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Re-Assembling De Poort

A Furniture Design and Manufacturing facility
proposed in the old Industrial district of Paarl.

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Submitted in fulfillment of part of the Requirements for the degree of Master of Architecture (Professional) in the faculty Natural and Agricultural Sciences, at the University of the Free State - 2022

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DECLERATION of AUTHENTICITY

This dissertation is submitted in partial fulfillment of the requirements for the Masters Degree in Architecture, at the University of the Free State (2022). To the best of my knowledge, this dissertation contains no material previously published or written by another person except where due reference is made. The Institute (UFS) possesses sole ownership of the research done and final document, including publishing rights. Dissertation to be submitted by 11 October 2022.

Johannes Haasbroek
11/10/2022

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RE-ASSEMBLING DE POORT

MICRO INDUSTRIAL PARK

A Furniture Design and Production facility proposed in the old Industrial district of Paarl, Western Cape.

PRELUDE

This document follows a structure, progressing similar to the *De Poort Micro Industrial Parks*' design development process. Starting with the Introduction portraying necessary narrative to the reader, to fully comprehend the current and historic Urban character of De Poort, whilst also including general information regarding orientation and other essential elements relevant to the scheme.

Chapter A thus allows for the interpretation of the second chapter (Chapter B Theoretical Discourse + Site Analysis), a purposefully integrated theoretical and contextual investigation, exploring alternative methods of urban analysis. The identified architectural principles in Chapter B then acts as input for the Concept and Design Development phase in Chapter C. Thereafter allowing for an extensive structural investigation, in Chapter D Technical Assembly Analysis, focusing on contextual, and climatic influences and structural solutions. Chapter D concludes the development stage, leading to the closing visual presentation in Chapter E Final Design Solution.

The remaining academic chapters, F + G, include the final accumulated perspectives, reflecting on the research aims and objectives, developed within this document. Chapter F facilitates the Conclusion, whilst Chapter G the post-rational Reflection. Ultimately ending with Chapter H, which comprises of all the necessary references to support this dissertation.

Abstract

De Poort led the wagon-making industry nationally in the 1870s as the primary producer for the Diamond rush in Kimberley, up until the arrival of the automobile in South Africa in the late 1890s. This left the manufacturing industry with no parts to design, produce or assemble.

It can be argued that the industrial landscape of De Poort now resembles a fractured assemblage, barely held together by a few components. A composition gradually disassembled by tools, representative of spatial isolation, terminated functional purpose, and a general lack of confidence. This resulted in the loss of De Poort's singular and universal identity, therefore being paralysed to transformation, unable to activate or produce the necessary components for it. Consequently, this led to the question of how the fractured identity of De Poort can be restored through transitional and transformative acts of spatial assemblage.

By combining the theoretical discourse, relating to the Assemblage Theory which exposes the extreme similarities that complex assemblage has towards urban landscapes, with that of extensive site analysis, it becomes possible to investigate the fractured assemblage of complex urban identities at multiple levels of analysis. This gives insight into the most sensitive transformation options for the De Poort Rhizome.

The conceptual purpose was to create a community bespoke design, integrating structural, technical, spatial, and material solutions for each of the contextual problems raised by the site analysis. Ultimately, this led to the design of a Micro Industrial Park with Manufacturing and Assembly based infrastructure. The project is thus capable of facilitating large-scale component deliveries from the community's component producers, combined with assemblage and distribution functions, in addition to being activated by a Design hub creating specialised furniture ranges commemorating De Poort.

This project aimed to explore alternative functional possibilities for the De Poort Production industry, whilst being sensitive to heritage and identity. Facilitating industrial and public engagement that is not only coherent but inseparable. Ultimately stabilising the Rhizome with decerning architectural intervention and the re-activation of assembly and infrastructure.

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Figure 2: Historic photo of a train passing De Poort station (Koetzer, 2001).

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A

INTRODUCTION

This architectural investigation focused on De Poort; a declined Industrial district located at the Southernmost point of Paarl, Western Cape. Once famous for being the primary wagon producer of South Africa from the 1860's to the 1910's, during the Diamond rush (Kimberley) and Gold rush (Johannesburg) respectively. It now, however, resembles a fractured and confused urban assemblage, due to an unforeseen decline in wagon manufacturing after the introduction of the car to South Africa.

Many urban transformative projects have been proposed and attempted in De Poort thereafter with no success. Poor integration of the local De Poort community into these developments rendered them redundant and without support, leaving the state of the urban landscape even more chaotic than before. Emphasizing that conventional methods of architectural analysis and transformation may be lacking, due to societies constantly evolving nature. Forcing the need for more dynamic, interactive solutions.

This inspired an alternative research approach, facilitated by analysis of the Assemblage Theory. Which analyzes Theoretical assemblies in relation to its individual parts, and its parts in relation to its universal whole. This being applied by comparing De Poorts' urban Assemblage with that of a machine (Rhizome), compiled from a wide spectrum of individually functioning components, simultaneously acting together to achieve a certain goal. This creates the opportunity for in-depth analysis of each relevant urban component to determine its individual and universal performance, to ultimately identify if they are productive and efficient. It then becomes possible to transform, re-activate and restore these identified 'static' components to generate a more dynamically integrated universal identity (Purpose – Manufacturing)

The importance of executing a project brief in this manner, successfully lies in comprehending the scale of intervention required, to protect the project from under or over-developing the urban landscape past natural restrictions generated by the urban context, including culture, community, climate, and resources. This approach led to the realization that different depths of investigations, could be more applicable to certain parameters, than others. Various methods of Typological, Morphological, and Topological enquiries into De Poort were then applied. Each with its applicable scale of analysis, ensuring that the most relevant information was used to determine transformation potential. Thus, accumulating as my research question to be.

Accumulated Research Question:
How can the fractured identity of De Poort be restored through transitional and transformative acts of spatial assemblage?

A1 | First impressions count

The first time I visited De Poort, I was left confused…

The following section will analyse my first experience of De Poort, depicting it as a necessary narrative, to realistically comprehend the current fractured Urban character of the historic industrial district of Paarl. With that said, it also revealed much in connection to the immense potential it still possesses.

The first time I visited De Poort, I was left confused… Paarl being famous for having the longest main road in the country (Paarl-Wellington, 2021: online), always has the potential to become a bit over-crowded. In December of 2021, on my way to a possible site outside Stellenbosch, having to drive through Paarl on the way there, I decided to take a different route through the town to avoid the previously mentioned traffic. I ended up lost, through all the narrow side streets leading nowhere and everywhere with no coherence. Adding to the confusion was the mesmerizing beauty of the natural landscape, visible around each corner, making it impossible to focus on navigation (Weiss, 2013: online). I found myself parked in front of the old station square in the industrial district of Paarl, being De Poort, just staring at the Klein Drakenstein Mountain range. Away from the hustle and bustle of the city, I experienced one of the most surreal moments. Surreal is defined by the Merriam-Webster dictionary as; marked by the intense irrationality of a dream, almost unbelievable (Merriam-Webster, 2016: online).

Sadly, in reality, that is what it was, unbelievable. The confusing part was realizing that I was in the industrial district of Paarl, where all the loud sounds are supposed to be originating from, hearing silence. No industrial machines, no trains arriving with raw materials, no trucks being unloaded by lively workers, no social activity on the old station square, nothing…

Leading to the realization that the current urban fabric of De Poort is in a very fractured state. The only road (Tabak street) still connecting the area to Paarl, curves past the station square, creating an alternative option for people in a hurry toward the N1 (Cape Town). Causing an unrestricted highway, bigger than the actual main road of Paarl, to blast through the “De Poort short-cut” at high speeds (Figure 7).

Figure 4: Photo showing dynamic Paarl main road (Haasbroek, 2022).

Figure 5: Photo emphasizing the contradicting urban landscape, taken 200m from Figure 4 (Haasbroek, 2022).

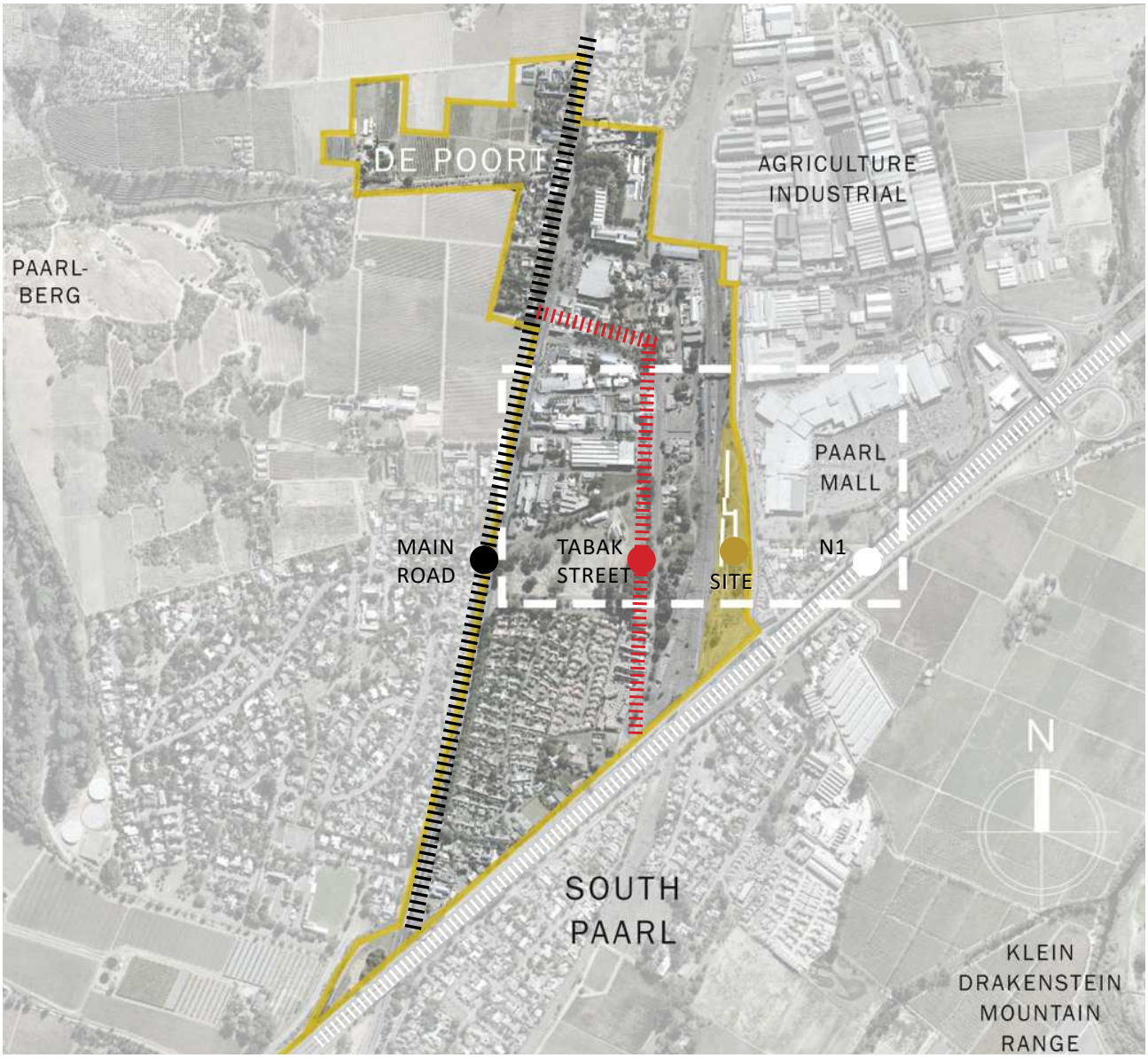

Figure 6: Edited map of the De Poort district, relevant to general orientation and context (Edited: Haasbroek, 2022).

A1 | First impressions count

It suddenly dawned on me that Tabak street, once intended on connecting everything and being successful at it for a long time, has suddenly become one of the primary reasons for the immense disconnect of the urban fabric. De Poort became a pass-through, rather than a place with its own identity. Cutting off the community sustained industrial area, train station facilities, and cultural infrastructure even further from public significance.

I decide to do a deeper investigation, by walking around the vicinity of the train station, intrigued by Victorian houses scattered around the old public square, clearly designed to interact with people, on the ground level as small shops, with residential being on the first floor (Duncan, 2021). The state of the sidewalks and lack of pedestrian road crossings, however, force effort and distracts from the picturesque setting. The 'public' square is surrounded by boundary walls left by previous development attempts causing even further isolation, accompanied by an overgrown train station surprisingly not using its main gable entrance for commuters, but instead an exterior side entrance leading around the building.

While walking past static industrial factories and deteriorating infrastructure, I finally noticed small signs of artistic engagement. A concrete couch with a small portion of colourful mosaic tiles, engraved granite blocks depicting community messages, and crafted metal sculptures. Symbolically emerging like small flowers through the cracks of ruined buildings, contending the forced upon perspective of redundancy, representing the forgotten fabric as hopeful and excited to once be significant again.


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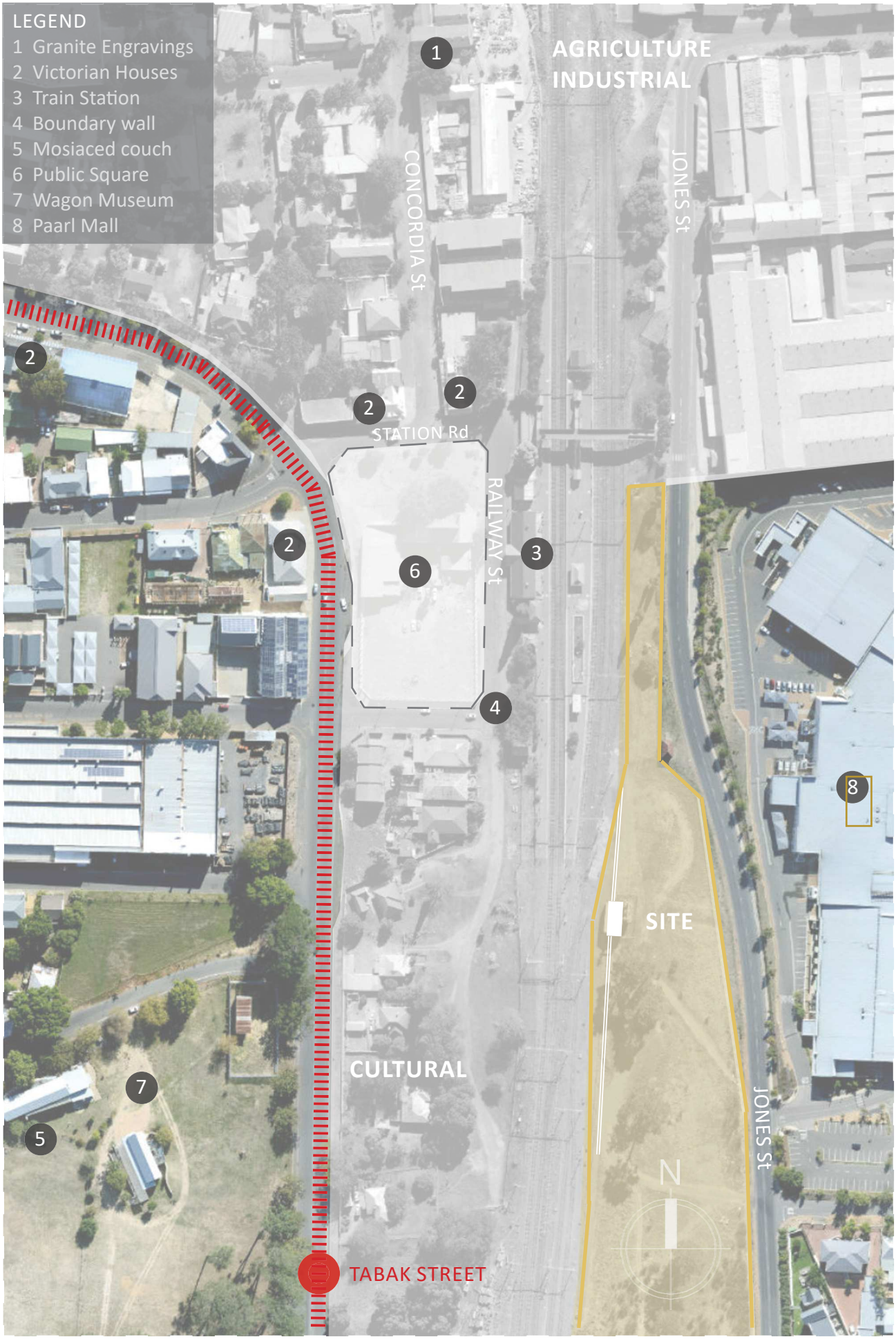


Figure 7: Edited map of De Poort showing relevant contextual elements elaborated further on Page 14 (Edited: Haasbroek, 2022).

A2 | History of De Poort

As previously mentioned, my first experience with De Poort was confusing. It seemed that all the necessary elements needed to be a striving production community was already existing. A machine with all its parts just switched off, paused in a moment of time, for maintenance, and someone forgot to switch it back on.

This inspired my research into the history of De Poort. The community of excellent wagon builders in the 1870s faced the possibility of becoming the primary producers of wagons for the Diamond rush in Kimberley when Paarl's railway line was proposed to move to De Poort in 1878 (Merwe, 1893). It was completed in 1885 and connected De Poort to Kimberley, shortening transportation routes to the already established centre of industry. This connection produced many distribution possibilities, creating great financial options for the community of De Poort. This, however, did not just happen by being at the right place at the right time (Rawson, 2022: online).

As the diamond rush increased in intensity, wagon builders were faced with not being able to produce parts fast enough by hand. This led to P.B de Ville introducing the first steam-powered machines to produce parts quicker in 1879, revolutionizing the industrial landscape of De Poort from hand manufacturing to an integrated system of imported Assembly (Merwe, 1893). The production system proposed, was reliant on a very integrated manner of collaboration between the part makers, due to limited variety in unique parts, and would fall apart if a single producer stopped supplying. This went on for approximately 40 years, transforming De Poort's small community into a vibrant combination of different cultures celebrating local materials with new innovative methods of assembly (Langham-Carter, 1991).

Figure 8: Royal Baking Powder factory, Jan van Riebeeck Drive, Paarl (Gribble, 1893).

Figure 9: Historic train line from Cape Town to Pretoria, including the Paarl-to-Kimberley section and the location for this proposal (De Caro, 2018).

A2 | History of De Poort

As the Diamond rush ultimately slowed and completely ceased due to the Second Boer War, it created new clients for the wagon-makers of Paarl in the form of both militaries. This ensured their continued domination over the sector (Duncan, 2021). They were importing parts from America, Sweden, and Britain in the form of steel, wood, and prefabricated parts. At the height of De Poort's success in 1885, a total of 87 businesses were producing 4000 wagons a month, with a variety of 91 different wagon types 12 (Follet, 2012: online).

Paarl led the wagon-making industry nationally up until the arrival of the automobile in South Africa, in the late 1890s, leaving the industry with no parts to design, produce or assemble. This resulted in the integrated production process of De Poort being disconnected and without purpose (Merwe, 1893). As the railroad was mainly intended for industrial transport with no need for public options, De Poort's significance to Paarl and South Africa went into decay and almost disappeared with the start of the 20th Century (Langham-Carter, 1991).

Research into more recent activities revealed that the Drakenstein municipality leased a large part of De Poort out to private investors in 2013, hoping to generate a tourism-based sector (TheVillageGuy, 2021: online). A fruitless effort to develop an interactive heritage facility at 'the gateway' of Paarl, as it never took off due to a lack of financial reserves and local interest. Since then, it has remained idle (Weiss, 2013: online).

Trains still pass the station now and again on the Cape Town Northern Line, dropping off and picking up fewer and fewer passengers. A sad but fitting visual metaphor, expressing the current redundancy of De Poort, unable to sustainably hold the attention of society or convince them of its rich history (Weiss, 2013: online).

Ultimately, this revealed the answer to why the machine known as the De Poort wagon industry, today still looks switched off. A result of the devastating knock-on effect caused by the global transformation of the transportation industry. Thus, leaving the hard-working, previously highly respected community of De Poort, with no purpose, unwilling and too proud to ask for financial assistance. Ultimately, this led to the steady decline of production, infrastructure and universal identity experienced these past 120 years, reaching the desperately fractured state it is currently confronted with.

Figure 10: De Poort at the height of its success, showing the Paarl wine and Brandy Co. buildings (Olivier, 1856).

Figure 11: Proposed De Poort Urban Development Frame, included in a municipal study in 2020 (Schlechter, 2020).

A3 | Journey of Potential

The information obtained regarding the history of De Poort inspired a second visit, structured around the *De Poort Wagon Museum*, which was only recently constructed (2007). The visit was encouraged to better understand the potential, represented by the historic urban character of the area, while trying to identify factors pertaining to the failure of previous attempts at transformation (TheVillageGuy, 2021: online). The proposed development in question, fortunately, left De Poort with a diamond in the rough.

The De Poort Wagon Museum is a perfect contemporary example of the community's ability to work together 12 (Follet, 2012: online). Upon visiting the museum, I was greeted by Phillipa Burger, now the resident caretaker of the modest facility, after the death of her husband Johan Burger, a cheerful raconteur and veteran museum artist responsible for the museum, in 2018 (Burger, 2022: interview). After explaining my first experience in De Poort and the reason for my visit, she excitedly went (ran) to the storage room, bringing back with her multiple binders full of newspaper clippings, old photos, and publications about De Poort and its more recent history. She then told me about the still-very-active makers' community and their influence on the design of the building.

A community of crafters, intent on restoring the identity of De Poort, spearheaded by a group of artists called *Ox Wagon Studios (OWS)*. The group consists of five members all skilled with decades of experience in their respective fields of metal, wood, leather, stone, and industrial design. Working together with Karin Storm, a heritage architect, they were able to design an integrated building. Paying maximum respect to local materials and methods, while incorporating innovative contemporary techniques to celebrate the optimistic perspective of the De Poort community and its future (Follet, 2012: online).

Phillipa explained that as individual artists they did not make a real impact on convincing the community. It was only until they started working together. Their collaboration generated the possibility, as in the time of the wagon, to play off each other's strengths, producing a much clearer understanding of the parts concerning the greater whole. Allowing for more interactive and diverse engagement between the museum and De Poort.

Figure 12: Photo of the De Poort Wagon Museum from the South East (Haasbroek, 2022).

Figure 13: Johan Burger and his colleagues at the Wagon Museum, re-creating the process of manufacturing an Ox wagon wheel. The wheel is on exhibit in the museum currently (Burger, 2015).

A4 | Contextual Precedent

De Poort Wagon Museum

As mentioned, the building successfully created the only possibility, as of yet, for De Poort to reconnect and work together in almost 120 years (Merwe, 1893). The construction team sourced locally produced materials from the existing sawmill and granite mines and had steel delivered from Cape Town 27km away via the N1. This was done to create the possibility of utilizing the dormant specialist blacksmiths, carpenters, stone cutters, artists, leather tanners, and furniture designers to assemble interior and structural components. The building was then constructed by local workers from the area, generating job opportunities and skill development (Burger, 2022: interview).

Material Investigation
Thick exterior walls reflect historic building strategies, with 'glowing' white-washed walls acting as the main exhibition facilitators. The main load-bearing steel I-beam structure with brick and glass in-fill, however, is located on the interior, emphasizing the community's perspective on future innovation, whilst celebrating existing local heritage on the exterior (Burger, 2022: interview). Public engagement is sensitized by incorporating timber cladding, ceilings, and floors, for a comfortable inviting experience.

Public Circulation
The "Memorial" exterior walls in figure 14, are separated from the primary loadbearing structure, creating circulation possibilities in the exhibition spaces. This causes vibrant strokes of light, to brush over the textured, white-washed walls and reflect into the exhibition spaces, adding phenomenological value and historical significance (Follet, 2012: online).

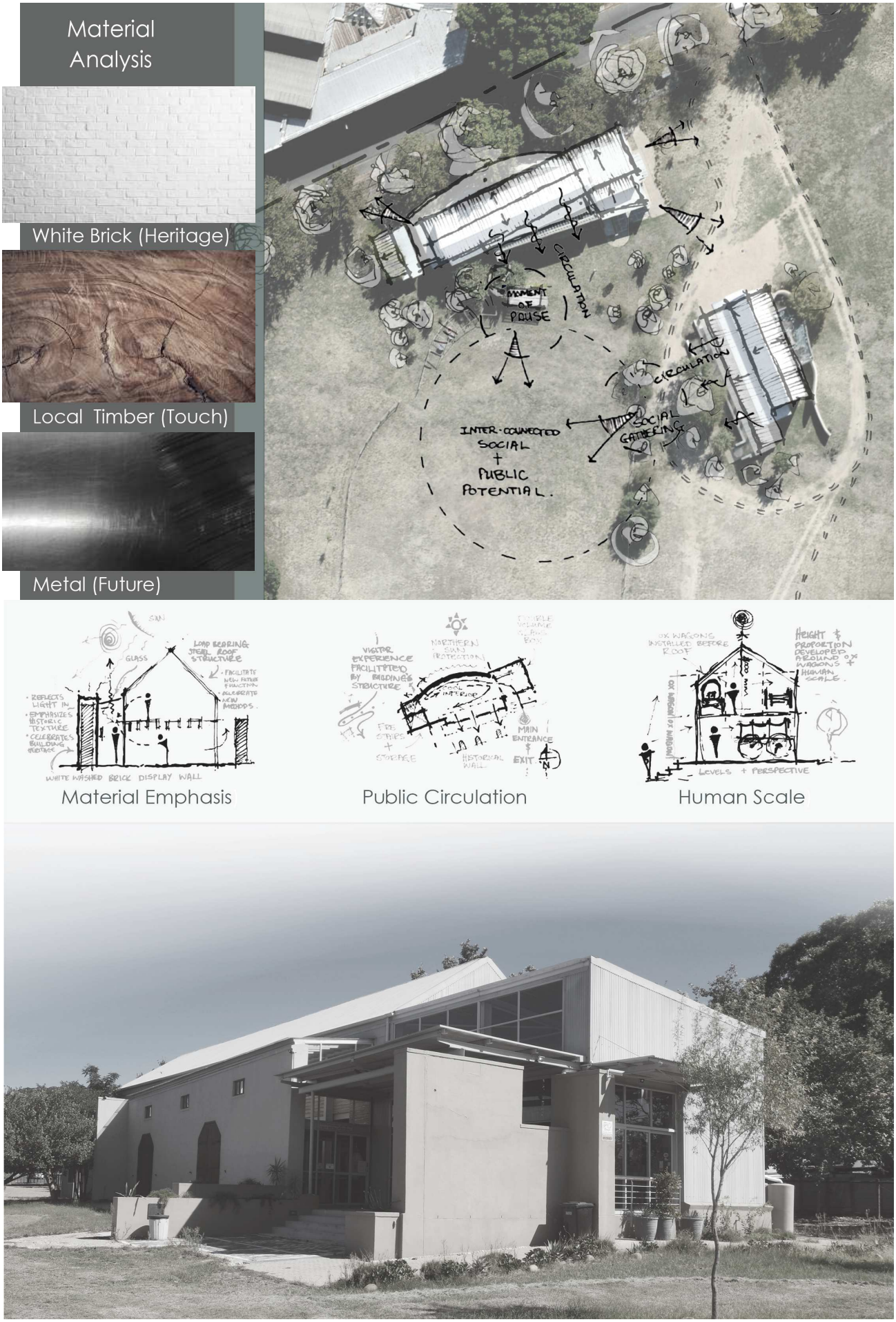


Figure 14: Diagrammatic analysis investigating the De Poort Wagon museum, to identify principles regarding material selection, public circulation, and sensitivity to human scale (Haasbroek, 2022).

Sensitive Scale

The entire structure was designed and constructed around the sizes of the Ox-wagons and exhibition material, supporting human scale, as the Ox-wagon was designed with human intent at heart (Follet, 2012: online). The disconnected, illuminated (Sun-skylight) South 'Memorial' wall and timber first-floor construction, viewed from inside, resembles the interior of a canvas Ox-wagon. This created a sense of safety and isolation from reality, transporting visitors to the day and age of the Ox-wagon, focusing their attention on the multi-faceted exhibition. A very low 'first floor' further emphasizes human scale.

Design Details

This analysis identified a few key design details, relevant to the success of the design. With little exterior context visible from the interior, circulation in the interior is guided by structural intent. Evident with the folding walkway, centrally supported by the main load-bearing steel columns from space created by moving the exterior walls away from the primary structure. This all comes together harmoniously as a vibrant, inquisitive performance, celebrating De Poort's heritage, facilitated by decerning structural design (Follet, 2012: online).

The architectural promenade is emphasized towards the main exhibition on the first floor (mezzanine), through a variety of small, increasing floor height differences. The building, however, is disability friendly with a ramp guiding circulation, (including Fire Stairs at the back service section), creating a sense of equality and extending potential exhibition space along the walls.

Principles Identified

The project started with the concept of celebrating local production heritage but ended up doing much more. It developed skills within De Poort and created a sense of ownership and responsibility for the community (Burger, 2022: interview). Proving that De Poort has the capability and will to finally pursue their new-found purpose. Purpose found by re-activating Assembly, ultimately restoring Identity.

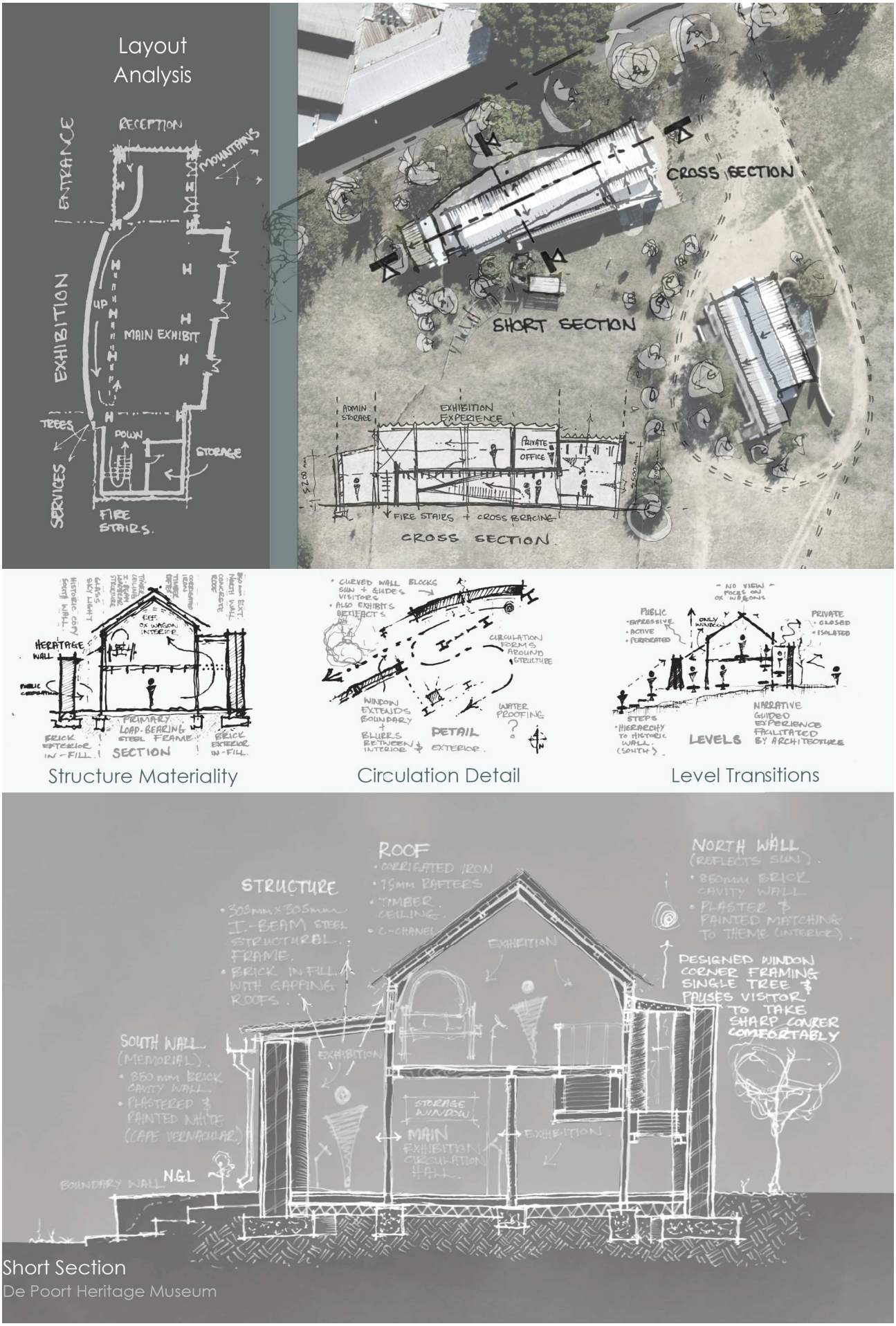


Figure 15: Diagrammatic analysis investigating the De Poort Wagon museum, to identify principles regarding engaging design solutions, structural concepts, and Topological influences contextual to Paarl (Haasbroek, 2022).

A5 | Brief

After my second visit, the idea to generate a conceptual architectural brief with *Ox Wagon Studios* took off. Gathering their contact information from Phillipa (Burger, 2022: interview), I decided to schedule an online meeting. I also contacted the *Drakenstein municipality* in relation to a representative acquainted with the area, and Mr. Louis Schlechter, the municipal town planner for De Poort, agreed to also take part.

On the 21st of March 2022, we conferred, primarily to discuss what architectural input would be able to facilitate the sustainable transformation of the industrial sector to the greatest extent. *Ox Wagon Studios* identified potential within existing production processes first, whereafter, with the help of Mr. Schlechter, we conceptualized possible intervention methods most efficient to municipal space and contextual expertise.

OWS envisions being able to apply this re-use methodology, on a much bigger scale within the community (Burger, 2022: interview). Proposing the possibility of designing De Poort-inspired furniture ranges in collaboration with the community, celebrating local knowledge and materials, with innovative new methods. Additionally, aiding in developing a sense of communal responsibility towards individual accountability, ultimately strengthening De Poort's identity and public significance.

Having furniture design and assembly as the function would be the most logical approach to transforming De Poort's industrial landscape, due to its less complex nature, in comparison to, for example, ox-wagons. The idea is strengthened by the fact that the area is already capable of producing all the necessary components for furniture. Thus, restoring the interconnected way of production and assembly in De Poort, which it was famous for so many years ago (Merwe, 1893).

Increasing the production of components will stabilize the De Poort economy and allow for re-investment into future development. It would not only create new job opportunities but also create a realistic possibility for exceptional talent to shine through. Talent inspired by a dynamic urban fabric, constantly adapting, and challenging the norm.

Ox Wagon Studios

Brief

Japie Smit
Landscape Artist
(Blacksmith)

Gavin Amade
Carpenter
(Timber Sawyer)

Elise Du Plessis
Furniture Designer
(Industrial Designer)

Lubazi Amogelang
Casting Specialist
(Stone Cutter)

Cassidy Rhoades
Crafts Expert
(Leather tanner)

Client Profile

Ox Wagon Studios is a, striving Design studio, specialized in industrial furniture design and the art of making. Serving as a reference for the creation and idealization of a social, human, tangible product. Being experts in multiple fields and mediums, portraying an Innovation hub for professional crafters with in-house design, and rapid prototyping facilities serving many industries.

Project Brief

A ***Micro Industrial Park***, with Manufacturing and Assembly based infrastructure capable of facilitating large scale; component deliveries, production and distribution, activated by a Design hub creating specialized furniture ranges commemorating De Poort. The park is required to utilize passive temperature control methods all year round. The combined floor area should not be less than ***10 000m²*** to ensure comfortable and efficient working environments, whilst allowing small scale industry.

The aim of this brief is to explore alternative design solutions, sensitive to heritage and the environment, by re-activating unutilized space, and static edge conditions. This will ultimately stabilize sustainable function through reconnection (Assembly). This will focus on the integration of restored public significance with that of production and industrial functions, in order to contest monotonous industrial landscapes.

Site Location

OWS would like to request an intensive site analysis of De Poort to determine the appropriate site for the facilities. The proposed site must consider the following with great discernment: the re-activation of lost urban connections, the re-use of existing infrastructure and ultimately, public interaction with the manufacturing process. Static Drakenstein Municipal properties would primarily be considered, as they present the best financial possibilities. The municipality also recognizes the project's great potential for social and economic development resulting in them acting as main financial investors.

Exterior

Private staff Park	Service Yards (Containers)	Public Event space

Interior

Assembly Facility	Design Hub	Staff Room
Product Storage	Prototype Workshop	Board room
Procurement Hub	Community workshop	Coffee Shop
Component Facility	Management	Restaurant

A6 | Rational

The importance of executing a project brief successfully lies in comprehending the scale of intervention required (Martins, 2020: online). Also, to protect the project from under or over-developing infrastructure past natural restrictions generated by the urban context, including culture, community, climate, and resources. This approach leads to the understanding that different depths of investigations, could be more applicable to certain parameters, than others.

Various methods of Typological, Morphological, and Topological enquiries into De Poort were then applied. Each with its applicable scale of analysis, ensuring that the most relevant information was used to determine transformation potential.

This is diagrammatically depicted in Figure 16, as Morphology, relating to the search for identity within the Macro context of De Poort. Secondly Typology, as Meso contextual lens, analysing existing and lost production functions in De Poort, to identify potential connections and lines-of-flight. Concluding with Topology, representing Micro levels of inquiry, concentrated on determining the relevant scale, with reference to architectural components necessary. The different levels of analysis thus aiding the design process with developing research aims and objects, to identify the following relevant architectural insights:

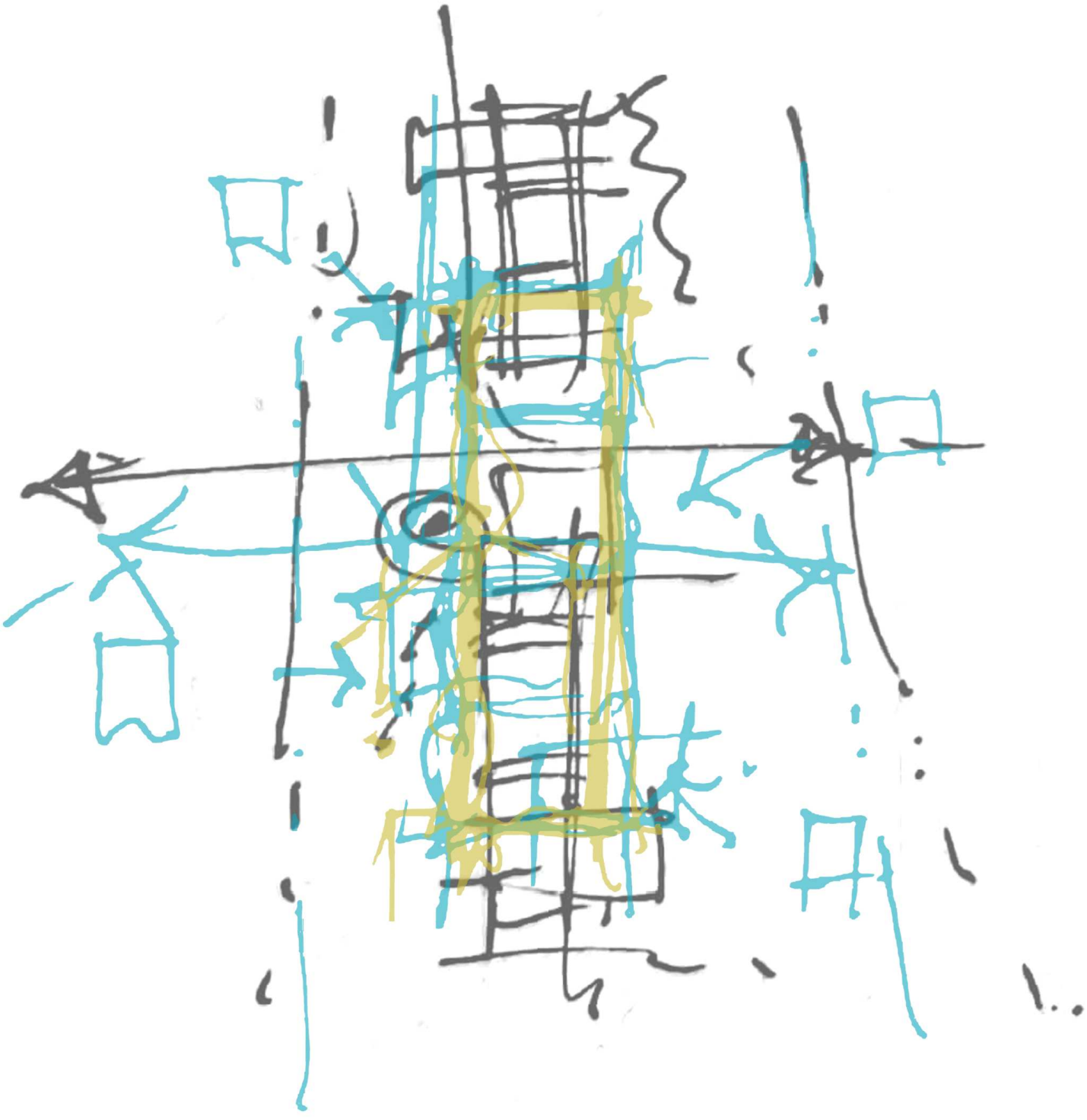


Figure 16: Diagrammatic interpretation of the proposed theoretical concepts, in relation to the three different scales of investigation. Portraying the most relevant combination, contextual to the fractured urban fabric (Haasbroek, 2022).

A6 | RATIONAL

Principles Identified:

Morphology

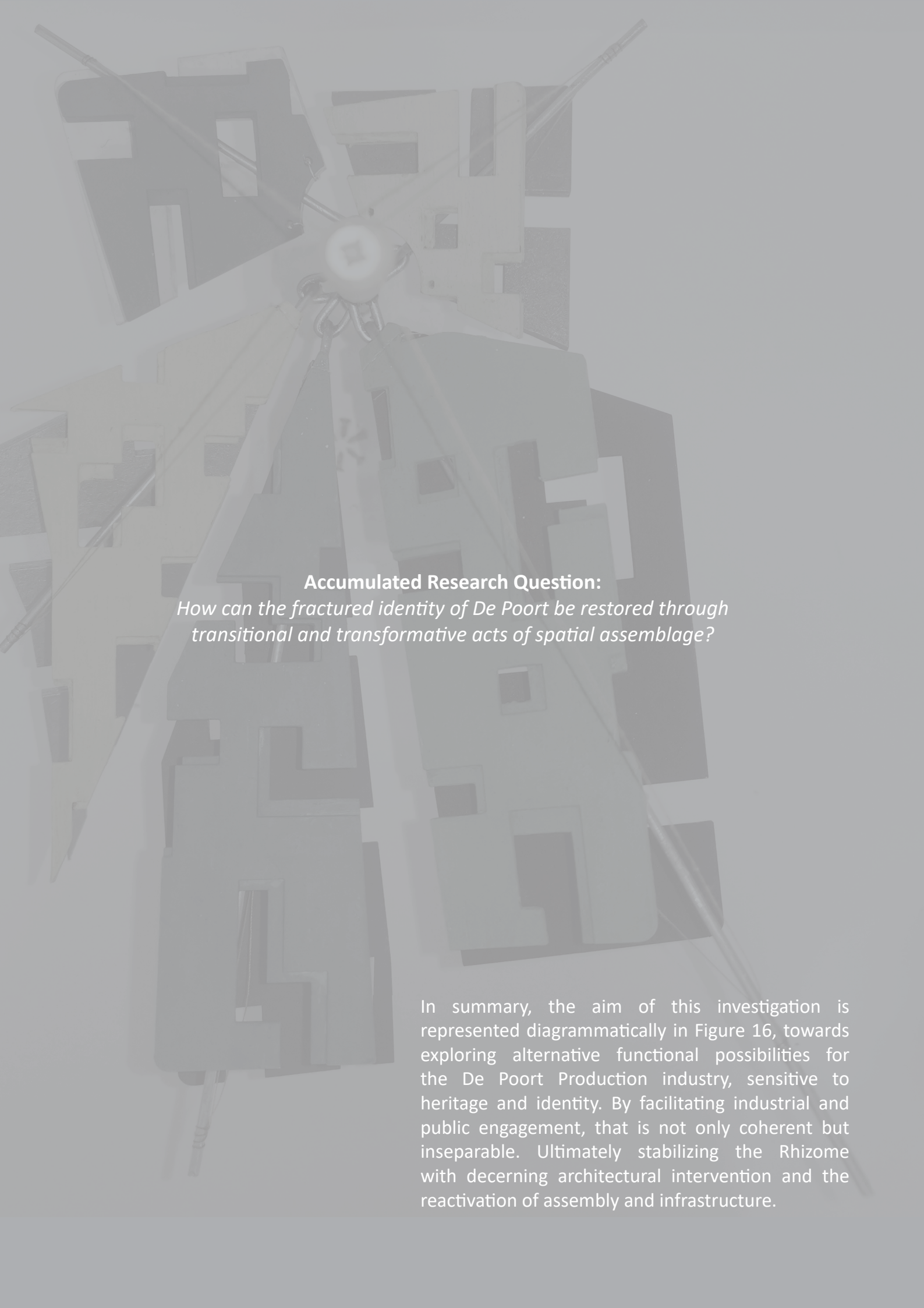
1. How can an architectural intervention restore Identity?
    - What morphological style of architectural intervention can address the decaying the De Poort precinct, identify to re-activate public engagement with the decaying historic urban fabric?
    - What visual conservation strategies will acknowledge the industrial character of De Poort, strengthening identity, whilst allowing for innovative future development?

Typology

2. How can Typological transformation of De Poort's production industry, reconnect lost and fractured industrial function?
    - What act of transformation, can architecturally address the restoration of production and assembly in De Poort?
    - How can architecture restore the interconnected nature of production in De Poort?

Topology

3. How a design intervention, decerned towards contextual scale, can create the most contributing architectural components for De Poort?
    - How can the project utilize the community and its resources efficiently, to produce not only production possibility, but also continued skill development and social progression?
    - How can investigating alternative design solutions, with reference to industrial working conditions and environments, allow for a more comfortable architectural experiences, restoring public significance?



Accumulated Research Question:

How can the fractured identity of De Poort be restored through transitional and transformative acts of spatial assemblage?

In summary, the aim of this investigation is represented diagrammatically in Figure 16, towards exploring alternative functional possibilities for the De Poort Production industry, sensitive to heritage and identity. By facilitating industrial and public engagement, that is not only coherent but inseparable. Ultimately stabilizing the Rhizome with decerning architectural intervention and the reactivation of assembly and infrastructure.

B

THEORETICAL DISCOURSE + SITE ANALYSIS

B1
Assemblage Theory

B2
De Poort as significant Assemblage

B3
Re-storing Identity through Rhizomatic Macro analysis

B4
Re-activating Production and Lines-of-Flight through Meso analysis

B5
Re-imagining architectural Assembly through Micro Analysis

B6
Hermeneutic Circle as the compass of Application

Figure 17: De Poort Macro Urban Landscape (Haasbroek, 2022).

Figure 18: Photo of existing train maintenance workshop (Out-of-service), to be transformed as an attemt at architectural re-use. (Haasbroek, 2022).

Figure 19: The existing *Buffer-stop* on site, where the historic service rail line generates from (Haasbroek, 2022).

B

THEORETICAL DISCOURSE + SITE ANALYSIS

The next part of the document attempts to explain the relevance of the Assemblage Theory, aimed at different depths of investigation (Macro-, Meso-, and Micro Analysis), to ensure maximum discernment of the project's interconnectedness (Greene, 2013).

Assemblage Theory is a concept developed in A Thousand Plateaus: Capitalism and Schizophrenia, a 1980 book by the French philosopher Gilles Deleuze and the French psychoanalyst Félix Guattari. As a "positive exercise" in what Deleuze and Guattari refer to as rhizomatic thought, A Thousand Plateaus was created as an experimental philosophical work that addressed a much wider range of subjects relating to multiplicities and arrangement (Deleuze and Guattari, 1987).

By combining the theoretical discourse with the site analysis, it becomes possible to investigate the assemblage of complex urban identities at multiple levels of investigation, giving insight into the most sensitive transformation of the De Poort Rhizome. This enables the practical possibility of utilizing the theoretical stance as an applied lens for an investigation into site and context, in a singular chapter.

Research Question:

How can the fractured identity of De Poort be restored through transitional and transformative acts of spatial assemblage?

B1 | Assemblage Theory

It can be argued that the industrial landscape of De Poort, resembles a fractured assemblage, barely held together by a few components. A site deconstructed through time and scrapped for parts, losing all future hope of regaining significance. Gradually disassembled by tools, representative of spatial isolation, terminated functional purpose, and a general lack of confidence, leading to the loss of De Poort's singular and universal identity, being paralyzed to transformation, unable to activate or produce the necessary components for it.

This chapter exposes the extreme similarities that complex assemblages have towards urban landscapes, such as being a sensitive constellation of components constantly interacting with one another (Greene, 2013). Giving reference to urban components as individual identities or bodies, Lines-of-Flight as existing and possible connections between them, and Rhizome as the greater Urban fabric encapsulating the relevant components. Appreciated as an assemblage of accumulated identities and individual components, with unique characteristics, simultaneously (DeLanda, 2016).

The authors Deleuze and Guattari, have assigned the term "rhizome" referring to a composition like that of roots. In general, a rhizome is defined as an interaction system applied to any division that follows no specific pattern or rules of organization. This then inspired investigation into Assemblage theory and how a singular identity comes into being or manifestation, with one another and their universal identity (Mambrol, 2017 online). When compared to the relation of components, a rhizome forms, assemblages. An assemblage is a collection and arrangement of parts, on two possible interactional planes, as discussed by Deleuze and Guattari (Deleuze and Guattari, 1987).

There is a plane of organization where objects interact vertically, in a hierarchy, and in a certain sequence such that if one of its components is missing, the entire system falls apart. This refers to the historic obstacles faced by De Poort's complex interconnectedness, with mention to production.

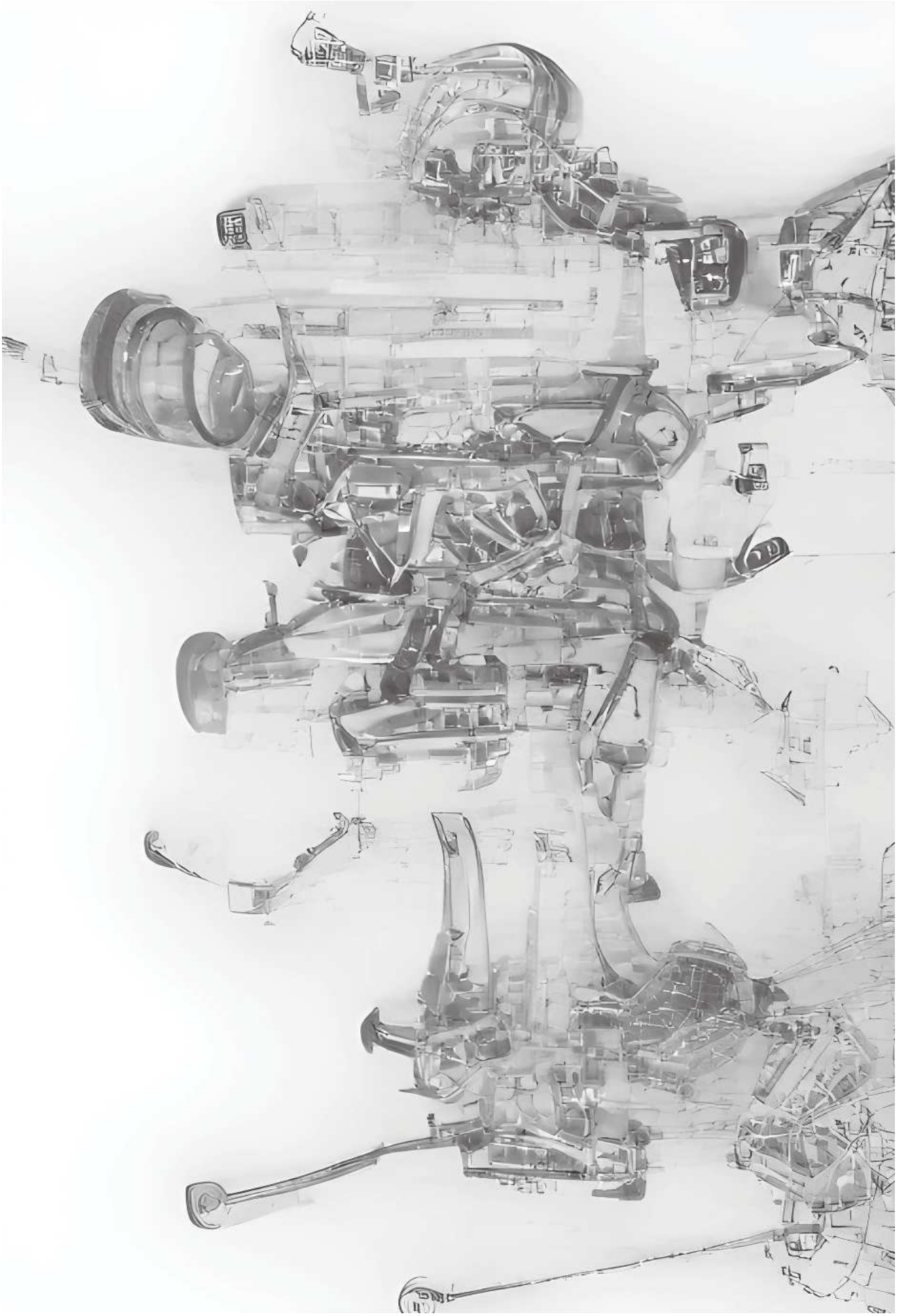


Figure 20: Abstract visualization depicting the deconstructing De Poort machine. This image successfully argues the resemblance De Poorts' fractured urban assemblage has, to a deteriorating machine (AI generated Haasbroek, 2022).

6 Guiding principles of Rhizome

Consistency would be the second level of perspective (Deleuze and Guattari, 1987). This plane is where the rhizome functions. It is a horizontal alliance without a clear direction where all its multiplicities interact with one another. Every aspect of life is interconnected in some manner, but only on one plane. Deleuze and Guattari thus created six guiding principles to help navigate the idea of rhizomatic connections (Strella, 2013: online).

The first principle, Connectivity, stipulates that every portion of the system is in some manner related to another part. The second concept, Heterogeneity, states that a rhizome is a relationship between objects of various natures. The authors use the example of orchids and bees, both engage in the reproductive system of one-another, although each comes from a completely distinct environment (Greene, 2013). Multiplicity is the third principle. As previously stated, all the components of a rhizome are related to one another, and then to others, and these others to a higher number of others; as in a mathematical representation of exponents, having no beginning or end (Mambrol, 2017: online). Assigning Rhizome's fourth fundamental idea as Rupture. A rhizome is said to be resilient to fracture or deconstruction. If one of its components is broken, the remaining components will always continue their original course or change their role to become de-territorialized as a new function (DeLanda, 2016). Cartography, and Decalcomania, comprise the final set of guiding principles, portraying that the Rhizome functions as a map. You can enter at any point, but because it has no beginning or end, you cannot sustainably follow it (Deleuze and Guattari, 1987). This then generates the possibility of combining urban factors and other methods identified, in a much more decerning method of analysis.

The proposed diagram presented in Figure 21, depicts the strategic theoretical approach to analysing the contextual influences, through the lens of Assemblage theory and the six related principles inferred by the authors of A Thousand Plateaus: Capitalism and Schizophrenia. The urban complications realized through the Morpho-, Typo-, and Topological investigation done in Chapter 1, acts as final reporters on their deficiency, giving De Poort the necessary information, from their newly acquired perspective, to determine what changes are compelled by the analysis, and how to sustainably adapt to them.

In my opinion, Assemblage theory has the potential to guide sustainable urban regeneration in De Poort, if the theoretical methodology defining it is utilized interactively with urban analysis. By determining the individual value of each contributing contextual component present in the Urban Assembly (Rhizome), and its relation to others, it becomes possible to divide urban elements into effective and ineffective components.

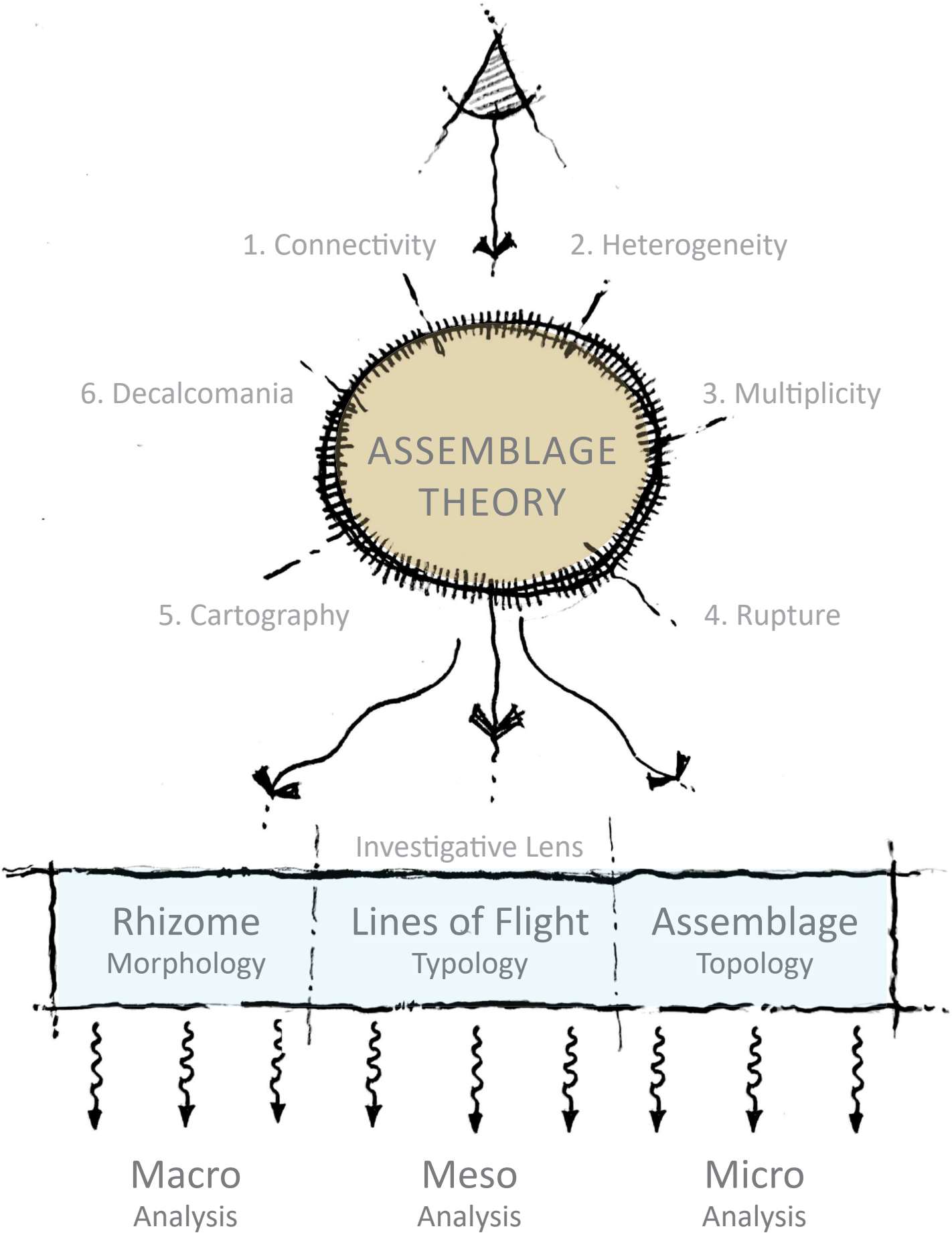


Figure 21: Strategic Diagram, visually presenting the method of Theoretical integration proposed, regarding different depths of site analysis and how it will be applied throughout the design process (Haasbroek, 2022).

B2 | De Poort as significant Assemblage

De Poort as Assemblage

Assemblage creates the possibility to increase the identity of the greater assemblage (De Poort), by replacing or repairing individual parts (Urban components) (Strella, 2013: online). Simplifying the complex comprehension of Assemblage theory and all its multiplicities, to small decerning architectural reactions on context, will allow for adaption to that change.

Ultimately, by striving to facilitate architectural dialogue between varied scales of urban analysis, it will generate the most appropriate transformation for De Poort. A dialogue that thus produces a sustainable evolving typology, that does not merely delay redundancy, but prevents it entirely, through generating dynamic new multiplicities of assembly constantly (DeLanda, 2010).

This then leads to our current comprehension of an ordered, rational society, described in the article: Becoming Otherwise: Artful Urban Enquiry by Rike Sitas, as problematic. The article argues that to transform, de-centre, and decolonize previously isolated spaces, architectural intervention requires the same academic intentions (Sitas and Pieterse, 2013). It questions whether urban research is always adequately equipped to capture every possible facet of 'cityness' (Simone, 2008).

Assemblage theory avoids such confrontation and essentialism described by the article, by focusing on the historical processes that produced those products, with the term 'historical' referring to cosmological and evolutionary history in addition to human history (DeLanda, 2016). As a result, the identity of any assemblage at any level of scale is always the product of a process (territorialisation) and it is always precarious since other processes (deterritorialization) can destabilize it (Mambrol, 2017: online).

Raising the question, that if pre-Urban-analysis was in closer coloration with individual Urban perspectives, to appropriately reflect the dynamic interconnected Rhizome, the significance of singular Urban components, and the necessity of the Lines-of-Flight (connections) between them would be reflected. It might have the possibility to contend with urban pre-conditions more accurately, to fundamentally bring together and deepen the analytical and political edge of alternative forms of urban enquiry.

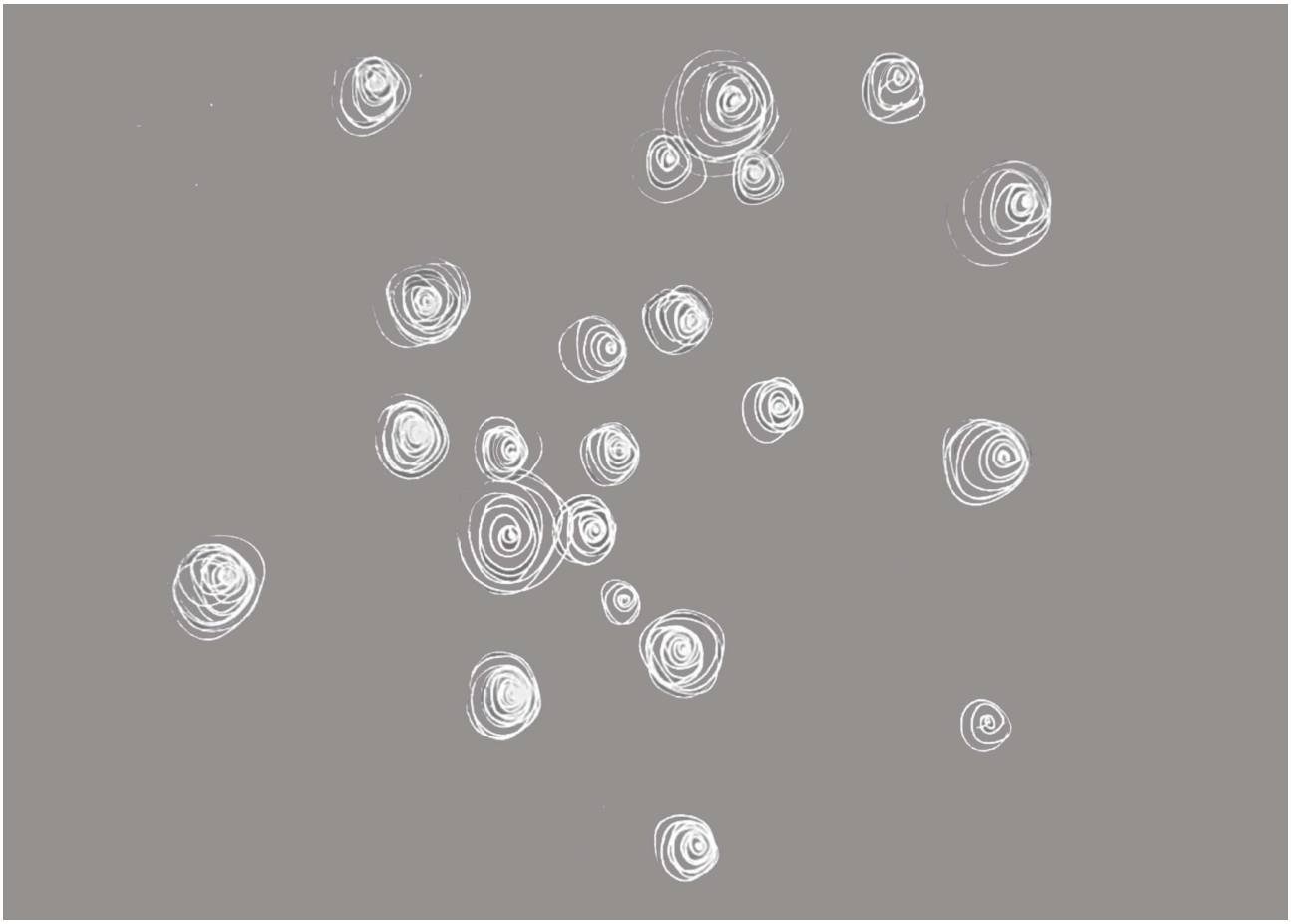


Figure 22:Abstracted visualization of the current static De Poort Rhizome

Figure 23:Abstracted visualization of the dynamically transforming, yet stabile, De Poort Rhizome (Haasbroek, 2022).

B3 | Re-storing Identity through Rhizomatic Macro analysis

Ruptured Identity

A raptured identity is a theoretical notion that raises the possibility for research into the relationship between architecture and society, relating to the idea of architecture and social atmosphere (Sitas, 2020). Questioning how people react to a change of space. Whether it is transforming or eliminating, a part of their environment, architecturally associated with singular- and universal identity (Deleuze and Guattari, 1987). Before that is possible, however, we must understand the true components pertaining to a productive urban landscape, to be able to interpret the information gathered by the analysis. The definition, the article; Becoming Otherwise: Artful Urban Enquiry, gives to what a 'good' city is, connects to the ability to not merely act as a backdrop, but rather as a catalyst for human interaction. The city should not just meet the basic needs of its population but foster urban environments where social engagement and cultural life thrive (Sitas, 2020). A city must be a setting, colourful and alive as it is accessible, safe, and efficient. This, conversely, is a very broad idyllic comprehension of what a city should be and still does not fully represent the shape-shifting essence of cities. Due to this, global research has reached a diverging point, as no universal theory exists.

When the so-called informal morphology becomes 'normal' then it can no longer be seen as deviant. Although scholars have recognized this theoretically, how this is studied has yet to shift dramatically. On this Mbaye and Dinardi stated, that simple structural critiques may be convenient, but do very little to portray the complexities and contradictions identified through local enquiry, into particulars, within the immediate context (Mbaye and Dinardi, 2019). Challenging existing investigative methods, into the Macro Morphology of De Poort, has the potential to develop an architectural language that will not only depict its history, but celebrate it, with decerning, yet confidently innovative visual features.

Cities will always defy simplistic classification, because of the truly transformative tendencies they possess, shaped by a complex web of relations between everywhere and everything (Simone, 2008). Re-assembling the Morphological identity within De Poort then plays a key role in sustainably transforming its fractured urban fabric. Conceived as dynamically evolving Lines-of-Flight connecting increasingly relevant nodes (architectural components), intent on re-generating significance to singular identity, ultimately restoring universal identity (DeLanda, 2016).

Figure 24: Photo of a contemporary building being constructed in De Poort, utilizing Morphological elements from the existing context (Haasbroek, 2022).

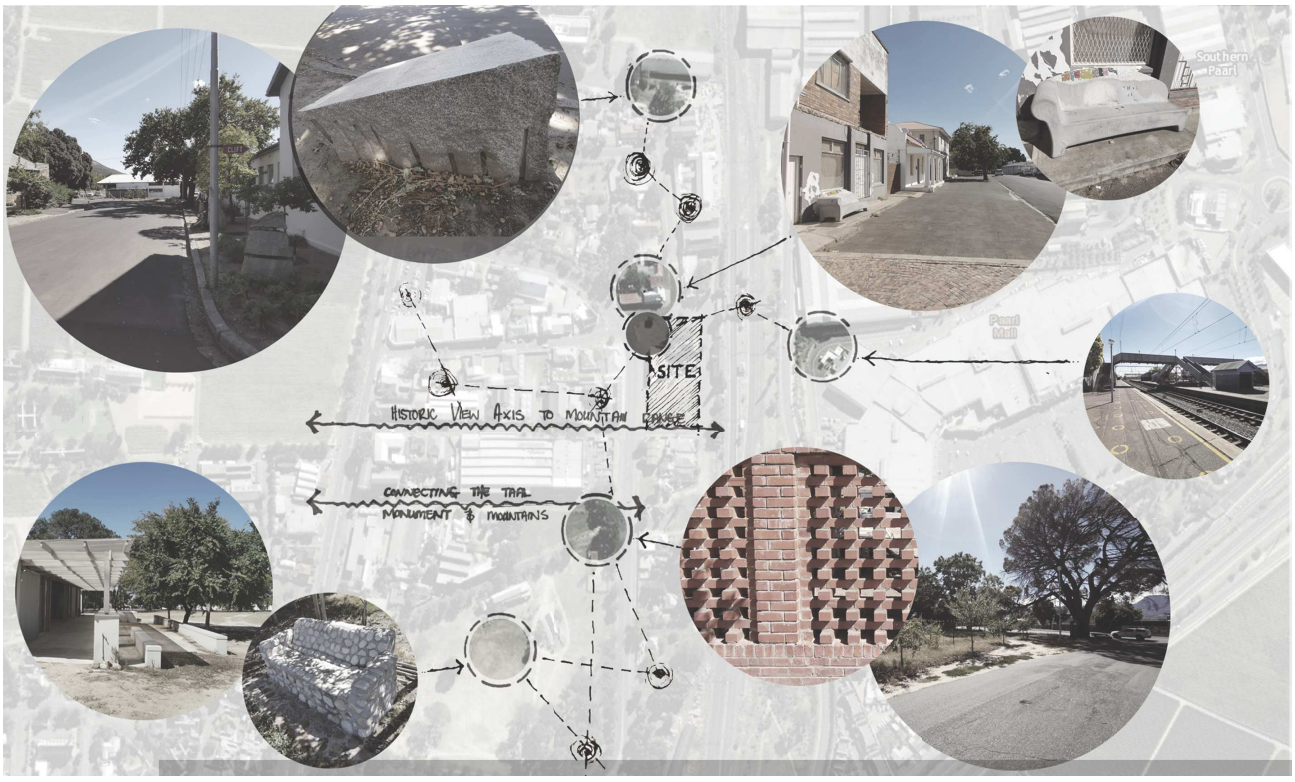


Figure 25: Diagrammatic collage investigating multiple Morphological factors pertaining to De Poort and its rich infrastructure (Haasbroek, 2022).

Morphological reflection on Rhizome

Rhizome Morphology, a term derived from Horticultural research, defines the visual aspects of rhizomatic root systems (Chomicki, 2013). Further investigation provided proof, that these classifications were based on the predictability of the root system visually and structurally, relating to the establishment of identity through morphological features. This could be more clearly explained by using the metaphor of a plant as an example. As depicted in Figure 26, a plant consists generally of a root system, stem, leaves, and flowers. These elements, however, change dramatically in terms of visual transformation through their life cycle, whilst in totality, retaining their universal identity to then determined species. Whether the plant is young, mature, or dying, representing different visual stages, it still identifies as that specific plant.

Because of its organizational characteristics then, we can also assume urban fabric, to be a plant-like Rhizome, fortunately without the reality of an actual linear cycle. Representing a composition of singular components (Molecules), growing, and interacting together, constantly conforming to a pre-determined identity. Urban compositions, however, as in relation to plants, possess the ability to re-assemble after a catastrophe. Able to discard, restore or replace components as it sees fit within the Rhizome, to retain functionality or by changing it, due to its indestructible nature, whether it be static, dynamic, balanced, or chaotic (Deleuze and Guattari, 1987).

If society, and all its pertaining multiplicities, can be conceptualized as an identified rhizome (Sitas, 2020), it will adapt successfully to change, given enough time. Motivating the realization that an urban re-assembly, guided by Rhizomatic principles, has the potential to generate alternative, yet applicable design solutions. By investigating Rhizome, and the six pertaining characteristics identified by Deleuze and Guattari, through site analysis, we might find a new perspective on engaging visually with urban compositions, concerning public significance and identity (DeLanda, 2010).

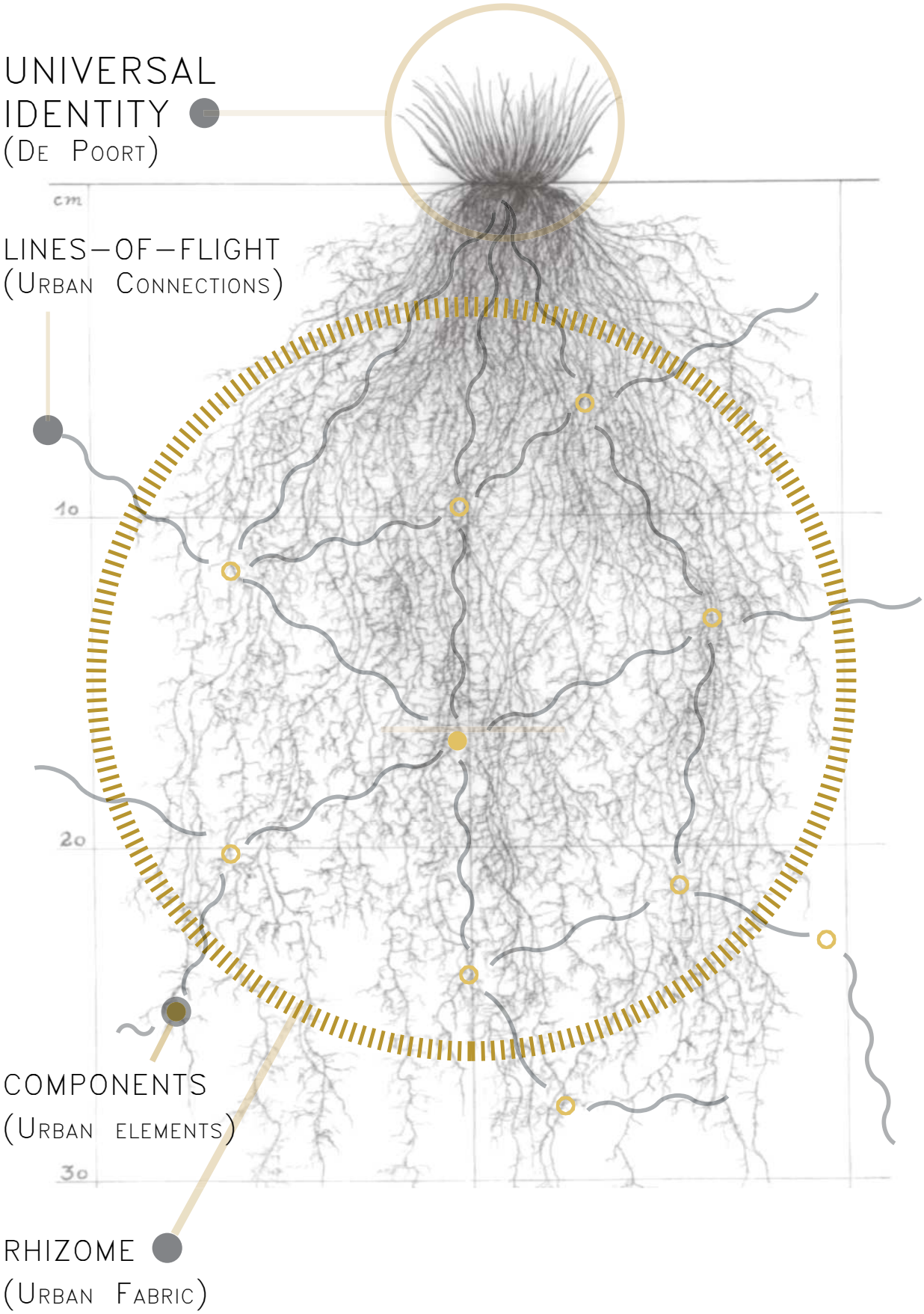


Figure 26: Adapted drawing of a plants' root system, to portray the similarities it has to the Rhizomatic concept of Assemblage theory (Original image: McIntyre, 2010. Edited by: Haasbroek, 2022).

Macro Site Analysis (How to Restore Morphological Identity)

The assumption that social lives are essentially rational, meaning citizenship is acted out as rational criteria, developed research methods to measure rational variables, blurring the possibility of a romantic notion pertaining to public space (Sitas, 2020). Ultimately, neglecting human phenomenological experience and material engagements, necessary for shaping inner-city identity, thus causing a disconnect between embodied human interaction and the urban fabric. Stating that our current approach to creating interconnected spaces, or places of public engagement, is dominated by rational motives, removing human influence and typically foregrounding the physical environment (DeLanda, 2010).

The study of urban spatial form is known as urban morphology, depicting the assemblage of buildings and public spaces that define the city (Arise, 2021: online). This subject introduces the field of urban morphological analysis and a range of mapping techniques. It incites the examination of causes that form such an assemblage as well as the spatial behaviours that emerge from it. Urban morphology mapping necessitates treating the city as a set of diverse layers of information and then selecting specific layers for specific analytical purposes. This generates urban design parameters including building footprints, heights, types, grain size, densities, functions, movement networks, and street life (Sitas and Pieterse, 2013).

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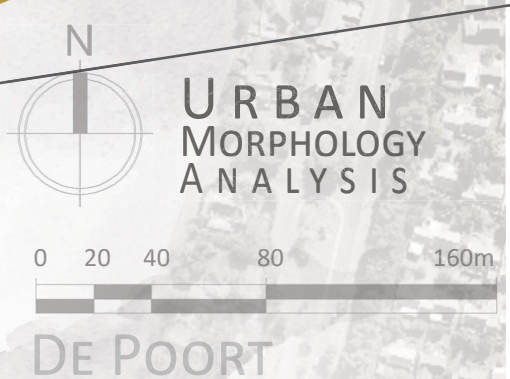


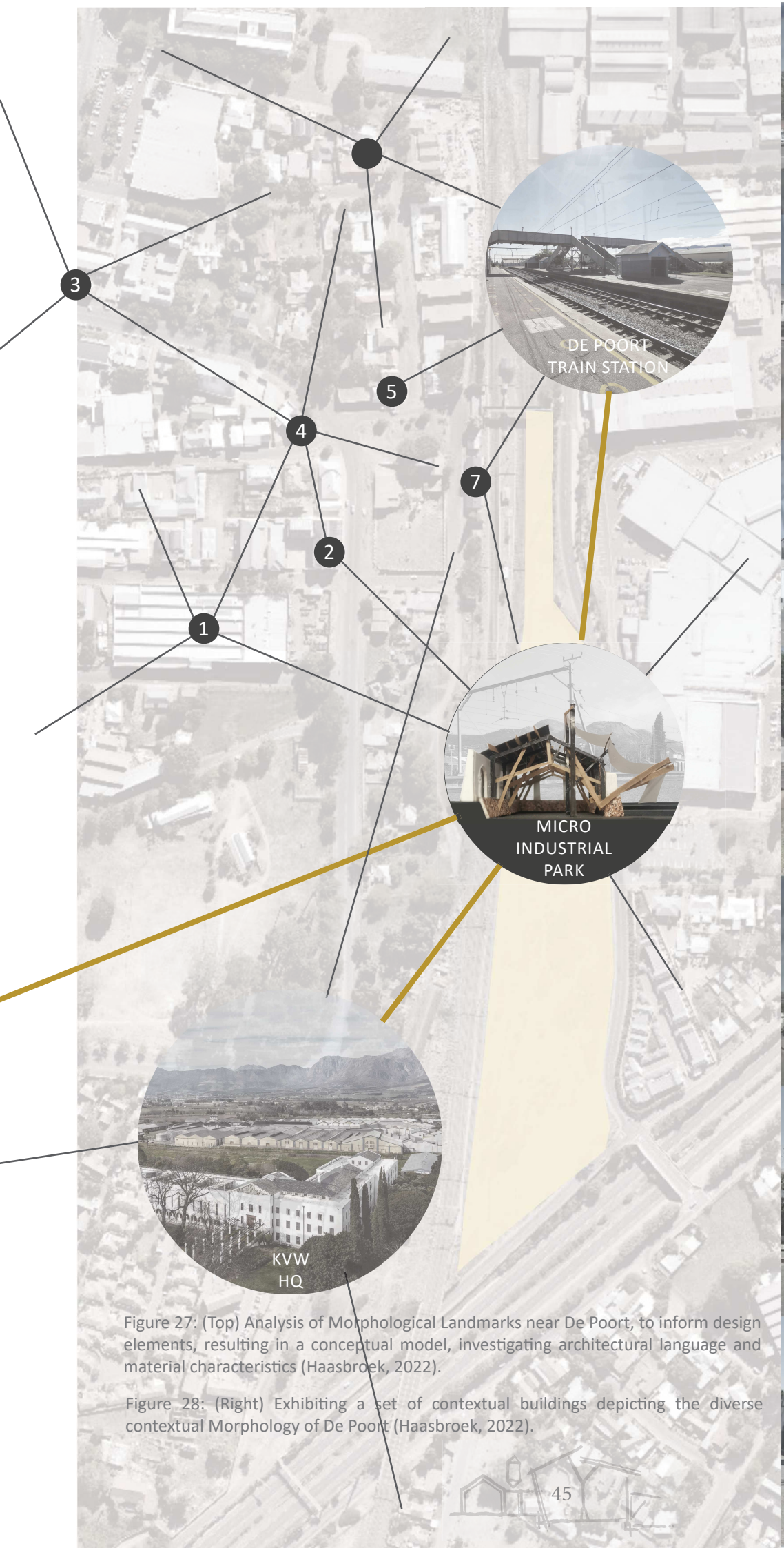


Figure 27: (Top) Analysis of Morphological Landmarks near De Poort, to inform design elements, resulting in a conceptual model, investigating architectural language and material characteristics (Haasbroek, 2022).

Figure 28: (Right) Exhibiting a set of contextual buildings depicting the diverse contextual Morphology of De Poort (Haasbroek, 2022).

Macro Site Analysis (How to Restore Morphological Identity)

My research study thus encourages alternative methods of site investigation, into applicable Morphological components, through the applied lens of Assemblage theory. Hereafter followed an extensive Macro investigation into De Poort, to possibly identify Morphological principles to allow for maximum respect, during architectural addition. The restoration of De Poort's identity concerning its current static state is thereby focused on, attempting to believe that sustainable city growth can be achieved, through interconnected preservation, and the regeneration of existing Morphological identities, whether singular or universal.

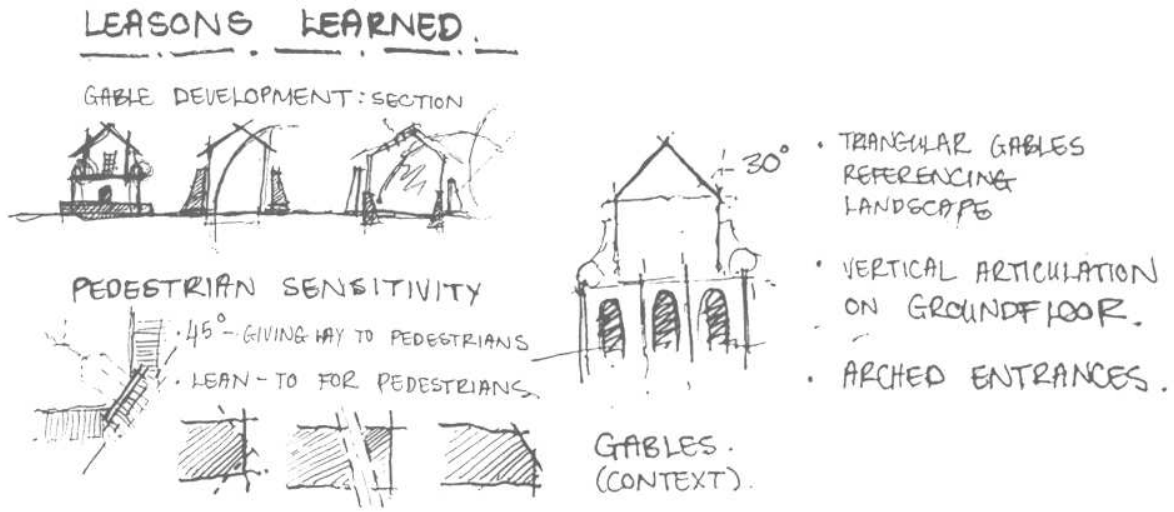


Figure 29: Sketches of Morphological elements Identified, to inspire the rest of the design progression (Haasbroek, 2022).

Morpological Analysis

Diagramatic investigation on the Macro context of De Poort

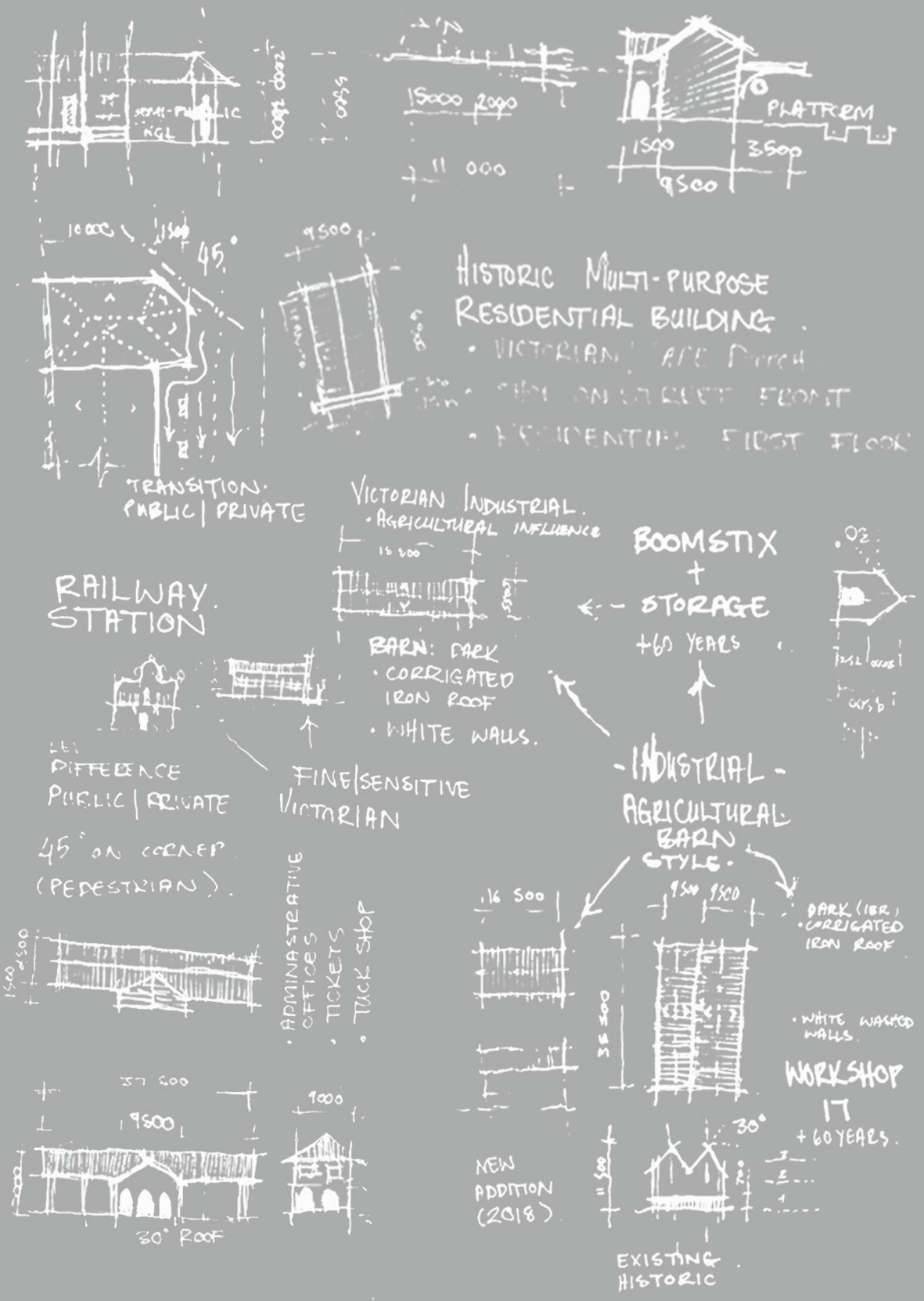


Figure 30: Diagrammatic sketches investigating multiple Morphological factors pertaining to De Poort and its rich infrastructure (Haasbroek, 2022).

B4 | Re-activating Production and Lines-of-Flight through Meso analysis

Static Connections

Static connections is a theoretical notion that raises the possibility for research into the relationship between architecture and Industrial Typology, relating to the idea of architecture and the connections it facilitates. Questioning the possibility, architecture as multiplicity within the Rhizome possesses to reconnect broken industrial connections in De Poort. This is where the history of a specific area becomes relevant, with mention of previous successful Typological systems, and the reasons why they failed over time. Encouraging research on the different functions existing at current, within the urban landscape, in relation to historic functions to determine the appropriate method of sustainable engagement, whether it be re-storing, re-assembling, or rejuvenating (Rayner, 2013: online).

As De Poort's history indicates, its Typological function has evolved many times over the passing years, proving its adaptability to change. Starting as a modest production village outside Paarl in the 1860s, producing hand-crafted wagons, with ideal conditions to connect Paarl with Kimberley, and the great financial prospect the Diamond rush ensued (Langham-Carter, 1991). At the height of its success in the 1920s, De Poort was the financial capital of the wagon industry, until it could no longer sustain itself, against the introduction of the first automobiles (Merwe, 1893). The area still has a strong localised, bespoke character, that has turned prone to urban infill and re-use. Referencing the already interconnected perspective of the existing community, due to subjection of constant change and adaption relating to function, to ultimately survive.

Using De Poort's history as precedent, it is clear, that we as a society always dream of transformation. For Deleuze and Guattari, Lines-of-flight with urban connections is descriptive of multiplicity, change, and becoming, subsequently focusing on the process of adaption, rather than on the essence of being (Deleuze and Guattari, 1987). We as a society naturally coordinate and form alignments, combining our powers to improve, recreating trajectories shaping transformed Typology (Simone, 2017). With information relating to the Macro analysis in the previous section, it is clear that De Poort has obvious connections to manufacturing, assemblage, and distribution, but also reflects a deeper testament to adaptability than previously understood.

Figure 31: Graphically compiled collage, symbolically resembling the Typological integration of De Poort, with various contextual and visual elements. (Haasbroek, 2022).

Typological reflection on Lines-of-Flight

“Lines of flight are bolts of pent-up energy that break through the cracks in a system of control and shoot off on the diagonal. By the light of their passage, they reveal the open spaces beyond the limits of what exists” (Rayner, 2013: online). More specifically, assemblages are made up of lineages that escape the confines of one component and connect to another, known as lines-of-flight (Thornton, 2020). The referred to theoretical notion appears frequently throughout A Thousand Plateaus, where it serves an important function in integrating the book’s other conceptual advances, such as the concepts of the assemblage and the machine (Deleuze and Guattari, 1987).

The world is made up of numerous assemblages as mentioned, and change takes place when these assemblages connect in a specific way. As a result, transformations in assemblages can occur only when a line-of-flight connects one assemblage to another and initiates a mutual becoming between the two (Thornton, 2020). An assemblage never portrays a simple composition, but it is always composed as a creative or particular path of motion, materializing as lines-of-flight, through which it can reconfigure itself.

In the case of De Poort, lines-of-flight, creates an alternative perspective into existing Typological circumstances, to better analyse future potential with a more sustainably decerning method. This gives insight into a more dynamic aspect of urban connections, to be a journey of discovery rather than just means of travel (Rayner, 2013: online). Therefore having the ability to aid Typological nodes within De Poort to exert their maximum potential in the most efficient of manners possible. This generates stability for adaption, to constantly changing contextual influences, in addition to extending the productivity of architectural components concerning one another.

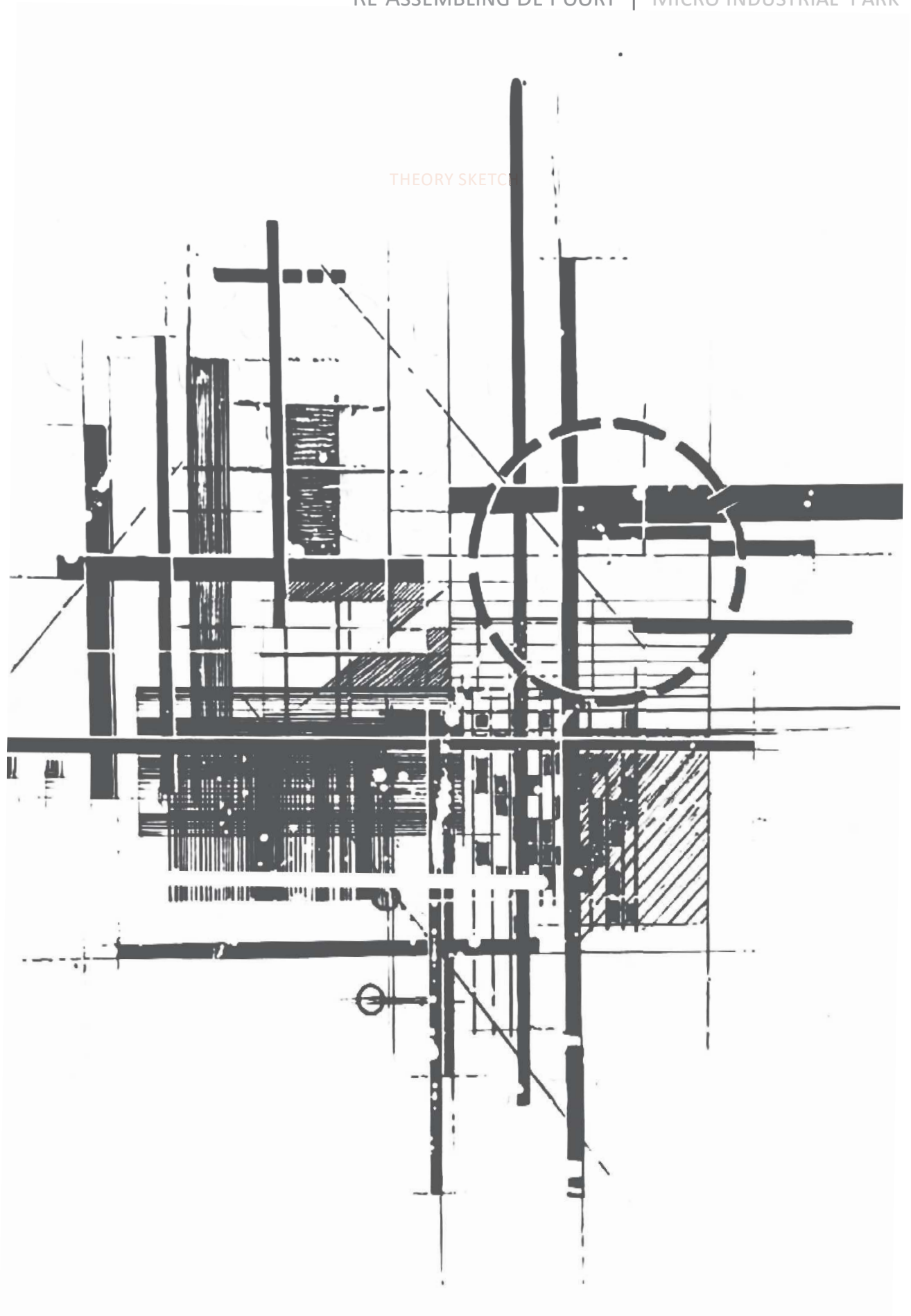


Figure 32: Conceptual sketch visual portraying the extreme possibilities connected to Lines-of-Flight to re-activate static urban Assemblages (Haasbroek, 2021).

Meso Site Analysis (How to Restore Typological connection)

According to its connective characteristics then (or the visible lack thereof), we can also assume urban fabric, to be indicative of lines-of-flight, by representing a composition of singular components (architectural nodes), assembling, and interacting together (Deleuze and Guattari, 1987). Regarding the Typological Meso context, De Poort finds itself in a state of isolation, depicting a chaotic assemblage, mostly activated only at the singular component level without the necessary connections to facilitate progressive industry or real collaboration. It does however contain a large amount of similarly themed Typological components. If re-connected, through the aid of alternative contextual analysis, relating to creative Lines-of-Flight, can regenerate forgotten potential and facilitate the adaption of Typological transformation (DeLanda, 2016).

Thus, experimenting with architectural elements of expression is vital to sustainable transformation. This practice however would be rendered ineffective, if it were not accompanied by a corresponding method of experimentation, referring to the arrangement of architectural components (Rayner, 2013: online). The goal here, will not be to only draw lines of flight, but to bring them together in such a way that they form a new set of relations, that does not exist within the parameters of the existing Rhizome (DeLanda, 2010).

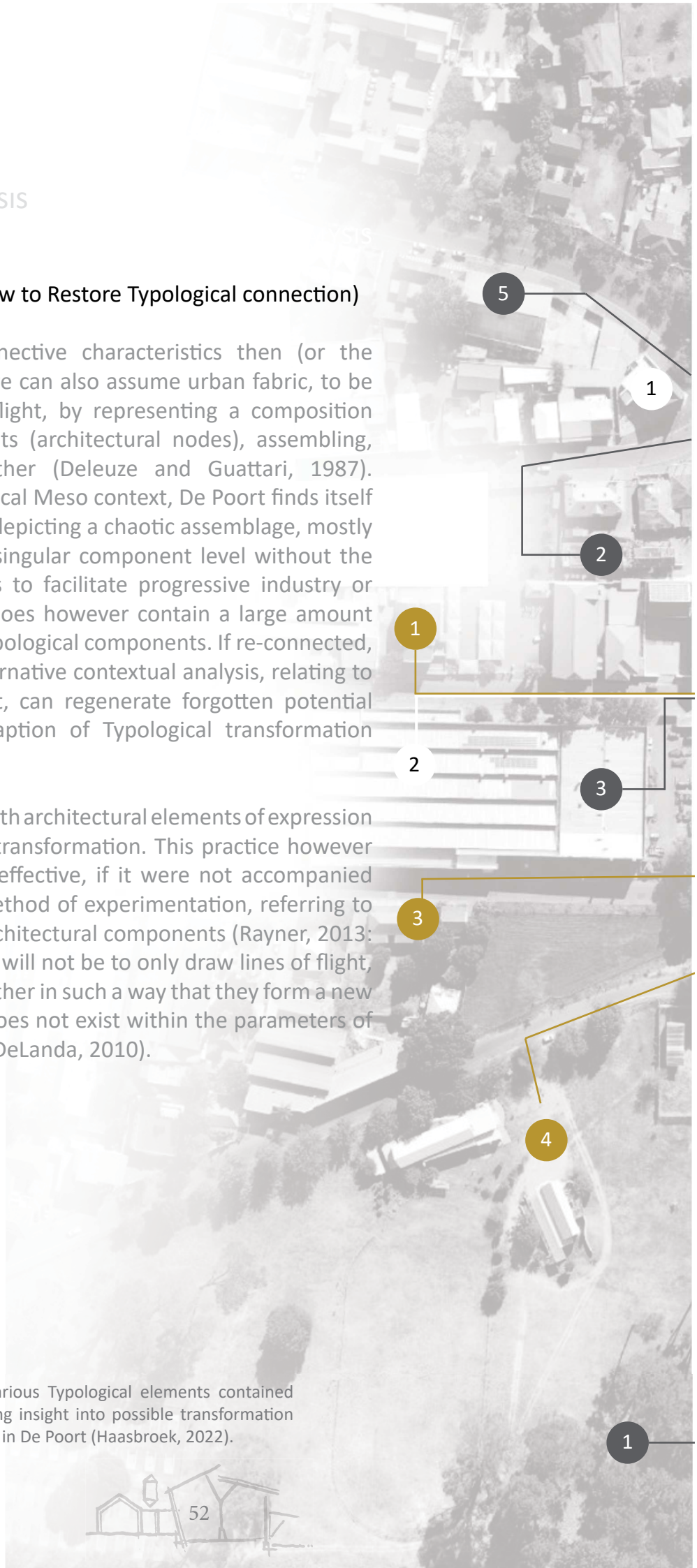
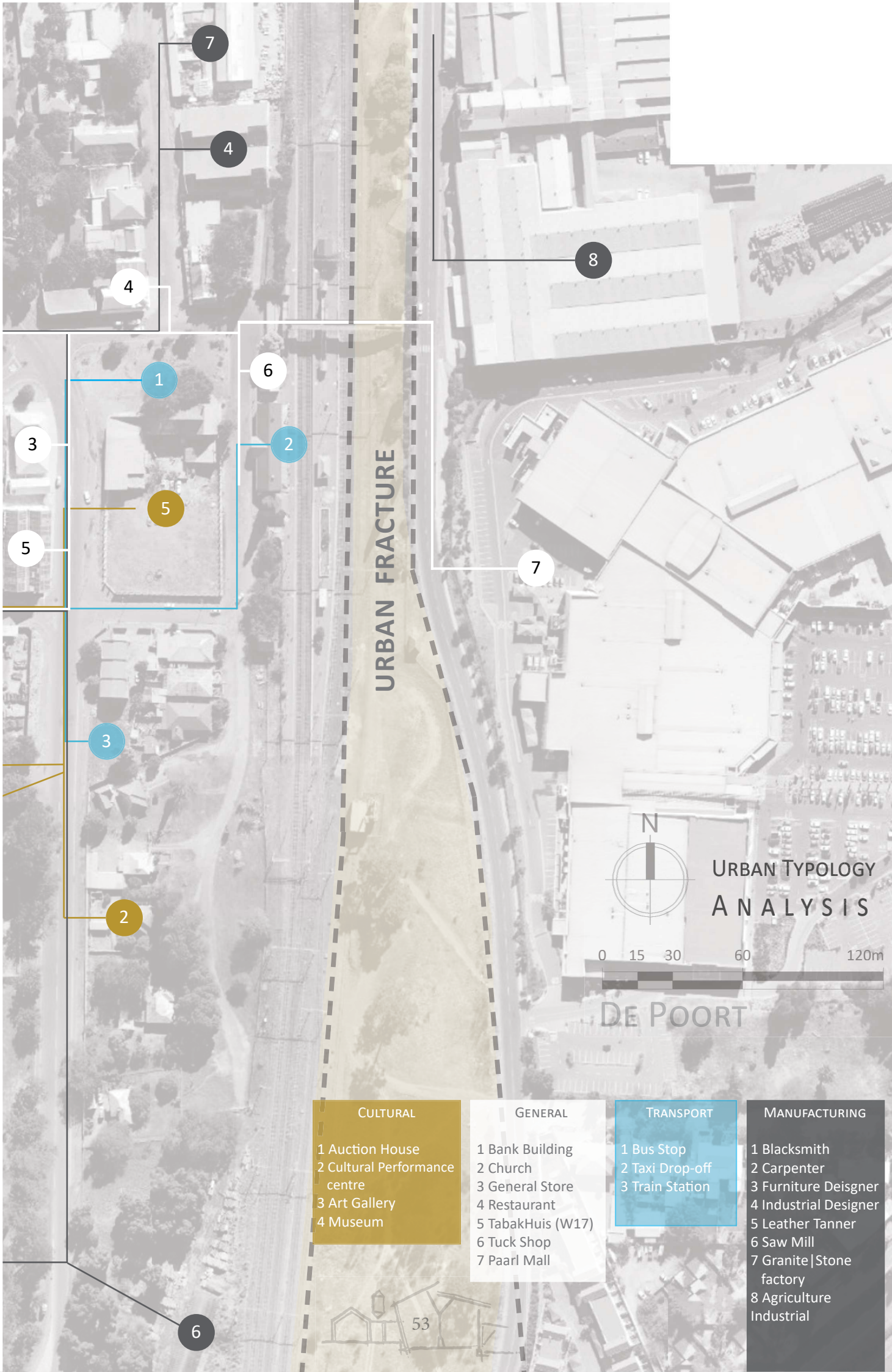


Figure 33: Map depicting various Typological elements contained in the urban landscape. giving insight into possible transformation options regarding production in De Poort (Haasbroek, 2022).



URBAN TYPOLOGY ANALYSIS

CULTURAL

1 Auction House
2 Cultural Performance centre
3 Art Gallery
4 Museum

GENERAL

1 Bank Building
2 Church
3 General Store
4 Restaurant
5 TabakHuis (W17)
6 Tuck Shop
7 Paarl Mall

TRANSPORT

1 Bus Stop
2 Taxi Drop-off
3 Train Station

MANUFACTURING

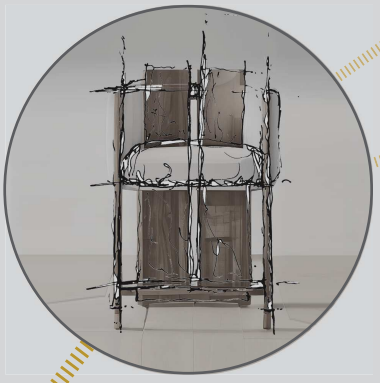
1 Blacksmith
2 Carpenter
3 Furniture Deisgner
4 Industrial Designer
5 Leather Tanner
6 Saw Mill
7 Granite|Stone factory
8 Agriculture Industrial

Appropriate Typology Analysis

This research project encourages alternative methods of site investigation, into applicable Typological components, through the applied lens of Assemblage theory. Hereafter followed an extensive Meso investigation into De Poort, to possibly identify Typological principles to allow for maximum connectivity, during architectural addition. Focusing on the restoration of De Poort's Production Industry to a more dynamic state. By believing that sustainable city growth can be achieved, through interconnected preservation, and the regeneration of existing Typological identities, whether singular or universal.

FURNITURE ASSEMBLY

AS
TYPOLOGY



FURNITURE DESIGN

UPHOLSTERY REQUIREMENTS
(ASSEMBLY)

STRUCTURAL COMPONENTS
(ASSEMBLY)

FINAL PRODUCT

DE POORT COMMUNITY

OX WAGON STUDIOS

FURNITURE DESIGNER

METAL

LEATHER

CRAFTS EXPERT

CARPENTER

TIMBER

SAW MILL

METAL

BLACKSMITH

GRANITE + STONE

STONE CUTTER

PRODUCTION
(LOCALLY PRODUCED COMPONENTS WITH LOCAL MATERIAL AND KNOWLEDGE)

Leather
Timber
Metal
Stone
Paint + Varnish + Staining

ASSEMBLY
(MISSING LINK TO HELP STABILIZE AND RECONNECT THE FRACTURED URBAN FABRIC)

Design
Assemble
Storage

DISTRIBUTION
(NECESSARY INFRASTRUCTURE ALREADY EXIST, REVITALIZING FUNCTION AND PURPOSE)

Airport 57km
Local Market|Mall
Harbour 48km

RESTORATION
(ULTIMATEY RESTORING DE POORTS IDENTITY BY GENERATING NEW PURPOSE AND SIGNIFICANCE)

Figure 34: Analytical visual composition showing the potential range off influence, by suggesting furniture assembly to the current urban fabric (Haasbroek, 2022).

B5 | Re-imagining architectural Assembly through Micro Analysis

Isolated Heterogeneity

Isolated Heterogeneity is a theoretical notion that raises the possibility of research into the relationship between architecture and Topological assembly. This relates to the idea of architecture and how it is assembled with sensitivity towards Rhizomatic context to avoid the isolation of urban components (Drakontaeidis, 2018: online). These include environmental, financial, and social factors all relating to an architectural Rhizome. This research thus, investigates alternative urban composition and arrangement methods, to better understand the most sustainable, yet dynamic scale of transformation, to the urban Topology of De Poort, regarding realistic perspectives on adaptability.

Questioning the capacity De Poort possesses to transform from its current state of disrepair, being well advanced and almost irreversible (TheVillageGuy, 2021: online). Depicting a Topological composition in isolation from the greater Paarl and its rich components, due to undiscerned planning and imposing transformation ventures. This is truly reflective of the confused identity, described by the De Poort community and its various multiplicities (Burger, 2022: interview). This was corroborated, by my first encounter with the area, experienced only recently, at the end of 2021. The same can then be argued for all visitors and tourists, interacting with the area, which is a very dangerous situation for De Poort to be in, especially while attempting to identify as a historic precinct (Weiss, 2013: online). Demanding transformation, with special attention to; contextual analysis that identifies, maximum adaptability potential, relating to certain lacking architectural components.

Ultimately utilizing the information gathered, through Macro- and Meso analysis in the previous sections, being more experimental, attempting to discerningly stitch new value into the current static urban fabric of De Poort. Resulting in the sensitive Re-assembly of the Micro-environment of the site, regenerating dynamic components of an expression, arranged to efficiently connect, and facilitate collaboration, regarding others, driven by a more productive Topological Assemblage.

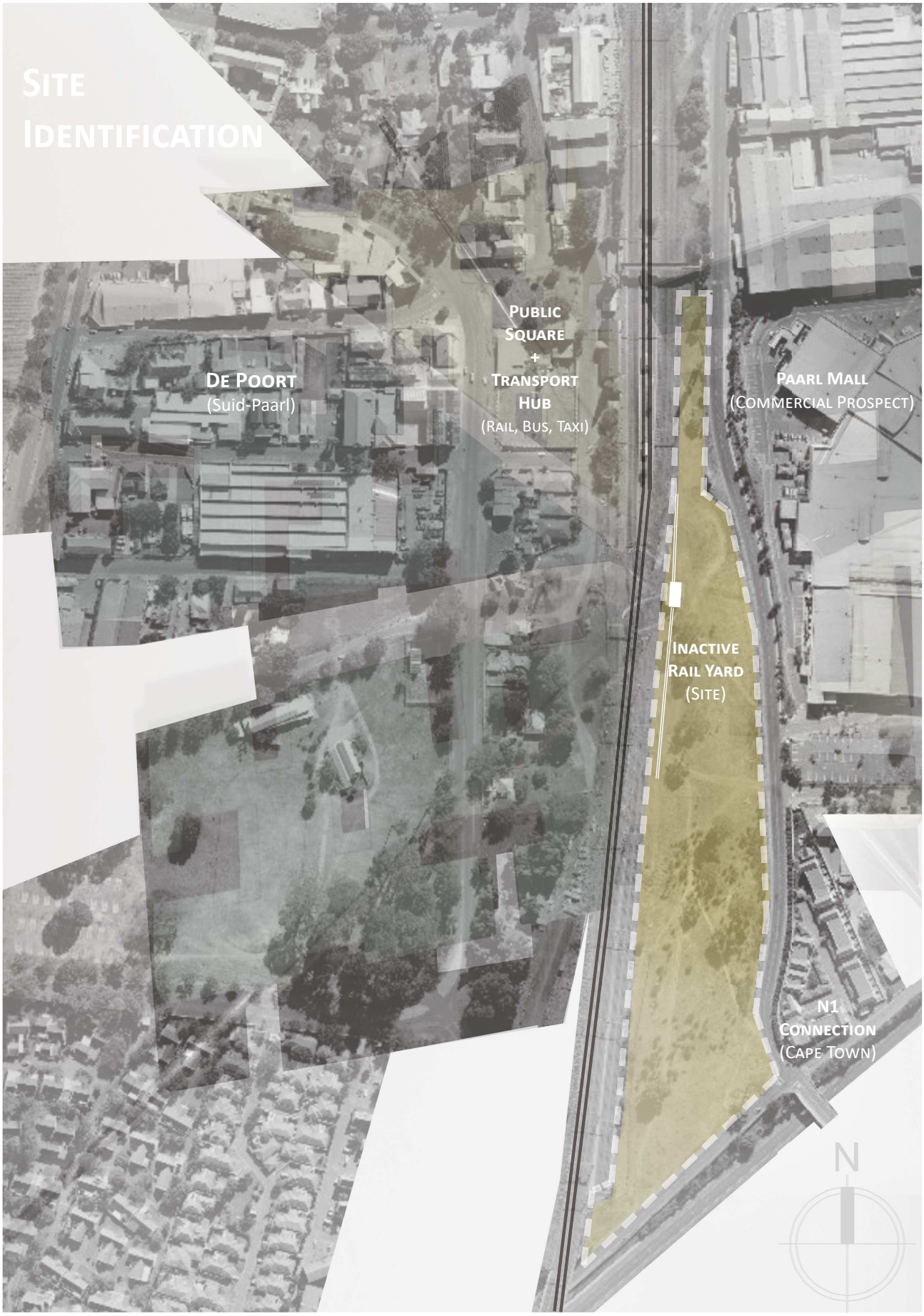


Figure 35: Proposing the **Urban Fracture,** identified in Figure 33, as the most suitable site due to its central location and close proximity to all the relevant public and Production components within the urban assemblage. It is also the least efficiently utilized space at the moment in De Poort, caused by the gradual decline of rail infrastructure nationally, encouraging necessary alternative perspectives on re-use and transformation (Haasbroek, 2022).

Topological reflection on Assembly

The definition of Machinic Assembly (referring to the urban landscape), concerning Assemblage Theory, as stated by Deleuze and Guattari, claims that; “the material or machinic aspect of an assemblage relates not to the production of goods but rather to a precise state of an intermingling of bodies in a society” (Sitas, 2020). This quote indicates that the authors confirmed that any socio-political assemblage is made up of a variety of factors that have both corporeal and incorporeal components. The forms of expression utilized by society, reflecting their universal identity, then contribute to determining the precise way these bodies should be assembled (Thornton, 2020).

Therefore, Deleuze and Guattari go even further by stating that; the different Topological approaches societies take, to dealing with their lines-of-flight, also create relevant contextual guiding principles to distinguish between different social forms and appropriate transformative measures (Deleuze and Guattari, 1987). As stated by DeLanda, Typological characteristics then, are the first elements to specify the pertaining communities Topological approach to urban arrangement and assembly (DeLanda, 2016). In the case of De Poort, it is historically related to strong production (Wagons), distribution (Railway Station), and public interconnectedness (Station Square market).

Becoming the powerful industrial centre of Paarl at the end of the 19th century, with subsequent abandonment of industrial uses, thereafter, caused Heterotopia to the urban assemblage. Currently it is still caught between antiquities and its Industrial heritage, reflected by its bewildering identity (Merwe, 1893). In turn pleading for architectural experiences, relating to restored public space and the reuse of old industrial buildings within the urban fabric of contemporary De Poort (Drakontaeidis, 2018: online). By identifying the ideal Topological location for this architectural intervention, in relation to existing and new connection possibilities, it is crucial for a sustainable re-assembly of the industrial landscape of De Poort.

Figure 36: Graphic map proposing the **Urban Fracture,** as site, showing orientational views and the proposed public intervention method, pertaining to urban development. This is aided by a sectional depiction of the site at the bottom of the page (Haasbroek, 2022).

SITE SECTION

N

SITE SECTION

Micro Site Analysis (How to Restore Topological assemblage)

Currently, the research area is bordered by the Wellington - Cape Town Rail Line on the east, with the Paarl Berg Mountain range on the west, foregrounded by vineyards, manor homes, and residential estates, relating to the town of Paarl on the north and the N1 to the south. On the grounds of the historic outspan known as the “Renbaan,” the southern parts of De Poort are populated by established residential developments (Rawson, 2022: online). The research site is located, in Paarl’s historic industrial sector and is currently being underutilized, as a dilapidating multifunctional area with a few sports facilities, a museum, and some warehouses. The northern urban landscape is a combination of light industrial workshops, creative studios, Victorian residential buildings, and adaptively repurposed buildings (Drakenstein, 2022: online).

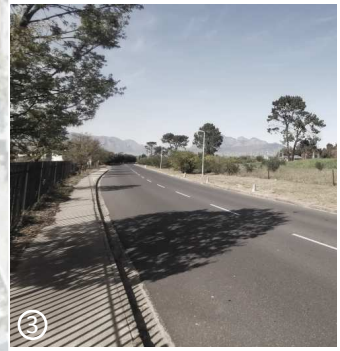
The aesthetic design of the building in question and its location within the Rhizome should therefore always be considered when repurposing an existing industrial shell. Therefore, with the right program, the shell can once again function as a contributing public space by being reintegrated into the urban tissue (Drakontaeidis, 2018: online). With reference to De Poort, any intervention should examine potential transformation, through the building’s original use, promote its design, and respect its significance and worth as a monument. ‘’The new uses must be creatively integrated into the building, strengthening its historical memory, respecting its cultural significance, and interacting with the functions and character of the environment’’ (Oikonomopoulou, 2011).

Figure 37: Map of existing contextual features to be further developed , restored, and re-used (Haasbroek, 2022).

SITE FACTORS

Figure 38: Photo of existing Paarl Mall power house (Haasbroek, 2022).

Figure 39: Photo of the existing service warehouse looked upon by the *Afrikaanse Taal Monument* (Haasbroek, 2022).



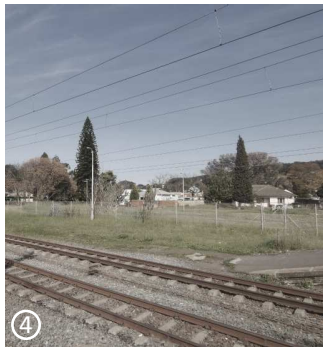


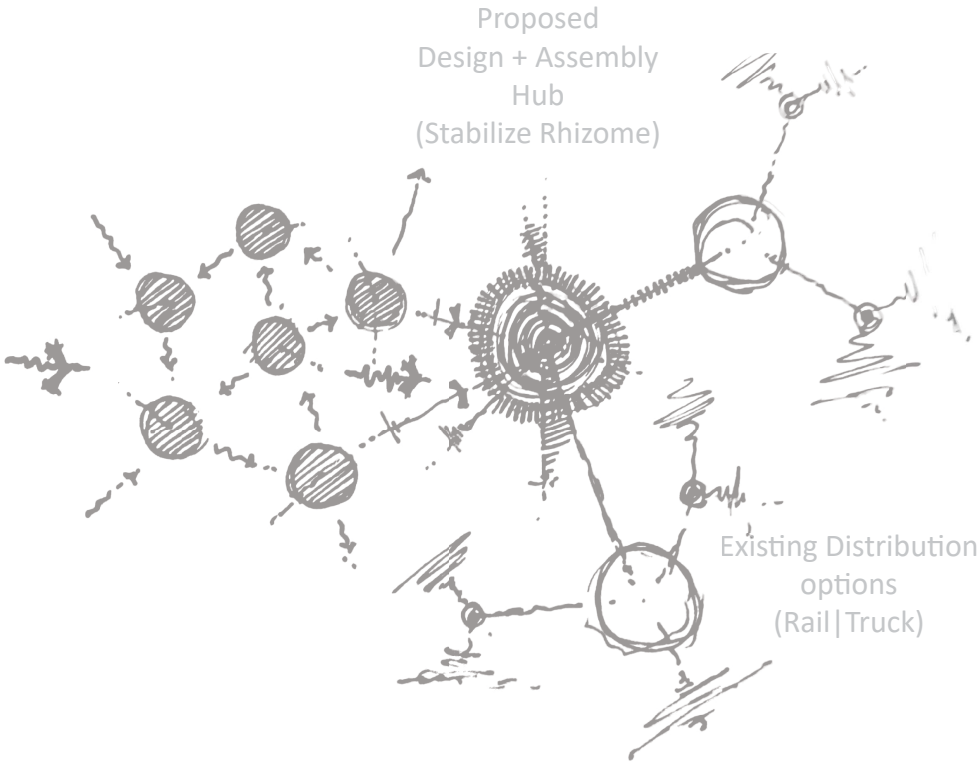
Figure 40: Photos of the potential Public zones to be developed with the *Micro Idustrial Park* (Haasbroek, 2022).

Figure 41: Photo of the origin point of the existing, out of service rail line (Haasbroek, 2022).

Micro Site Analysis (How to Restore Topological assemblage)

In retrospect, several patterns and characteristics, symbolic of a fractured industrial landscape and static public spaces, were discovered during the investigation discussed in the previous sections of the existing urban fabric (Drakenstein, 2022: online). After this it became possible, to determine the lacking architectural components relating to De Poort's disconnect, which can be improved upon, and developed further to offer a more distinct identity, individual to De Poort (DeLanda, 2010).

Figure 42: Compilation of photos edited to visual depict the conceptual reconnection, proposed for De Poort (Haasbroek, 2022).


Proposed
Design + Assembly
Hub
(Stabilize Rhizome)
Existing Urban
Components
(Manufacturing)
Existing Distribution
options
(Rail|Truck)


INDUSTRIAL
DESIGN
HUB
COMMERCIAL
DISTRIBUTION

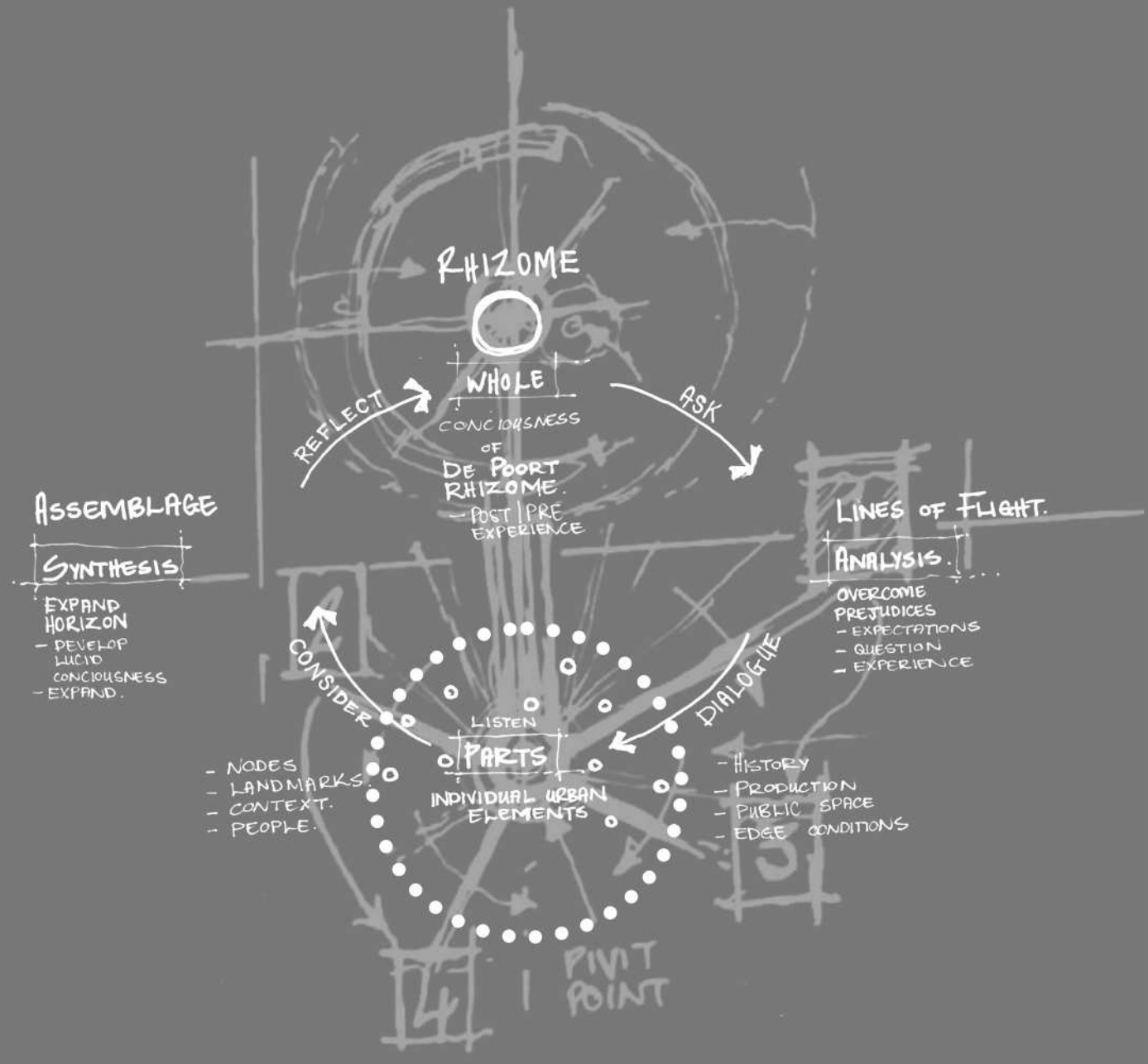
B6 | Hermeneutic Circle as compass of Application

The general encapsulation of the identified principles pertaining to this theoretical investigation, regarding Assemblage theory with that of architectural arrangements and contextual analysis, thus depicts the potential of an interconnected set of architectural components, working together to transform the static universal identity of De Poort (Deleuze and Guattari, 1987). By proposing transformative, discerning architectural interventions, not only re-activates existing lines-of-flight to appropriate adaption, but also restores significance to all the existing historical nodes. Ultimately restoring the fractured urban fabric of De Poort through Rhizomatic re-generation (Drakontaeidis, 2018: online).

Applying theoretical knowledge, based only on academic research and hypothetical analysis alone, without adapting the informative approach to formats relating to architectural intervention, delivers the possibility for a disconnected transformation, ultimately delaying redundancy (Sitas and Pieterse, 2013). In this case, the grasp of the information gathered in Chapter B, relating to a universal assemblage (whole), composed of individual singularities (parts), closely resembles that of the Hermeneutic circle. By allowing for diagrammatic analysis into the possibility of combining the information gathered from Assemblage Theory, with the interrelated nature associated with the Hermeneutic circle. This forms the most discerning combined method of intervention, able to be sustainably applied to De Poort architecturally.

How this theoretical site analysis then tries to rekindle this disconnect, or at the very least attempts to bridge the gap between rational static spaces, is intended for irrational emotional engagement in cities, guides the incorporation of Assemblage Theory and the Hermeneutic circle as the method of inquiry. Leading to alternative ways of unravelling human, material, and spatial interconnectedness, typical in and of De Poort, to propose how this knowledge can be implemented in service of more radical, de-colonized projects of “becoming otherwise” (Sitas, 2020).

HERMENUETIC RHIZOME



ANALYSIS OF PARTS

EXISTING CONDITION OF THE DE POORT RHIZOME

C

CONCEPT + DESIGN DEVELOPMENT

C1
Touchstone

C2
Concept

C3
Massing Investigation

C4
Culmination of Site Factors

C5
Design Development

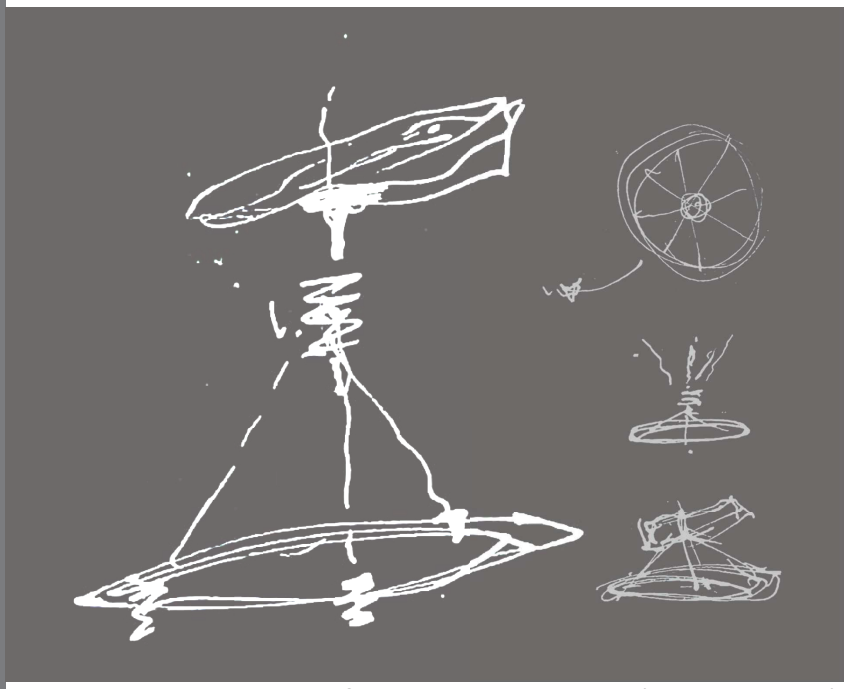


Figure 43: Conceptual sketch of Touchstone Development (Haasbroek, 2022).

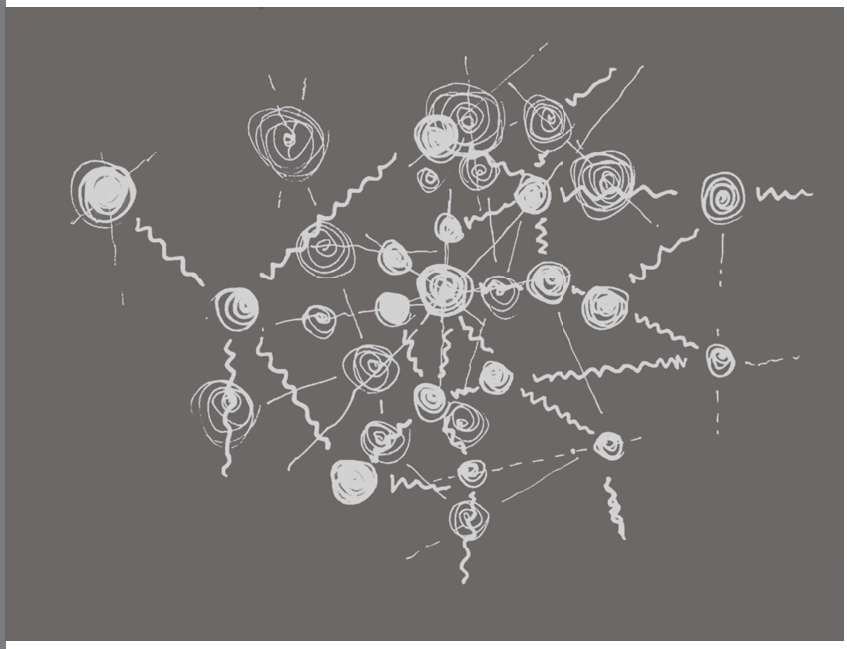


Figure 44:Proposed Conceptual transformation of De Poorts' urban landscape.

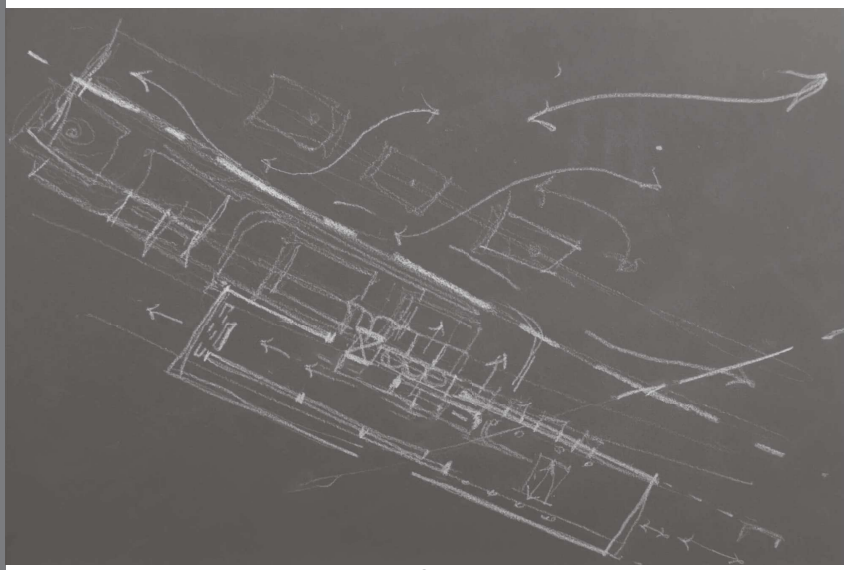


Figure 45: Conceptual Sketch as part of the Design Development, investigating climatic and contextual influences on the Morpology (Haasbroek, 2022).

C

CONCEPT + DESIGN DEVELOPMENT

This chapter will specifically handle applying the transformative methods of architectural engagement, identified in the previous chapters, to a realistic contextual environment, through the act of design.

By presenting it as a process following the narrative of Design, starting with a Conceptual Approach derived from the brief developed in A5 Introduction| Brief. Further transforming into a Touchstone investigation, to identify the essential materialistic and spatial components interconnected with relevant Phenomenological factors, vital to the sustainable transformation of De Poort. Then moving to the Urban landscape to apply the Concept to the identified site (Existing Train Station Industrial Grounds - Out of Service), to completely understand the Topological complexities of the proposal. Ultimately, developing into final plans, through the aid of diagrammatic analysis and extreme discernment of context and history.

With that same sensitivity, a massing investigation followed, taking influence from iconic Morphological elements in Paarl Industrial, and the picturesque natural landscape surrounding it, to generate a respectful yet dynamically innovative structural approach.

C1 | Touchstone

The Wheel-chair

The Wheel-chair simulates a design exercise, with similar essential parameters to what the designers at *Ox Wagon Studio* will conceptually face, regarding furniture ranges celebrating local knowledge and materials in innovative abstracted manners of expression, with reference to De Poort and its community.

The name refers to a play on the current state of De Poort's paralyzed urban landscape, while revealing the dynamic paradox of, potential re-activation through urban Assembly. By taking the components of the 'redundant' wagon wheel, which represents current De Poort, and re-assembling them with transformed function in mind. All while attempting to stay sensitive to the existing components' original functional- and material characteristics, when applying them within the new Typological Assembly (Figure 46).

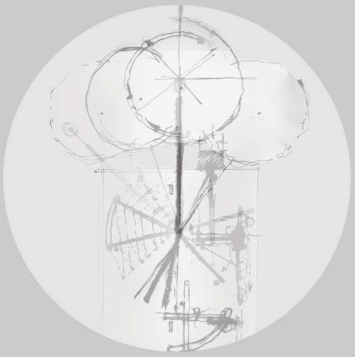
Metaphorically the method of intervention proposed in Chapter B, is here literally represented as an attempt at furniture design and assembly. By attempting to celebrate the craftsmanship and manufacturing capabilities of Historic De Poort, through disassembling an iconic object, famous of the time, and re-using the components to symbolically solidify the identity, that is generated from the new functional purpose experienced.

Hub | Stability

Spokes | Strength

Rim | Contact

Leather Hide | Flexibility



Integration

Figure 46: Conceptual render of *the Wheel chair*, a furniture interpretation representing the Touchstone and essential elements pertaining to this project. It celebrates De Poorts proposed transformation from a paralyzed urban assembly, to a dynamically engaging district with new manufacturing purpose (Haasbroek, 2022).

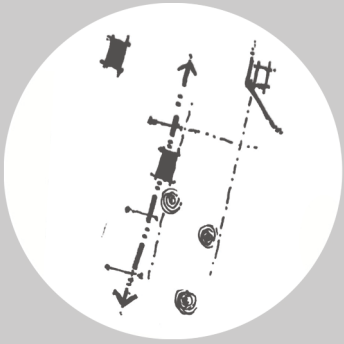
C2 | Concept

Re-Assembling Rhizome

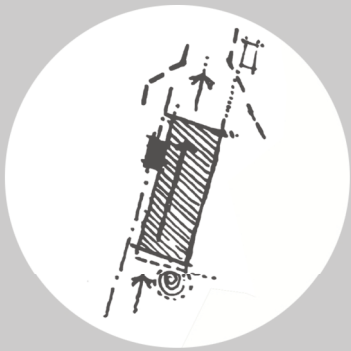
The concept developed from the theoretical approach, relating to Assemblage Theory, attempts to Re-Assemble the fracture De Poort manufacturing process, by make use of existing urban components, to transform the Rhizome sensitively, with a certain sense of honesty to contextual factors.

The concept resembles a metaphoric comparison to the process of constructing a wagon wheel. The process starts with the wagon builder, forming the hub around the axle to ensure perfect symmetrical conditions for the rest of the Assembly. Which architecturally relates the proposed design, stabilizing the current Rhizome and its confused Typology. Then the spokes are assembled in phase 2, adding the primary structural elements connecting the hub to the rim, resembling Lines-of-Flight or connections between different urban components. The rim in Phase 3 is then added, finally held in-place with raw animal hide in Phase 4, shrinking as it dries up to generate tension inwards. This symbolizes the restoration of a universal identity in De Poort, facilitated by a communal interdependence.

Proposing a method of intervention and analysis intended on firstly identifying the best Typological transformation or addition needed, to stabilize the Rhizome. Then to determine the perfect location for the architectural interaction to ensure efficient Lines-of-Flight (reconnections) between each relevant urban component. Ultimately restoring the machine known as De Poort by repairing each individually lacking urban component first, to then be able to Re-Assemble the fractured urban fabric with transformed intent.

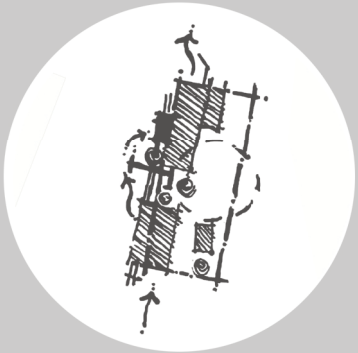


Re-Use Existing

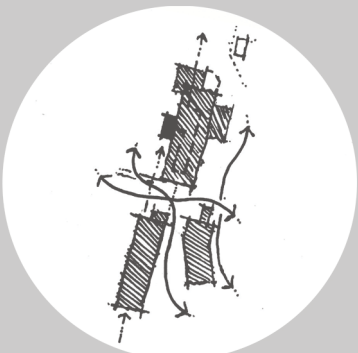


Re-Activate Rhizome

Repair Connections



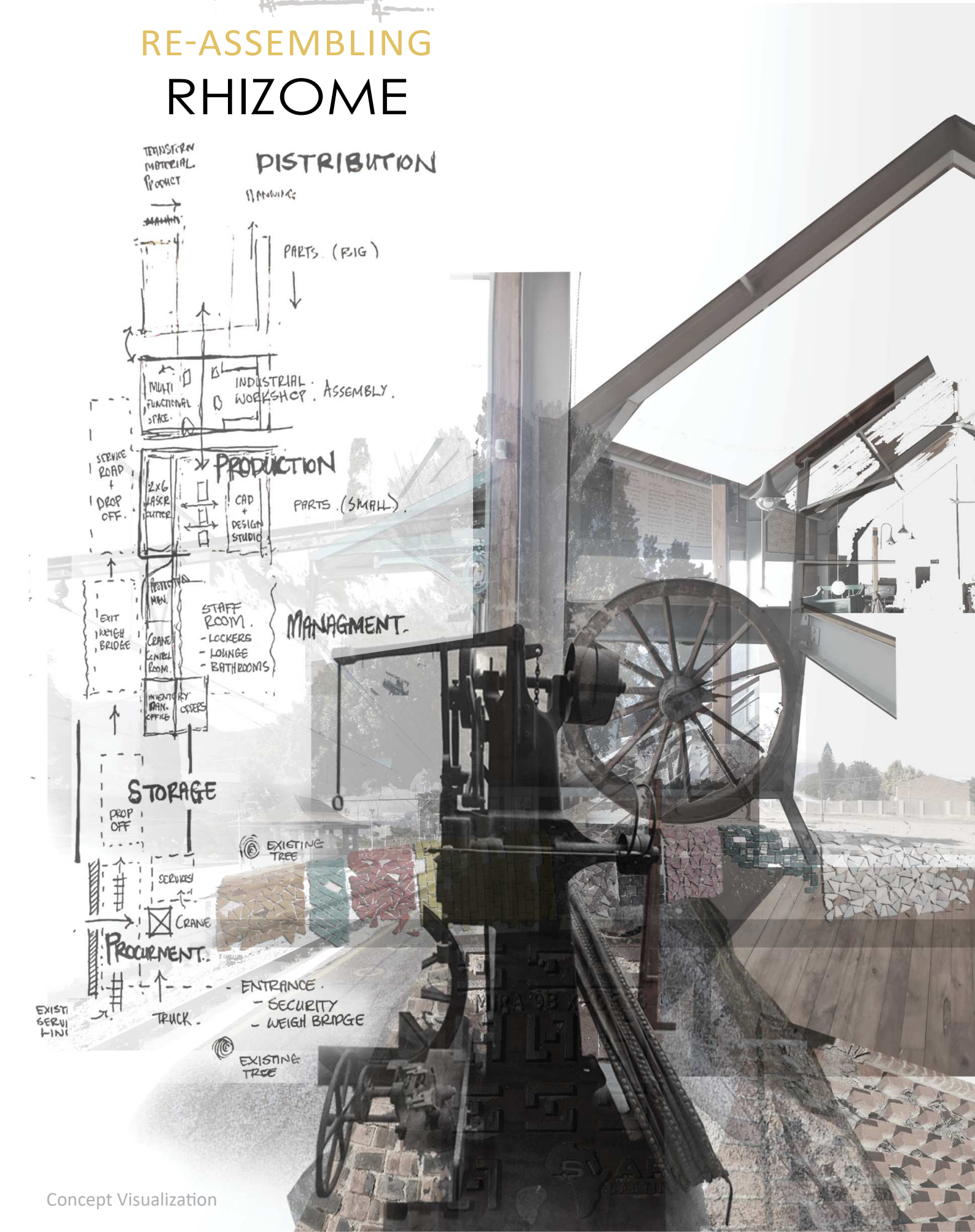
Restore Identity



Reinstate De Poort

RE-ASSEMBLING

RHIZOME



Concept Visualization

C3 | Massing Investigation

The massing investigation analysed various shapes, forms, and size factors pertaining to the design of the envelope of B1, B2, B3, to generate the most dynamic visual representation of the De Poort community, historically and with mention to the future.

Massing Precedent | Vitsoe HQ
A 12 000m Furniture Assembly Warehouse (Archdaily, 2017: online), located in Royal Leamington Spa, UK, depicts its functional program proudly on the interior, as a modular structural timber system, while referencing industrial elements on the exterior.

This building was designed by the furniture manufacturer themselves in close connection to a range of professionals within the industry, to ensure maximum compatibility with their style of operations and the infrastructure facilitating it daily. It makes use of a term they coined as long-term-system-thinking, designed as a set of components, that could be adjusted or adapted to fit an everchanging need. This enabled the generation of a modular solution to transformability and expansion (Archdaily, 2017: online). The identity associated with Vitsoe through analysis of this building, Vitsoe HQ, resembles a strong sense of pride in the future, which does well for an already established brand.

This precedent, however, does not face the same contextual obstacles and difficulties as the OWS Micro Industrial Park, concerning complex urban fractures and disconnections to necessary production links. In the case of *OWS Micro Industrial Park* and the fractured state of the surrounding urban fabric, it needs a massing approach more secure and foundational. Again, ensuring that a public experience radiates a sense of solitude and security, but also renders unanticipated excitement, to ensure strong universal identification with the structure.

Figure 47: Roof plan image of the building showing the little interaction it has with urban context of its location. Also showing the Monolithic approach to massing (Lindner, 2019. online).

Figure 48: Rendered perspective of the Furniture manufacturing facility, reflecting industrial characteristics on the exterior, isolated by harsh pedestrian conditions (Williams, 2017. online).

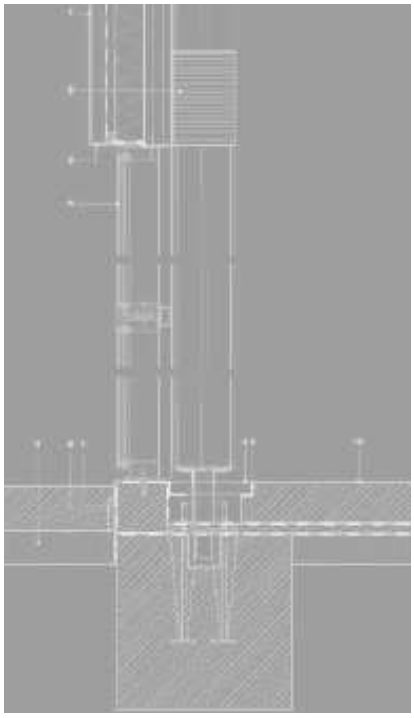


Figure 49: Edited photo with a sketch to investigate the structural approach the building takes to manage the climatic factors of the specific area. Also showing the modular nature of the construction (Griffiths, 2017. online), (Haasbroek, 2022).

a Monolithic Industrial structure then, does not allow for sensitive integration into the urban fabric, as it represents only manufacturing as function, and not the mixed-use typology, commonly associated with De Poort. The analysis in Figure 51, encourages a more disassembled approach, leaving more intentional space for public interaction, whilst still being sensitive to the existing parameters of the urban fabric.

Figure 50: Mapping analysis of the grain density of De Poort. Giving valuable insight into massing characteristics of the area, and what the Micro Industrial park should do similiar to remain sensitive to urban context (Haasbroek 2022).

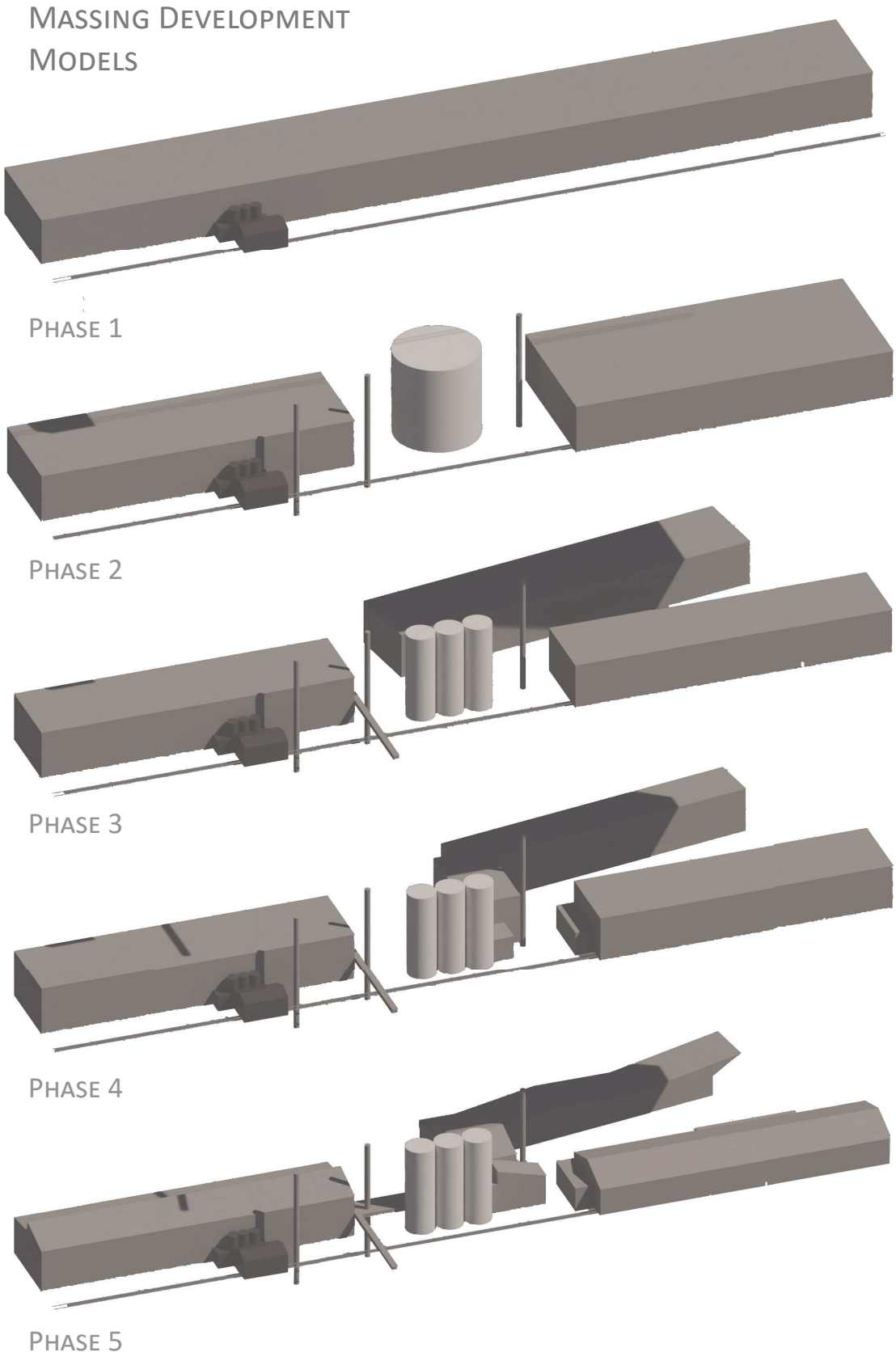


Figure 51: Massing development showing the different stages of form-giving and progression. Also featuring the vegetive elements that generated the final building boundaries, emphasizing maximum sensitivity towards the existing (Haasbroek 2022).

C4 | Culmination of Site Factors

The accumulated data acquired through the site analysis and what the clients are expecting within the Brief, in terms of functionality and spatial requirements, generated the possibility of arranging functional components according to contextual influences. This enables the possibility of combining decerning spatial development with that of efficient program development more symbiotically, ensuring a more interconnected design solution.

Figure 52: Graphic map proposing the **Urban Fracture,** as site, showing orientational views and the proposed public intervention method, pertaining to urban development (Haasbroek, 2022).

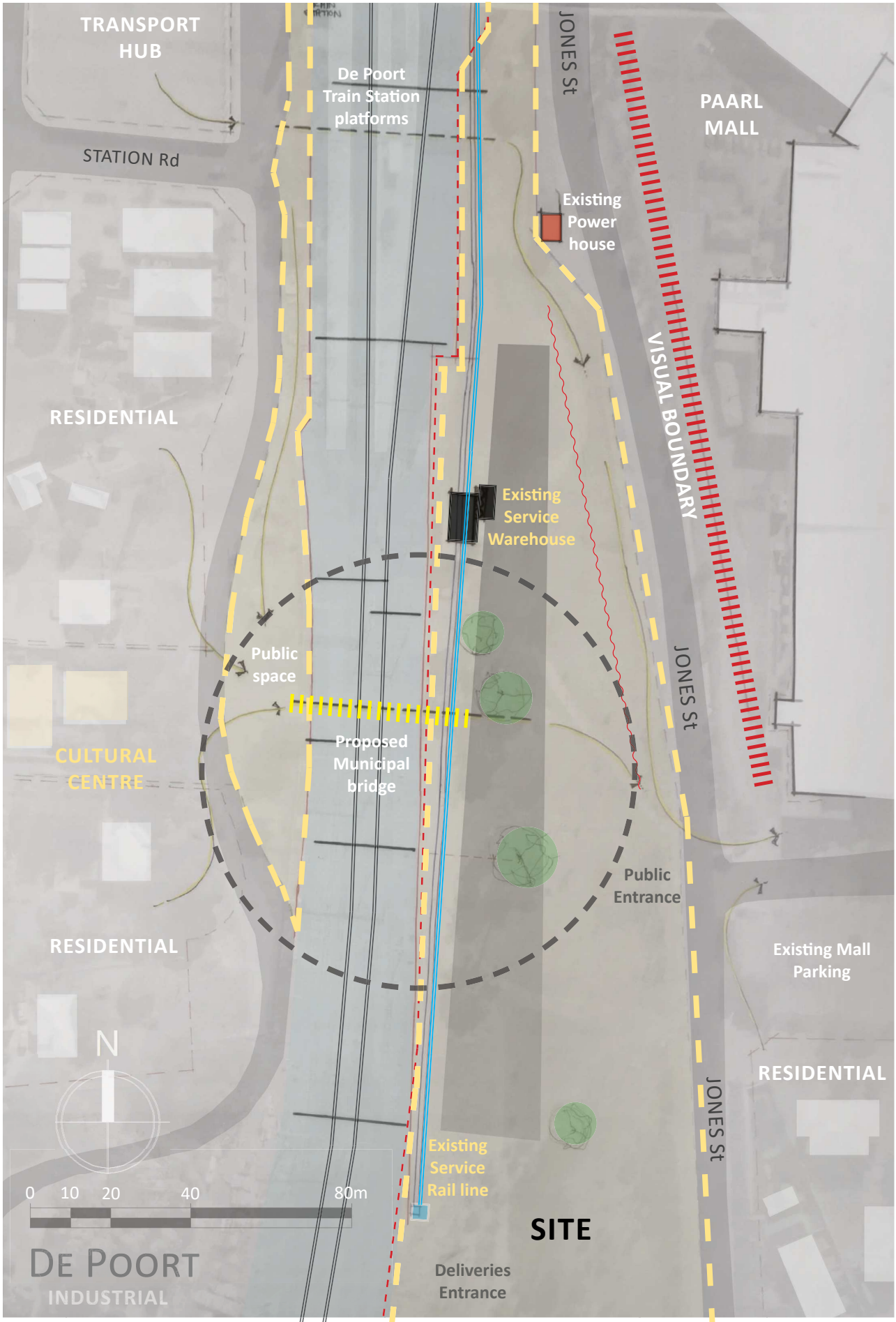


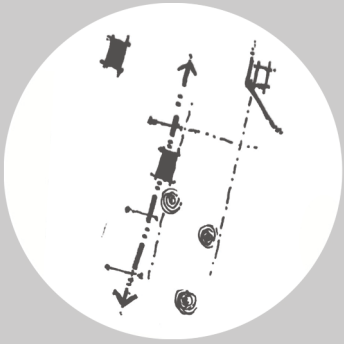
Figure 53: Programmatic development of the *Micro Industrial Park* identifying potential spaces for development and urban transformation. Also note that the blue line represents the unification of identities through a transitional act of repurposing the existing service rail line (Haasbroek, 2022).

C5 | Design Development

The conceptual intention was to create a community bespoke design, integrating structural, technical, spatial, and material solutions for each of the contextual problems raise in A6 Introduction | Rational. The identification of a site with a symbolic reference to the history of the area, added the element of public significance, increasing universal identity, and rendering it perfect. By integrating the large reference made to manufacturing and distribution, in A5 Introduction | Brief, with that of the Site Analysis and Theoretical stance developed in Chapter B, it became possible to reach an appropriate design synthesis.

The main factors relating to occupants' satisfaction, security, and productivity are most often directly connected to the spatial and material arrangement of a structure. How a building has the potential to facilitate and adapt to these specified needs requires a holistic and long-term perspective on the process of design and would not be successful without it.

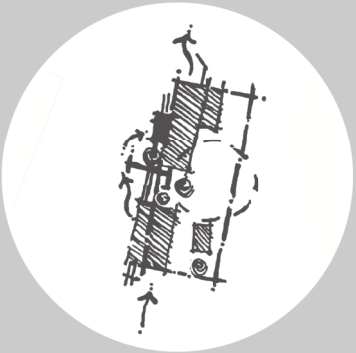
This initiated a functional and efficient approach to planning solutions, derivative of the buildings' Typology (Warehouse, Assembly Facility, Distribution Hub, etc.) to facilitate the manufacturing process primarily. The exterior program, however, according to the research done in Chapter B (Sitas and Pieterse, 2013), needed to be restored and sensitised to public interaction and scale. This influenced the Morphological factors of the project, to resemble public spaces and facilitate human interaction, while keeping a strong resilient perspective towards industrial influences.



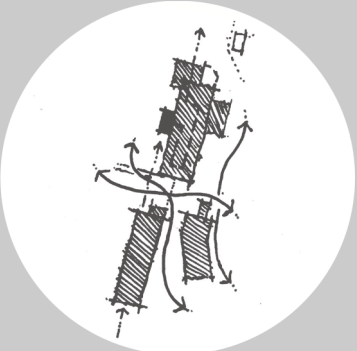
Service Warehouse Axis

First footprint
result on context influence

Proposed Municipal Bridge
influence.



Sub-division of functions
forming to site vegetation.



Public circulation, following
manufacturing process.

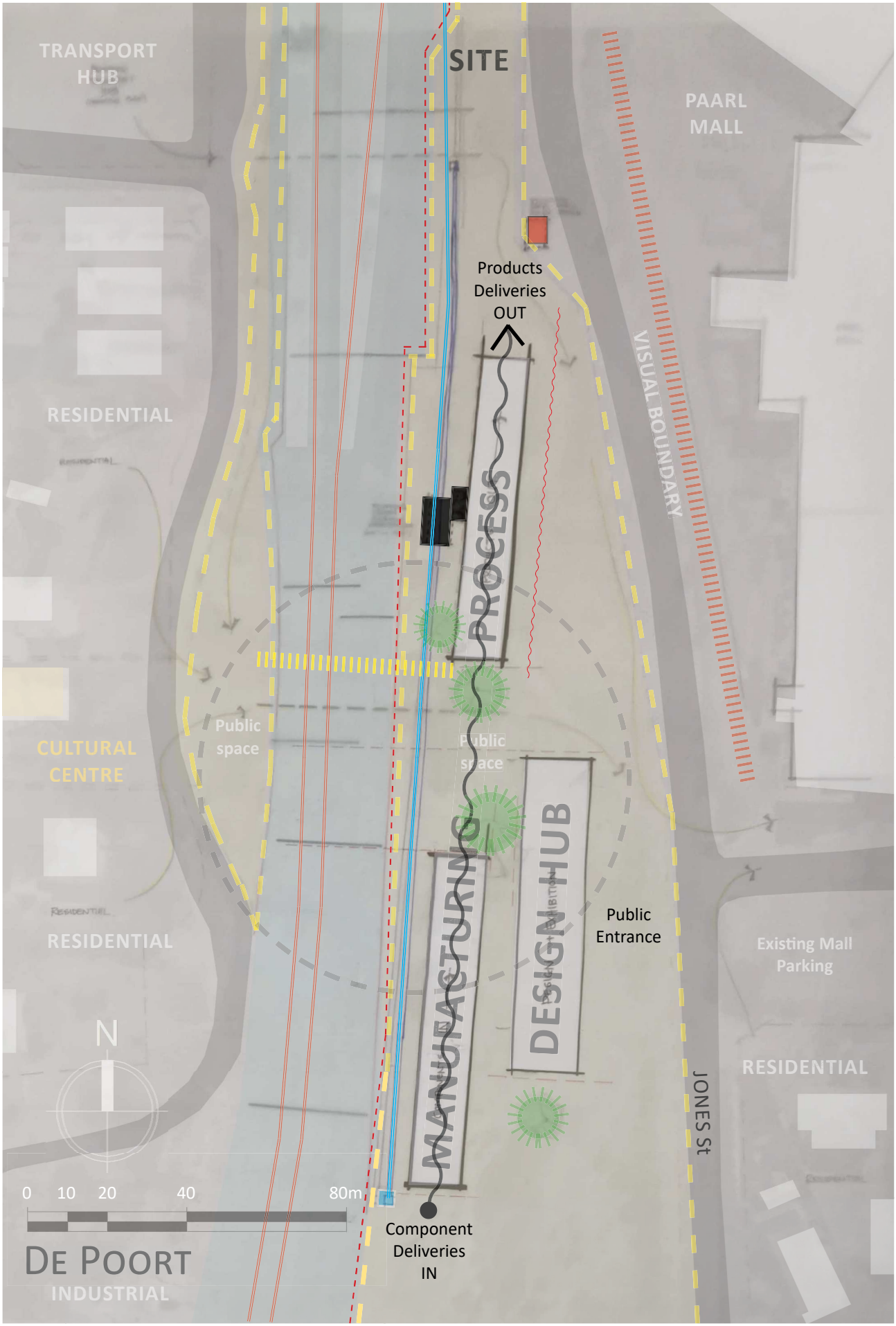
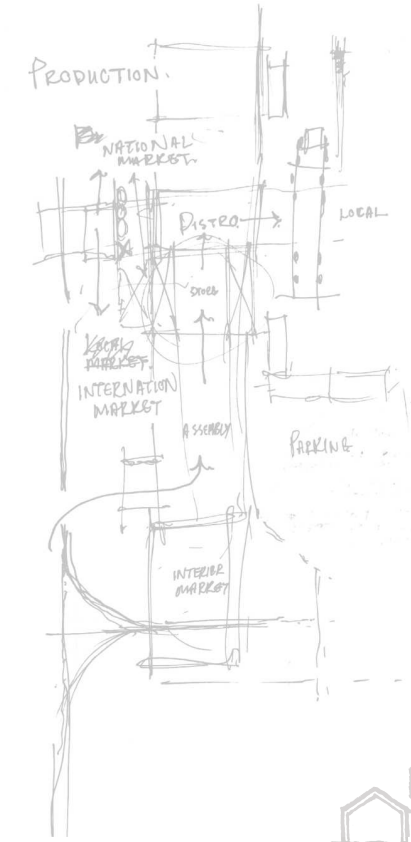


Figure 54: Programmatic development of the *Micro Industrial Park* relating to the individual functions of each building. Also note that the blue line represents the unification of identities through a transitional act of repurposing the existing service rail line (Haasbroek, 2022).

C5 | Design Development

The goal then was to let each building subtly portray what happens in the interior, with regards to function (Assembly Facility – Deconstructed Structural theme). Therefore to create an adjoining public experience based on the process of furniture manufacturing, orientating a linear experience from start to finish (Figure 55), following the different stages of production and distribution.

The Socio-technical methods of analysis activated in this design development to ensure that the buildings ultimately, resembled the historic methods they were inspired by, through sensitive, yet innovative abstractions. By incorporating Morphological, Typological, and Topological factors from the contextual environment, to facilitate, flexibility to current norms and the capability to adapt to variations in occupancy patterns and climate. This then solidifies a sustainable purpose, which ultimately strengthens the universal identity of De Poort.



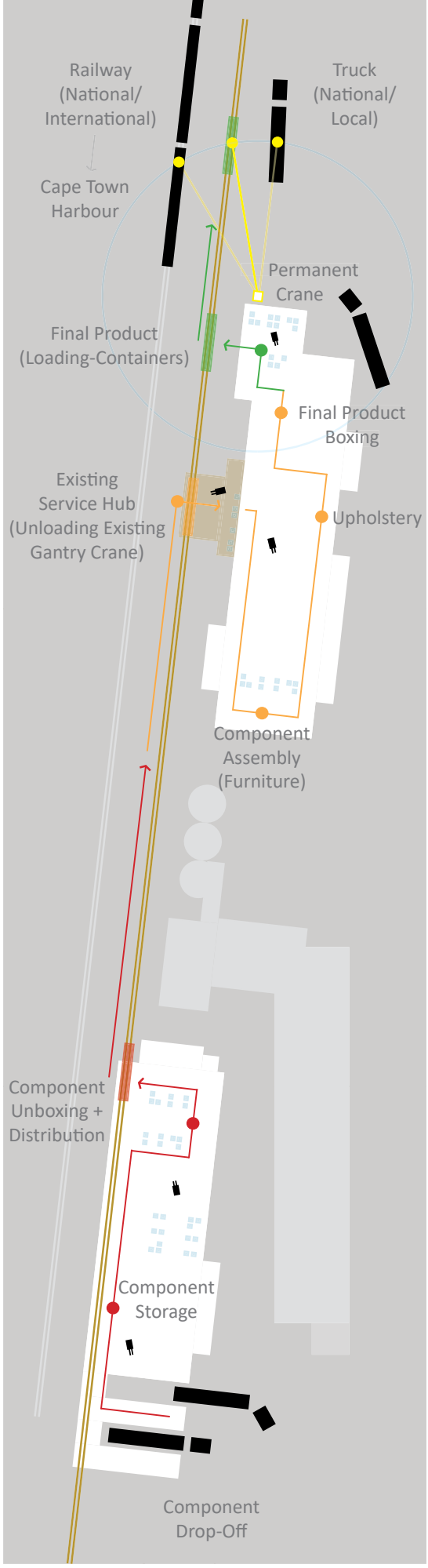


Figure 55: Programmatic development of the *Micro Industrial Parks'* manufacturing process (Haasbroek, 2022).

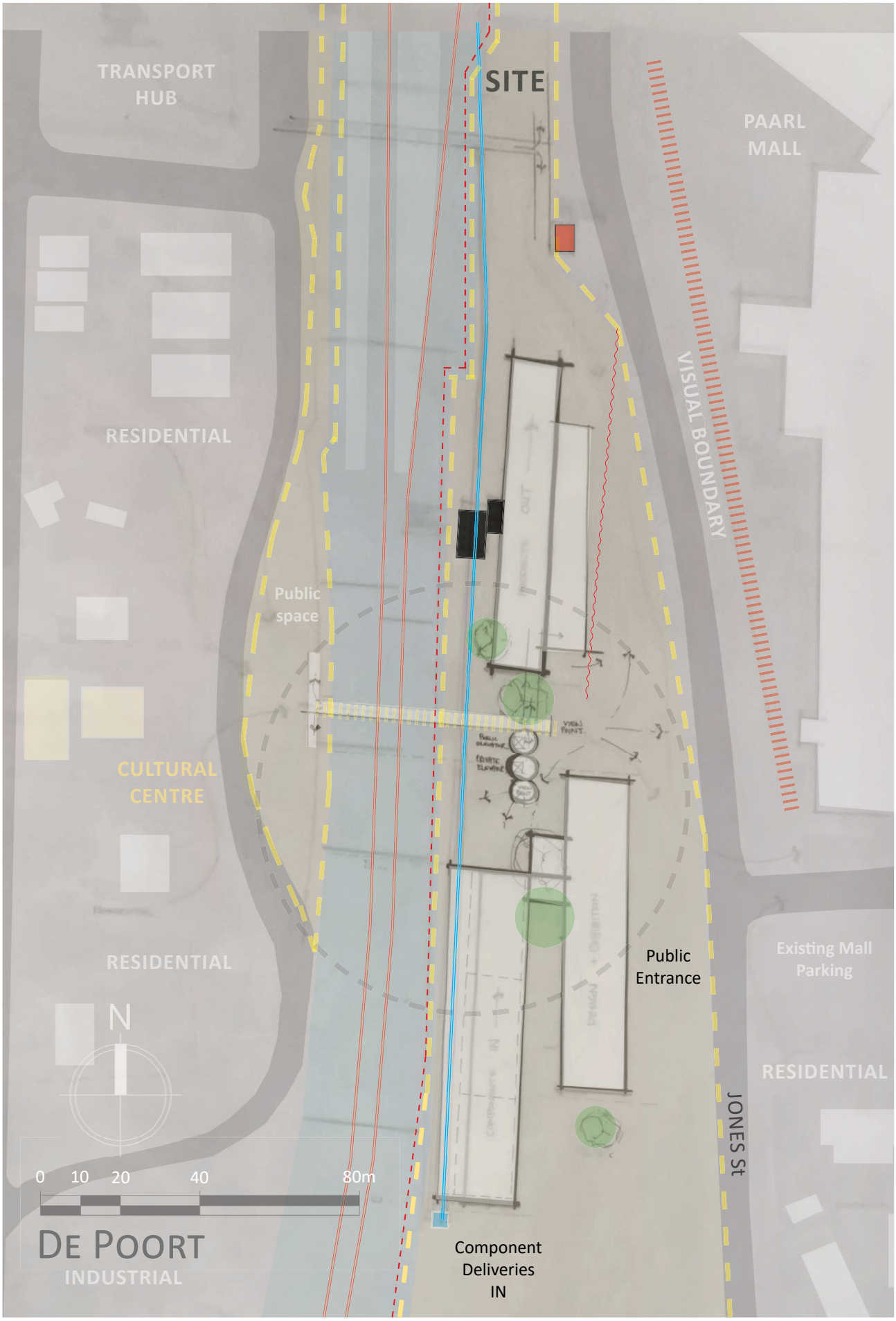


Figure 56: Programmatic development of the *Micro Industrial Park* with its allocated public circulation. Also note that the blue line represents the unification of identities through a transitional act of repurposing the existing service rail line (Haasbroek, 2022).

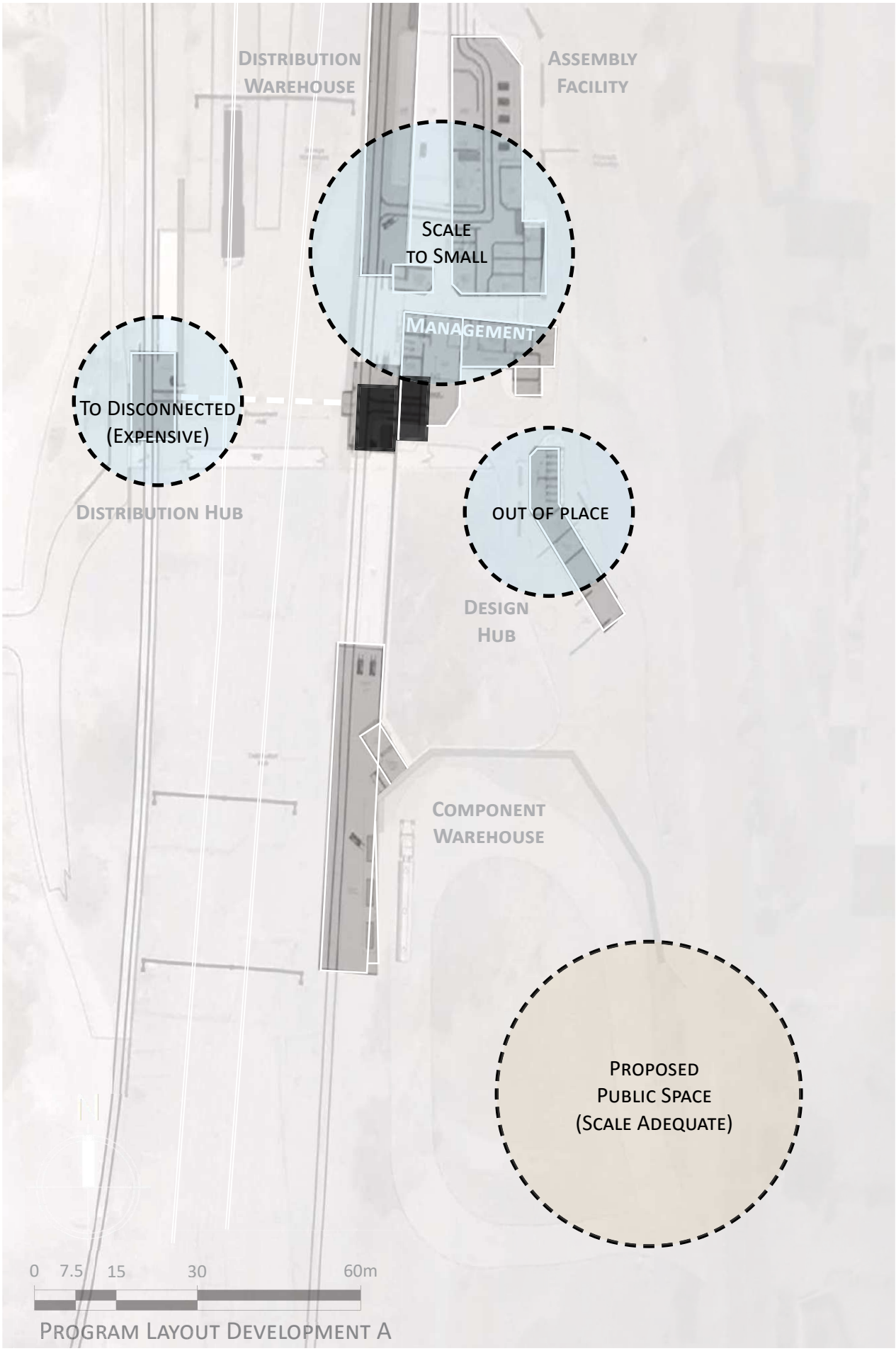


Figure 57: First chronological attempt at a program layout and plan developement, including post-rationalized comments and reactions (Haasbroek, 2022).

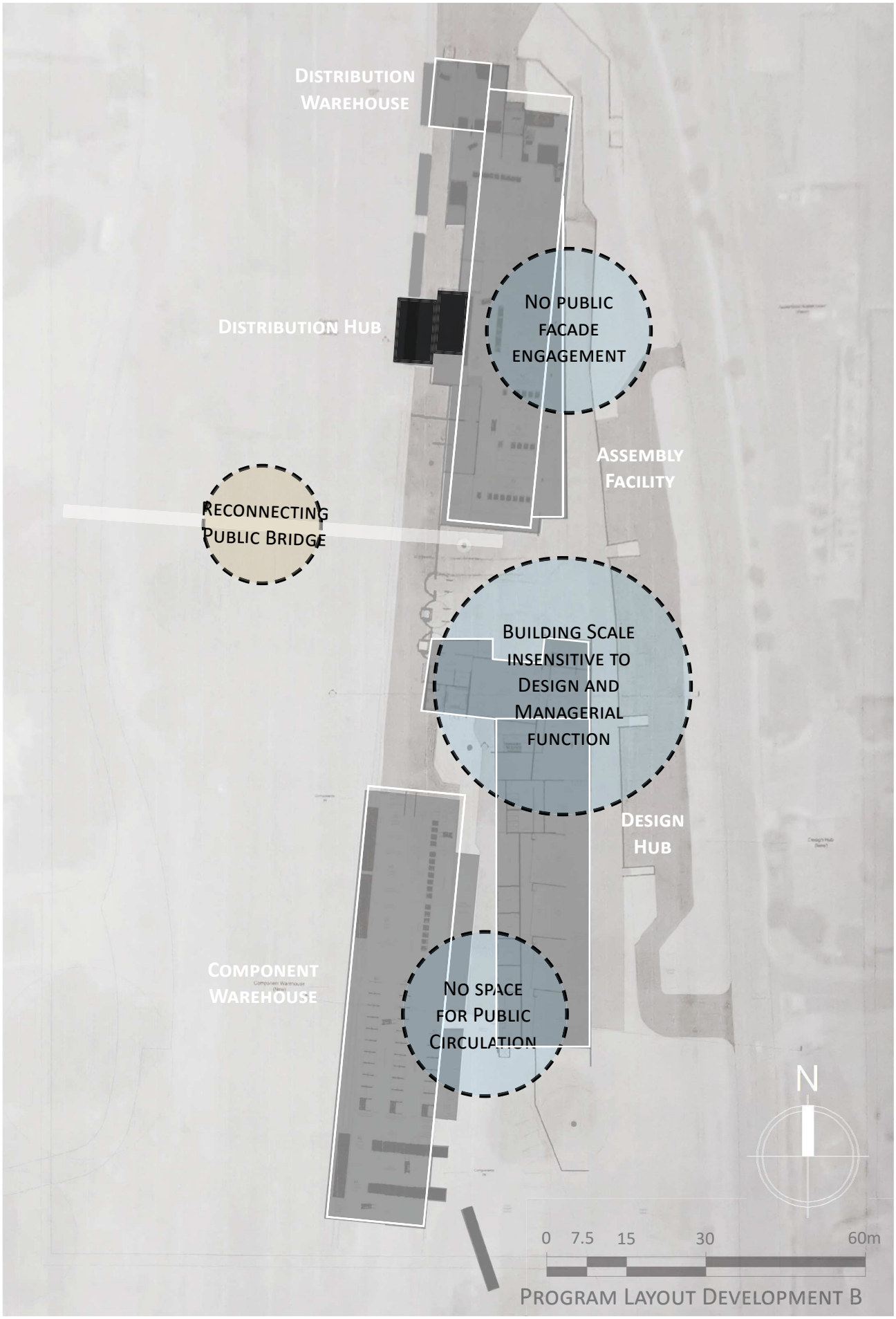
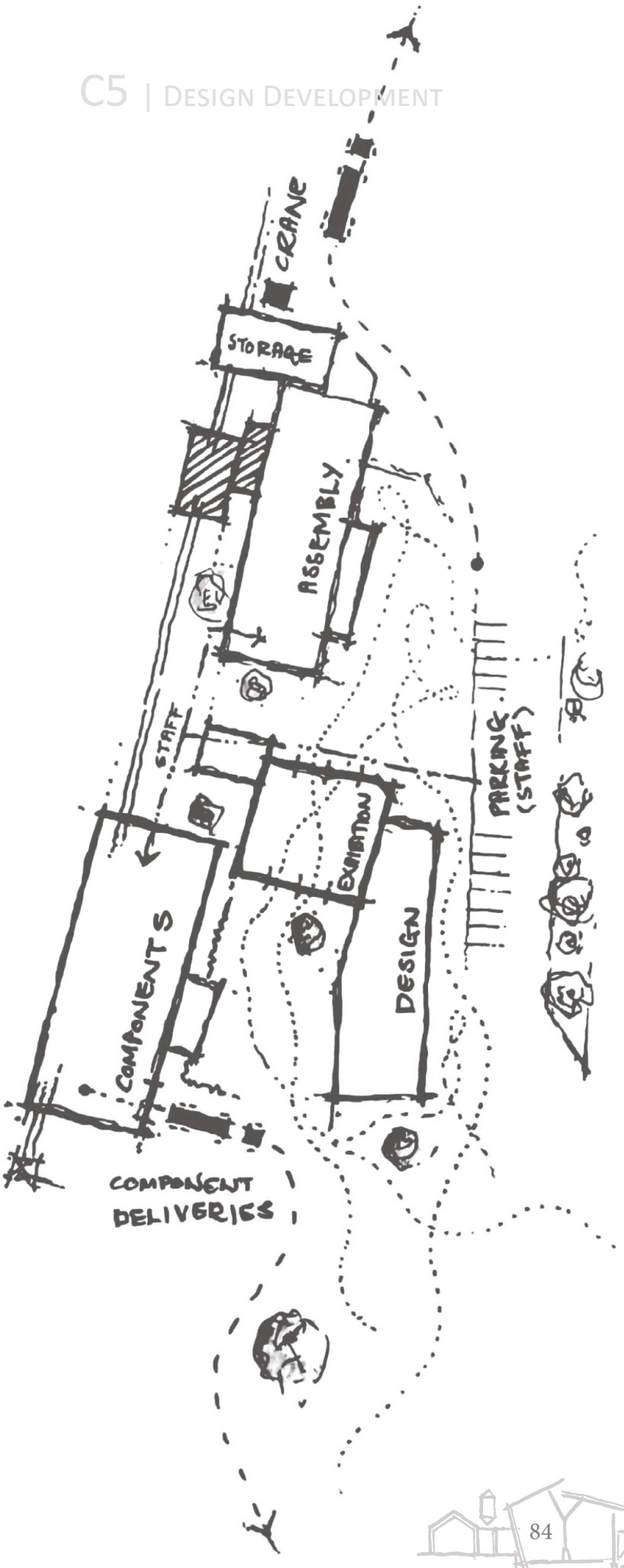
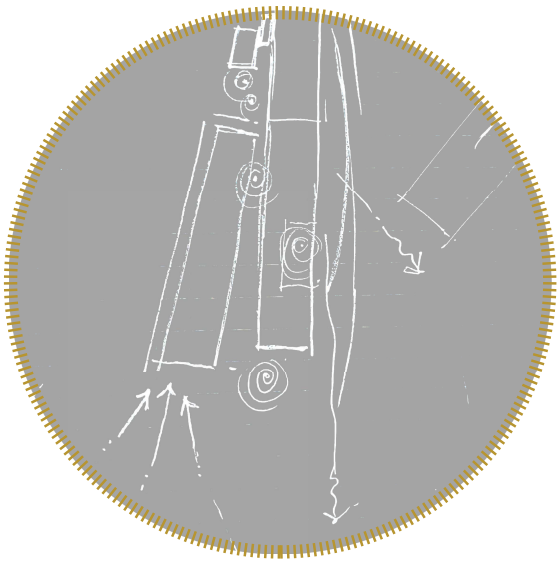
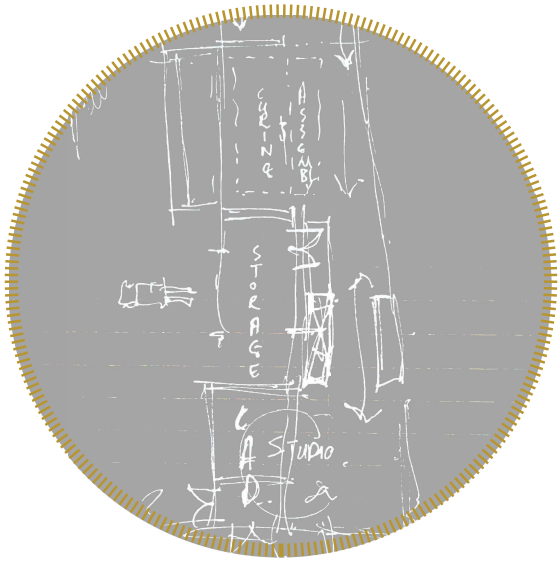


Figure 58: Further developed chronological attempt at a program layout and plan, including post-rationalized comments and reactions (Haasbroek, 2022).







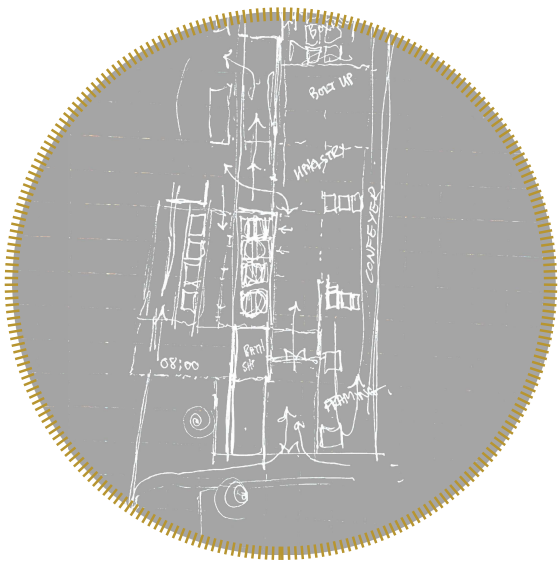
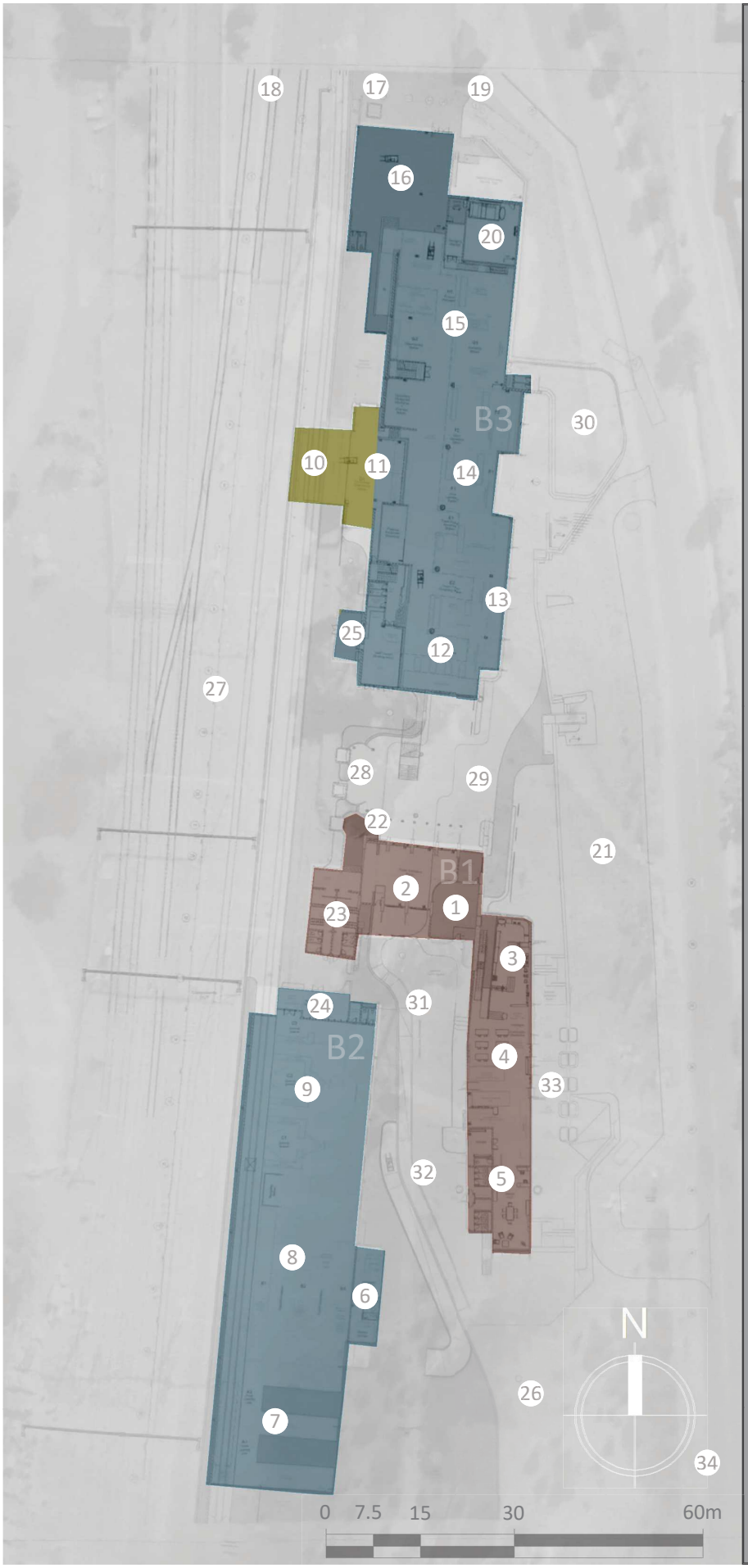


Figure 59: Conceptual Sketches as part of the Design Development, investigating public circulation and the visitors experience following the process of manufacturing (Haasbroek, 2022).



B1-Design Hub
1. Reception | Info
2. Public Exhibition
3. Prototype Workshop
4. Community Workshop
5. Design Studio

B2-Component Storage
6. Inventory Manager
7. Unloading (Pallets)
8. Storage
9. Unboxing | Sorting

B3-Assembly Facility
10. Unloading (Boxes)
11. Distribution
12. Frame Assembly
13. Conveyor Belt
14. Upholstery
15. Boxing | Shipping Prep
16. Storage | Packing
17. Permanent Crane
18. Railline Loading (Containers)
19. Truck Loading (Container)
20. Pump|Power Room

Staff
21. Private Parking
22. Staff Entrance
23. Staff Lockers
24. **B2** Staff Room
25. **B3** Staff Room

Public
26. Public Parking
27. Public Bridge
28. Public Elevators
29. Public Square
30. Amphitheater
31. Restaurant Square
32. Informal Market
33. Community Exhibition
34. Public Park

Figure 60: Final plan resulting from the Design Development process, with legend to give more clarity on functional aspects (Haasbroek, 2022).

D

TECHNICAL ASSEMBLY ANALYSIS

D1
Structural Manifesto

D2
Structural Development

D3
Sectional Investigation

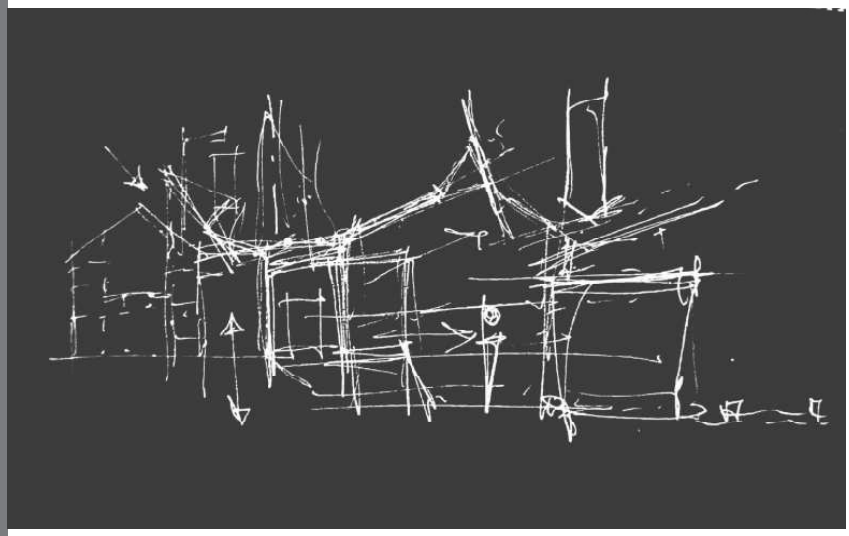


Figure 61: Abstract Structural sketch inspired by De Poort (Haasbroek,

Figure 62: Conceptual model, investigating structural assembly and spatial composition (Haasbroek, 2022).

Figure 63: First conceptual section model, investigating material application and spatial experience (Haasbroek, 2022).

D

TECHNICAL ASSEMBLY ANALYSIS

With this section, the text attempts to give clarity to the structural decisions made throughout the design process. By first explaining the structural intent of the building to better comprehend, the factors pertaining to the structural resolution of the *Micro Industrial Park* and its facilities.

It then becomes possible to apply this information, to the programmatic design and Massing investigation developed in Chapter C, to ensure that the overall design intent and structural approach is closely aligned with that of the contextual environment. Analysing the Topological and climatic factors relating to this specific project, to determine the most appropriate and efficient manner of construction. A Process conceptually proposed in this chapter, through progressive diagrammatic and 3D modelling analysis.

This led to a technical investigation of the resulting concept, regarding passive design principles, and determining the most efficient systems for this project. Finally accumulating with structural sections and construction details, concluding the inquiry.

D1 | Structural Manifesto

Ford ultimately contends that both approaches communicate a certain truth about construction, whether literal, as in Monolithic construction, or symbolically related, as in Layered structure (Wiedersphan, 2010). I found the power to lie in integrating these ambiguous architectures, to lure the viewer into their individualities, gradually forcing confrontation with the interconnected tectonic mysteries, in this instance strongly associated with Assembly. This architecture blurs not only the divisions between architectural expression and structural reality, but also the factors of functionality and craft. Which can then be articulated through the design process into less distinct and more affiliative interactions (Sekler, 1965).

These buildings, on the contrary, should not immediately overshadow the experience with formal investigations into unconventional shapes or extravagant structural complexities. Instead, with the aid of discernment towards Morphological and contextual factors, the structural approach of this project attempts to engage with the visitor and occupant in an active intellectual dialogue of perceptual possibilities and impossibilities (Ford, 1990).

In the case of De Poort then, due its lack of universal identity, the structure should symbolically resemble security and encourage a sense of enduring permanence. Rather than a modular, temporary architectural approach that would leave the structure with no connection to its strong historic past. In combination with that, certain structural elements should however be more tactile, celebrating the local materials and methods of the area, in abstracted, yet functional manner. Ultimately generating an architectural experience primarily guided by strong Morphological elements, expressing confidence (Wiedersphan, 2010). These elements should then be emphasised by smaller, more ambiguous design elements to ensure that the experience does not become too harsh or incompatible to human scale. This will also create necessary datum to the integrated public experience, aiding in generating orientational elements for the confusing urban fabric.

Figure 64: Artistic interpretation, rendered by, open-source AI image generating software (Dream-AI), abstractly depicting the sectional model in Figure 3 (Original image: Haasbroek, 2022. Edited by, DreamAI, 2022).

D2 | Structural Development

Not all architectural expression relies on truthful expression: some buildings are intentionally “deceptive” in their structural explication. Eduard Sekler, a world-renowned architectural historian, demonstrated the affiliation between an explicit and ambiguous structural expression as both being perceptions (Sekler, 1967). Both being generated by an architectural organization of structure and construction, but the former affirms a structural logic while the latter distorts structural legibility (Sekler, 1965).

Buildings that render the internal forces of a structure so far as to be illegible or confusing, does not resemble strong identity. This separates the architecture of support from the image of the intention and destabilises the universal comprehension (Wiedersphan, 2010). Focusing on Paarl, and more specifically De Poort then, such an ambiguous structural expression will displace the explicit reading of a building’s forces with that of an out-of-place visual conundrum.

Sekler describes the cognitive dissonance (Sekler, 1967), that a balanced ambiguous design can induce on an architectural experience, when he writes, “The tectonic expression may be deliberately unclear, leaving a beholder marvelling at vast expanses of matter hovering apparently without effort over a void.” This proves that by persuading our visual expectations, both through artful architectural detailing and structural manipulation, it becomes possible for a building to facilitate universal identification and public significance. Whilst maintaining a dynamic approach to transformability towards the constantly evolving contextual landscape (Wiedersphan, 2010).

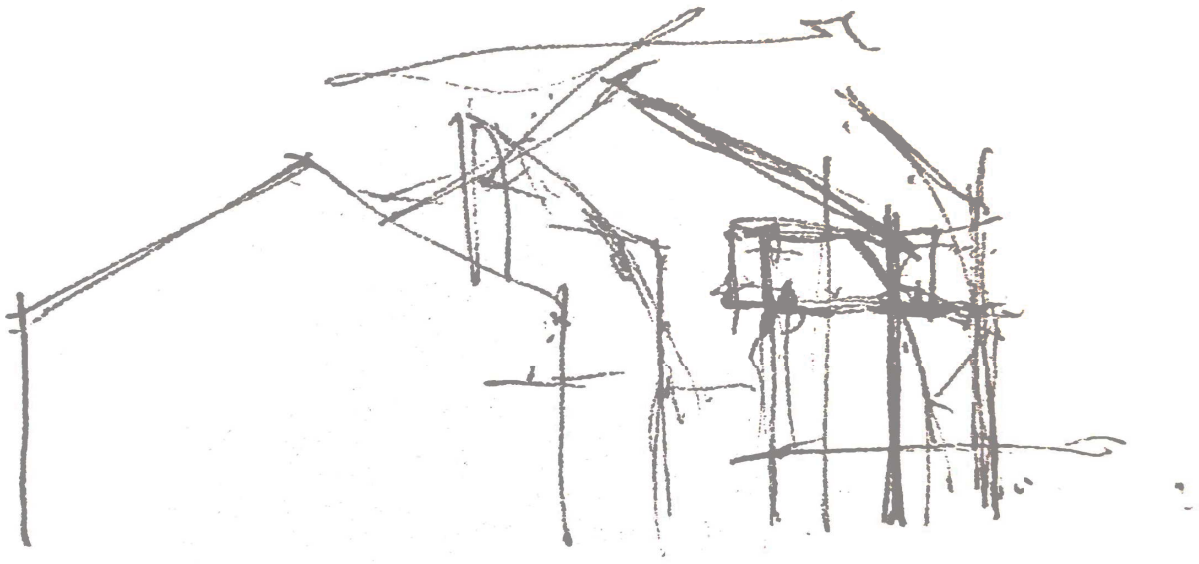
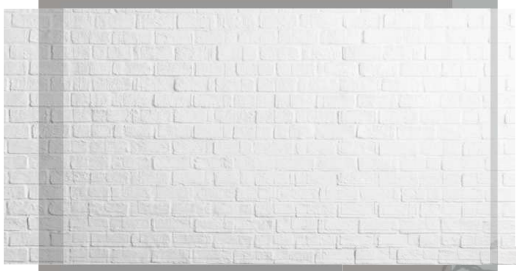


Figure 65: Sketch developing the sectional structure from historic existing Morphological influences from the surrounding context and urban landscape (Haasbroek, 2022).

Material Analysis



White Brick (Heritage)

Local Timber (Touch)

Metal (Future)

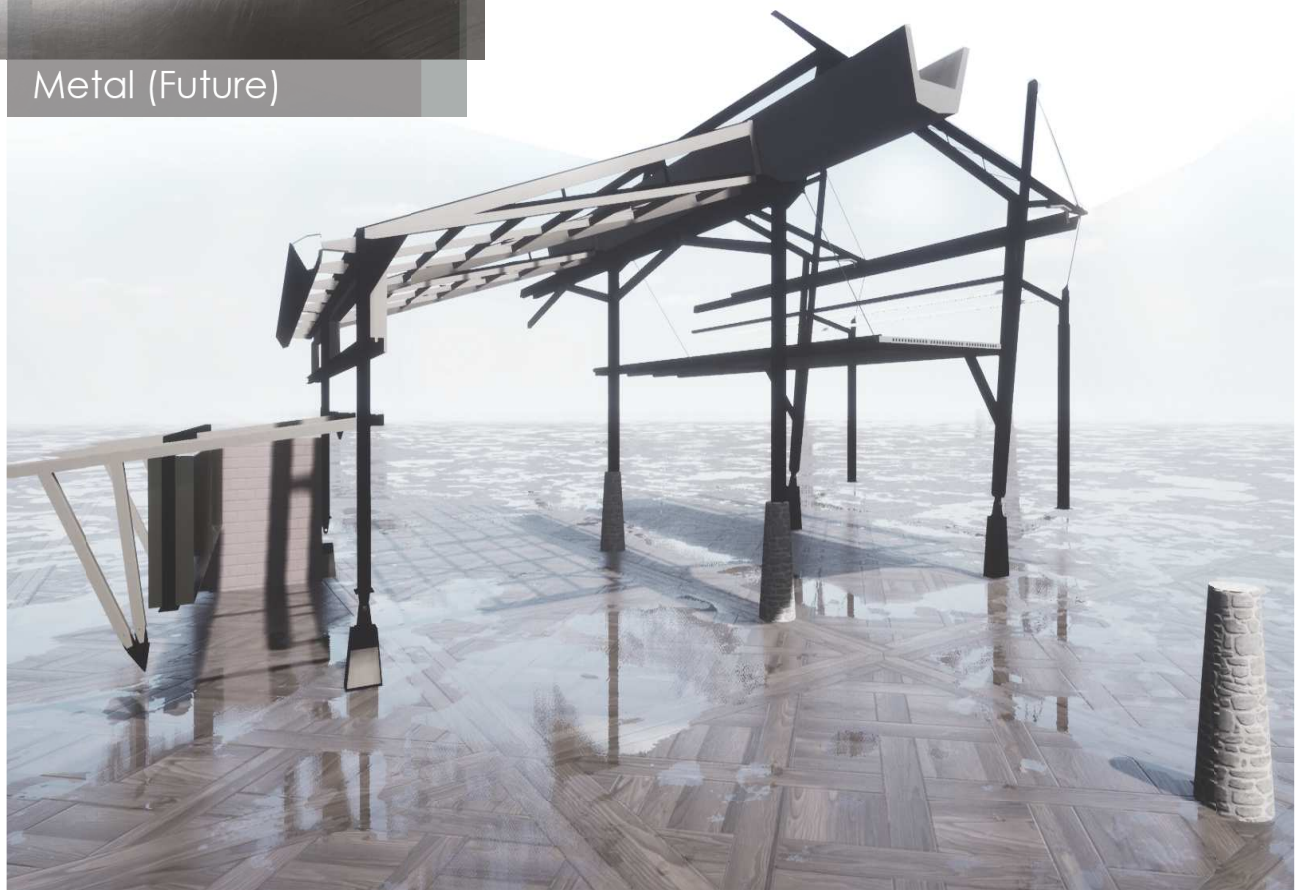


Figure 66: Render of a structural portion of the Assembly Facilities load-bearing structure, exhibiting the material selection applied to this project (Haasbroek, 2022).

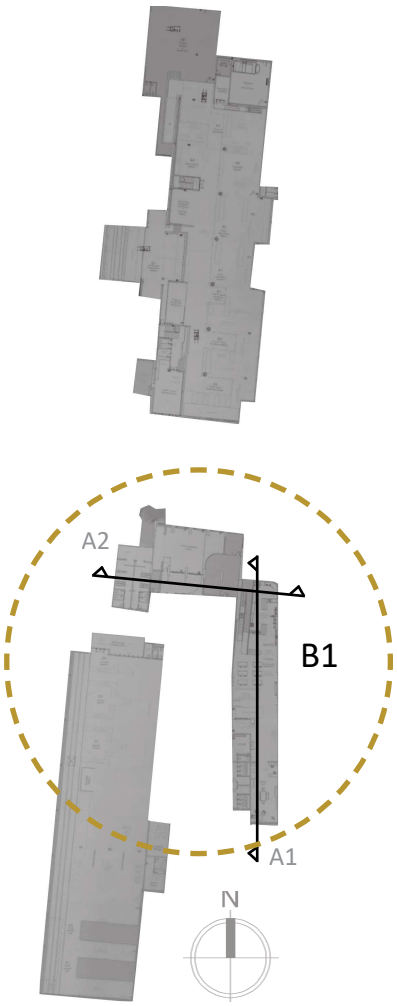
D3 | Sectional Investigation

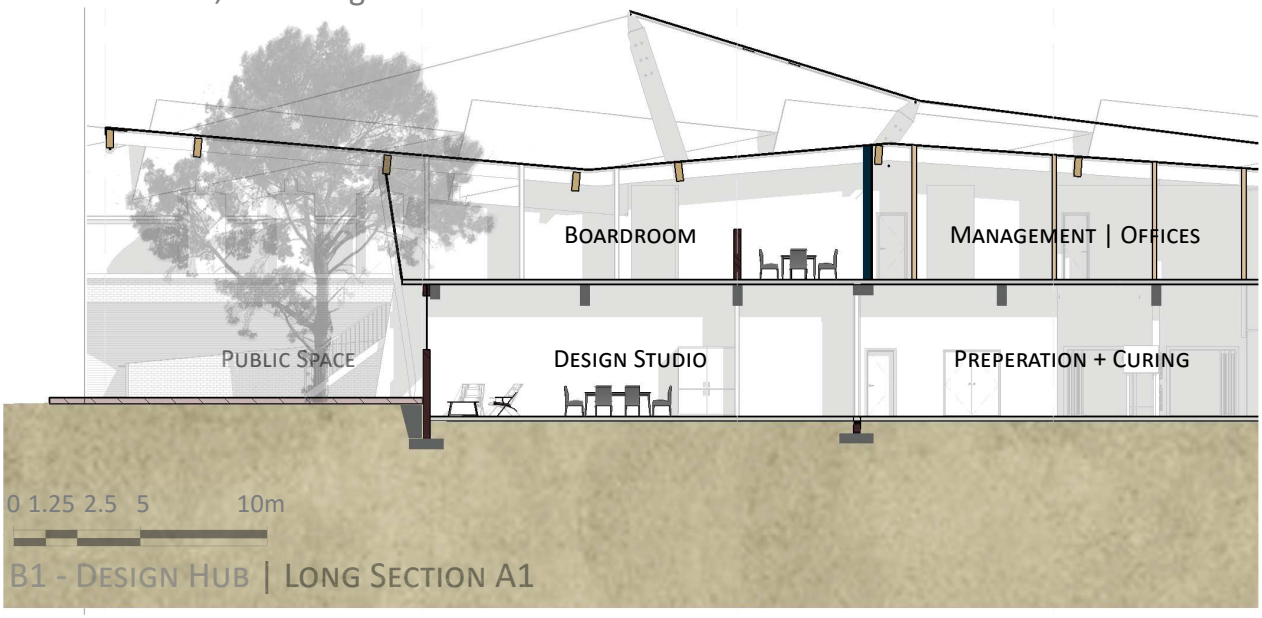
B1 | Design Centre

The Morphological influences relating to this building, developed as a celebration of local construction methods. In Figure 58 it is identified that the public section (B1 | Design Centre) was out of scale (to large) and not indicative of the function it facilitates. This led to an analysis of historic Cape Dutch construction methods, as the scale is sensitive towards human form and the materials are comforting to human interaction.

In the time these historic buildings were being constructed, there were only specific lengths of timber beams available, restricting design solutions to a structural parameter. Modern technology allows for Laminated timber beams, spanning much further.

In this case then the design implemented the Laminated beams but restricted their span to resemble the local construction methods. The rest of the structure celebrates the unique qualities of the local materials and craftsmanship through exterior, ornamentation, and design elements.





B1 - Design Hub | Long Section A1

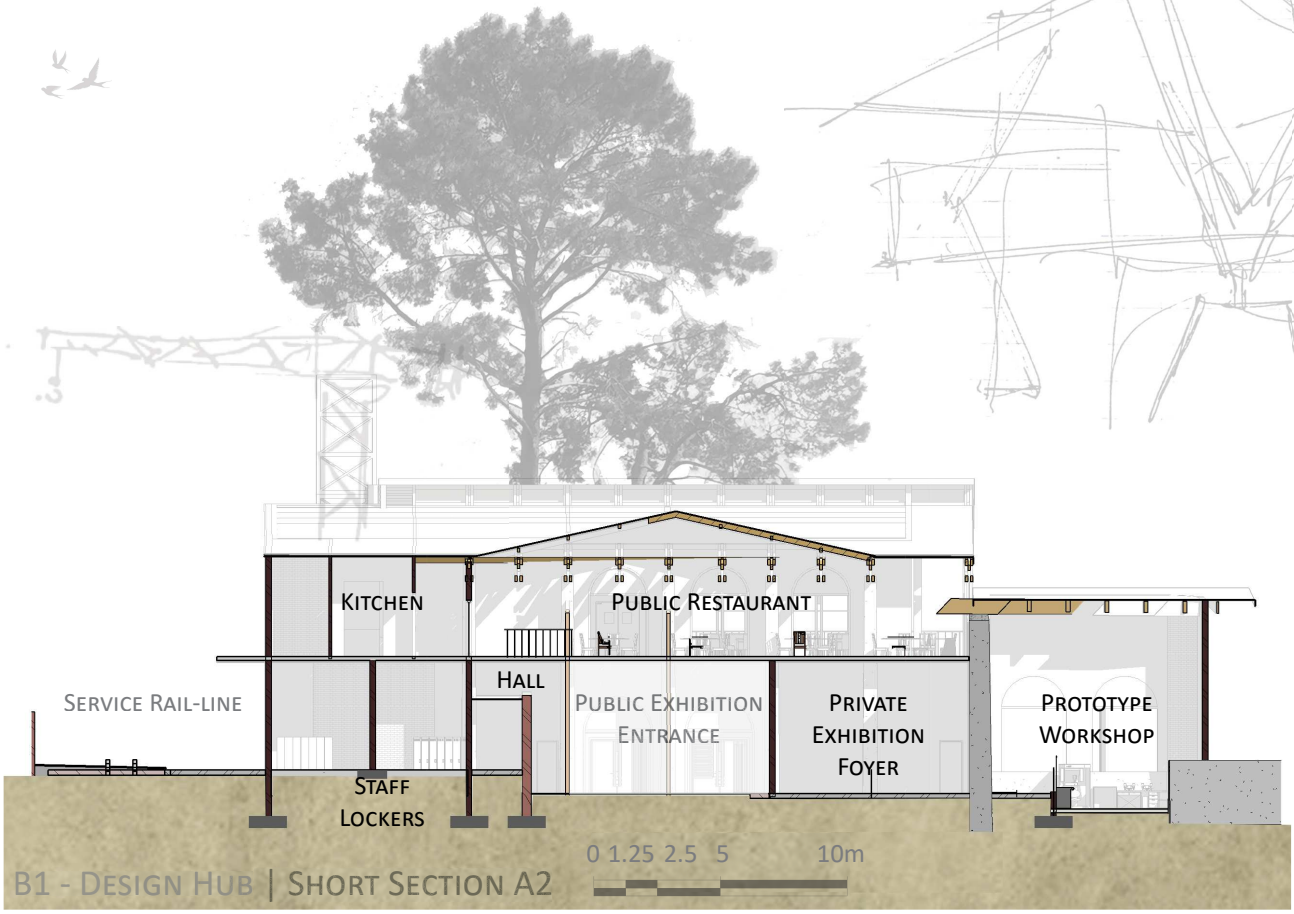


Figure 67: Short Section of the Design Centre, including public functions, management and client facilities (Haasbroek, 2022).

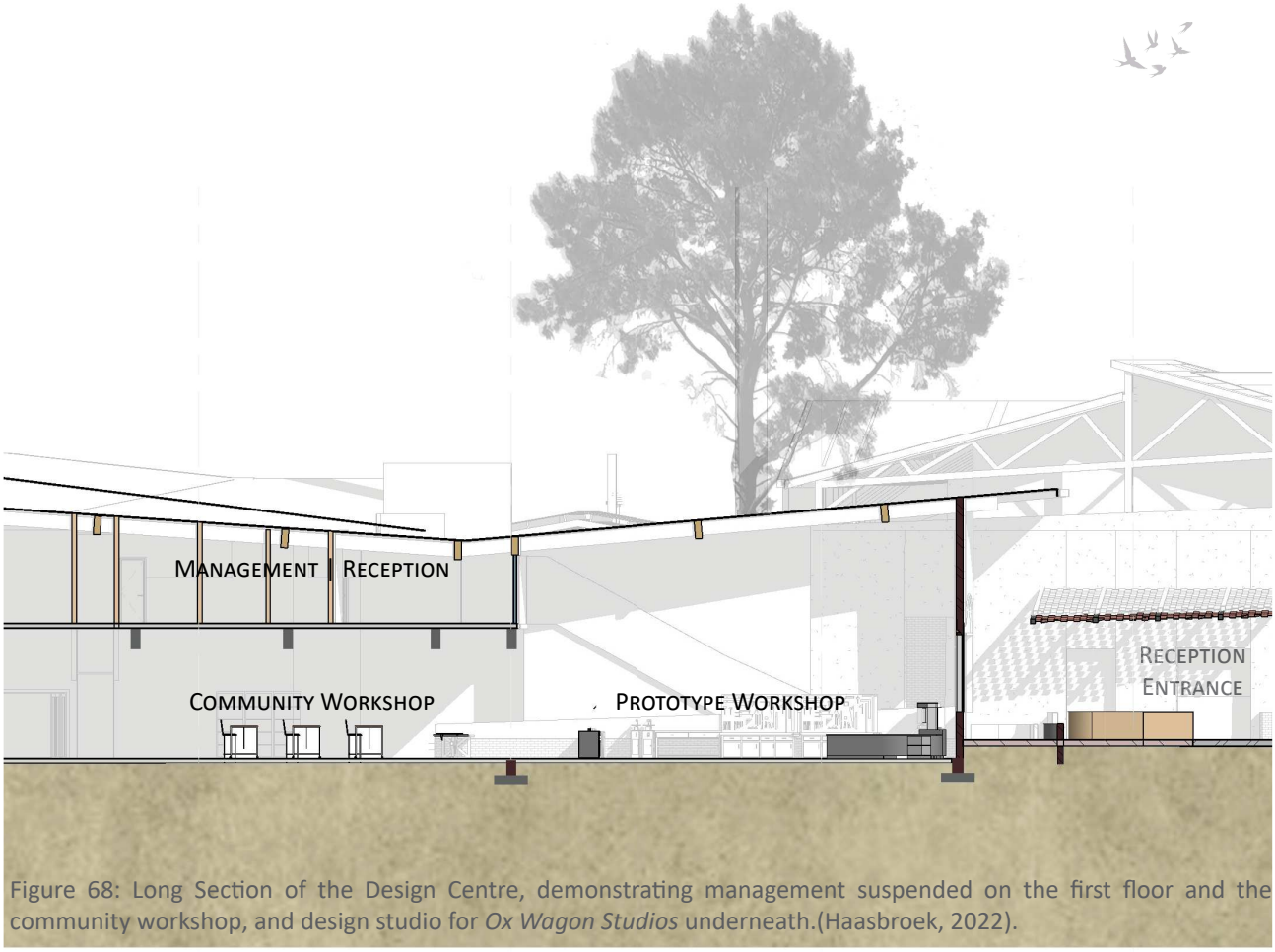


Figure 68: Long Section of the Design Centre, demonstrating management suspended on the first floor and the community workshop, and design studio for *Ox Wagon Studios* underneath.(Haasbroek, 2022).

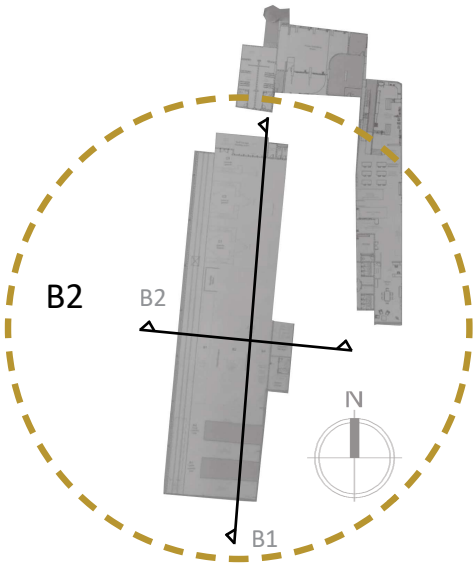
D3 | Sectional Investigation

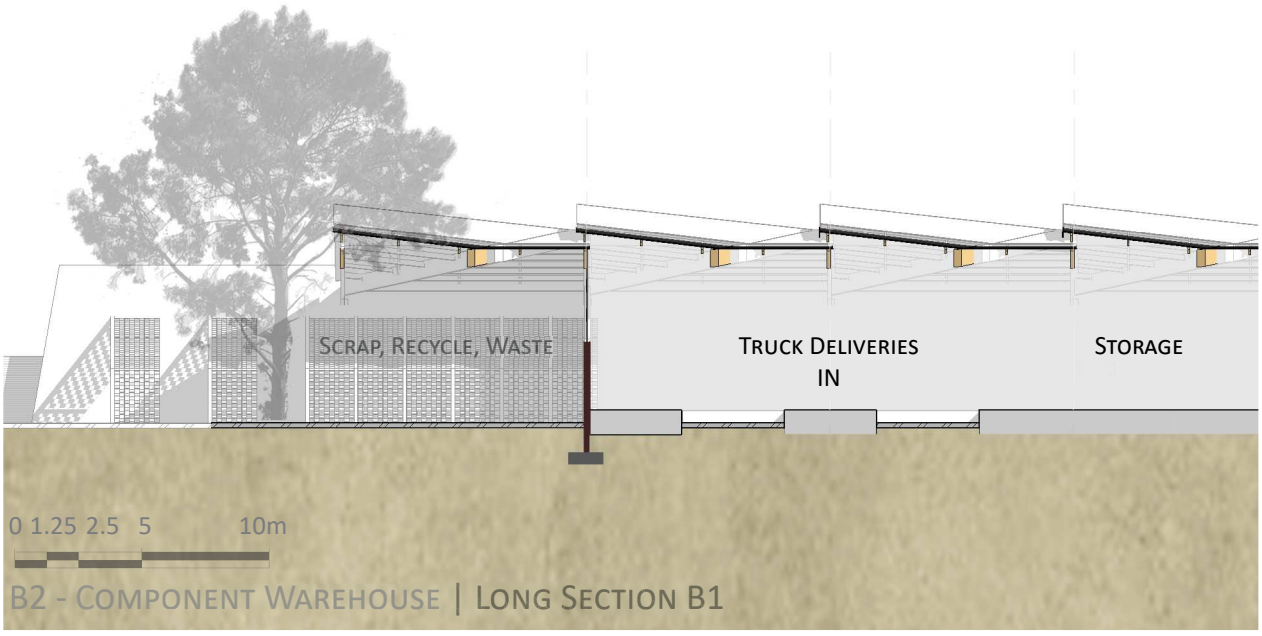
B2 | Component Warehouse

The goal with this building was not over design for the function it resembles, being storage essentially. It did however, according to the design brief, expect a comfortable working environment, with open volumes and natural sun light.

Dis generated a simple yet effective structural system, with load-bearing steel space frames, set 10 meters apart, sitting on the outside of a masonry fill wall. This keeps the interior decluttered and provides additional protection from the Western sun.

With a timber sub-frame pitching the roof open to the South, that allows for natural sunlight and a blurry transition between inside and outside. Generating comfortable yet efficient working environments.





B2 - Component Warehouse | Long Section B1

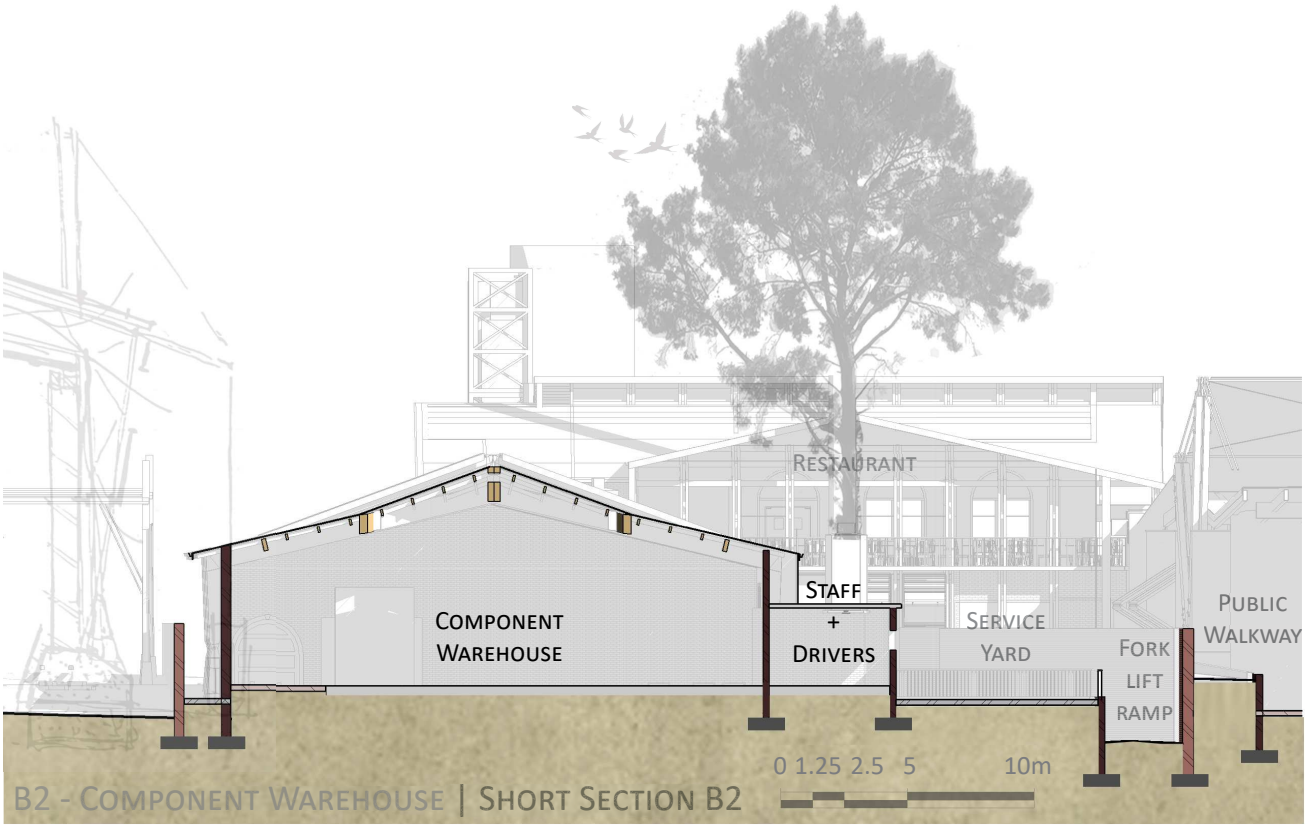


Figure 69: Short Section of the Component Warehouse, including Staff and driver facilities (Haasbroek, 2022).

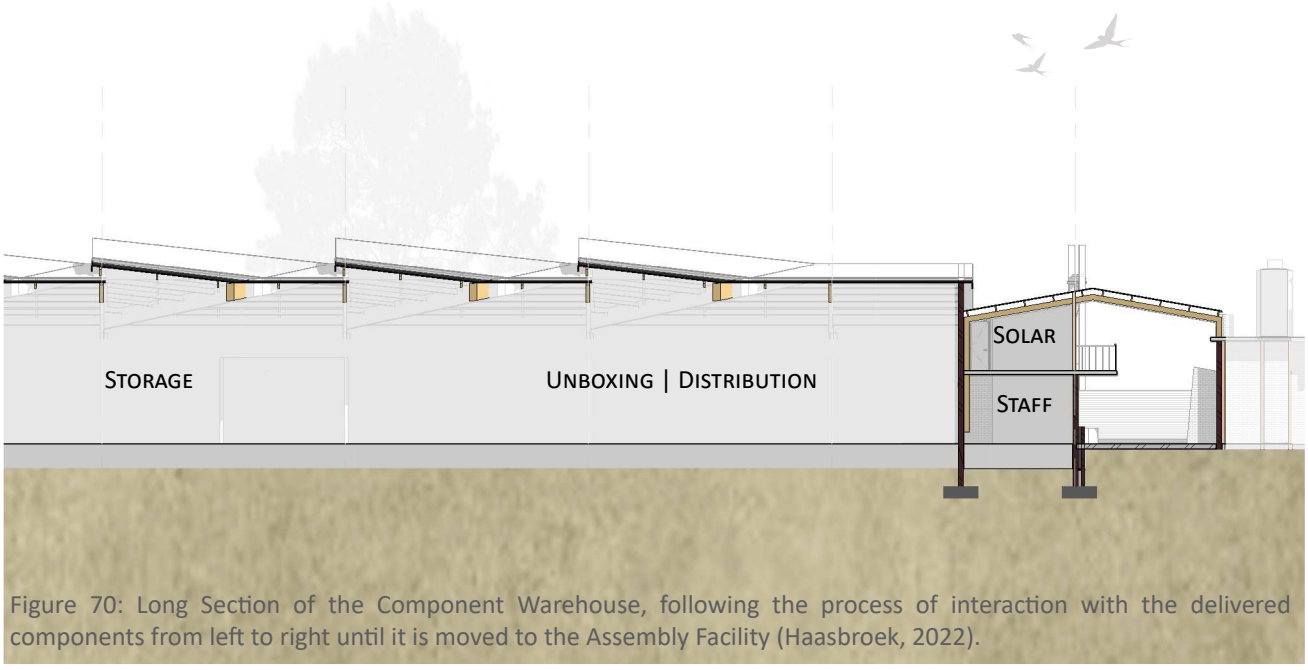


Figure 70: Long Section of the Component Warehouse, following the process of interaction with the delivered components from left to right until it is moved to the Assembly Facility (Haasbroek, 2022).

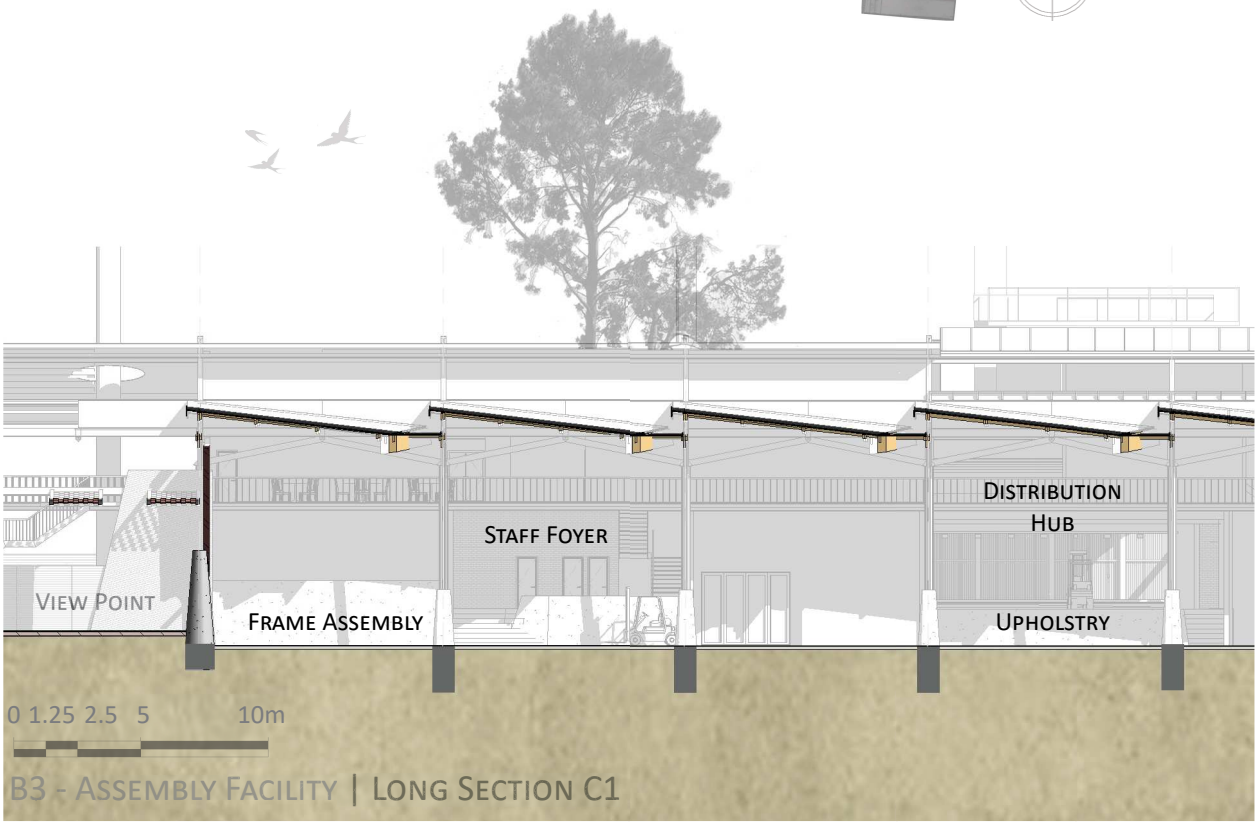
D3 | Sectional Investigation

B3 | Assembly Facilty

The Assembly facility is in many cases still just a warehouse, for the assembly of furniture components. This process is however emphasized through public engagement, made possible by interactive design. Conforming to contextual massing examples in the area.

The structure itself was designed ambiguous to some extent, to visually deceive visitors to which is load bearing and which is not. Generating a sense of mystery and excitement. encouraging interaction with the facades.

The form of the structure was derived from the silhouette of the Klein Drakenstein Mountain range visible to the South on site. This, combined with the Service hubs' visual and structural influence, provided for a dynamic Morphological approach, unique to De Poort.



B3 - Assembly Facility | Long Section C1

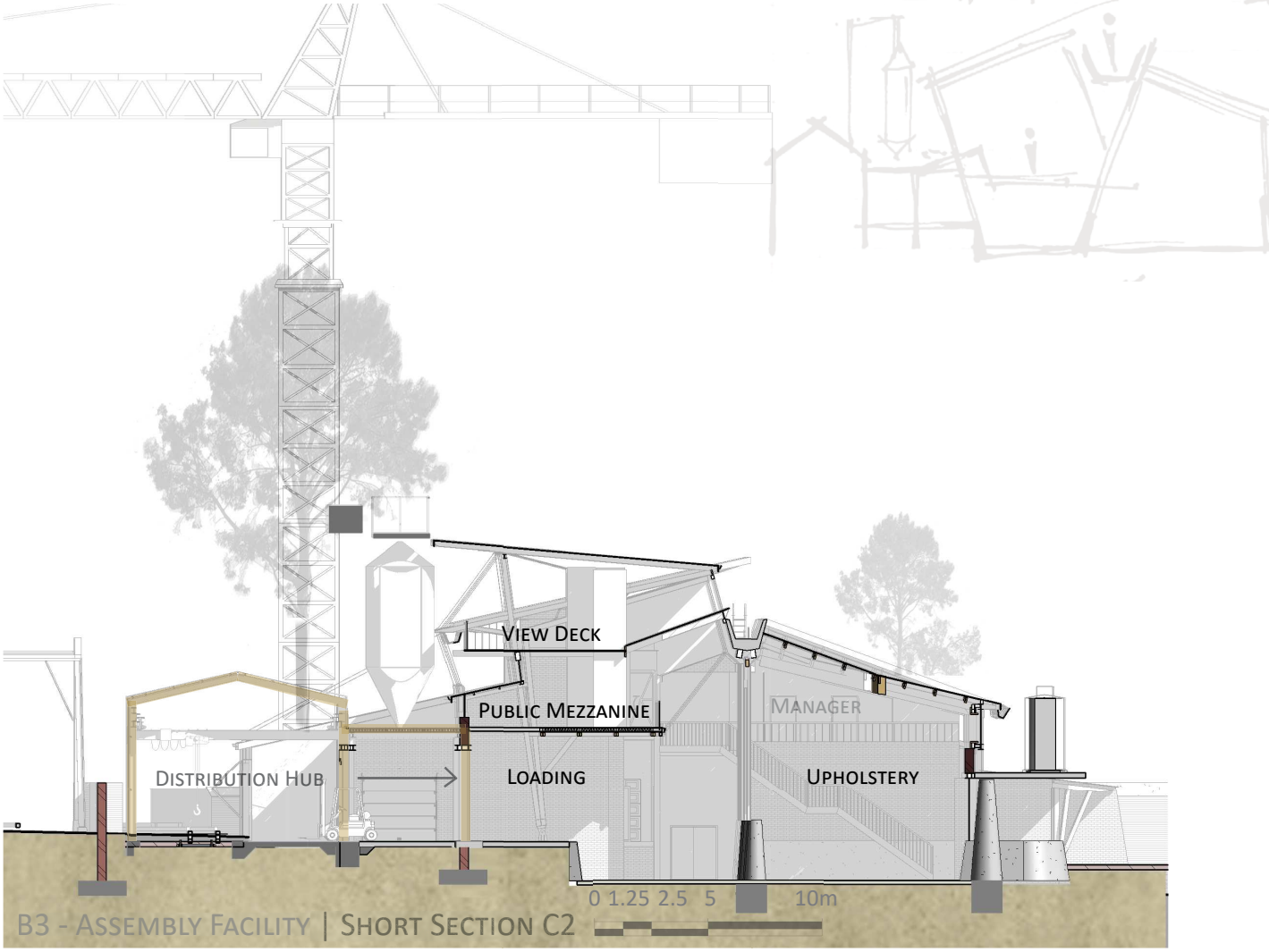


Figure 71: Short Section of the Assembly Facility, including the Existing Service hub (yellow), Assembly floor, and mezzanine level (Haasbroek, 2022).

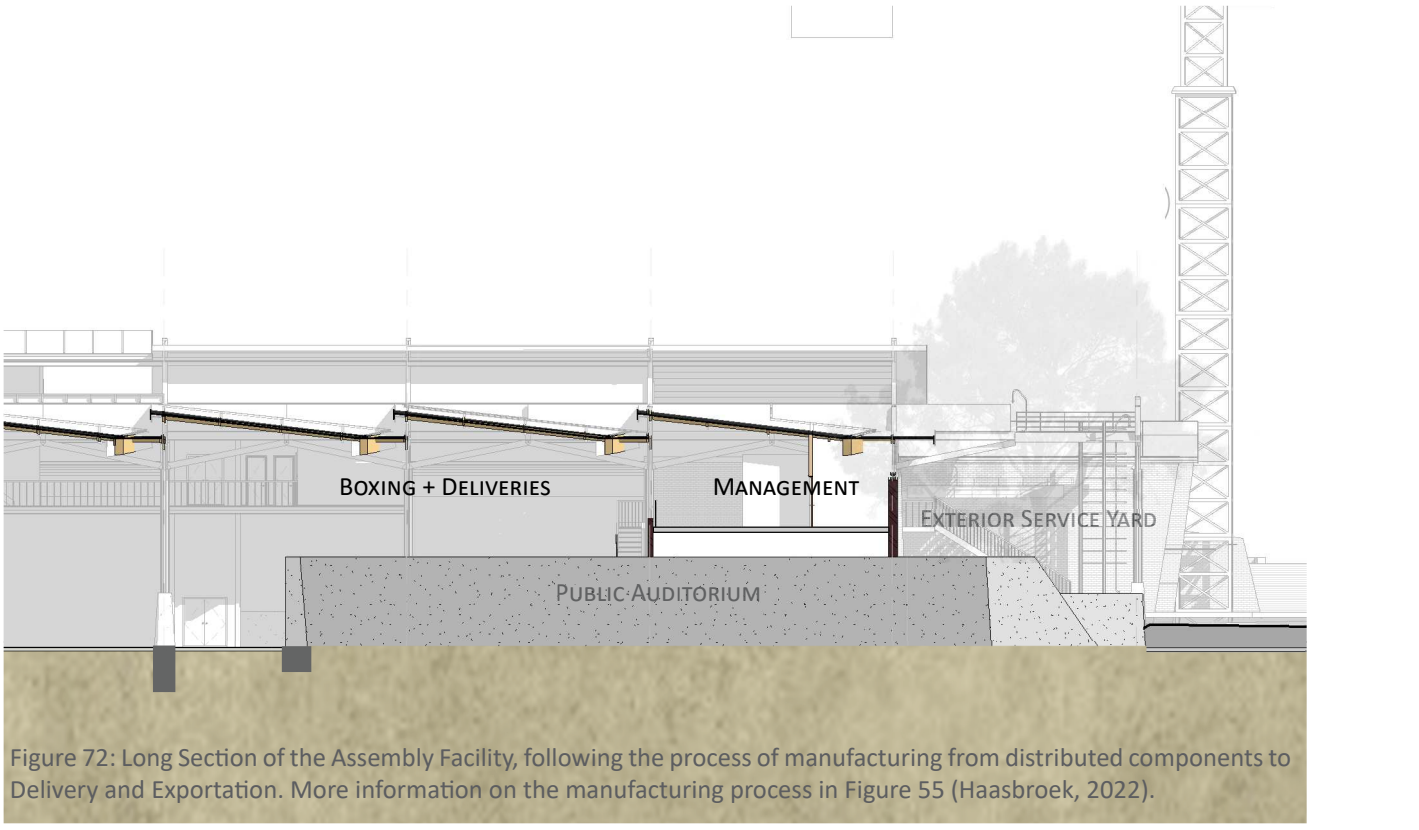


Figure 72: Long Section of the Assembly Facility, following the process of manufacturing from distributed components to Delivery and Exportation. More information on the manufacturing process in Figure 55 (Haasbroek, 2022).

E

FINAL DESIGN SOLUTION

E1
Plans + Section + Exterior Renders

E2
Manufacturing Process Visualization

E3
Public Experience Visualization

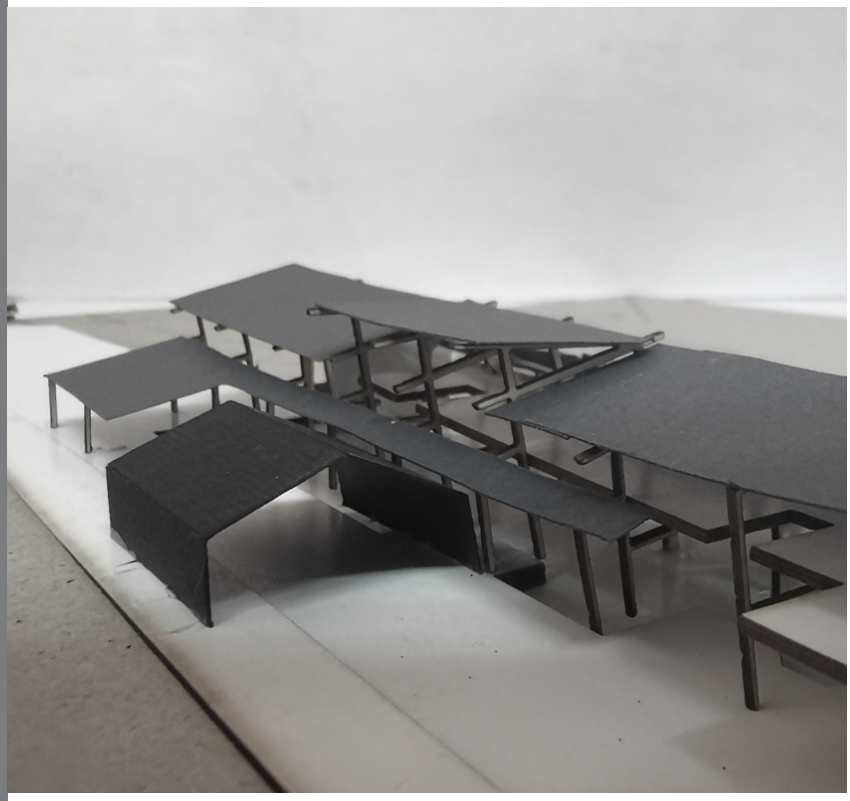


Figure 73: 1:500 Model, perspective of existing service warehouse (Black), connecting to the newly proposed Assembly Facility B3 (Haasbroek, 2022).

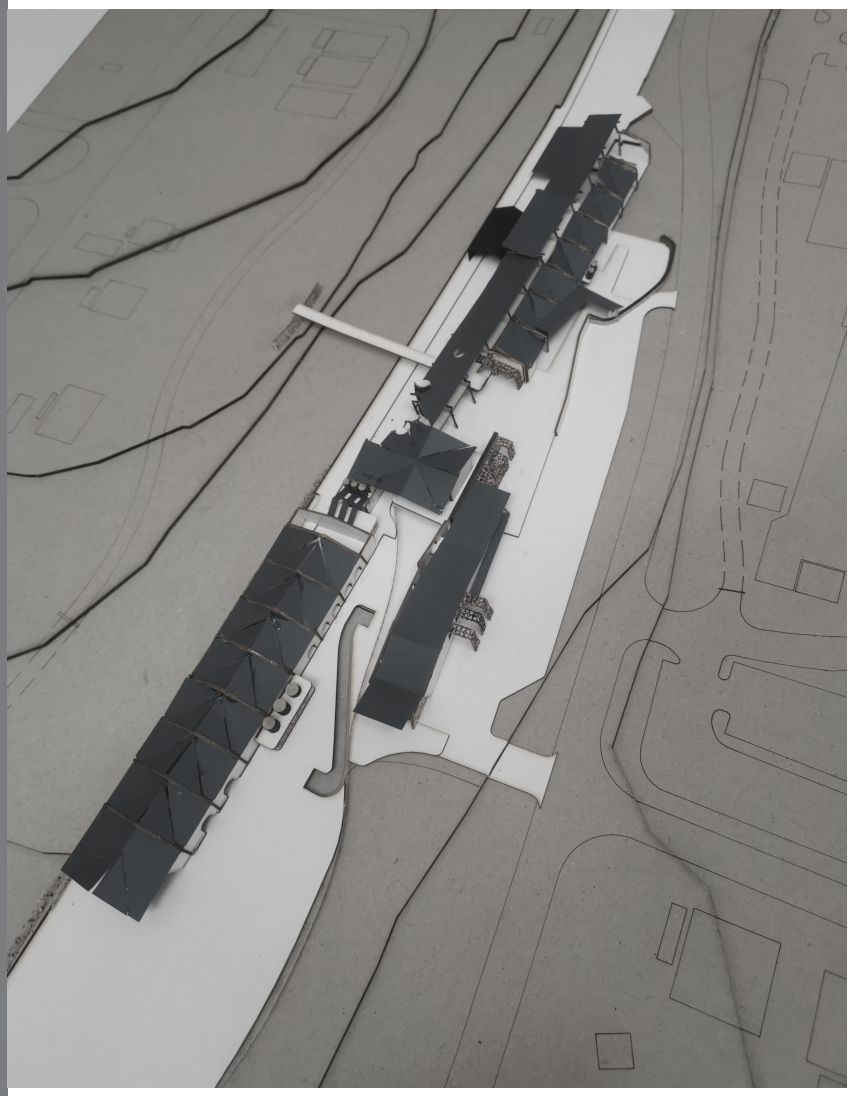


Figure 74: 1:500 Model, birds-eye-view of the De Poort Micro Industrial Park showing the complete infrastructure proposed (Haasbroek, 2022).

E

FINAL DESIGN SOLUTION

The following Chapter concludes the graphical design section, with attempts at final visualization, by architecturally portraying the De Poort Micro Industrial Park. This presentation follows a structured process of expression, starting with an expanded perspective of the facilities, to orientate the reader.

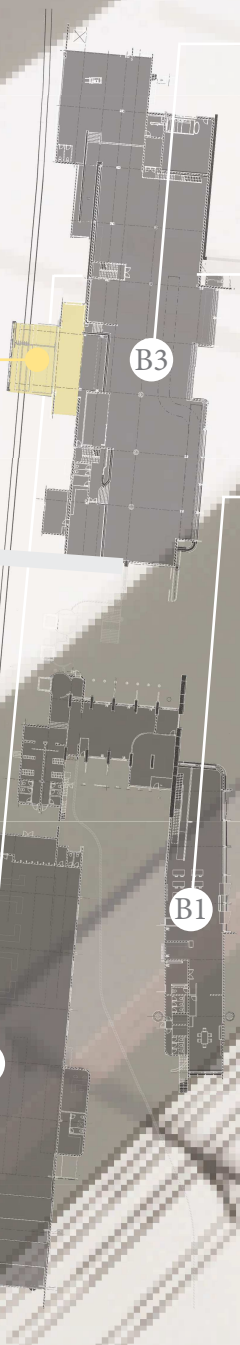
Then progressing to the final program list and technical drawings, providing clarity on programmatic- and other design solutions. The Chapter is concluded with composed renders of each of the individual buildings, referred to as B1, B2, and B3, aided by photos of a scale 1:200 model and adjoining sectional model.

E1 | Plans + Sections + Exterior Renders

MINI INDUSTRIAL PARK

Bridge
Public
(Municipal)

Existing
Service
Warehouse
+
Rail line



B3
Assemblage Facility
+
Distribution

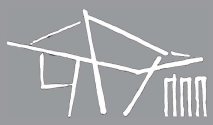
B2
Component Warehouse
+
Deliveries

B1
Design Centre
+
Management
+
Staff facilities
+
Restaurant

Figure 75: North Western perspective of the entire Micro Industrial Park showing dynamic social engagement (Haasbroek, 2022).

FINAL PROGRAM LIST

B1



BUILDING 1

Public Design Centre

Ground floor

Public
Reception | Show room
Public Bathrooms

Semi-Public
Community Workshop

Private
OWS Design Hub
Prototype Workshop
Private Client Show room
Staff Entrance + Lockers
Staff facilities
Security
Storage

First floor

Public (Elevator or Stairs)
Restaurant
Cocktail Bar
Public Bathrooms

Semi-Public
Reception

Private
Board rooms
Management
Restaurant Staff Entrance
Staff facilities
Security
Storage

B2

BUILDING 2

Component Warehouse

Ground floor

Public
N|A

Semi-Public
Delivery driver Lounge

Private
Inventory Manager
Storage
Unloading zone
Unboxing + Distribution
Private Bathrooms
Staff Lunch room
Security

First floor

Public
N|A

Semi-Public
N|A

Private
Solar battery room
(Exterior ladder access)

B3

BUILDING 3

Assemblage Facility

Ground floor

Public
Assembly View Point 1
Assembly View Point 2

Semi-Public
Fire Stairs

Private
Distribution hub (existing)
Loading zone
Production floor
Production Manager
Staff Lunch room
Private Bathrooms
Generator|Pump room
Storage

First floor

Public (Bridge Entrance)
Coffe Shop
OWS Archives
Public Bathrooms

Semi-Public
Fire Stairs

Private
Reception
Assembly Manager
Distribution Manager
Staff facilities
Library
Storage

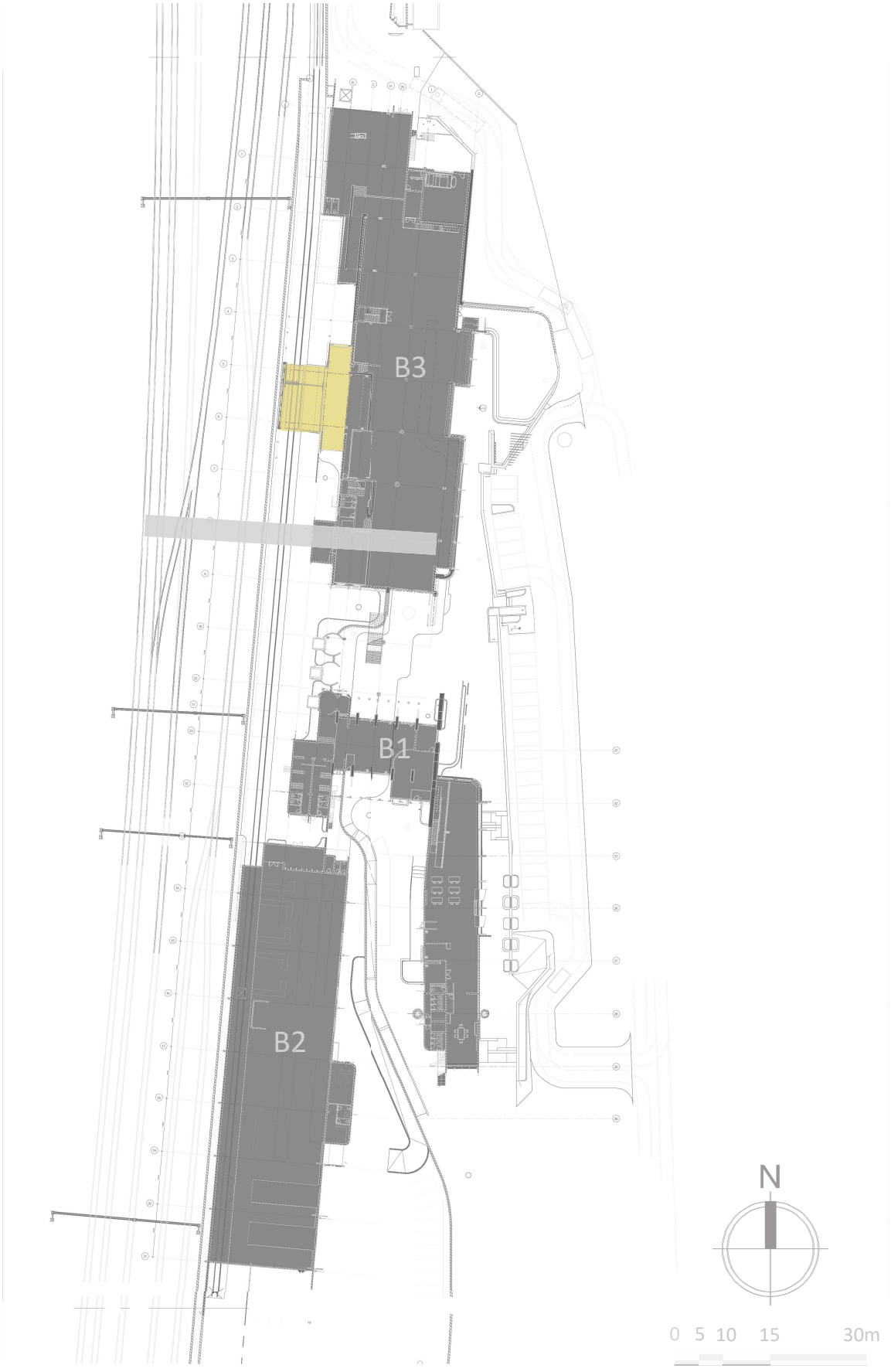
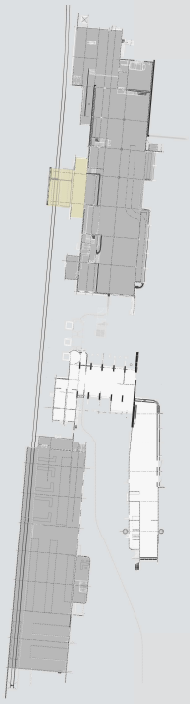


Figure 76: Orientational site plan of the Micro Industrial Park (Haasbroek, 2022).

B1

DESIGN CENTRE
GROUNDFLOOR

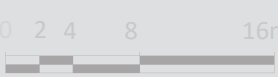


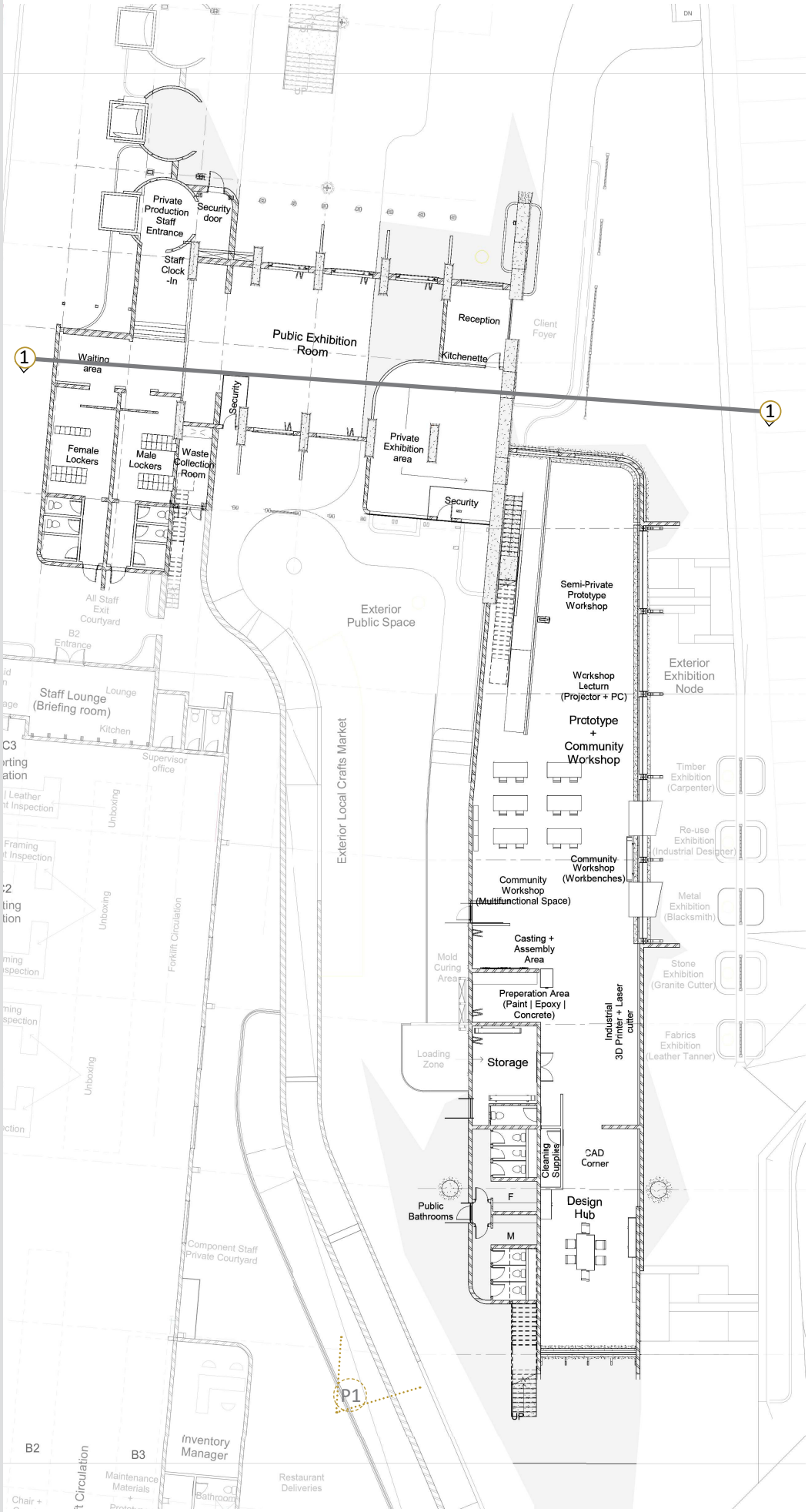
FUNCTION

This section of the design facilitates public engagement and guides most of the circulation aspects pertaining to everyday function.

It includes a public exhibition Room, designed to blur the transitions between inside and outside spaces. Guiding visitors through the assemblage a along the process of manufacturing.

The South-eastern section of the building facilitates *Ox Wagon Studios*, with regards to a Prototype Workshop, a Community based Multi-functional Workshop, and a Design Studio with all the necessary equipment.





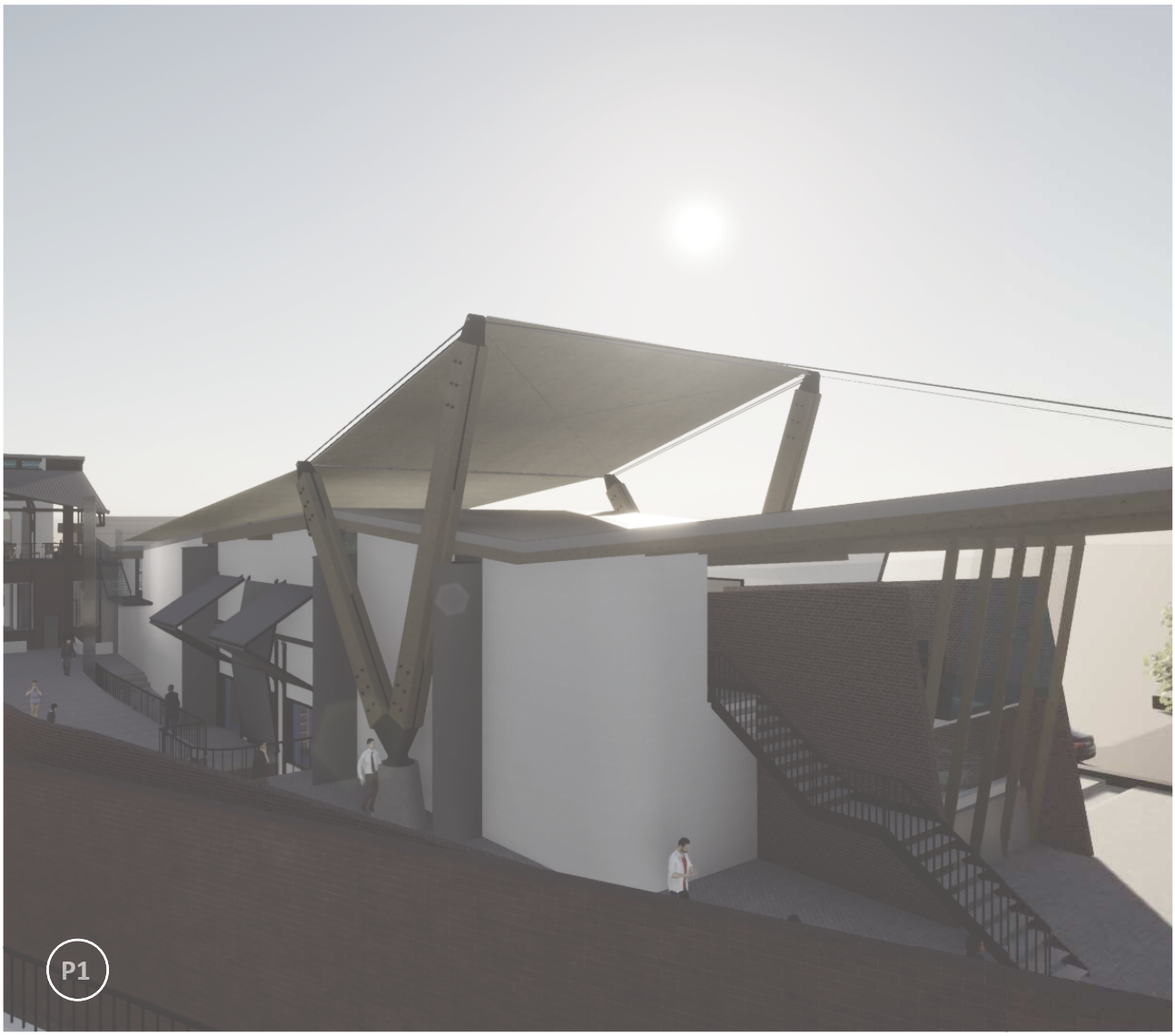
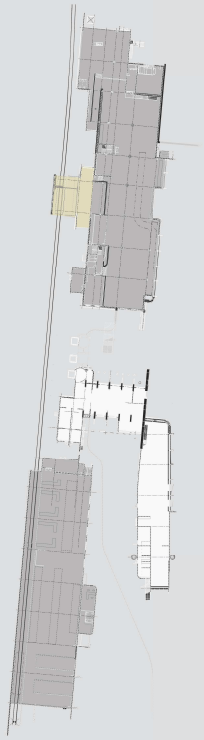


Figure 77: South Western perspective of the proposed Design Centre (Haasbroek, 2022).

Figure 78: 3D sectional perspective of Design Centre emphasizing structural approach (Haasbroek, 2022).

B1

DESIGN CENTRE
FIRSTFLOOR



FUNCTION

The first floor consists of more formal functions. These include corporate management, client facilities, security, and a public restaurant.

This floor was designed primarily around views to the East and South, of the variety of natural beauty scenes around the identified site.

Service functions are located to the West of the program to protect from direct heat transfer to the offices. Which is well vented to the East by an open corridor providing natural sunlight and airflow in the harsh summer conditions.

N

0 2 4 8 16m

Figure 79: Northern perspective of the entrance to the Public Exhibition on ground floor and the restaurant on first floor (Haasbroek, 2022).

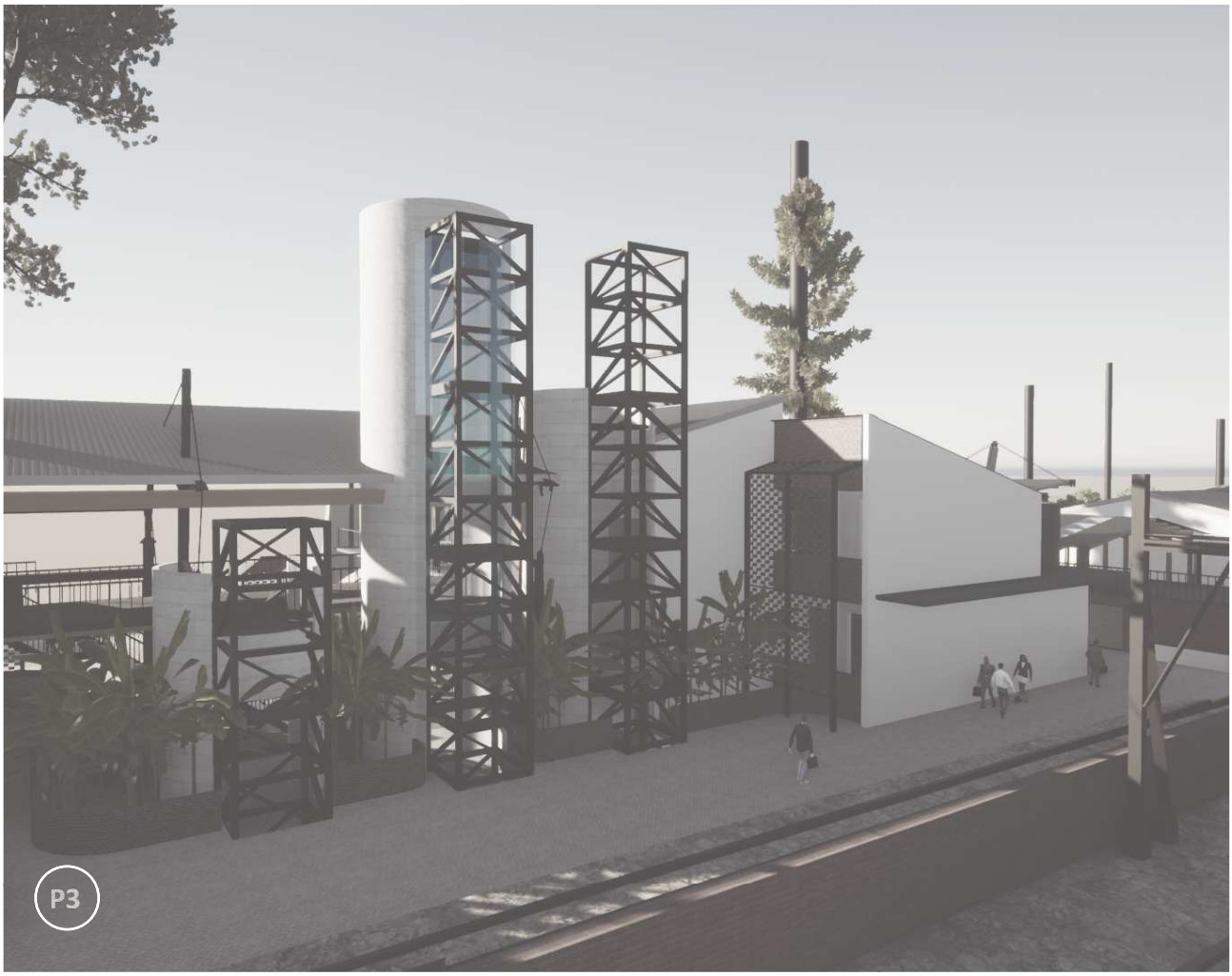
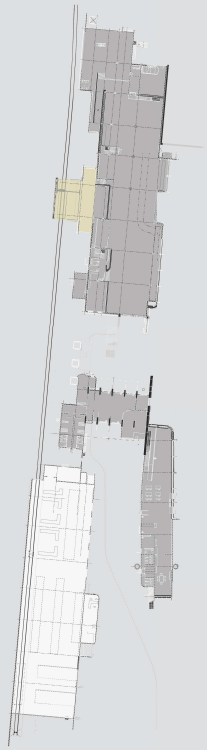


Figure 80: North Western perspective of the public and privaye elevator structures (Haasbroek, 2022).

B2

COMPONENT WAREHOUSE
GROUNDFLOOR



FUNCTION

This building was designed to be the least complex as per its need for efficient space utilization, with regards to storage.

This inspired research into open-plan, space frame warehouse structures, to generate the most functional approach.

The storage process is better explained in Figure 55, through a diagrammatic depiction of the relevant steps and procedures. With regards to location, the South side of the site is best suited for this function, due to its proximity to the N1.

N

0 2 4 8 16m

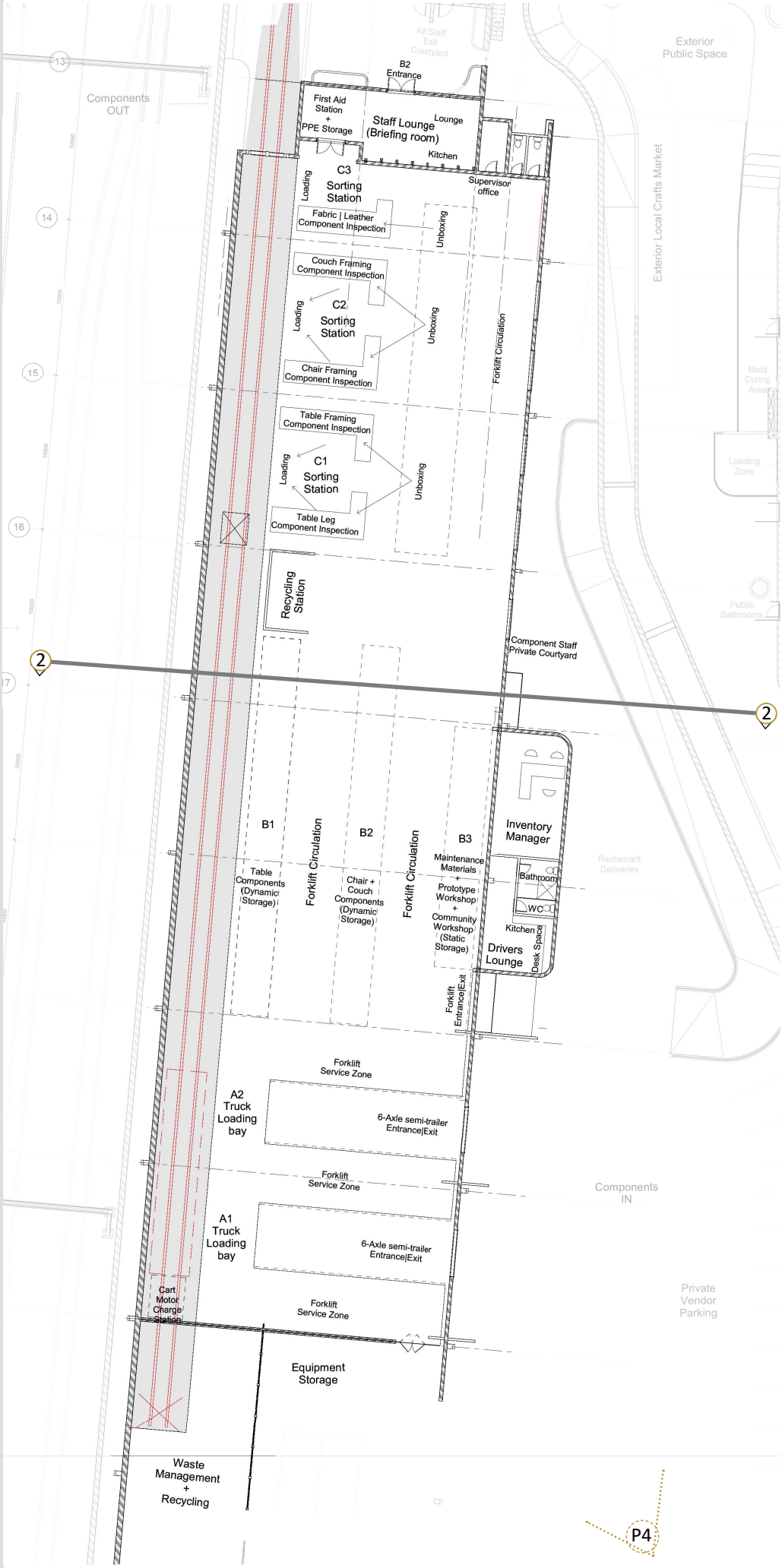


Figure 81: South Eastern perspective of the Component Warehouse and its adjoining service yard and waste storage (Haasbroek, 2022).

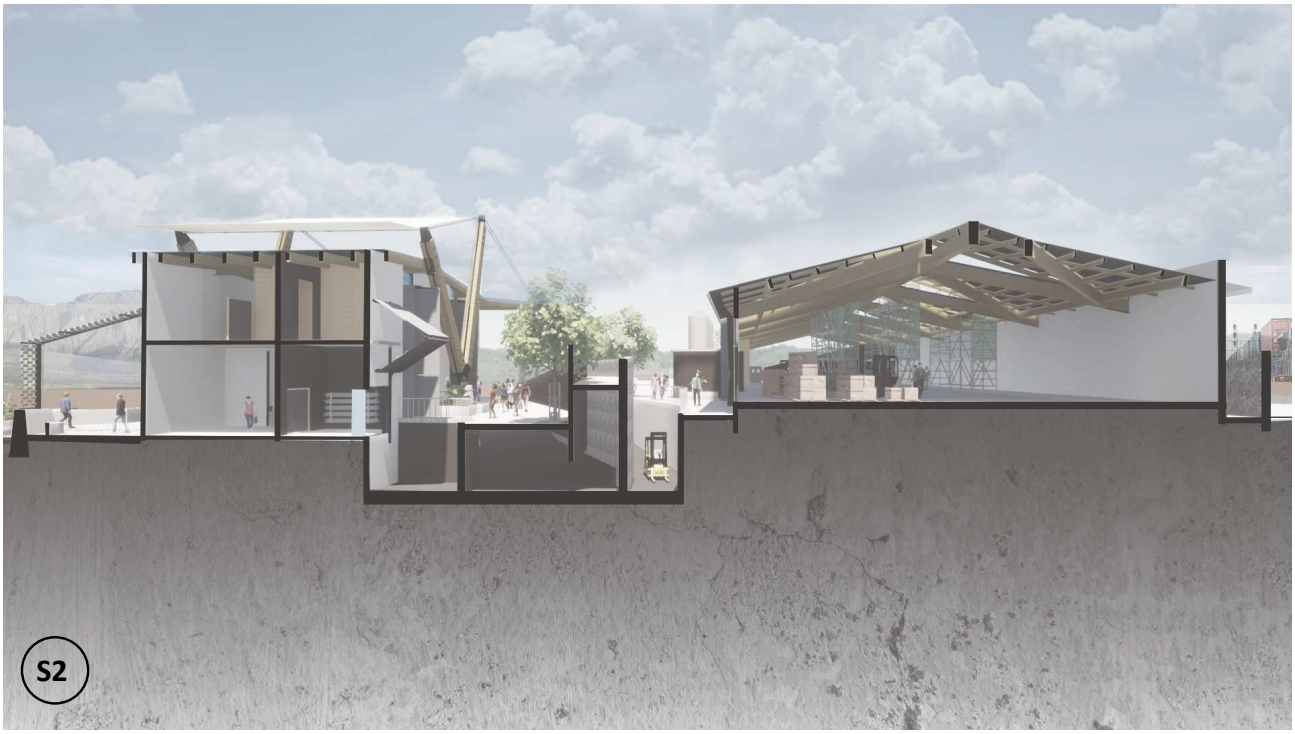
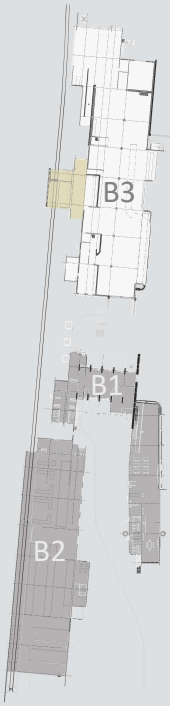


Figure 82: 3D sectional perspective of the Component Warehouse emphasizing structural approach (Haasbroek, 2022).

B3

ASSEMBLY FACILITY
GROUNDFLOOR



FUNCTION

This building was designed to exhibit the process of manufacturing and production, whilst facilitating a comfortable working environment for everyday staff.

Form generated from the existing service hub and the strong axis created by the rail line on site.

Materials gets unloaded and distributed through the facility, depending on what sort of component it resembles, to determine its location. an industrial conveyor belt assists with speeding up the component phase circulation aspects.

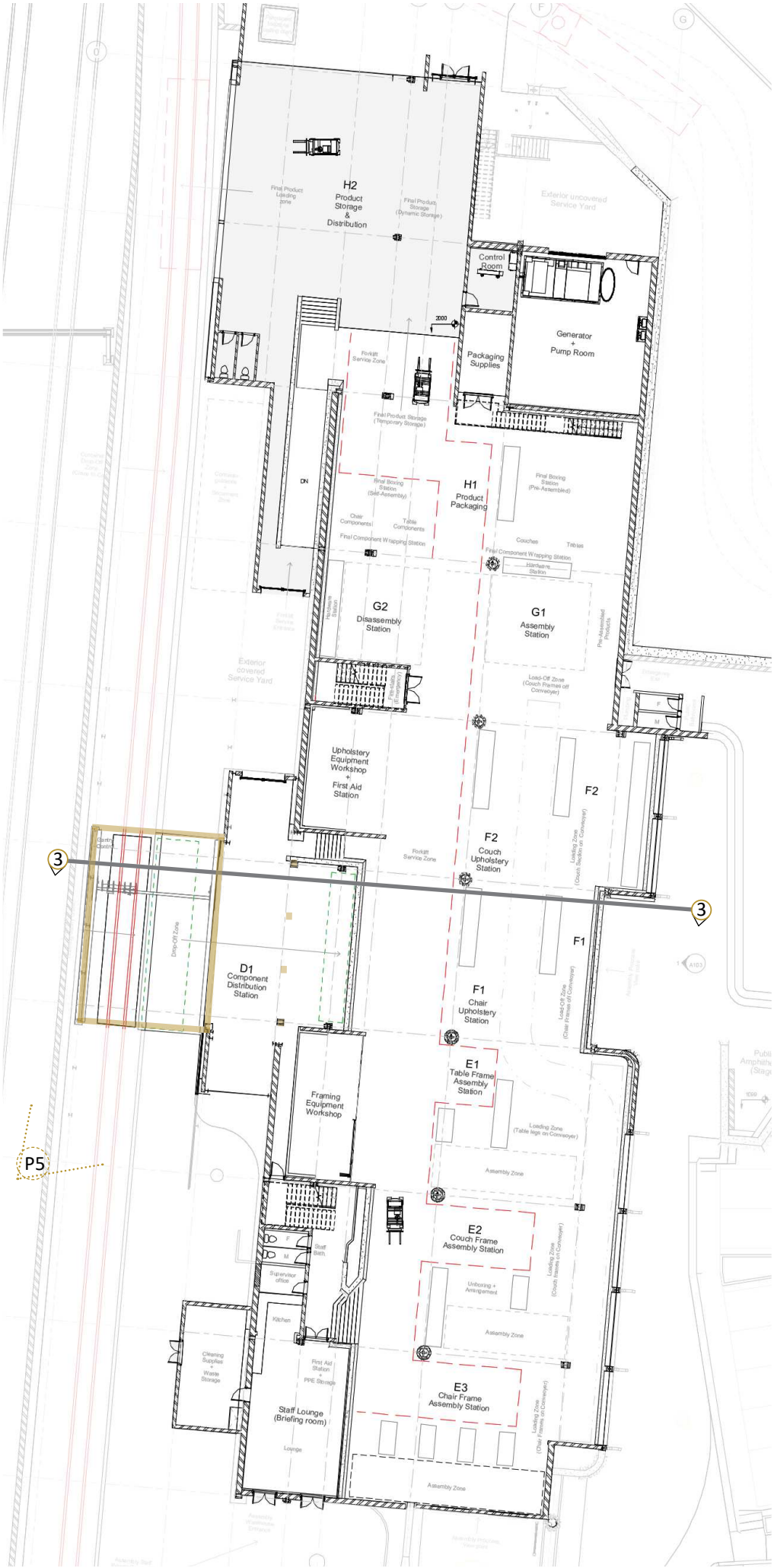


Figure 83: South Western perspective of existing service warehouse transformed into distribution hub, connecting to the newly proposed Assemblage Facility (Building 3) (Haasbroek, 2022).

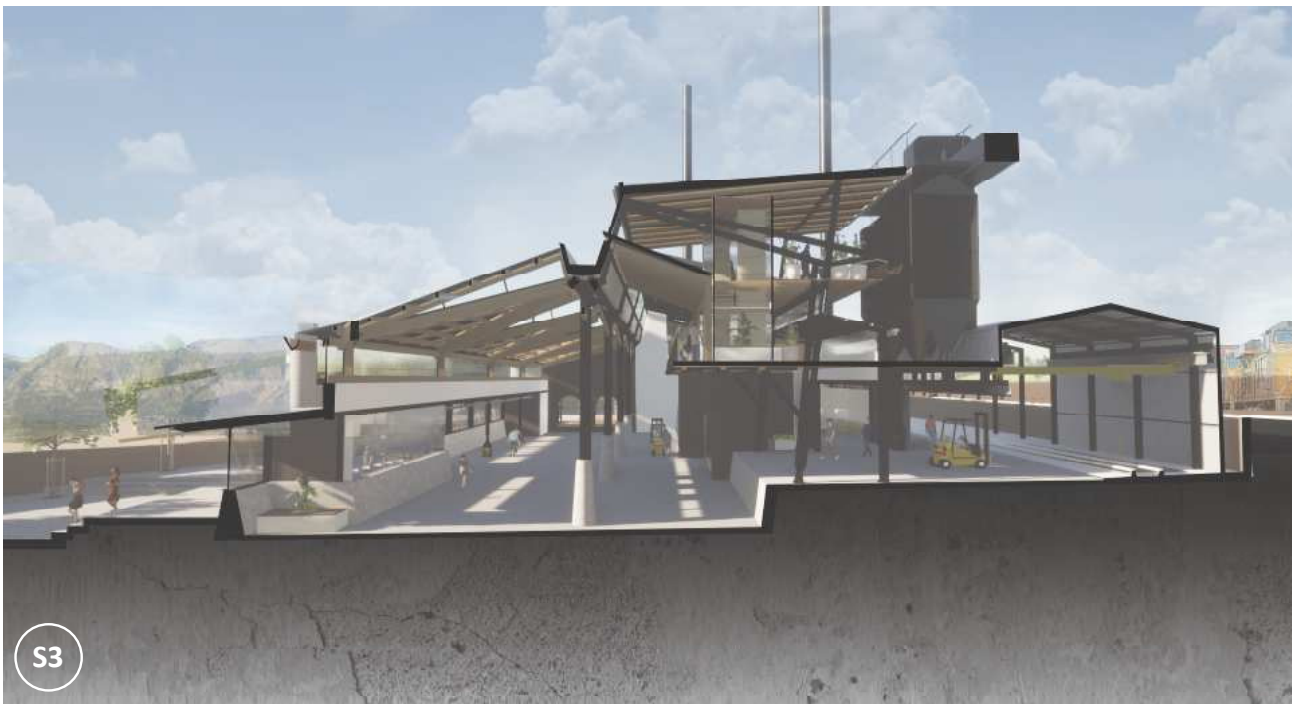
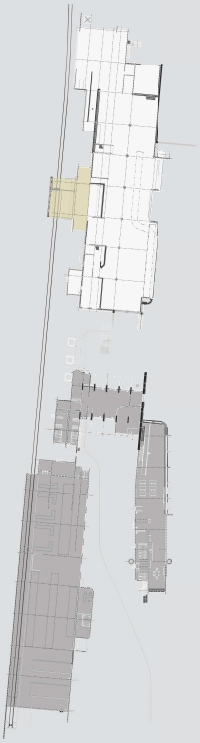


Figure 84: 3D sectional perspective of Assembage Facility emphasizing structural approach (Haasbroek, 2022).

B3

ASSEMBLY FACILITY
FIRSTFLOOR

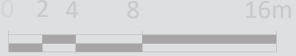


FUNCTION

This Mezzanine level generates the possibility for public engagement with the process of manufacturing, without causing concern for safety and efficiency.

The entrance is located at the point where the axis generated from the Southern public parking connects with that of the bridge coming over from the West. This favors public circulation and comfort overall experience.

Ending with a potential visit to the *Ox Wagon Studios* Archive and Library with adjoining roof viewpoint.



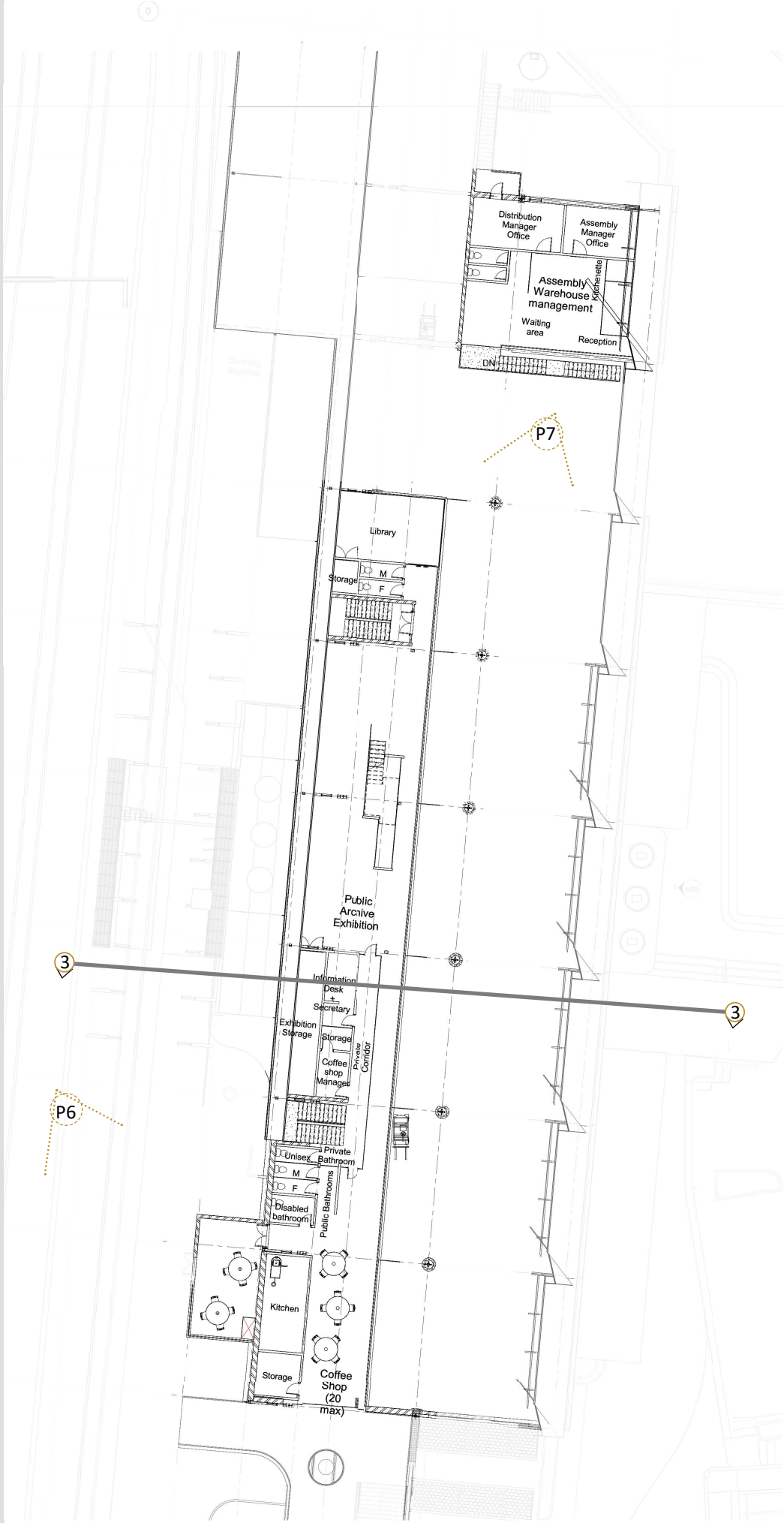


Figure 85: Northern perspective of the Exterior of the Assembly Facility and the adjoining public experience (Haasbroek, 2022).

Figure 86: Northern perspective from the managerial level inside the Assembly Facility (Haasbroek, 2022).

E3E2 | Manufacturing Process Visualization

The general encapsulation of the identified principles pertaining to this theoretical investigation, with reference to Assemblage theory in relation to architectural arrangements and contextual analysis, thus depicts the potential of an interconnected set of architectural components, working together to transform the static universal identity of De Poort

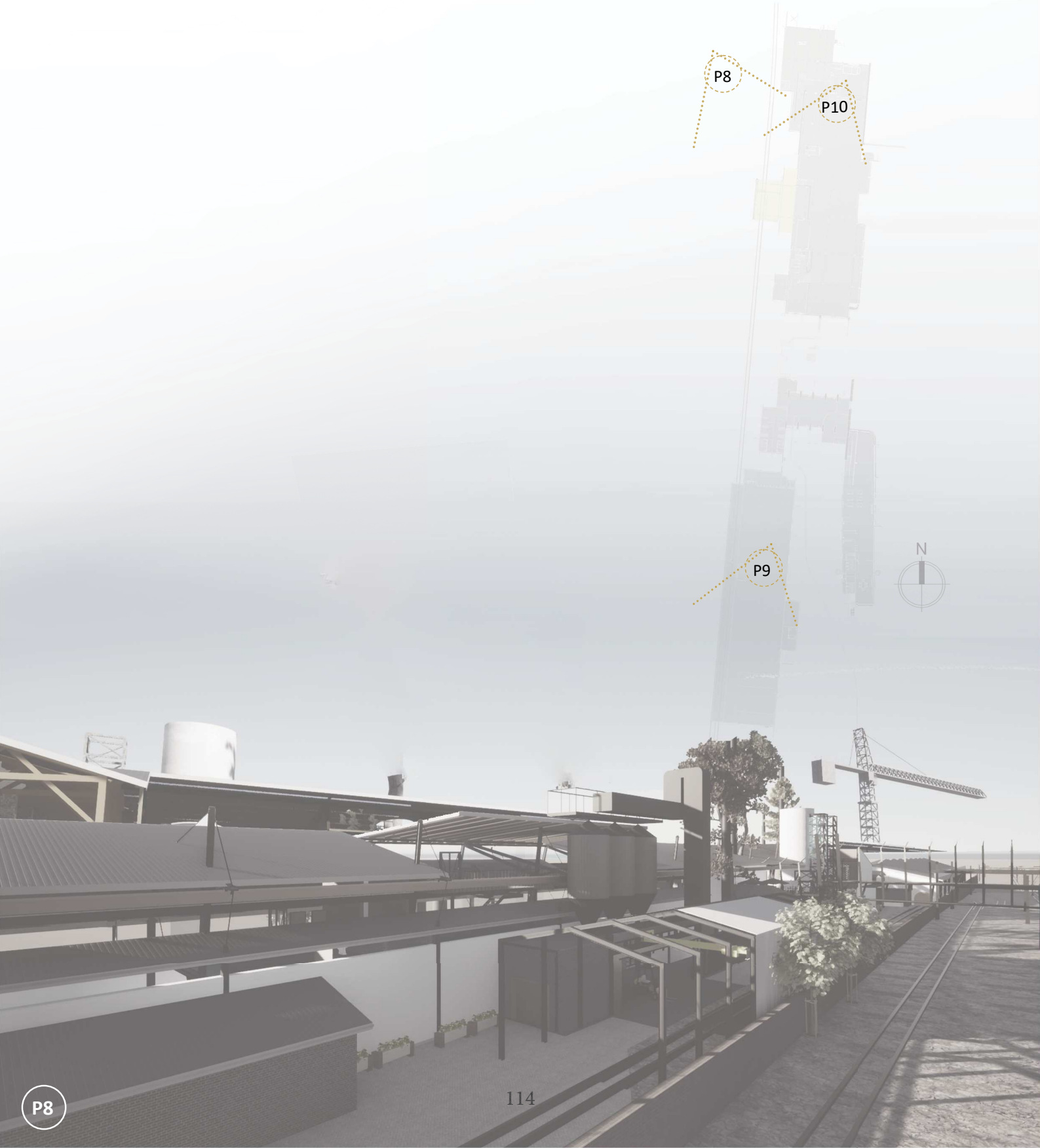
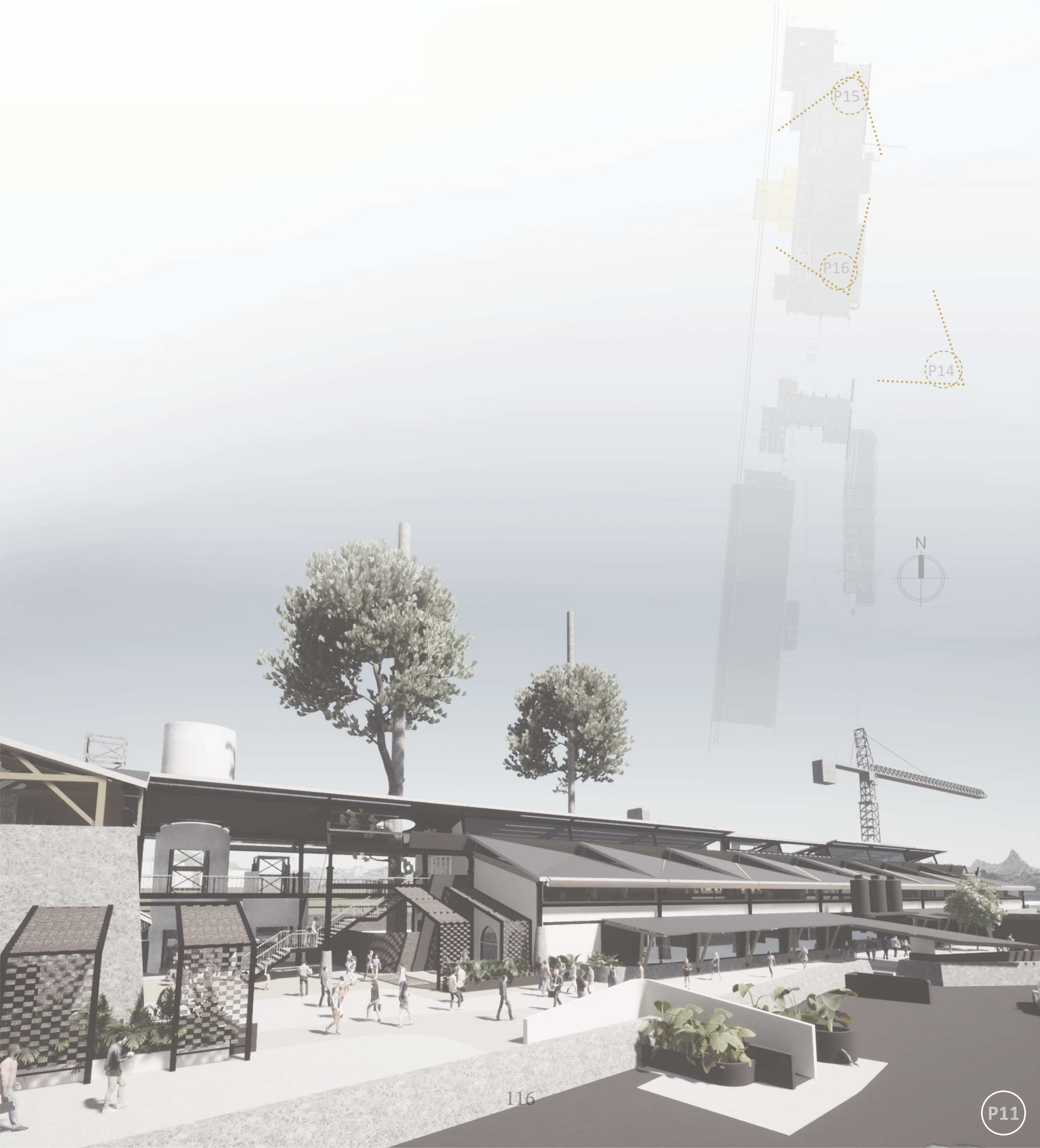


Figure 87: Northern perspective of the interior functions of the Component Warehouse (Haasbroek, 2022).

Figure 88: Southern perspective of the interior functions of the Assembly Facility (Haasbroek, 2022).

E3 | Public Experience Visualization

The general encapsulation of the identified principles pertaining to this theoretical investigation, with reference to Assemblage theory in relation to architectural arrangements and contextual analysis, thus depicts the potential of an interconnected set of architectural components, working together to transform the static universal identity of De Poort



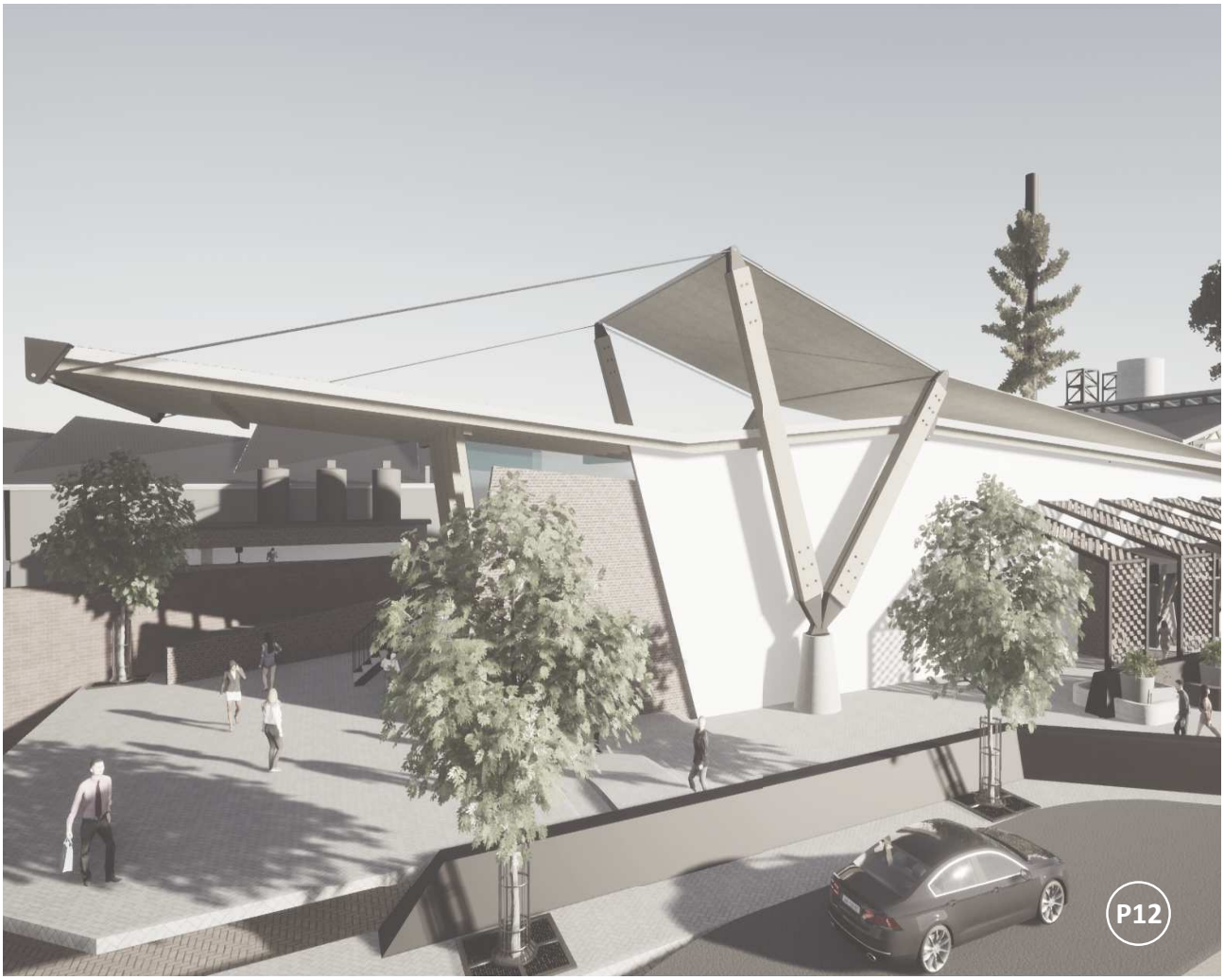


Figure 89: South Eastern perspective of the Design Center and its adjoining public space (Haasbroek, 2022).

Figure 90: Eastern perspective of the public Amphi-theater (Haasbroek, 2022).

F

CONCLUSION

F1
De Poort, Assemblage, and Architecture

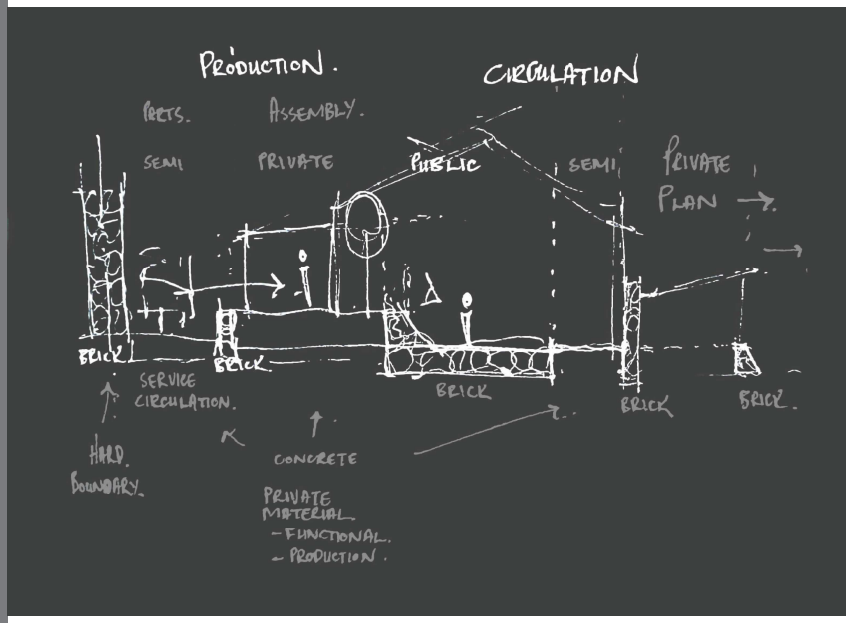


Figure 91: Conceptual section derived from Chapter C (Haasbroek, 2022).

Figure 92: Edited perspective of 1:500 conceptual model (Haasbroek, 2022).

Figure 93: Exterior render of **B3 -** Assembly Facility, South East perspective (Haasbroek, 2022).

F

CONCLUSION

The final part of the research project is assembled in this chapter, giving evaluative insight into the outcomes of this design proposal. It realistically reasons the possibility of irrational emotional engagement in cities, guided by the incorporation of Assemblage Theory and the Hermeneutic circle as the method of inquiry.

Leading to alternative ways of unravelling human, material, and spatial interconnectedness, typical in and of De Poort as a case study, to propose how this knowledge can be implemented in service of more radical, de-colonized projects of “becoming otherwise”.

F1 | DE POORT, ASSEMBLAGE, AND ARCHITECTURE

Research Question:

How can the fractured identity of De Poort be restored through transitional and transformative acts of spatial assemblage?

This research does not state that the proposed method of engagement is by any means, the only manner of intervention approved. It does however, at the very least attempt to give insight into alternative design solutions, sensitive to the irrational habits of human interaction in relation to spatial assemblage.

The knowledge gathered in this document has shown that De Poort, given its current static state, still has the potential to transform into a dynamically significant precinct yet again. Success thereof depends on a wide spectrum of interconnected urban components that are required to achieve an assembled universal balance, to sustainably restore the urban Rhizome.

Assemblage Theory aided in generating alternative methods of contextual investigation into spatial design, intended at different depths of scale (Macro, Meso, Micro), to then be able to analyse these existing urban components individually. This resulted in the possibility of disassembling De Poorts' urban fabric, to identify and restore broken (lacking) components, to then be reassembled with new dynamic Lines-of-Flight connecting them. By proposing a restorative process sensitive to heritage and communal factors, but open to innovative solutions.

With regards to the design itself and all its pertaining Morphological, Typological, and Topological factors, it generates the possibility for massive communal gain in the form of job creation, financial stability, social development, and urban development, to list just a few.

I thus believe that it is possible for De Poort to pull itself back to life, it already possesses the required potential and necessary urban components. By introducing a Micro Industrial Park specialized in assembly, filling the gap in the fractured production chain and urban fabric. This then creates new nodes of connective possibility between these components, restoring sustainable purpose to the transformed manufacturing sector. Ultimately stabilized the De Poort Rhizome and restoring universal identity.

G

REFLECTION

G1
Post-Rational Disassembly

G

REFLECTION

This section will focus primarily on the post-rationalization of the *De Poort Micro Industrial Park*, with mention of long-term sustainability, feasibility, and the overall plausibility of the scheme. The information contains a reference an evaluation of successful aspects of this project, as well as less successful elements identified, to give a true and holistic perspective of the final design solution.

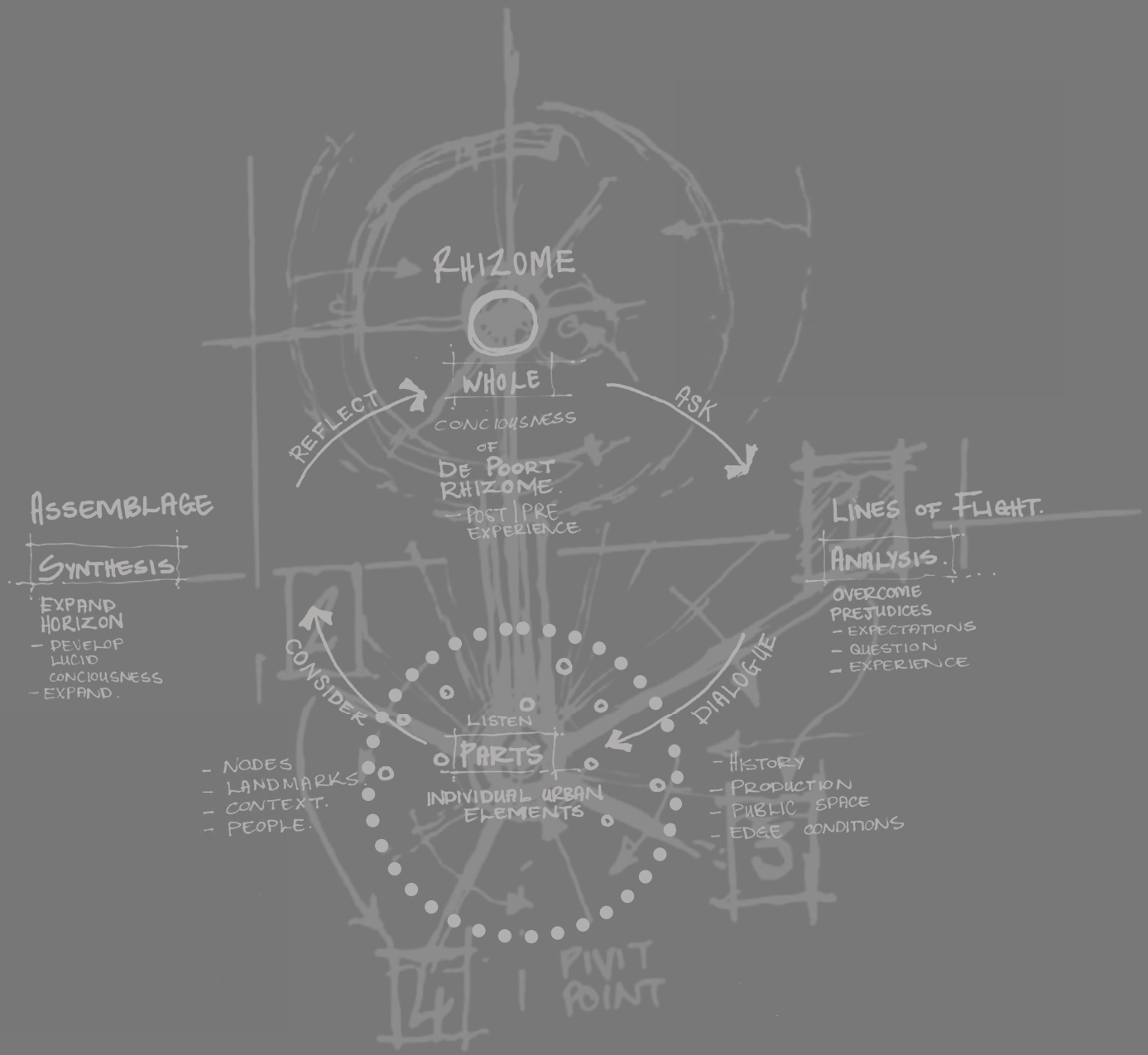
G1 |POST-RATIONAL DISASSEMBLY

After post-rationalization, it became clear that the project achieved some of the aims set out by the research methodology and is still lacking in other categories. The proposal of an Assembly orientated Industrial Park, in my opinion, and with regards to the contextual analysis, proves the perfect Typological transformation for the urban fabric to restore existing production possibilities.

This architectural intervention, on paper, has the possibility to stabilize the degradation of the urban fabric just enough, to start growing new connections. The public engagement with the identified spaces of potential however does not yet depict an integrated experience. The plan is to further develop public spaces and pedestrian conditions in the next part of this project. With that, the facades allocated to public engagement relating to this stage of the project are still fractionally static and would also value from time under the Microscope.

In conclusion then, Determining the appropriate scale for the intervention was the most crucial part. This project brought with it a range of questions, parameters, and requests. some more difficult to deal with architecturally then others, but overall, a pleasing experience.

HERMENUETIC RHIZOME



ANALYSIS OF PARTS

EXISTING CONDITION OF THE DE POORT RHIZOME

H

LIST OF WORKS CITED

H1
References

H2
Authenticity Report

H

LIST OF WORKS CITED

This chapter includes all the relevant works cited, ranging across the academic spectrum, in terms of format and intention. All related to the Re-Assembly of De Poort in one form or another. Inspired by methods of architectural investigation and analysis, to find, not the right, but rather alternative more relevant methods of engagement.

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H2 | AUTENTICITY REPORT

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SafeAssign Originality Report

ATRE7904 MAIN On • Document Final Submission

Johannes Haasbroek

Submission UUID: a78ff2b5-2bc3-fdc1-a88f-399ff17f1765

Total Score: Low risk 1 %

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

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1 Student paper 3 Student paper 5 Student paper

Internet (3) 0 %

6 tamarajournal 7 epdf 2 science

Scholarly journals & publications (1) 0 %

4 ProQuest document

Top sources (3)

1 Student paper 3 Student paper 6 tamarajournal

Excluded sources (0)

Acknowledgements

First and foremost, I would like to thank my Studio Masters, Jan, and Petria Smit, for all their support and advice during this academic year. I would also like to thank Phadi Mabe for his technical support on this document, as Theoretical Supervisor. Finally, I would like to express my gratitude to my parents, brother, and Lomari Geertsema. I dedicate this degree to their tremendous understanding and support these past few years.

Re-Assembling De Poort

Micro Industrial Park

A Furniture Design and Production facility was proposed in the old Industrial district of Paarl. Aimed at re-assembling the fractured connections between static urban components, restoring the universal identity of De Poort, through the implementation of decerning contextual analysis and spatial assemblage.

Prelude

This document follows a structure, progressing similar to the De Poort Micro Industrial Parks' design

I

APPENDIX

I1
Construction
Documentation

I

APPENDIX

This chapter includes all additional information regarding this project. This with mention to Construction Documentation to aid in structural comprehension and if supplementary information is needed.

GENERAL

FIGURED DIMENSIONS ON SITE TO TAKE PREFERENCE OVER PLAN DIMENSIONS.

ALL SEWER CONSTRUCTION MUST BE CARRIED OUT BY A REGISTERED PLUMBER.

ALL ELECTRICAL INSTALLATIONS MUST BE CARRIED OUT BY REGISTERED AND QUALIFIED ELECTRICIAN.

WINDOWS TO BE FITTED WITH 4mm GLASS.

R.I CONCRETE LINTELS OVER OPENINGS.

CLIENT TO DECIDE ON FLOOR COVERINGS AND LIGHT / PLUG POSITIONS.

1 AIR BRICK TO BE PROVIDED FOR EVERY NEW CONSTRUCTED ROOM.

PLASTERED WALLS PAINTED TO CLIENT SPECIFICATIONS.

SABS APPROVED DPC THROUGH OUT, FITTED TO STANDARD BUILDING PRACTICE.

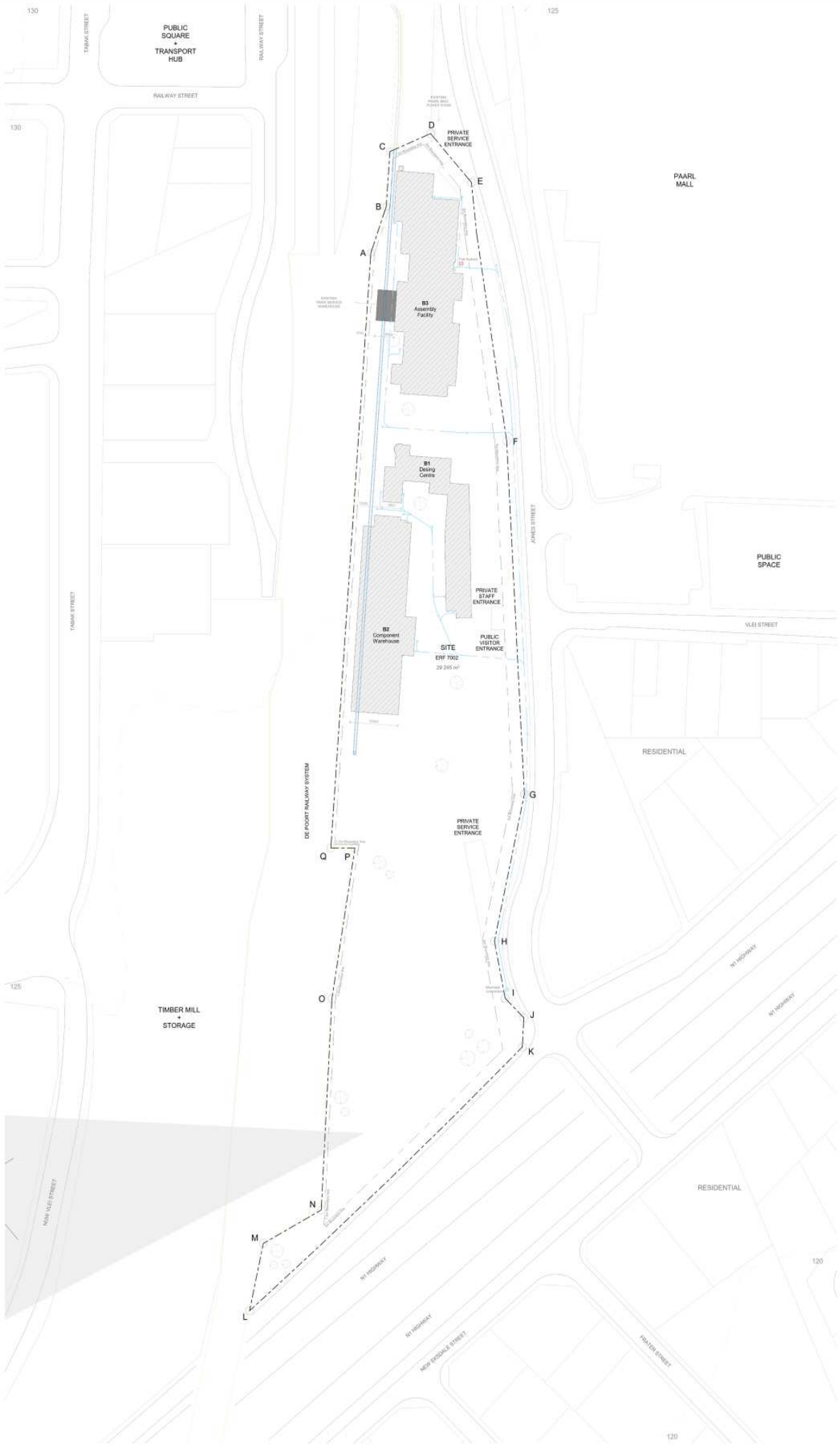
WALLS WITH BRICKFORCE EVERY 4TH COURSE.

NOTES

Project:	Micro Industrial Park
Location:	Paarl
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

LOCALITY PLAN
1:1000



SET OUT POINT	
LINE	D
AB	19, 869m
BC	22, 397m
CD	19, 066m
DE	26, 275m
EF	106, 070m
FG	143, 700m
GH	61, 000m
HI	23, 700m
IJ	11, 200m
JK	11, 875m
KL	157, 366m
LM	28, 000m
MN	28, 000m
NO	86, 000m
OP	62, 000m
PQ	10, 589m
QA	242, 389m
TOTAL	1 059.50m
AREA	89 328.91m²

COVERAGE	
Site Area	89 328.91m²
Footprint Area	35 420m²
TOTAL	39%

GENERAL

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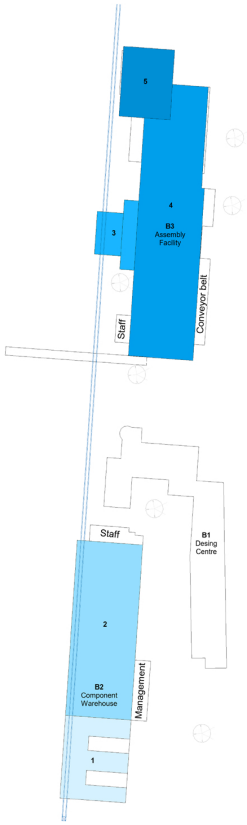
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

SITE PLAN
1:500



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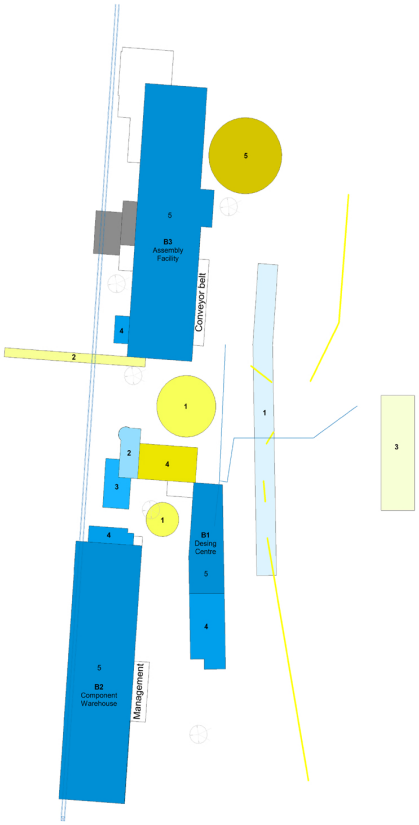
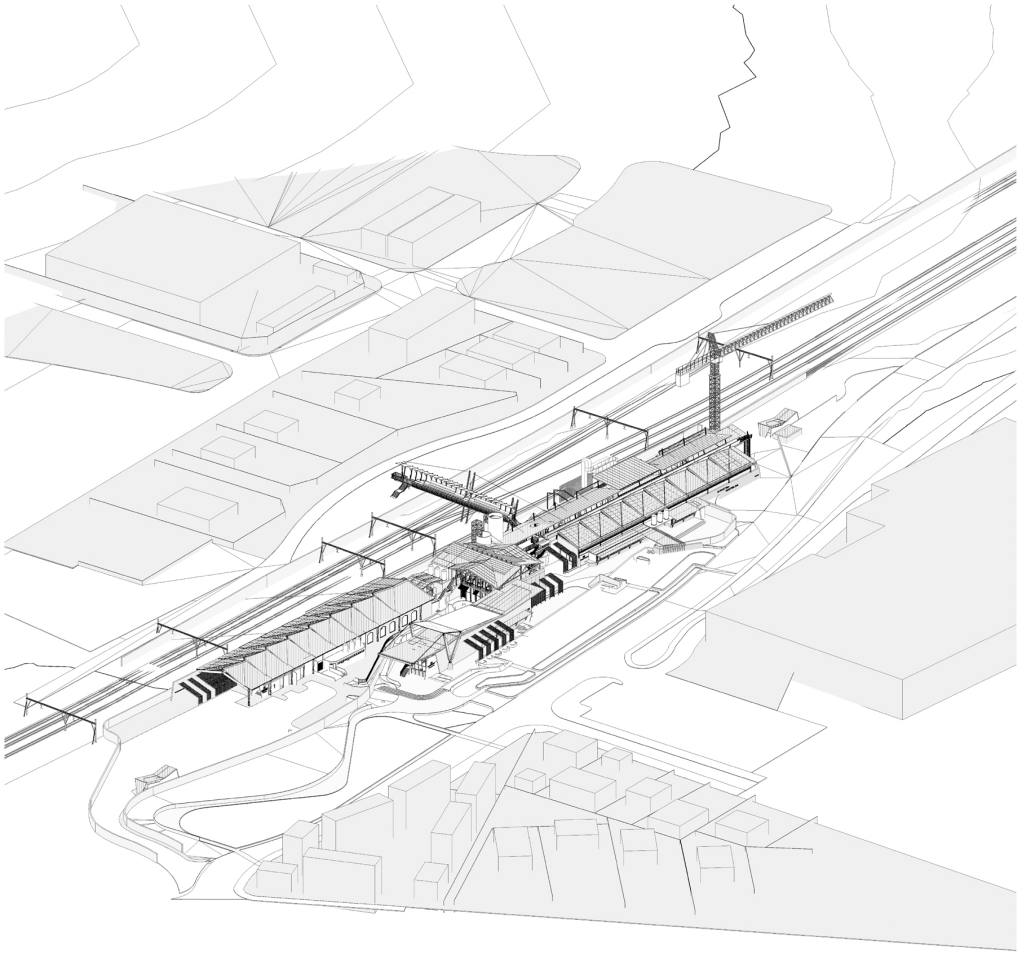


B | PRIVATE + PUBLIC 1:500



LEGEND

A
MANUFACTURING
+
DISTRIBUTION

1	Component Deliveries (IN)
2	Component Inventory + Storage
3	Component Distribution
4	Furniture Assembly
5	Furniture Storage and Exports

B
PRIVATE + PUBLIC

PRIVATE

1	Parking
2	Staff Entrance
3	Staff Locker
4	Staff Room
5	Work Floor

PUBLIC

1	Parking
2	Bridge
3	Public Couryard
4	Exhibition
5	Amphitheater

GENERAL

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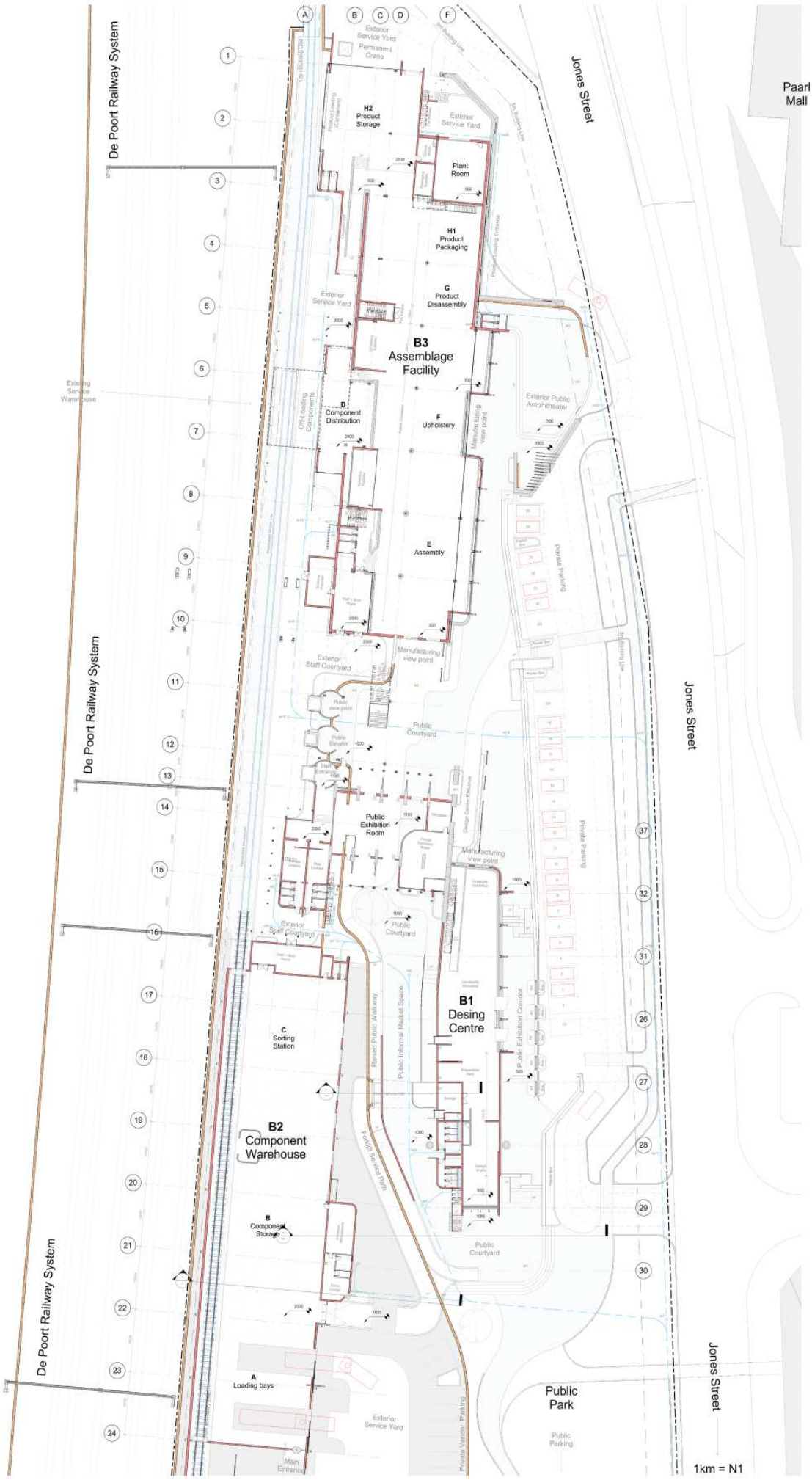
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

PROGRAM LAYOUT
1:500



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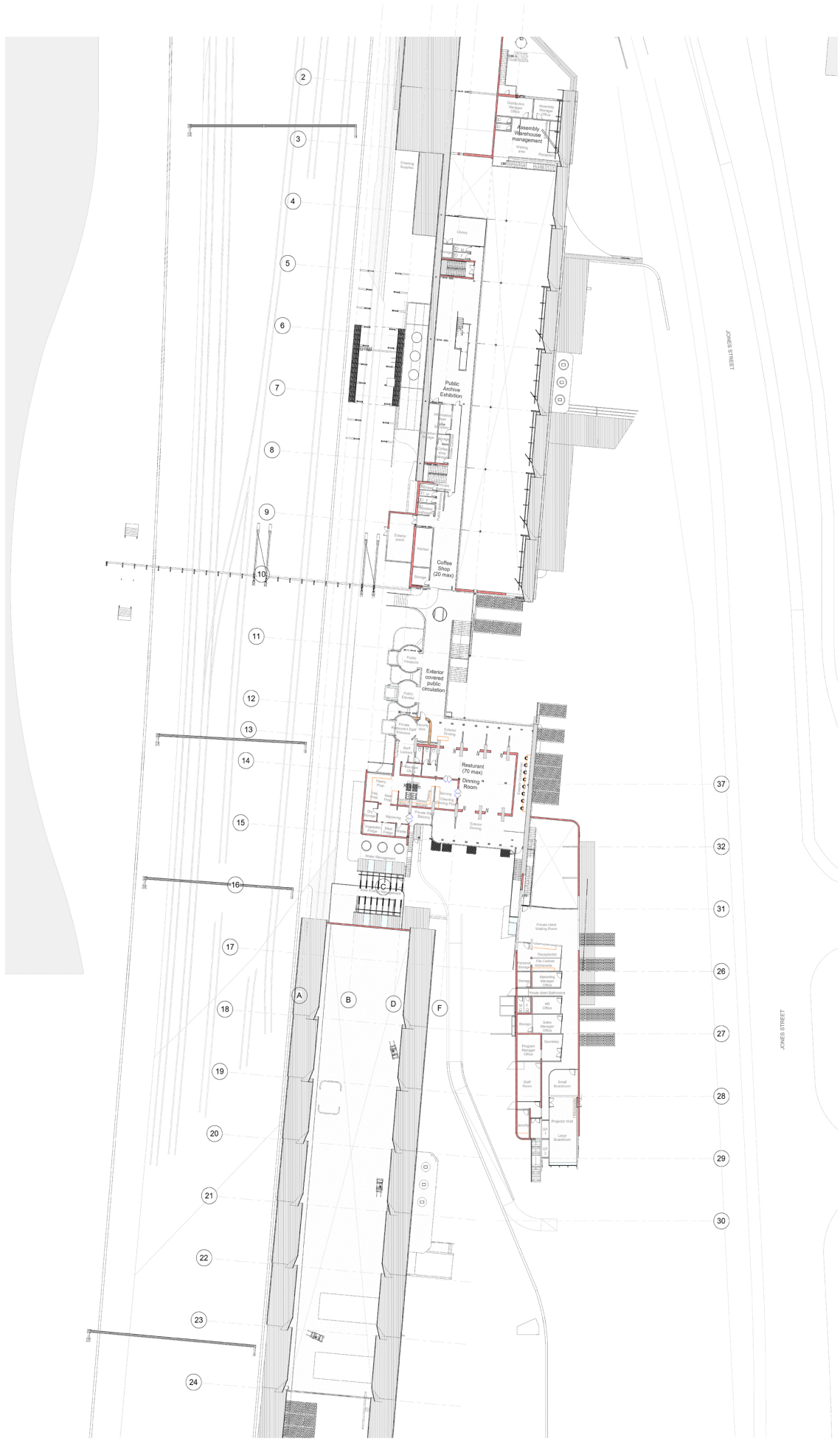
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	23 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

COMPREHENSIVE PLAN
1:200



LEGEND

A
MANUFACTURING + DISTRIBUTION

- Component Deliveries (IN)
- Component Inventory + Storage
- Component Distribution
- Furniture Assembly
- Furniture Storage and Exports

B
PRIVATE + PUBLIC

PRIVATE

- Parking
- Staff Entrance
- Staff Locker
- Staff Room
- Work Floor

PUBLIC

- Parking
- Bridge
- Public Courtyard
- Exhibition
- Amphitheater

GENERAL

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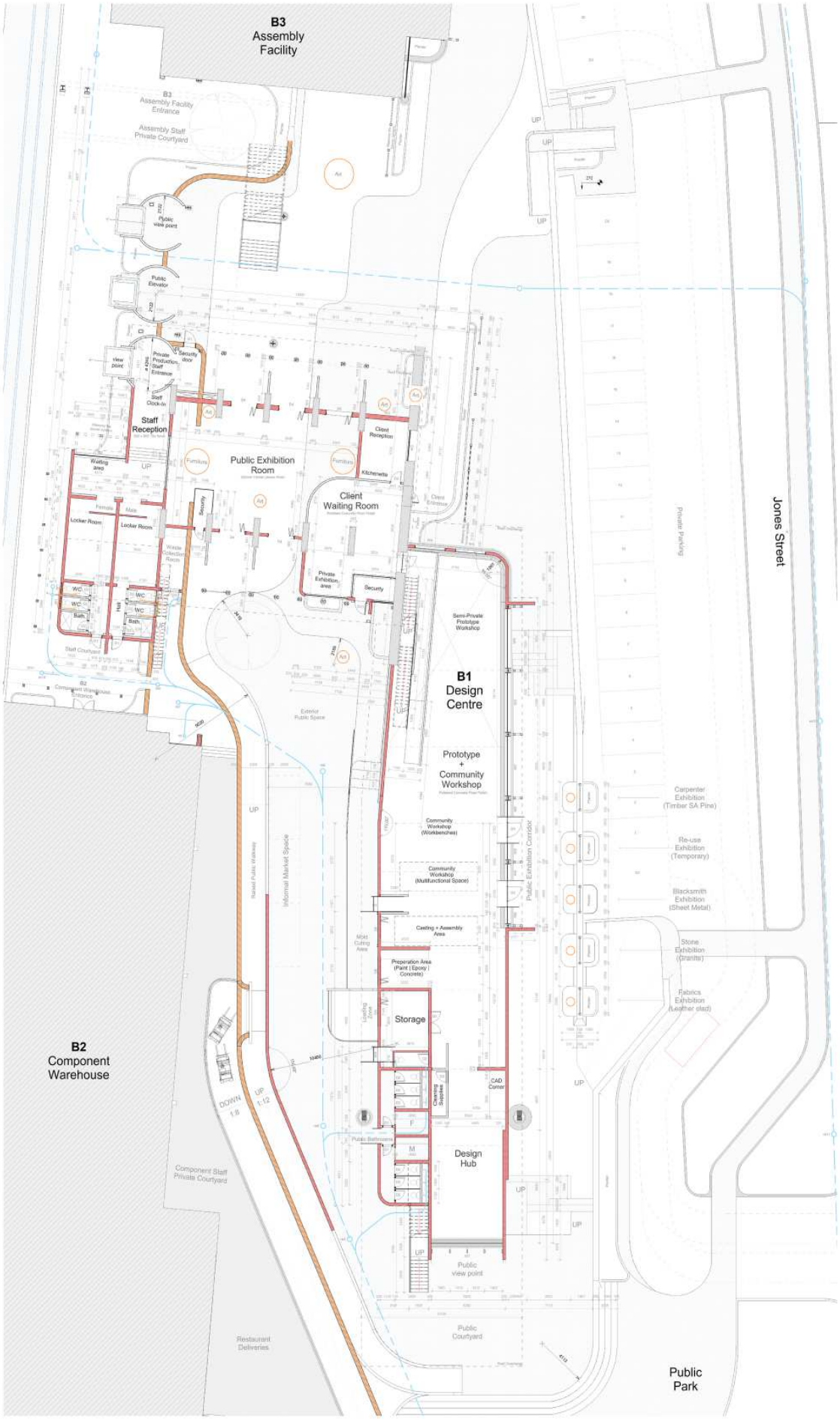
Location:	Paarl
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

First Floor
1:200



1 **B1 GROUNDFLOOR**
1 : 100

LEGEND

A
MANUFACTURING
+
DISTRIBUTION

- Component Deliveries (IN)
- Component Inventory + Storage
- Component Distribution
- Furniture Assembly
- Furniture Storage and Exports

B
PRIVATE + PUBLIC

PRIVATE

- Parking
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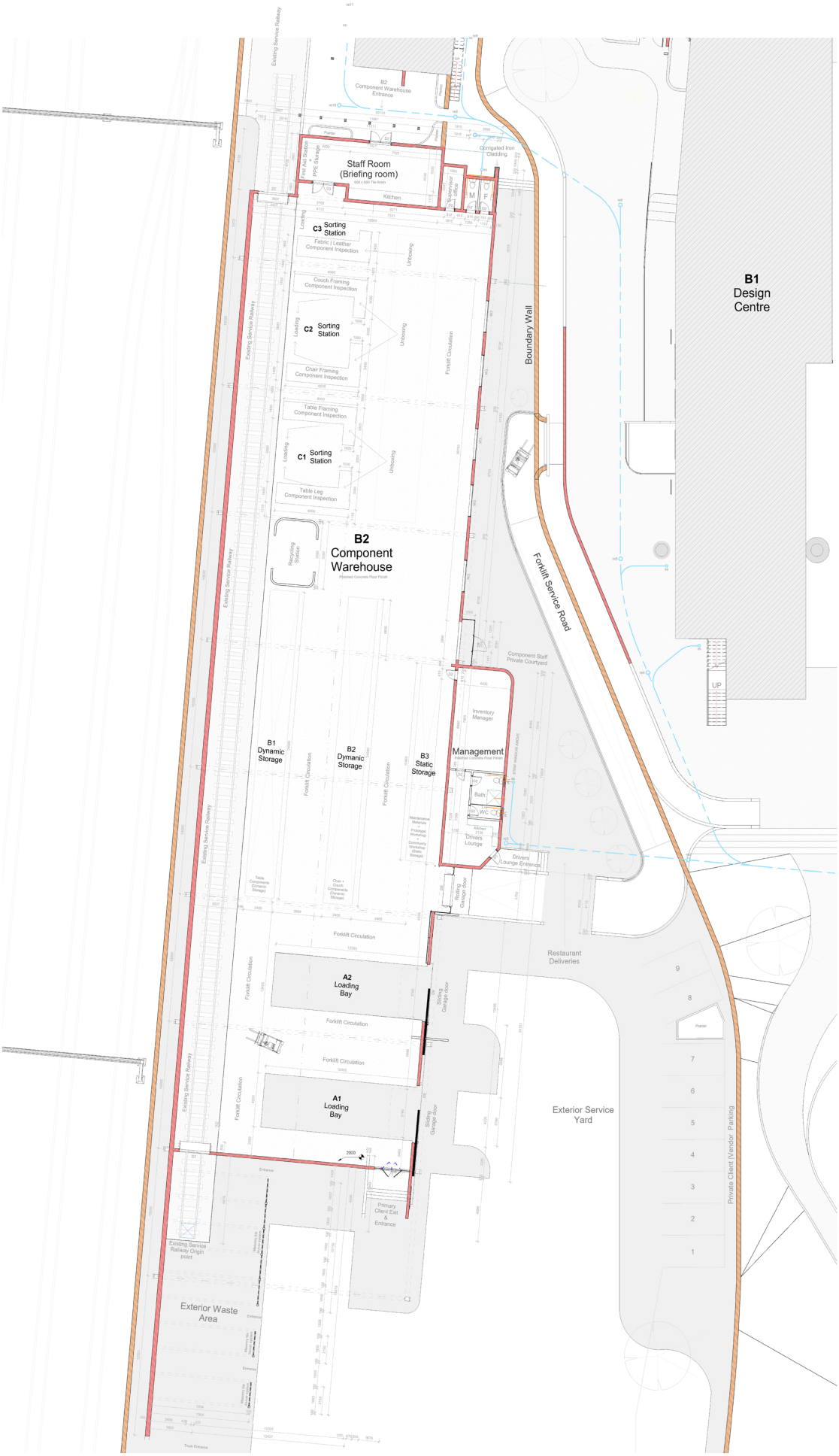
Location:	Paarl
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

B1 Plan
1:100



LEGEND

A
MANUFACTURING
+
DISTRIBUTION

- Component Deliveries (IN)
- Component Inventory + Storage
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PRIVATE + PUBLIC

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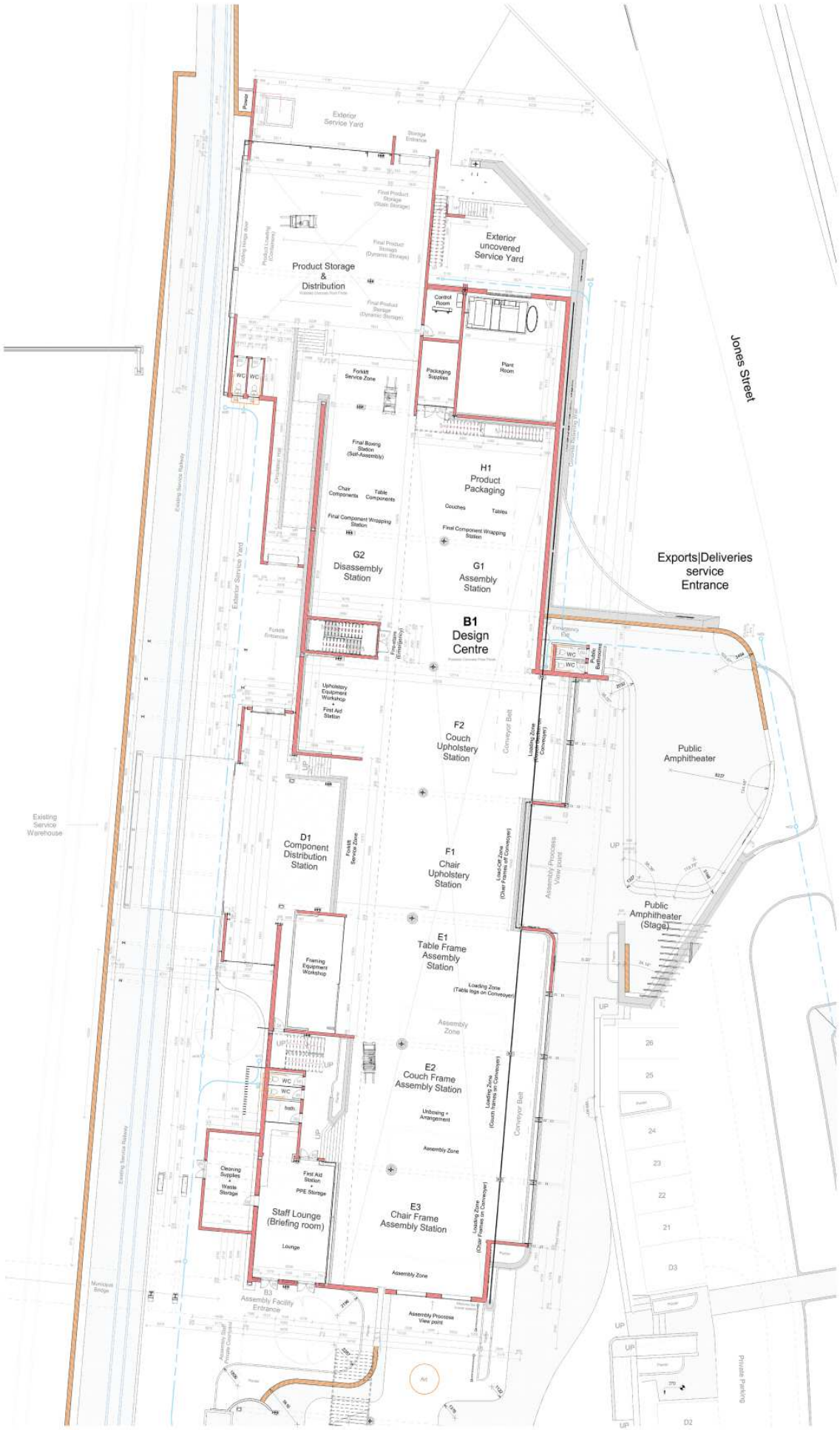
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

N

B2 Plan

1:100



LEGEND

A
MANUFACTURING
+
DISTRIBUTION

- Component Deliveries (IN)
- Component Inventory + Storage
- Component Distribution
- Furniture Assembly
- Furniture Storage and Exports

B
PRIVATE + PUBLIC

PRIVATE

- Parking
- Staff Entrance
- Staff Locker
- Staff Room
- Work Floor

PUBLIC

- Parking
- Bridge
- Public Courtyard
- Exhibition
- Amphitheater

GENERAL

FIGURED DIMENSIONS ON SITE TO TAKE PREFERENCE OVER PLAN DIMENSIONS.

ALL SEWER CONSTRUCTION MUST BE CARRIED OUT BY A REGISTERED PLUMBER.

ALL ELECTRICAL INSTALLATIONS MUST BE CARRIED OUT BY REGISTERED AND QUALIFIED ELECTRICIAN.

WINDOWS TO BE FITTED WITH 4mm GLASS.

R.I CONCRETE LINTELS OVER OPENINGS.

CLIENT TO DECIDE ON FLOOR COVERINGS AND LIGHT / PLUG POSITIONS.

1 AIR BRICK TO BE PROVIDED FOR EVERY NEW CONSTRUCTED ROOM.

PLASTERED WALLS PAINTED TO CLIENT SPECIFICATIONS.

SABS APPROVED DPC THROUGH OUT. FITTED TO STANDARD BUILDING PRACTICE.

WALLS WITH BRICKFORCE EVERY 4TH COURSE.

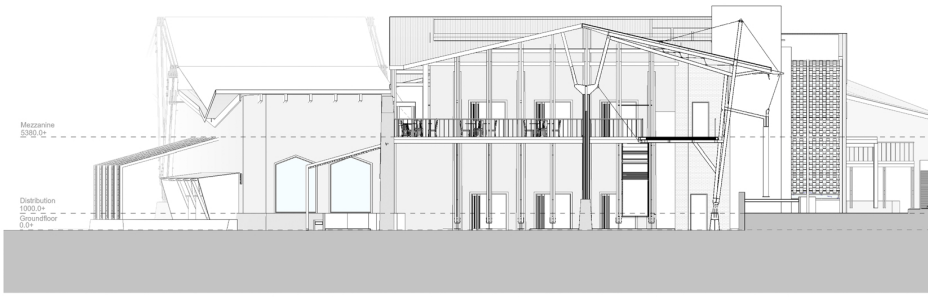
NOTES

Project:	Micro Industrial Park
Location:	Paarl
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	22 | 10 | 2022
Occupancy:	D3
Climate Zone:	4

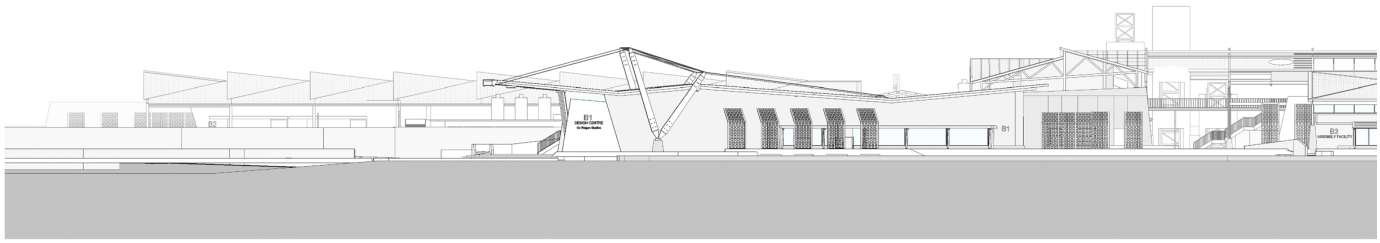
N

B3 Plan
1:100

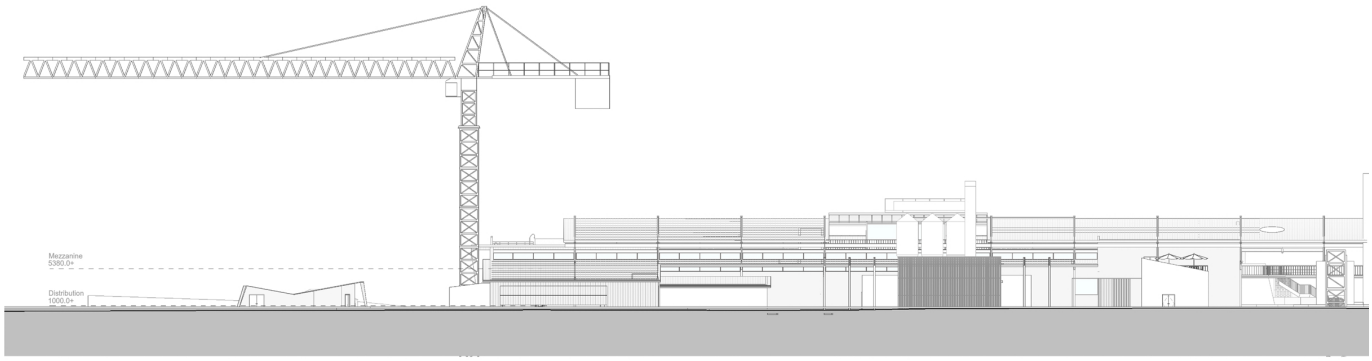
Plan Legend | 1:500



1 **North Courtyard Elevation**
1 : 100

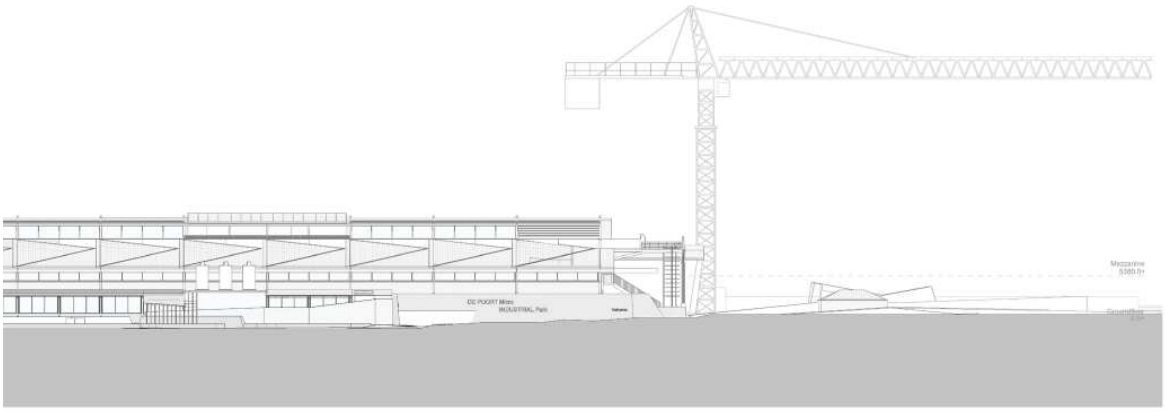


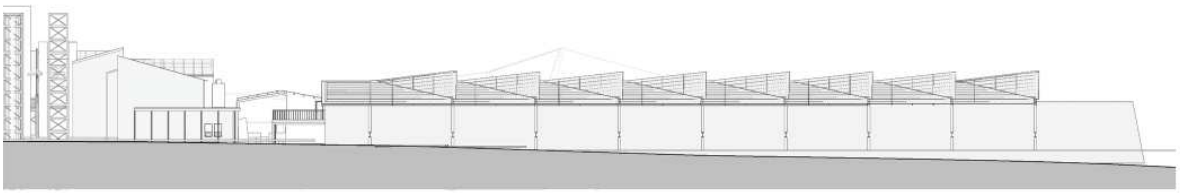
3 **Eastern Elevation**
1 : 200



4 **Western Elevation**
1 : 200

2 **South Courtyard Elevation**
1 : 100





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Project:	Micro Industrial Park
Location:	Paarl
Client:	Ox Wagon Studios
Drawn by:	Johan Haasbroek
Date:	24 | 10 | 2022
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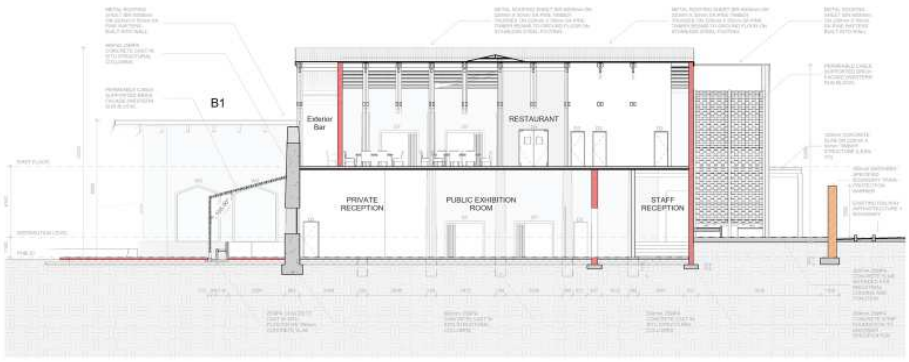
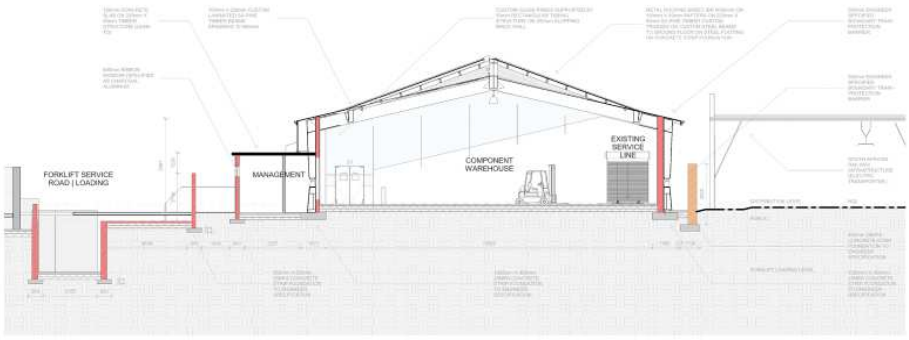
N

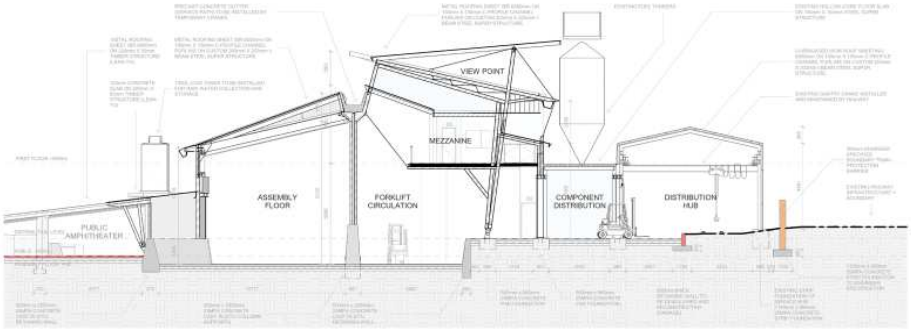
Elevations
1:200



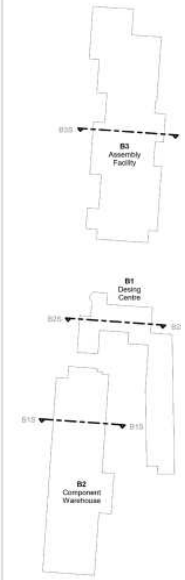
1 **B1 Short Section**
1 : 100



2 **B2 Short Section**
1 : 100



3 **B3 Short Section**
1 : 100



GENERAL

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Location:	P
Client:	Ox Wagon Stu
Drawn by:	Johan Haasb
Date:	22 | 10 | 2
Occupancy:	
Climate Zone:	

N

SECTIONS
1:100

Johannes Haasbroek

11/10/2022