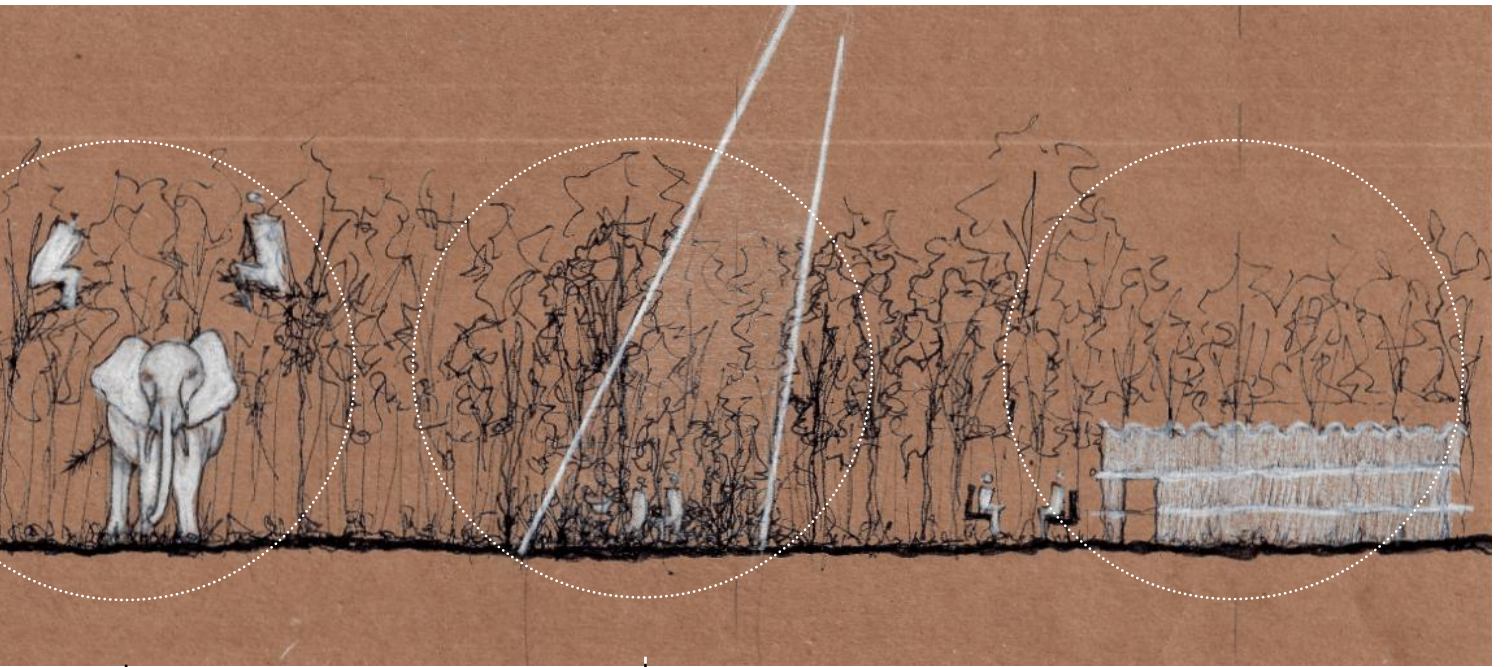
Architectural journey



Final pavilion

Stone walls with stories

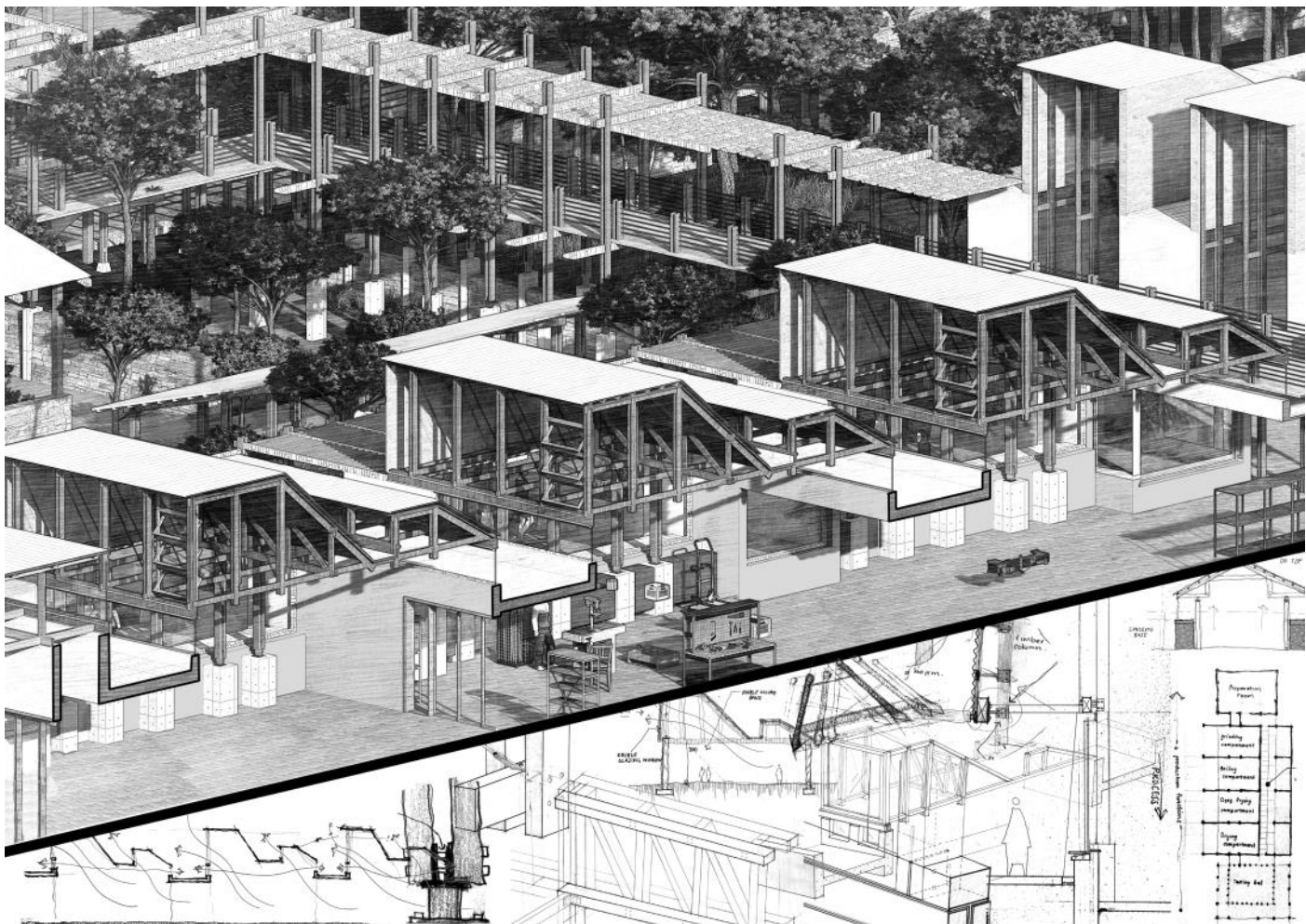
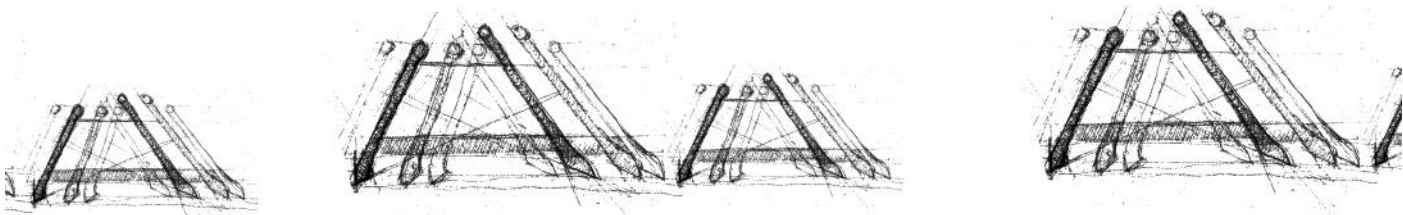
Tower & bridge



ge

Canopy pavilion

Entrance







View from under bridge to courtyard



Educational carpentry



View bridge to courtyard



Walkway connecting carpentry factory

Technical report

Introduction

Site & Environment

- Vegetation & Climatic conditions
 - Context accessibility
 - Site accessibility & parking
 - Public, private & semi private

Theoretical construction framework

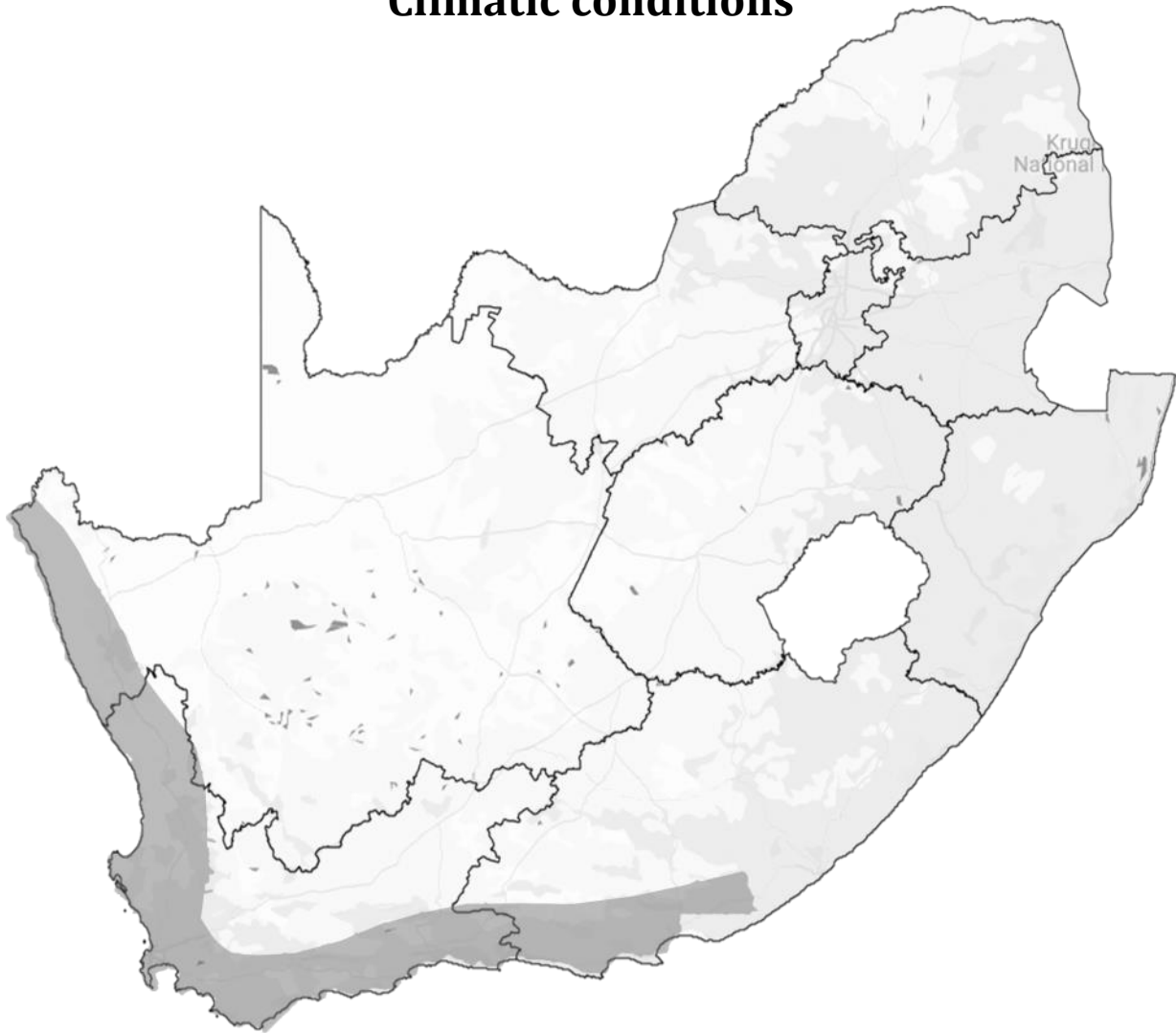
— Touchstone

— Joints

Structural systems of factory

- Factory process
- Factory structural system
 - Materiality

Climatic conditions



3.3 Climatic conditions

Knysna, Knysna municipality

Macro analysis

General description

Temperate coastal

Oceanic (marine) climate

Summer

Average high temperatures

Warm to hot summers with average humidity and strong winds (Weather Atlas, 2023:

Winter

Mild temperatures with medium to high humidity

Rainfall

Rainfall volume presents a diverse spectrum.

Constant rainfall in winter

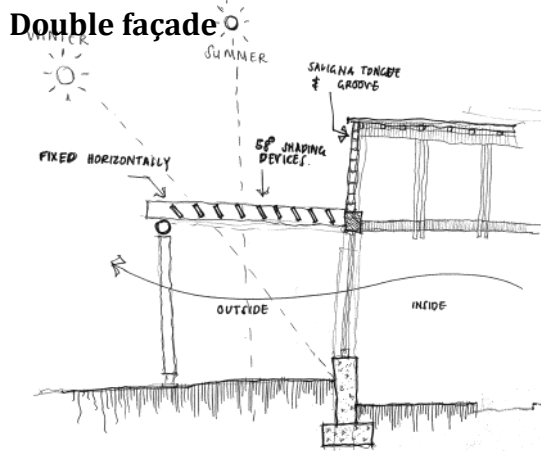
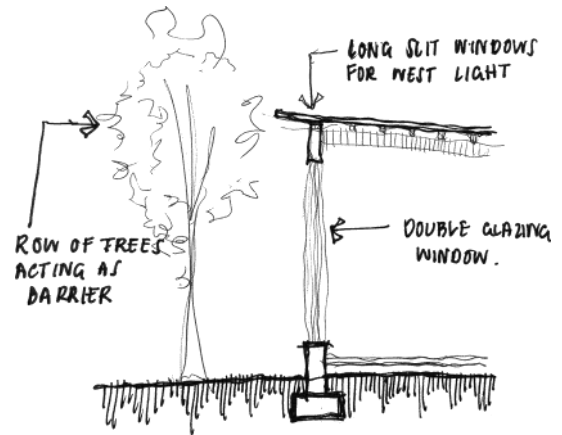
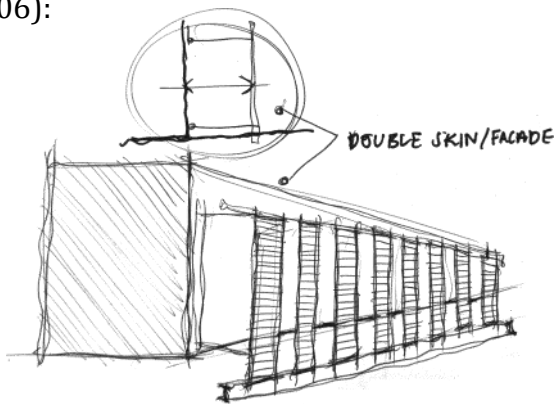
Rain in summer possible

Passive design strategy

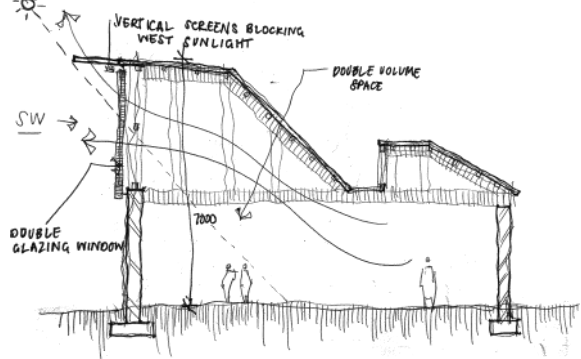
The following section explores passive design strategies to create comfortable area for visitors and staff.

The following design principles are the best design responses for a temperate coastal area according to (Schmidt, 2013: 106):

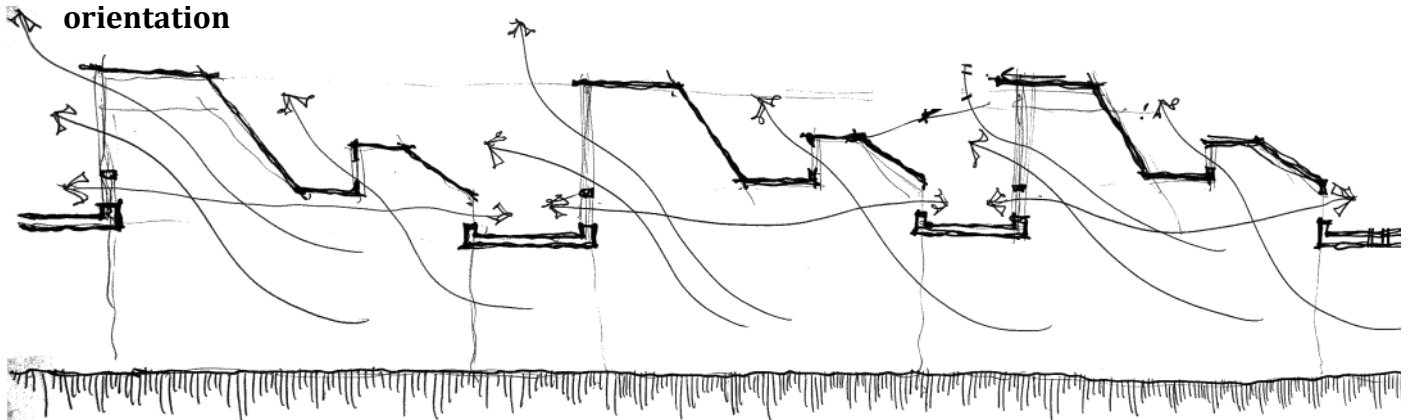
- Use passive solar principles
- Use high insulation levels
- Maximise solar access in winter
- Minimise all east & west glazing
- Use double glazing to insulate windows
- Minimise east & west walls
- Use cross ventilation in summer



Double glazing & low window-to-wall area

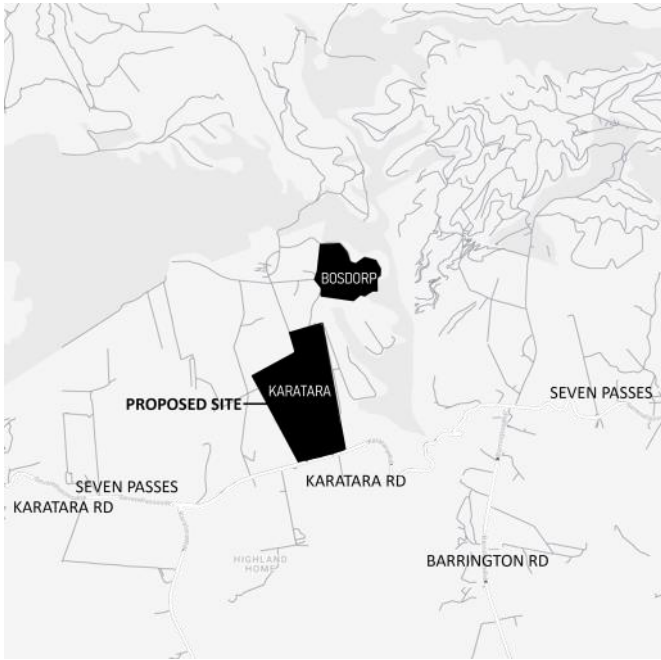


Horizontal louvres for northern orientation



Double glazing window

Context



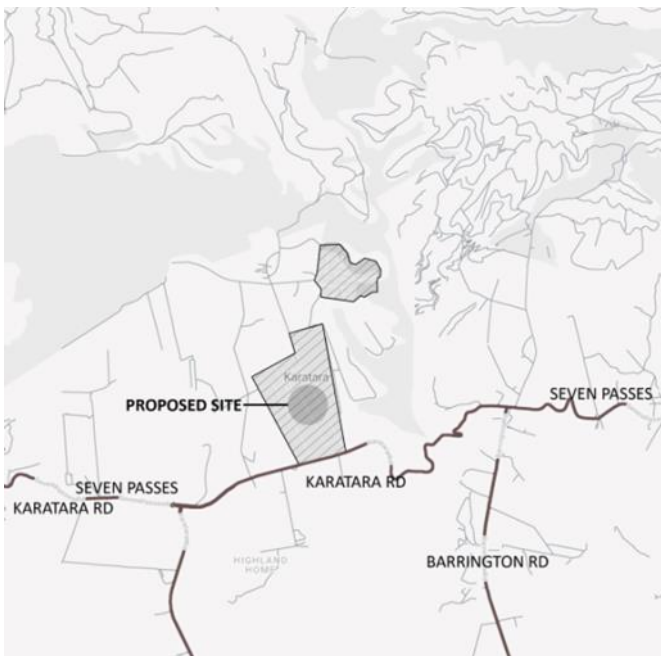
Karatara and Bosbou settlement

The area is made up of Karatara Welfare Settlement and Bosdorp.



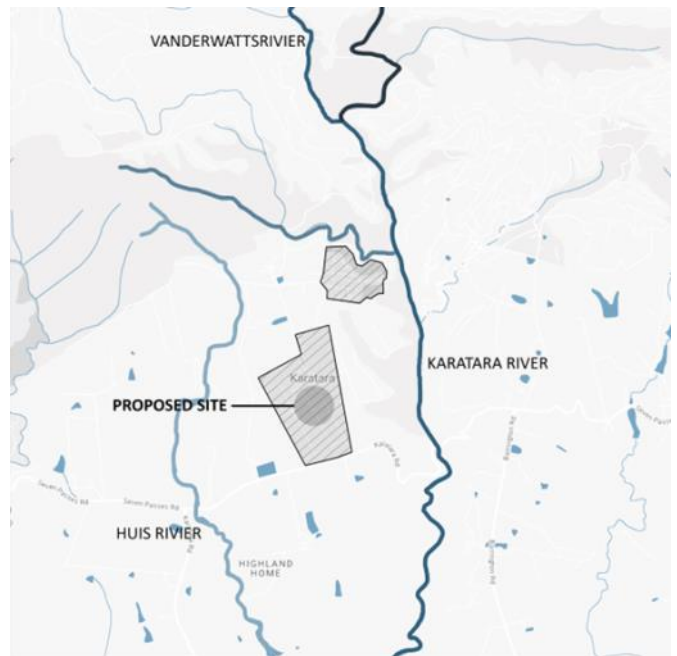
Vegetation

Karatara is located in-between a forest. Making Karatara the center of a forest glade. In these forests, there were some woodcutters who cut wood close to this area.



Main roads

There is only one main road that moves against Karatara, 'Karatara Road'. This road is also part of the Seven Passes Road (Karatara Pass). Karatara can be entered from Segdefield or Knysna's side.



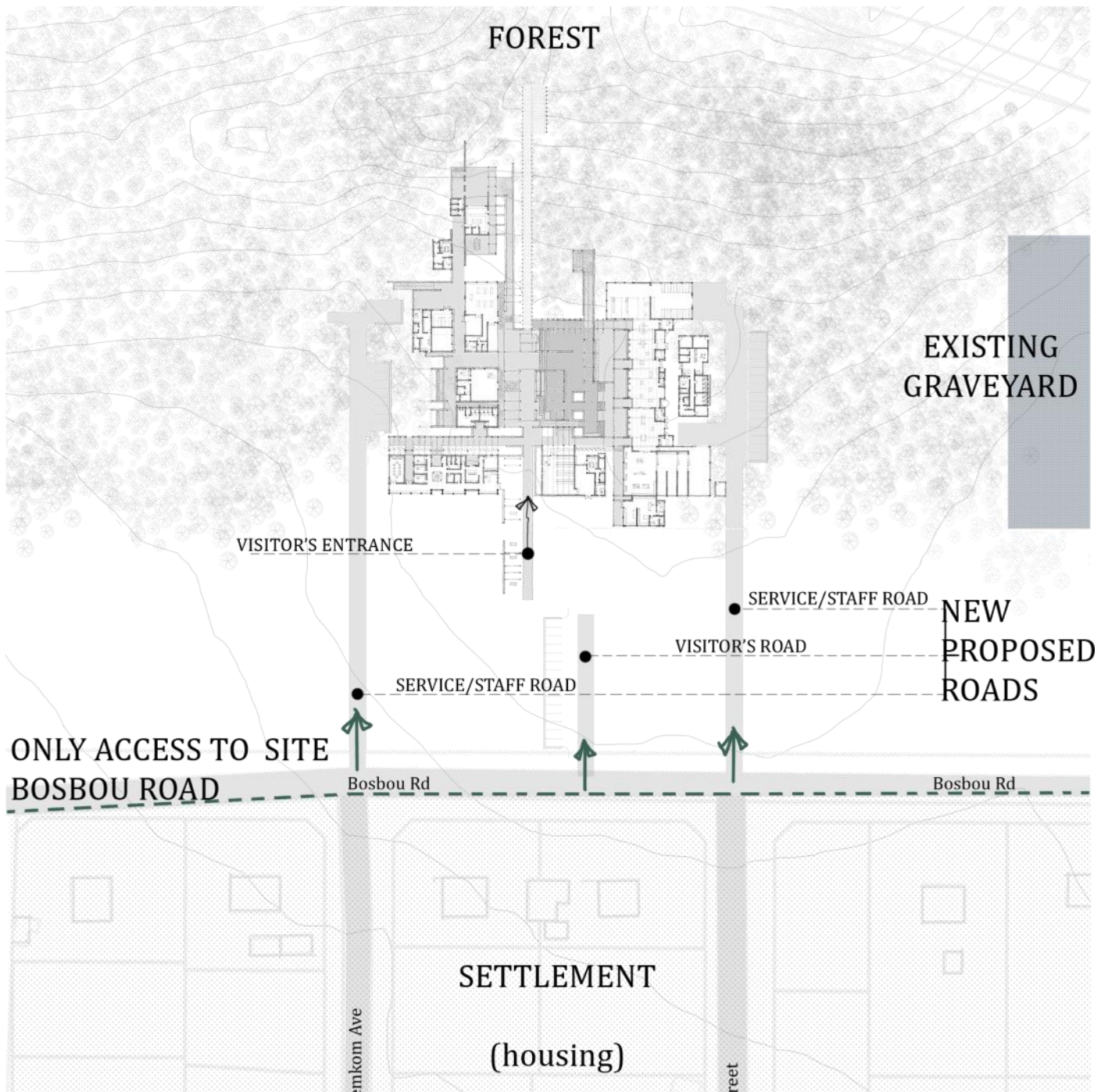
Rivers

Karatara got its name from the Karatara River that runs close by (P. Caveney, Karatara; 2016).

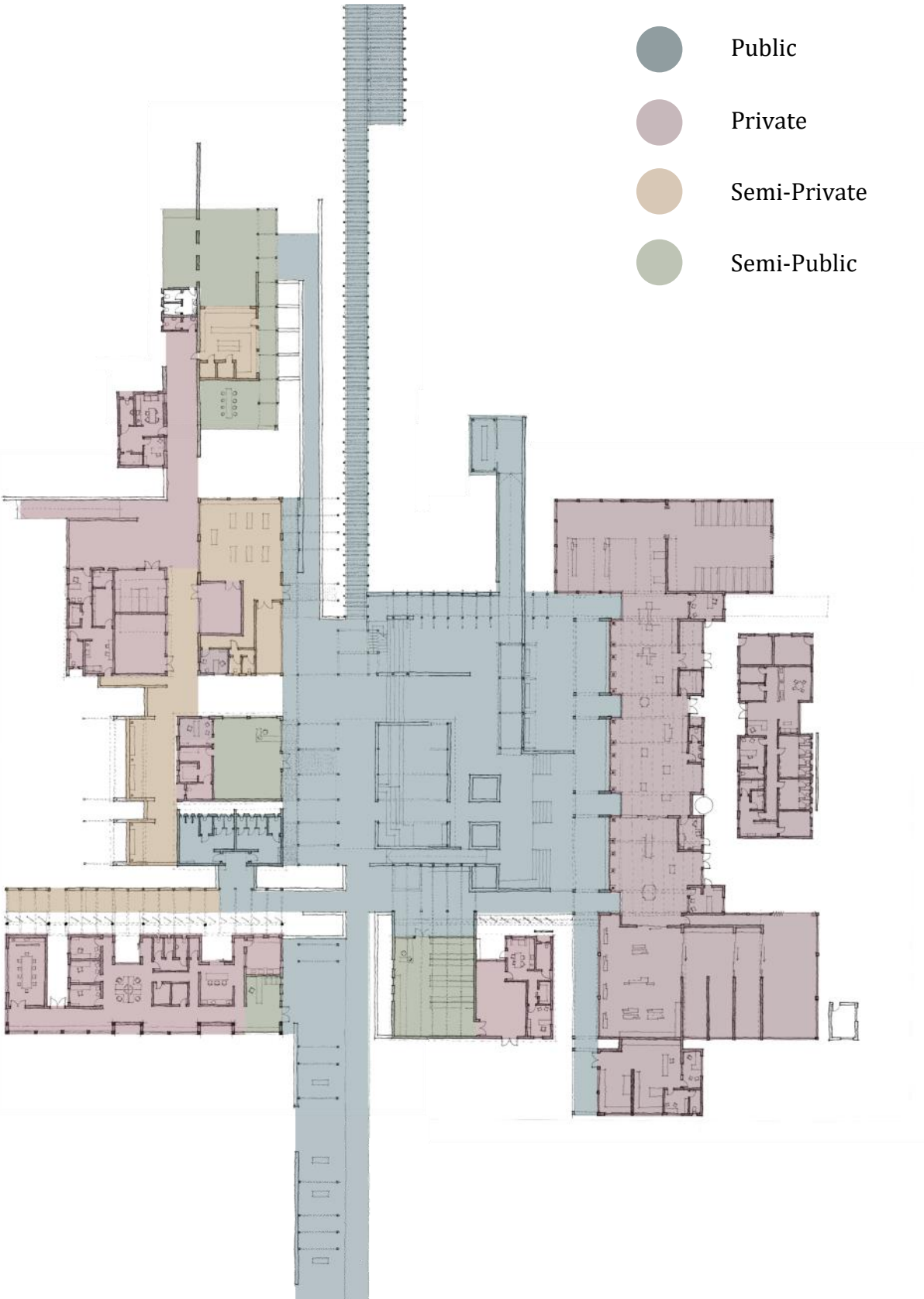
Site accessibility

The site is only accessible from Bosbou Road, which runs parallel to a forest. Three proposed roads have been designed to accommodate for services, staff and visitors.

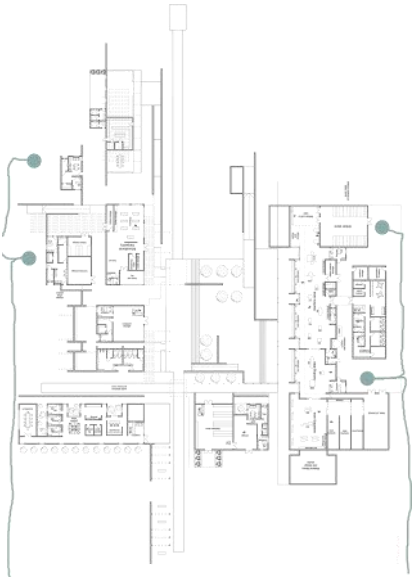
The service and staff parking are located on the outside of the design while the visitors parking is located in the centre. The service/staff roads include a security gate which regulates people coming in and out of the building.



Public/semi public private



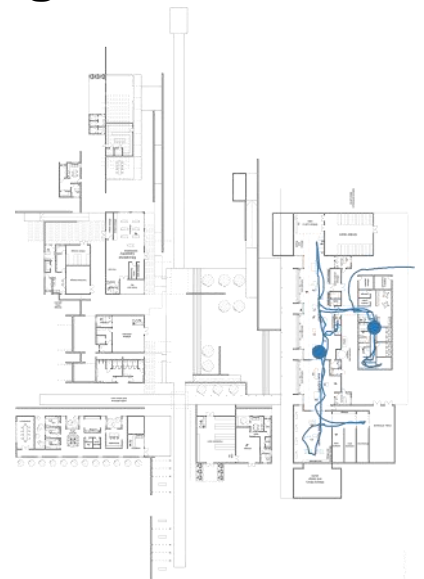
Circulation within the building



Deliveries



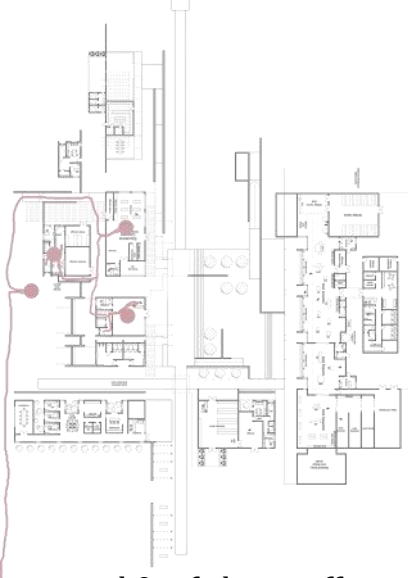
Hardware shop visitors



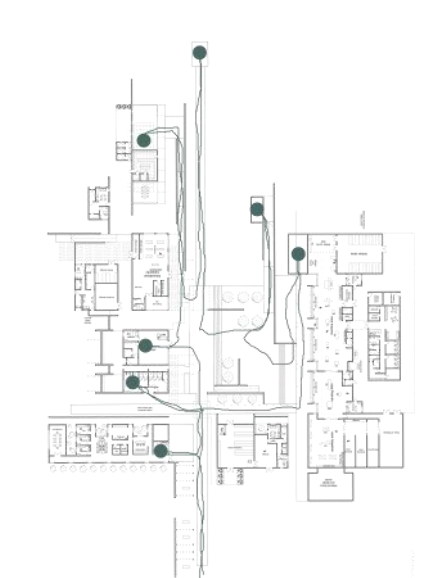
Factory staff



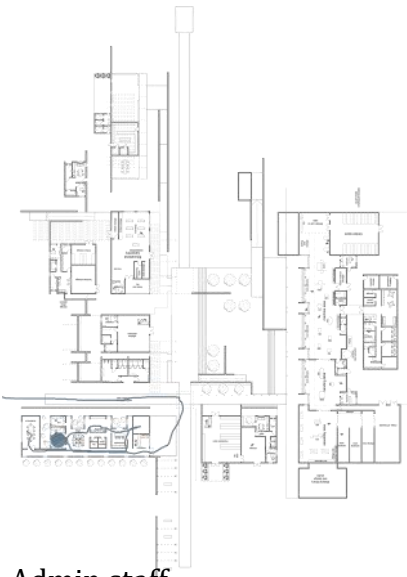
Café staff



Educational & giftshop staff



Visitors (public)



Admin staff



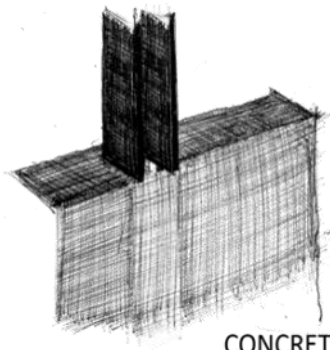
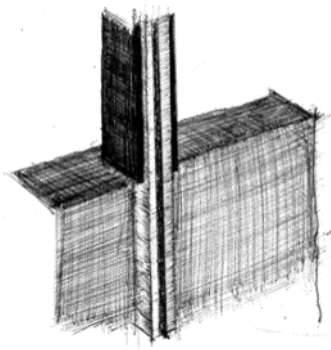
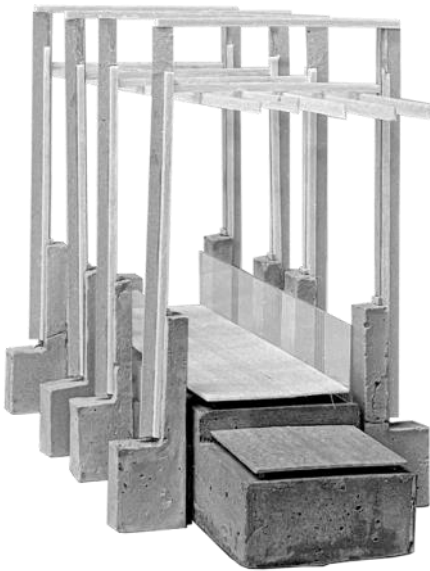
Educational carpentry visitors

Theoretical construction framework

Touchstone

The structural composition of the design consist of hybrid timber construction systems.

A heavy base is created and a light timber rests on this. A concrete base is used with a steel and timber infill column supporting a light timber louvre.



CONCRETE



TIMBER

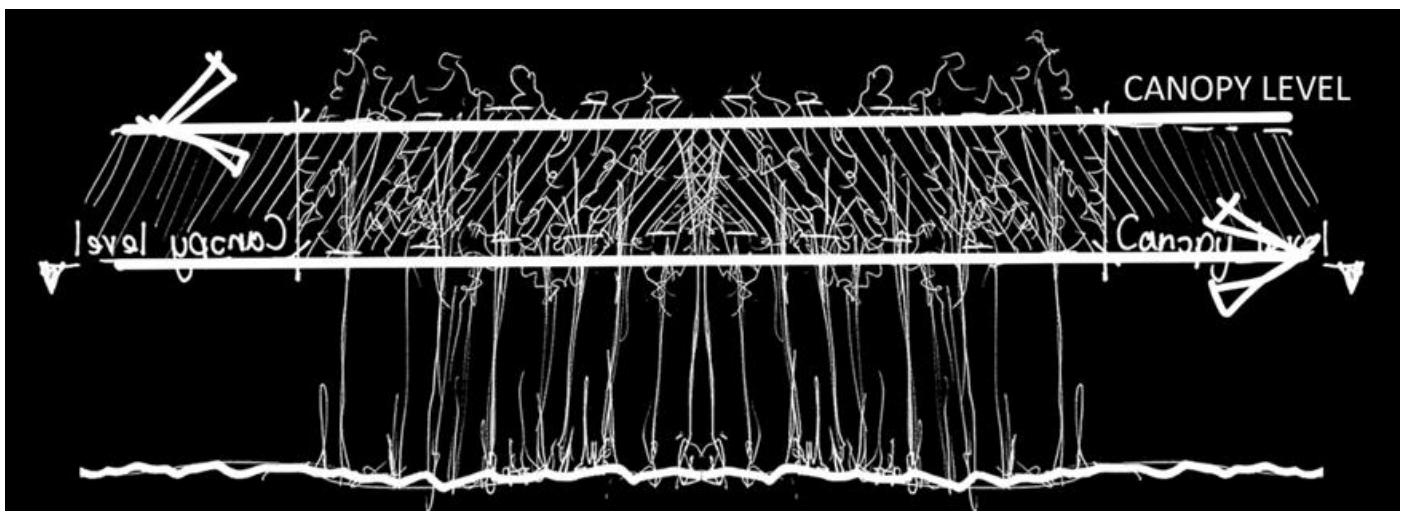
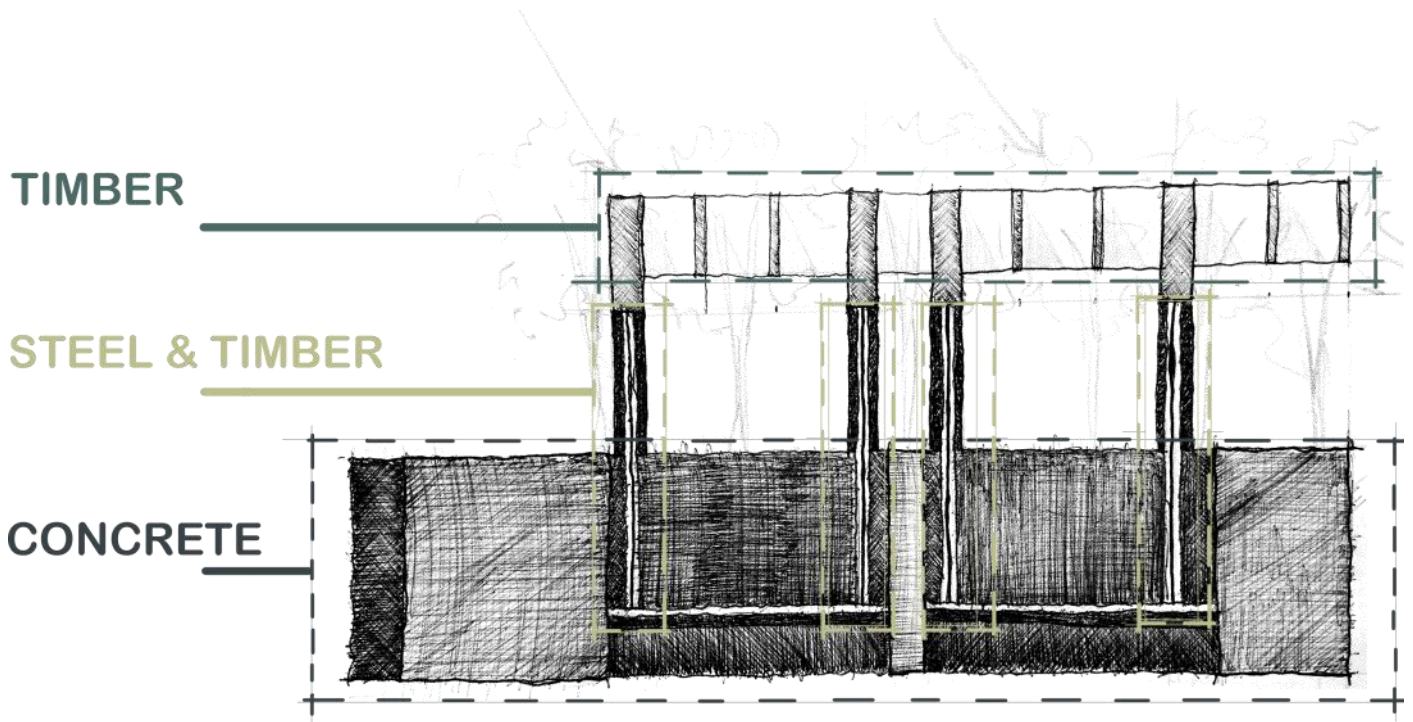


STEEL

Touchstone

The construction touchstone includes a theoretical aspect, as the theory, design and construction are interconnected. The model illustrates how the timber and steel columns imitate the repetition of trees in a forest. The light timber waffle louvre emulate the canopy level in a forest allowing light to filter through.

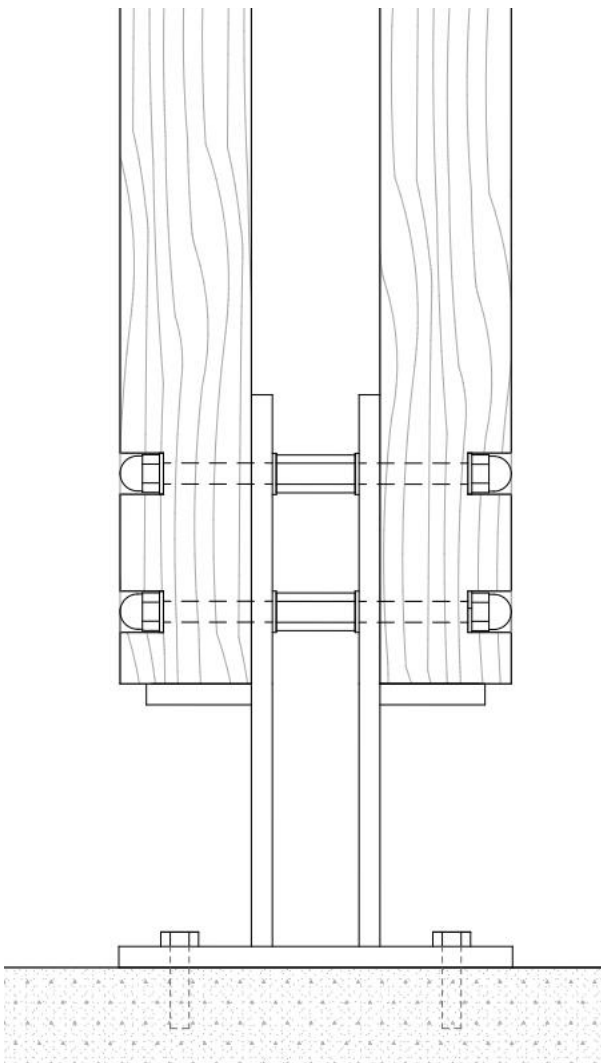
The construction of the building will be an exploration of different ways to construct and combine different elements and how these materials are connected. Joinery becomes very important.



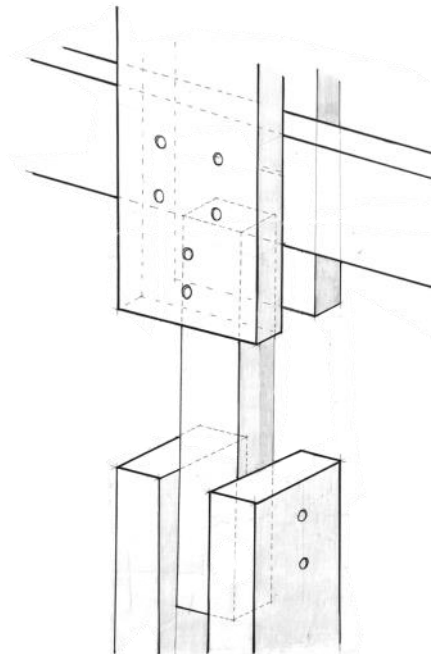
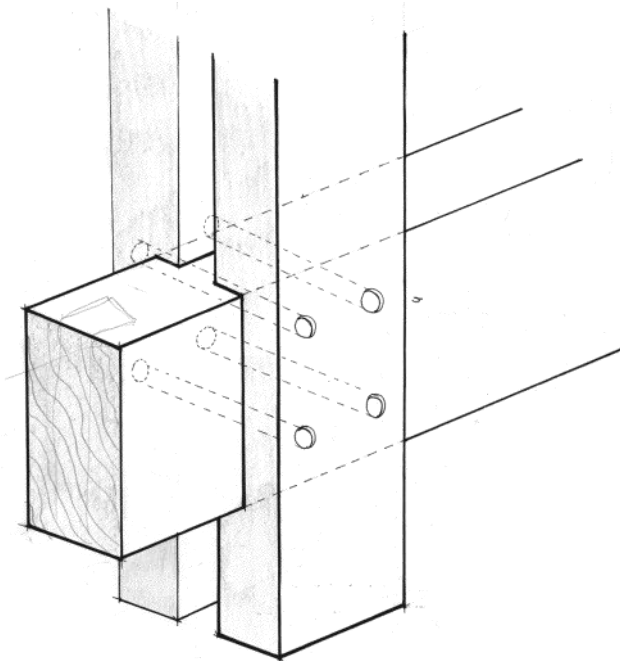
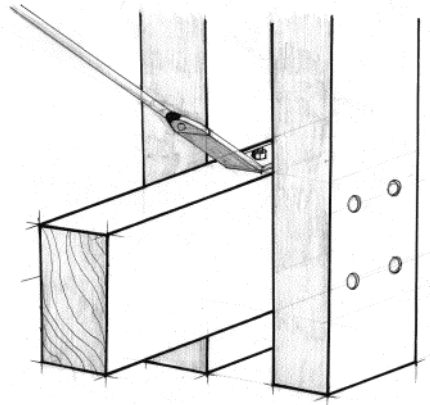
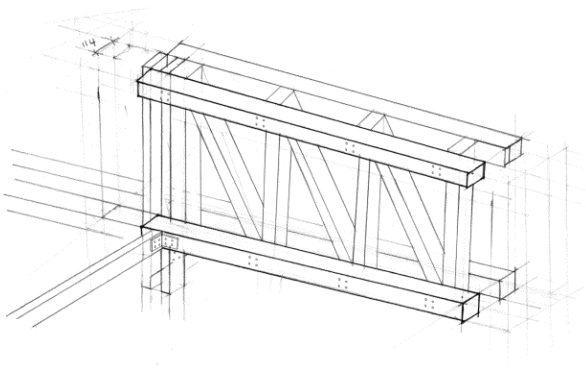
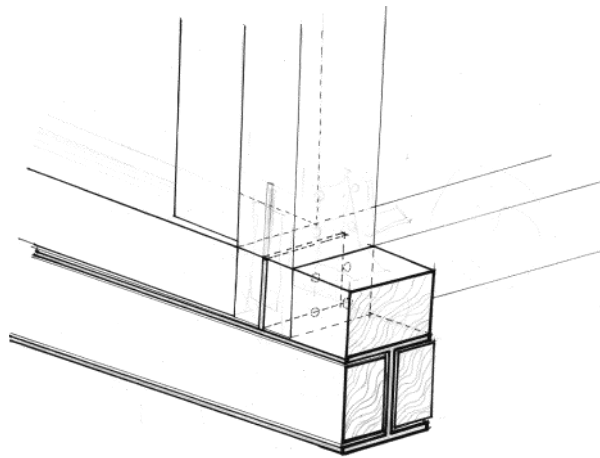
Joinery

As stated before, the design, construction and theory are very much intertwined. A method to regulate and organize which connections can be utilized can be implemented with the assistance of the theoretical approach. To remember the history woodcutters and bring out these stories.

The image depicts an axe moving through a tree stump. This image is translated into a column connection. Four coupling nuts hold together two wooden panels which are fixed to flat mild steel bars. A wedge effect is created between the wooden columns.



Joinery explorations





Precedent study

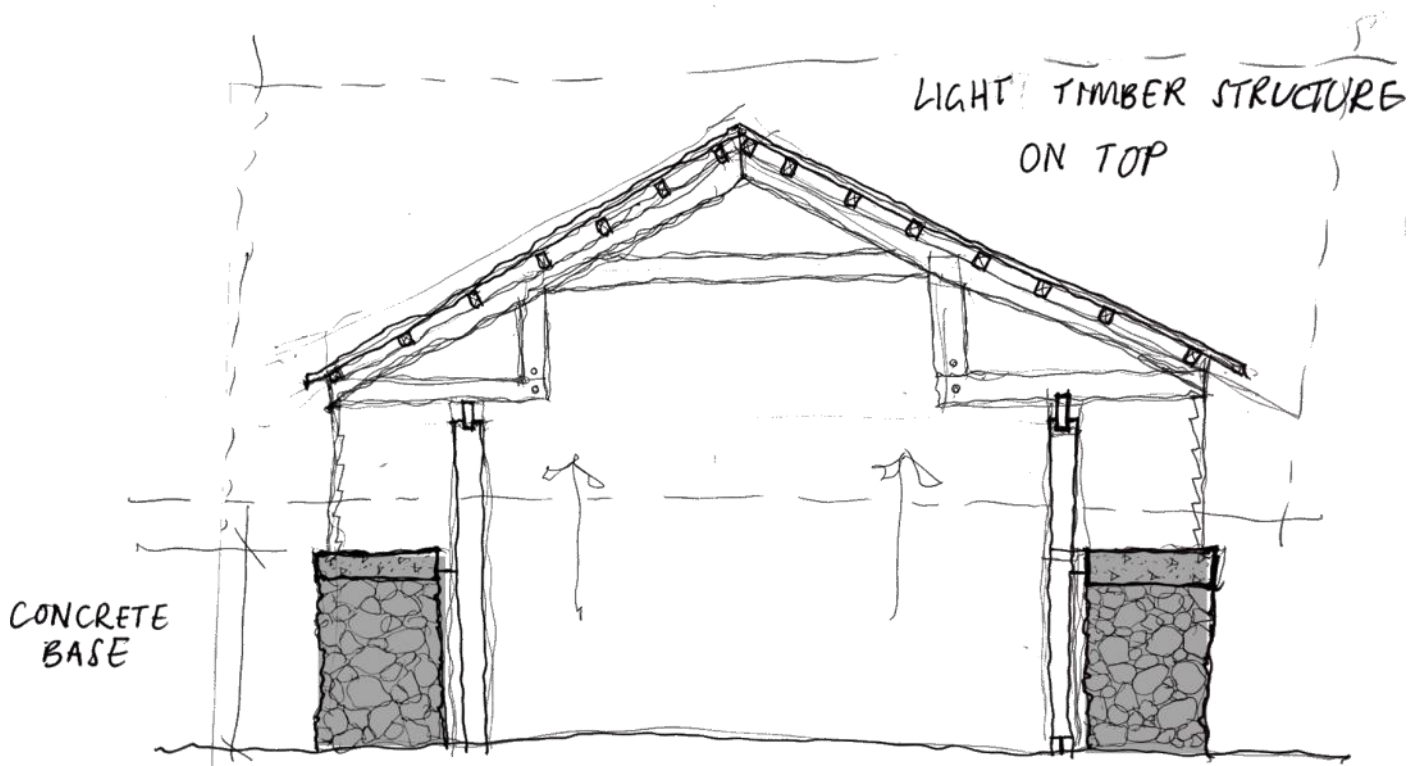
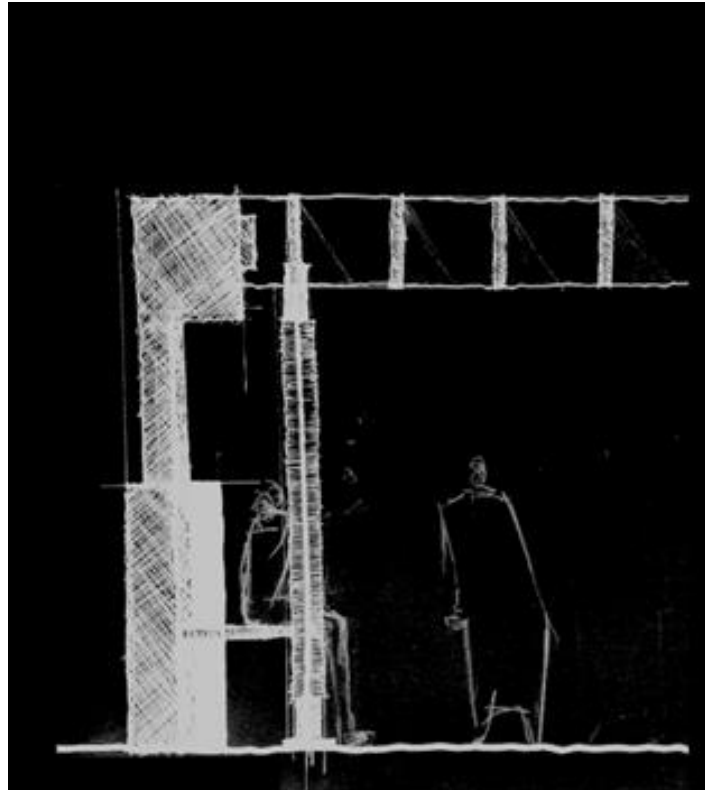
Cathedral Museum | Sverre Fehn

Location: Hamar, Norway

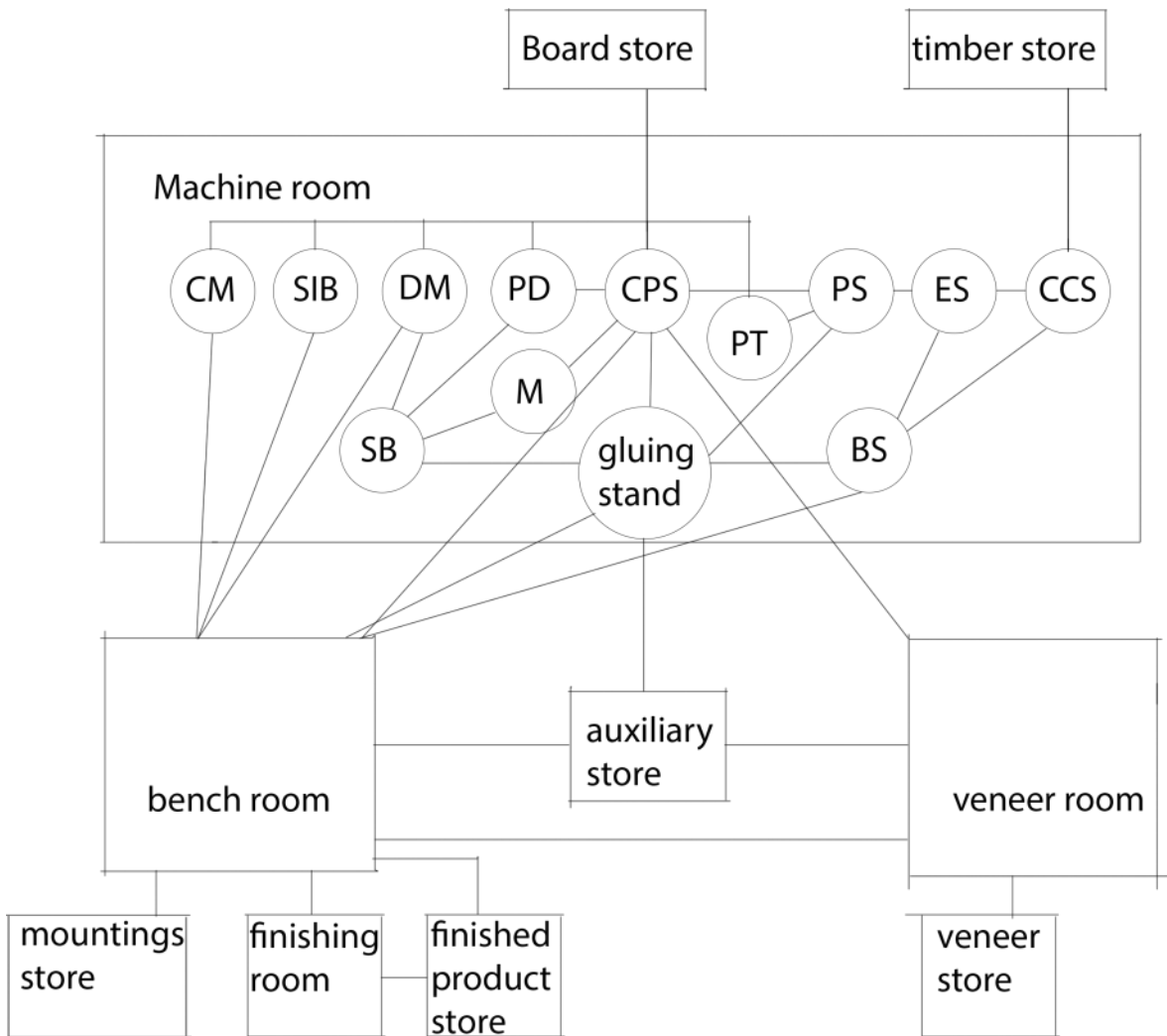
Project year - 2019

The project involves the revitalization of a historical vernacular architectural structure in Scandinavia with the aim of showcasing and elucidating both the building's ruins and the Hedmark Cathedral. The architectural approach centers on juxtaposing the new construction atop the remnants of a sizable house and an adjoining barn.

This juxtaposition can be used in the timber factory where a heavy base is needed and a light timber structure can be placed onto this base.



Typical carpentry factory process



CM chain machine

SIB slot boring

DM dovetailing/
mortising

PD pin drill

CPS circular panel saw

PT thickness planer

PS surface planning

ES edging circular
saw

CCS cross-cut saw

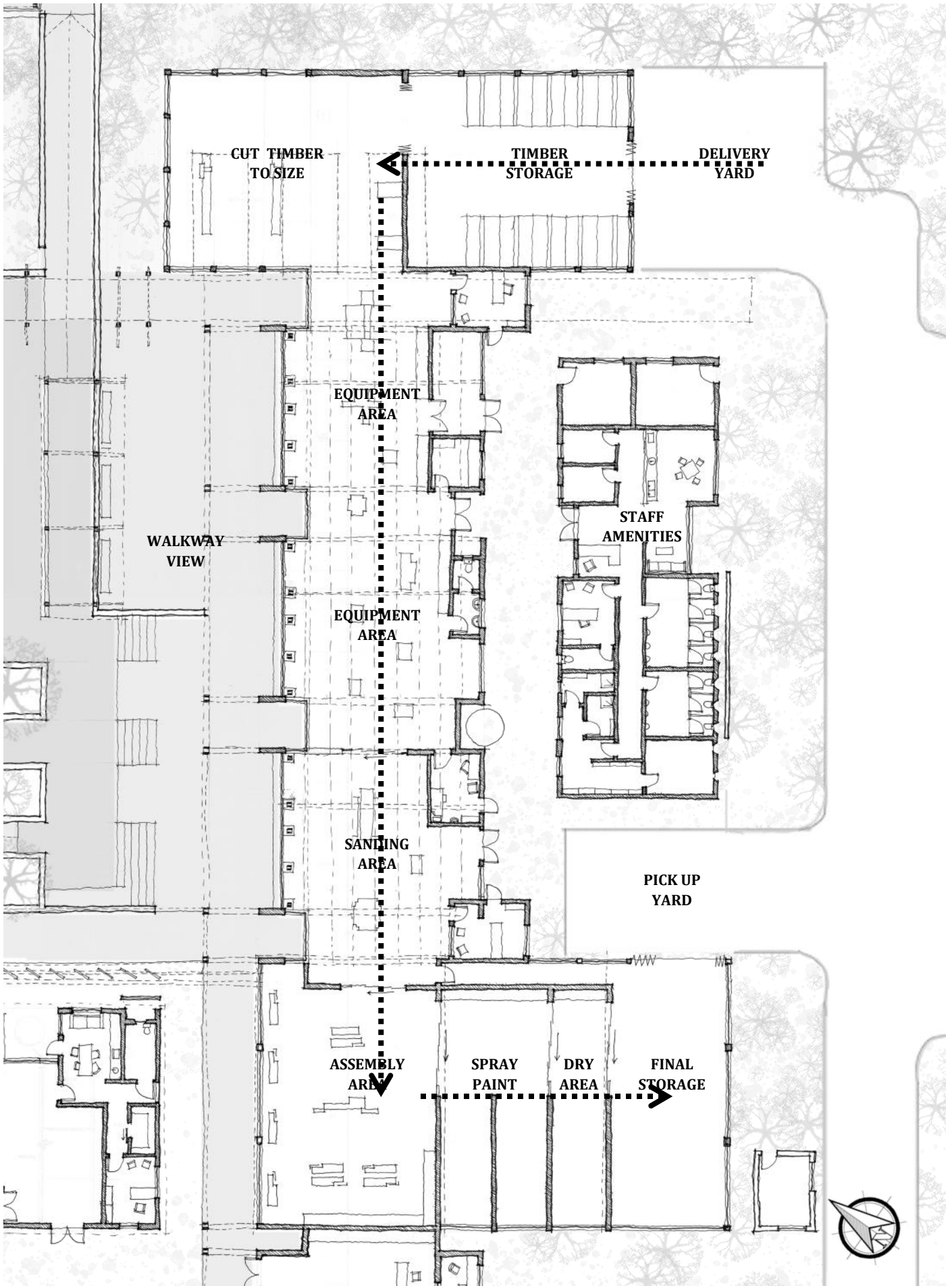
M milling machine

SB belt sander

BS band saw

A typical carpentry factory would need a timber storage area, machine room, bench room and a finishing room. The bench room should not only have enough space for the workers but also enough space where items can be assembled.

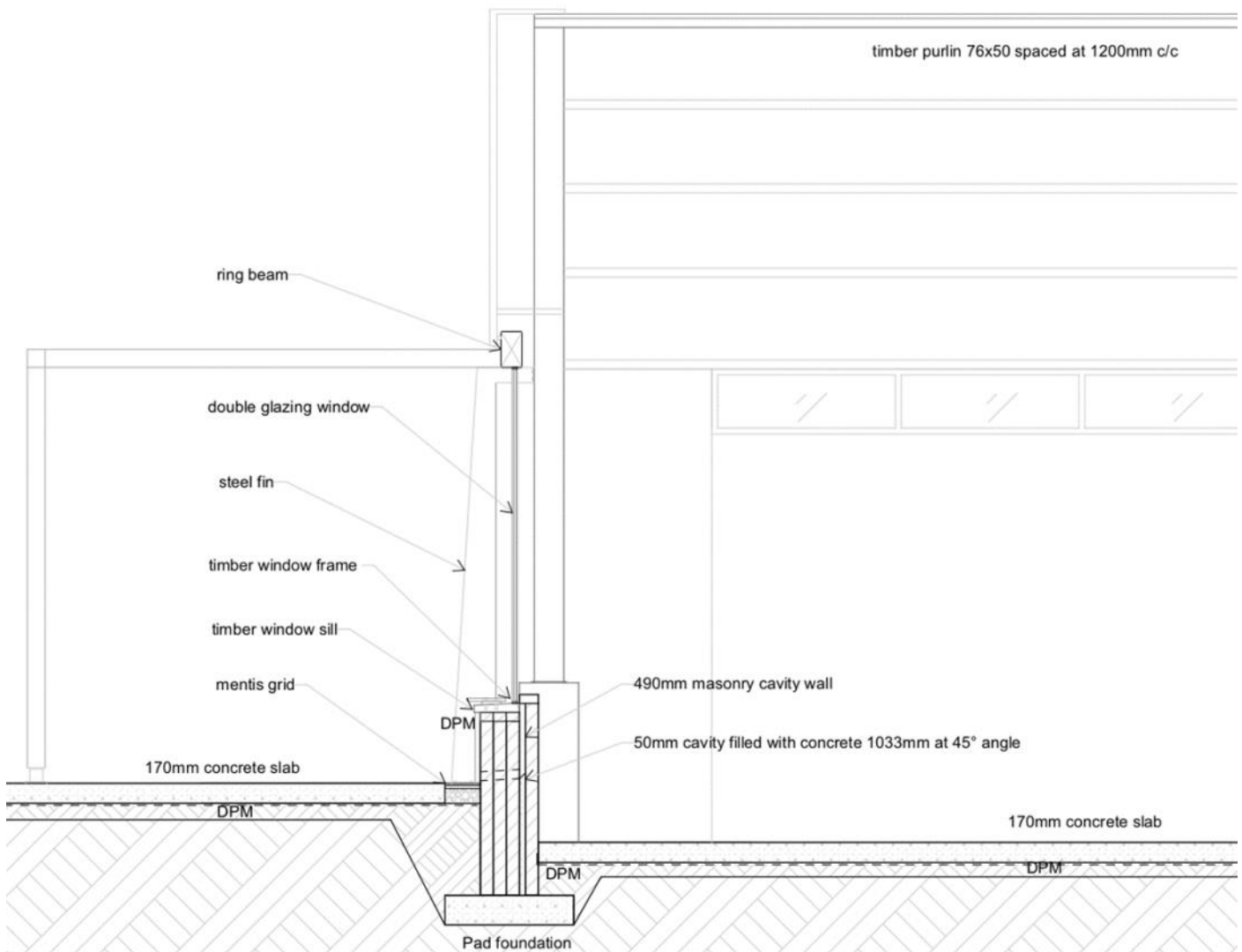
The carpentry factory employs a sequential approach in crafting window and door sills, ensuring an organized and efficient workflow, with the majority of services taking place on the southern side.



Factory structural system

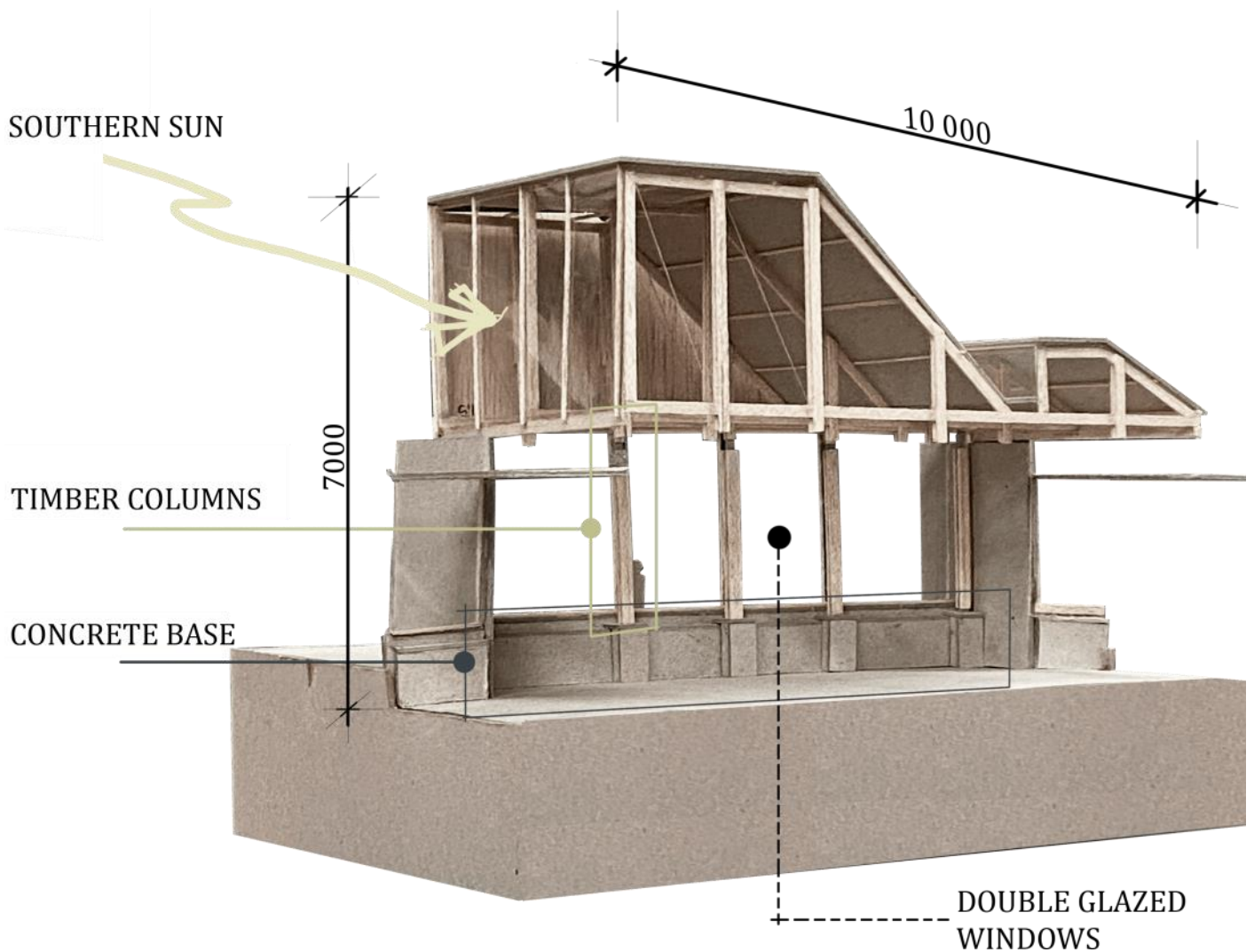
The site is located in a forest, so the structure makes use of pad foundation. Pad foundation allows for less excavation around the site, which would lessen the impact of construction in the surrounding. The structure consists of a 490mm cavity wall which pushes out towards the outside to allow for public seating for visitors that explore the factory. The factory is also lowered 500mm which allows visitors to have a better view into the factory.

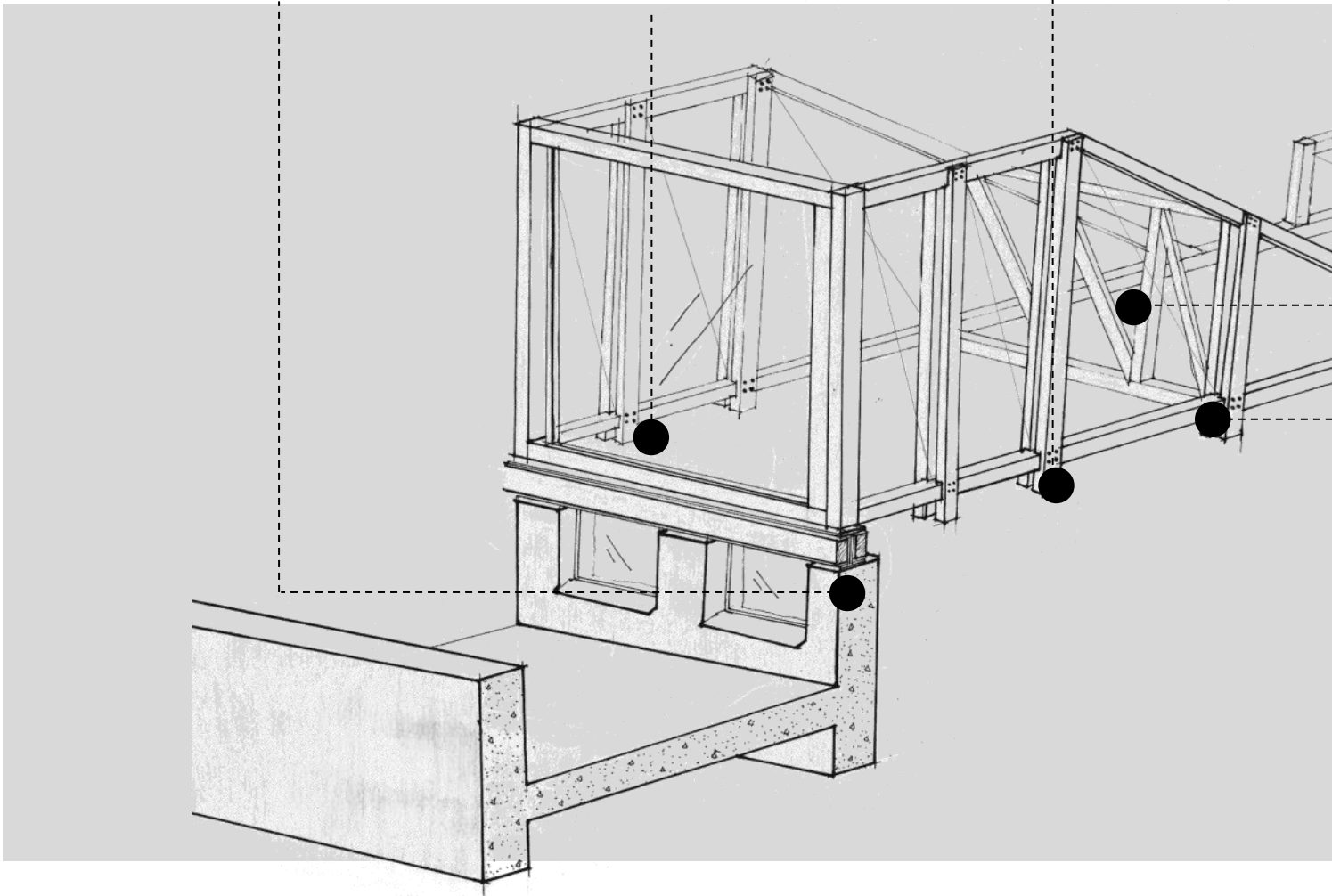
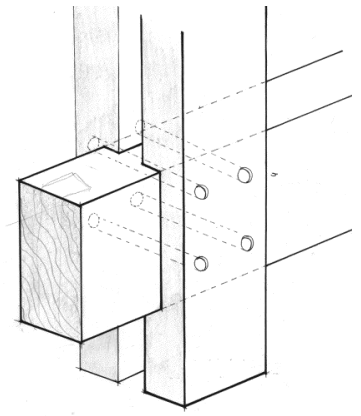
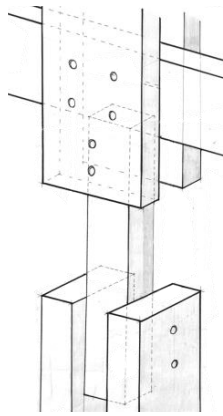
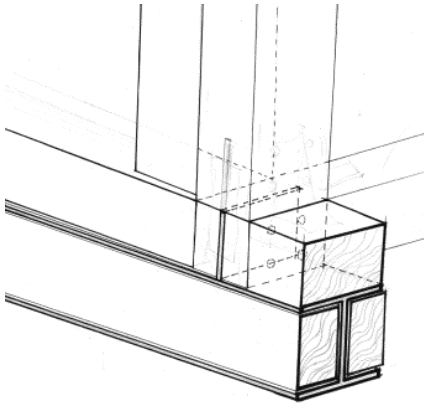
There is also no access from the visitor's side to prevent any dangerous exposure to any equipment. The building's façade is separate from the structural columns but connect with joints. The structural timber columns rests on a concrete base which is 1.5m high to avoid any damage to the timber. To assist temperature control double glazed windows are used. A laminated beam is fixed to the structural timber column and supports the louvres and timber screen.

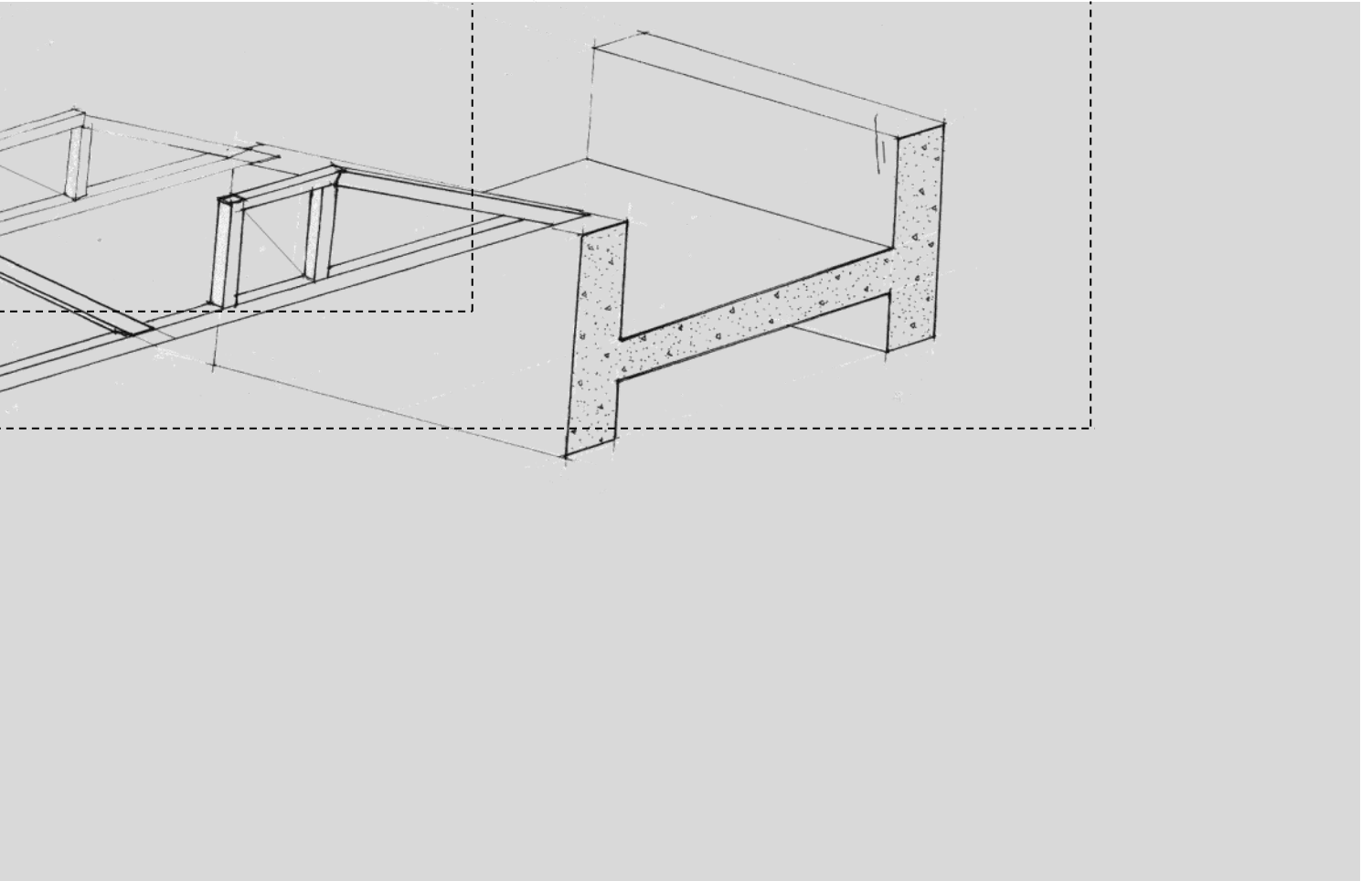
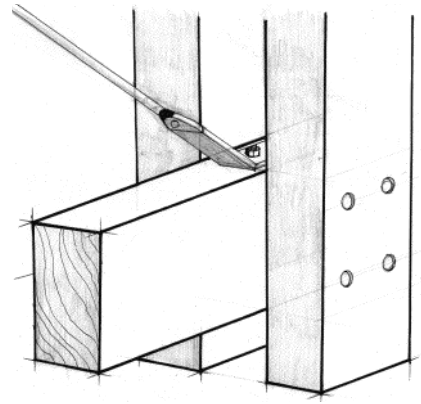
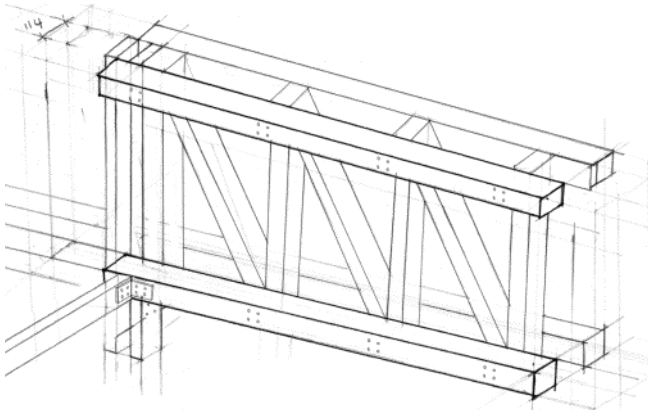


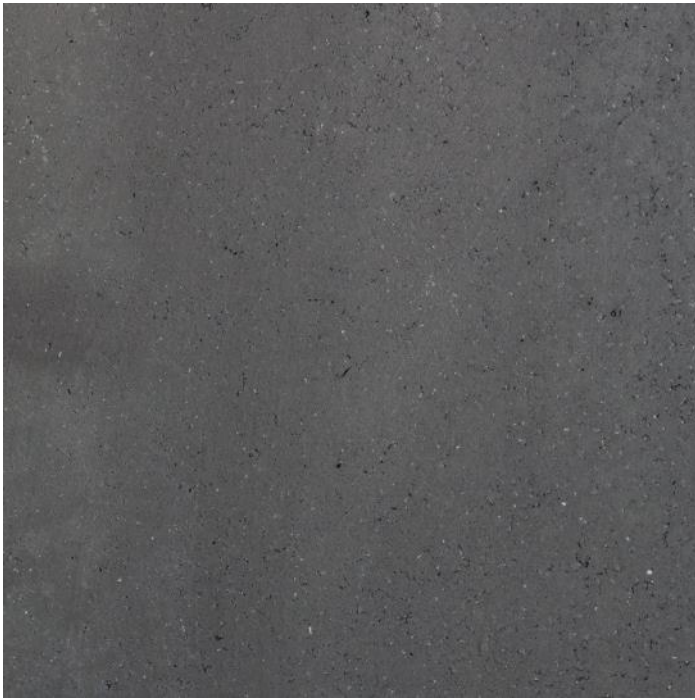
The large windows of the factory faces south-west, allowing for proper lighting. Double glazed windows provide insulation for the building assisting to regulate the temperature of the building.

Big windows—allow for natural sunlight, lessening the need for artificial heating, while shading devices can assist the need for cooling devices.









Terrazzo tiles

Terrazzo is a composite material employed for floor and wall treatments, available in both poured in place or precast forms. Its remarkable durability, attributed to the inclusion of marble and granite stones, grants it exceptional resistance to abrasion, shock, and



Saligna wood

Saligna gum, a hardwood renowned for its numerous advantageous attributes, proves to be an excellent selection for various purposes owing to its exceptional durability. While its origin lies in Australia, South Africa hosts extensive plantations of saligna gum, making it a suitable choice for a wide range of indoor and outdoor applications as it has become a native timber in this region.



Mixed stone strip wall

Slate strip walling has a fine & linear design and it retains its natural appearance once it's cut. It is a very low maintenance product, commonly used in landscaping.

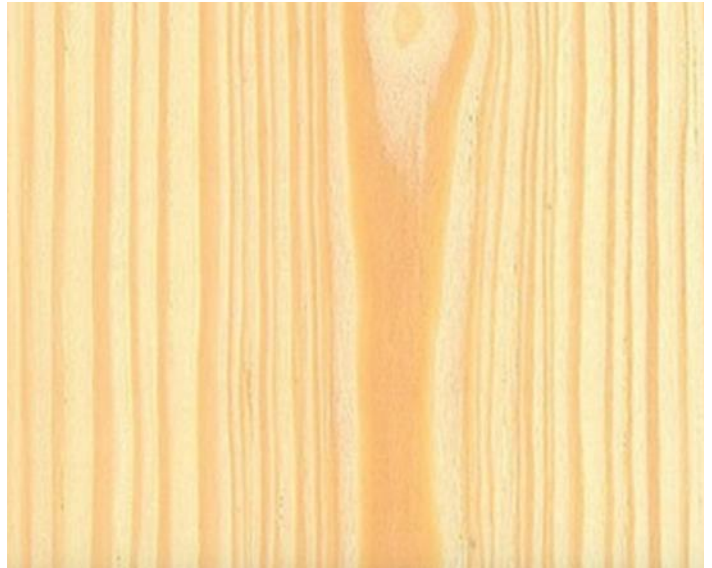
Used for: landscaping walls.

Materiality

South Africa Pine Wood

Pine is a common softwood, but offers plenty of strength and durability, making it a popular timber used worldwide.

While pine wood is not indigenous to our country, it has grown in plantations all around South Africa and has become one of the most cost-effective timber choices on the market. It remains a popular choice due to its versatility in manufacturing.



Meranti wood

This is often used to create plywood to increase its strength. The stunning colour it shares after staining, and finishing makes it a popular choice for furniture, general construction, and flooring.

Used for: Window & door sills.



Meranti tongue and groove

Used for: outdoor cladding.



Final Conclusion

How can the creation of a Carpentry centre in Karatara be approached through the lens of recalling memories, archetypal references, and their integration within the existing community?

The grounding essay offers a brief historical overview of the Knysna woodcutters and delves into the significance of memory within architectural design. Following this foundation, the subsequent "three experiments" sought to identify the most suitable location with respect to the timber industry's historical context.

"Experiment 1" established that Knysna was not the ideal location, as it had already evolved into a bustling tourist destination. The conceptual framework underscored the value of incorporating the woodcutters' narratives into architectural design.

Following Experiment 1, Karatara emerged as a promising alternative, setting the stage for "Experiment 2." This phase emphasized the importance of addressing the community's needs within the settlement. It also led to a strategic shift from maintaining both a carpentry and timber factory to focusing solely on a Carpentry Center, given the limited number of capable residents available for both operations.

"Experiment 3," which represents the final project, serves as a synthesis of the preceding experiments. It identified a unique location in dire need of intervention and crafted appropriated conceptual ideas rooted in memory.

The architecture is rooted in a deeper understanding of Karatara which was achieved through this research and experimentation approach.

Final Reflection

Since my early days of Architecture, I remember having multiple drawings and models in the initial stages of design. I always felt that my ideas weren't that good and then suddenly I would arrive at a beautiful model and I was satisfied. But then in 4th year I learned the power of process work. It is not just the final product which is important but also everything that led up to that point.

A quote from the 4th year mini-thesis in my own words; "The result could not have been achieved if it was not for the parts. This does not discredit all of the components used to create the finished product nor does it praise the mass for its aesthetic assemblage but instead praises the whole by virtue of its parts."

This led me to appreciate and celebrate the process and not to disregard it too quickly which led me to my experimental approach in 5th year. Initially I did not realize that I was experimenting until I was almost done. When my supervisor, Orepa Mosidi, helped me realize this, I made it the theme for this thesis.

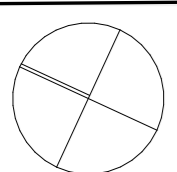
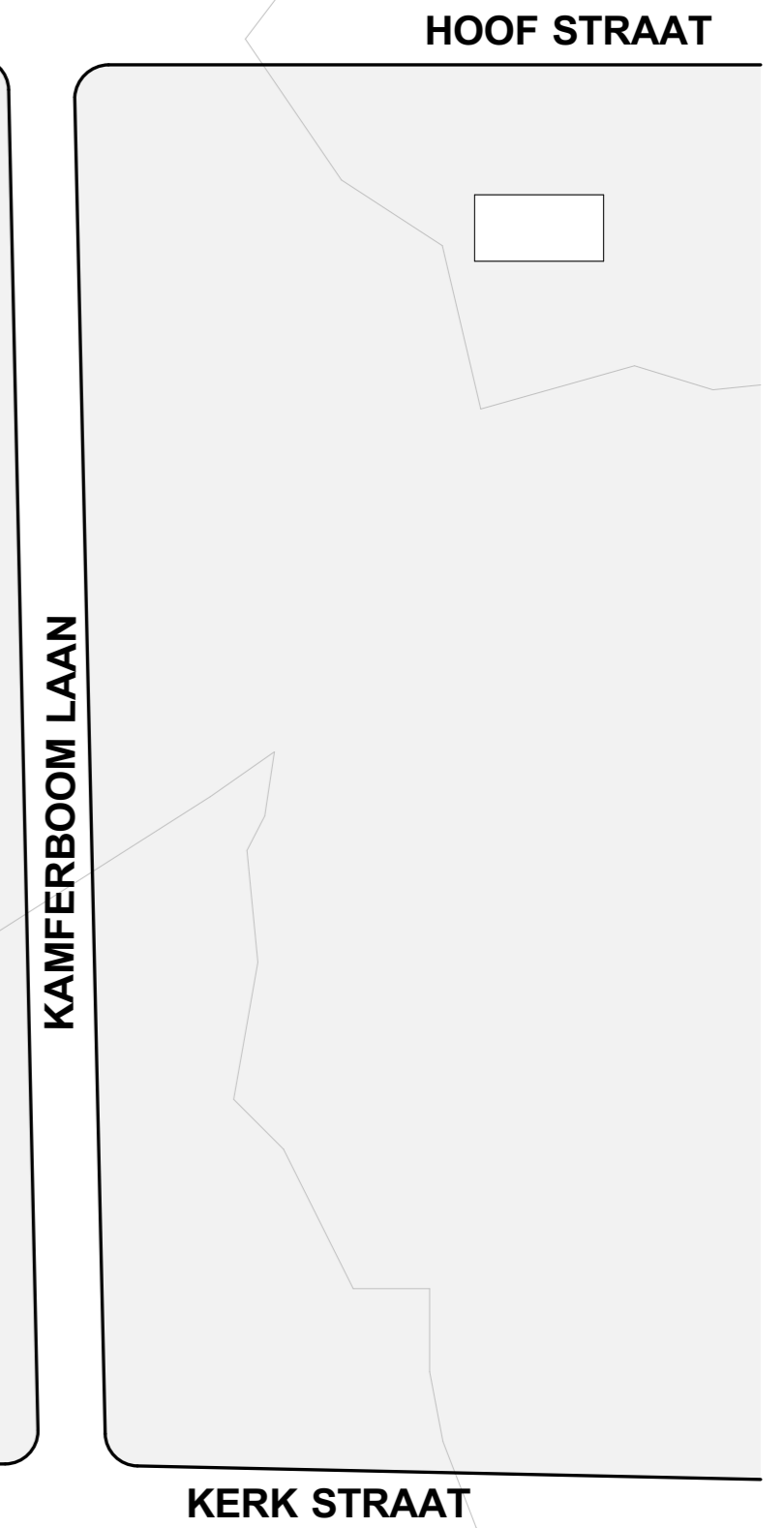
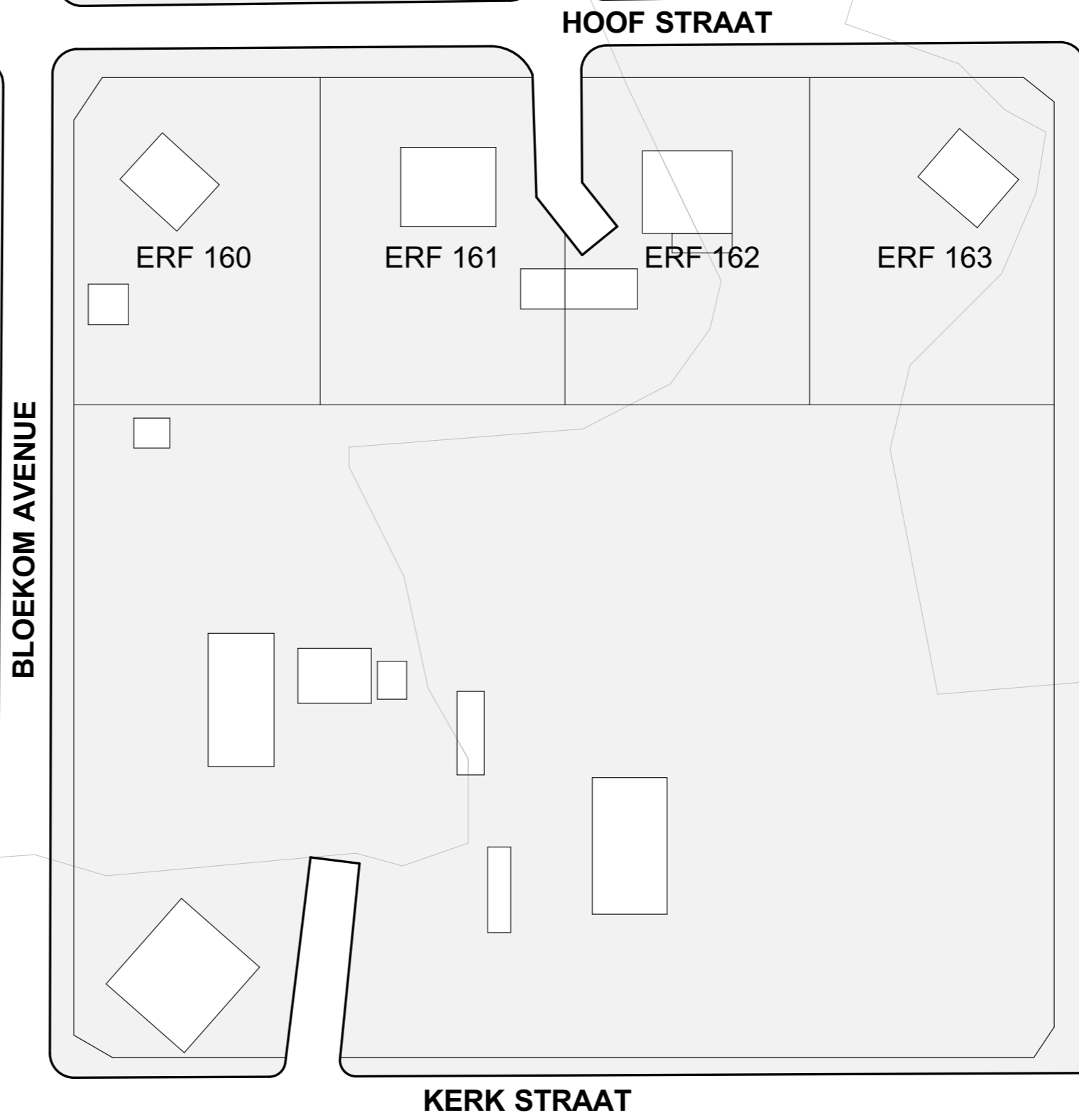
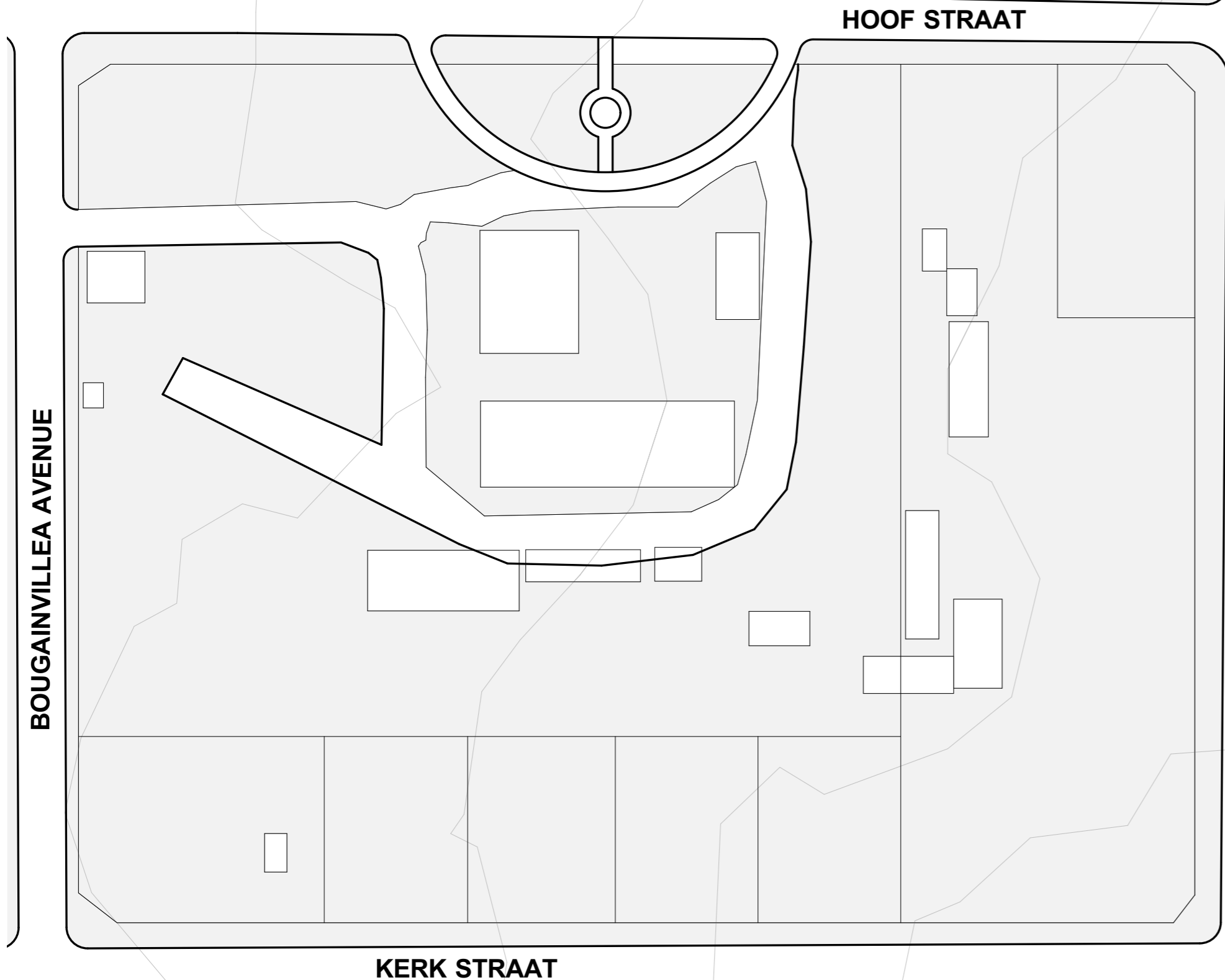
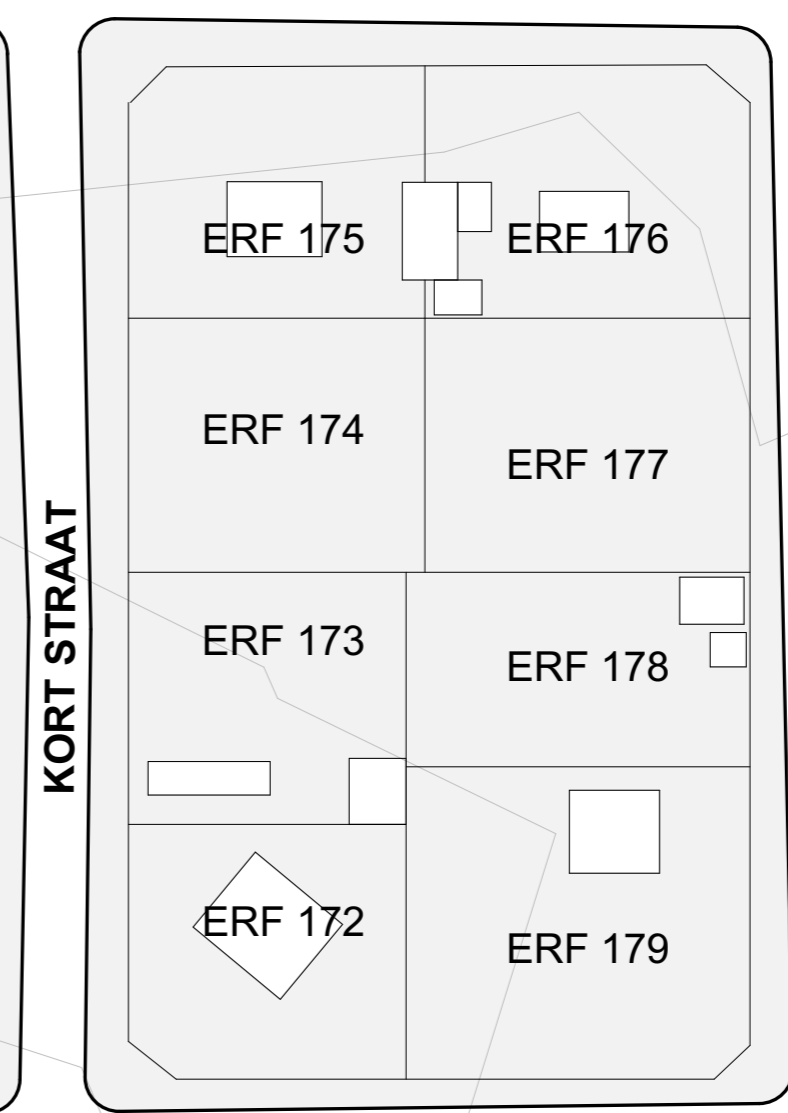
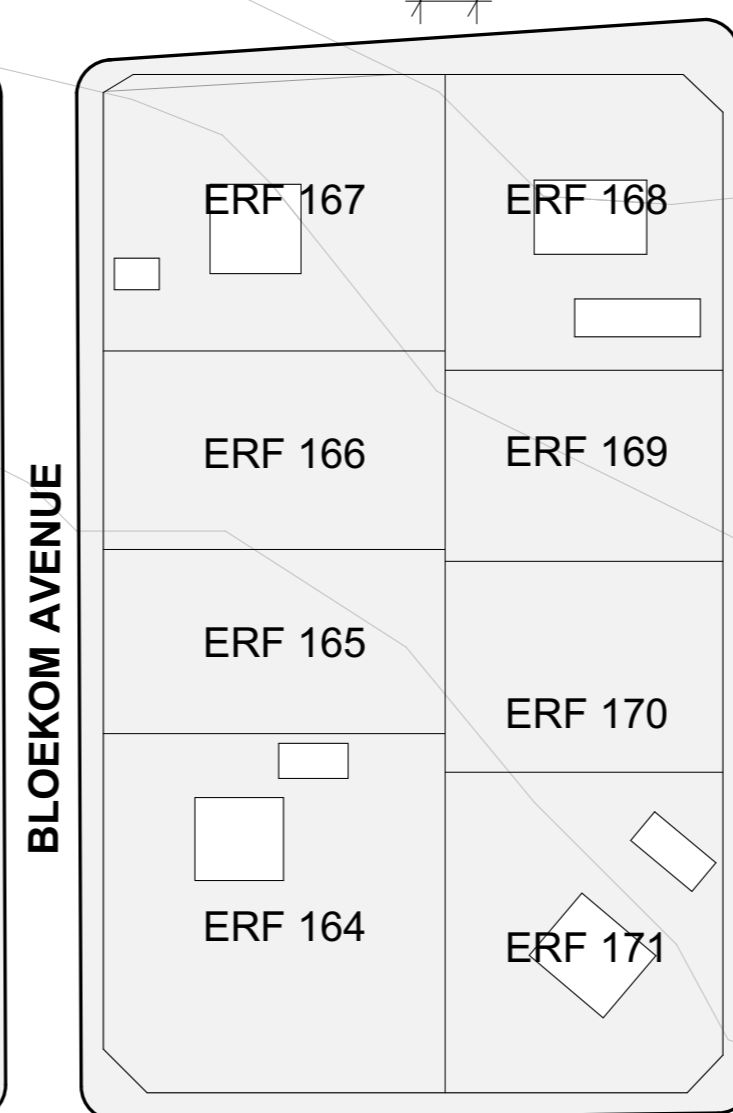
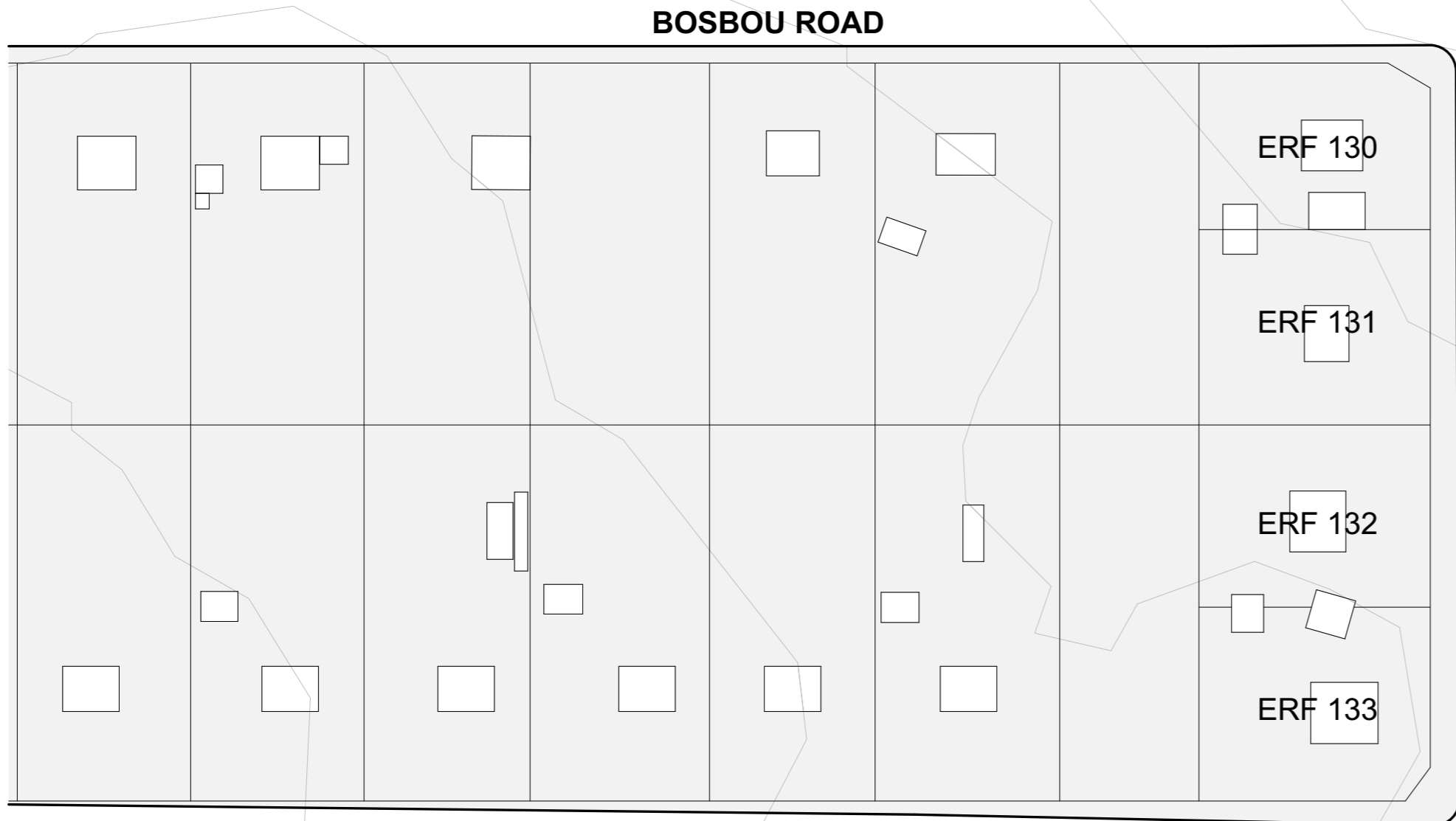
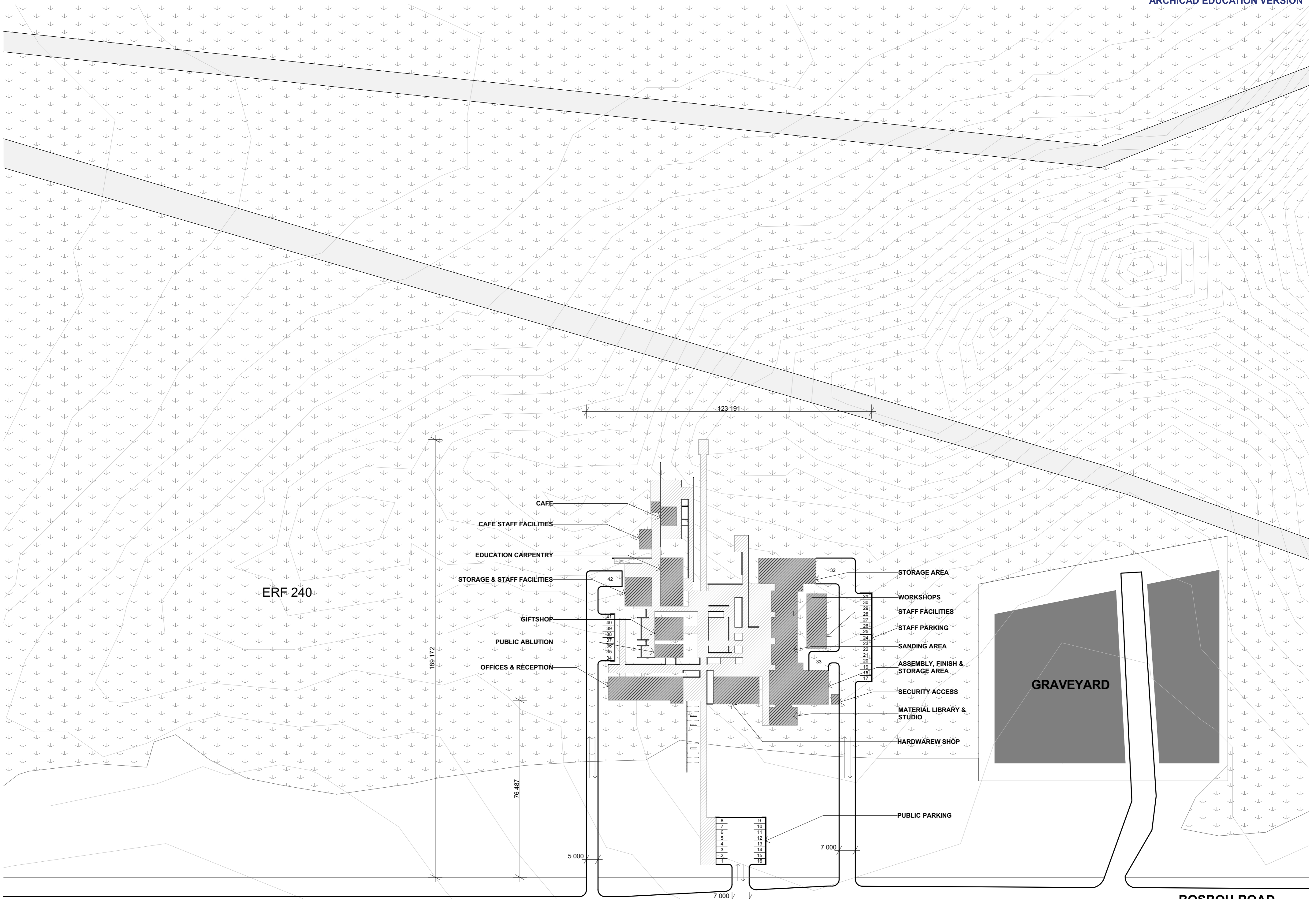
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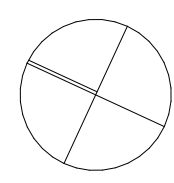
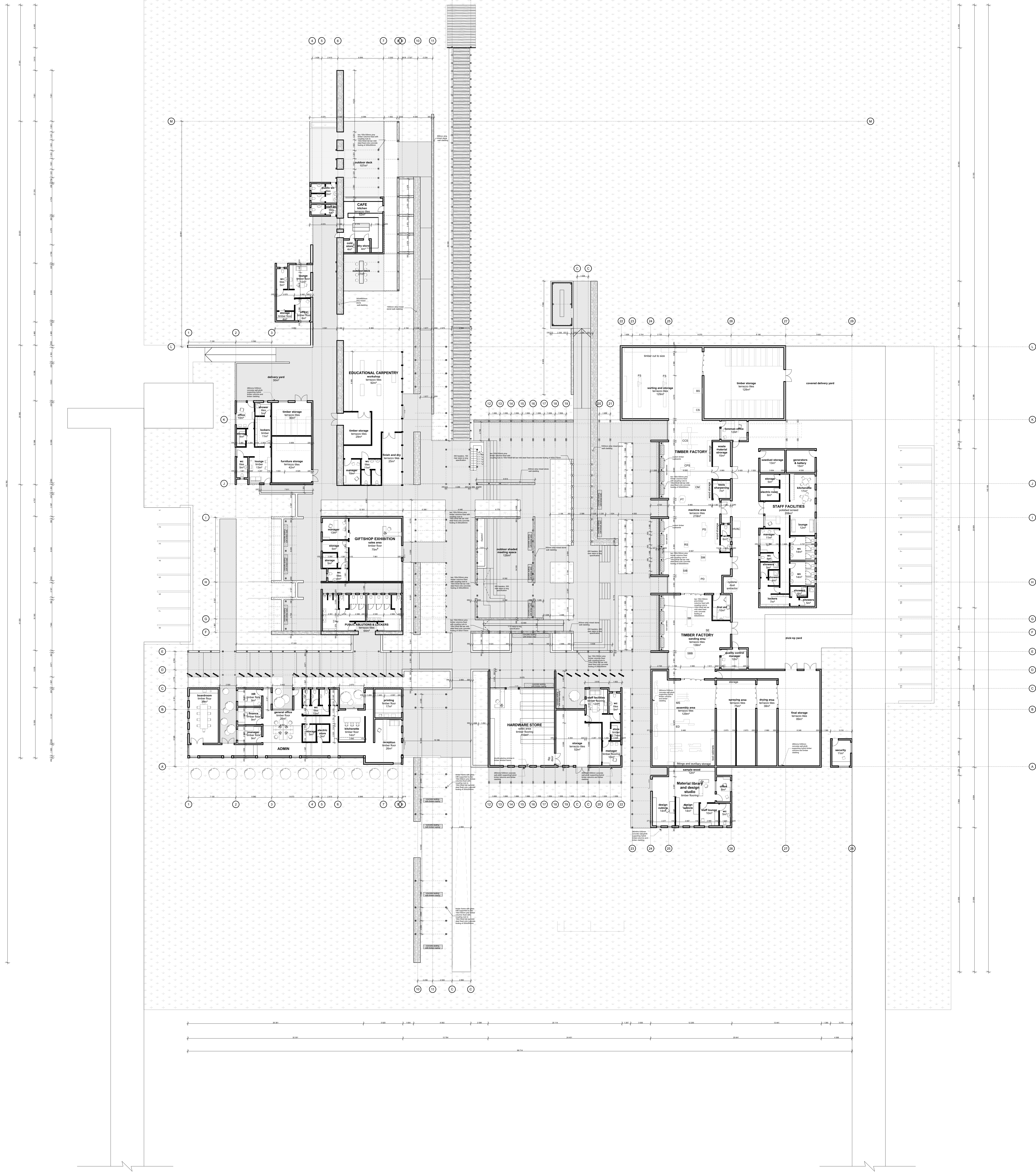
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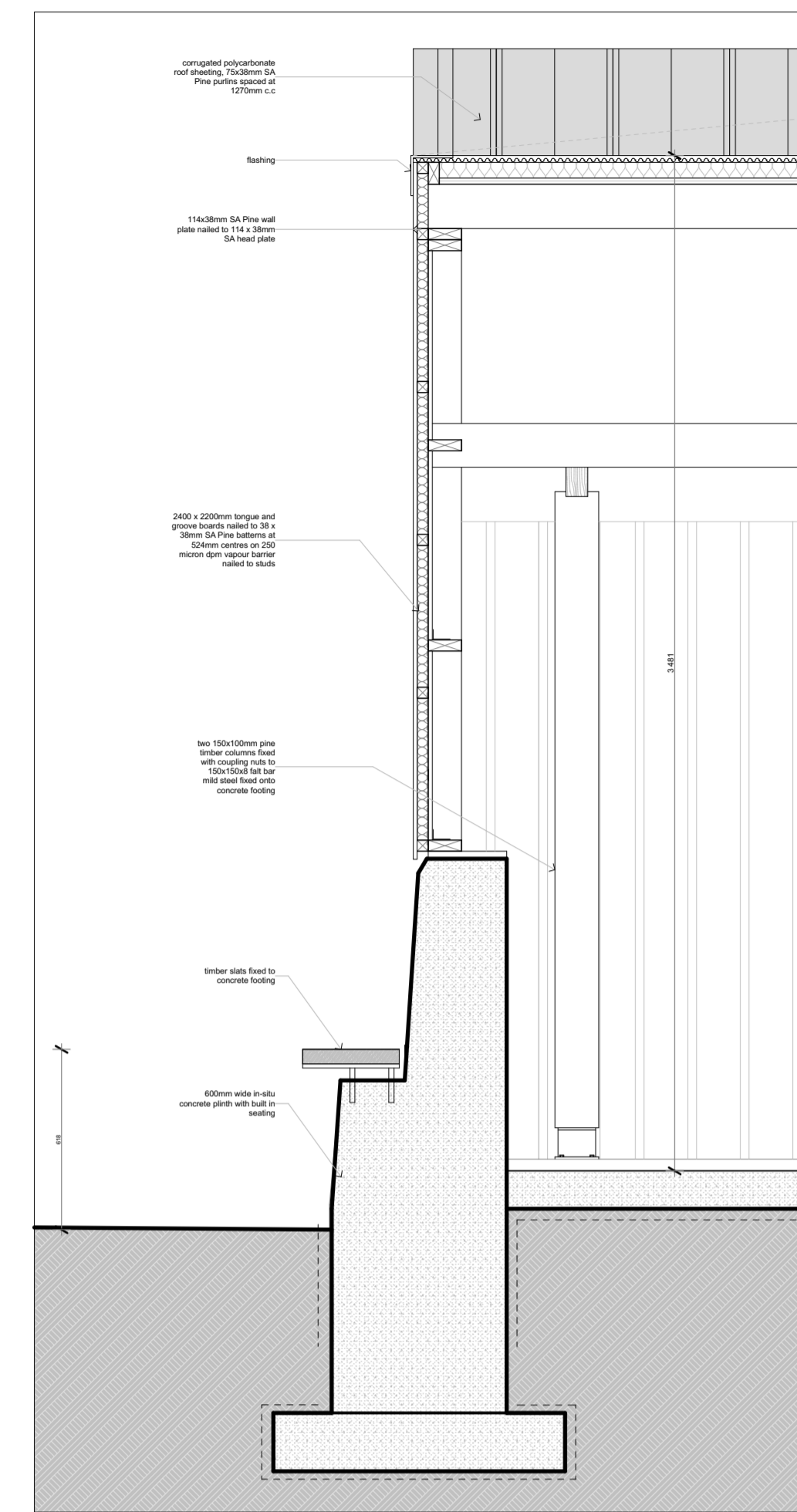


Fig 260: Woodcutters standing by a cut tree (Knysna Museum).



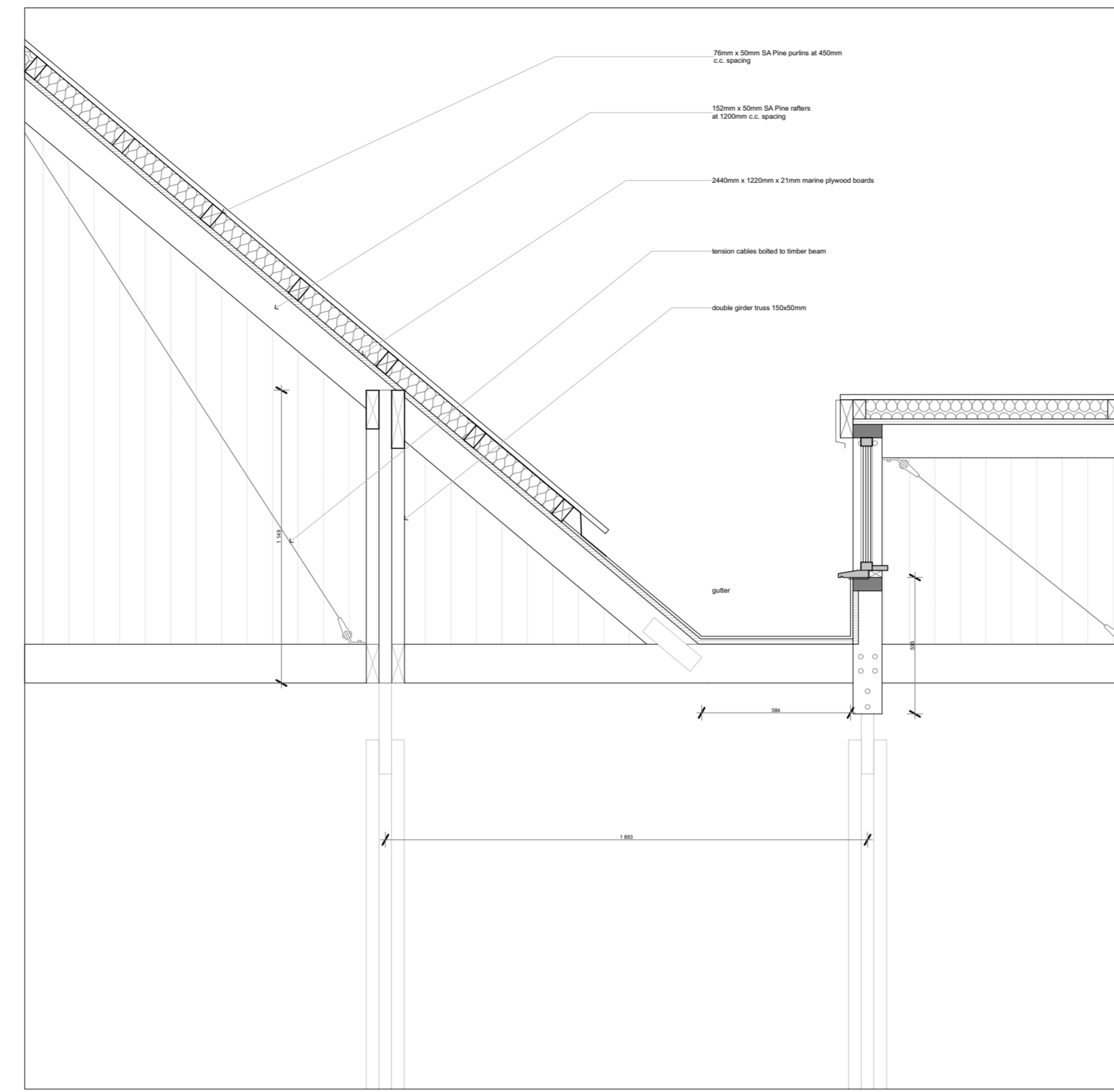
LOCALITY PLAN
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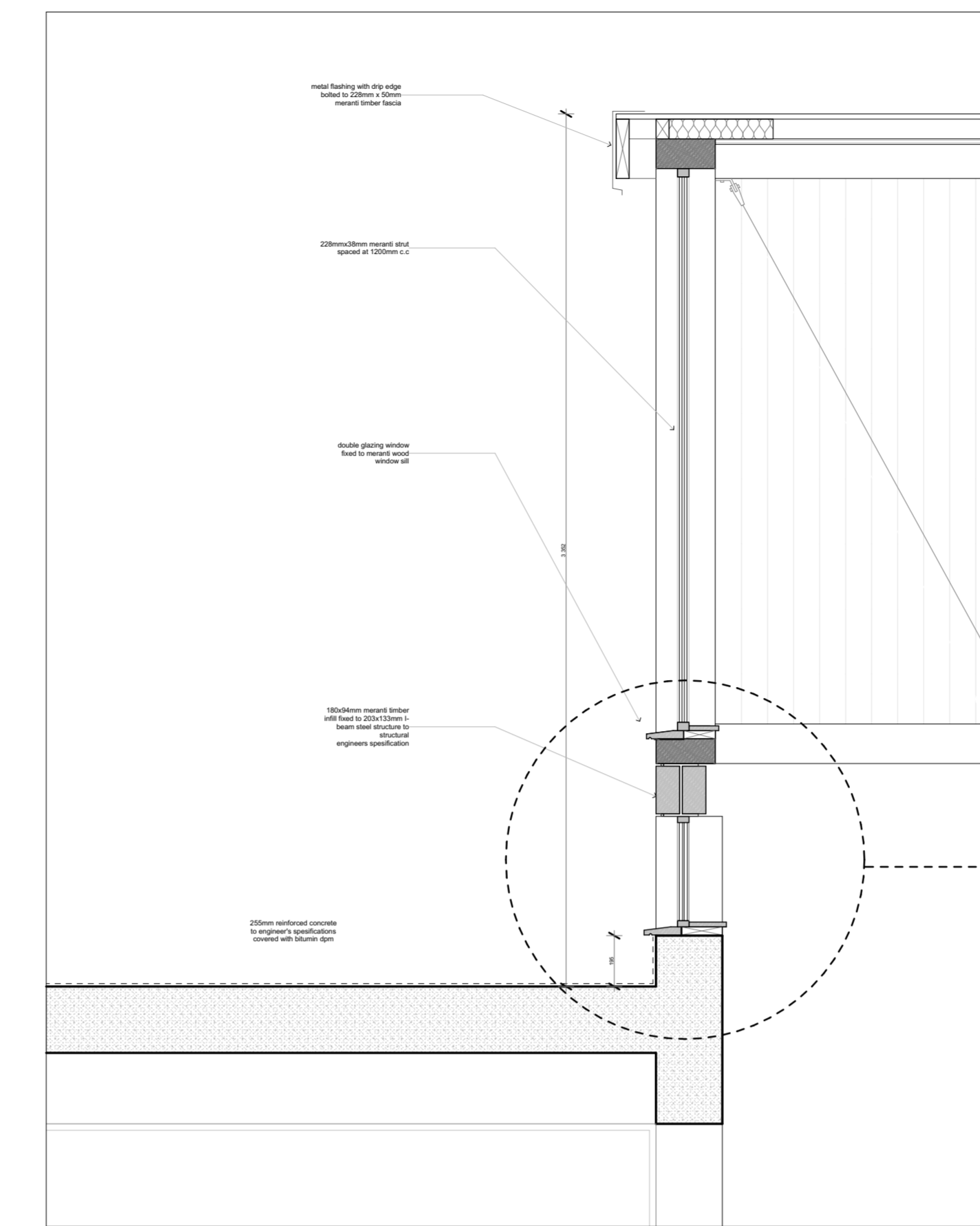


DETAIL A
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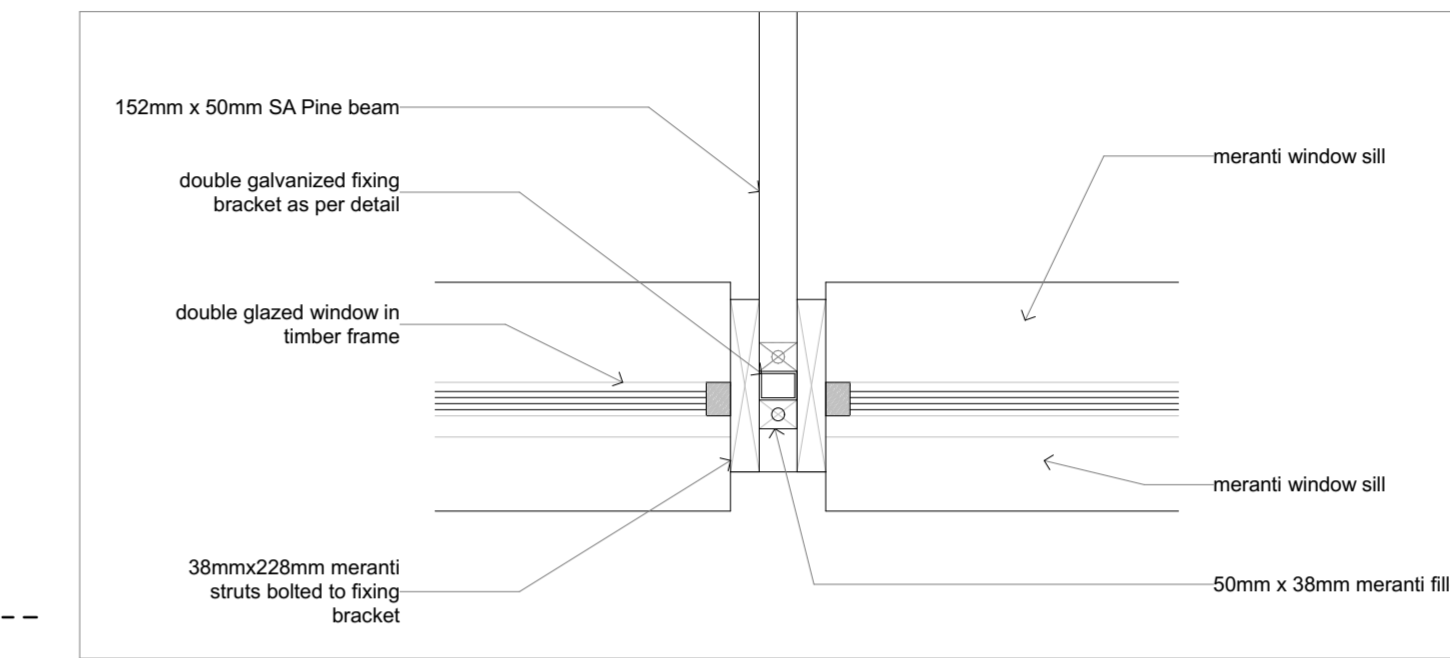
DETAIL B
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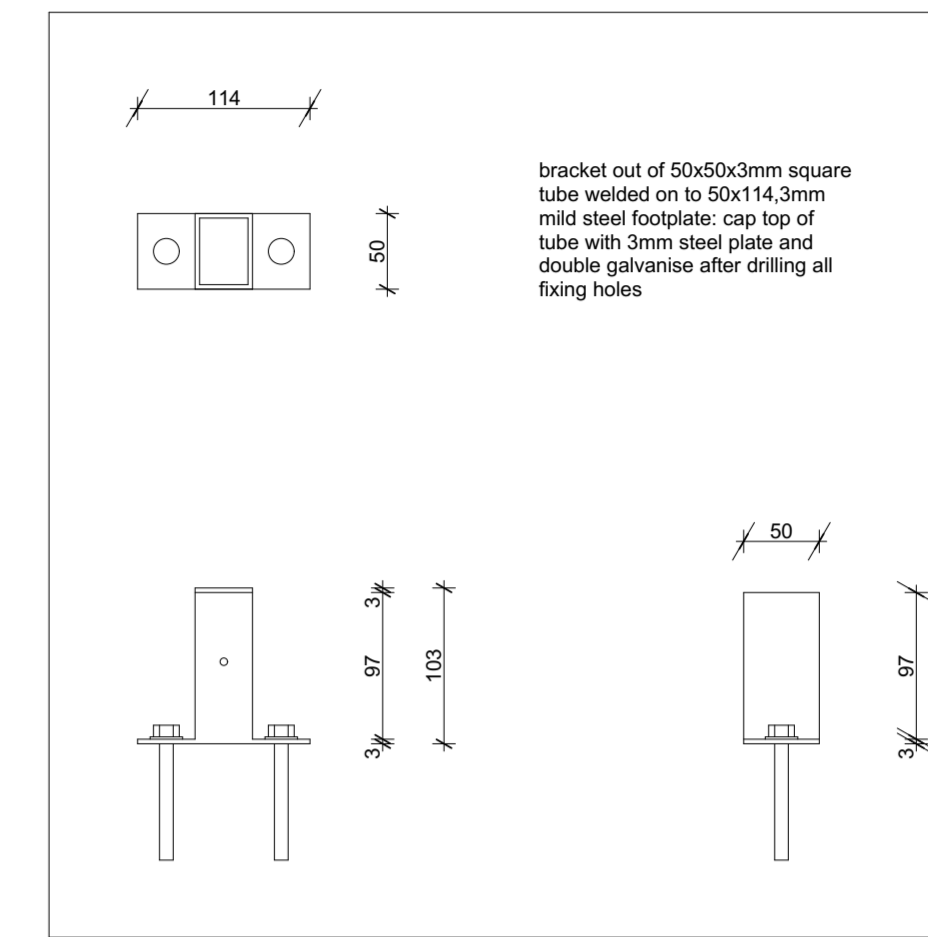
DETAIL C
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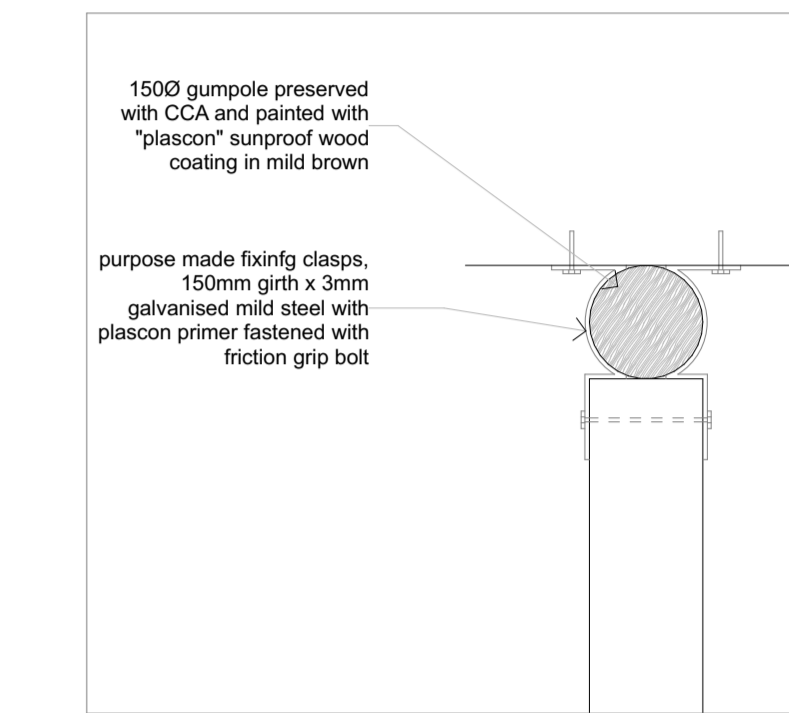
DETAIL D
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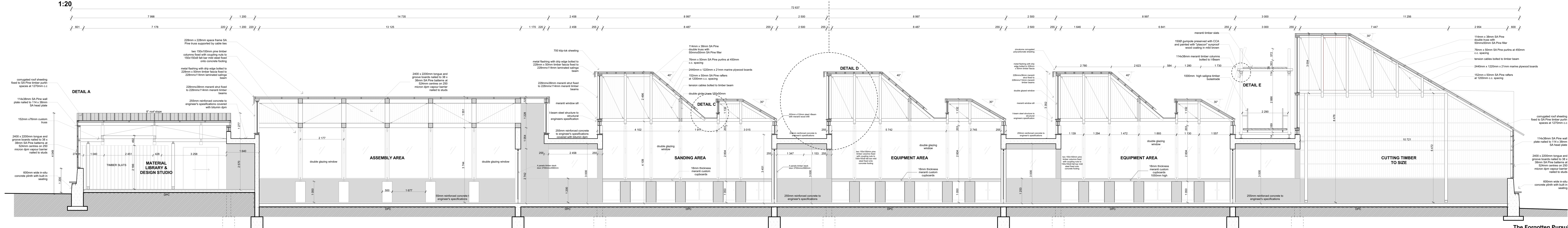
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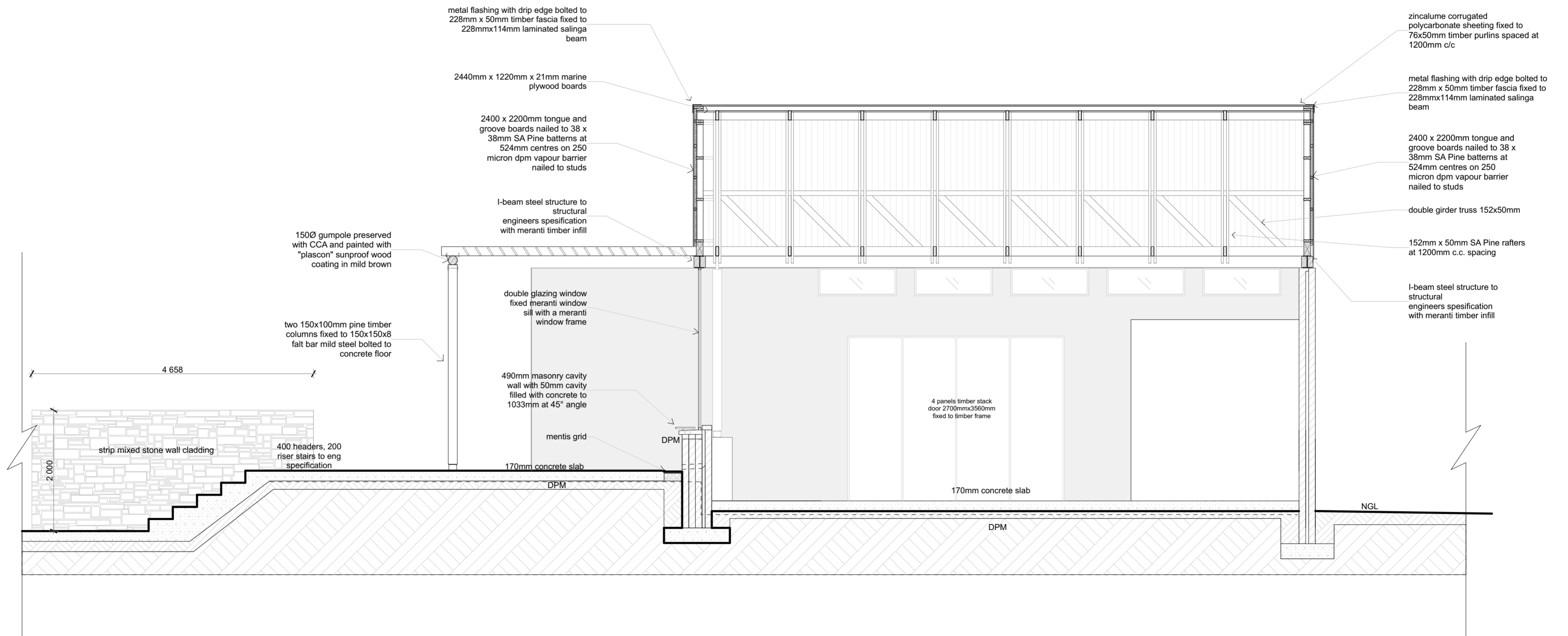
DETAIL E
1:5



DETAIL E
1:10



SECTION A-A
1:50



SECTION B-B
1:50

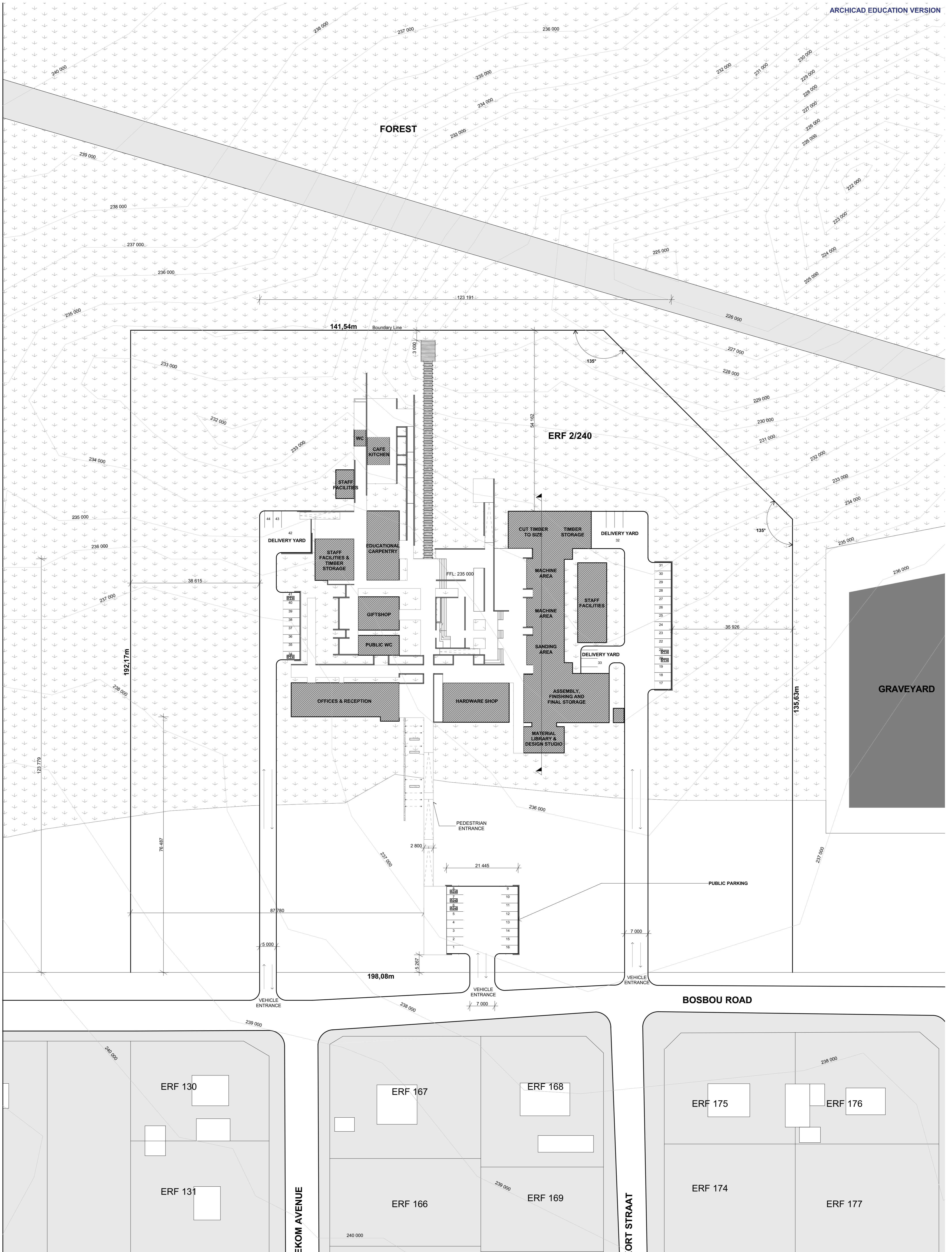
The Forgotten Pursuit
CONSTRUCTION DRAWINGS

DRAWING

SECTION B-B

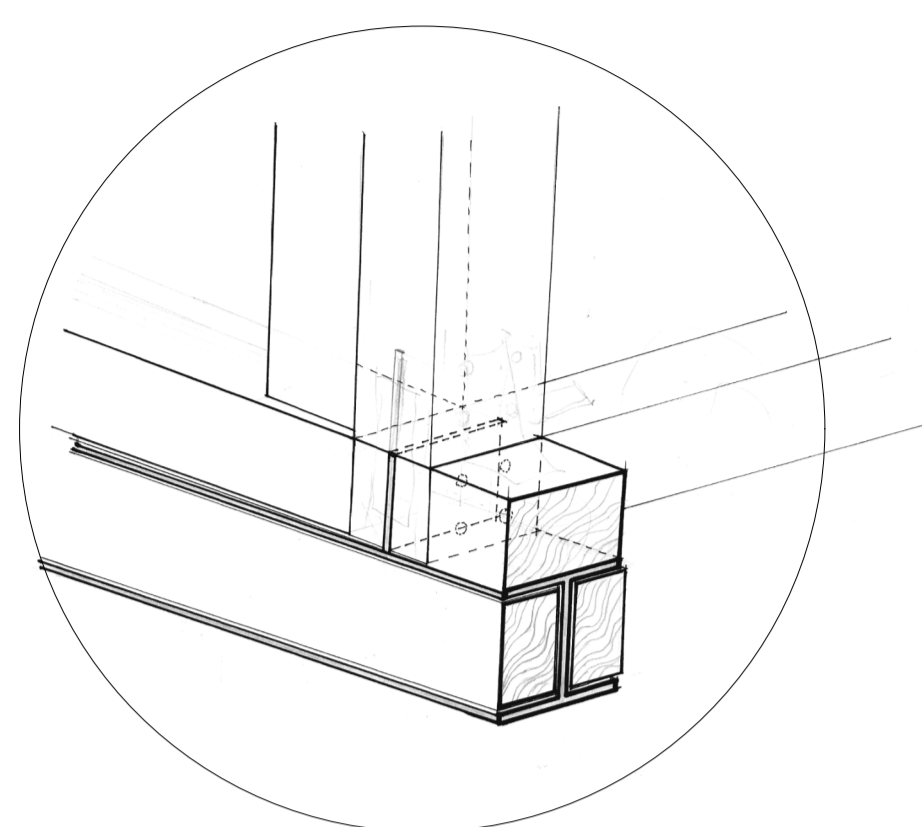
STUDENT NAME & SURNAME

TALINE ROOS | 20181716442
University of the Free State M.Arch (Prof)

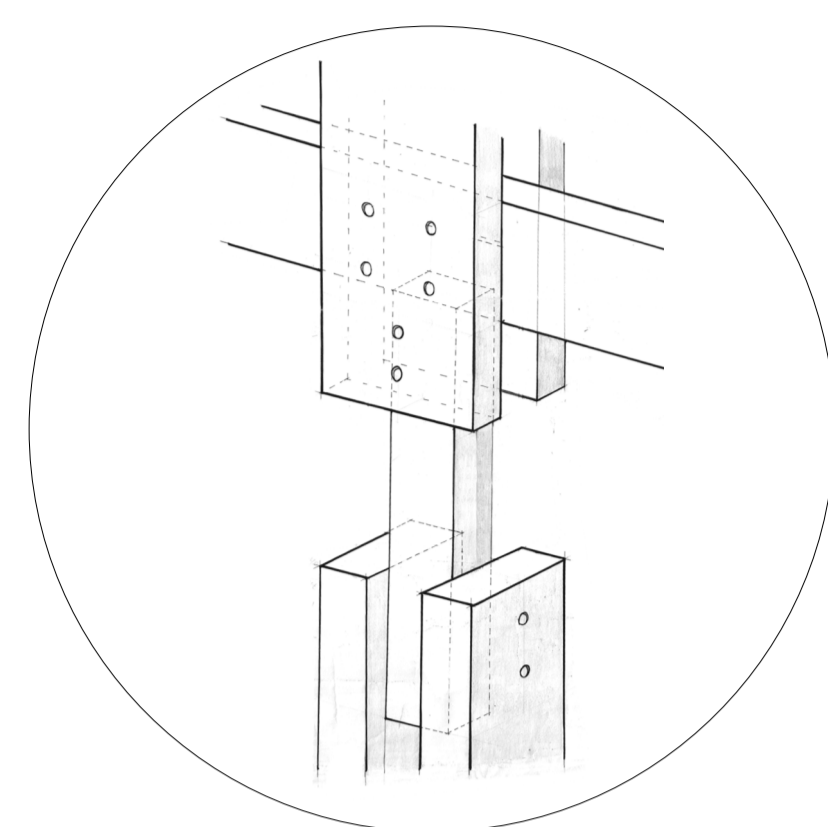


SITE PLAN
1:500

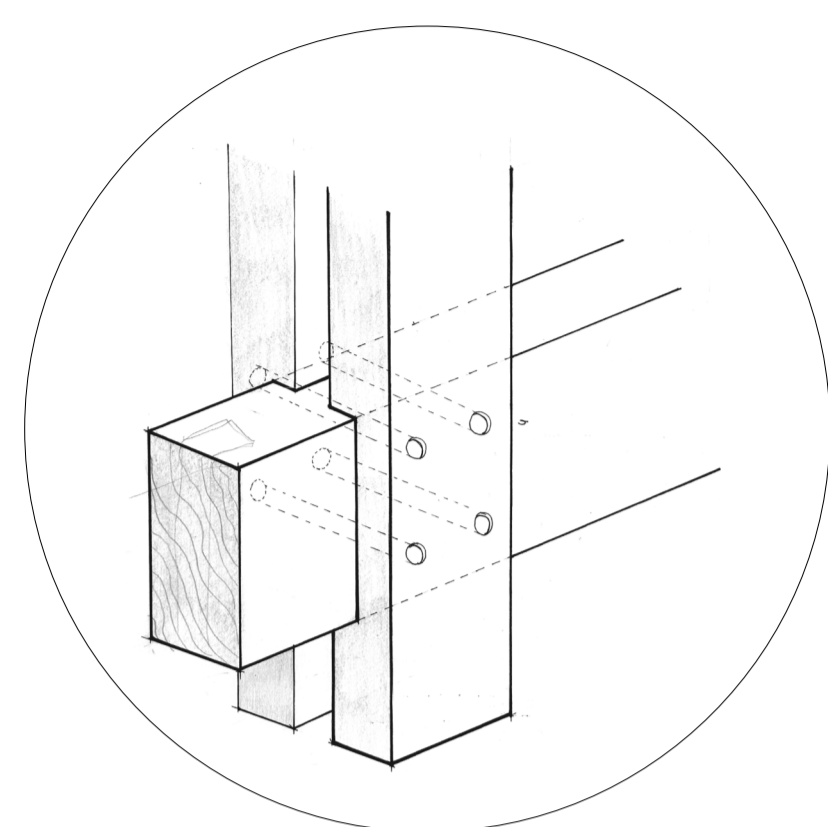
STEEL AND TIMBER FRAME



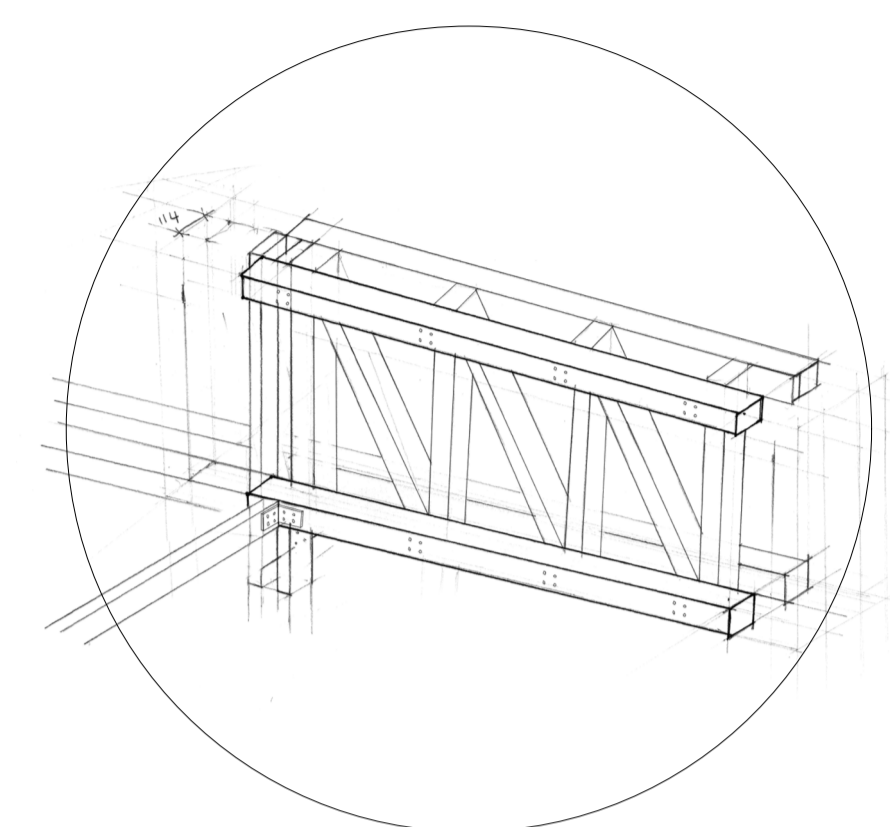
MORTISE & TENON



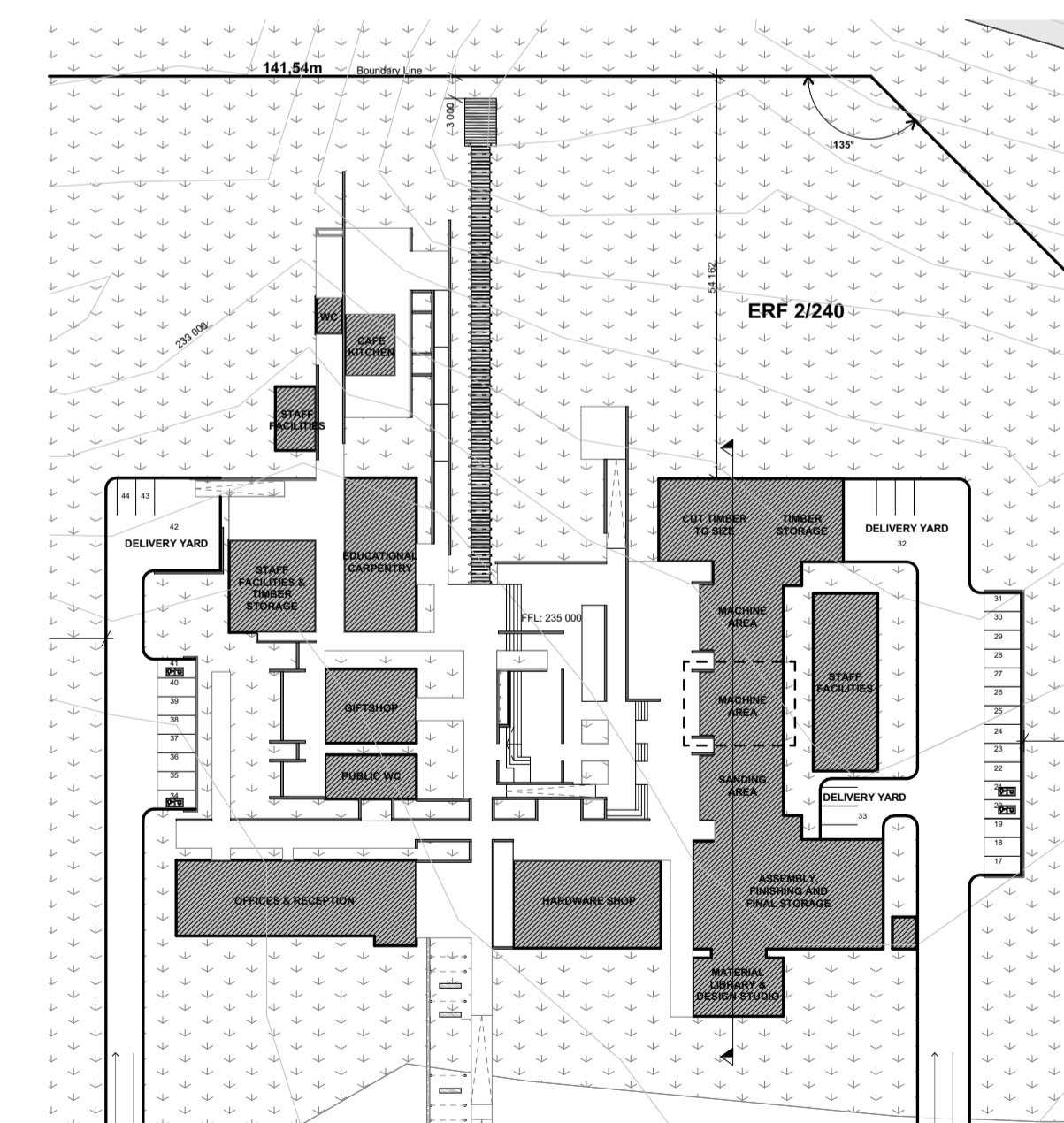
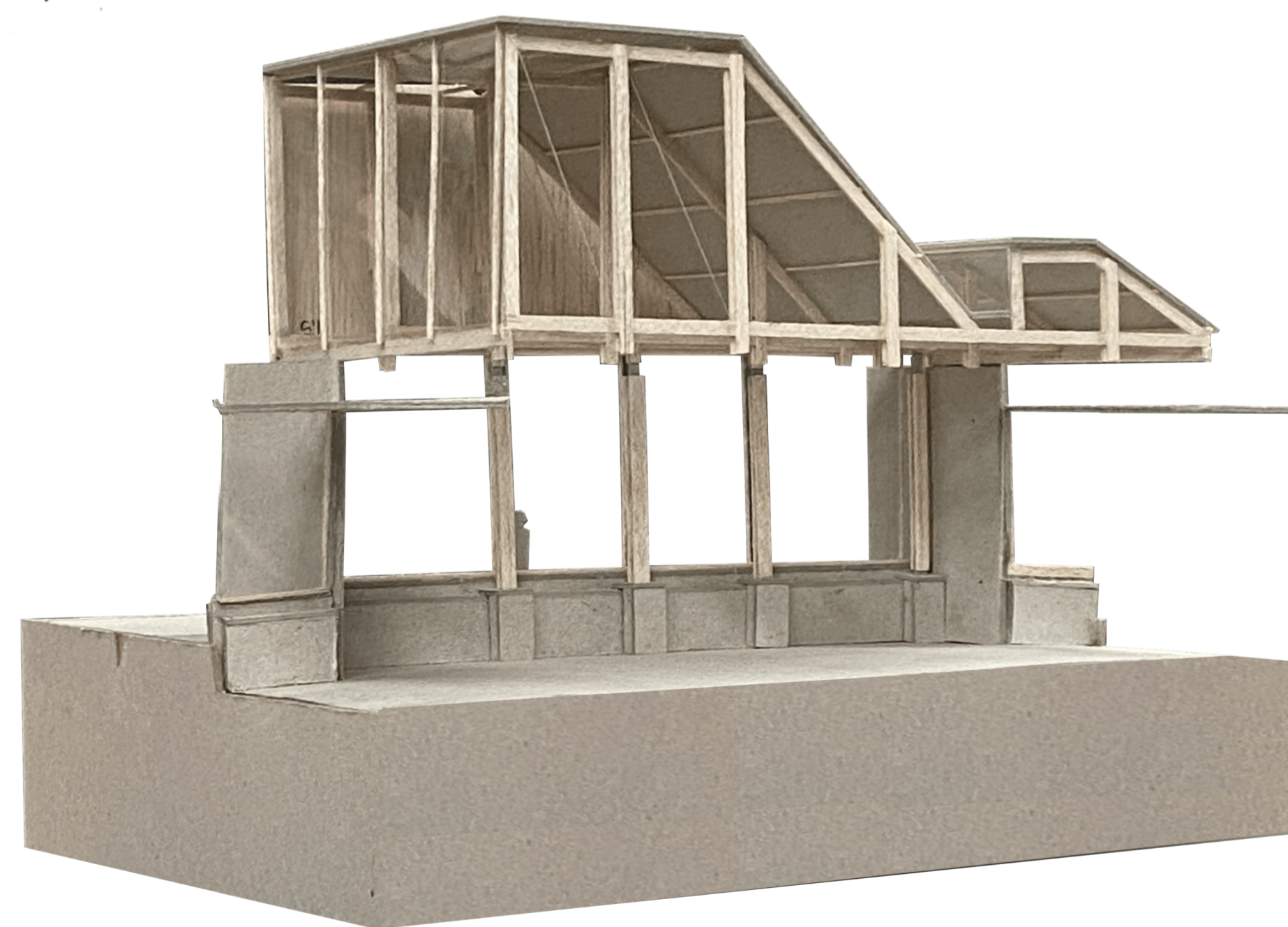
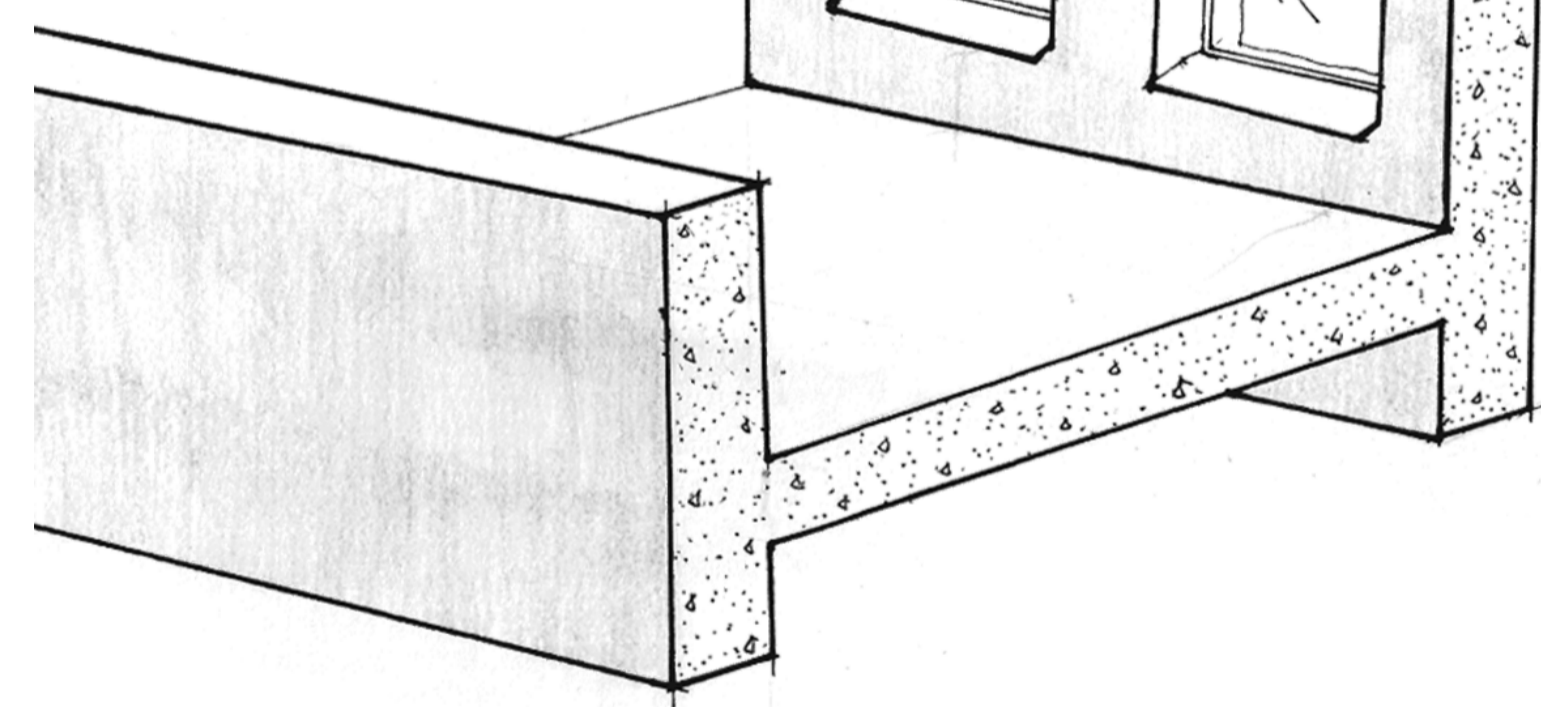
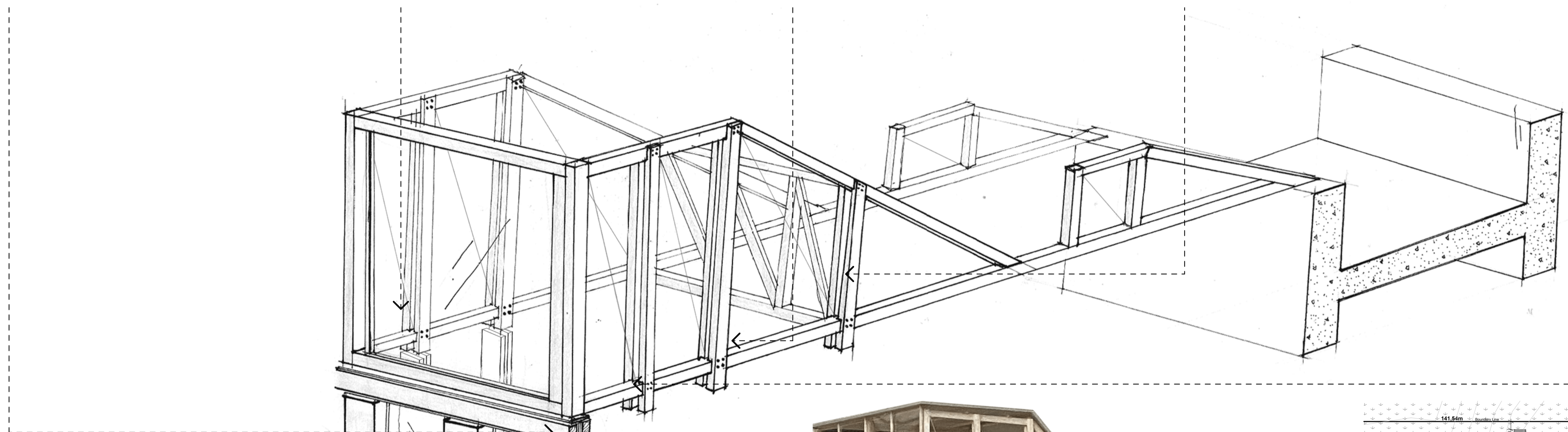
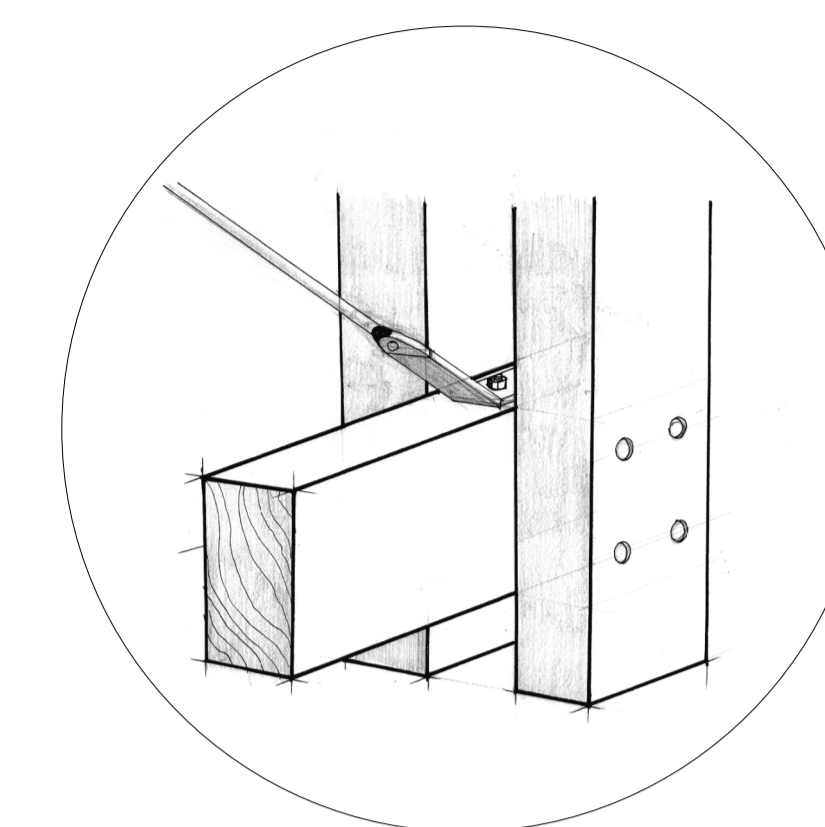
T-Bridge joint



Double N-girder



Tension cables



**FACTORY WORKSHOP
TRUSS DETAIL**

The Forgotten Pursuit
CONSTRUCTION DRAWINGS

DRAWING

FACTORY TRUSS DETAILS

STUDENT NAME & SURNAME

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University of the Free State M.Arch (Prof)