

Architecture of the
I N T E R F A C E

Engaging architecture with a long neglected public space: the street

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DISSERTATION TITLE

Architecture of the interface

Engaging architecture with a long neglected public space: the street

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RESEARCH FIELD

Public Space

THE SITE

Lynnwood Road, Gauteng, South Africa | 28°15'03.6"E

THE PROGRAM

Farm to fork inspired brewery and cafe-bakery

THE PROGRAM

University of Pretoria

KEYWORDS

Contemporary public space, public life, third space, interface, farm to fork, urban farming, farm to fork, industrial typology, retail space

THEORETICAL PREMISE

In a polycentric city the notion of a town square can no longer serve civil society in the way it used to. This project proposes a new topological approach to serve public life by reclaiming street space as the main public space of the city. This is coupled with an exploration on how current issues relating to urban inequality, consumerist culture and use of street space can be mitigated through a new contemporary public space approach.

ARCHITECTURAL APPROACH

This dissertation proposes that contemporary public space should be the product of an appropriate response to the existing and natural systems on site as part of the building blocks of the architecture and ultimately contribute to social and economic cohesion within society.

The physical fulfillment of this concept requires introducing into the transit orientated environment a consumer's trade experience with a system of food production and artistry. The aim is to reintroduce the nuances of food production to the unconscious consumer by creating a surrounding experience of production and processes within a pedestrian activated setting.

DECLARATION

In accordance with Regulation 4(c) of the General Regulations (G.57) for dissertations and theses, I declare that this dissertation, which I hereby submit for the degree Master of Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution. I further state that no part of my dissertation has already been, or is currently being, submitted for any such degree, diploma or other qualification. I further declare that this dissertation is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

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Kelsey Smith, thank you for carrying your light and touching my heart with all the kindness and strength you share.

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Your belief in me is a source of strength and confidence. My mind is flushed with countless moments of your support and care. I am so utterly grateful for you. You are my most precious gift.

ABSTRACT

Almost universally, public space is treated in the plural voice. This implies a variety of public spaces occurring throughout the city to which pseudo-public spaces constitutes a relatively recent addition.

In South Africa, modernist planning has been exacerbated to use infrastructure in segregating ways, although much has been improved, the legacy of segregationist planning remain tangible and powerful. Practices still consider streets as exclusively means of circulation, paying little attention to other equally important aspects of current place making.

The present study reaffirms the street space as the main public space of the city. The essential elements of place making are then incorporated into its conception and design. The main argument uses this consideration as the driver of the urban hypothesis: Only when the street space is treated as a comprehensive public space, is architecture able to establish a meaningful dialogue that potentiates both realms.

Conversely, it is argued that architecture can only relate to a setting largely defined by the street's configuration. The quality of the dialogue is thus bilateral; the quality of the interface depends on the quality of the phases simultaneously. Buildings that cannot relate any more to the street space struggle to survive, often leading to derelict or abandoned structures. Streets that change over time into mono-functions tend to narrow the scope of uses.

Lynnwood road in Pretoria is the case of a street that has seen constant changes and reconfigurations, from removal of landscape, parking, enlarging of road surfaces to the implementation of BRT system. The dissertation focus on a tract of road that combines a number of different uses and typologies conceived in contradictory ways along a public space that is equally contradicting. From diplomatic uses, to institutional, commercial, educational and residential, this particular area of Lynnwood road offers a unique complexity that can potentially be captured if the right dialogue is established.

PROJECT SUMMARY

In a polycentric city the notion of a town square can no longer serve civil society in the way it used to. In its place our private as well as public lives have become heavily reliant on privatised public space also known as pseudo-public spaces.

The past two decades have seen the emergence of pseudo-public spaces in the form of malls, lifestyle centres, markets, and retrofitted residential precincts... as a result of the perceived danger and neglect prevalent in traditional public spaces such as plazas, parks and streets.

Pseudo Public Space: An institution fostering classism and a consumerist culture casts a veil in society due to its commercial nature. In a fast-paced, car-centric environment these spaces have not only proven counterproductive to social and economic cohesion but also exploit natural resources, concurrently detaching the consumer with the time and value of producing the products they consume in everyday life.

This project has considered a tract of Lynnwood Road as an example area of how public space can be woven into a transit oriented environment. Located in close geographic proximity to educational institution, residences and businesses, the area has an existing social and economic energy which forms part of the dialogue of Lynnwood road and is associated with public assemblage.

The problem with designing streets purely as roads for circulation is that they become non-places creating derelict, neglected and sometimes even dangerous edges. These spaces encourage car-dependency and discourage walkability within a city.

To frame this in terms of the project, this consequently results in an abundance of contested and latent space between building and street. Reclaiming street space in order to establish a pedestrian orientated urban experience will not only empower the citizen but contribute to the environment that make cities great places to live in.

The macro analysis investigated street configuration of the region and concluded that streets are primarily designed to facilitate vehicular movement. In spite of their orderliness streets host contested energy as pedestrian movement and street vendors battle for a space that is supposedly rightfully theirs.

The analysis and issues provided a point of departure. The intent of Architecture of the interface proposes the holistic integration of public space by means of reclaiming street space in order to facilitate public life in a poly-centric city. The physical fulfilment of this concept requires a pedestrian-orientated authentic urban experience.

This is done by introducing into the transit orientated environment an extension of the consumers' trade experience. A celebration of the time, craft and resources that go into alimentary production was the main driver of this experience. The design and programmes act as exposed experiential devices

which visitors to the site can engage with and learn from. Ultimately it is the projects intention to realize a new approach to contemporary public space woven into everyday movement, to remedy the state of unconsciousness and encourage a sustainability culture within society.

Issues relating to the current state of public space is often related to the under- or over management thereof. Contemporary public space, following the clarification provided by Matthew Carmona, is found within a range of public space typologies based on function, perception and ownership.

Carmona categorised contemporary public space typologies as positive, negative, ambiguous and private space, the latter being open space for social encounters and exchange. Negative spaces have a circulatory purpose and finally ambiguous space, which ties directly to Edward Soja's concept of third space create a moment of pause, observation and interpretation. All of these spaces and programmes are unpinned with the principle of regeneration as the project aims to counteract the wasteful culture produced by commercial public spaces.

In its approach to reunite public life with truly public space, the street (as part of the future node of the Tshwane Vision for 2055), encourages a larger scope of citizens to engage with the sustainable synergies that exist between the farmers, artisans and consumers and consequently start to voice the concern for a sustainable culture in society. A farm to fork inspired public space motivated the projects intentions.

The project set out to develop a non-typological approach to public space in a poly-centric city. The principle of third space was used to conceptualise an interface for public life that would potentiate both public and private realms, and mitigate the issues currently related to contemporary public space. The notion of third space was also considered for the projects programmatic response in order to achieve an authentic urban experience.

In essence a bridge between industrial typology and retail space was proposed to remedy the state of the unconscious consumer as well as establish the cross-fertilisation that occurs when a larger demographic of users are present.

The project manifesto, aimed at generating a holistic understanding of sustainability, resulted in a design underpinned by the act of knowledge transfer. Knowledge transfer motivated the design to include exposed systems, processes and raw materials that would instil education through experiences and engagement between nature, craftsman and user. From material use to the functionality of systems became part of the project discussion to mitigate a social and environmental blindness caused by the current public space typology. Ultimately, the project's practical implementation toward knowledge transfer provided a new sense of direction of public space indispensable to the vitality and longevity of public life within a city.



Figure 01: Photo of focus area in Lynnwood road (Author, 2020)

the interface:

“

Home for the explorer, it is impact instead of scale. Taking comfort in ambiguity It looks like the grey when there is only black and white. It is an atmosphere that is open and intriguing, enigmatic, generous. Not quite in, not quite out. Simultaneously real and imagined, it's ambidextrous, it's maybe, its wait and see.”

Definitions of third space from architecture students at the University of Newcastle

(University of Newcastle, 2016)



Figure 0.2: Derelict edge condition at site location where the brewery and cafe-bakery will be allocated (Author, 2020)

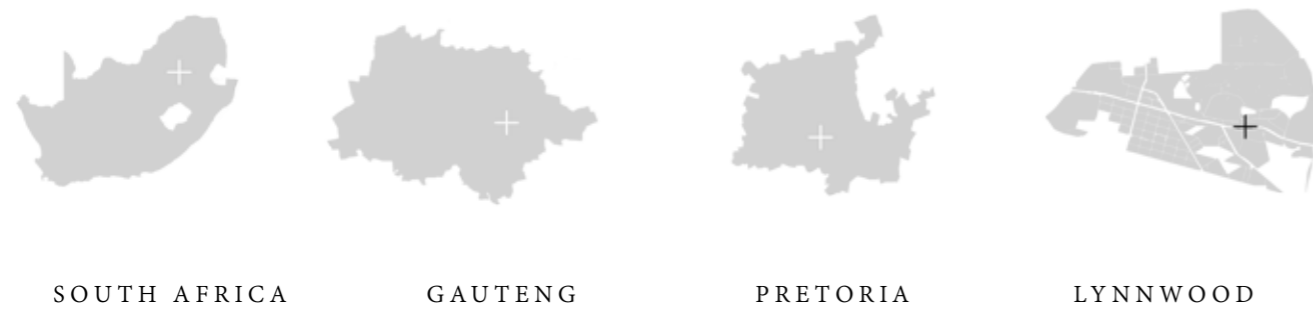
CHAPTER

00

background

This chapter seeks to ground the project and provide an introduction to the document

(A)
PROPOSED CONTEXT



AREA LOCATION

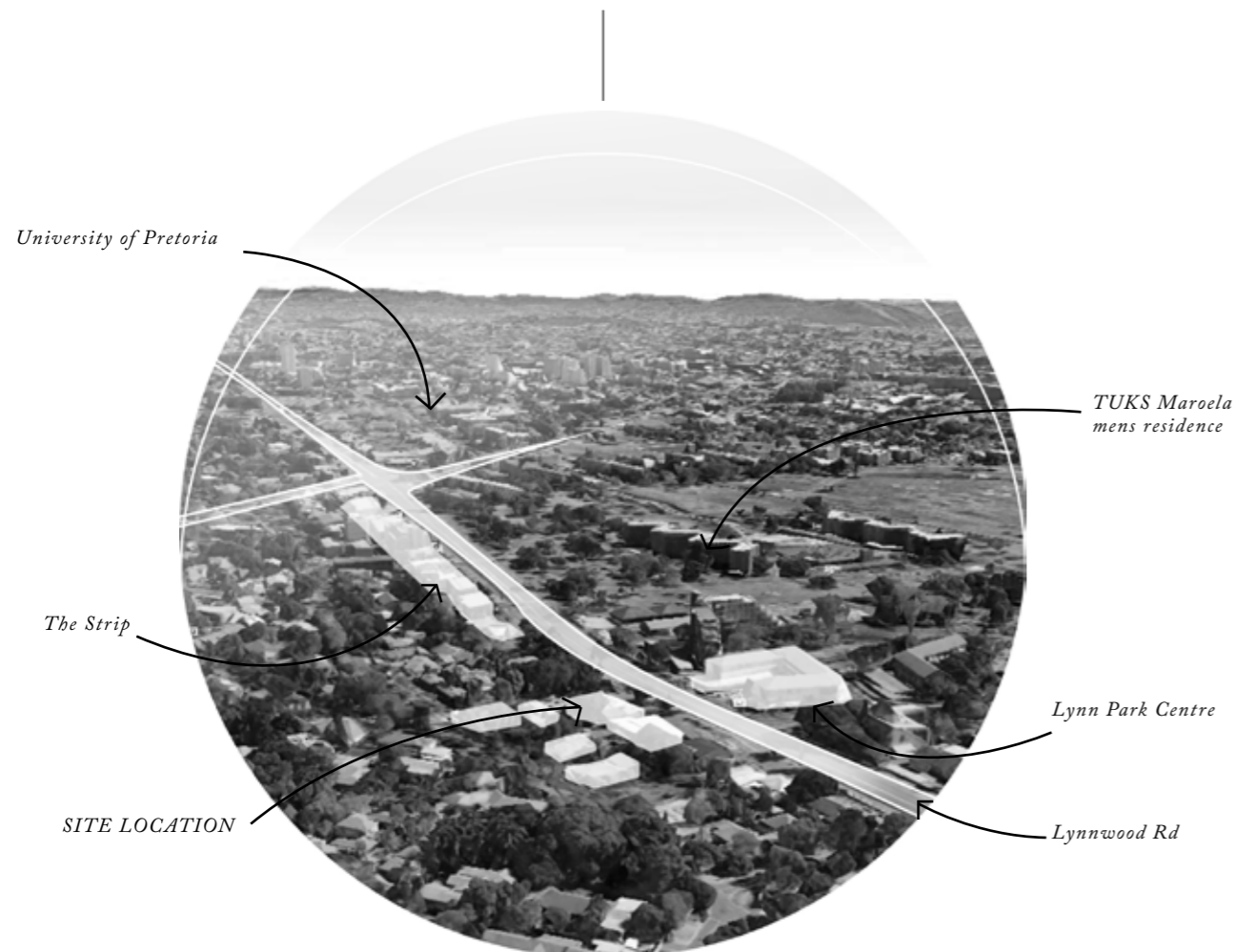


Figure 0.3 Focus area (Author, 2020)

This dissertation has considered a tract of Lynnwood Road as an example area of how public space can be woven into a transit oriented environment.

Located in close geographic proximity to educational institution, residences and businesses. The area has existing social and economic energy which forms part of the dialogue of Lynnwood road and is associated with public assemblage.

(B)

ARCHITECTURE OF THE INTERFACE:
THIRD SPACE

The argument of this dissertation is based on the architecture of the interface. The point being that the interface, between private and public space, should be treated as a place in its own right, only then can a successful dialogue between both realms space take place. This interface or thirdspace, a term coined by well-known urbanist Edward Soja, is used to better understand this dialogue between private and public space.

The notion of social life and the spatiality thereof only became topical since the publication of the English version Henri Lefebvre's *The Production of space* (1991) (Aitken, 1998: 148-151). Since then, the work of Soja has paved the way forward in our understanding of spatiality. Soja draws on the work of Lefebvre and Foucault, as contemporary feminist, postcolonial theorists, and cultural critics, to oppose traditional knowledge on spatiality and establish the term of "thirdspace" for critical thinking (Aitken, 1998: 148-151).

Thirdspace is built on Lefebvre's argument in that the intrinsic power in everyday dialogue comprises not only of "the space of common sense, knowledge, of social practice, of political power" but also the space of "common places" (Lefebvre, 1991:25). The importance of third space is that it is "simultaneously from the periphery and the centre, the future and the past, the infinite possibility of space from all points of time simultaneously" (Aitken, 1998: 148-151). It comes from heuristic understanding between Firstspace, spatial science and perceived-human practises, and Secondspace, poetic conceptions. On the other hand Soja includes Foucault's definition of heterotopologies as the otherness of geohistories which allows for a critique on historicism's spatial imagination (Aitken, 1998: 148-151). The composition of Soja's work can in short summarise third space as the recognition of dialects between dualities. Dualities, which are found in everyday phrases such as "inside and outside", "old and new", and "private and public", can now be deconstructed and reconstructed to form new debate and interpretations of spatiality.

(E)

PERSONAL POINT OF DEPARTURE:

The point of departure of this research project came from a personal life-enriching experience in my home-town Pretoria. Early 2019 I joined the Planet Fitness in Waterkloof. Every other morning after my workout I would walk the 400 meters to Spout, a container coffee shop situated in The Village precinct, for a decaf americano. After a couple of weeks of the same morning-routine strangers became familiar faces and before I knew it friends with joint travel plans and even the unexpected freelance project or two.

My favourite film *Under the Tuscan Sun*, set in a beautiful Italian village, provoked a typical European-lifestyle desire to be walking around in a piazza, ice cream in hand, listening to the laughs, conversations, and life around me.

This got me thinking about why aren't there any plazas or streets that facilitate that kind of public life in Pretoria? How do we currently connect in society? What does public space mean today? What functions still survive on them? And how do these public spaces connect with the urban fabric?



Figure 0.4: Lifestyle photos taken in the Village (Author, 2020)

(D)

NORMATIVE POSITION

My passion for the environment and the impact that architecture can have on the way people live, their quality of life, has always influenced the way I think about design. I enjoy the idea of creating places that evoke a sense of self-awareness. Providing someone with the opportunity to truly exist and express themselves in their own otherness and gain cognizance about others in the same way.

Simultaneously a consciousness about local culture, ritual, resources and nature is vital as they communicate the truth on the place and time in which the architecture exists. A design has to consider the things it does not yet know it can become. In this way, its fragility and ephemerality will allow it to adapt and contribute to its contemporary context.



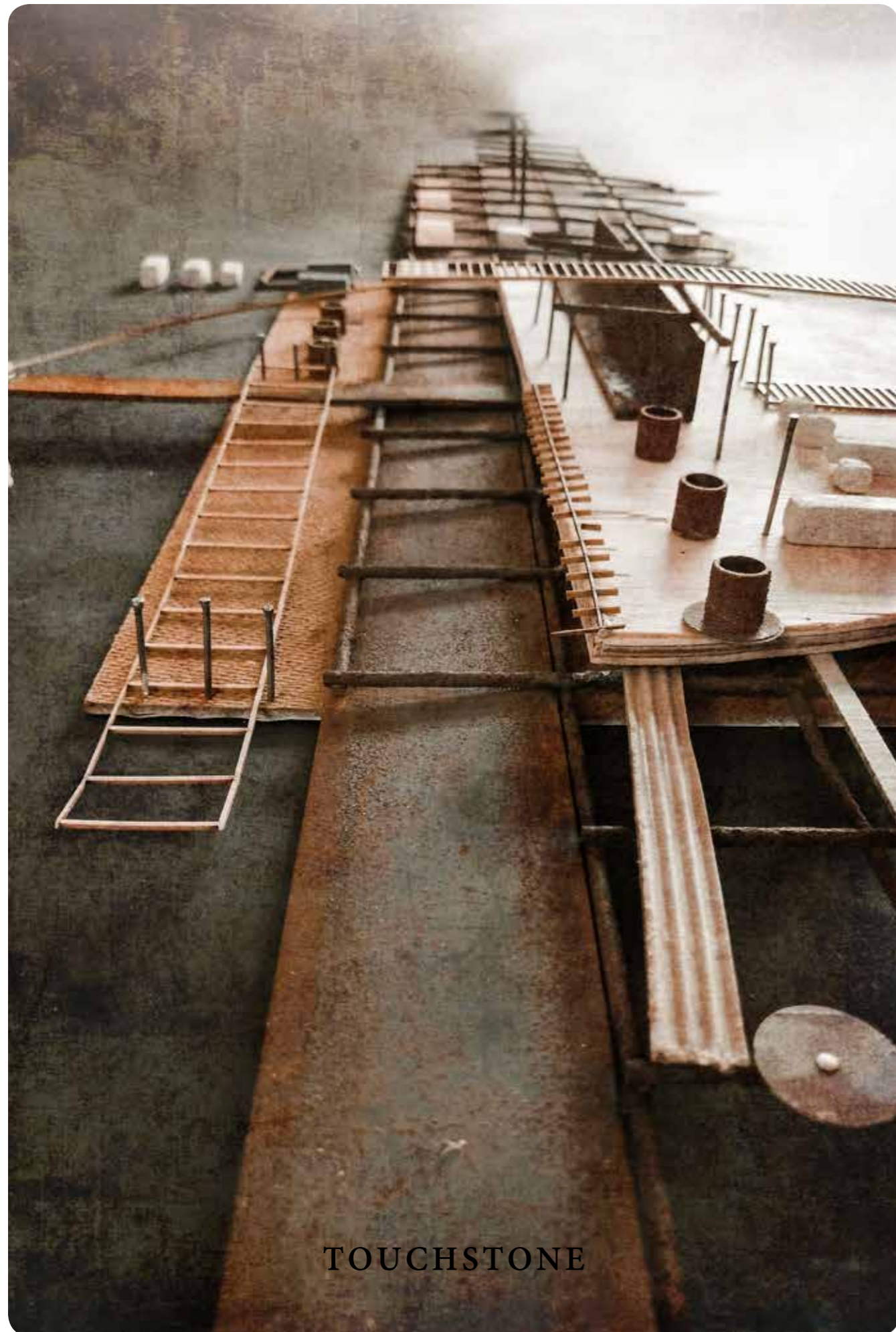
Figure 1.1: Street edge condition looking toward site (Author, 2020)

CHAPTER

01

introduction

This chapter seeks to build on the background information and aims to introduce the concept of architecture as interface as a point of departure and elaborate on the problems and issues that this project aims to address.



TOUCHSTONE

Figure 1.2: Touchstone model (Author, 2020)

ARCHITECTURE OF THE INTERFACE

introduction

Evolution of public space

The past two decades have seen a rapid inclination towards the privation of public space and loss of public life since the onset of neo-liberal policies in 1994 (Landman, 2016:28). Neo-liberal stakeholders have aimed to address the growing perception that traditional open public spaces are dangerous places of latent conflict related to public impudence through the privatization of places that facilitate public assemblage (Landman, 2016:28; Carmona 2010). The emergence of pseudo-public places or 'private public spaces' (De Magalães, 2010 in Landman, 2016:28) which include retail developments, corporate plazas, or open spaces managed by a private stakeholder has only furthered the abandonment of truly public spaces. As a result shopping malls and commercial developments have become the epitome of privatization of public space (Landman, 2016:28).

Pseudo public spaces aim to adopt the characteristics of successful public space in terms of their form and function by refabricating the notion of a conventional plaza in a mall setting (Landman, 2016:35) where the main focus is on consumption and control. These spaces place an emphasis on retail and entertainment to entice consumption of goods and space. Landman (2016:34) describes the consumption of space as "space itself that becomes a spectacle to be consumed as a product." For many the urban experience has become synonymous with the shopping experience, and in turn contemporary life has become synonymous with a consumerist culture.

These spaces offer people destinations where they can experience the nuances of older town squares or village piazzas but fail to develop a sense of community. Although considered as public space it is selective to groups that feel comfortable and able to afford the goods, services and activities offered there. Landman (2016:36) argues that it is thus "a case of voluntary participation and acceptance of the status quo".

The lack of integration and access both on an urban and anthropological level is what this project aims to respond to, this is coupled with opening up the conversation of use between production or industrial space and retail in order to remedy the growing consumerist culture to a more sustainable one.

The vision for an improved societal environment

The vision drafted in the National Spatial Development Framework (NSDF) and the City of Tshwane 2055 Vision advocates mitigating the aftermath of segregationist planning with the adoption of new urbanism principles and a larger focus on public life. It has been proven that cities with a focus on quality public space have an improved quality of life and inherent sustainability culture. This project aligns itself with those goals and contributes to the discussion by proposing practical guidelines to architects for future development.

This dissertation aims at contributing to the vision of the New Urban Agenda by making an architectural spectacle of integrated urban living and sustainability in order to instil a regenerative culture in society. The theoretical facet of the investigation refers to a concept known as the “third space” which, in this dissertation, explores the dependency and potential between privately owned building and its immediate public space (the street space). The architectural facet explores the integration of ecological models and water management as tools to encode a regenerative culture within the public realm.

The first objective of this dissertation is to take into account notions of society’s right to public space and public life. The second objective is to create architecture that will illuminate the synergising relationships between site, public space and an environmentally-conscious design. The third and final objective is to educate society and train the future generation about regenerate every day practices.

PROBLEM STATEMENT:

City making habits shape the world we live in

The impact that pseudo-public spaces has had on our city, society and in the end our culture, has been greatly underrated. In a society where our private as well as public life is heavily reliant on pseudo-public spaces, this common cultural institution, which fosters classism and a consumerist culture, has been allowed to saturate the urban landscape unchecked. Not much thought has been given to how it can be architecturally manipulated to change and improve society.

Instead of competing with the urban experience and coveting consumerism the dissertation begs to ask the following question: Can contemporary public space once again contribute to an authentic urban experience? Can it facilitate public life inclusive to a larger demographic? Can it remedy society’s unconscious consumerist state and reduce the impact of environmental and societal exploitation?

GENERAL/ GLOBAL ISSUE:

The holistic integration of public space into urban environments



Figure 1.3: General issue graphic (Author, 2020)

Cities that invest in its citizens to experience a better quality of life also experience higher levels of prosperity and are inherently more sustainable, this is the opening statement made in the Journal of Public Space (Anderson, 2016: 5). The article goes on to say that cities that invest in public space such as adequate street space, green areas, parks, recreation facilities and other public spaces bring about lively urban environments (Anderson, 2016: 5). Investing in public space allow people to feel healthy and safe, supports local economy, contributes to social- and cultural cohesion, increases mobility and make cities attractive places to live and work (Anderson, 2016: 5).

There is no dispute in the transformative power public space can have in a city. The issue however is how does public space remain well-maintained places? Conversely, the provision of public space does not naturally give rise to this transformation. Society has to be able to relate, connect and have access to public space in their everyday life. Therefore, the adoption of a holistic and integrated approach to planning, design, development, creation, protection and management of public space is crucial in making urban environments and citizens that thrive (Anderson, 2016: 5).

URBAN ISSUE

Streets as non-places

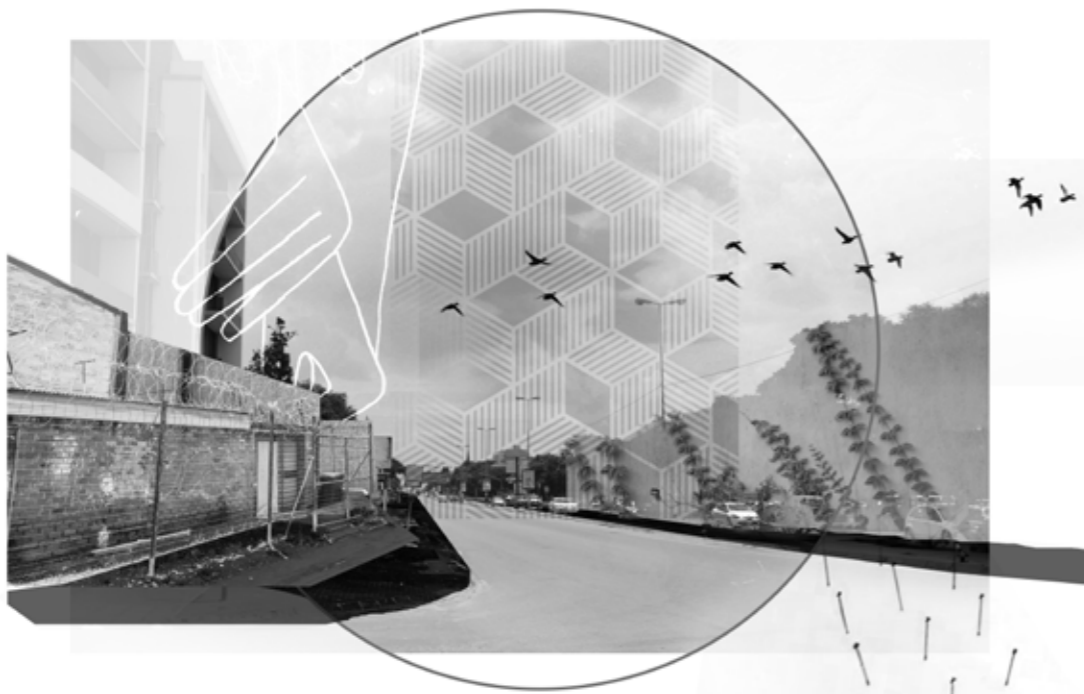


Figure 1.4: Urban issue graphic (Author, 2020)

A common thread throughout South Africa is the use of streets as circulation space. Streets are more than just roads; they are a forgotten and often neglected public space. The lack of integration and connection of built form with street space result in public space that creates derelict, unsafe and hostile environments (Harper et al, 2018).

Pretoria's streets are generally designed with the notion of facilitating the flow of vehicles (Harper et al, 2018). Taking a closer look, streets are often chaotic, contested spaces that change over time as citizens attempt to appropriate a form of public life (Harper et al, 2018). The problem with designing streets for transportation is that they become non-places. A space dominated by cars, despite the diverse typologies and use of buildings that could potentiate a pedestrian lifestyle, does not (this will be elaborated in the context analysis) consider its interface towards the pedestrian.

ARCHITECTURAL ISSUE

The interface between building and street/ public space



Figure 1.5: Architectural issue graphic (Author, 2020)

In the short tract of Lynnwood that this dissertation will be focused on zzz z. Public places attract people. They bring value to a city and its people whether it is for enjoyment, employment, or sleep (Price, 2012). Non-places are not designed with people in mind, typically roads, parking lots and green space (Price, 2012). Non-spaces discourage walkability and incidentally encourage car-dependency. Not all non-spaces are bad, they help a city function. What it comes down to is the fact that cities should essentially be designed for people. We want the interface be become a bridge to places and non-spaces.

The comprehensive composition between building and street space should establish a meaningful dialogue that potentiates both private and public realms. The architecture of the interface therefore adds value to its urban environment.

DISSERTATION INTENTIONS

Exploring the dependency between built form and the street/ public space in which it sits. Through an environmentally-conscious design the project aims to highlighting a renewed relationship between architecture and street space. The project aims to deliver a set of guidelines that future architects and urban planners can build upon.

DISSERTATION QUESTION

What role can architecture play in reconciling streets as the main public space with the city?

RESEARCH QUESTION

Specific questions:

How can the dependency and interactions between architecture and street space contribute to a new sense direction of public space within an urban environment?

How can public space be adapted to cultivate a sustainability culture within society?

Can the boundaries between urban and architectural design be blurred to reveal systemic productive relationships engendered in an suburban context?

General questions:

Can public space reflect and impact society's paradigm?

Can architecture impact the status quo? How?

Can developments reduce environmental and societal exploitation?

How can contemporary public space contribute to an authentic urban experience?

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Figure 2.1: Street edge condition looking toward site (Author, 2020)

CHAPTER

02

context and site analysis

This chapter seeks to contextualise the conceptual and practical issues discussed in chapter 1. The analysis was conducted on three various scales, namely the urban, precinct and site specific which were used to generate the urban vision.

MACRO ANALYSIS

*Contextual analysis:
a brief history of the region and its streets*

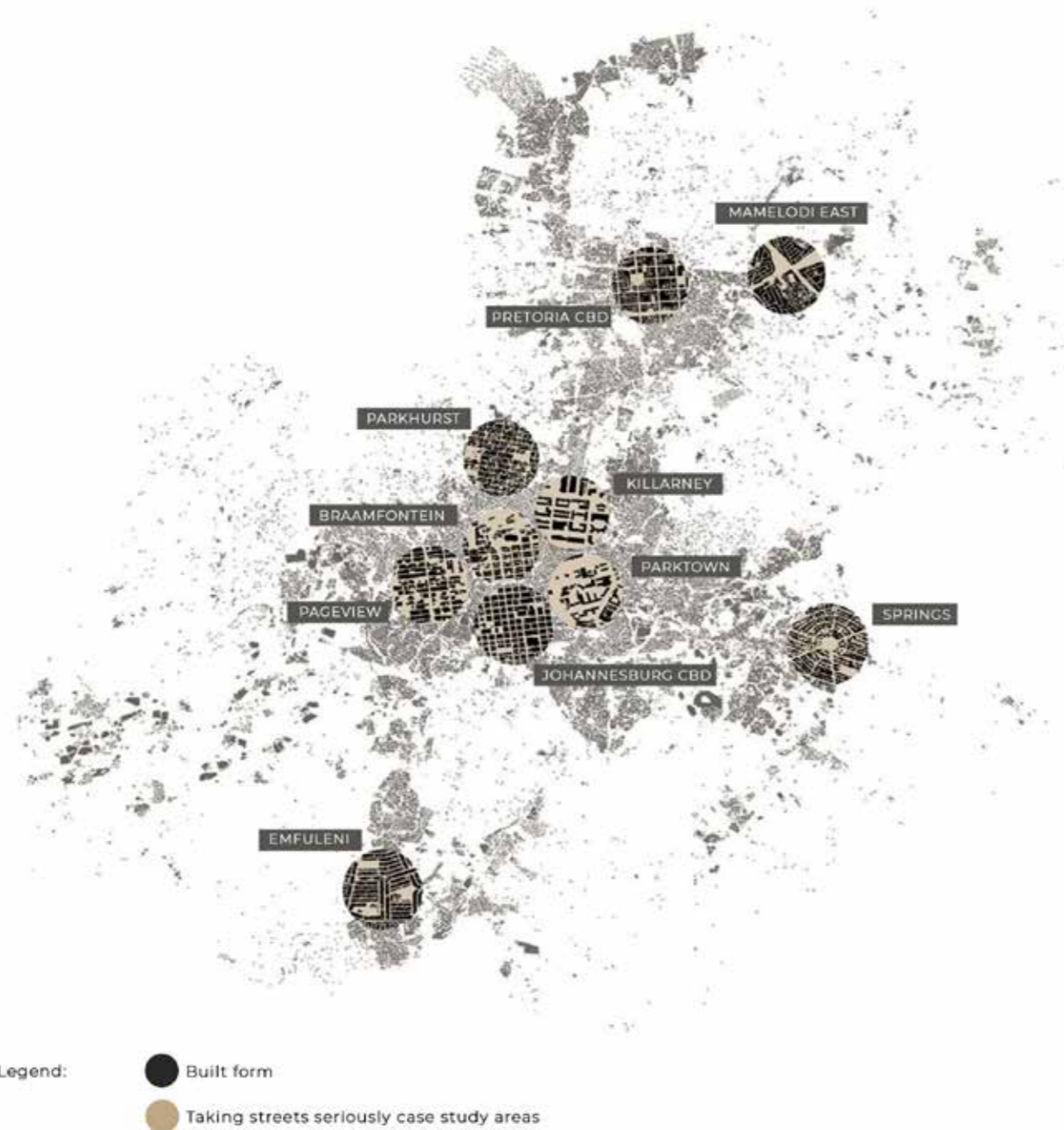


Figure 2.2: Land cover in Gauteng (Harper et.al., 2018)

In the Gauteng region cities and even smaller villages have been design with a common goal in mind: to facilitate vehicular movement (Harper et. Al., 2018). The history and development of cities in the region have resulted in streets that are chaotic, contested, and continuously changing (Harper et. Al., 2018). Various origin stories

from segregationist planning, gated communities, or the organic development of some informal settlements are connected by its roads. However, despite the car-centric environments we live in, there are people that find a way to express and experience vibrant pedestrian-life.

Figure 2.1 depicts the relationship between built form and open space. It enables us to gain a brief understanding of the morphology of space and possible density of the city. The various street patterns from the map are indicative of the assortment of spaces found in the region (Harper et. Al., 2018).

Typical of the inner city of Pretoria and Johannesburg we see the orderliness and rigidity of street grid layouts and lack of parks or other open space as illustrated in Fig. 2.1. Contradictory to the orderliness congested traffic, heavy pedestrian movement, and street traders often occurs here.

It is important to be cognisant of the contested use of spaces in the city. The street which makes up seventy percent of the urban environment is arguably one of the most contested spaces found in the city. It is the unrecognised public space of the city. Streets are more than just roads (Harper et. Al., 2018). Roads have been design unconscious of pedestrian life and as a result are often associated as environments of neglect, danger and isolation (Harper et. Al., 2018). When governments invested in the wellbeing of its citizens it designs streets as good public spaces for people (Price, 2012). These spaces make cities attractive places to work and live, they enhance social and cultural cohesion, and improve local economy.

*Contextual analysis:
Pretoria*

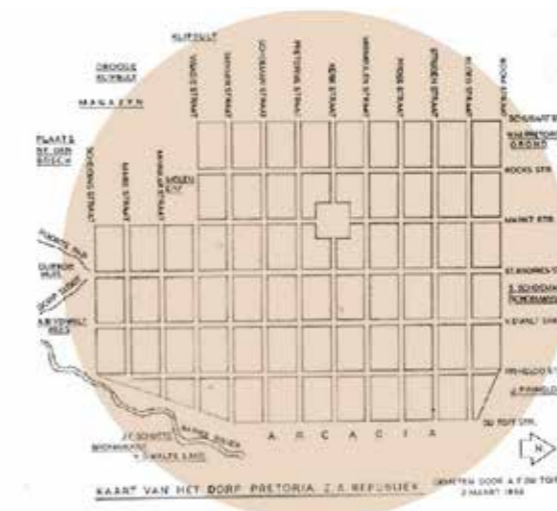


Figure 2.3: First plan of Pretoria by AF Du Tiot (Liebenberg, 2015:10)

The first plan of Pretoria was commissioned by President Pretorius in 1857 (see figure 2.2) which included the enlarged town of Pretoria and Church Square at its centre and its boundaries defined by Scheiding, Schubart, Boom and Du Toit Streets (Liebenberg, 2015: 10).

A total of 622 erven were surveyed and measured and sold to the public for £4 each. The erven were sold with full water rights for irrigation purposes and the right to graze up to 33 head of cattle on the town lands for

each erf holder (Liebenberg, 2015: 10). Later on citizens were formally requested to plant and take care of trees planted at the edge of their property so as to provide shade for the street.

The discovery of gold in 1886 caused a rapid influx of people, the city expanded far beyond its central-orthogonal grid to include a range of other economic centres, accountable for the decentralisation of Pretoria, into what we today know as a poly-centric city (see figure 2.3).

MESO ANALYSIS

Urban analysis Regional Spatial Development Framework

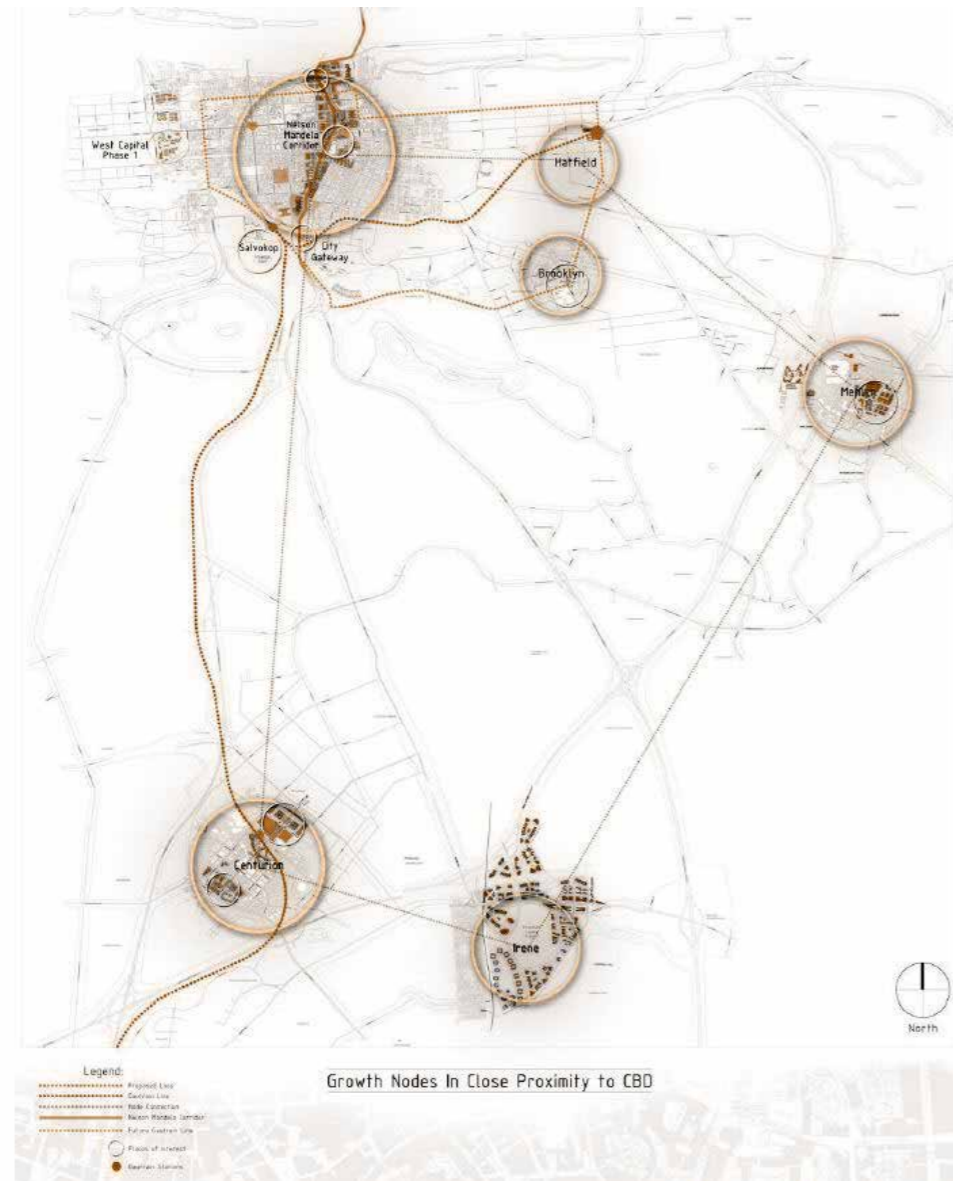


Figure 2.4: Development nodes of Pretoria (City of Tshwane, 2013:98)

A poly-centric city, as defined in the Tshwane Vision 2055, is made up of Regions and nodes that possess a number of opportunities (City of Tshwane, 2013:97). Within the document emphasis is placed on good quality transport for the purpose of access to employment opportunities. Moreover liveability, resilience and inclusivity are primarily goals on the agenda, based on compaction and densification policies. Albeit seemingly appropriate the agenda negates streets as public space for people; a missed opportunity in a transit-dominated environment.

Public spaces such as a market plaza or civic square lose their character as places that facilitate public life in a poly-centric city. The lack of connection to public space, with special reference to the street, in Pretoria has resulted in neglected and isolated spaces often effecting further deterioration.

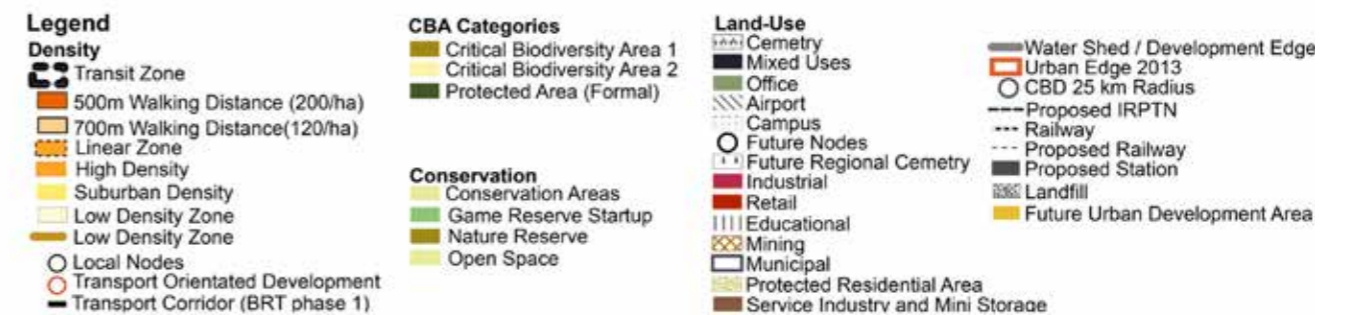
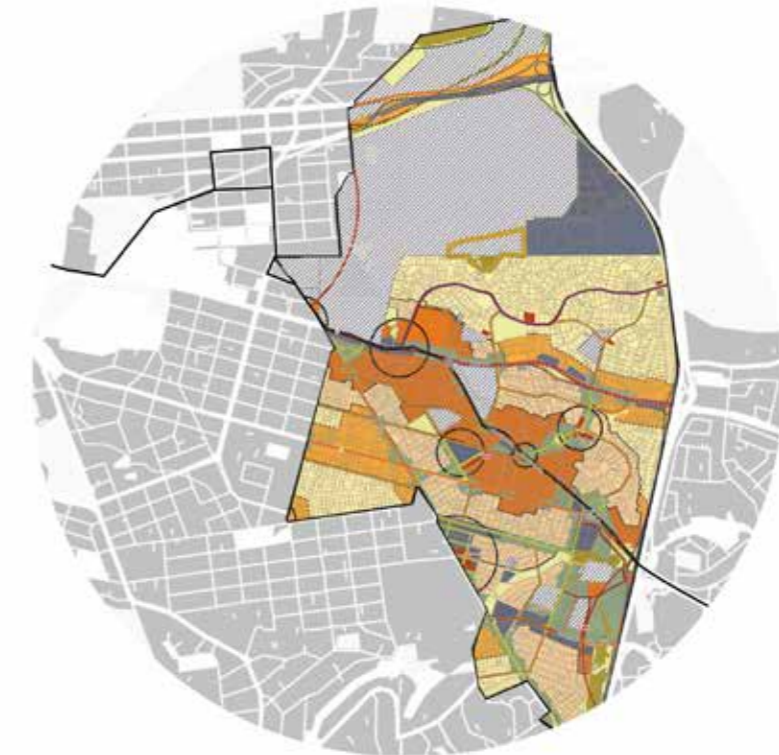


Figure 2.5: Spatial Development Framework of ward 82 (Author, 2020)

The area of investigation has five local and planned future nodes, two of which forms part of the BRT route system, indicated as a solid black line in figure 2.4. Lynnwood Road is classified as a residential corridor, serving the everyday life of the area's residents, businesses, diplomats, and students.

The area of investigation sits within a medium to high density area with Lynnwood Road adjacent to offices and mixed-use buildings. These office and mixed-use building serve both the private and public life of its users.

Urban analysis
Public space and Pseudo-public space



Figure 2.6: Public space (Author, 2020)

Urban analysis
Pseudo-public space

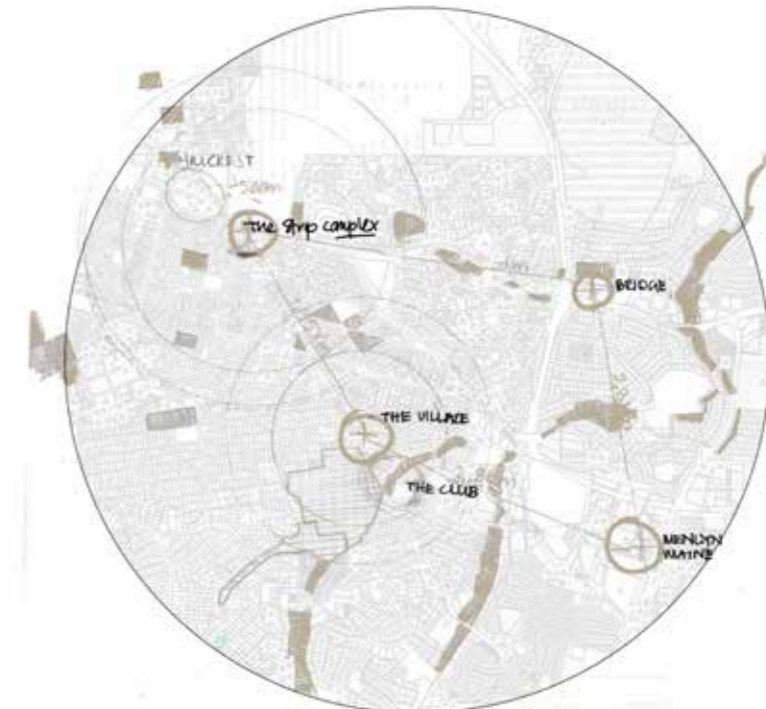


Figure 2.8: Pseudo-public space in relation to open-space (Author, 2020)



Figure 2.7: Pseudo-public space (Author, 2020)

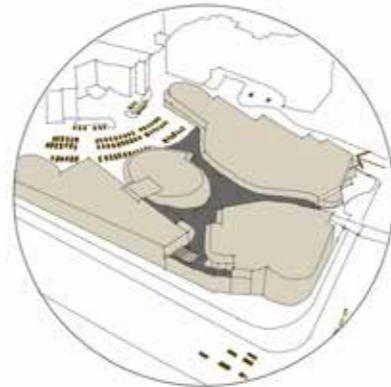
The decentralisation of the inner-city is coupled with the decentralisation of economic, institutional and recreational nodes. As a result buildings along Lynnwood Road have, over the past twenty years, been

re-zoned and adapted to support the private and public life. Public space or rather the qualities thereof have been appropriated into privately owned spaces or buildings along main and arterial roads.

Urban analysis
Public Space versus Pseudo-public space



PLAZA



MALLS



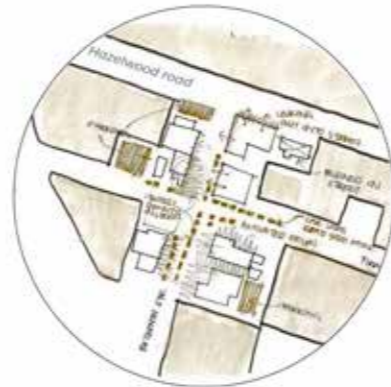
PARKS



MARKETS



STREETS



**RETROFITTED
 PRECINCTS**

Figure 2.10: Pseudo-public space versus open public-space (Author, 2020)

Traditional public spaces are places like plazas, parks and streets. These places no longer serve society in the way it used to. People, in South Africa, have commonly perceive these type of places as dangerous. The emergence of pseudo-public space took shape over the the past twenty years to meet society's need for public life. Places such

as malls, market and retrofitted suburban buildings allowing spillout on the street edge are privately owned development that control access and security, therefore making them preferred places to visit (Landman, 2016:28). Pseudo-public spaces have become the place for public assemblage, the new type of village commons.



LOCATION

Extention of the strip along Lynnwood Road

Urban analysis
Zoning analysis



Figure 2.11: Zoning in suburb (Author, 2020)

SINGLE RESIDENTIAL ZONE 1: CONVENTIONAL HOUSING (SR 1) **SINGLE RESIDENTIAL ZONE 2: INCREMENTAL HOUSING (SR2)** **GENERAL BUSINESS SUB ZONES: (GB1 – GB7)**

PRIMARY USES	PRIMARY USES	PRIMARY USES
Dwelling house, private road. Additional use rights.	Dwelling house, Second dwelling, Utility service, Private road, Urban agriculture, Open space, Additional use rights.	Business premises, Dwelling house, Second dwelling, Boarding house, Flats, Place of instruction, Place of worship, Institution, Hospital, Place of assembly, Place of entertainment, Hotel, Conference facility, Service trade, Authority use, Utility service, Rooftop base telecommunication station, Multiple parking garage. Private road, Open space, Additional use rights.
ADDITIONAL USE RIGHTS Home occupation or Bed and breakfast establishment or Home child care.	ADDITIONAL USE RIGHTS Shelter, House shop, Home occupation, Bed and breakfast establishment, Home child care, Informal trading. Any educational religious occupational or business purposes subject to conditions.	ADDITIONAL USE RIGHTS Adult shop, Adult entertainment business, Adult services, Funeral parlour, Informal trading, Expo-centre, Motor repair garage, Warehouse, Freestanding base telecommunication station, wind turbine infrastructure, Transport use, Helicopter landing pad, Service Station
CONSENT USES Utility services, Place of instruction, Place of worship, Institution, Guest house, Rooftop base telecommunication station, wind turbine infrastructure, Open space, Urban Agriculture, Second dwelling, Halfway house.	CONSENT USES Group housing, Boarding house, Place of worship, Institution, Clinic, Place of assembly, Place of instruction, Office, Restaurant, Guest house, Place of entertainment, Service trade, Authority use, Rooftop base telecommunication station, wind turbine infrastructure, halfway house.	CONSENT USES Adult shop, Adult entertainment business, Adult services, Funeral parlour, Informal trading, Expo-centre, Motor repair garage, Warehouse, Freestanding base telecommunication station, wind turbine infrastructure, Transport use, Helicopter landing pad, Service Station

Urban analysis
Analysis of pseudo-public spaces

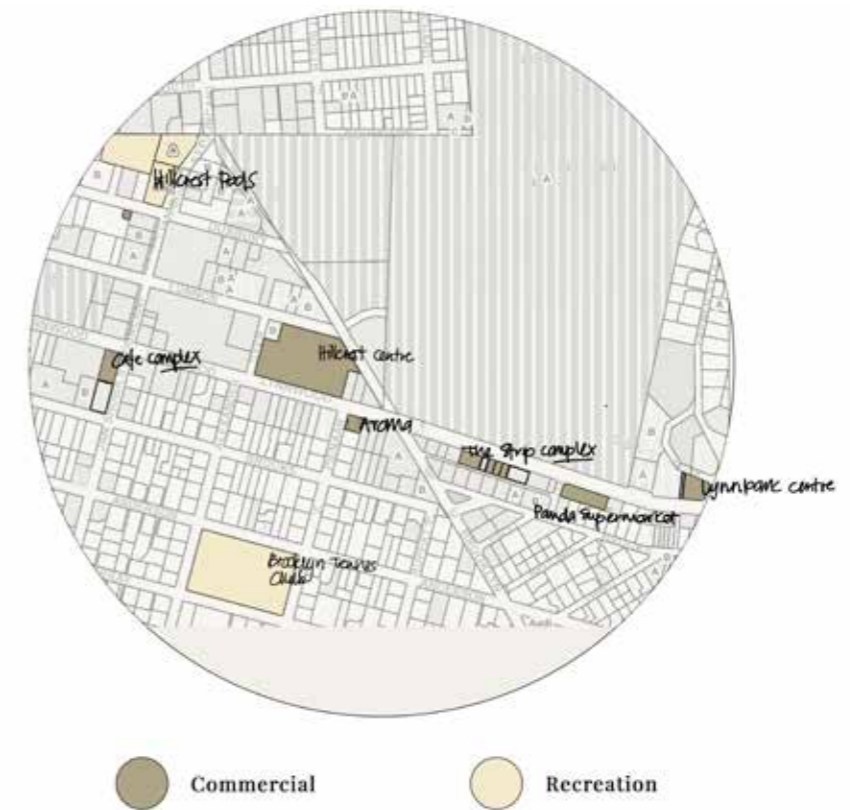


Figure 2.12: Breakdown of pseudo-public space in suburbs (Author, 2020)

A range of commercial and recreational facilities host the sense of public life for residences, or the passerby, within the area.

Urban analysis
Demographics

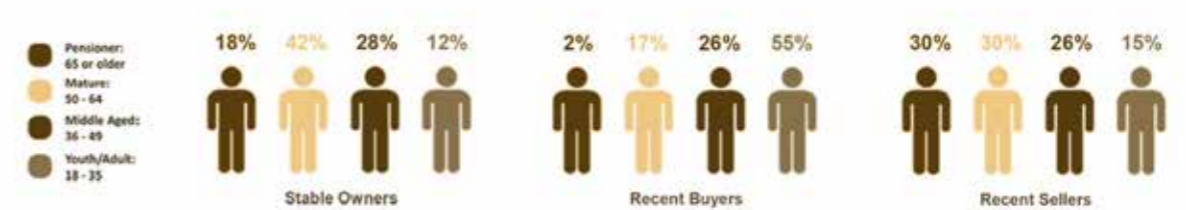


Figure 2.13: Age of ownership in the suburb (Anon, 2019)

The area sees a lot of new developments in the form of student accommodation in and around the University. The majority (fifty five percent) of recent buyers in the area are between the age of 18 and 35. Many older home owners have sold their properties in

pursuit of a more peaceful environment, making up thirty percent of the sellers market. From this analysis we find many commercial and recreational facilities to accommodate students/ young adults who call this area home.

Morphology analysis

A morphological analysis will be done on the following area. The intention is to unearth the assembly of spaces and their relationship toward the street.



Figure 2.14: Interface analysis (Author, 2020)



1. Aroma Gelato & waffle lounge
2. Jollie Roger
3. Jukes
4. Latino's (ground floor) and Fokof bar (first floor)
5. Terra rooftop lounge and bar (rooftop of old ABSA building)
6. Julie Bean

NOTE:
Communality between all these places is that of social gathering. These places mainly function in the food and beverage industry, and serve the public.

Eventhough these are places of high density public assembled it is important to note that it is not public space. Rather private space open to public life.

ADAPTATIONS:
Buildings that have been retrofitted as pseudo-public space

For the purpose of the analysis this tract of Lynnwood will be divided into three areas namely Aroma, the Strip and Lynnpark Centre. Each area will analysed i.t.o. its edge condition, circulation (vehicular and pedestrian), parking and building type.

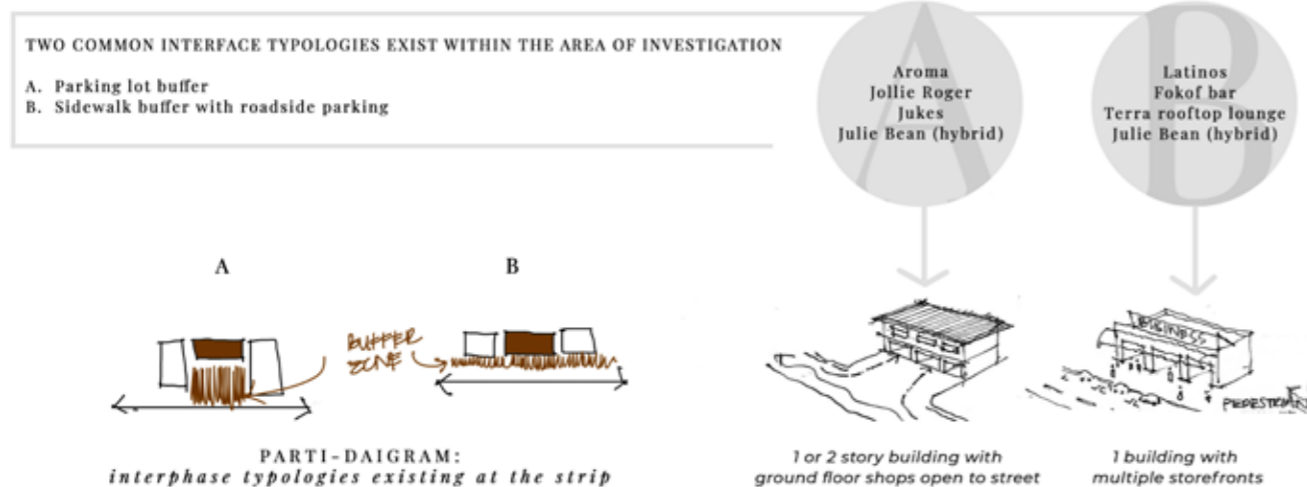


Figure 2.15: Interface typologies (Author, 2020)

Morphology analysis

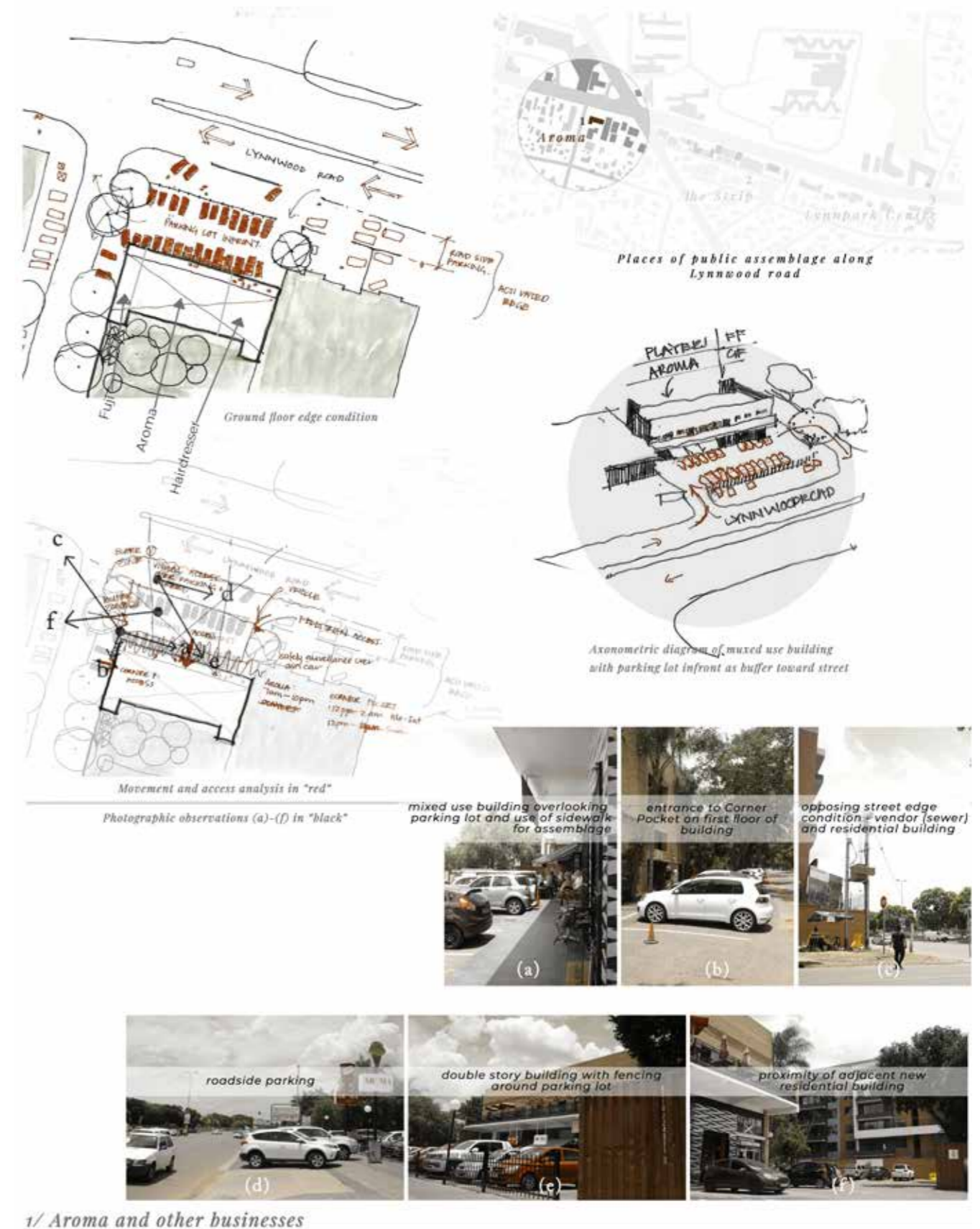


Figure 2.16: Aroma morphological analysis (Author, 2020)

Morphology analysis

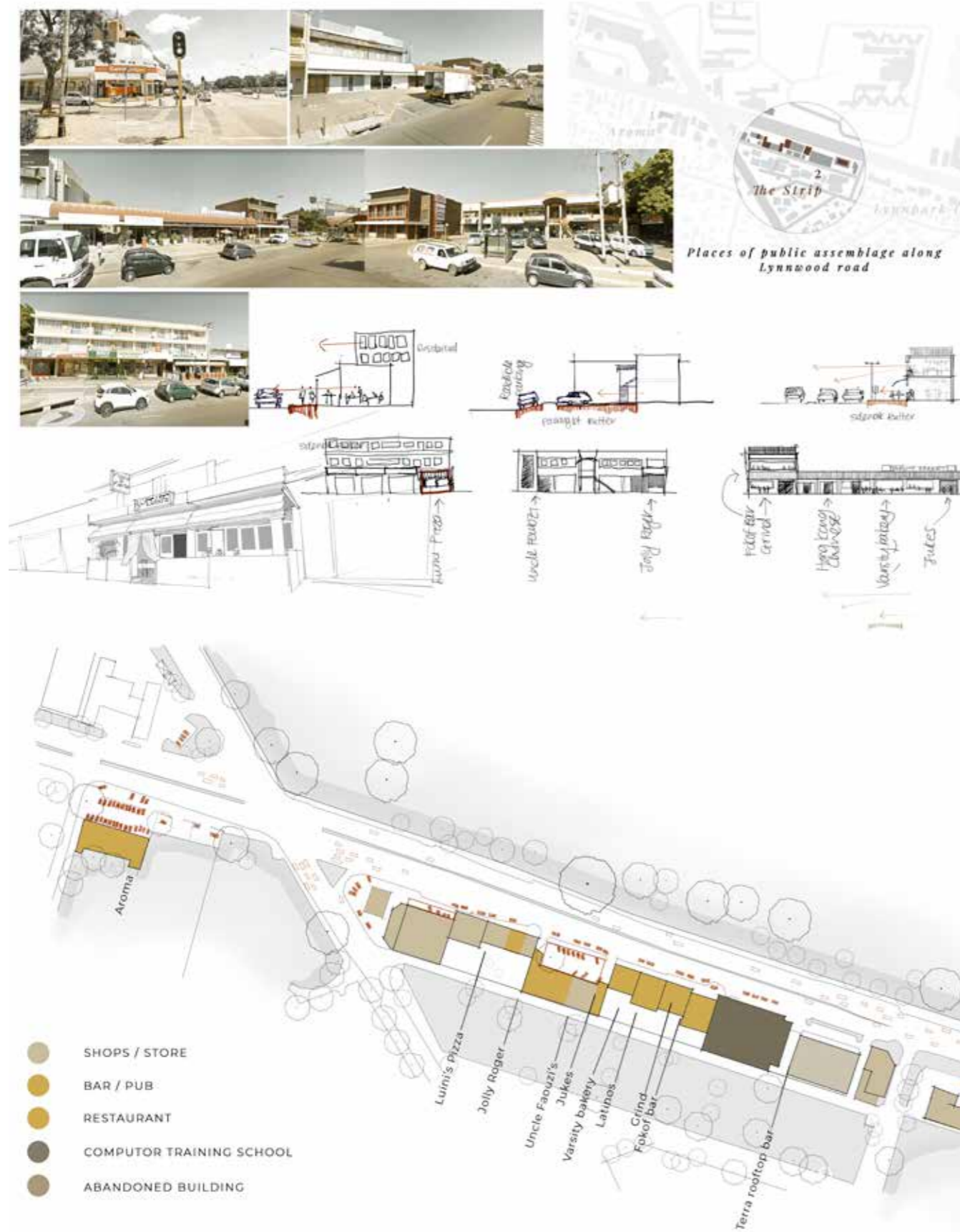


Figure 2.17: The strip morphological analysis (Author, 2020)

Morphology analysis

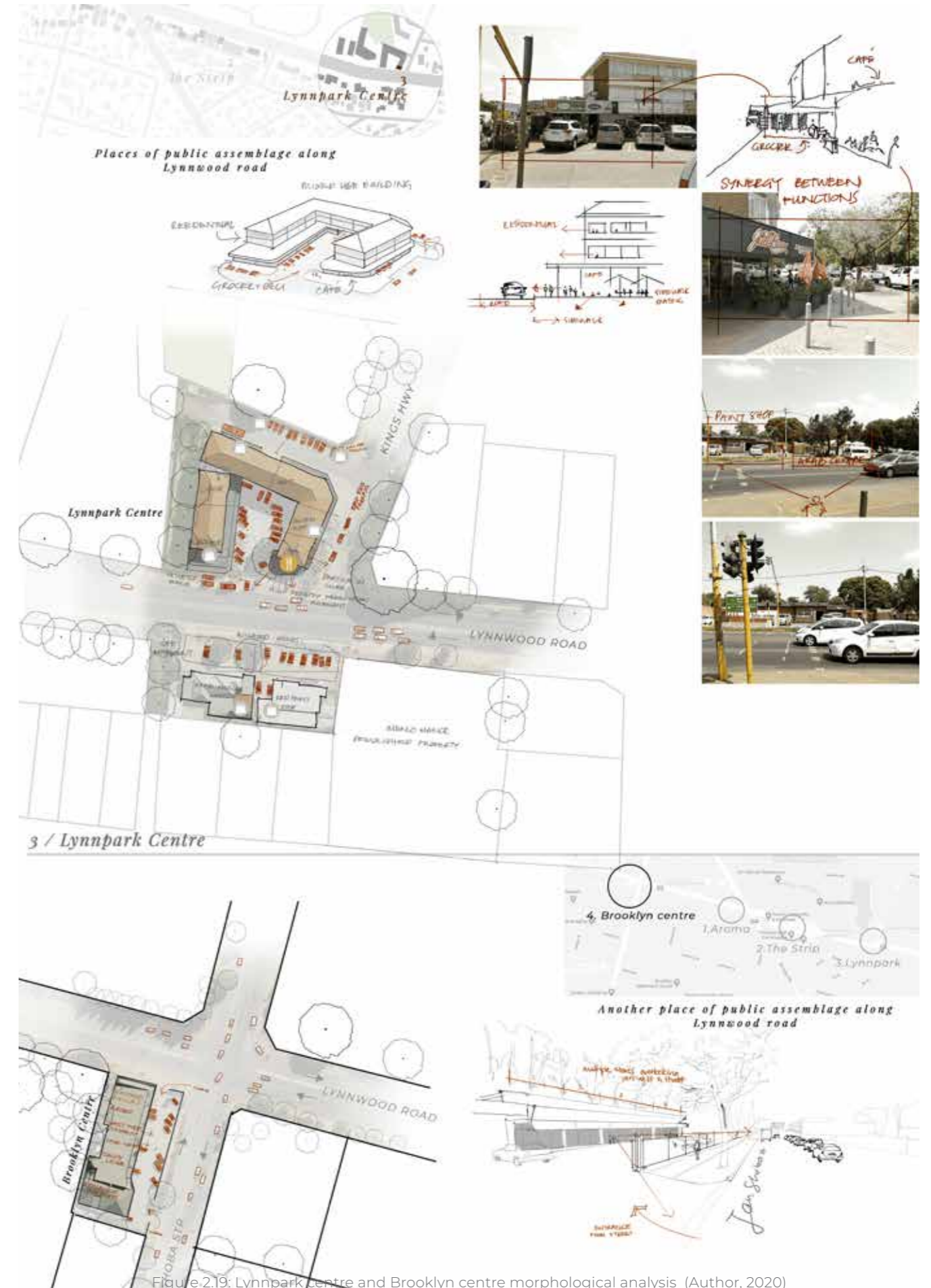
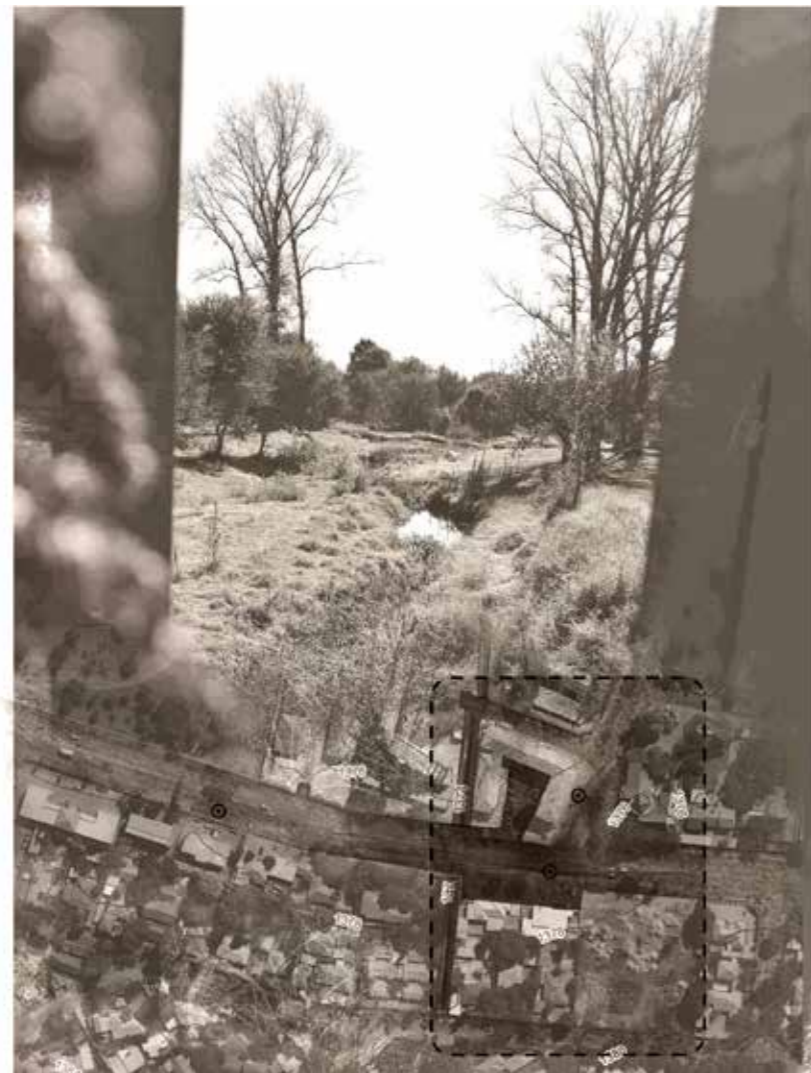


Figure 2.19: Lynnpark Centre and Brooklyn centre morphological analysis (Author, 2020)

Conclusion

Aroma, the Strip and Lynnwood Centre form part of the dialogue of Lynnwood Road. They create a sense of economic and social vitality which contributes to the success of the area. The typology of the street facing storefront, with possible residential on the first or succeeding building stories, is typical of the peripheral condition of public space in most European cities. However, unlike in most European cities, car circulation and parking dominates the street scape. The presence of cars is not necessarily a bad thing. They contribute to the energy of a place, attracting even more people. But a street scape solely designed for vehicular movement and parking is bound to create spaces that feel bare, isolated, dangerous resulting in derelict and abandoned edges. Such is the case for the edges found here.

MICRO ANALYSIS Conditions that effect the interface



SITE LOCATION

Coordinates: 25°45'42.3"S 28°15'05.5"E

Figure 2.20: Site specific location illustrated through an enclosed green space as part of the site (Author, 2020)

Existing site

Photographic analysis of conditions on site

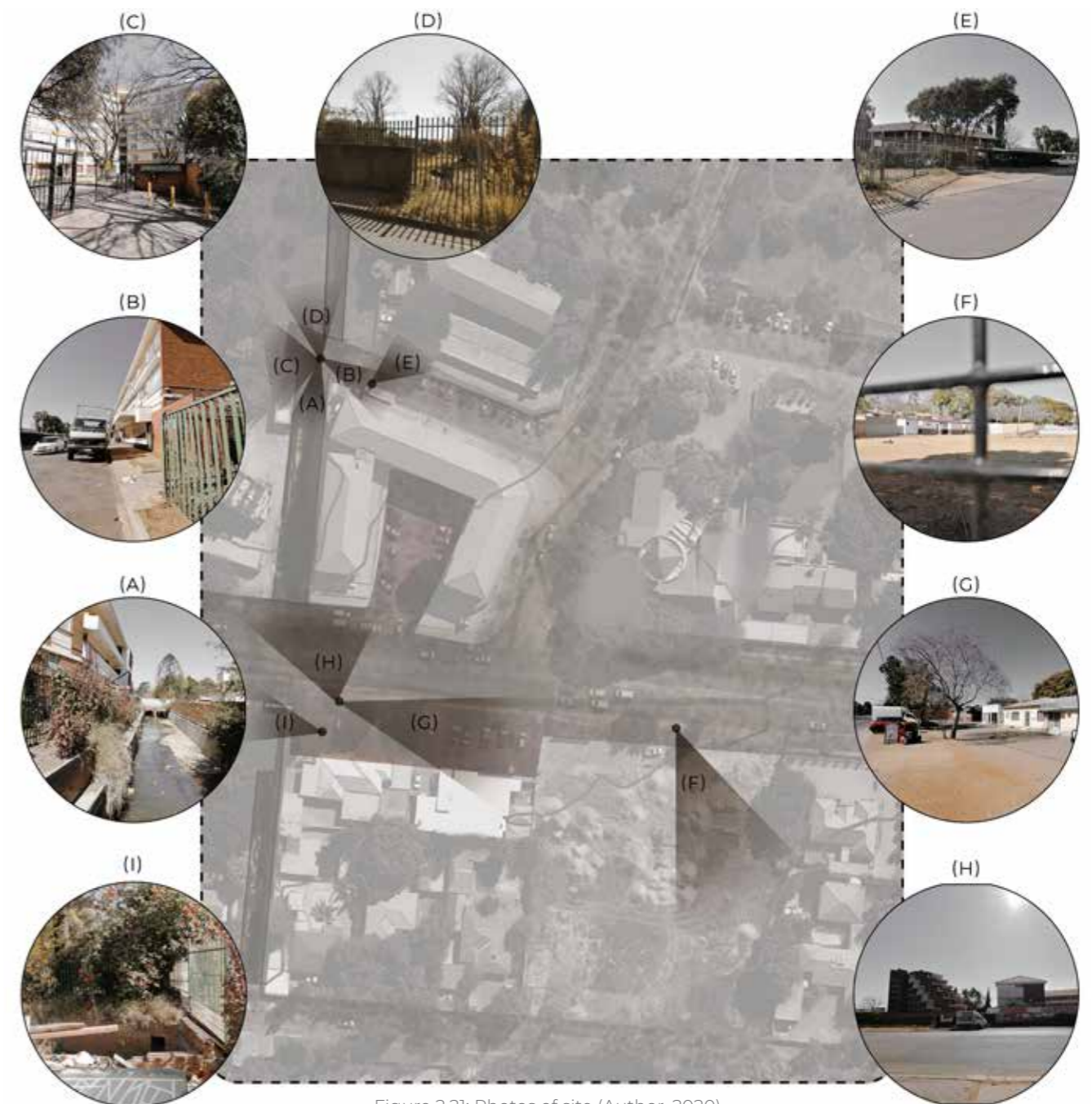


Figure 2.21: Photos of site (Author, 2020)

- (A) Hartebeesspruit channel enclosure situated between Lynnwood Centre and Lynnwood Close apartment Block.
- (B) Deliveries and parking for Lynnwood Centre Customers
- (C) Gate to Lynnwood Close apartment block
- (D) Continuation of Hartebeesspruit to the north. Here the channel disseminates into the natural waterway and continuous all the way through to the Coblyn Wetland.
- (E) Harvest Crescent condominium complex situated across the street from Lynnwood Centre, and contributes to passive surveillance for the back of house and parking area.
- (F) Menlo Manor is a fenced site in a status of demolition for the past 9 years. However, recent groundwork activity on site was documented in March 2020. The site is in stasis since lockdown.
- (G) The Red Paint shop and Islam Centre: stark contrast between building and vacant space
- (H) Lynnwood Grocer deliveries occur in front of the shop on the side of the road.
- (I) [No description provided for (I) in the original text]

FRAGMENTATION

Green and open spaces enrich the urban environment and enhance user experience within a space. Unfortunately these spaces are closed off or are part of private property to eliminate unnecessary dangers. The underutilisations of these spaces only contributes to the perspective of danger as well as obstruct the effectiveness at which public space can be interwoven into the urban fabric.



Figure 2.22: Fragmentation (Author, 2020)

EDGE CONDITION

Zoning and the fenced nature of property cause an obvious private character on street level. Long stretches of fencing and the constant rivalry with roadside parking and vehicular flow decrease walkability of the area, contributing to the disengagement between public and private space.



Figure 2.23: Edge condition (Author, 2020)

HYDROLOGY

Water flow occurs from the South towards the North. Hartebeesspruit is a prominent spring which supplies water into the dams at LC de Villiers to thereafter form part of the Colden Wetland system. The spring is channelised between the residential areas and finally forms part of the natural landscape after it passes under the road behind Lynnpark center. The unsightly state of the channel provides an opportunity to revitalise and celebrate such a life-force within the urban fabric therefore becomes a prominent design informant.



Figure 2.24: Water movement (Author, 2020)

DESIGN POTENTIAL

The wide street provides opportunity for improved utilisation of public space. Lynnwood road can be narrowed, slowing down traffic, increasing pedestrian circulation and connectivity to the urban surround. Public thoroughfares can be created on the street edges and between buildings, like little allies, in order to create intimate pause spaces and establish a connection between built form and public space.



Figure 2.25: Design potential (Author, 2020)

URBAN VISION

Informants, precedents, planning and proposal

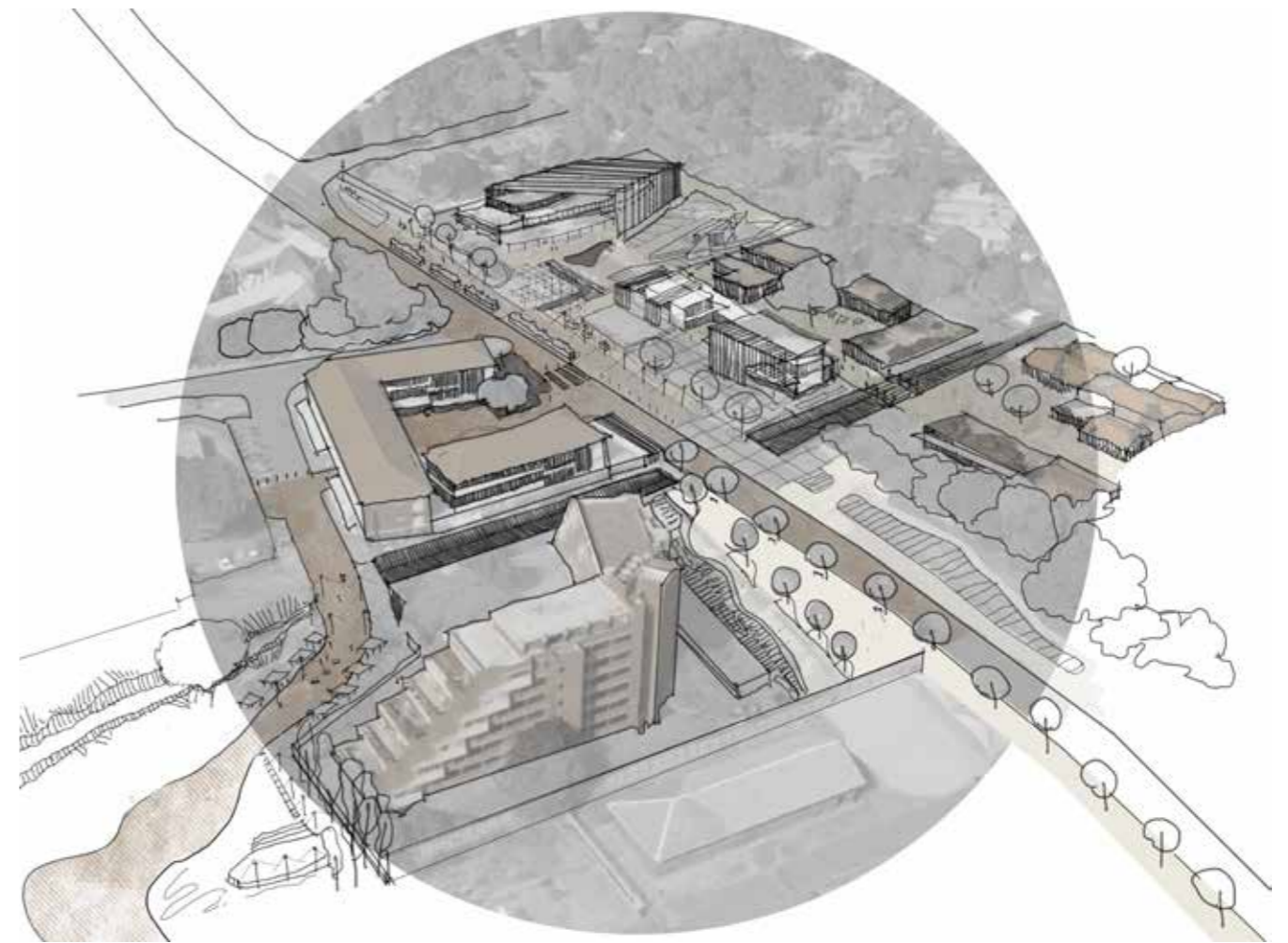


Figure 2.26: Urban Vision (Author, 2020)

Informants



Figure 2.27: The Place diagram (PPS, n.d.)

This diagram can be used as a practical tool to measure and create public place. There are three rings, the inner ring represents the core attributes of a place, the middle ring are the intangible qualities, and the outer ring are the measurable data (PPS, n.d.).

Placemaking steps applied to project

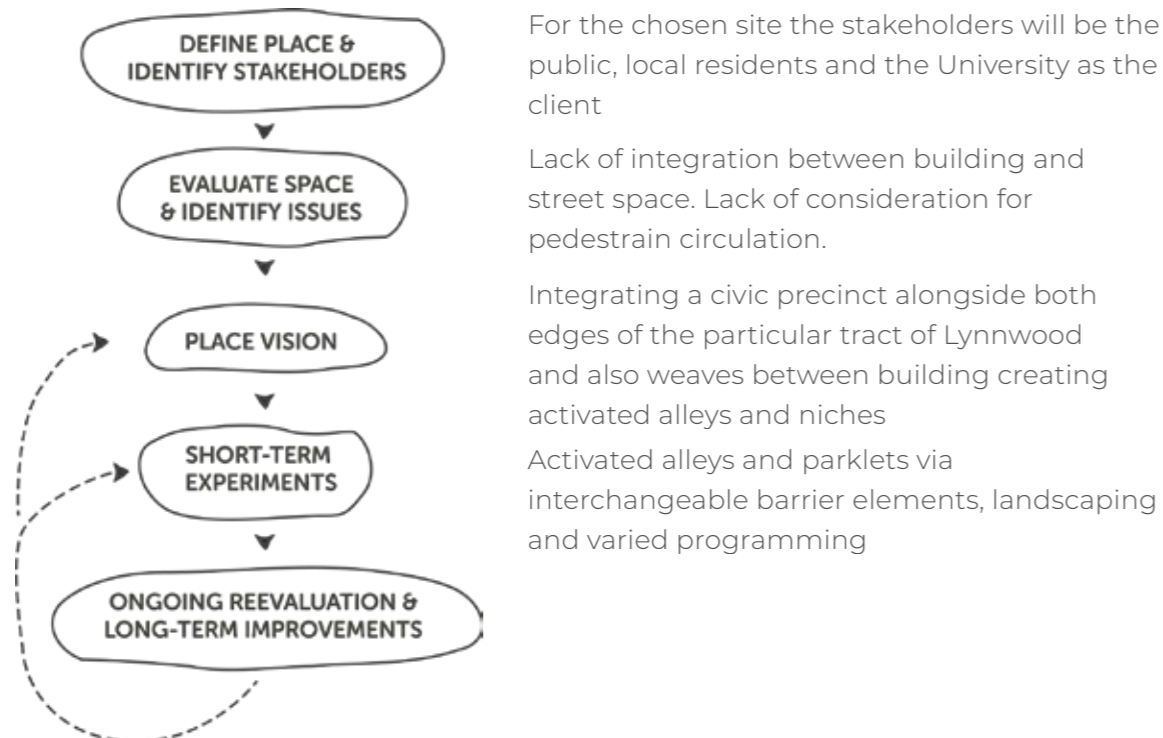


Figure 2.28: Five steps to making places (PPS, n.d.)

APPLICATION

Informants

Tactical Urbanism guide: Guidelines to creating parks and plazas

Tactical urbanism is an approach to community-building using short-term, low cost and saleable projects that are intended to catalyse long-term change (Garcia & Lydon, 2016).

Programming, street furniture, barrier elements, and surface treatment are the tools to bring about short to medium term change. The intention is to test projects in the short and medium term, and then implement the best practices (from user experience) from the lessons learnt.

Figure xx is an example of how these tools have been implemented to achieve a certain desired outcome in creating a pedestrianised street edge.



PROGRAMMING
Food trucks and pop-up vendors provide amenities

STREET FURNITURE
Moveable tables and chairs

BARRIER ELEMENTS
Planters and delineator posts create a buffer between vehicles and people in the plaza

SURFACE TREATMENT
Coloured surface treatment to define plaza area

Figure 2.29: Cheat sheet in tactical urbanist guide (Tactical urbanist's guide, 2016: 120)

Precedents

These are local examples of spaces which adapted a typical urban setting into a place where people access qualities of public life. That is to meet people in an open space, immersed in some greenery, catch up on news, events, politics, pause and watch the people go by.

44 STANLEY, JOHANNESBURG



Figure 2.30: 44 Stanley (44stanley, n.d.)

Taking on a European typology of shop fronts within a small alley. The synergy between shops, restaurants, and greenery creates a vibrant place that would have otherwise seemed dull and dangerous between two tall buildings.

THE VILLAGE, PRETORIA



Figure 2.31: Photographs at the village (Author, 2020)

The village is an residential area which has retrofitted the buildings and street edges to facilitate public life. Furniture and seating is placed over parking spaces accommodates more pedestrian circulation. The area also has pop-up night market once a month which draws a lot of attention.



Precedents

This alley was transformed into an interim public plaza to host day-long or weekend-long events to gain community feedback for a more permanent plaza. Programming included musical performances, fitness classes, food trucks, and fashion events (Tactical urbanism, 2016: 130).

ACTIVATED ALLEY, SAN FRANCISCO

User experience is sometimes different to what the architect or urban planner proposes for a space. Therefore using short to medium term project to test how users actually use and experience space is a good practice in before finally implementing permanent change.



Street Furniture
Concrete benches and moveable chairs

Landscape element
Hanging plants

Programme
Regular performances and events

Figure 2.32: Case study of tactical urbanism in San Francisco (Tactical urbanist's guide, 2016: 120)

Planning

Urban vision informants and precedents playing out in the conceptual planning stages for circulation, greenery and place making potential.

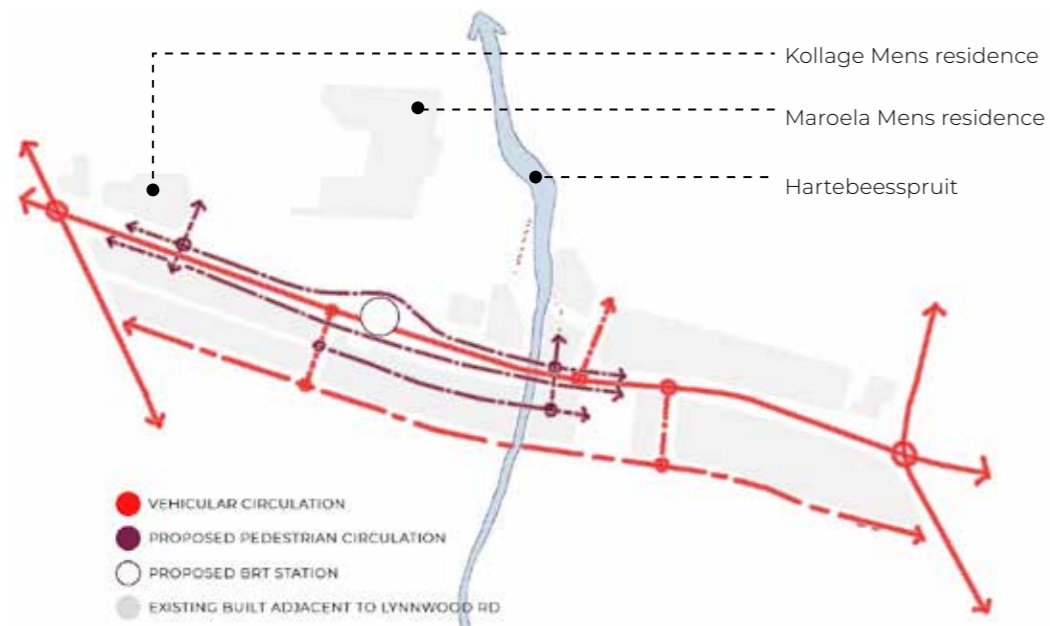


Figure 2.33: Proposed circulation and RBT station (Author, 2020)

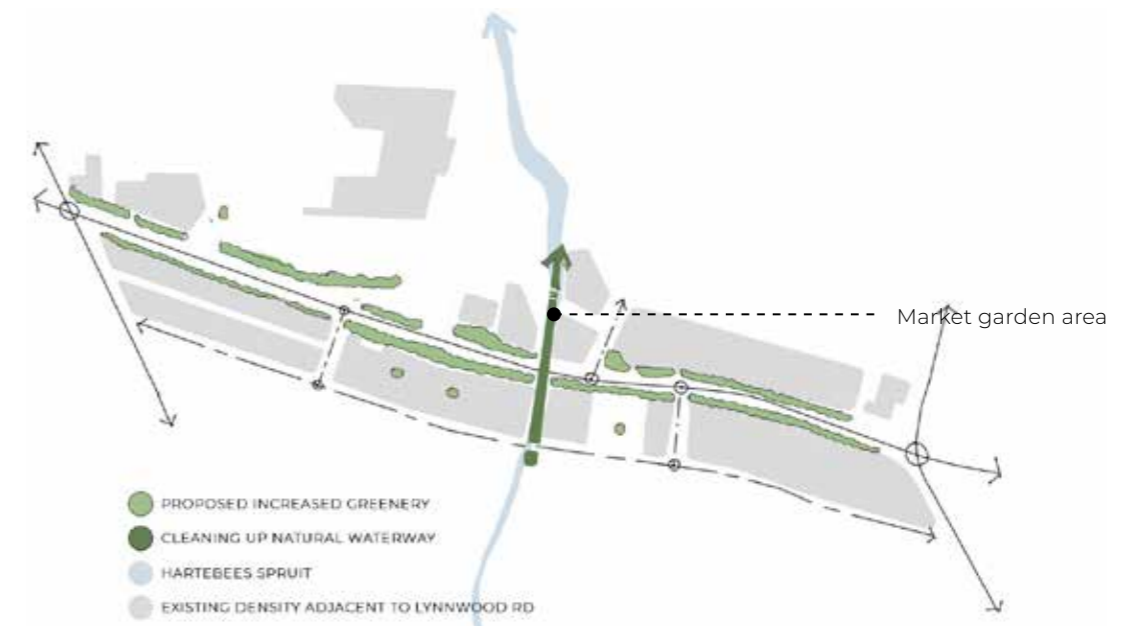


Figure 2.35: Proposed greenery (Author, 2020)

From the analysis done students often frequent the places across Lynnwood road. However, fast moving cars and a wide road seems have been an unconsidered danger to the pedestrian. Slowing down of traffic and change in surface condition will be used to counteract this issue.

The project also proposes an official location for the BRT station situated next to the student access point. This is practical but also contributes to safety and surveillance of the access point.

The existing vegetation will be incorporated into an more extensive part of the pedestrian circulation route along the edges of the road.

The proposal also considers the channel as a feature or possible landmark to be celebrated. The channel will draw visitors attention to

the market garden route which continuous though to the north of Lynnpark Centre and ends within the natural landscape to the north. This area will connect people back to nature, hosting day-long or weekend-long events or performances.



Figure 2.34: Existing greenery (Author, 2020)

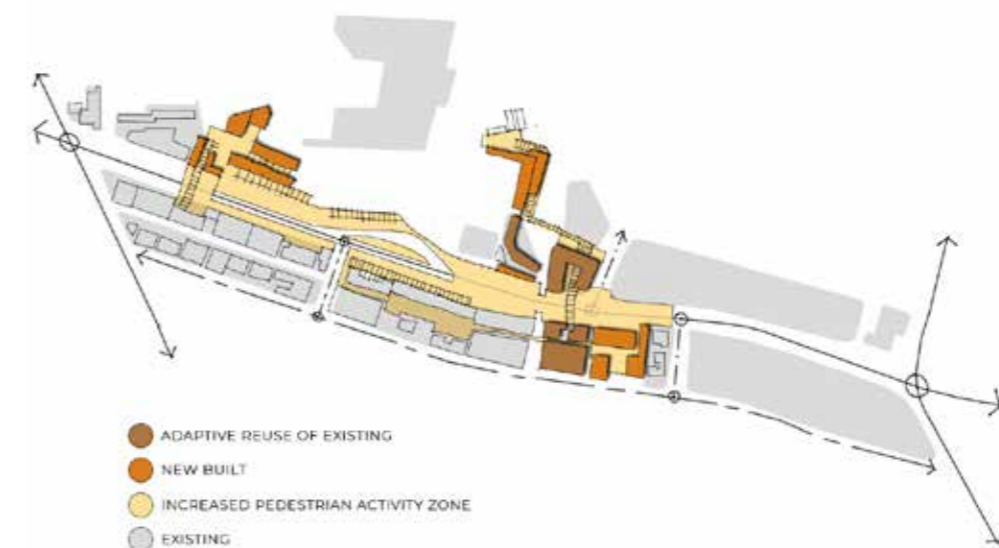


Figure 2.36: Spaces with place making potential (Author, 2020)

Urban Vision Proposal

Ultimately the proposal seeks to increase pedestrian circulation and activation of the spaces between building and the street. The vision proposes the narrowing with Lynnwood road together with surface treatment to slow down vehicular flow. The

aim is to draw society's attention back to the notion of origins. Connecting with nature, seeing the life-giving force of water, buying produce from the corner grocer, or meeting up with friends becomes an easy part of our everyday life



Application of tactical urbanism strategies

SURFACE TREATMENT

Introduce bike lanes and wide sidewalks that weave between newly created streets between buildings

BARRIER ELEMENTS

Sidewalks merge into parklets which bring about more greenery and shading conditions

PROGRAMMING

Parklets also provide seating arrangements and space for pop-up markets to take place

SURFACE TREATMENT

Creating a new typology for pedestrian plazas alongside road. Road painting and niche engagement

Figure 2.37: Site urban vision plan iteration and strategies (Author, 2020)



Figure 2.38: Site in current condition (Author, 2020)

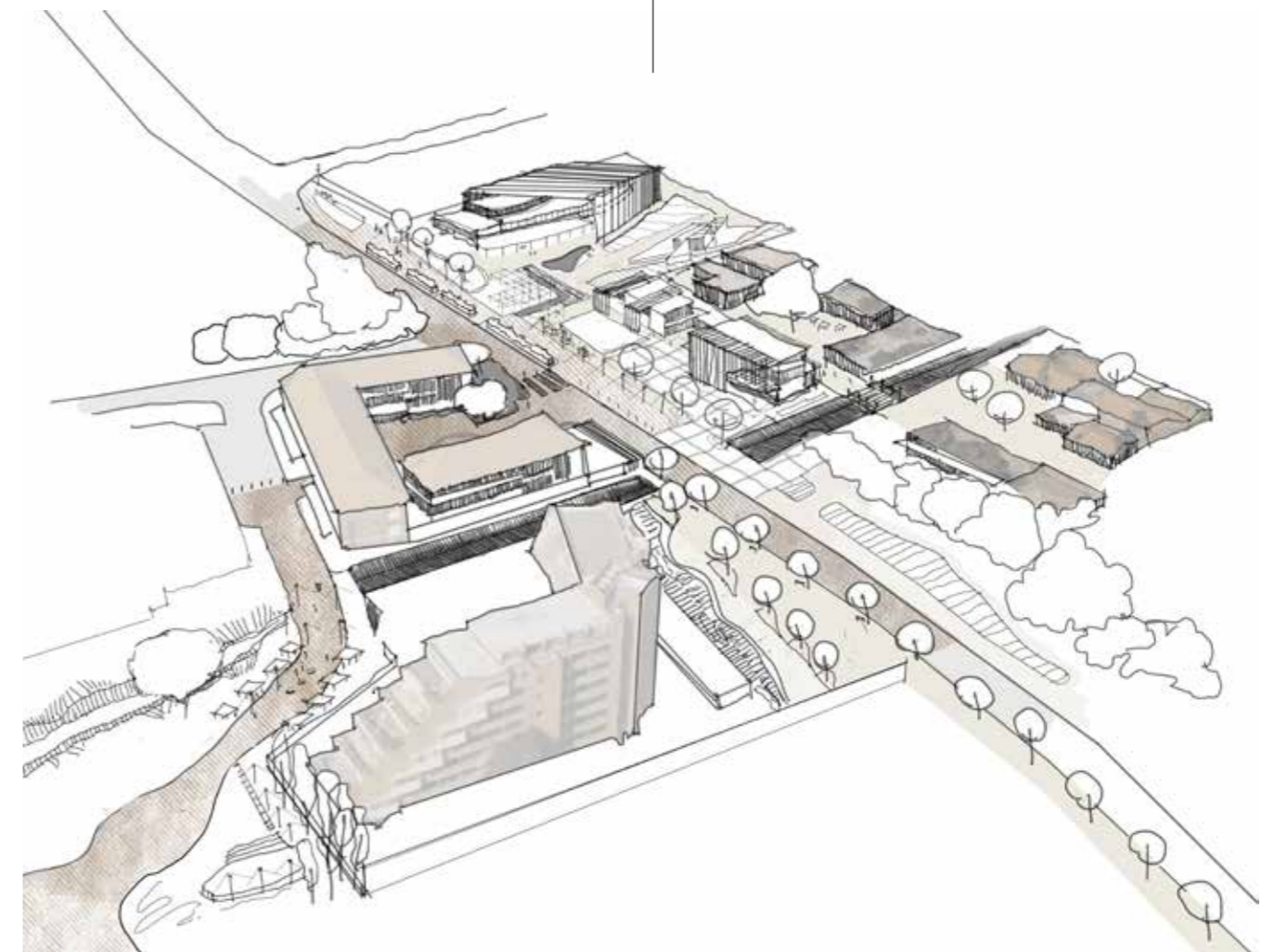


Figure 2.39: Site urban vision (Author, 2020)

CHAPTER

03

theoretical framework

addressing the bias relating to public space

The following chapter which focuses on the theoretical framework is concerned with creating an understanding of the current bias relating to public space within the city; secondly looking at how the notion of truly public space has been adapted to fit new forms of public assemblage and public life; and finally, the dissertation suggest how contemporary public space should mitigate the bias and provide solutions to ensuing societal issues.



Figure 3.1: The vibrancy of public space (Author, 2020)

BACKGROUND AND DELIMITATIONS

This chapter attempts to create a theoretical and philosophical understanding of the aspects that impact the notion of public space. A variety of public spaces exist throughout the city to which pseudo-public spaces constitutes a relatively recent addition. The present study confirms streets

as the main public space within the city. It aims to illuminate the evolution of public space in Pretoria and provide insight into how architectural typology can manipulate and facilitate public life integrated into a transit-orientated environment.

UNDERSTANDING THE URBAN ENVIRONMENT:

the bias of public space

Aspects that influence notions of public space in South Africa are twofold. On the one hand the era of segregationist policies and planning was inspired by the functionalism of modernist. Priority was given to vehicular movement which undermined the connection and physical linkages between open spaces and the built fabric surrounding them. Modernist paid little attention to the notion of traditional or historically created public space, instead saw opportunity where expanded open spaces could be utilised for the construction of high rise buildings with no concern as to how these structures would connect to the rest of the city. This has often led to neglected edges or “lost space” where no social interaction or activities associated with public life can take place (Bugari, 2016: 173-176).

On the other hand the pressure of capital and privatization has increasingly been altering the social and physical attributes of public space, contributing to the decline of the public realm and ultimately loss of truly public space (Nissen, 2008: 1129-1149). Truly open public spaces such as parks and squares are neglected, enclosed or given over to private stakeholders while the street (also inherently public space) is demoted to circulation and access purposes (Nissen, 2008: 1129-1149). Furthermore, encouraging the privatization of public space is the

growing perception of looming danger in open public spaces (Carmona, 2010; Landman, 2016).

The emergence of pseudo-public spaces or ‘private public spaces’ as a result, are often projects driven by private stakeholders, such as businesses or community organizations (Landman, 2016:69), as an approach to aid impoverished officials with the improvement and or management of deteriorating public spaces (Carmona, 2010: 157-173), but they have also been part of measured agendas to serve those neoliberal developers in their pursuit of profit (Landman, 2016:26-38). Deducing that commercial or retail developments are stereotypically accused for the privatization of public space and have greatly influenced our perception of contemporary public space.

This shift towards a privately-owned and overly-managed public space has effectively removed those whom are deemed dangerous or unwelcome as the notion of commodified space inherently encompass costly goods, services or activities within them (Landman, 2016: 69). Those who are able to afford visiting these spaces are attracted to them as they offer a unique experience that relate to the notion of older public space types, such as a traditional town square or village piazza, this is coupled with creating a spectacle

around the consumption of goods and space. Unfortunately, pseudo-public spaces have been allowed to extensively shape the urban landscape in affluent areas fostering a widespread classist and consumerist culture in society.

The city of Tshwane is home to about 2,9 million people, with a population density of 464 people/km². The municipal area is also the host of 134 diplomatic missions and 26 international organisations (Tshwane 2055 Strategy, 2013:42). It is also estimated that almost 90% of all research and development in South Africa takes place in The City of Tshwane, crowning the municipality as the “intellectual” capital of the country (Tshwane 2055 Strategy, 2013:42). Despite the attention and investment the capital receives 136,640 households have no annual income and has a 24% unemployment rate (Tshwane 2055 Strategy, 2013:42). Subsequently portraying the level of inequality the country experiences.

Peter Calthorpe (in Chapman, 2014: 147) talks about how our city making habits shape our social wellbeing, our economic

vitality and our sense of community and connectedness. Unfortunately the type of city taking shape in Pretoria is manifesting a society of division. Standards of social wellbeing and economic vitality is seemingly a measure aimed at those of an affluent group whilst the other is treated as anomalies. As a result street corners or open spaces typically occupy the homeless or poor and constitute places to be avoided. Consequently contributing to the growing perception that open public spaces are dangerous (Landman, 2016:28) and that the shift toward privatisation of public space can remedy the affluent group’s need for public life.

Conversely, it is argued that architecture can only relate to a setting largely defined by the street’s configuration. The quality of the dialogue is thus bilateral; the quality of the interface depends on the quality of the phases simultaneously. Buildings that cannot relate any more to the street space struggle to survive, often leading to derelict or abandoned structures. Streets that change over time into mono-functions tend to narrow the scope of uses.

UNDERSTANDING TYPOLOGIES:

variety in public space

Carmona contends that ‘contemporary public space’ is a multifaceted space type and can become increasingly difficult to define as private and public territories entwine. Ultimately the contestation relating to typology (discussed in this section) is conjoint by the theme ‘management of urban space’.

Public space in cities creates places where people can relax, interact, engage in politics, news, and activities which connect and bind communities together (Gehl, 2011:19-21). These spaces contribute to the liveability of a city, quality of life, and greening of the

urban fabric (Landman 2015: 91).

It can be argued that problems associated with under- and over-management of public space have caused a renaissance of public space types. Matthew Carmona summarised a diverse range of arguments, from various authors, based on what public space is (see table 1). In short, public space is complex and contested, what is clear however, is that there are a range of public space typologies based on function, perception and ownership. These typologies (as seen in the table) can be categorised according to positive, negative, ambiguous

TABLE 1: URBAN SPACE TYPES

Space type	Distinguishing characteristics	Examples
Positive spaces		
1. Natural/semi-natural urban space	Natural and semi-natural features within urban areas, typically under state ownership	Rivers, natural features, seafronts, canals
2. Civic space	The traditional forms of urban space, open and available to all and catering for a wide variety of functions	Streets, squares, promenades
3. Public open space	Managed open space, typically green and available and open to all, even if temporally controlled	Parks, gardens, commons, urban forests, cemeteries
Negative spaces		
4. Movement space	Space dominated by movement needs, largely for motorized transportation	Main roads, motorways, railways, underpasses
5. Service space	Space dominated by modern servicing requirements needs	Car parks, service yards
6. Left over space	Space left over after development, often designed without function	'SLOAP' (space left over after planning), Modernist open space
7. Undefined space	Undeveloped space, either abandoned or awaiting redevelopment	Redevelopment space, abandoned space, transient space
Ambiguous spaces		
8. Interchange space	Transport stops and interchanges, whether internal or external	Metros, bus interchanges, railway stations, bus/tram stops
9. Public 'private' space	Seemingly public external space, in fact privately owned and to greater or lesser degrees controlled	Privately owned 'civic' space, business parks, church grounds
10. Conspicuous spaces	Public spaces designed to make strangers feel conspicuous and, potentially, unwelcome	Cul-de-sacs, dummy gated enclaves
11. Internalized 'public' space	Formally public and external uses, internalized and, often, privatized	Shopping/leisure malls, introspective mega-structures
12. Retail space	Privately owned but publicly accessible exchange spaces	Shops, covered markets, petrol stations
13. Third place spaces	Semi-public meeting and social places, public and private	Cafes, restaurants, libraries, town halls, religious buildings
14. Private 'public' space	Publicly owned, but functionally and user determined spaces	Institutional grounds, housing estates, university campuses
15. Visible private space	Physically private, but visually public space	Front gardens, allotments, gated squares
16. Interface spaces	Physically demarked but publicly accessible interfaces between public and private space	Street cafes, private pavement space
17. User selecting spaces	Spaces for selected groups, determined (and sometimes controlled) by age or activity	Skateparks, playgrounds, sports fields/grounds/courses

Private spaces		
18. Private open space	Physically private open space	Urban agricultural remnants, private woodlands,
19. External private space	Physically private spaces, grounds and gardens	Gated streets/enclaves, private gardens, private sports clubs, parking courts
20. Internal private space	Private or business space	Offices, houses, etc.

Table 1: Summary of urban space type (Carmona, 2010: 169-170)

and private space. The categorisation can become increasingly complex as public and private realms intertwine. Carmona's reference to ambiguous space finds itself in the notion of pseudo-public space as these are typically spaces what serve as village commons or places of public assemblage without being exclusively open public spaces. Table 1 is a reflection of the array of space types that could exist within any particular urban environment. It is also indicative of the how some spaces are more than they appear in their ambiguity relative to ownership and extent of 'public'-ness remains unclear.

The places of public assemblage analysed in chapter 2 can all be categorised as ambiguous space according to Carmona's classifications of space types. Even though Carmona has a classification titled "third space places" this does not fully potentiate what Soja coined the thirdspace as described in the background of this dissertation. Rather that the all types of ambiguous space to some extent potentiates both realms of public and private or positive and negative is what Soja refers to as thirdspace.

What is interesting, as a reflection on the analysis done in chapter 2, is that these ambiguous spaces are only successful due to the direct connection with the positive and negative spaces that serve them. The configuration of the buildings at The Strip in Lynnwood road is dependent on the adjacent road and car parks (negative

space) which contribute to the social and economic energy that exists. The same counts for Lynn Park Centre where the street (positive space) becomes the parking area and allows the corner café to establish itself on the street edge.

These space types are inherently interlinked to create a functioning urban environment. When place making is incorporated into the design then architecture is able to establish a meaningful dialogue between the different realms which potentiates livability.

From the four categories one is able to distinguish that positive spaces are spaces for the exchange of social encounters, knowledge and resources. Negative spaces are utilised for circulation and services. Ambiguous space is a lot more about perception than the definition of space. They inherently create a moment of pause, observation and interpretation. Private spaces are used to demarcate and limit public access.

To make sense of what creates successful urban space, which would facilitate a better sense of community, Landman (2016: 28) suggests a framework that examines the function, form, and meaning of space. Function relates to uses and activities within the space, form relates to the physical attributes and the spatial organisation thereof, whilst meaning is based on the interpretation of the function and form of the space (Landman, 2016:26). Moughton

and Mertens (2003) in Landman (2016:27) argue that a square or plaza does not have to conform to typology (form) but can be defined by the meaning its users assign to it. This supports Carmona's space type

argument which is based on use and function of space. Meaning is therefore equally influenced by or in parallel with the use (function) of the space. Thus the interplay between "form follows function".

A CONTEMPORARY APPROACH TO PUBLIC SPACE MAKING

This dissertation proposes that contemporary public space should be the product of an appropriate response to the existing and natural systems on site as part of the building blocks of the architecture which aims to create interlinked experiences between a variety of positive, negative, ambiguous and even private spaces.

Considering the emergence of pseudo-public space which remedy some of society's concerns regarding safety and security it also promotes a culture of division feeding on production and waste. Due to their commercial nature these spaces remain ignorant of the issues that divide society, be it physical or emotional. They also no longer cause people to slow down and connect as it would have in the old town market place.

Public space is not the answer to solving all of society's issues but more than capable of connecting people which contributes to a thriving urban environment (Anderson, 2016: 5). As a main point of departure the architecture will consider intervening in the latent space which is the result of a deficient integration between building and street space. This dissertation considers the third space, the condition between buildings and the street, as latent space due to its underutilised potential.

The notion of public should consider itself a place for all members of society and aim to uplift the quality of life of the people living within its environment (Anderson, 2016: 5). In order to achieve a new typological approach in public space making the project proposes

that place making (see figure 3.2) is used as a unifying tool throughout the various space types present within the identified design location. The contemporary public space will be deemed as successful if the symbiotic relationships between site resources, walkways, and open areas encourage interlinked experiences between people and functions. These are put in place to encourage pedestrian activity and public events in the latent space surrounding the building.

Furthermore, more often than not products are sourced from global market, where it is cheaper than the local market, obscuring the value of craftsmanship and quality of products. Public space in accordance to creating a successful city should be an institution which contributes value to the local economy which in turn fosters cohesion on multiple levels of society. This implies a local or site specific approach to public space which utilises the existing and natural systems to bring forth a regenerative environment.

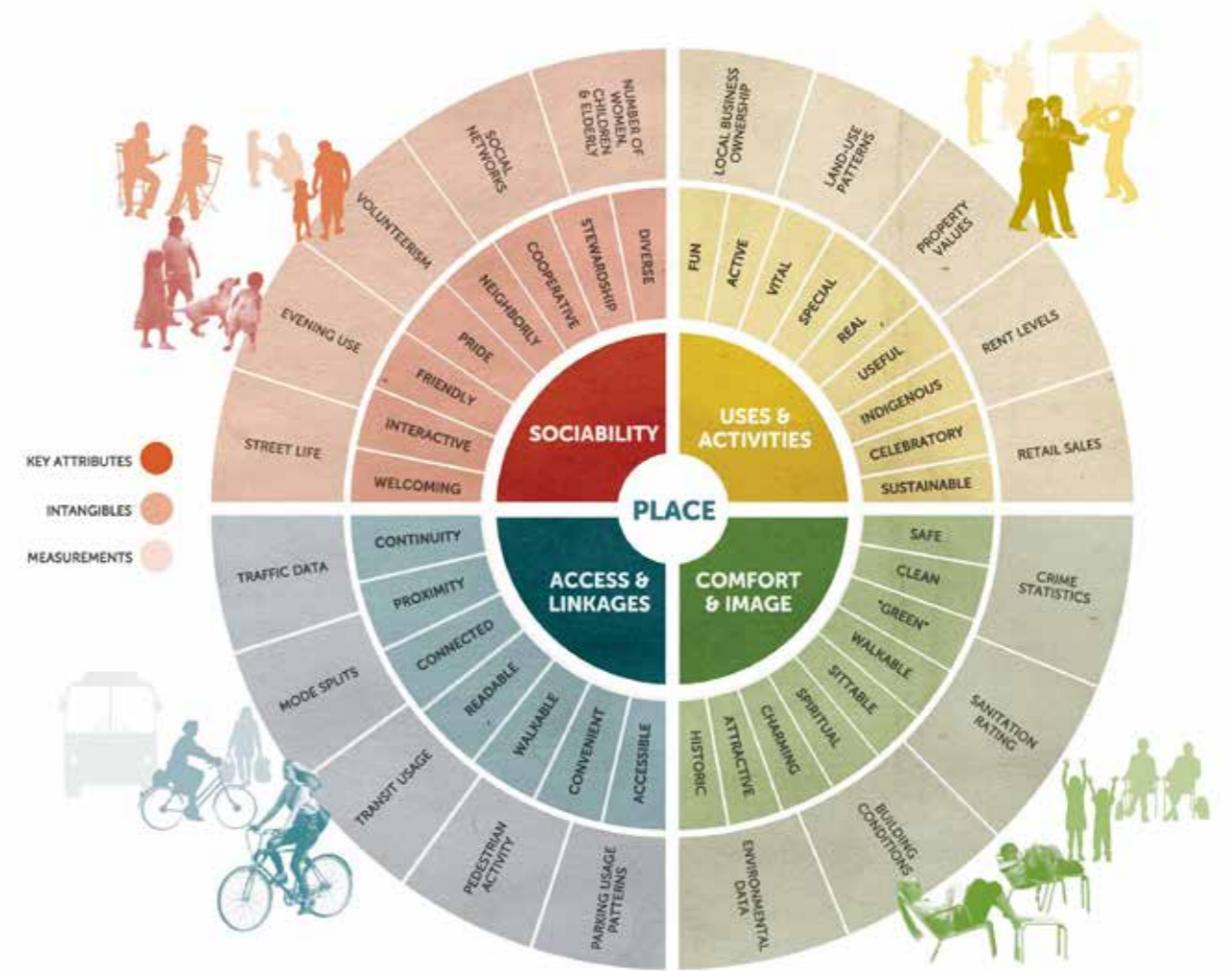
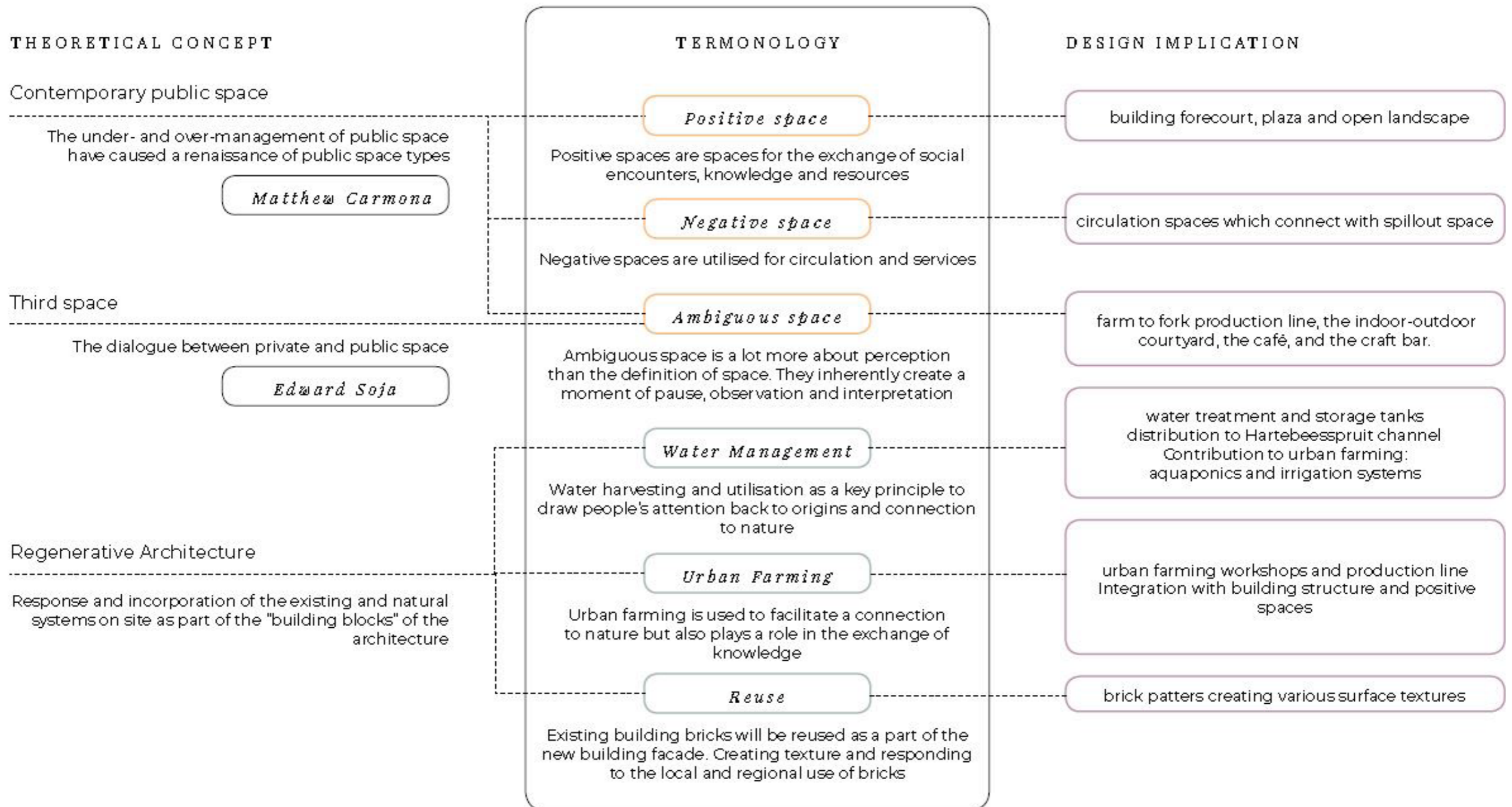


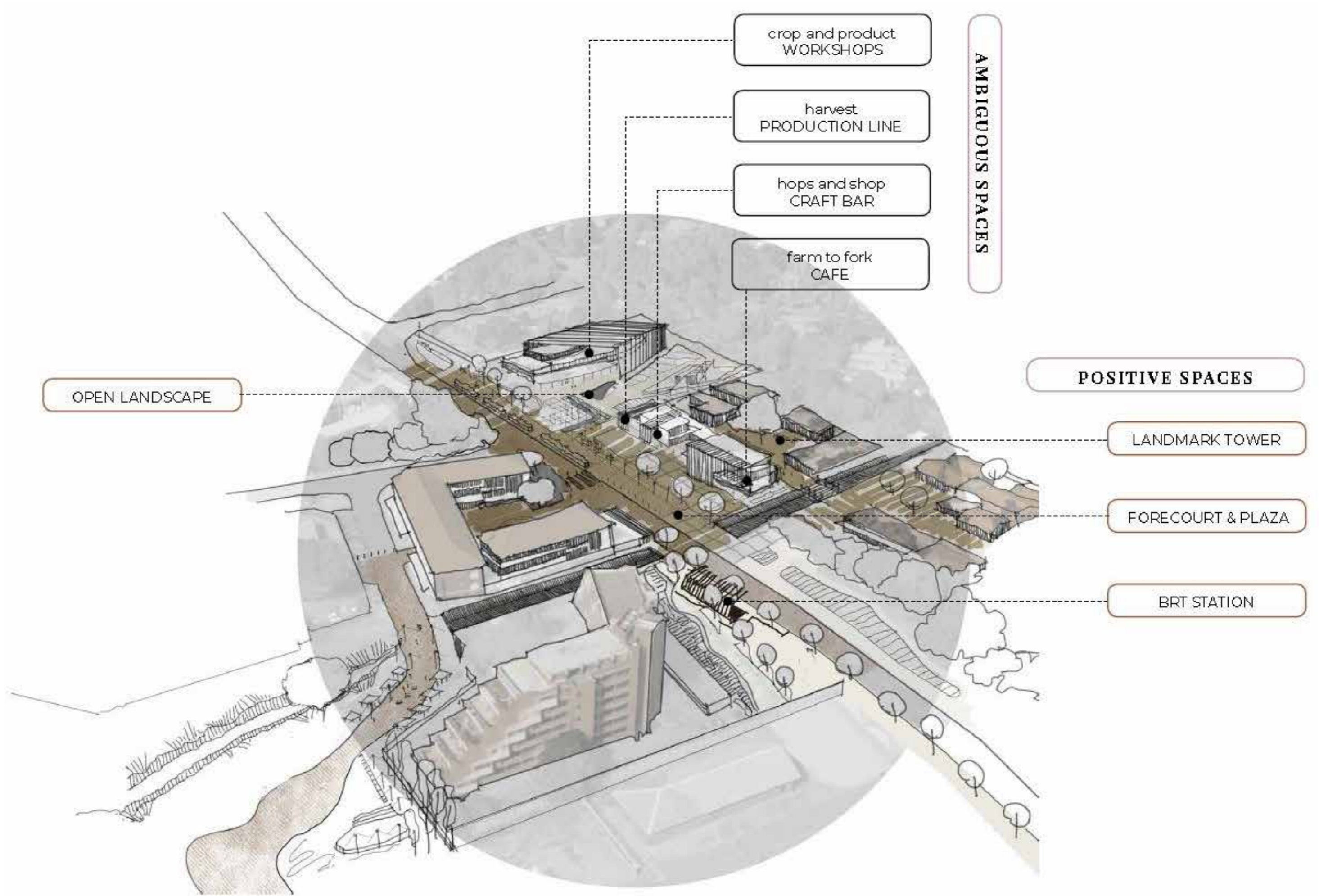
Figure 3.2: Place making guidelines (Project for public spaces, n.d)

THEORY

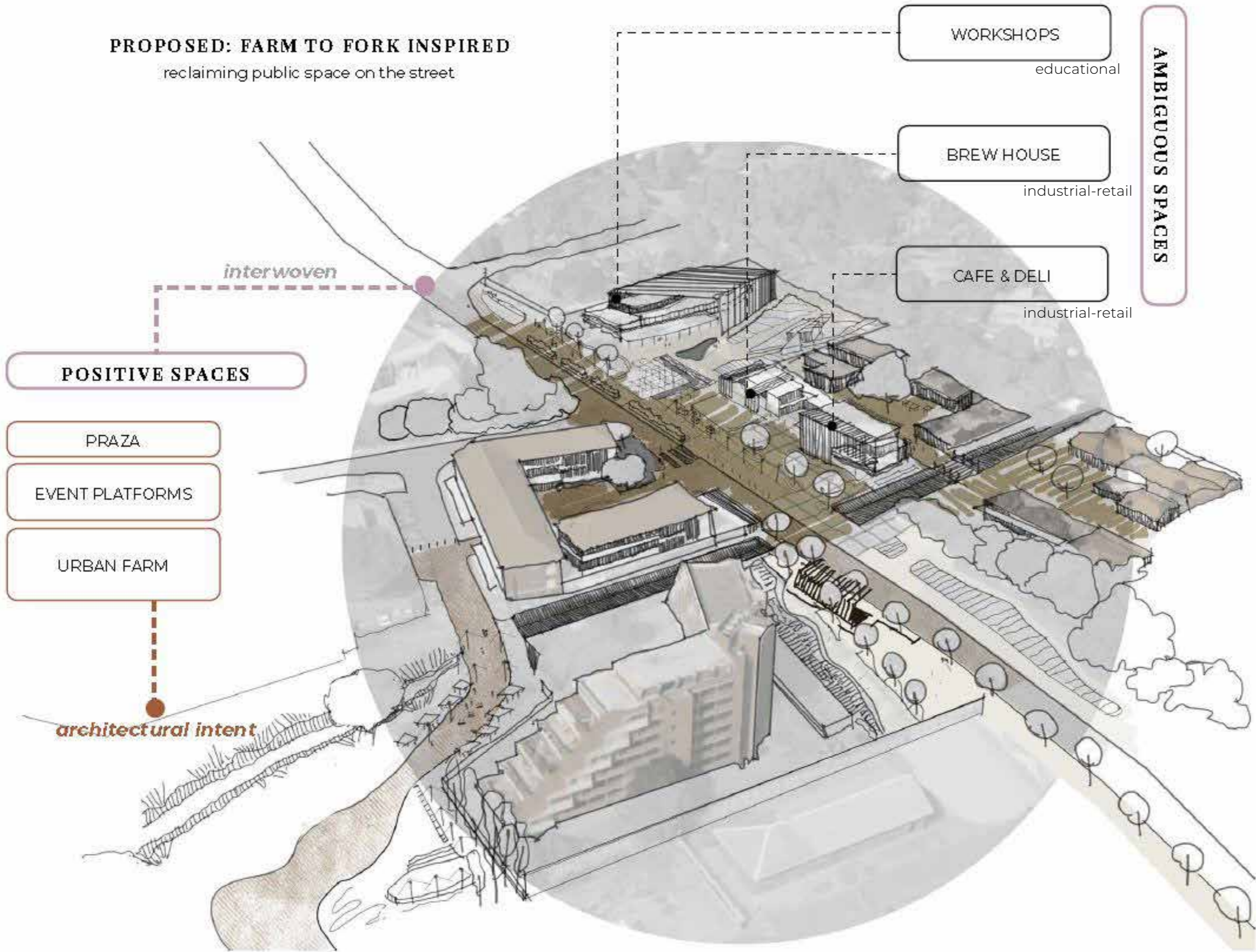
It can be argued that problems associated with under- and over-management of public space have caused a renaissance of public space types. Matthew Carmona summarised a diverse range of arguments, from various authors, based on what public space is. In short, public space is complex and contested, what is clear however, is that there are a range of public space typologies based on function, perception and ownership. These typologies can be categorised according to positive, negative, ambiguous and private space. The categorisation can become increasingly complex as public and private realms intertwine.

ORIENTATION





PROPOSED: FARM TO FORK INSPIRED
reclaiming public space on the street



TYOLOGICAL APPROACH TO PROGRAMMING PUBLIC SPACE

In order to mitigate the societal and environmental consequences as a result of retail dominated public space the project proposes an appropriation or extension of the industrial typology.

Not only will this contribute to the desired authentic market-place experience but it will encourage awareness and connection between the people and processes that underpin our everyday life.

The project proposes that the industrial-like typology be extended to include the retail experience. In order to explain the physical fulfillment of this hybrid-typology one can perhaps conjure up the image of certain

wineries which have opened their production facilities to include an interactive public interface or similarly how the kitchen in a domestic dwelling has become part of the heart of a home (de Bruyn, 2018:6). This approach, to extend the retail experience to include the production processes, ties back to the notion of third space. The dialogue which now potentiates both retail and production space bring about a new found awareness lacking in contemporary public space typology.

CONCLUSION

Undoubtedly the classist and consumerist culture engendered through these pseudo-public spaces has created an ignorant society fabricated upon environmental and social exploitation. Not only are these spaces counterproductive to the notion of public space, stimulating an economic and socially cohesive society, they have also created a society of unconscious consumers. The intention of this dissertation is thus to institute contemporary public space as places which mitigate the division within society, remedy the consumerist culture based on production and waste, and finally celebrate the systemic relationships

between open space and built form. Contemporary public space will once again be able to claim the right to create vibrant environments which uphold a city as a great place to live in.

Finally, in terms of the role that the architecture has to play, it should relate to the street space, allow for a wide scope of users and functions which can change over time. Finally, the architecture should respond to the existing and natural systems on site as part of a responsible regenerative approach.



Figure 4.1: Reclaiming street as public space (Author, 2020)

CHAPTER

04

precedents

This seeks to provide appropriate architectural examples related to components of context, programme, space and technification.

Contextual | Future Africa

Programme | Bezwill's

Programme & conceptual | 3 Dogs Brewing

Spatial & programme | Victoria Yards

Technology | Old meets new house

CONTEXTUAL PRECEDENT:

Future Africa, Pretoria, Earth World Architects, 2017

The Future Africa Innovation Campus was designed with a new approach to learning in mind. Methods of learning and teaching would revolve around lifestyle instead of the traditional lecture hall (Earthworld, 2017). The campus stands as a good contextual but also spatial precedent in the manner medium-density buildings are integrated into the farmland encouraging a pedestrian-orientated dialogue between the architecture and landscape.

A coherent integration between urban design and architecture of the campus was required in order to allow the architecture play a role in nurturing a culture of critical thinking and research (Earthworld, 2017). The campus is designed as a productive landscape in support of campus studies but also allow students to pick some of the edible vegetation from the gardens. The intention

of the architecture of the campus is to play a vital role in the studies of the scholars it houses as well as the environment within which it sits.

Future Africa's brief was to accommodate a range of programs, including a dining hall, a conference center, research commons, and 300 living units, ranging from single bedrooms to family units.

The campus landscape is connected to the buildings through a series of walkways, opens spaces, and productive plots which allow activities, events and movement to form part of a larger system. The expansive campus, even though removed from the urban setting, can create the feeling of a human within an urban setting which gives meaning to the design; the creation of space in par with the creation of building.



Figure 4.2: Future Africa campus (Author, 2020)

PROGRAMMATIC PRECEDENT:

Vir jou eie Bezwill, Hermanus, Western Cape. Principal brewer: Willem de Bruin (also the owner)

The brew house for this project was based off of the 1000L fixed brewing system planned and used by principal brewer Willem de Bruin. His brewery Vir jou eie BEZWILL located in Hermanus, Western Cape, is a micro-brewery with a 1000L brewing capacity, equivalent to 17-20 kegs per batch. It's brew house is situated within a 90m² warehouse, although only roughly 70m² is utilised, the extra space

provides opportunity for future expansion. The brewing process consists of milling the grain, mash, boil and fermentation. Furthermore the brewery also uses a three cartridge filter to remove any sediment, chlorines and metals from the municipal water source. The exact specifications for the entire brewing systems are outlined within chapter 5.

PROGRAMMATIC-CONCEPTUAL PRECEDENT:

3 Dogs brewing, White Rock, British Columbia. Principal brewer: Scott Ketty

A second precedent, that of 3 Dogs Brewing, was taken into consideration for its systemic incorporation of the brew house as community space where patrons can not only taste the beer but enjoy the process as they are see it come into fruition (Brewha, 2017).

3 Dogs Brewing is a community orientated micro-brewery. Their goal was to create a space for social gatherings in a former wine store. The entire brewery is crammed into around 150m² which includes the tasting room, the bar serving area, the milling - and brew area, which takes up around 50m² of the entire available floor space (Brewha, 2017). Their brewing system is a flexible 5 barrel Brewha system, which allows them to move the brewing equipment around within a small footprint. Their beer brewing process however remains the same as many other breweries: they mill, mash, lauter, boil and ferment.

In terms of ventilation and floor drainage no additional adjustments were made because the size and flexibility of this particular brewing system renders a very controlled and easily manageable process (Brewha,

2017).

The lesson applied from this precedent is that a brewing can be relatively clean and safe when designed with the public interface in mind. However to ensure comfort in the tap room the design proposes cross ventilation and evaporative cooling strategies to mitigate some of the heat expelled during the brewing process.

The brewery was designed as an open plan space allowing the seating side to have visual access to the brew side. Patrons can therefore feel immersed in the brewing process, the changes, and the smells which connect them to the time, effort and resources that go into producing the beer they sip on.

3 Dogs brewing has a walk in cold room which directly supplies cold beer to the bar serving area. The design took inspiration from this feature and will itself connect the keg room to the serving taps. Once again establishing the farm to fork concept. The architecture will therefore play vital role in the reinforce the interface between industrial process and retail product.



Figure 4.3: Vir jou eie Bezwill beer (Bezwill, 2020)



Figure 4.4: 3 Dogs brewing (3dogsbrewing, 2020)

SPATIAL-PROGRAMMATIC PRECEDENT

Victoria yards, Johannesburg, Brian Green, 2018

Victoria Yards is an inner-city regeneration project whose goal is to bring about social change. The development started out as an urban farm which eventually grew to include a social and societal educational aspect. Brian Green, the developer of Victoria Yards, envisioned a place filled with artists and artisans that would contribute to the development of certain artisanal skillsets and fulfill a gap in the South African education market.

The intention is to formalize the educational aspect where people from the community are able to be accredited with a certain skillset (Green, 2018). Skillset development includes woodworkers, steelworkers, silkscreeners, glass blowers, other artists, farmers and people who support the arts (Green, 2018).

The complex is a compilation of derelict

buildings retrofitted to create various studios, the space between buildings is used to create edible productive landscape and walkways which connect various spaces and buildings. The site even has examples of granadillas growing on a trellis structure attached to the building façade nourished by an aquaponics system. Terraced meadows grow with wild flowers, attracting bees, adjacent to a theatre like platform in which shows, plays or other events can take place. Whenever an event does take place the meadows will be cut down so that people can place blankets and chairs for comfortable seating arrangements (Green, 2018).

The development is a refreshing approach to inner city development including artisan studios, urban farming, skills development and visual arts with the ambition to stimulate a social and economic cohesive culture.

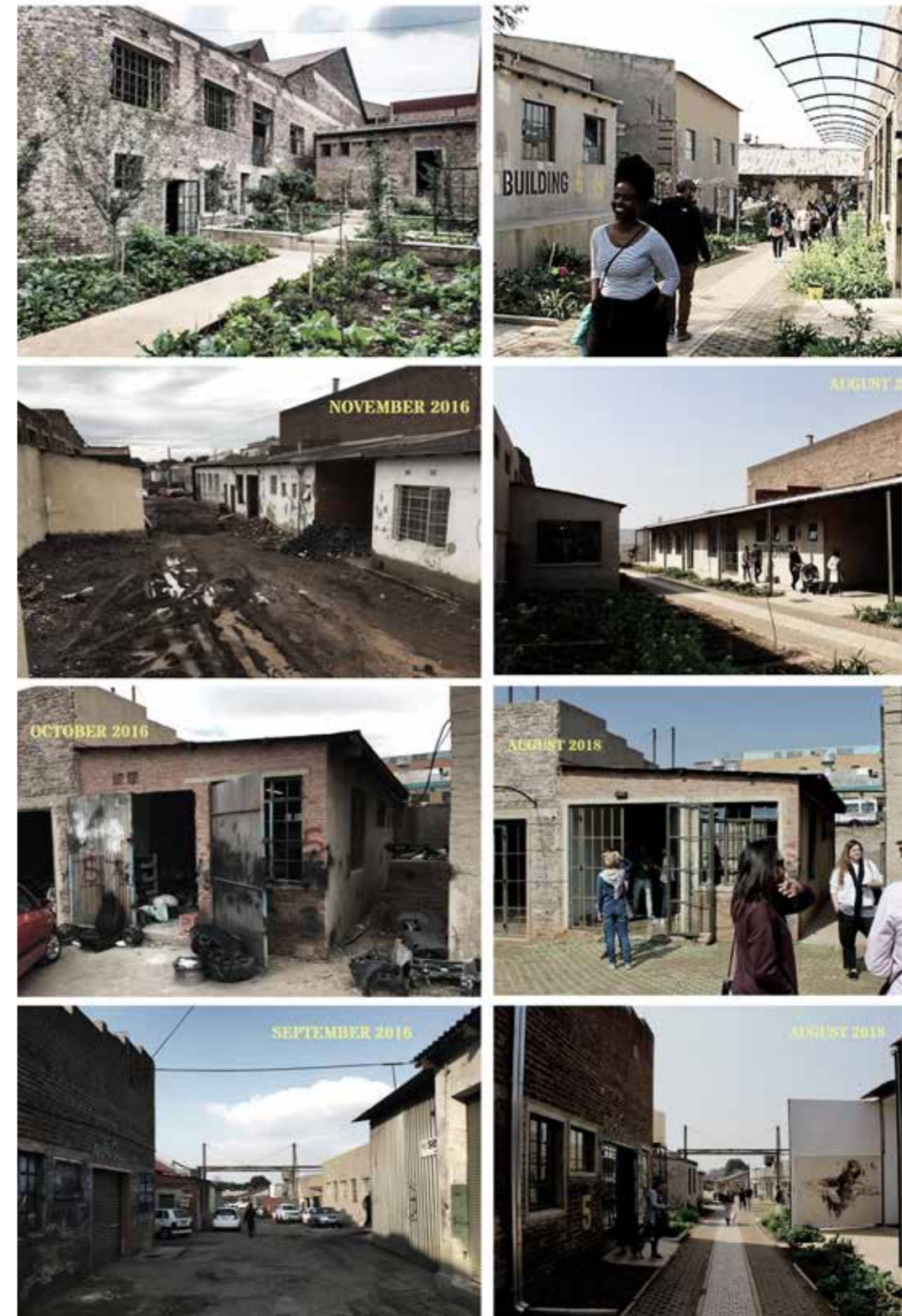


Figure 4.5: Victoria Yards (Victoria yards, 2018)

TECHNICAL PRECEDENT:

Old meets new house, Tra Vinh, Vietnam, Block Architects, 2018

In 2018 Block Architects was commissioned to design a 148m² family home that would reflect their values and reference the traditional Vietnamese three-part country house. This includes three main areas in the heart and two bedrooms on either side (Archdaily, 2019). The house consists of a three-parts enclosed by a separate brick shell. Parallel to these three main areas is what is called the empty land, a space used to harness wind and natural light in order to circulate fresh air through various buffer zones within the house (Archdaily, 2019). The buffer zones include spaces such as the lobby, porch and voids (Archdaily, 2019). The brick shell, used to enclose the house, is designed to create light patterns throughout various parts of the house.

Tra Vinh is a city full of fresh air, not heavily urbanized, and fosters traditional pagodas and residential areas (Archdaily, 2019).

The vertical brick screens allow fresh air and light to penetrate the interior, which might seem controversial to the notion of enclosure, however on the ground floor glass doors separate the three main areas from the empty land whilst the bedrooms are nested in their own white-pods on the first floor, creating comfortable environments on the interior. The roof which continuous the perforated brick pattern has clear polycarbonate panels covering to protect the interior from weather elements such as rain.

The house which combines the use of brick and steel to fabricate the enclosure inspired the brick screening device used within the design. The materials reflect an appropriate response to local use of brick and steel but the new technology provides complexity to the aesthetically pleasing element.

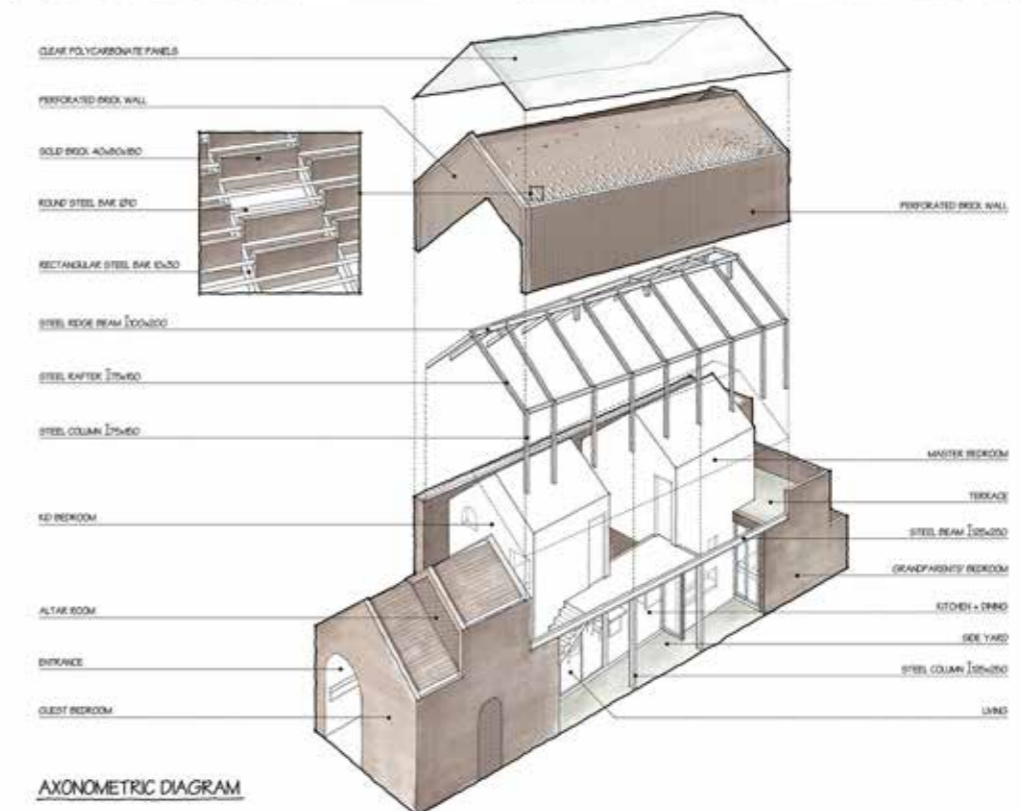


Figure 4.6: Old meets new house (Archdaily, 2018)



Figure 5.1: Farm to fork inspired programme within the city (Author, 2020)

CHAPTER

05

programme

a farm-to-fork inspired approach to public space making

The chapter focuses on the programmatic development which responds to the theoretical framework, discussed in chapter 3, and explores a farm-to-fork based approach to reclaiming public space.

BACKGROUND AND DELIMITATIONS

Farm to fork inspired programmes are proposed in conjunction to reclaiming the street as the main public space within the city that goes hand-in-hand with cultivating a sustainability culture within society. The intention is to reintroduce processes of production within a retail environment in order to mitigate those negative societal, social and environmental issues discussed in Chapter 3. The project will focus on the resolution of a brew house which utilizes the site resources, namely urban farming and harvested rain water, to reveal systemic productive relationships engendered in a suburban context. The café-bakery also benefits from those symbiotic relationships however for the purpose of this dissertation the building for the café-bakery will be resolved at a meso-level. The workshops, which ties

into the University of Pretoria's Department of Agricultural programs, are a proposed a future extension of the urban farming and will be resolved at a macro-level.

consumed on site, this ultimately aims to mitigate the environmental and social exploitation of commodified public space. Thirdly, celebrated craftsmanship also ties itself back to the opportunity of an enlarged scope of demographics to provide the unemployed or unskilled citizen with the opportunity to train, work, and find a passion within the various proposed programmes. Finally, the interaction and participation between consumers, traders, farmers and artisans will reassure a cross-fertilisation of knowledge, linked with the agenda to encourage an improved sustainable culture, as well as social and economic cohesion in society.

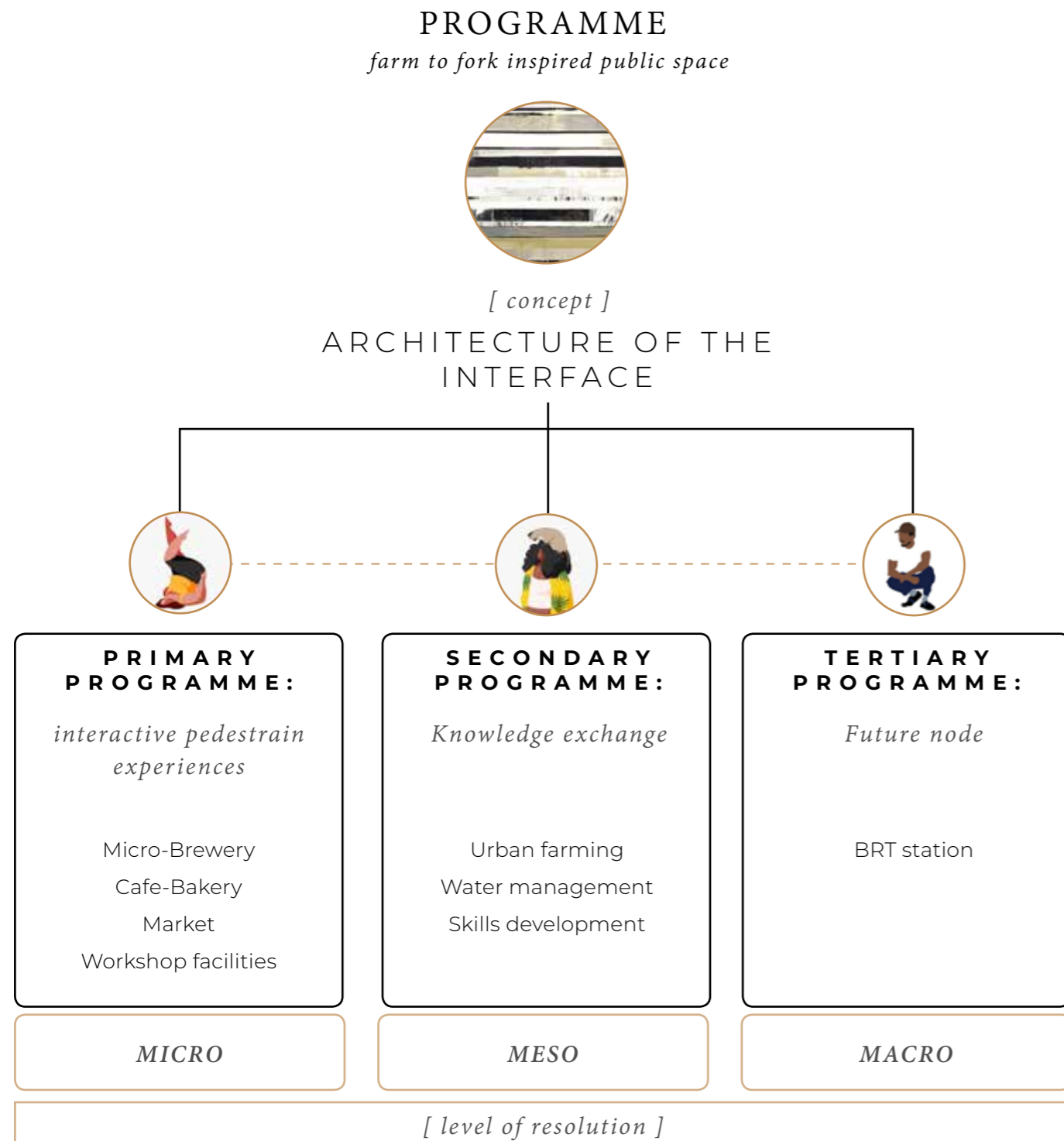
INTRODUCTION

Architecture of the interface deals with the relationship between building and the street edge. The programme as an extension of the theoretical argument proposes an improved and contrasting approach to the current status of contemporary public space. The project proposes that contemporary public space has a more inclusive approach to the urban and outdoor environment, moreover it should respond to the existing a natural systems on site and offer itself as an extension of the urban experience. Carmona and Landman, as well as other renowned urban designers such as Madanipour and Sorkin have criticized how pseudo-public space competes with the urban experience as citizens desire to experience something authentic (Landman, 2016: 34). The experience itself has become interchangeable with that of a shopping experience as these spaces have been commoditized to satisfy peoples' need for a safe and controlled place for public assemblage and similarly neoliberal developers' pursuit for profit.

The primary objective of this dissertation is to integrate pseudo-public space as part of the urban experience. In this approach to reunite public life with truly public space, the street, a larger scope of citizens are allowed to engage with the authentic sustainable synergies that exist between the farmers, artisans and consumers and start voicing the concern for a sustainable culture in society.

The farm-to-fork inspired programme:

A sustainable approach to contemporary public space



Spatial implications *Primary, secondary and tertiary* *programmes*

In order to reclaim the street as public space the programme proposes that the farm to fork inspired brewery, bakery, workshops, and market, as primary programmes, to form part of the Future Node planned in the Tshwane 2055 Vision. This means that the junction between Lynn Park Centre and the site considers the planned BRT station (according to the Spatial Development Framework, 2012), as the tertiary programme, to contribute to the pedestrian activity. In turn the additional activity will contribute to the scope and demographic exposure to the programmes and systems in place whose goal is to bring about alimentary awareness, facilitate public life and uplift those in need.

Secondary programmes are about exposing farm production and related craftsmanship processes in order to attribute value to the products we consume on a daily basis. Primary programmes will be situated between open areas, walkways and productive landscape in order to stimulate pedestrian circulation and participation in various processes. Furthermore craftsmanship form part of the a community upliftment programme facilitated by the University's agricultural department. This is coupled with exploiting the sustainable practices in support of those primary programmes. Secondary programmes consist of:

- (a) Urban Farming
- (b) On-site water management
- (c) Skills development

PROGRAMMATIC INFORMANTS

Programmatic rational: *a connection with origin*

Origin refers to the awareness and holistic consideration of where things come from. The programme seeks to draw attention

and value to the notion of "origins" by establishing a connection with nature, by exposing the time and resources that go into alimentary production. The programmatic interface aims to be inherently regenerative in establishing coherent relationship with existing and natural systems on site in order to maintain a state of vitality within an urban setting.

The farm to fork approach encourages people to slow down and connect with nature and other people. A cross-fertilisation between people visiting, exercising or training in their craft whilst immersed in an urban farm setting will most assuredly contribute to an improved integration of public space and ultimately public life.

Macro level: Urban Node

This specific tract of Lynnwood road is directly associated as a future node to house the BRT station and acts as the link between Menlyn and the CBD. The area thus serves as a place of collection and exchange contributing to the process of transformation that this dissertation proposes.

The strategy is the implementation of positive-, negative-, and ambiguous spaces (Carmona, 2013, p. 169) that collectively form part of a network which makes up the contemporary public space realm.

Meso level:

Sustainable resource management

(i) Water management

Water becomes an important element used within the design to connect visitors with nature and the notion of slowing down. It plays a key role in illustrating the holistic farm to fork approach and as part of an attraction point in the building forecourt. Fortunately Hartebeesspruit also forms part of this tract of Lynnwood, and provides the project with the opportunity to introduce a natural system on site. Filtered water from harvested rain and storm water is used

as educational features in positive (open) spaces where pedestrian activities and events take place.

A water treatment bed, using bio- filters as a natural element, is integrated between event platforms where market stalls, exhibitions and seating can take place. These terraced platforms could also host amphi-like seating for larger events like performances.

(ii) Urban Farming

Urban farming is used in conjunction with water management in order to achieve a functional public space. Apart from the aesthetic and educational role it plays within the design it produces the resources required in the production of the brewery and café-bakery. Barley and hops are planted and harvested on site, while waste is used to contribute to on-site soil fertilization or donated as feed. The café-bakery sources its fresh produce from smaller vegetable, herb and spice crops on site. Patrons are also able to partake in courses, facilitated either by the café or workshops, which will teach them about botanicals, farming, artisanal farm products, and or a variety of other creative workshops.

In tying back to the theoretical argument it is the ambition of the urban farm in combination with the workshops to uplift the urban environments through education, employ and enable homeless people to develop skills and finally bring about a type of cross-fertilization of people.

Micro level: *Interaction & Exchange*

The intention is to allow people to do the things they would typically like to do in public space. People like to sit, eat, drink, observe, and 'participate in another's existence' (Taljaard, 2018: 48). Culture is formed upon inter-relationships dependencies (Annear, 2019: 52) and with that in mind the project

proposes that a sustainable approach locally-based farm-fresh products alligns itself with the dissertations ambitions to coneract the status quo associated with current pseudo-public space.

(i) Micro Brewery and Cafe Bakery

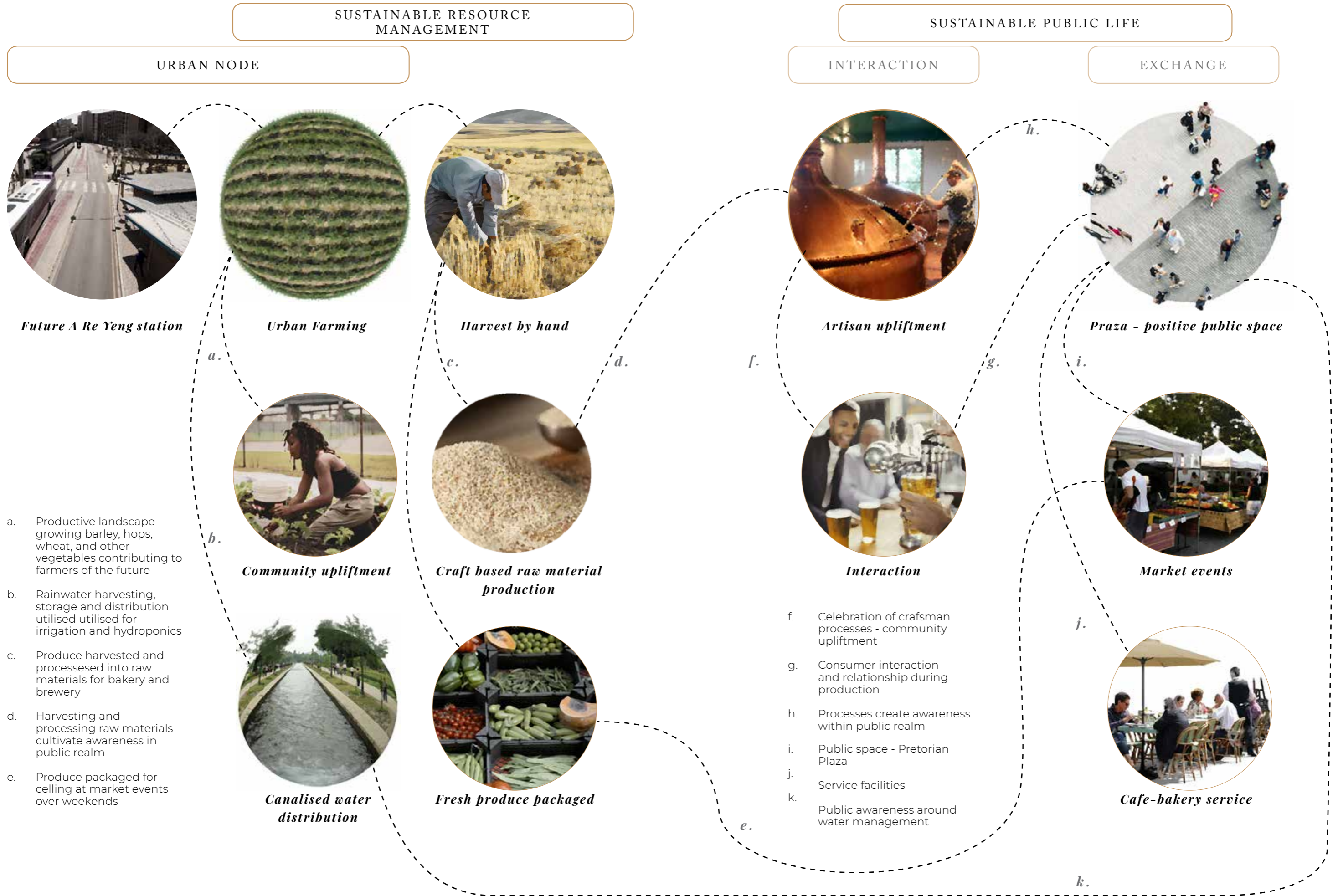
The brewery and cafe-bakery occupy real estate toward Lynnwood road and contributes towards a commercial aspect attracting awareness and activity. In an attempt to extend the commercial-retail experience the brew house is topologically fitted to that of an industrial warehouse. The nature of the site allows a larger diversity of people to have access to the site and as an extension thereof the craftsmen who exhibit their skills in brewing, farming or in the bakery. These interactions encourage relationships between the different users on site. The space in front of the brew house is used as open space where markets, exhibitions or other events can take place.

(ii) Workshops

The workshop facilities have a strong educational role to play on site. On the one side student from the university will use the facilities to conduct practical workshops hosted by the department of agriculture. On the other the workshops will act as a type of tourist attraction. The urban farm is used as a garden which patrons can explore and use during a workshop course. Finally the workshop programmes will contribute to skills development and upliftment of those who are less fortunate the community.

(iii) Market

The market is defined within the Pretorian Plaza - or Praza - engaging in dialogue with the street as well as the open spaces, walkways and functions on site. The market facilitates weekly rituals which in turn contributes to connecting and strengthening those inter-relational dependencies which bring community and culture together.



Micro-brewery system

Below is the specifications and configuration of a 1000L brewing system. A micro-brewery will have anything between 500 up to 3000L brewing capacity. For this brewery the brewer will be able to brew between 1 to 3 times per day providing ample opportunity for patrons or visitors to the site a glimpse into the brewing process.

Configuration for a 1000L system

Description	Component specification	Capacity	Spatial requirement	Process description	
Malt milling unit				Grain particle crusher	
Brew house unit	Hot Liquor Tank (HLT)	2000L	100m ²	The micro brewery is set up for a three barrel unit. Brewer will be able to brew between 1 to 3 times per day. Around 20 kegs can be filled from one brewing.	
	Hot water pump				
	Mash Tun	Effective 1000 L Total 1500 L			
	Boiling Kettle	Effective 1000 L Total 1500 L			
	Two stage heat exchanger				Wort runs through heat exchange plates to cool down to 70C
	Wort pump				Used to pump wort between tanks
Fermentation unit	Conical cylindrical fermentation tank	Effective 1000 L Total 1500 L		After fermentation beer is poured into kegs	
Cold room	Refrigerators		12m ²	Storage of hops, yeast and other additive ingredients (eg pumpkin, citrus etc.)	
Dry room	Stacks		12m ²	Storage of malted grain	
Keg room	Cooling room for kegs used in tap room		20m ²	Storage and cooling of down of kegs used directly in tap room	
Controlling Unit	Cabinet with electrical controls for temperature, on-off controlling		n/a	Controlling fermentation tanks and keg cooling room	

Figure 5.4: Micro-brewery configuration (Author, 2020)

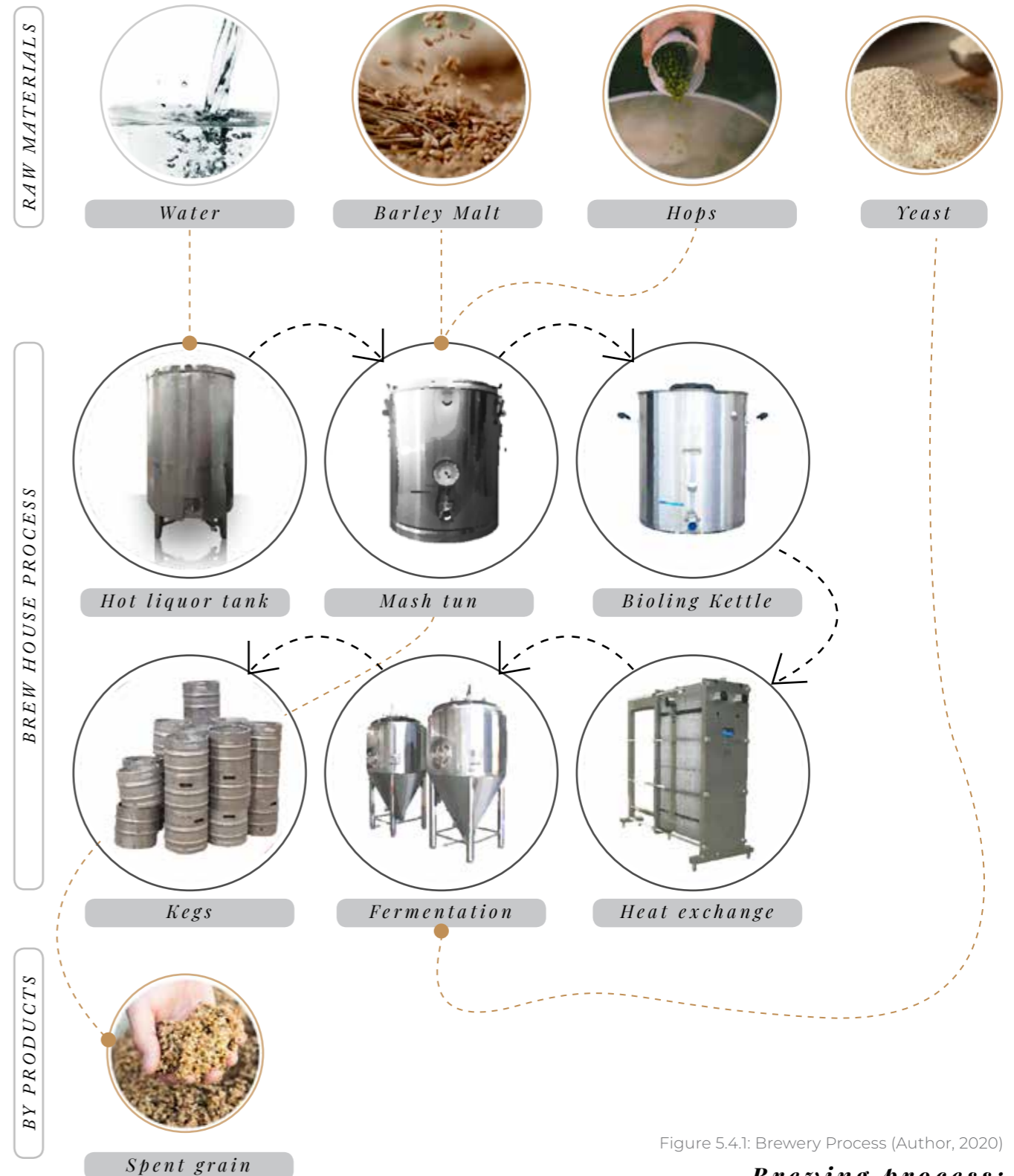


Figure 5.4.1: Brewery Process (Author, 2020)

Brewing process:

Malted barley is fed into a grain mill from a gantry. The first step is to boil water in the hot liquor tank (HLT) until it has reached the desired temperature. The next step is to fill the mash tun with the boiled water (from the HLT) and milled grain which steeps the grain for about an hour. The malt mix (called wort) is then pumped into a boil kettle to boil for another hour; this removes bitterness from the mixture. The spent grain is scooped out, left to cool down and finally used as fertilizer or feed. Depending on the brewers preference hops will be added near the end of the boil; this adds aroma to the beer. The beer is then run through a heat exchanger (around 11-17 degrees Celsius) to start the fermentation process. This micro-brewery is design so that the boil kettle is used as part of the cooling down process, after the beer is pumped through the heat exchanger it will sit in the boiler, with the lid open, until it has cooled down to around 65-75 degrees Celsius. The cooled down beer is ready to be pumped into the fermentation tank(s) into which yeast is added and allowed to ferment anything between one to three weeks (de Bruyn, 2020). After fermentation the beer is pumped into kegs, to then be stored in a cold room or sold. Around 20 kegs can be filled from one brewing. In the brew house the tap room directly taps from the keg room to serves fresh cold beer.

Cafe-bakery schedule

Below is the specifications and configuration of a multi-functional cafe-bakery which utilizes and celebrates the produce, processes and production of the urban farm. The intention is to have an open-plan space with a lot of visual access as to encourage interaction and exchange between patrons, public and artisans.

Configuration for a full-kitchen bakery and cafe

Area description	Component specification	Considerations	Spatial requirement	Process description
Kitchen	Grain milling and bagging station	Visual access enables interaction between patrons and artisans. Ventilation.	51m ²	Grain particle crusher into wheat flour
	Preparation area			The kitchen is a multi-functional space where baking breads and pastries can occur in conjunction to preserved products as well as meals produced from freshly harvested urban farm produce to cafe patrons.
	Oven			
	Cooling area	Service facilities should not be visible to public/patrons. Areas designed as walk-in rooms.	8m ²	Wet or perishable produce storage area
	Cold room			
	Dry Room			Dry or shelf products storage area
	Back of house			Cleaning and utensil storage area. Staff lockers.
Deli-section	Storage & display	Effective 1000 L Total 1500 L	75m ²	Breads, pastries and preserved products are to be displayed and sold from the counter. Other farm-fresh products are also able to be stored in their place of display within this section.
	Refrigerators			
	Counter & display			
Café	Indoor & outdoor seating		indoor: 78m ² outdoor: 150m ² +	Patrons are able to be served some of the lovely fresh, baked or preserved food from the land.
	Barista bar		12m ²	Coffee station manned by artisan barista.

Figure 5.5: Micro-brewery configuration (Author, 2020)

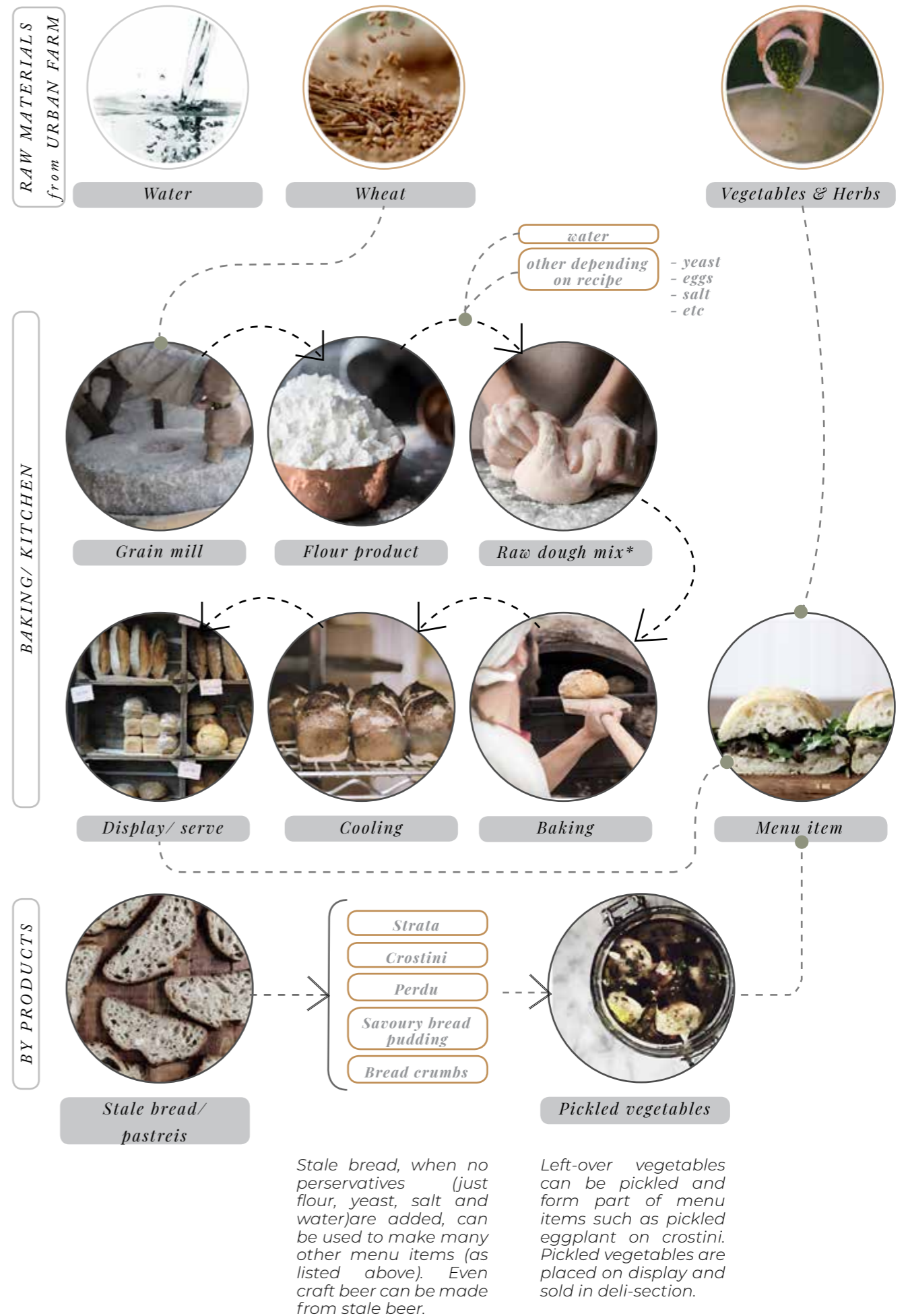


Figure 5.5.1: Bakery processes (Author, 2020)

CHAPTER

06

design development

Manifesting contemporary public space: the Praza



Figure 6.1: Developing the praza (Author, 2020)

INTRODUCTION

Manifesting contemporary public space: the Praza

Architecture of the interface aims to manifest how contemporary public space in Pretoria can be situated within a transit orientated environment. The design concept is inspired by the touchstone, Chapter 1, and the theoretical argument discussed in Chapter 3. The idea of a Pretorian Plaza, or Praza if you will, does not conform to any specific typology of public space, instead allows public space to be defined by the meaning (Landman, 2015) and use (Carmona, 2010) its visitors assign. It aims to encompass the analytical, theoretical, programmatic, and precedential aspects discussed in those previous respective chapters.

As a retort to the fragmentation created by private neoliberal-developers and segregationist policies the project addresses the narrow scope of street use, the consumerist culture, and the urban inequity it underpins. As envisioned in the tract of Lynnwood road, its retail accessibility, social and productive interdependency, integrity of product and facilitation of public life, serves as a critique on consumptive-driven islands, which support a classist society, in the urban environment. It an approach which explores the integration of the street with the controlled setting of built form to potentiate both realms of public and private.

The physical fulfillment of this concept requires introducing into the transit orientated environment an extension of the consumer's trade experience with a system of alimentary production and artistry. The aim is to reintroduce the nuances of industrial-like production to the previously unconscious consumer by creating a surrounding experience of production and processes within a pedestrian activated setting. Furthermore, the intervention ensures economic opportunity to the unemployed by allowing them to participate

in the production, training and farming processes which conversely contribute towards the Tshwane 2055 goal of achieving social and economic cohesion within the city.

As a point of departure the allotted site aims to acts as a future extension of the Strip development, located down Lynnwood Road, and ties into Lynnpark Centre, adjacent Lynnwood road, both of which independently evolved into places of public assemblage as a response to the need to authentically experience public life.

Secondly, space for productive landscaping exist on the selected 1,3 hectare site and as a future consideration the grass planes adjacent Maroela Mens residences can be transformed into urban farmland both of which is linked by the natural ecosystem of Hartebees Spruit flowing towards the north all the way through LC de Villiers.

Finally, the proposal takes place within a medium dense suburban setting with fragmented allotments of public assemblage, which sit along a public space only accessible through vehicular transportation. The main issue this dissertation aims to address is the exploitation of streets primarily for vehicular circulation which negates the potential to facilitate public life.

This chapter comprises of explorations to develop a more appropriate response to street space to show how the conditions and relationship between built form and street space can be shaped to enable more socially and environmentally conscious developments.

DESIGN INFORMANTS

Conceptual approach to architecture of the interface

Typological intention:

Open public space, of which the street is a constituent of, have become desolate allotments creating derelict and neglected spaces in the urban landscape. This dissertation proposes an extended understanding of public space by utilizing a non-typological approach to manifest contemporary public space.



Fig. 6.2: Local examples of a plaza, park and street as desolate traditional public space in Pretoria (Author, 2020)

Programmatic intention:

(i) Public life and ritual

The culture and nuances of public life is explored within the non-typological approach to creating a Pretorian plaza. Alleys and forecourts are used as spaces which activate pedestrian activity.

(ii) Production

A café-bakery and micro-brewery is explored in the form of industrial-like production processes. These will contribute to the trade experience and the economic upliftment programs.

Architectural intention:

Pedestrian activity in the open spaces instill symbiotic relationships between site resources, walkways, and open areas and consequently encourage interlinked experiences between people and functions on site. Spatial consideration regarding the interface between industrial-like processes and public aim to encourage knowledge transfer and connection across a larger demographic.



Fig. 6.3: Illustrating programmatic and architectural intentions and their connection

Dissertation intention:

Reconciling streets as the main public space with the city

This dissertation proposes that contemporary public space should be the product of an appropriate response to the existing and natural systems on site as part of the building blocks of the architecture which aims to instil those interlinked experiences and spaces.

Fig 6.4 illustrates how contemporary public space will be the product of space utilisation (positive, negative, and ambiguous) and meaning (thirdspace dialogue) as argued in the theoretical chapter. All of is underpinned by regenerative principles to ensure a resilient future for the space itself but also as a contribution towards educating society about a resilient and sustainable future.

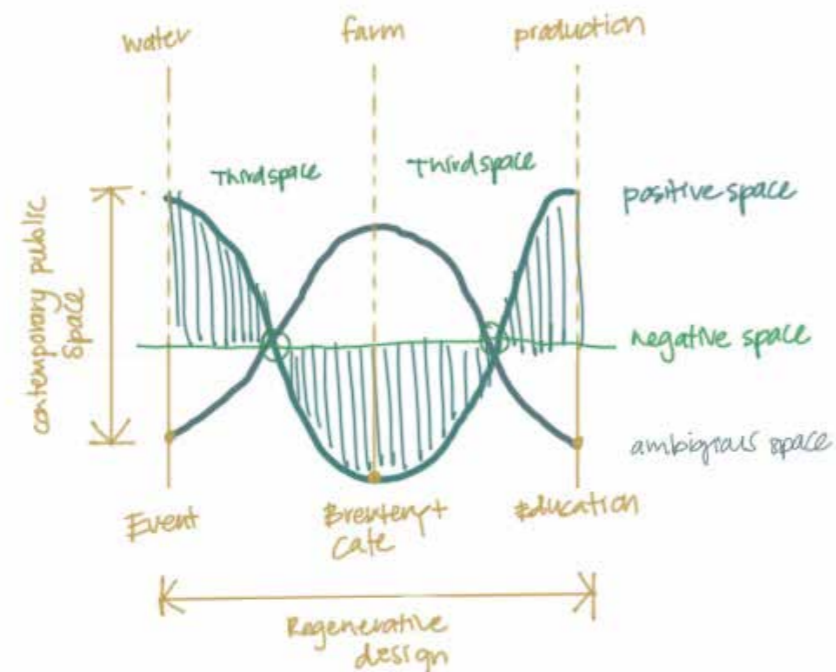


Fig. 6.4: Conceptual diagram of how contemporary public space is the result of theoretical argument based on space usage, meaning and regenerative principles (Author, 2020)

- A. The intention is to effect change in the main available open public space within the city by redirecting the way street configuration is incorporated with the architecture of a site and its building.
- B. Redirecting the inward focus of public assemblage, as discussed in chapters 2 and 3, to one that is more inclusive of the natural environment. The intervention encourages participation, interaction, social and economic cohesion to a larger demographic of society.
- C. The essence of reclaiming street space to facilitate public life can set in motion a paradigm shift in the way architecture is developed. The flexibility and future opportunities in which architecture can respond should be explored.
- D. Lastly, the overriding architectural intention is to regain the quintessential quality of public space and engender consciousness regarding honest food production and sustainability.

Touchstone:

Spirit of the space - Architecture of the interface

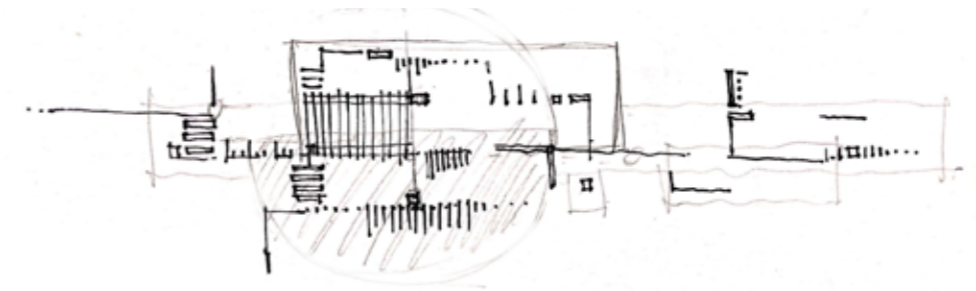


Fig. 6.5: 2D representation of touchstone (Author, 2020)

The touchstone aims to capture an essence or spirit of the design. It talks about systemic relationships, spatial connection and linear integration alongside a main road. It also captures something of raw materiality which alludes to the notion of extending the retail experience to include authentic industrial-like processes.

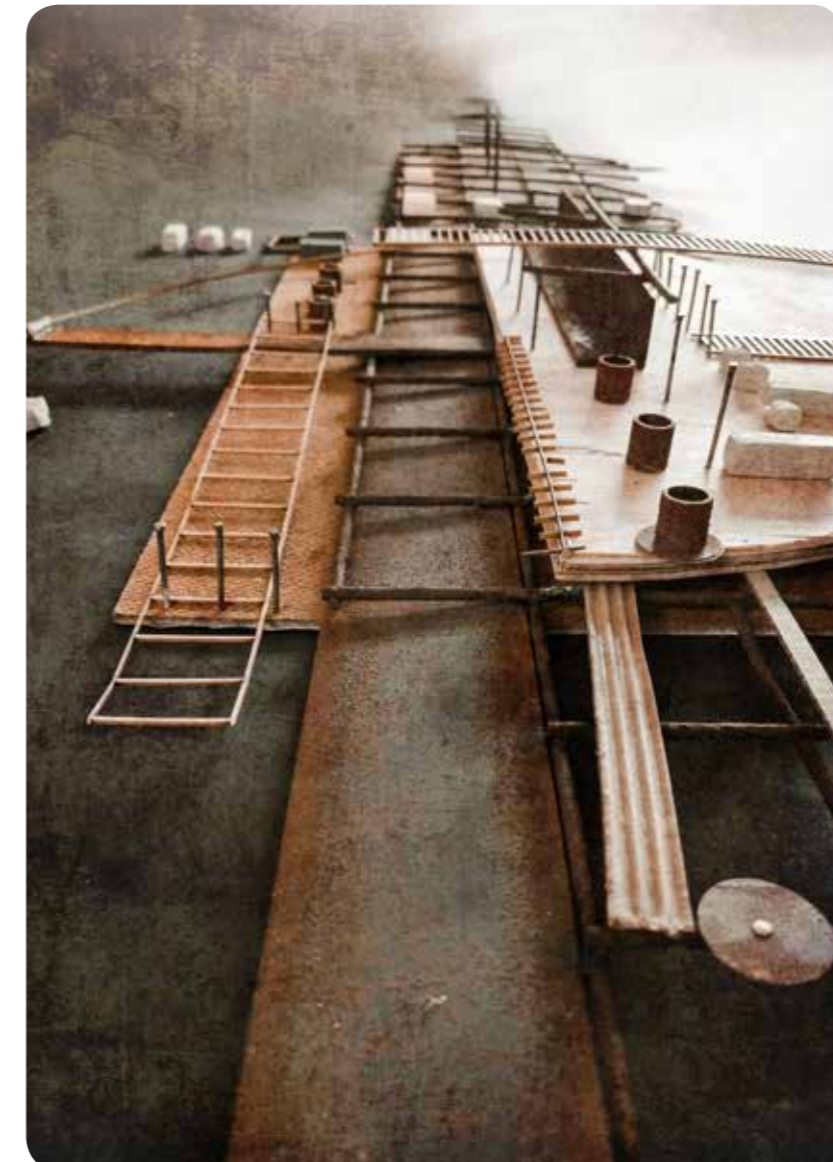
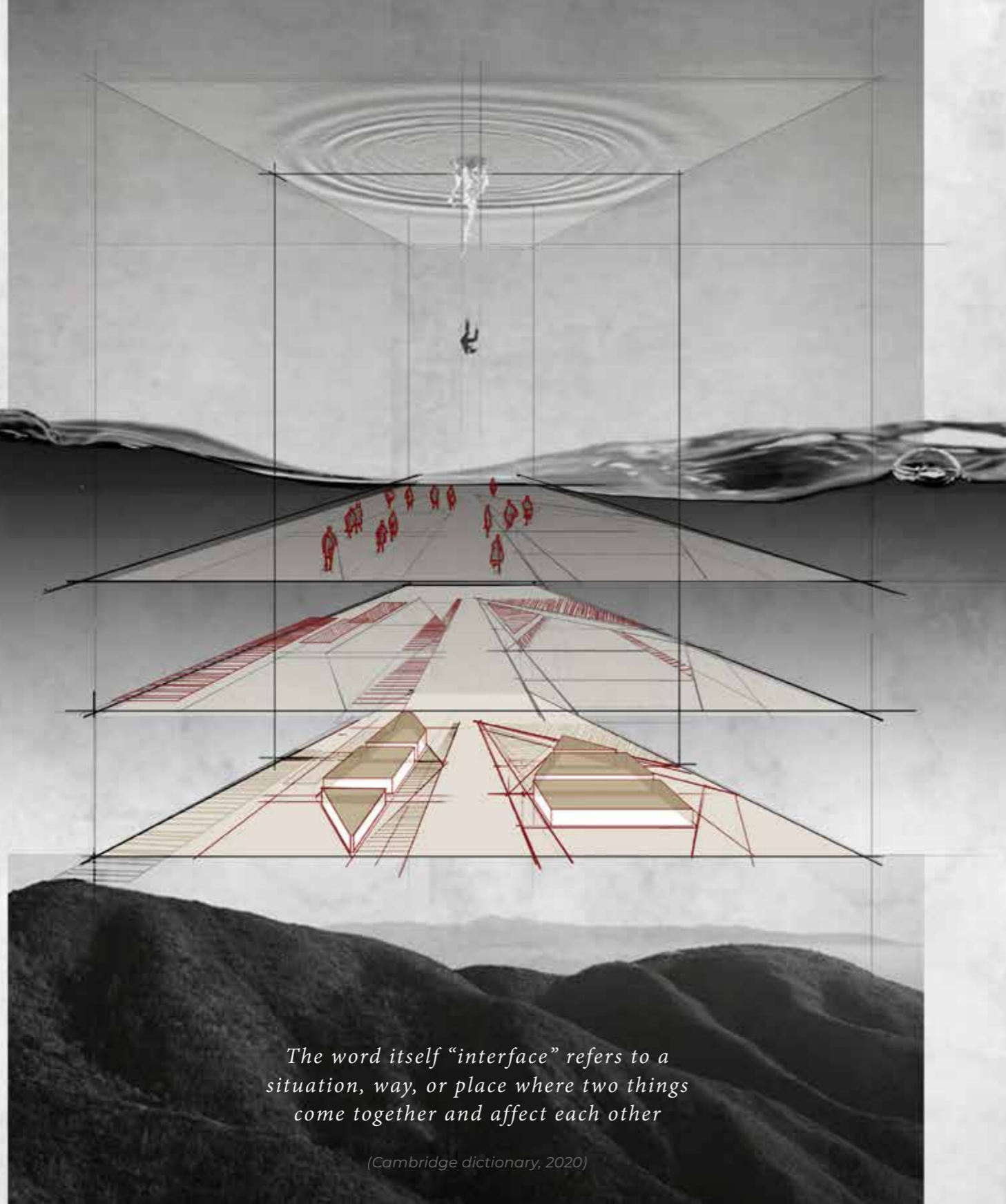


Fig. 6.6: Touchstone model (Author, 2020)

CONCEPT

Architecture of the interface



The word itself “interface” refers to a situation, way, or place where two things come together and affect each other

(Cambridge dictionary, 2020)

CONCEPT

Architecture of the interface

Architecture of the interface, as the golden thread for this dissertation, seeks to project an approach whereby planners and practices can incorporate street conditions as part of the architecture which activate pedestrian activity and ultimately facilitate public life within a city. The holistic vision aims to celebrate the exchange of knowledge between people and processes and explores the way in which architecture can inform and convince society to embrace an environmentally conscious future.

Architecture of the interface incorporates systems of production, retail and waste as exposed experiential devices which the visitors to the site can understand and ultimately learn from. As an extension of the concept the architecture wishes to celebrate the artistry, time and phases that goes into food production, it therefore aims to celebrate the services, logistics, and resources which contribute to a final product.

Ultimately exposure to processes and systems in real time will contribute to a more authentic experience, giving visitors a mental and sensory connection to the systemic relationships, which awakens an understanding of products consumed on a daily basis.

DESIGN DEVELOPMENT:

The following aspects are considered as design generators.

URBAN PLACEMENT

A

Location

Lynnwood road, Pretoria

B

Importance

The role that architecture can play in changing the way street space is used and perceived within a transit orientated environment

C

Technology

Responding to the existing context in terms of materiality, as well as existing and natural systems

D

Model

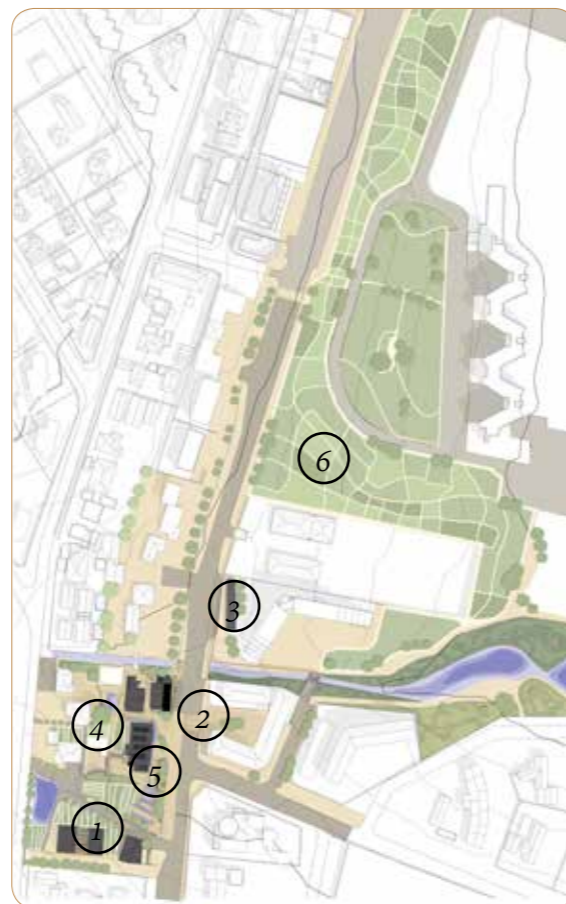
(i)

Respond to the organic development of the Strip down in Lynnwood Road

(ii)

Respond to the organic metamorphosing at Lynn Park Centre adjacent Lynnwood Road

URBAN INFORMANTS



1. Demolished site to form part of productive landscapes and workshops
2. Proposed Praza in building forecourt
3. Proposed BRT station as future node
4. Independent businesses to form part of internal Praza
5. Proposed insertion of beer and bakery production processes
6. Proposed future consideration for urban farming and street edge development

SUMMARY OF INTENTIONS

Architectural and philosophical intention

Architecture of the interface as the main objective of this dissertation aims to establish a dialogue that potentiates both the private and public realm whilst informing society about the some of the natural and industrial processes that underpin everyday life.

(i)

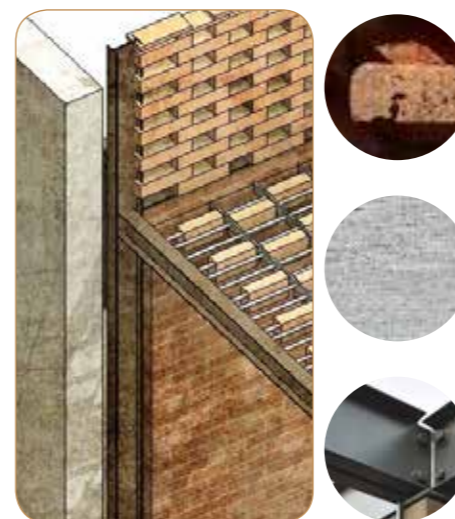
Street space as part of building landscape

(ii)

Exposing production and natural systems as a tool to remedy the unconscious consumer

Materiality

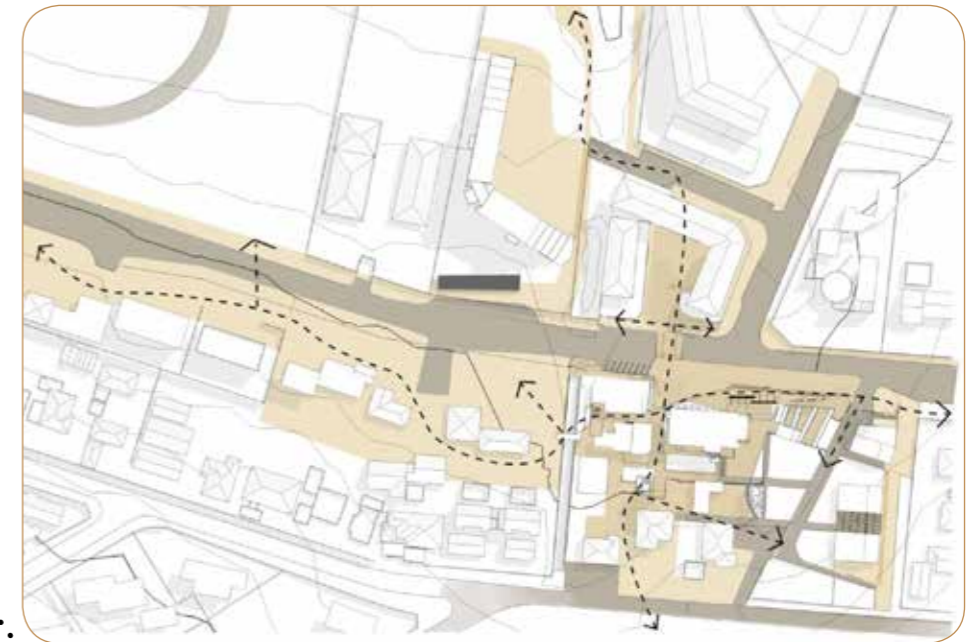
Response to regional vernacular of brick, concrete and steel with new aesthetic complexity



SPATIAL IMPLICATIONS

Reclaiming street space for pedestrian activity

In order to recreate street as Pretorian Plaza, an approach to urban equality, a portion of Lynnwood will be narrowed and undergo surface change in order to slow down traffic and demarcate pedestrian space.



Architecture of the interface

The interface between production processes take place in an interactive manner. Architecture of the interface therefore aims to allow production, public movement and events to intertwine as a cross-fertilisation of experience and knowledge occurs.



DESIGN DEVELOPMENT:

Design iterations and reflections

DESIGN ITERATION ONE:

Urban response

In order to engage the pedestrian realm with the larger context a consideration towards tactical urbanism principles were given. Tactical urbanism is a pedestrian centric approach which provides temporary, short-term, and cost-effective solutions intended to produce long-term change (Lyndon, 2020). The implementation of bicycle lanes, parklets, pedestrian plaza and a change surface treatment (as illustrated in figure 6.8) are the tools used to transform derelict street edges into vibrant places where user experience can be tested to determine the success of the project tactics. The application thereof was focused on the junction of Lynn Park Centre with the existing businesses and a demolished site (allotted site A).

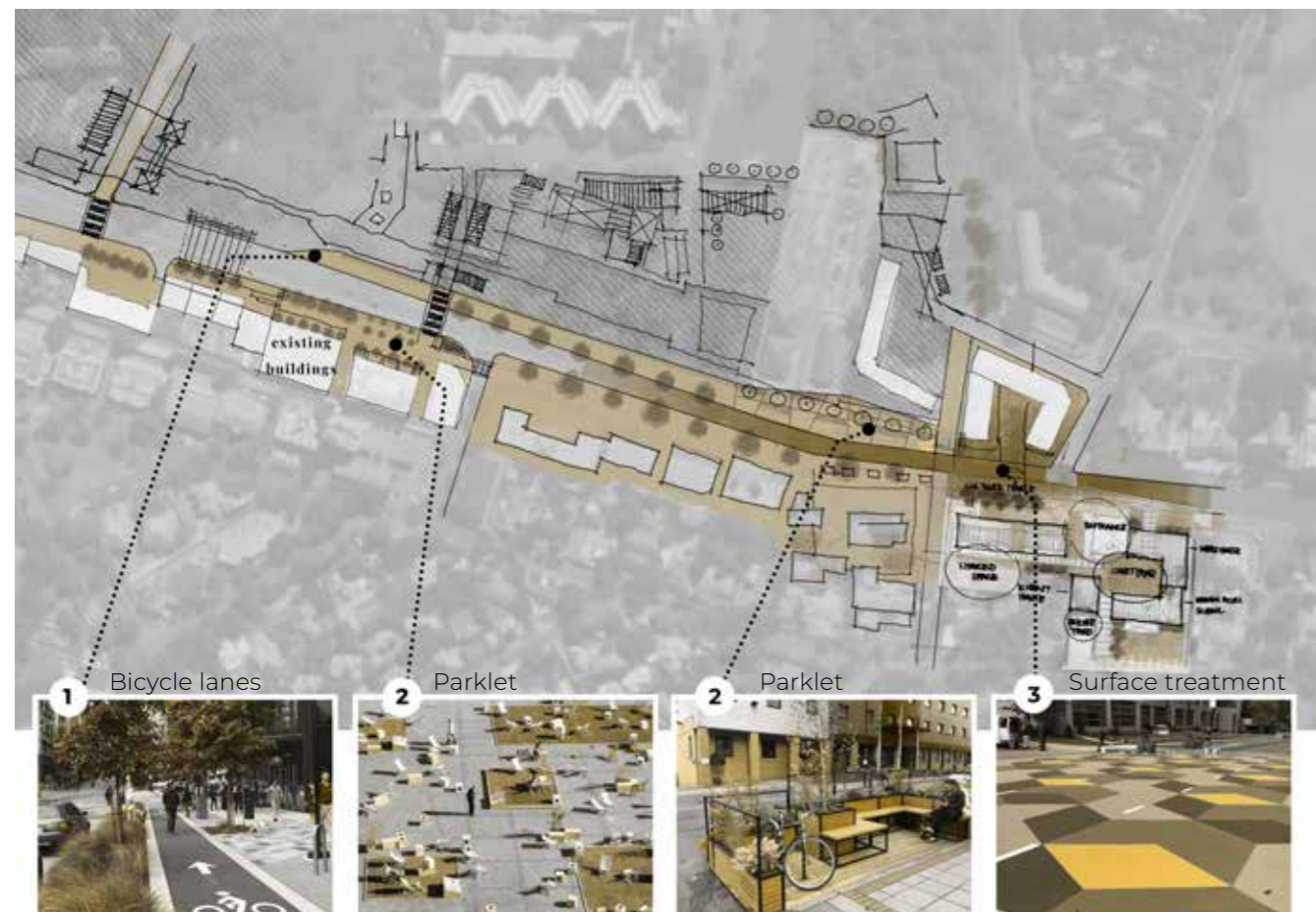


Figure 6.8: Tactical urbanism applied to transform edge conditions towards a pedestrian centric environment (Author, 2020)



Figure 6.9: Initial framework for intervention (Author, 2020)

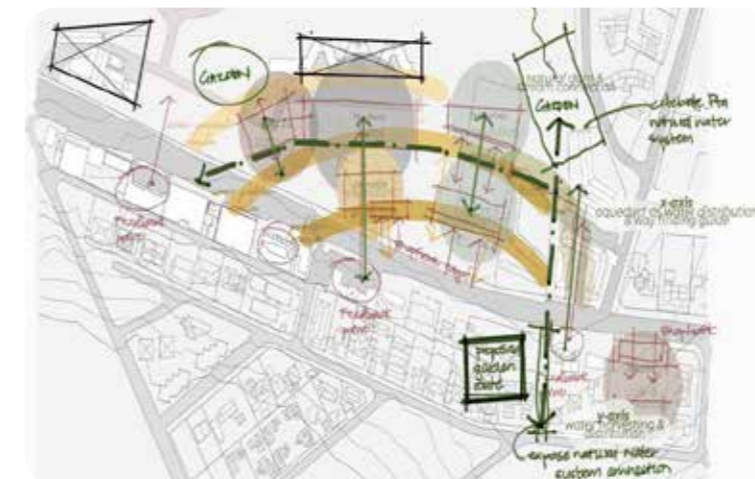
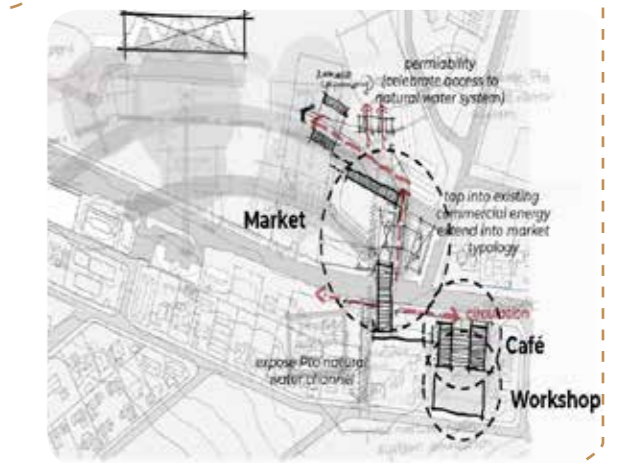
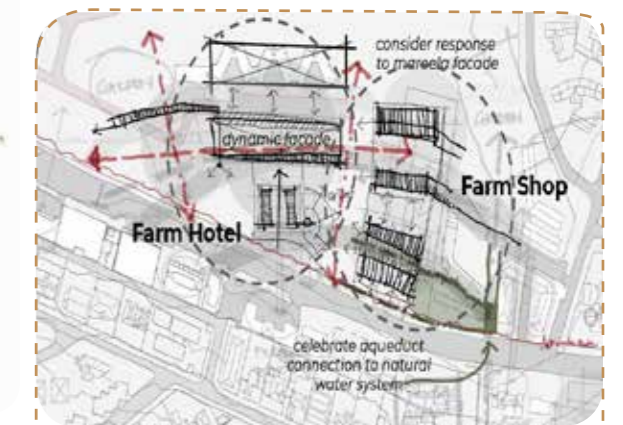


Figure 6.10: Garden market route to link circulation and programmes (Author, 2020)



Figure 6.11: Larger scope of proposed programmes and site allocation (Author, 2020)



The initial framework had a large scope of programmes as seen in figure 6.11. The programme at this stage considered a hotel-apartment development, an educational centre, a specialized culinary restaurant and an extensive urban farm food production facility to be located on the periphery of Tuks residences next to Lynnwood road.

The framework was designed with the touchstone in mind to ensure coherence throughout the project.

The intention was to link these programmes through natural ecology which considered the Hartebees spruit and productive landscapes as part of a garden market which weaves between the walkways and open spaces. The location also provided the programmes to extend and contribute to the existing social and economic potential found at the Strip and businesses along Lynnwood.

The junction between the market, café and workshops was then chosen to resolve architecturally and link to natural ecology. A focus was placed on the demolished site, see Figure 6.14, for an overlay of proposed footprint on allotted site A.

DESIGN ITERATION ONE:

Architectural development of workshops and landscape

The placement of the workshops allowed for a flexible response between open and functional spaces with the proposed buildings. The intervention consisted of a few buildings, outlined in white in figure 6.12, that would frame the pedestrian activated spaces between and in front of them. In terms of regenerative principles the design considered the adaptive reuse of two existing structures (their footprints illustrated in red in figure 6.14) to form part of the intervention.



Figure 6.12: Initial response and spatial considerations to urban framework (Author, 2020)

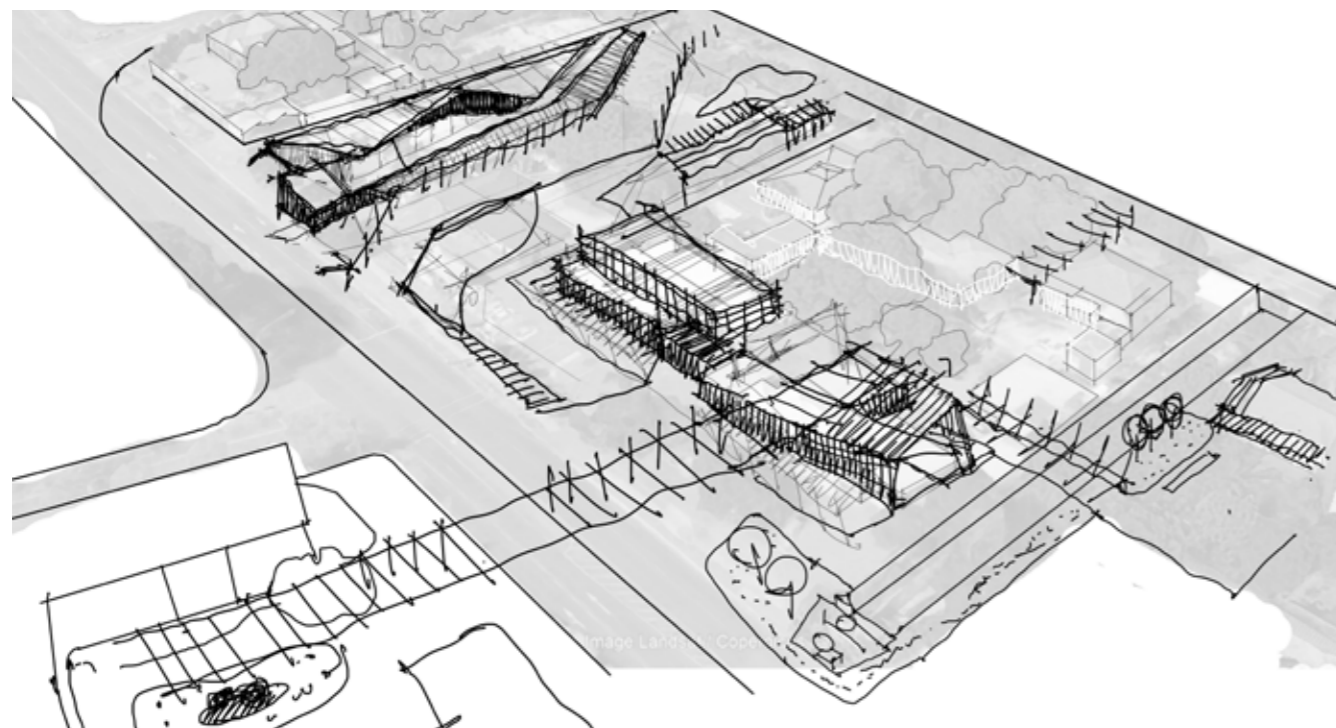


Figure 6.13: Sketched conceptual exploration of junction and proposed building massing (Author, 2020)

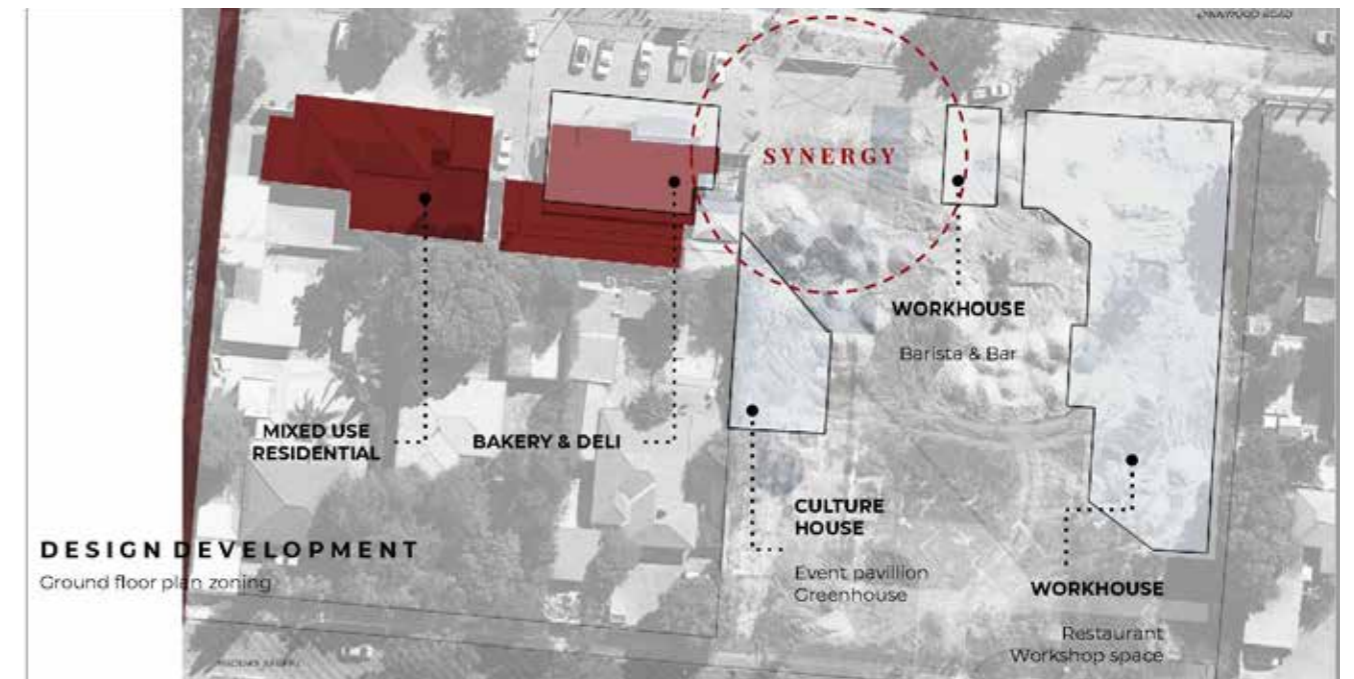


Figure 6.14: Initial zoning of buildings (Author, 2020)

The intention was to have the market space and productive landscape guide visitors through the site whilst creating an activated edge which establishes pedestrian activity on the street edge. The edge would also provide greenery in the form of ecological systems as an educational tool as part of the processes which expose nuances in food production. At this stage there was already a consideration towards how these ecological systems would inform the spaces in and around the buildings as illustrated in figure 6.16.

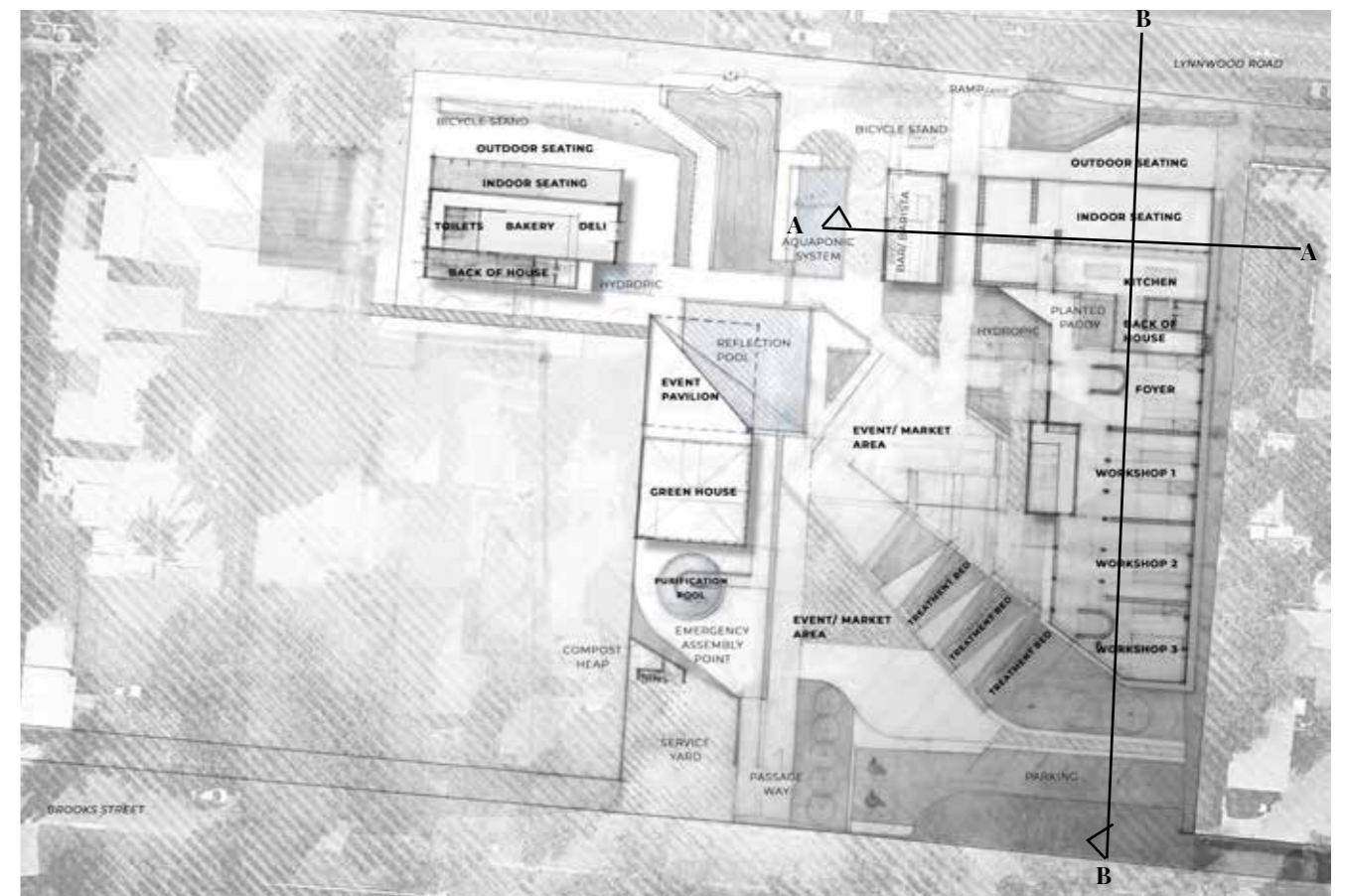


Figure 6.15: Initial hand drawn ground floor plan of site (Author, 2020)

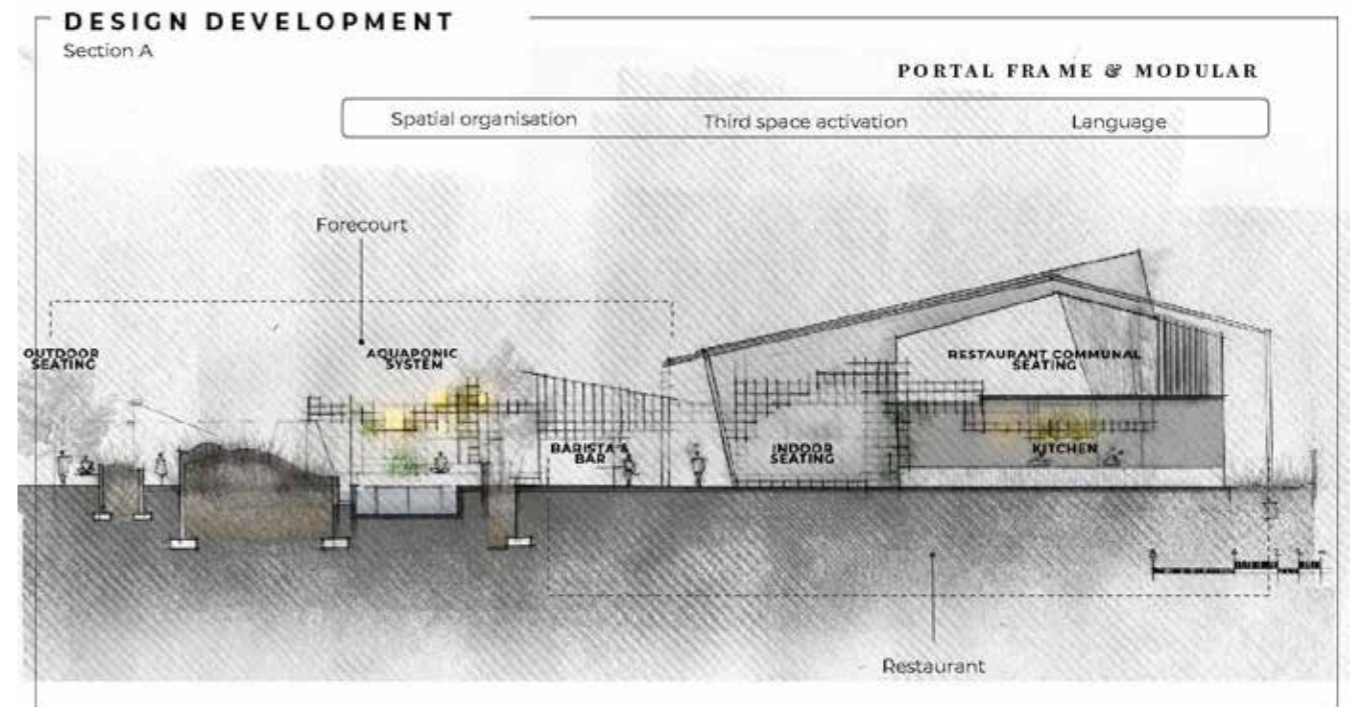
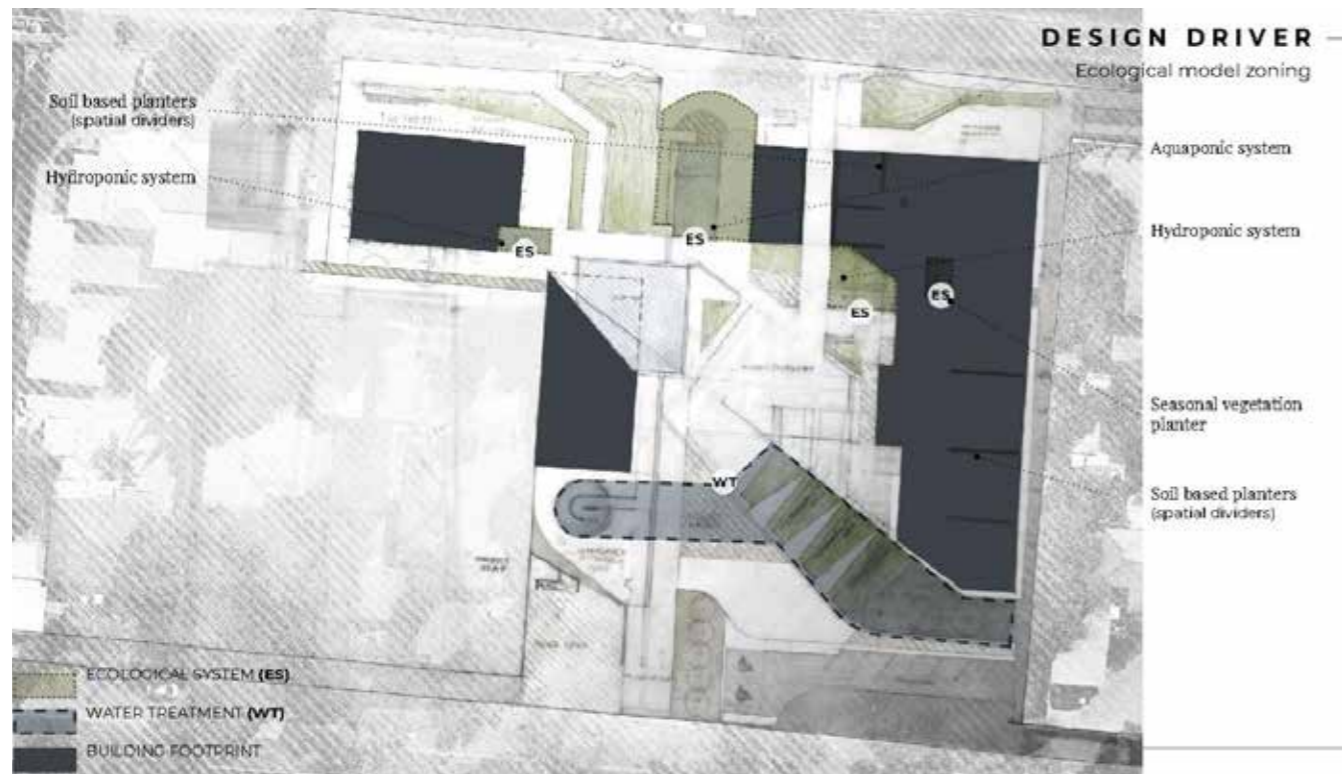


Figure 6.17: Explorative Section A-A (Author, 2020)

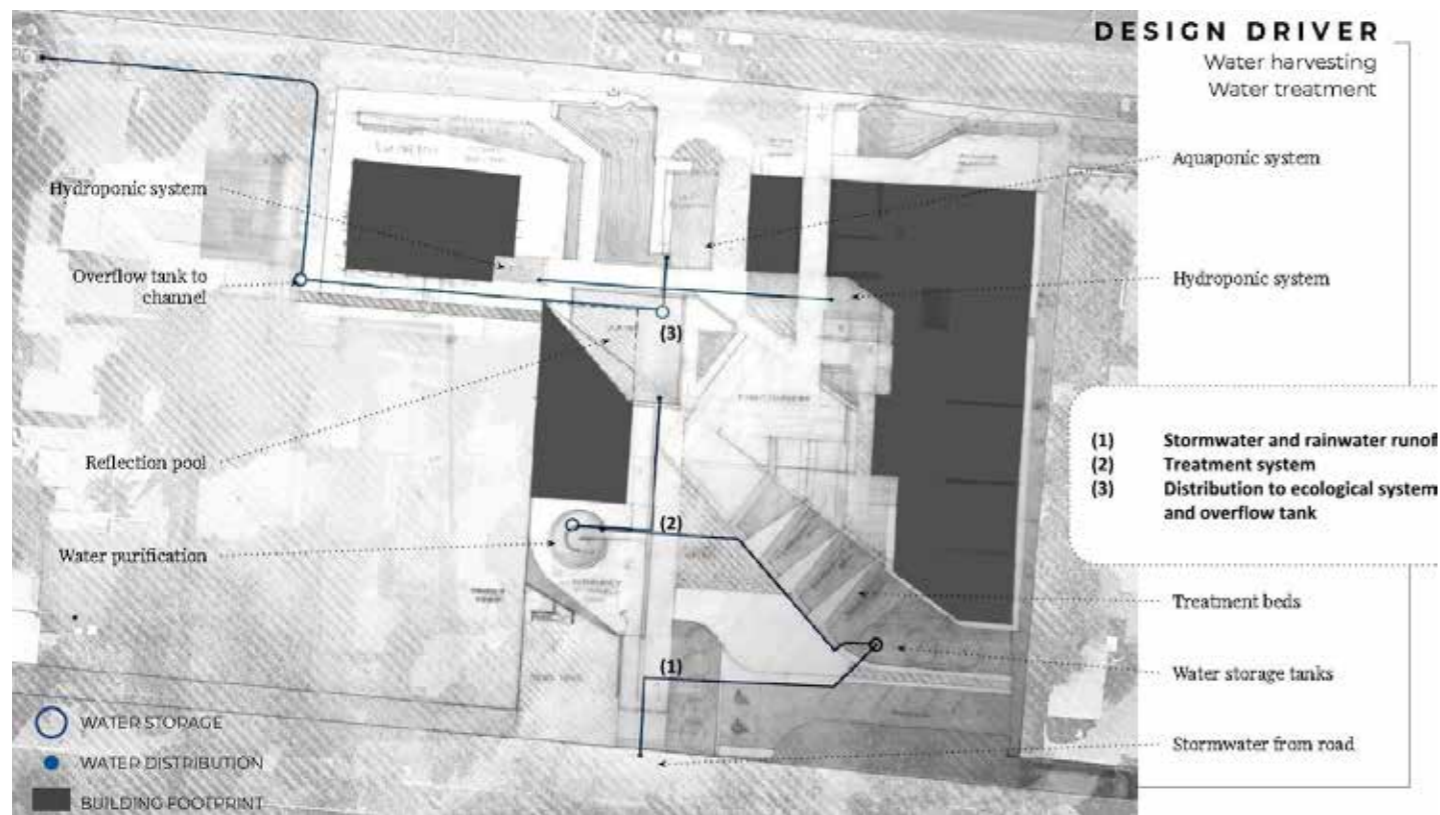


Figure 6.16: Conceptual consideration towards incorporation of ecological systems (Author, 2020)

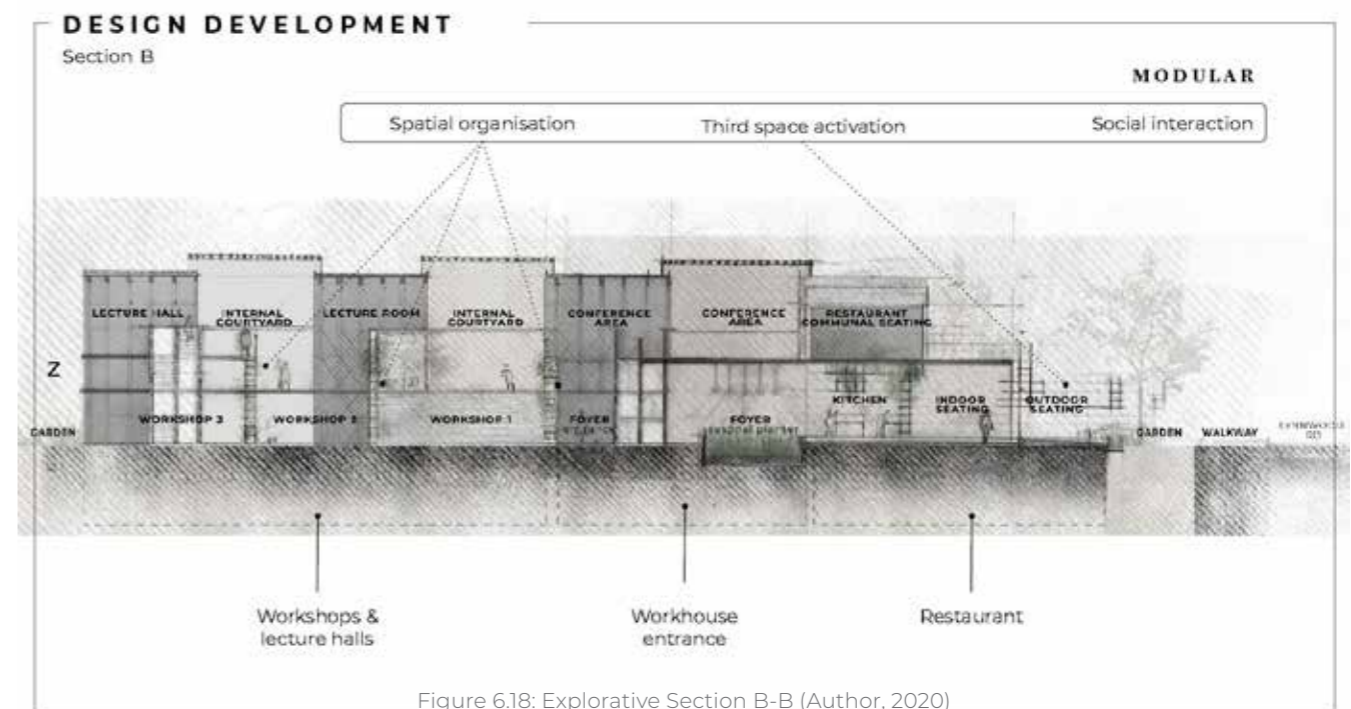


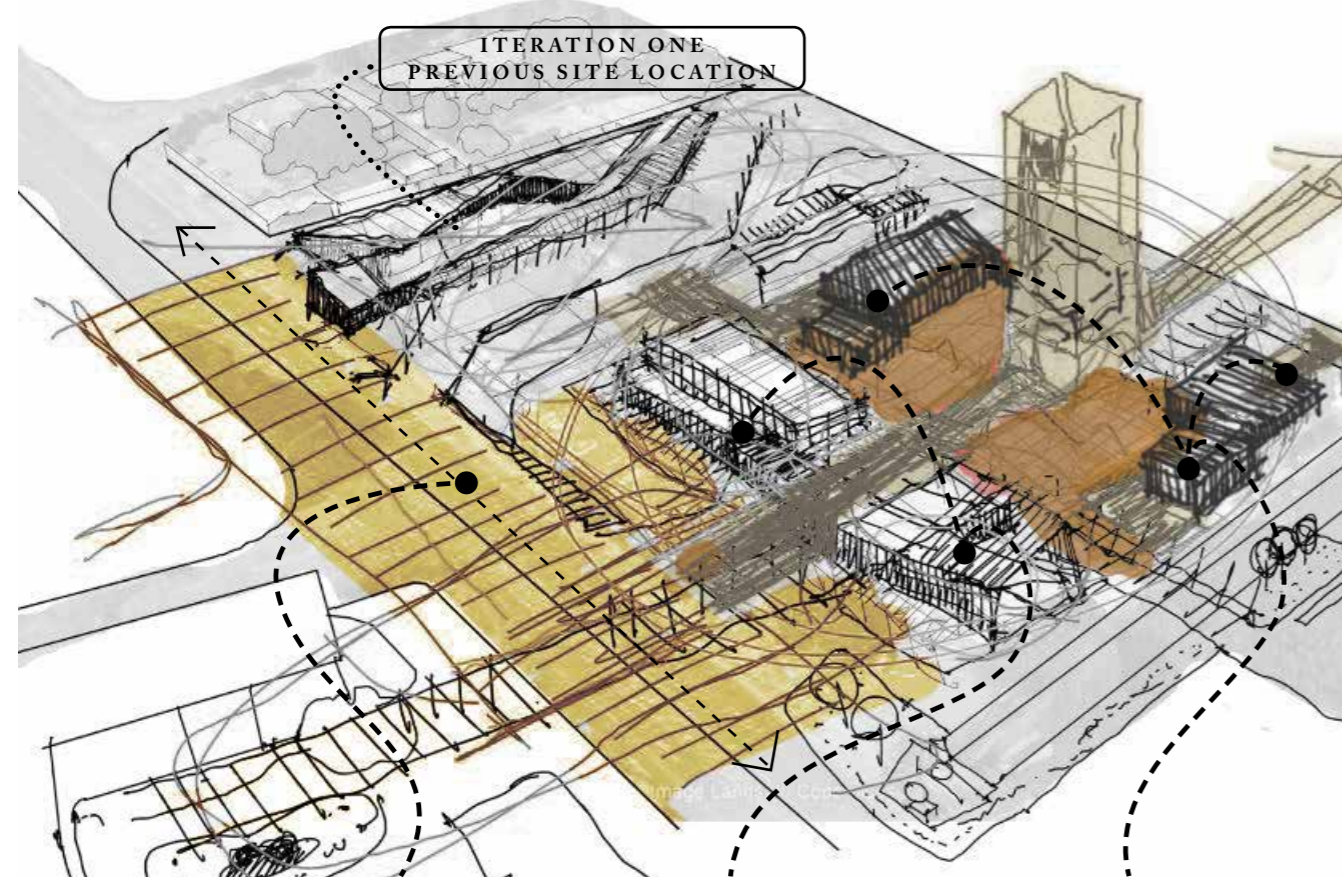
Figure 6.18: Explorative Section B-B (Author, 2020)

The development of the sections (Fig 6.17 and 6.18) at this stage included an exploration of ecological systems such as aquaponics, hydroponics and soil based planters. The intention was to explore the dialogue between indoor and outdoor spaces, private and public spaces, programme synergies and their relationship towards the ecological systems.



DESIGN ITERATION ONE:
Reflection

Upon reflection the focal area of where architectural solution would have taken place was moved to have a larger engagement or larger real estate to interface between building and street (as illustrated in figure 6.19). Iteration two explored the new allotted location for design and technical resolution. This meant that the focus of the workshop buildings shifted to the resolution of the café which eventually changed to include a bakery and micro-brewery, to increase the programmatic complexity. The programmes were only fully refined by iteration three. Furthermore the existing businesses to the south of the site were then included as part of the proposed internal pedestrian plaza which would connect to the site location A and extend into urban fabric by means of a pedestrian and cyclist route.



INCREASED INTERFACE
BETWEEN BUILDING
AND STREET EDGE

NEWLY ALLOTTED BUILDINGS
TO RESOLVE IN SUPPORT OF
THEORETICAL ARGUMENT

EXISTING BUSINESS CONTRIBUTE
TO ECONOMIC AND SOCIAL
VITALITY OF INTERNAL PLAZA

ITERATION TWO
NEW SITE LOCATION

Figure 6.19: Change of allotted site location for design and technical resolution (Author, 2020)

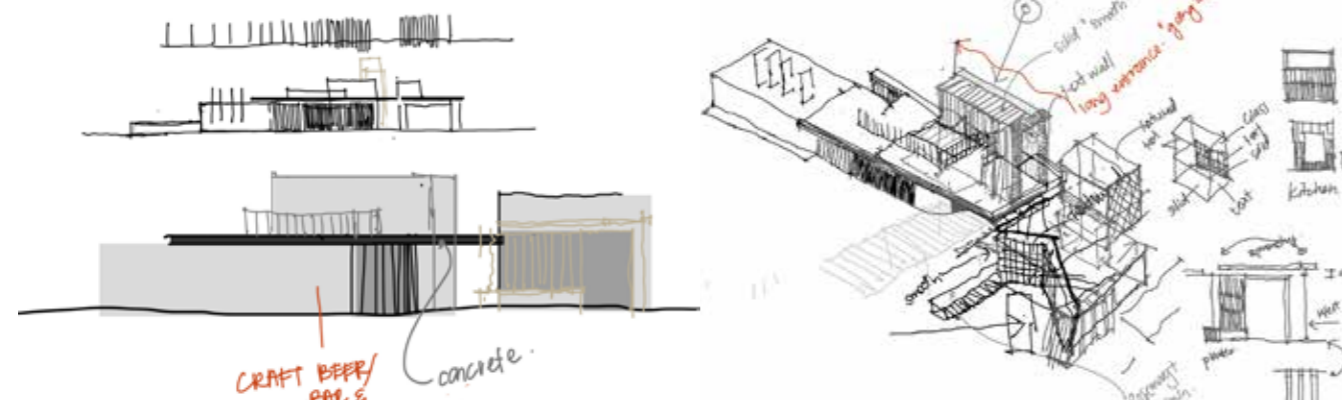


Figure 6.20: Sketches exploring building massing (Author, 2020)

DESIGN ITERATION TWO:
Exploration

The marquette (Fig. 6.21), as a massing exploration, of the micro-brewery and deli-bakery considered the formation of the internal plaza which would utilise the existing businesses. A water tower would act as a landmark to the Praza (Pretorian Plaza).

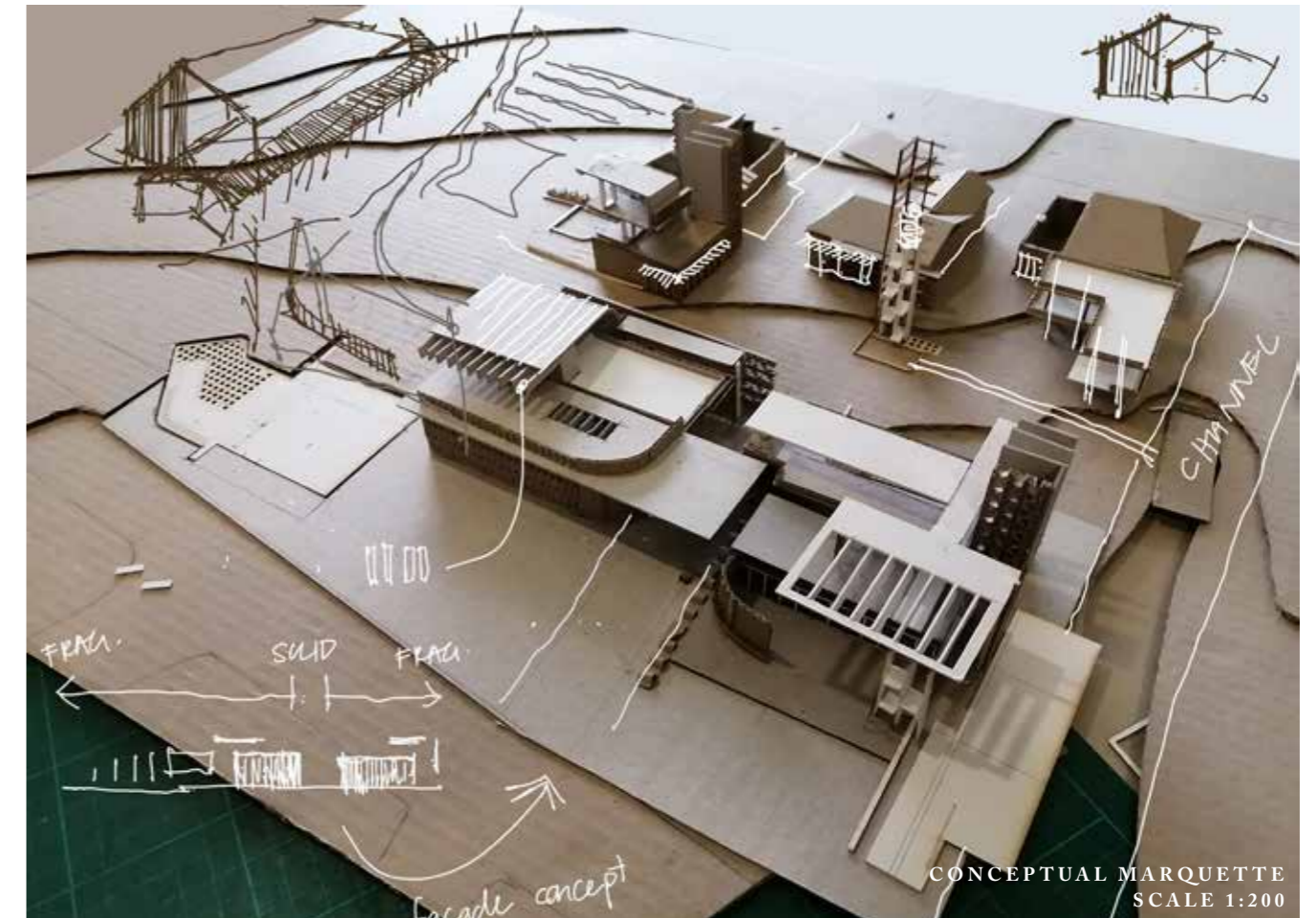


Figure 6.21: Conceptual marquette of micro-brewery and deli-bakery (Author, 2020)



Figure 6.22: Marquette highlights (Author, 2020)

DESIGN ITERATION THREE:
Resolution of primary and secondary structure

Figure 6.23 indicates how the design development aimed to consolidate the architectural proposal of iteration one with iteration two in order to achieve a holistic design composition. It also clarifies the areas delimited zones of resolution, as a result of

the pandemic inflicted circumstances this year, but suggested as a part of the design consideration as well form part of the holistic programme set out as part of the dissertation.

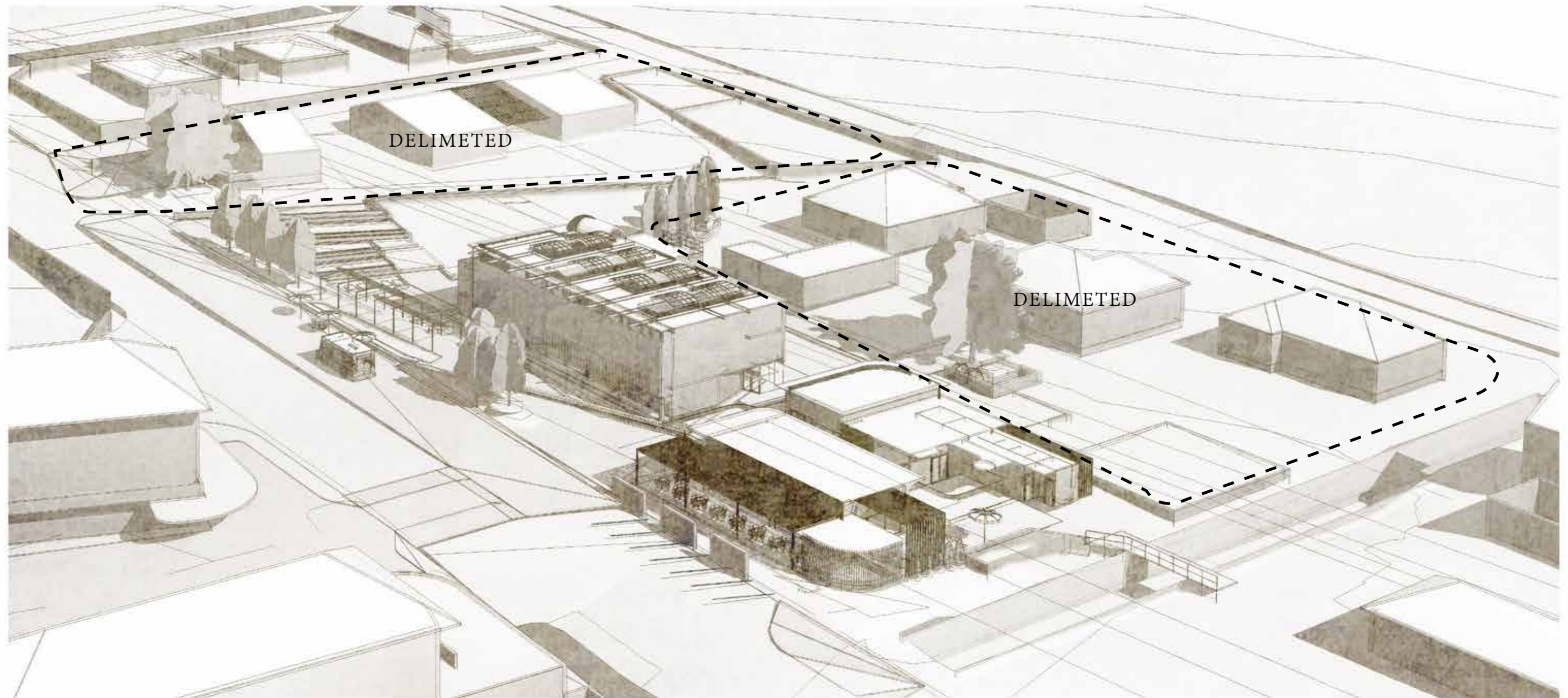
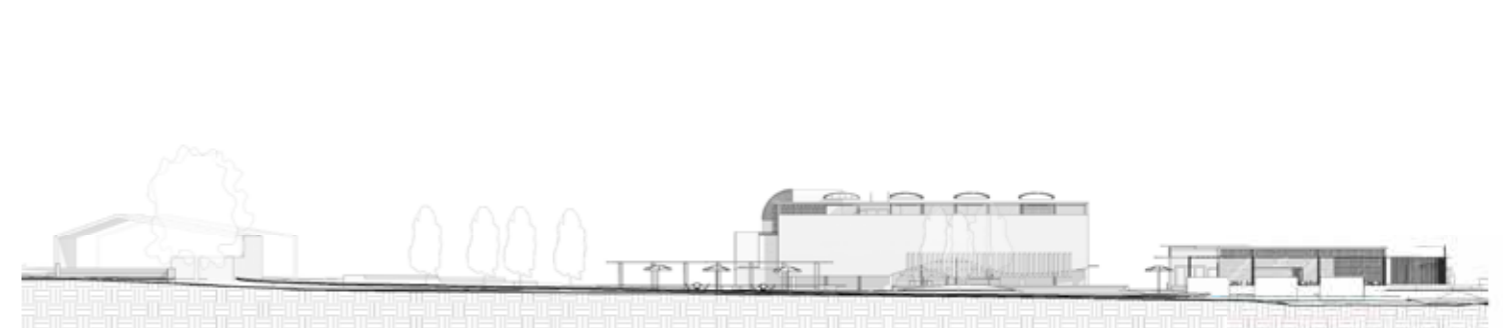


Figure 6.23: Model indicating level of resolution and delimited areas (Author, 2020)



SOUTH ELEVATION



NORTH ELEVATION

ITERATION THREE PLANS
and circulation



Figure 6.24: Iteration three ground floor plan (Author, 2020)

FINAL DESIGN RESOLUTION

3D model of final design resolution



Public circulation:

The design connects existing synergies (at Lynnpark Centre) opposite Lynnwood road to new ones and allow the public to freely explore the site. The brewery and constructed water treatment beds create the forecourt which acts as a Pretorian Plaza - a praza if you will - where markets and other event can take place.

Pedestrians are guided by a long bench in the forecourt into the alleys between buildings. Visitors are able to sit along the edges of the buildings, watching other people eat, drink, shop, or play as well as see how an the beer or pastry in hand was made from the crops on site.

Figure 6.25.1: Final design resolution model view north (Author, 2020)



Figure 6.25.2: Final design resolution model view south west (Author, 2020)

Lynnpark Centre

SITE PLAN
to scale 1:200 on A1 paper

Lynnwood road

event/ market space

Biofilter water treatment beds

**CAFE
BAKERY**

BREWERY

Workshop A

Internal plaza

Barley plot

Wheat plot

Vegetable plot

Underground water reservoir

Existing building:
Mixed use retail

Hops plot

Workshop B

Existing building:
Furniture store

Service yard

Workshop C

Existing building:
Graphic designer

Existing building:
Mixed use retail and residential

Open water reservoir

Brooks street



Figure 6.25.3: Final design resolution master plan (Author, 2020)

GROUND FLOOR PLAN

to scale 1:100 on A1 paper

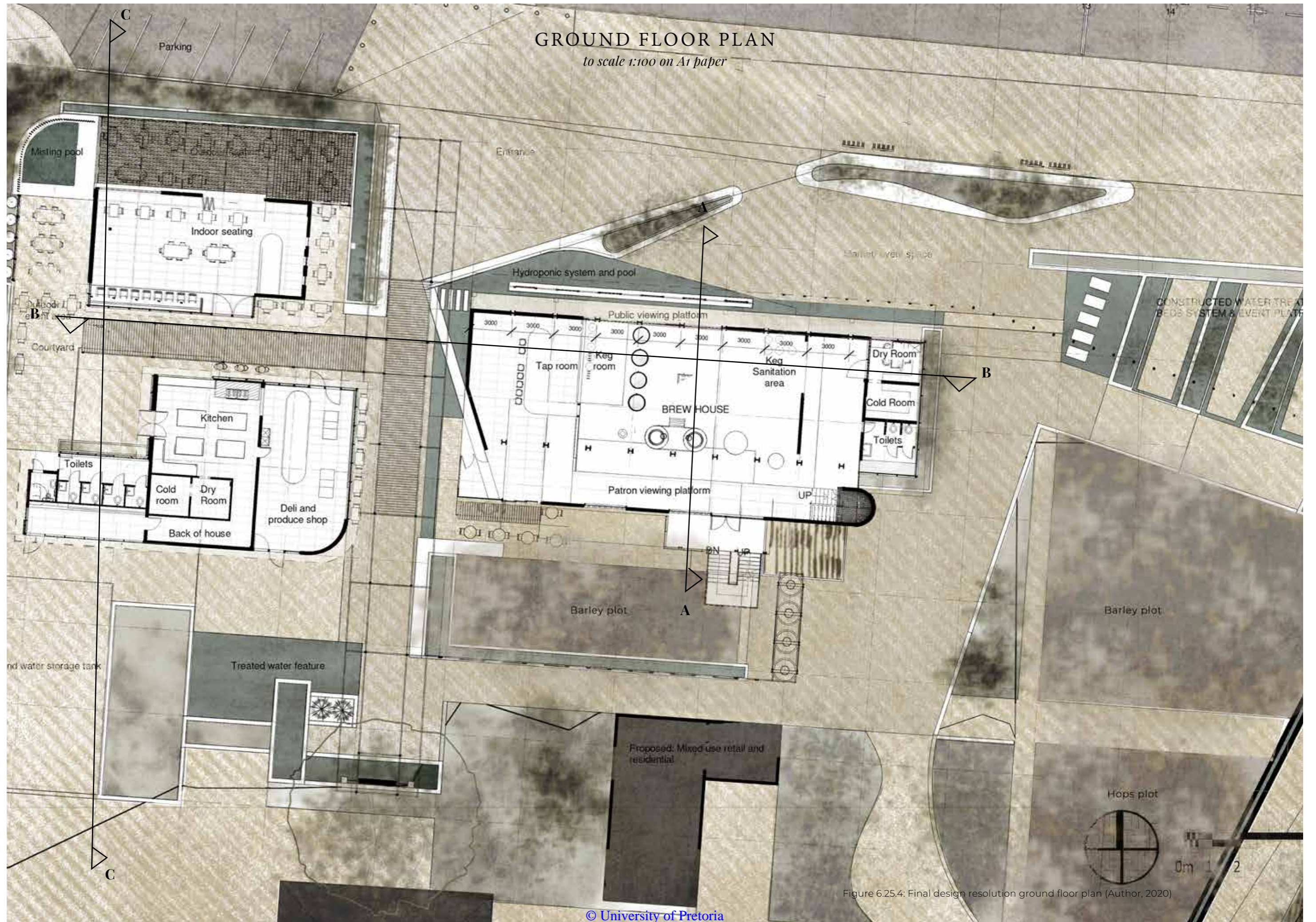


Figure 6.25.4: Final design resolution ground floor plan (Author, 2020)

SECTION A

spatial section of brewery
not to scale (to scale 1:50 on A1)

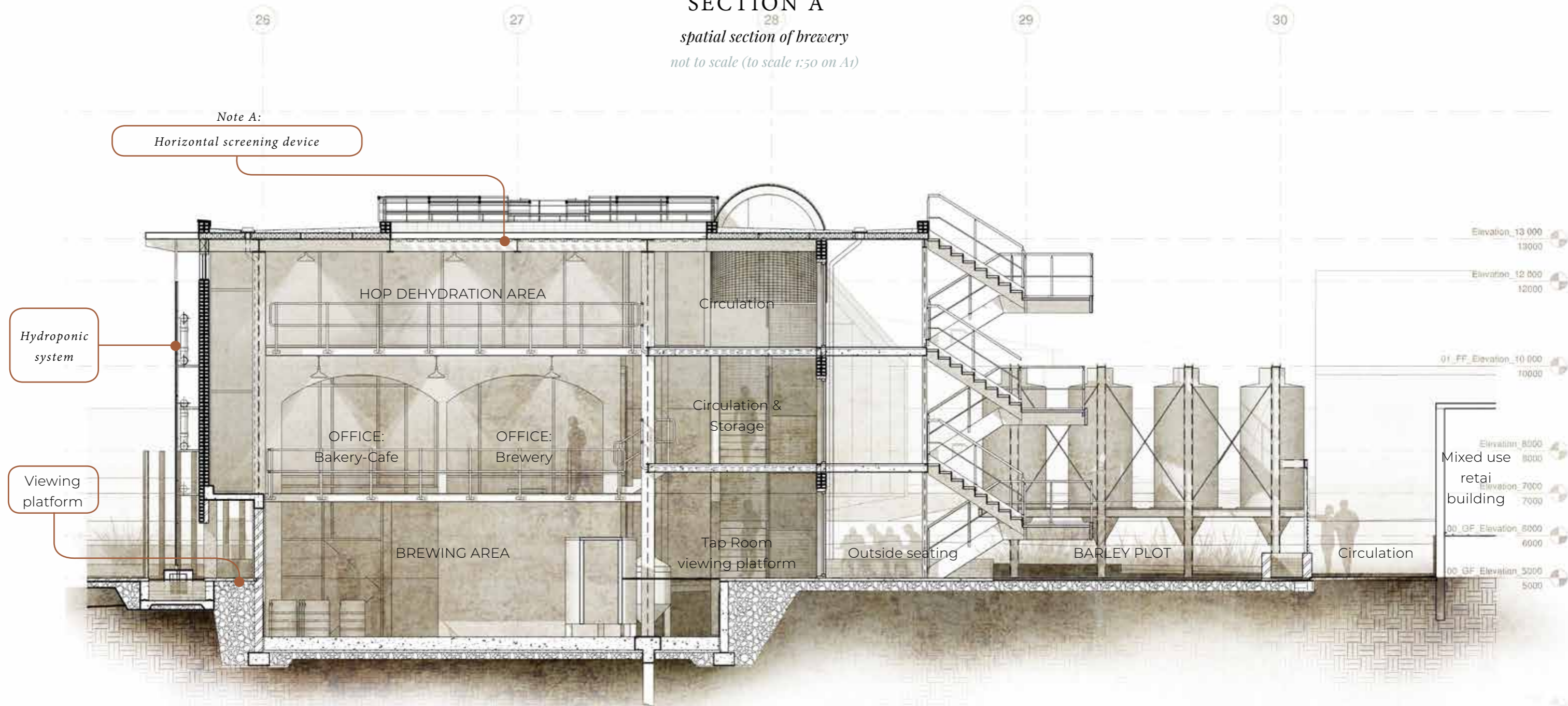


Figure 6.26: Design section A (Author, 2020)

Third space circulation:

Section A taken through the brew house aims to illustrate the relationship between the brewing process, the hydroponic system towards the exterior event/ market space and alley (hosting the outside seating for the tap room) between the brewery and barley plot.

A nutrition pool at the base of the hydroponics creates an island viewing platform and niche where the public can to view the brewing process, peer into the tap room and even see views to the barley plot on the other side of the building.

As the platform wraps into the brewhouse patrons are welcomed to feel like they are of the brewing process in the tap room where they are able to taste the very beer being made. Upon exit visitors are greeted by the very barley and hops plots used in the process just witnessed from the tap room platform.

Private circulation:

Only the brewers are allowed access to the brewing area platform, offices and hops dehydration area in the floors above.

NOTE A:
See Chapter 7: Application of brick screening devices



Figure 6.27: Brewery exterior and event space (Author, 2020)



Figure 6.28: Brewery interior (Author, 2020)



Figure 6.29: Brewery exterior from internal plaza (Author, 2020)

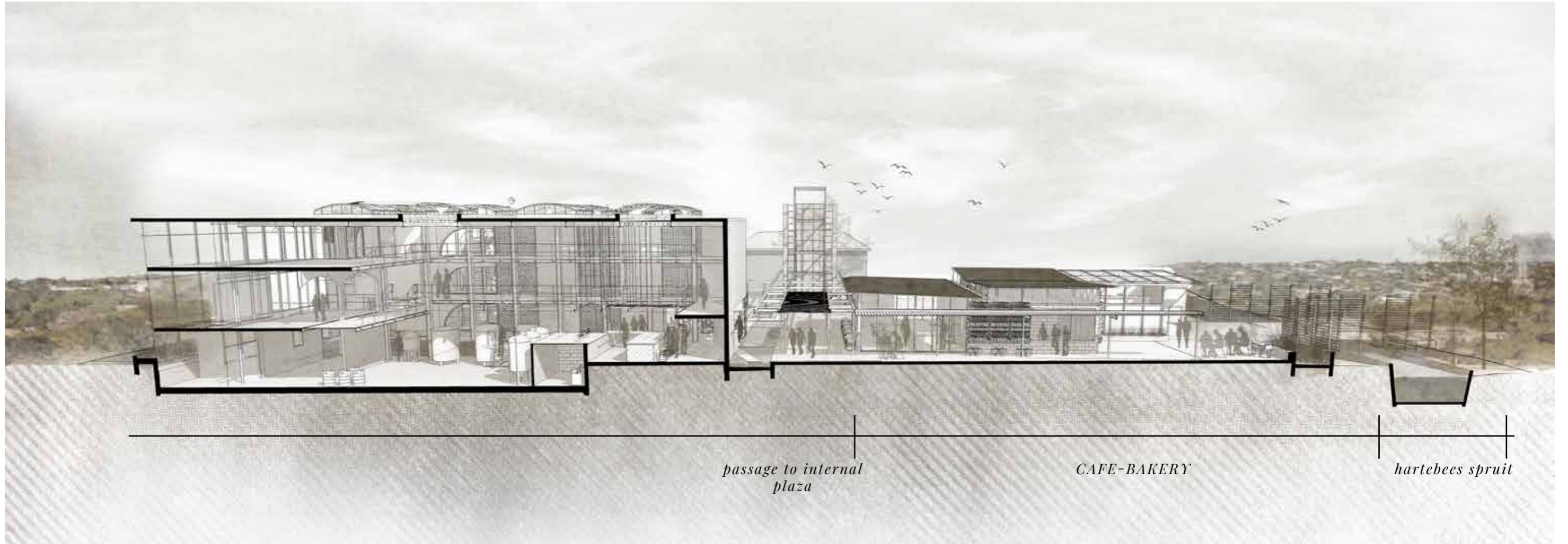


Figure 6.31: Cafe seating area and perspective from western approach (Author, 2020)

STREET INTERFACE EAST
perspective from eastern approach towards the site

Reclaiming street space as primary public space in the city



Figure 6.32: A view of proposed reclaimed street space (Author, 2020)



SECTION C

*spatial section through cafe-bakery building
not to scale (to scale 1:100 on A1)*

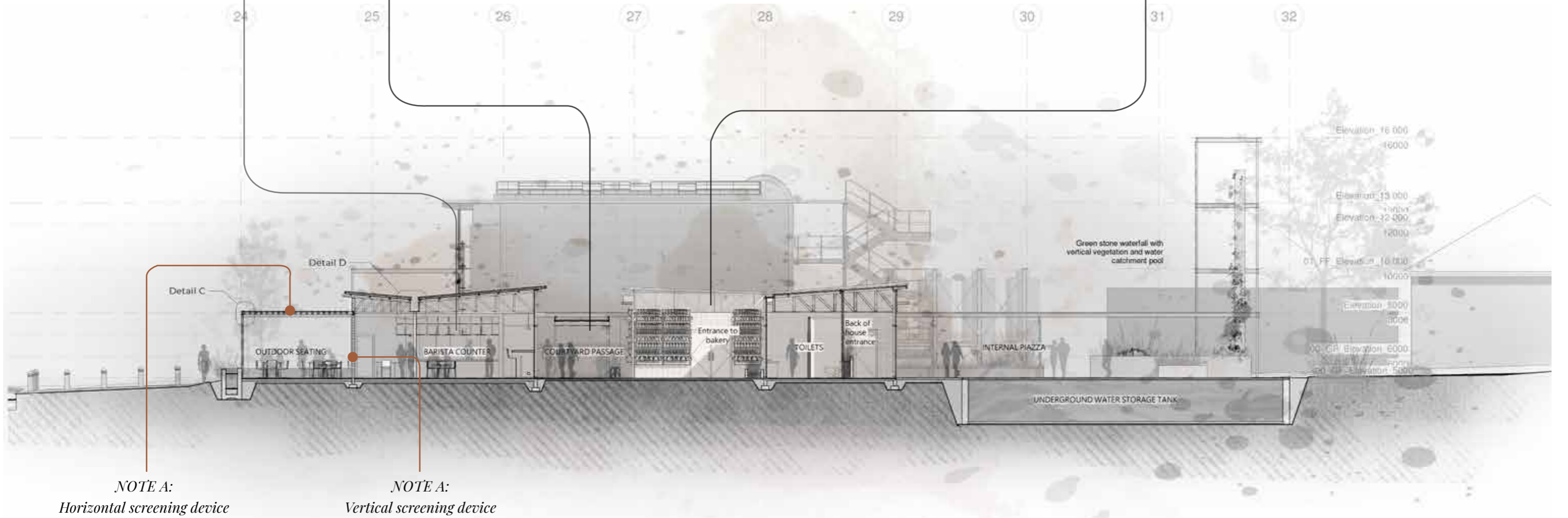


Figure 6.33: Spatial section C (Author, 2020)



Figure 6.34: Cafe interior seating with vertical brick screening device (Author, 2020)

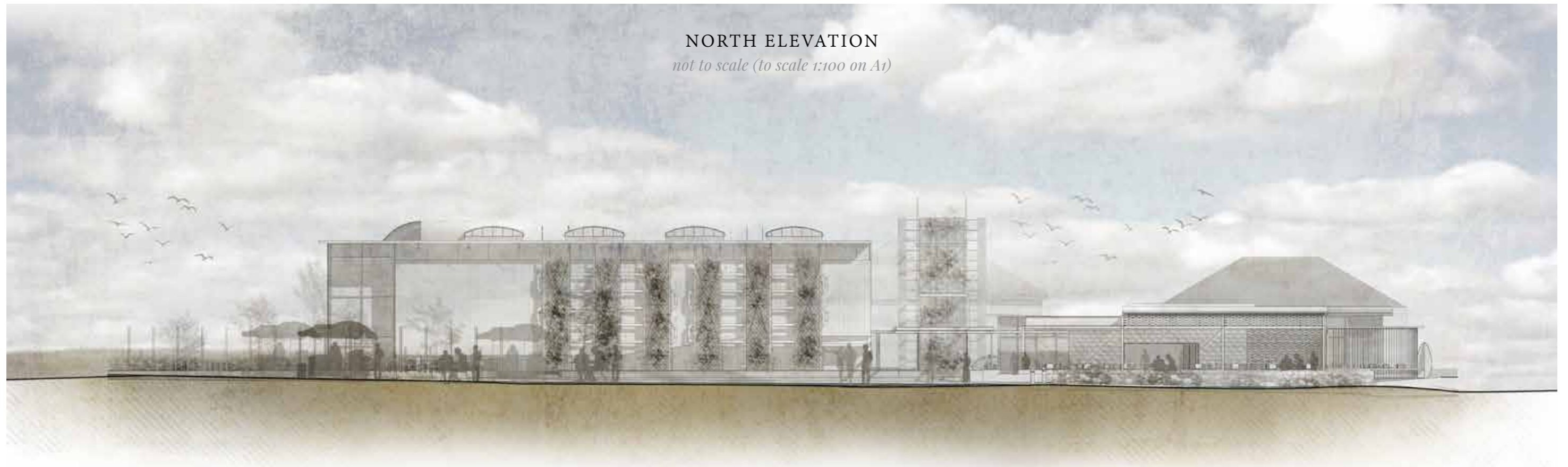


Figure 6.35: North elevation (Author, 2020)

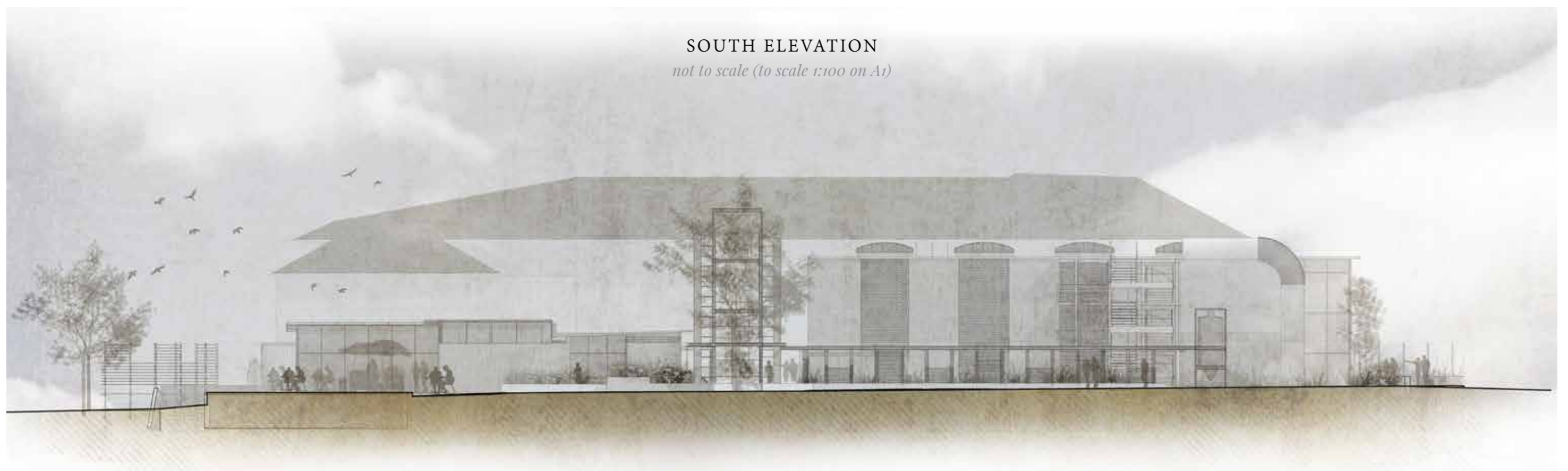


Figure 6.36: South Elevation (Author, 2020)



Figure 6.37: West Elevation (Author, 2020)



ttttv



Figure 7.1: Clay brick textures (Phanasitti, 2020)

CHAPTER

07

technical investigation

architecture of the interface

The following chapter will focus on the technical resolution based on the architecture of the interface concept, theoretical argument and programmatic requirements proposed within the context of Lynnwood Road.

TECHNOLOGICAL INTENT

Extention of the architectural intent

The technical approach sprouts from the theoretical background which considers the thirdspace. The dialogue between the two main structural concepts of tectonic and stereotomic is explored within the structural relationship of architectural materiality.

The role of stereotomic is to incorporate a resilient building as a part of the landscape of the public space. The role of the tectonic is to create an openness and sense of flexibility within the industrial-like processes of the building. The poetics and condition between the two structural components is considered as thirdspace.

The graphic below (Figure 7.2) aims to illustrate the connection of the stereotomic with the exterior context, earth and resilience whilst tectonic with the interior contexts, sky and flexibility as an extended investigation of thirdspace.

Architecture of the interface naturally seemed to lead to an exploration of the facade. Facade as interface considers materiality as a tool to create an enticingly touchable building facade to engage the public space.



Figure 7.2: Technological intent (Author, 2020)

STRUCTURAL INTENTIONS

Extention of the architectural intent



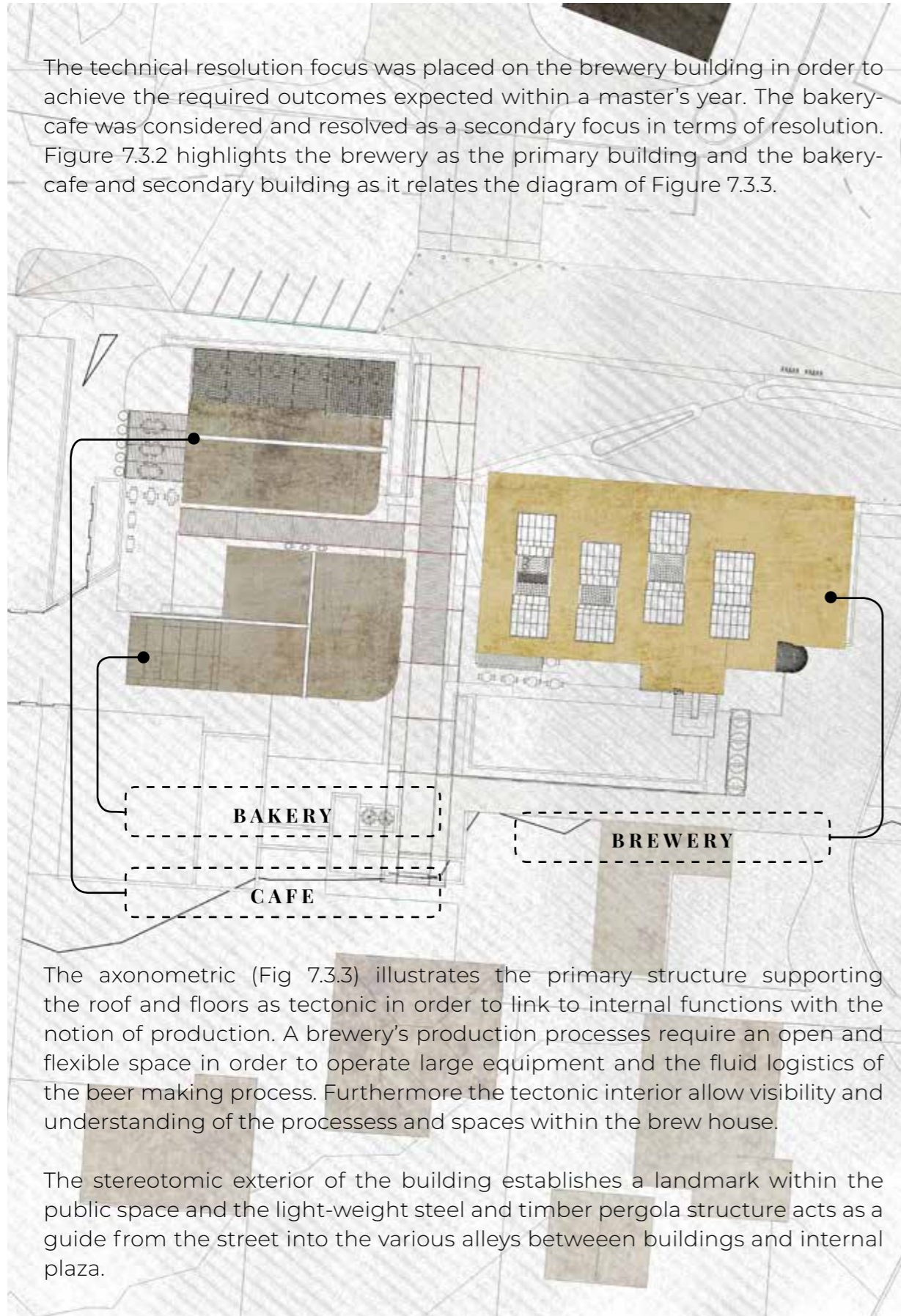
Figure 7.3.1: Existing footprint in white and new in black (Author, 2020)

Figure 7.3.1 illustrates the newly proposed buildings in black and existing in white. Buildings A and B is proposed to be demolished and form part of the newly proposed buildings. As part of the projects sustainable backbone foundations are kept and extended upon whilst bricks are reused for planters and as aggregate for new foundations.

STRUCTURAL INTENTIONS

*DELIMITATIONS:
Primary and secondary buildings*

The technical resolution focus was placed on the brewery building in order to achieve the required outcomes expected within a master's year. The bakery-cafe was considered and resolved as a secondary focus in terms of resolution. Figure 7.3.2 highlights the brewery as the primary building and the bakery-cafe and secondary building as it relates the diagram of Figure 7.3.3.



The axonometric (Fig 7.3.3) illustrates the primary structure supporting the roof and floors as tectonic in order to link to internal functions with the notion of production. A brewery's production processes require an open and flexible space in order to operate large equipment and the fluid logistics of the beer making process. Furthermore the tectonic interior allow visibility and understanding of the processes and spaces within the brew house.

The stereotomic exterior of the building establishes a landmark within the public space and the light-weight steel and timber pergola structure acts as a guide from the street into the various alleys between buildings and internal plaza.

Figure 7.3.2: Delimitations for technical resolution (Author, 2020)

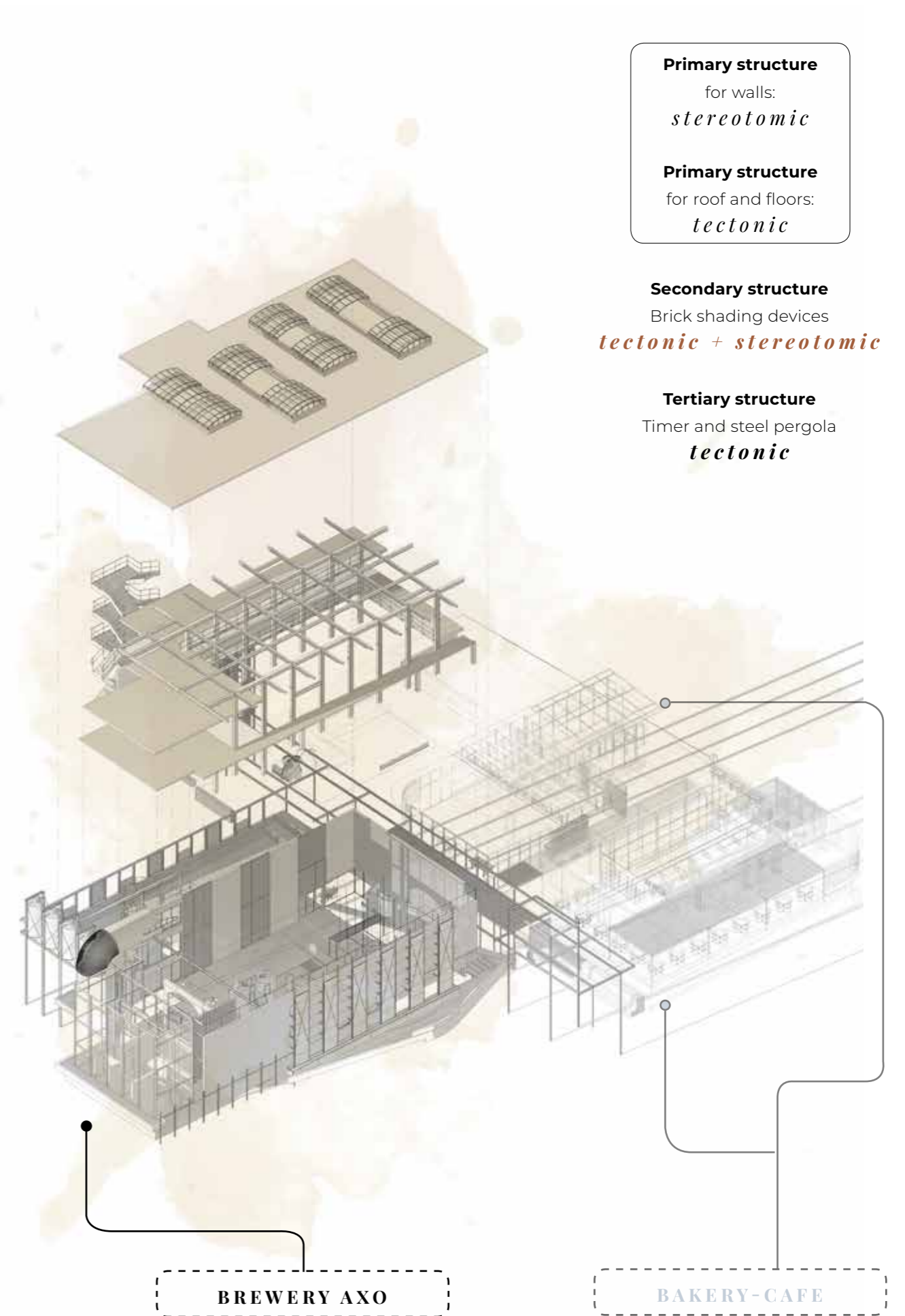


Figure 7.3.3: Primary, secondary and tertiary structure integration (Author, 2020)

MATERIALITY

Tectonic and stereotomic integration

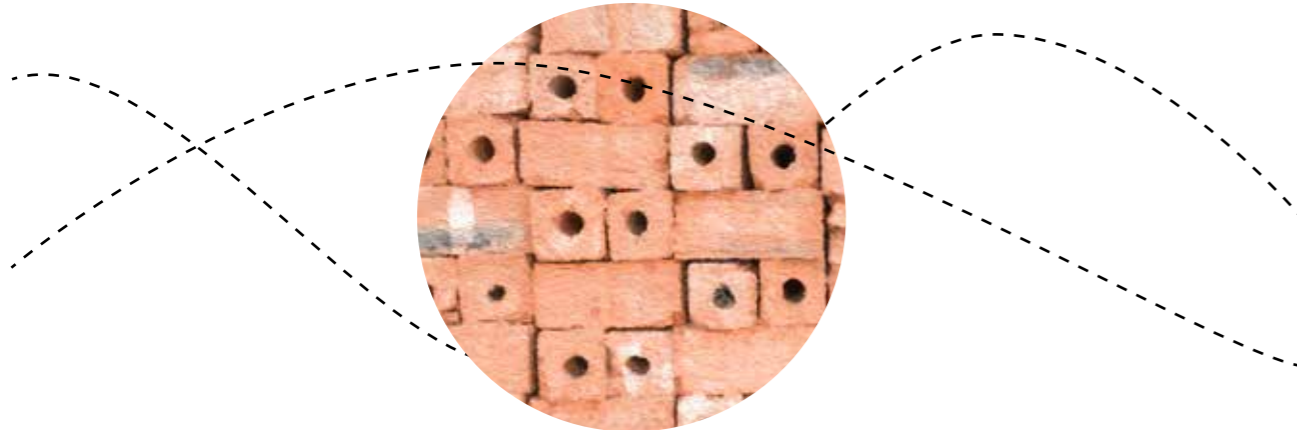
The in line with the projects tactile approach of the building facade the architecture also considered responding to local vernacular.

Bricks, a simple and very Pretorian building material, are used to create architectural complexity as it relates to light qualities found in tectonic architecture. A weaving between stereotomic bricks and tectonic steel rods create a variety of vertical and horizontal screening devices as the main manifestation of the poetics of architecture of the interface. The various application of these screening devices will be discussed

later in this chapter in *Note A: Application of brick screening devices*.

The use of raw materials as the primary finish of the building and screening devices align itself with the dissertation's manifesto of instilling an authentic market place experiences.

The dissertation aims to make use of the traditional brick bond patterns as well as find innovation in masonry construction of the proposed building, as seen in Fig. 7.3.3.



CLAY BRICKS AS PRIMARY MATERIAL OF INVESTIGATION

Clay bricks, a natural and strong building material, have a rich history in Pretoria's built environment. John J Kirkness pioneered the production of high quality bricks under the establishment of the Kirkness Brick Factory in Groenkloof in 1888 (Artefacts, n.d.). The factory later grew to produce 50 million bricks annually and later opened a second factory in Pretoria which produced 36 million bricks per annum (Artefacts, n.d.). Corobrick still manufactures clay brick for their all-round performance and sustainable value they bring to constructing buildings (Corobrick, n.d.).

Clay brick continually demonstrates on an local and international scale why this green' building material is ideal for thermally efficiently sustainable construction in South African environments (Corobrick, n.d.). In general bricks are one of the most sustainable construction materials. Made from the natural materials, the process of making fire clay bricks have been around for five thousand years (Green building elements, 2016). Bricks are a hundred percent recyclable and energy efficiency in the production of bricks is already 70 percent less than just 50 years ago (Green building elements, 2016).

In conclusion, not only does the an exposed brick finish communicate the authenticity of construction but provides the building with a timeless natural beauty and bestows an image of quality and prestige for the community (Corobrick, n.d.).

BREWERY

The brewery building is rich in simple and complex masonry construction elements (see Fig 7.3.4). Running bonds create the majority of the building facade and paving whilst a perforated brick facade is used to create wind ventilation when windows are opened from the interior. These panels make use of clay brick which will be damp and contribute to the proposed cooling mechanisms of the brewery to be discussed later in the ventilation section of this chapter.

A concrete roof creates a spectacle on the interior of a horizontal brick screening device as it seemingly suspends between apertures which allow natural light and ventilation. A concrete roof was chosen to differentiate the brew house for its industrial-like production processes from the retail spaces of the cafe-bakery.

CAFE-BAKERY

In contrast to the concrete roof of the brew house lightweight klip-lok sheeting was chosen to unify the bakery and the café buildings. Exposed steel roof trusses from part of the internal aesthetic which relates the the project technological intent to link interior spaces with flexibility and movement.

The outdoor seating area is unified by the horizontal screening device creating patterned rays of light.

PASSAGE PERGOLA STRUCTURE

The structure composites of a steel frame with Luna wood slats which bridge the frame in order to create a shaded seating in the passage way.

WATER AND VEGETATION

Water and vegetation play an important role within the design as elements that align with the dissertation manifesto.

Water unites site functions, programmes, spaces and extends into the various vegetation systems which allow urban farming, hydroponics and evaporative cooling to take place throughout the different public spaces.

TYPES OF BRICK PATTERNS USED IN DESIGN:



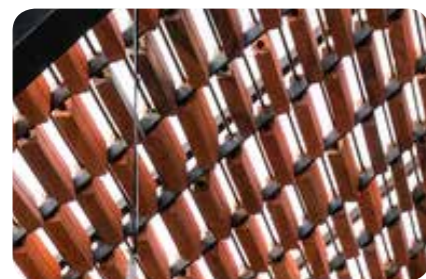
Running bond as facade and paving pattern



Stack bond between horizontal screening device



Brazilian pattern with gap as horizontal screening device



Unique pattern with gaps as vertical screening device

TYPES OF BRICKS USED FOR SCREENING DEVICES:

Clay bricks are used for both screening devices as well as the building facade.

Horizontal clay brick:

For the horizontal system a brick with a whole is required in order to thread through steel cords as per precedent in Fig 7.4.3. Corobrick is able to manufacture a purpose made special shape brick for this application.

The specified brick will be similar to the 222x106x73mm Roan Satin finish clay brick with a compressive strength of 30-40 Mpa.

Vertical clay brick:

Similar to the horizontal device the Ronan brick will be used and manufactured with core holes in order to for the bricks to be threaded onto steel rods in assembly as in Fig 7.4.4.

Paving clay brick:

The 210x60x60 mm burgandy piazza paver with a compressive strength of 60Mpa for medium to heavy traffic loads

General facade brick:

222x106x73mm Ronan Satin finish clay brick

ROOFS



Cafe-bakery Brewery

- Klip-lok 406 sheeting
- Poly-carbonate sheeting
- Clay brick
- Steel framing and rods
- Hollow core slabs
- Poly-carbonate sheeting
- Clay brick
- Steel framing and rods

shading device

skylight aperture device

WALLS



Cafe-bakery Brewery

- Cast-in-situ concrete
- Clay brick
- Glass and alluminium frame

Stack & Brazillian

FLOORS AND PAVING



Internal External

- Teratzzo
- Existing concrete slab
- Mentis grating deck
- Clay brick
- Balau timber deck
- Mentis grating (over water canal)

Figure 7.4.1: Brick patterns and bonds (Author, 2020)

Figure 7.4.2: Material pallet (Author, 2020)

NOTE A
APPLICATION OF BRICK SCREENING DEVICES
Tectonic and stereotomic integration

PRECEDENT FOR PERFORATED BRICK SCREENING DEVICES



Figure 7.4.3: Horizontal screen (Quangdam, 2017)



Figure 7.4.4: Vertical screen (Malik, 2017)

Brick screening devices as secondary structure (see Fig 7.3.3) become an important element within the design as they provide architectural complexity and aesthetics in the moment where stereotomic and tectonic meet. Both vertical and horizontal brick screens are compiled from threading clay bricks through steel rods (see detail C). Creating another moment of manifesting thirdspace - a structural element that is both stereotomic and tectonic, both inside and outside.

The horizontal devices are framed and supported by steel members (as seen in Fig 7.4.6 and Fig 7.4.7) and the vertical devices (as seen in Fig 7.4.7) created as perforated panels throughout various spaces of the design.

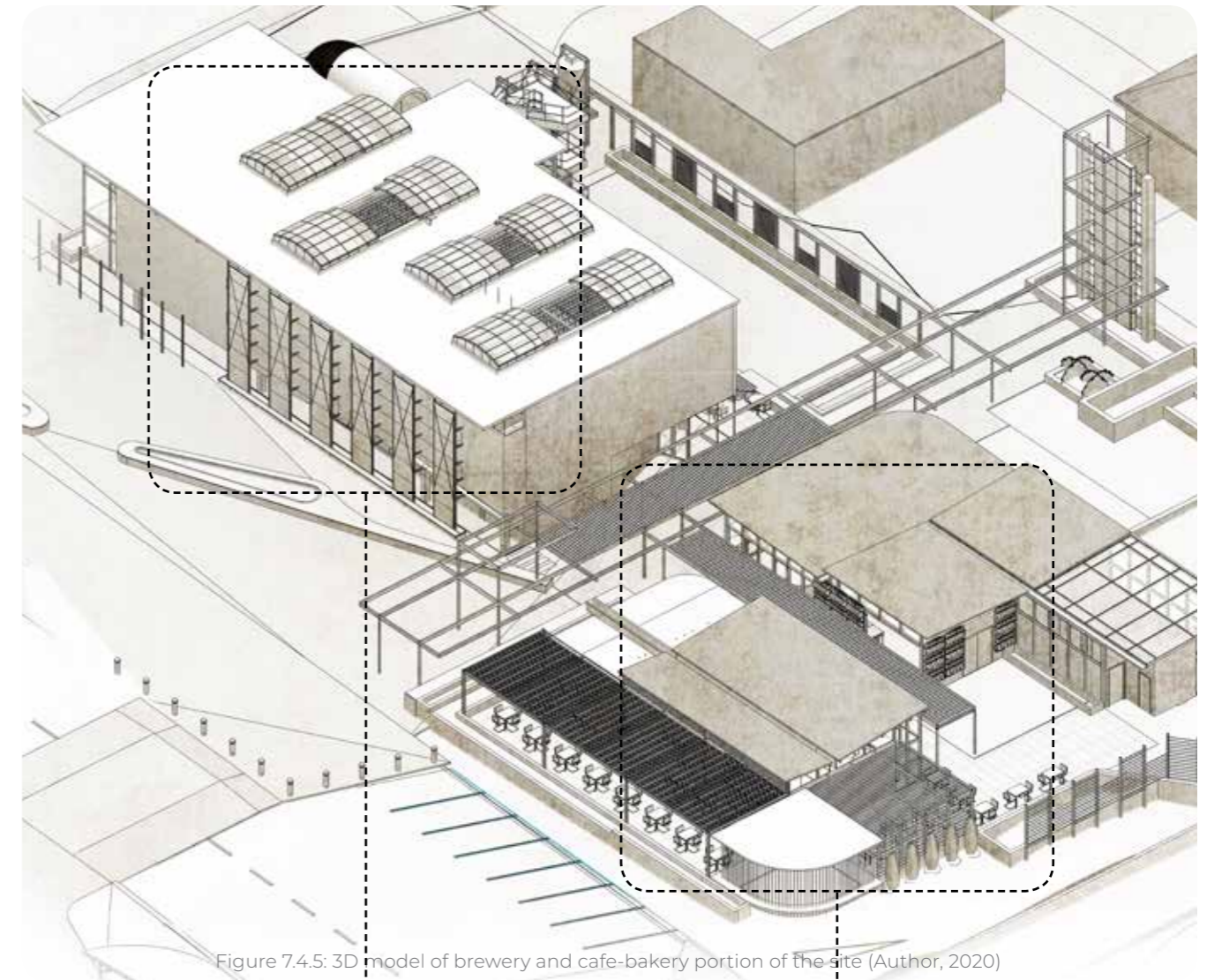


Figure 7.4.5: 3D model of brewery and cafe-bakery portion of the site (Author, 2020)

Brewery

INTERNAL APPLICATION
(as in Figure 7.3.9)

Horizontal Screening Device:
The device is used to fill the aperture of the skylight and create aesthetically pleasing dapple light on the interior of the brewery.

Vertical Screening Device:
Creating patterns on the southern facade and used as evaporative cooling device.

Cafe-bakery

EXTERNAL APPLICATION
(as in Figure 7.3.10)

Horizontal Screening Device:
The device is used as a shading device on the northern edge of the building for the external seating area of the Café.

Vertical Screening Device:
Creating patterned walls to demarcate certain areas to sit or enter.

NOTE A
Relates the the various applications of the vertical and horizontal screening devices within the Brewery and Cafe-bakery as indigated in Chapter 6

*BRICK SCREENING DEVICES
at brewery (primary building)*



Figure 7.4.6: Brick screening device incorporated in brew house (Author, 2020)

Perforated wall with operable window on interior for ventilation

Skylight aperture perforated fill pattern. Refer to detail C

*BRICK SCREENING DEVICES
at cafe (secondary building)*



Figure 7.4.7: Brick screening devices incorporated in cafe-bakery (Author, 2020)

Perforated shading device above external seating area of Café. Refer to detail C.

Perforated wall with fixed window on interior for ventilation

TECHNÉ SECTION A

techné
not to scale (to scale 1:50 on A1)

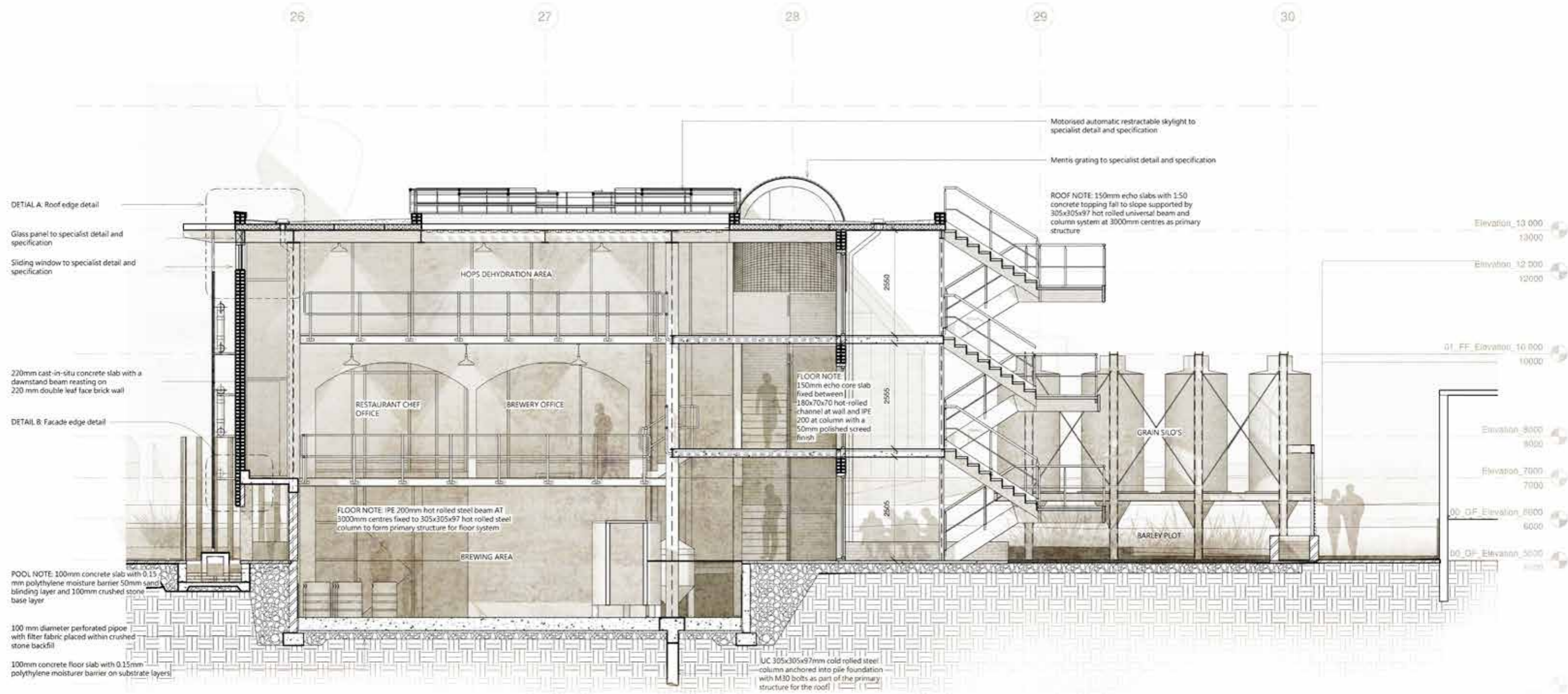
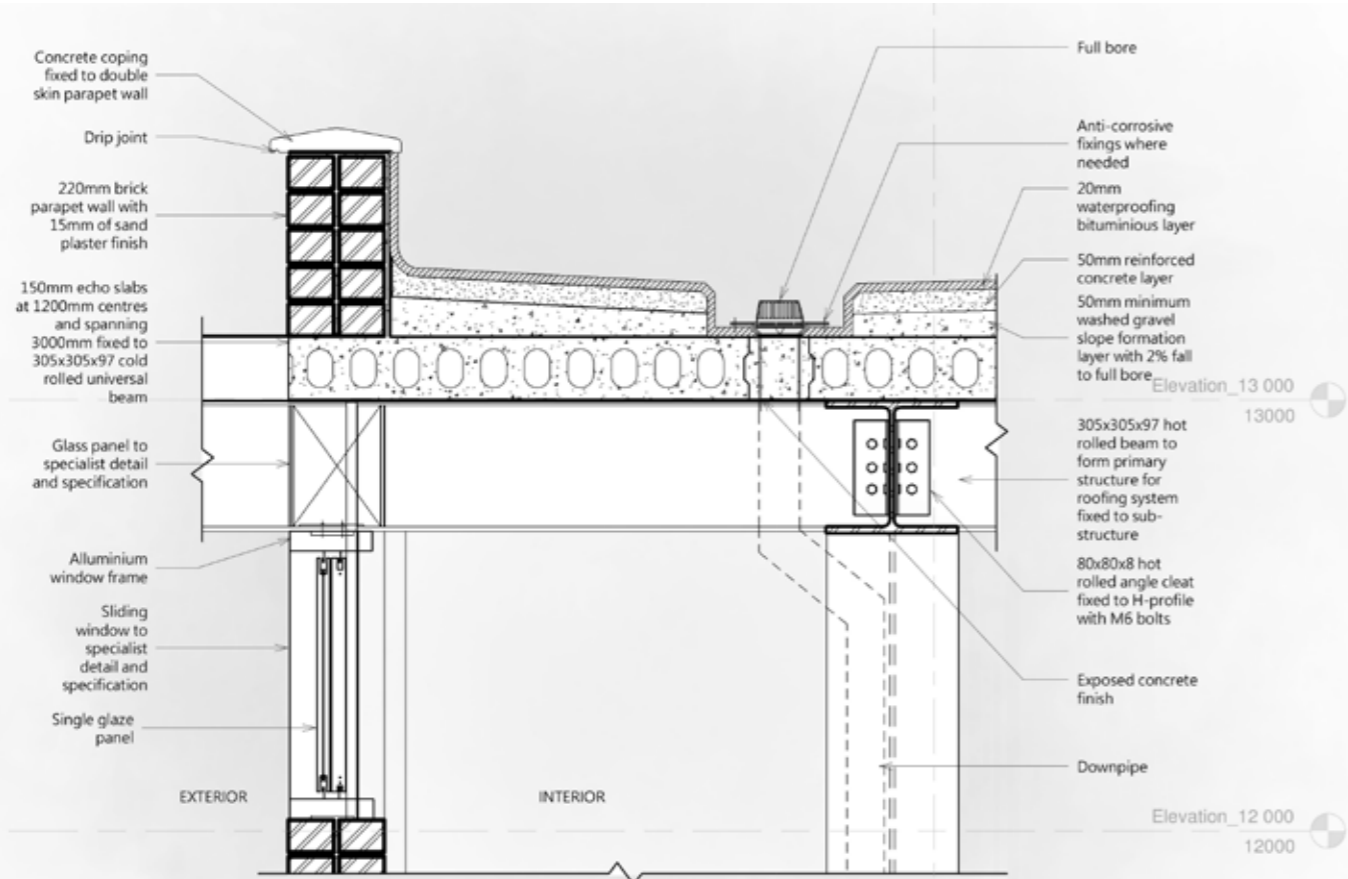
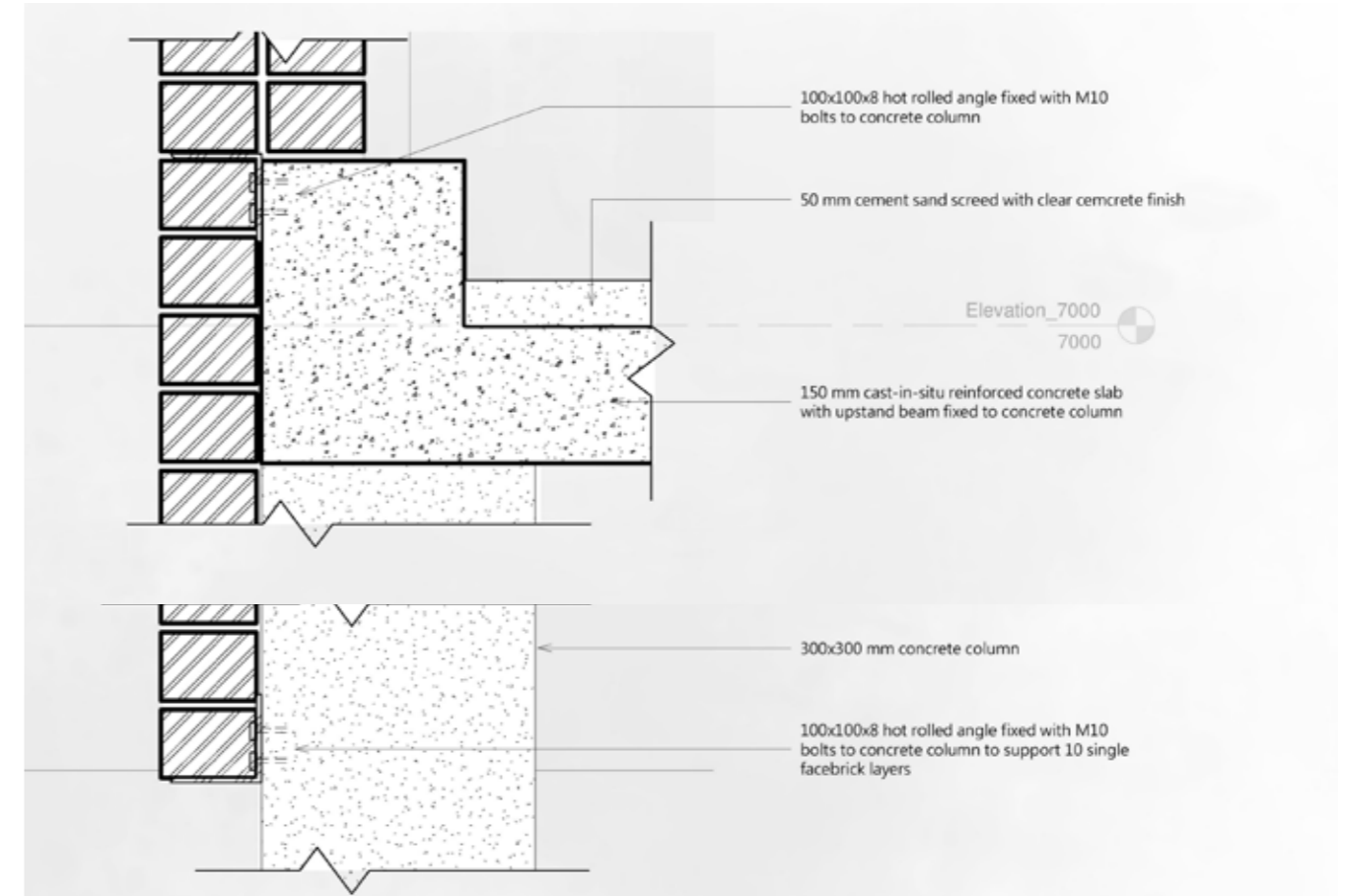


Figure 7.5.1: Section A annotated (Author, 2020)



DETAIL A: ROOF EDGE DETAIL
1:10 to scale on A3

Figure 7.5.2: Detail A annotated (Author, 2020)



DETAIL B: BRICK WALL EDGE DETAIL
1:5 to scale on A3

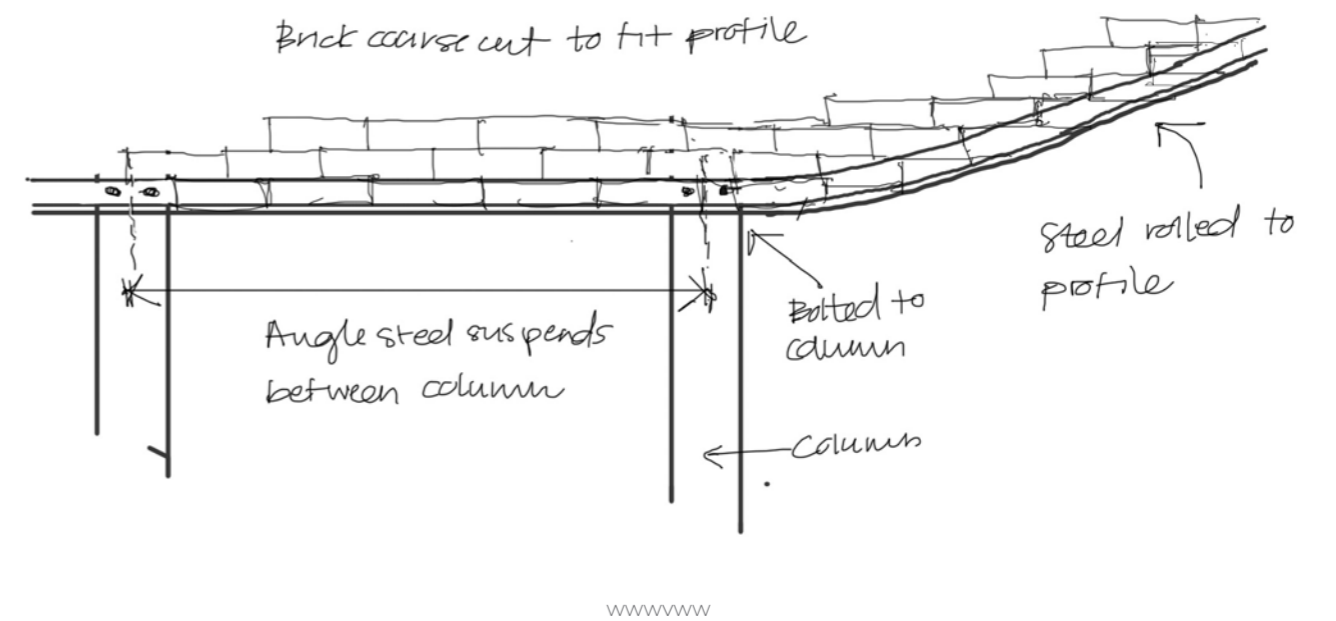
Figure 7.5.4: Detail B annotated (Author, 2020)



DETAIL A

DETAIL B

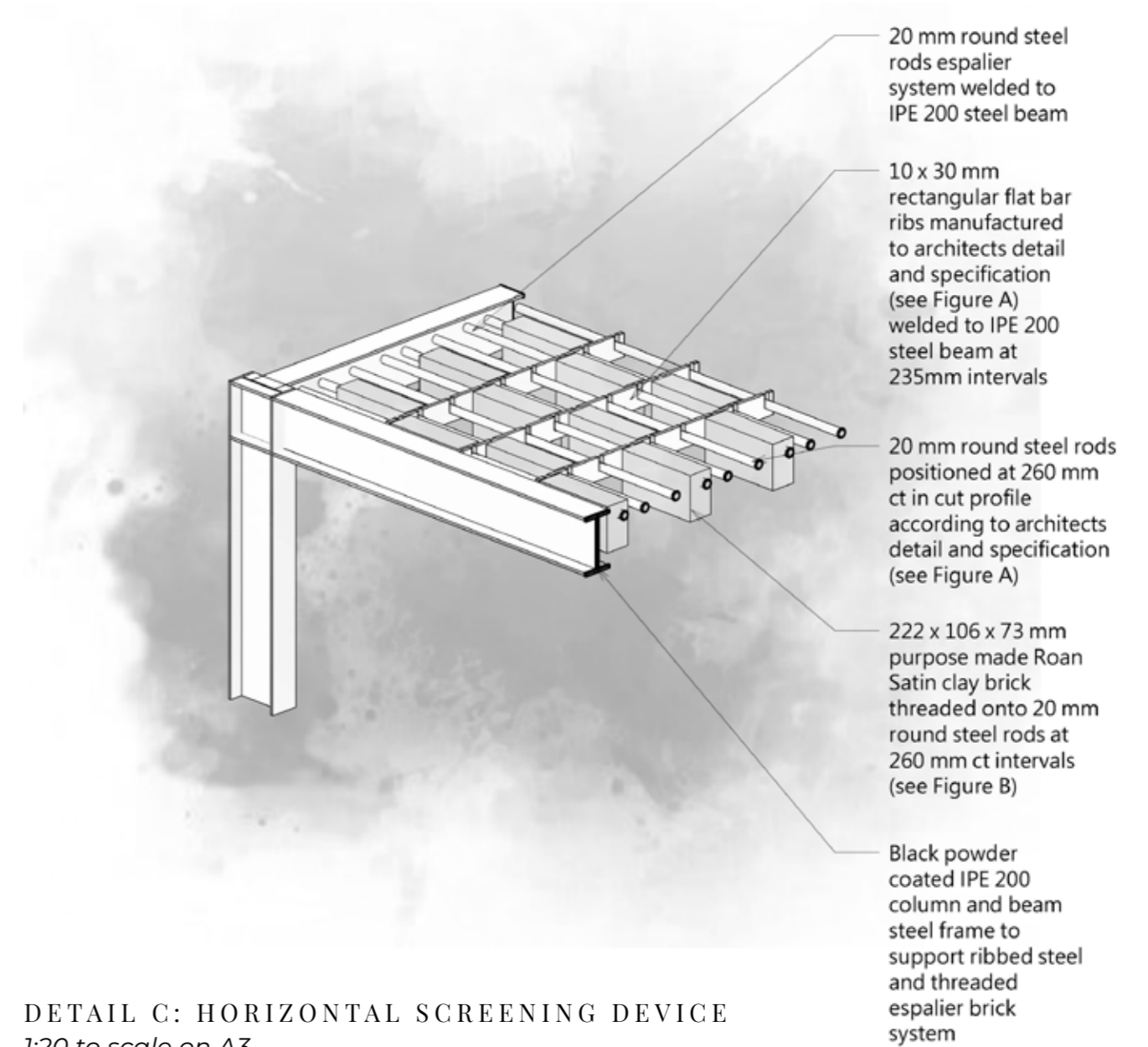
Figure 7.5.3: Indicating locations of detail A and B on Brewery (Author, 2020)



As indicated in Design Section C (Figure 6.33)



Figure 7.5.6: Indicating locations of detail C and D on Cafe-bakery (Author, 2020)



DETAIL C: HORIZONTAL SCREENING DEVICE
1:20 to scale on A3

Figure 7.5.8: Detail C annotated (Author, 2020)

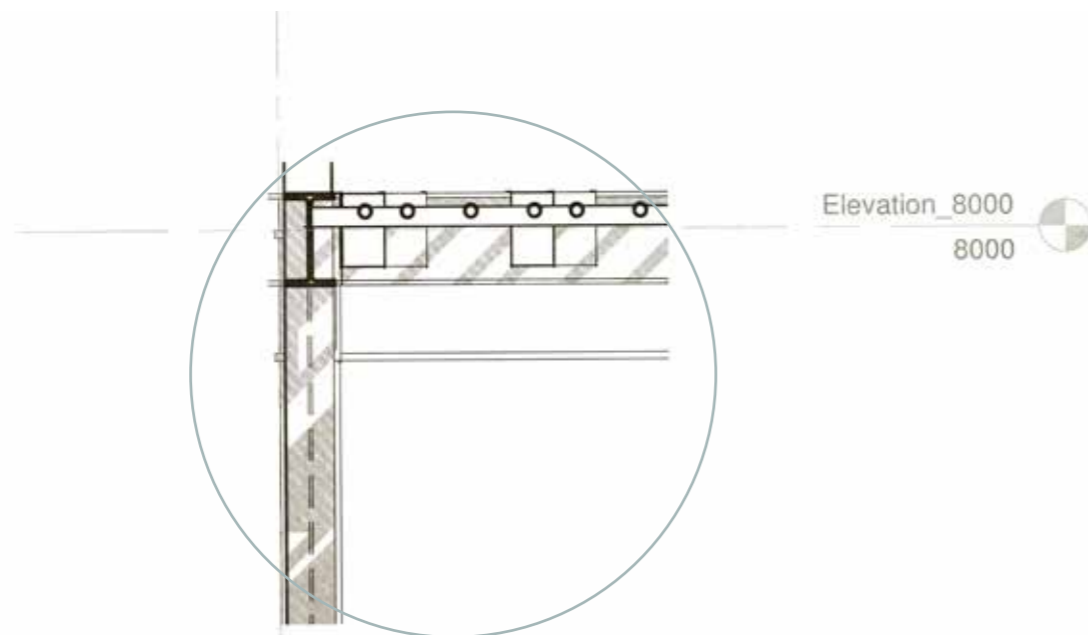


Figure 7.5.7: Vertical section of detail C (Author, 2020)

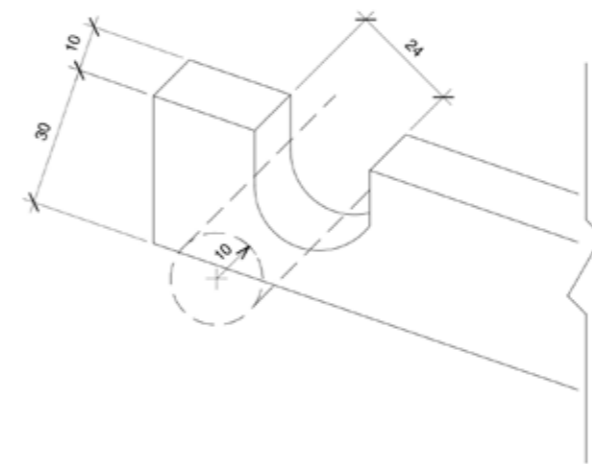


Figure A: Rectangular steel bar cut profile (Author, 2020)
Not to scale

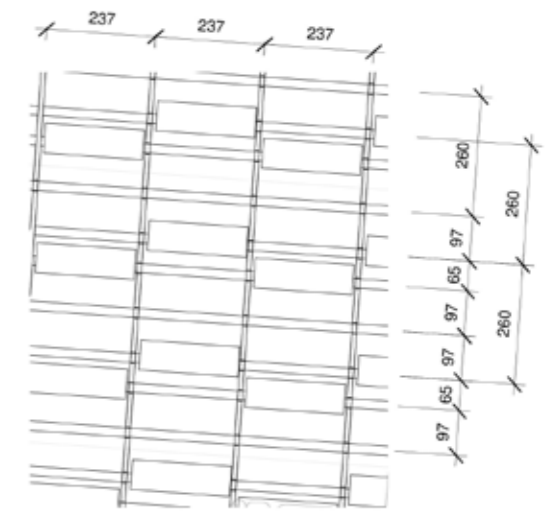
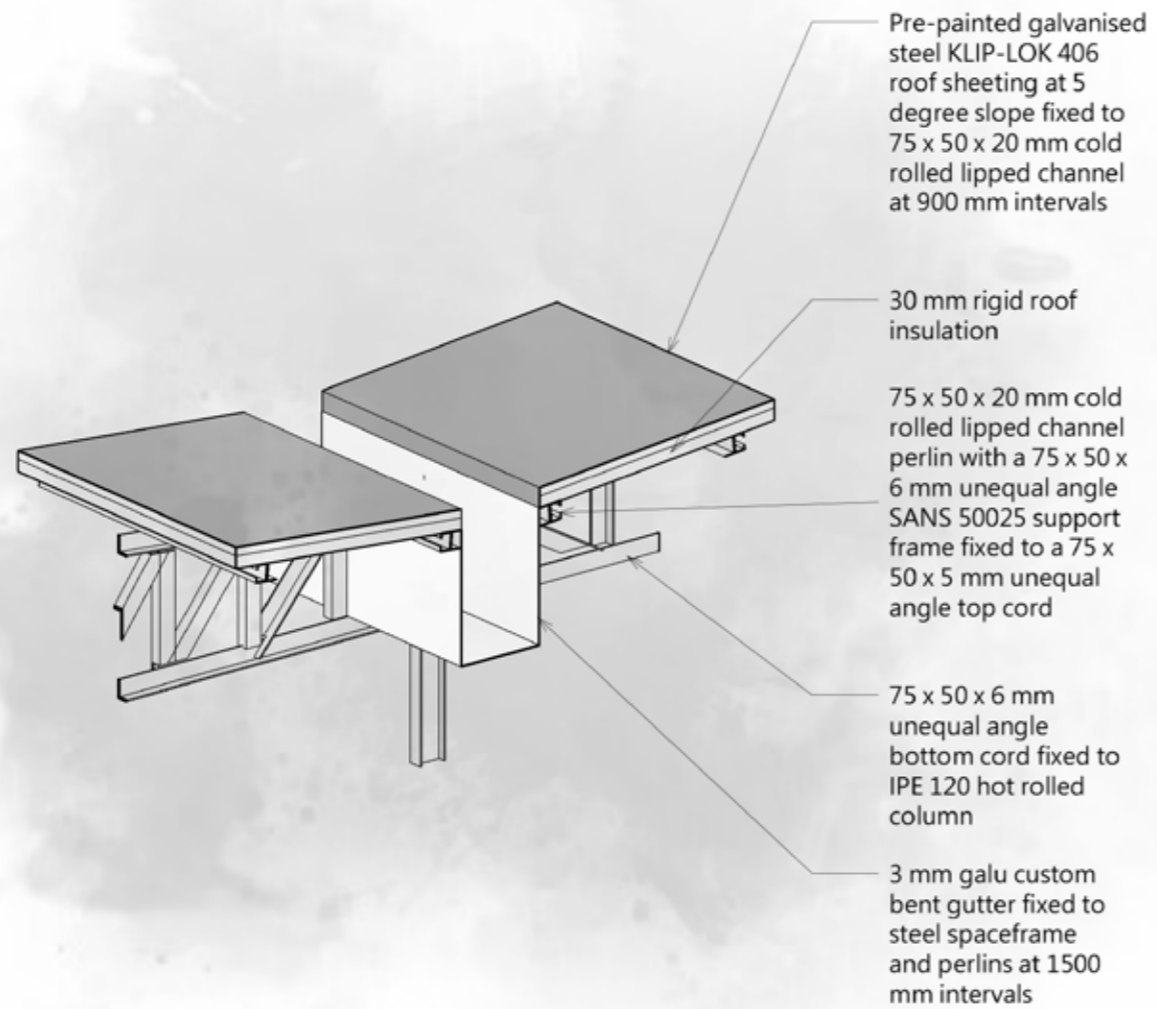


Figure B: Brick pattern layout (Author, 2020)
Not to scale



DETAIL D: GUTTER DETAIL
1:20 to scale on A3

Figure 7.5.9: Detail D annotated (Author, 2020)

SYSTEMS: WATER *ecological system*

Water becomes an important element used within the design to connect visitors with nature and the notion of slowing down. It plays a key role in illustrating the holistic farm to fork approach which contributes to the projects intention to mitigate the value of production in retail space.

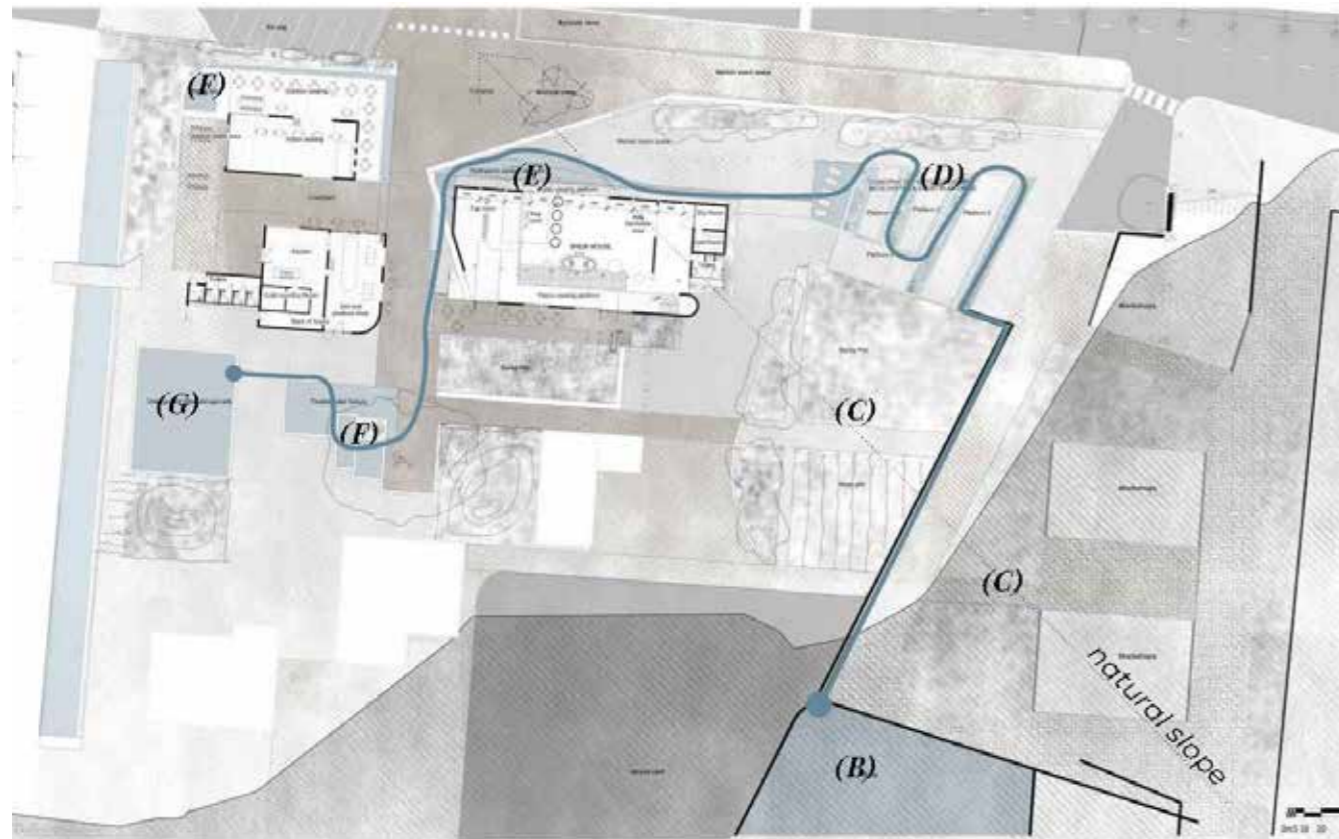


Figure 7.6.1: Water management and distribution (Author, 2020)

The notion of slowing down is manifested through the movement of water, indicated in Fig. 7.4.1, in the canals from the dam (point B) to the water treatment bed (D) which uses bio filters to purify the harvested storm and rooftop rain water for the hydroponic reservoir and evaporative cooling in the forecourt as well as the outdoor seating area

of the cafe (points E). The clear water also forms part of a feature in the internal praza (at point F) before the canal disappears.

In Fig 4.1.2 points (D) and (E) in the systems diagram is simply illustrated here regarding a consideration towards the bio filter in the treatment beds and the hydroponic system.

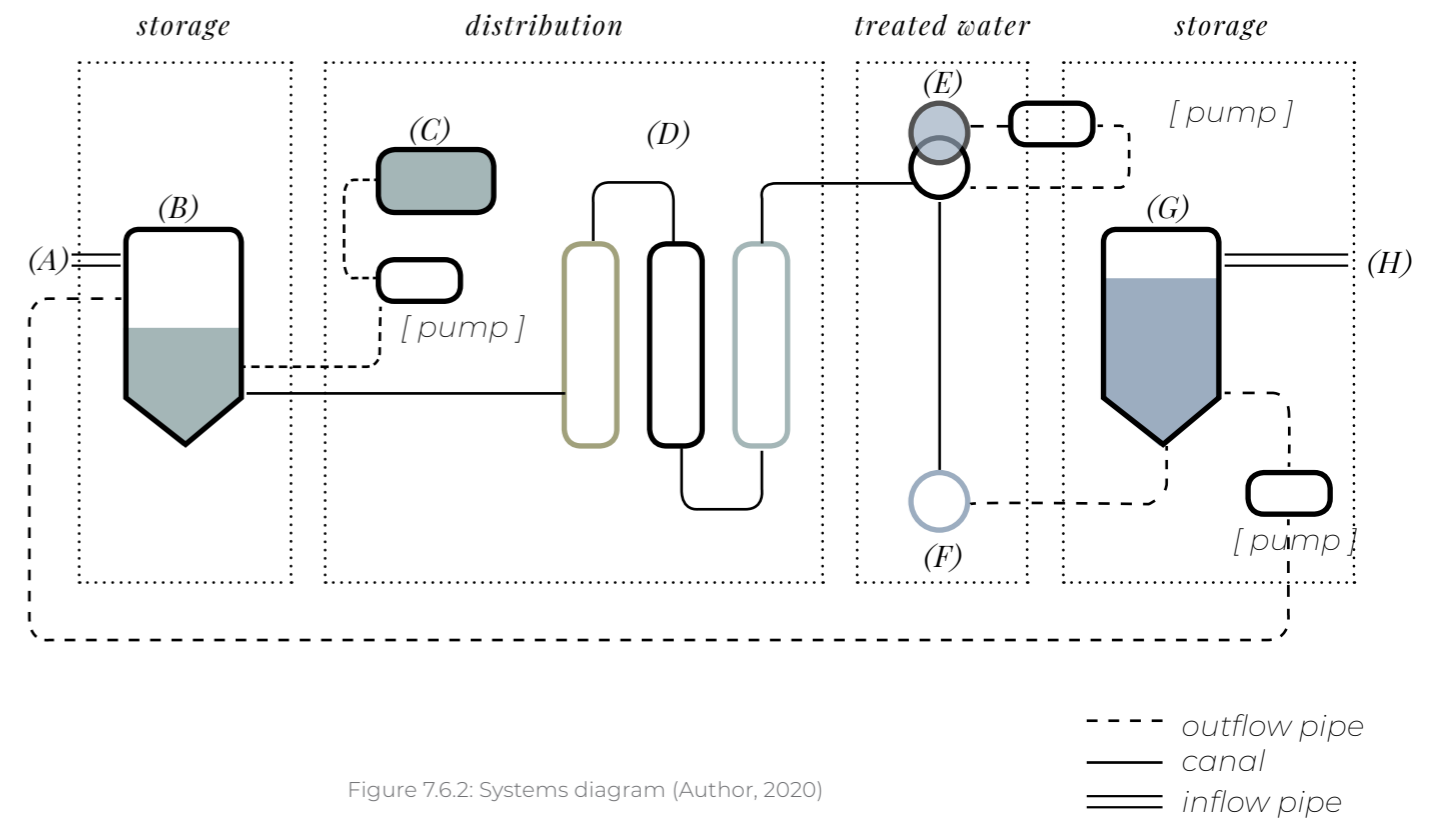


Figure 7.6.2: Systems diagram (Author, 2020)

Water yield

Since the public space and urban farming are water intensive services rainwater and grey water collection will be used to save cost and align with the projects sustainable ethos.

Rainwater will be collected from the roofs, as well as the runoff from the parking area, lawn, wetland, and paved surfaces of the market space. Grey water from basins and water used to clean brewery equipment and floor will also contribute as an alternative water source. Figure 7.4.3 provides an explanation of the total water yield derived from rain- and grey water collection.

Water demand

Landscape irrigation makes up around 50 per cent of the total annual water yield sourced from rain- and grey water collection. Water closets and evaporation loss (from the open reservoir) account for another 30 per cent annually. Figure 7.5.5 provides a table of the of water demand constituting out of irrigation, water closet and evaporation loss and the related graph in Fig 7.5.6

portrays how there will only be a slight decrease in the water demand in the winter months as less landscape irrigation will be required.

Water budget

Within the first full year cycle the annual average balance will potentially deliver around 570 cubic meters of water (see Fig. 7.4.7).

The sum of the closed and open reservoirs capacity is 1200 cubic meters and after sixteen months both tanks will be utilised to their fullest capacity. At this moment in time the system will be able to put water back into Pretoria's water grid. The Hartebees stream, located on the western border of the site, will receive overflow water via a surface canal from the subsurface water storage tank. A canal was chosen to highlight the projects' contribution toward Pretoria's grid as well as form part of the language used on site for water distribution.

TOTAL WATER YIELD

MONTH	AVE RAINFALL, P (m)	CATCHMENT YIELD (m³) (Yield = PxAxC)	ALTERNATIVE WATER SOURCE (m³)	TOTAL WATER YIELD (m³)
January	0.13	642.54	12.00	654.54
February	0.09	410.64	12.00	422.64
March	0.09	425.14	12.00	437.14
April	0.05	251.22	12.00	263.22
May	0.02	91.79	12.00	103.79
June	0.01	28.99	12.00	40.99
July	0.01	28.99	12.00	40.99
August	0.01	28.99	12.00	40.99
September	0.07	333.35	12.00	345.35
October	0.07	352.67	12.00	364.67
November	0.11	541.08	12.00	553.08
December	0.12	555.58	12.00	567.58
ANNUAL AVE.	0.70	3690.96	144.00	3834.96

Figure 7.6.3: Total water yield table (Author, 2020)

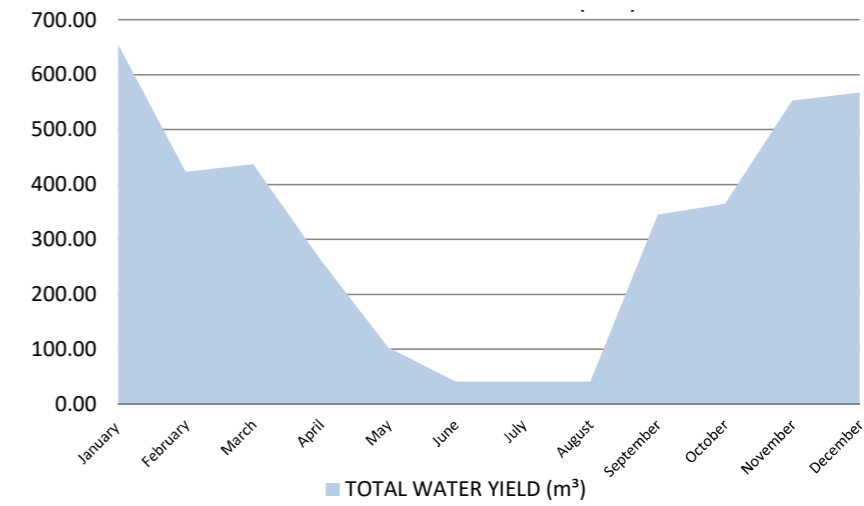


Figure 7.6.4: Total water yield graph (Author, 2020)

TOTAL WATER DEMAND

MONTH	TOTAL DEMAND (m³/month)
January	306.18
February	290.76
March	277.92
April	266.50
May	239.86
June	219.98
July	221.98
August	260.04
September	285.34
October	296.76
November	294.76
December	306.18
ANNUAL TOTAL	3266.26

Figure 7.6.5: Total water demand table (Author, 2020)

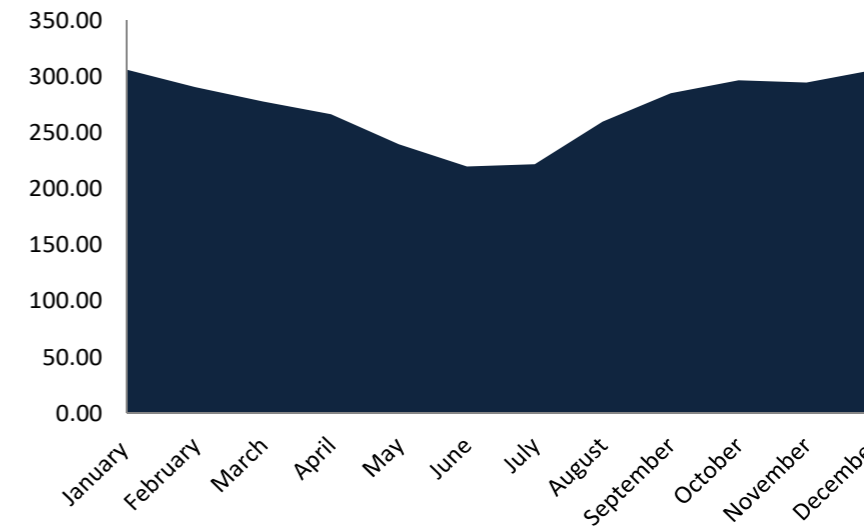


Figure 7.6.6: Total water demand graph (Author, 2020)

TOTAL WATER BUDGET

MONTH	YIELD (m³/month)	DEMAND (m³/month)	MONTHLY BALANCE	POTENTIAL VOLUME (m³)	VOLUME IN TANK (m³)
January	654.5	306.2	348.4	936.0	936.0
February	422.6	290.8	131.9	1067.9	1067.9
March	437.1	277.9	159.2	1227.1	1200.0
April	263.2	266.5	-3.3	1223.8	1196.7
May	103.8	239.9	-136.1	1087.7	1060.6
June	41.0	220.0	-179.0	908.7	881.7
July	41.0	222.0	-181.0	727.7	700.7
August	41.0	260.0	-219.1	508.7	481.6
September	345.3	285.3	60.0	568.7	541.6
October	364.7	296.8	67.9	636.6	609.5
November	553.1	294.8	258.3	894.9	867.8
December	567.6	306.2	261.4	1156.3	1129.2
ANNUAL AVE	3835.0	3266.3	568.7		

Figure 7.6.7: Total water budget table (Author, 2020)

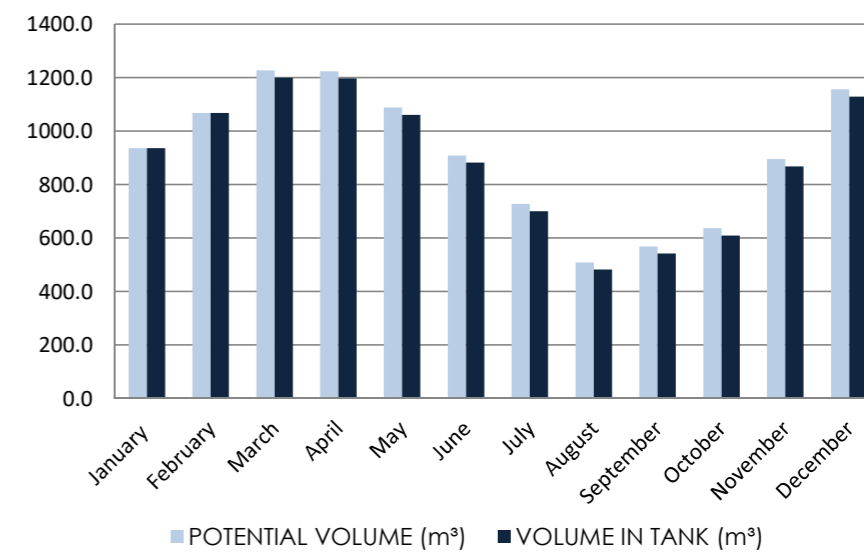


Figure 7.6.8: Total water budget graph (Author, 2020)

SYSTEMS: AIR FLOW

Ventilation and cooling mechanisms

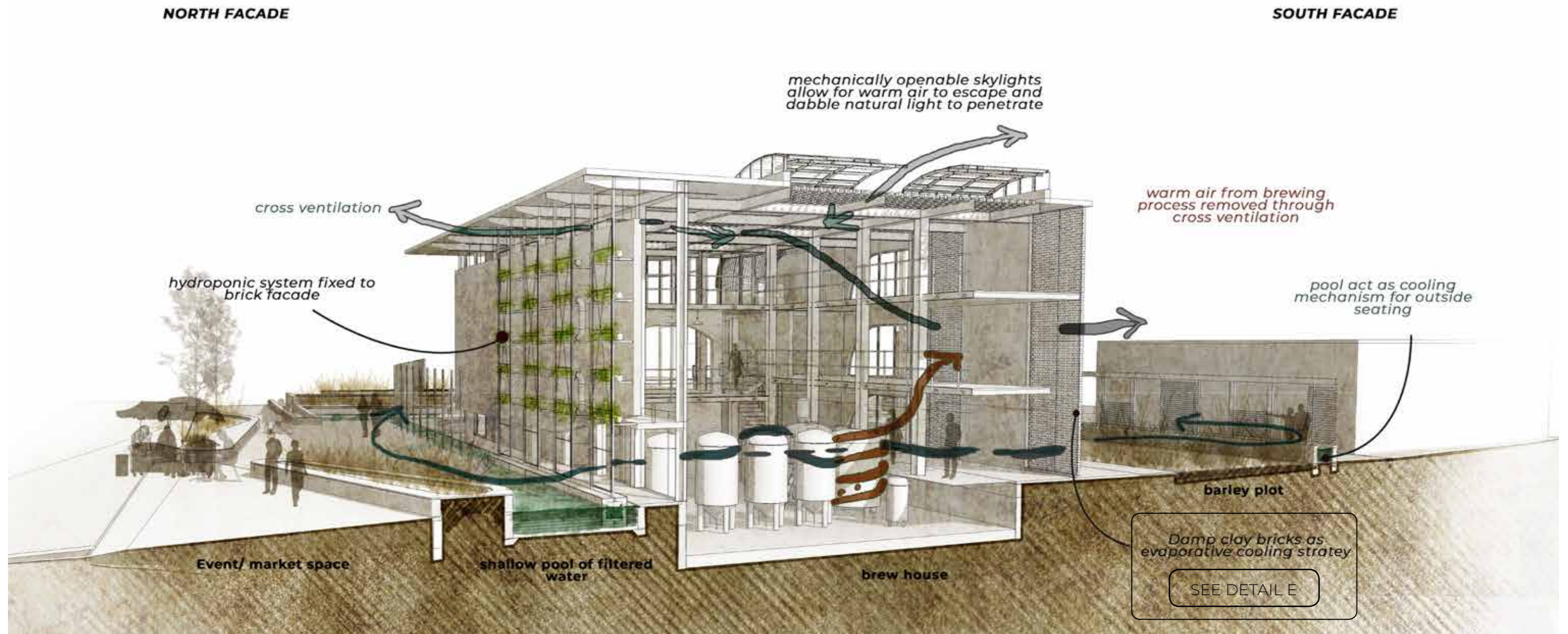


Figure 7.7.1: Ventilation and cooling mechanism (Author, 2020)

Cross ventilation and evaporative cooling strategies using pools on both the northern and southern facade work in conjunction with one another. Additionally a special cooling technique is used whereby the clay bricks on the southern facade are dampened with water lightly cascading along the edge of the building in order to allow the bricks to absorb water creating a microclimate which naturally pulls cool air into the building as hot air from the brewing process rises.

Mechanically operable skylights will contribute to the outflow of hot air from the brewing process whilst filtering sunlight through the brick screens.

PRECEDENT FOR EVAPORATIVE COOLING
of vertical brick screening devices



Figure 7.7.2: Spanish pavilion in Zaragoza (Mandago,2008)

The intention of the Spanish Pavilion at the International Expo of Zaragoza was to generate environmental awareness from an energy point of view.

These vertical elements made of a metallic core clad in pieces of clay, in contact with water, absorbs the water which then creates air currents in order to stimulate a microclimate (Mandago, 2008).

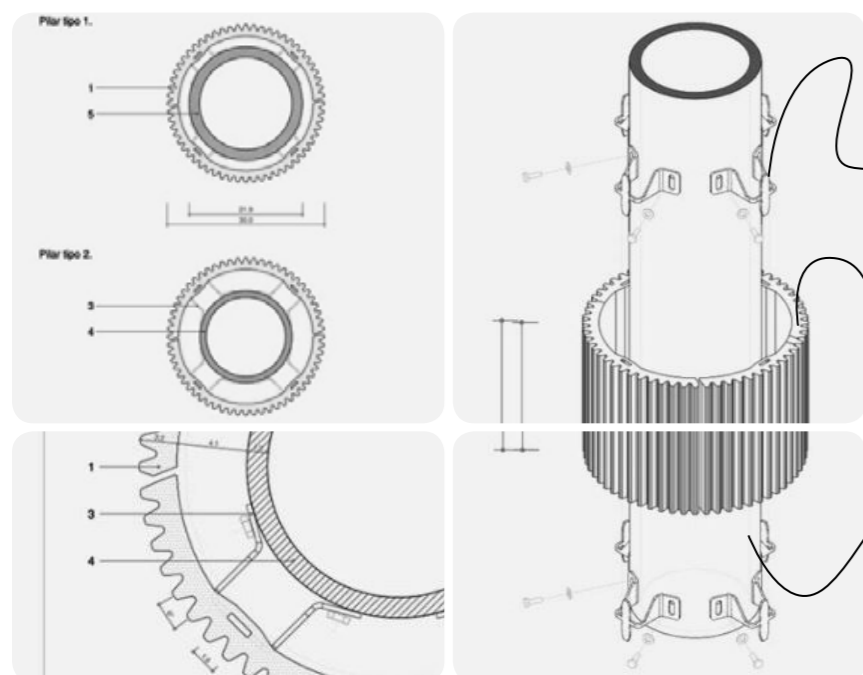


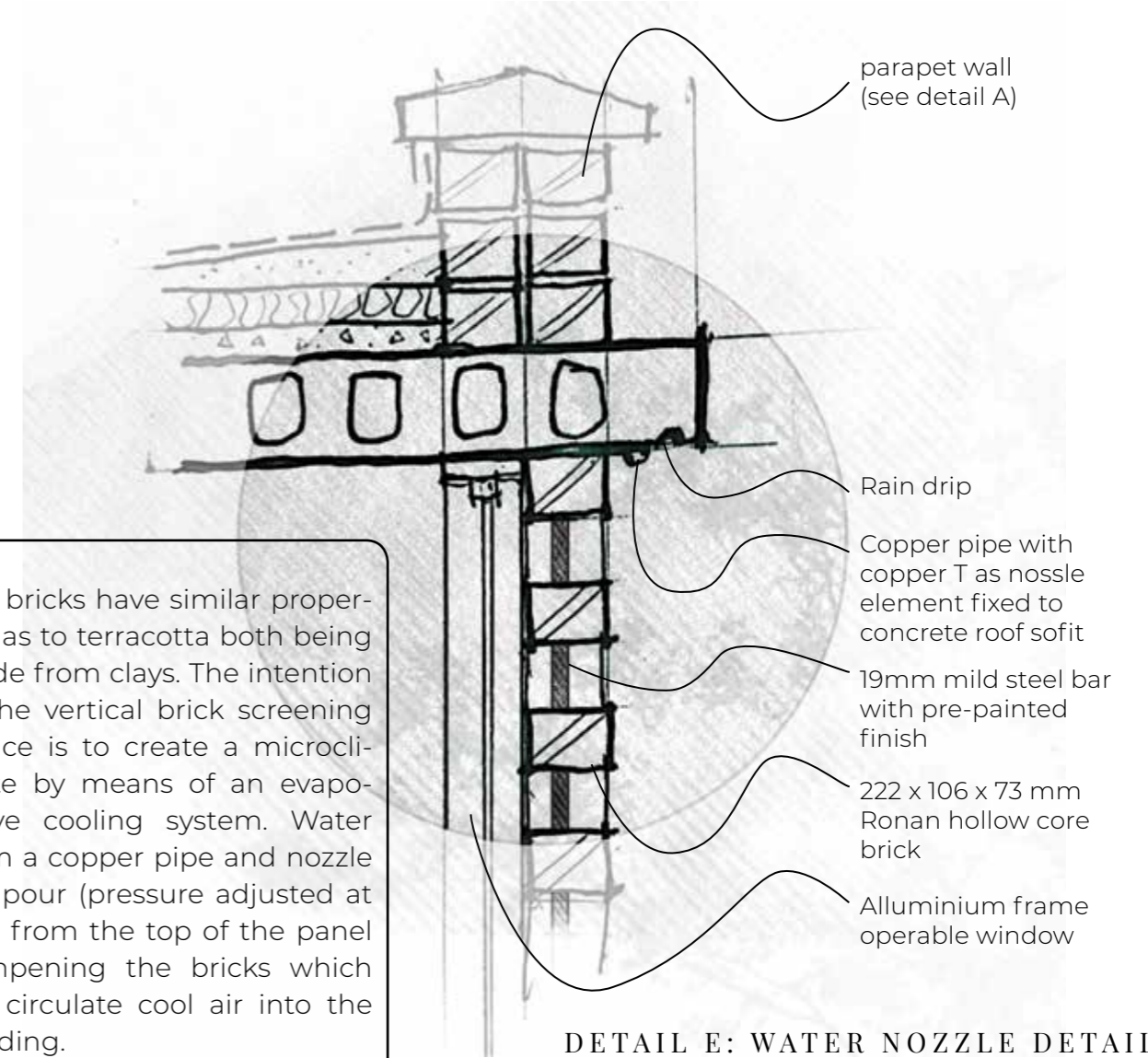
Figure 7.7.3: Terracotta column detail (Ceramica Architectures, 2008)

Double peg steel piece allows for high degree of precision in construction

Terracotta semi-circular section prepared with clays at 15mm thickness

Metallic core

APPLICATION FOR EVAPORATIVE COOLING
of vertical brick screening devices

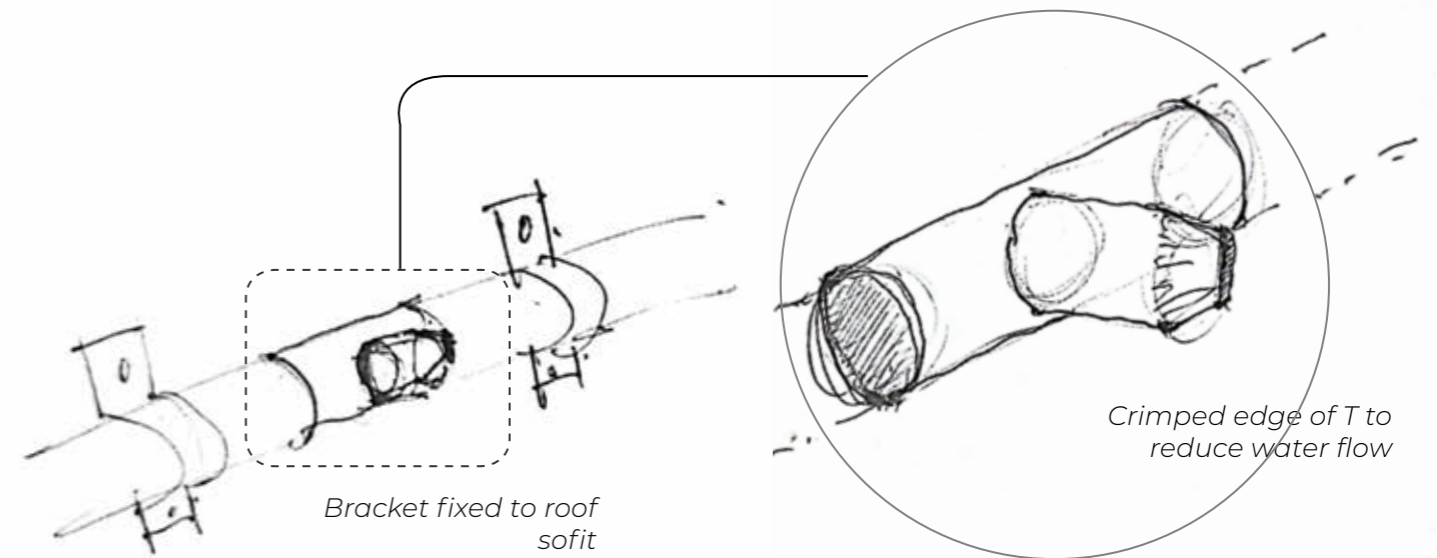


The bricks have similar properties as to terracotta both being made from clays. The intention of the vertical brick screening device is to create a microclimate by means of an evaporative cooling system. Water from a copper pipe and nozzle will pour (pressure adjusted at tap) from the top of the panel dampening the bricks which will circulate cool air into the building.

- parapet wall (see detail A)
- Rain drip
- Copper pipe with copper T as nozzle element fixed to concrete roof soffit
- 19mm mild steel bar with pre-painted finish
- 222 x 106 x 73 mm Ronan hollow core brick
- Alluminium frame operable window

DETAIL E: WATER NOZZLE DETAIL
not to scale

Figure 7.7.4: Detail E exploration (Author, 2020)



Bracket fixed to roof soffit

Crimped edge of T to reduce water flow

Figure 7.7.5: Explanation of water spray device (Author, 2020)

CONCLUSION

The project set out to develop a non-typological approach to public space in a poly-centric city. The principle of third space was used to conceptualise an interface for public life, that would potentiate both public and private realms, and mitigate the issues currently related to contemporary public space. The notion of third space was also considered for the projects programmatic response in order to achieve an authentic urban experience. In essence a bridge between industrial typology and retail space was proposed to remedy the state of the unconscious consumer as well as establish the cross-fertilisation that occurs when a larger demographic of users are present.

The project manifesto, aimed at generating a holistic understanding of sustainability, resulted in a design underpinned by the act of knowledge transfer. Knowledge transfer motivated the design to include exposed systems, processes and raw materials that would instill education through experiences and engagement between nature, craftsman and user. From material use to the functionality of systems became part of the project discussion to mitigate a social and environmental blindness caused by the current public space typology. Ultimately, the project's practical implementation toward knowledge transfer provided a new sense of direction of public space indispensable to the vitality and longevity of public life within a city.

APPENDIX



View from passage toward bakery and internal praza



View from passage seeing water canal in front of brewery



Internal view of the deli/ shop section of the bakery building



Internal view of cafe seating area



Pond and canal as cooling strategies for seating area at Cafe



View of brewery and silos from barley plot



Barley field and vertical stone wall in internal praza



Internal view from office in Brewery

SBAT RATING

Sustainable Building Assessment Tool

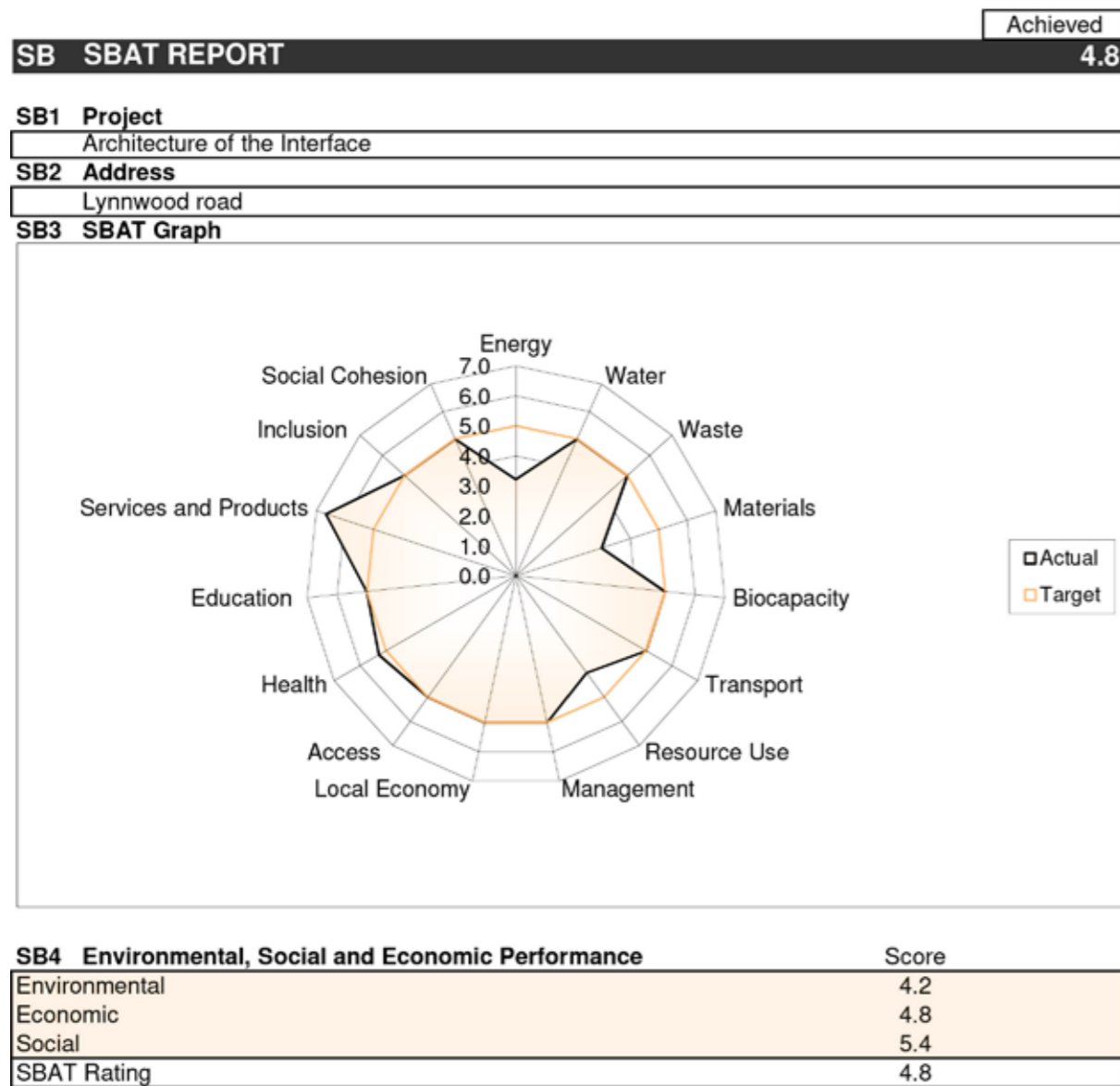


Figure 7.8: SBAT rating (Author, 2020)

SEFAIRA

Daylighting assessment tool



Figure 7.9: Sefaria internal lighting result (Author, 2020)



Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en
Inligtingtegnologie / Lefapha la Boetšenere,
Tikologo ya Kago le Theknolotši ya Tshedimošo

Reference number: EBIT/53/2020

Ms C Karuseit
Department: Architecture
University of Pretoria
Pretoria
0083

Dear Ms C Karuseit

FACULTY COMMITTEE FOR RESEARCH ETHICS AND INTEGRITY

Your recent application to the EBIT Research Ethics Committee refers.

Conditional approval is granted.

This means that the research project entitled "Masters Professional Dissertation in Architecture, Landscape and Interior Architecture" is approved under the strict conditions indicated below. If these conditions are not met, ap is withdrawn automatically.

Conditions for approval

Approved based on the summaries provided.

Applications from each student (including application forms and all necessary supporting documents such as questionnaire/interview questions, permission letters, informed consent form, etc) will need to be checked inter the course coordinator/ supervisor. A checklist will need to be signed off after the checking.

All of the above will need to be archived in the department and at the end of the course a flash disc / CD clearly marked with the course code and the the protocol number of this application will be required to be provided to E REC administrator.

No data to be collected without first obtaining permission letters. The permission letter from the organisation(s) be signed by an authorized person and the name of the organisation(s) cannot be disclosed without consent.

This approval does not imply that the researcher, student or lecturer is relieved of any accountability in terms of Code of Ethics for Scholarly Activities of the University of Pretoria, or the Policy and Procedures for Responsible Research of the University of Pretoria. These documents are available on the website of the EBIT Ethics Comm

If action is taken beyond the approved application, approval is withdrawn automatically.

According to the regulations, any relevant problem arising from the study or research methodology as well as a amendments or changes, must be brought to the attention of the EBIT Research Ethics Office.

The Committee must be notified on completion of the project.

The Committee wishes you every success with the research project.

Prof K.-Y. Chan

Chair: Faculty Committee for Research Ethics and Integrity
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The End.

Thank you!