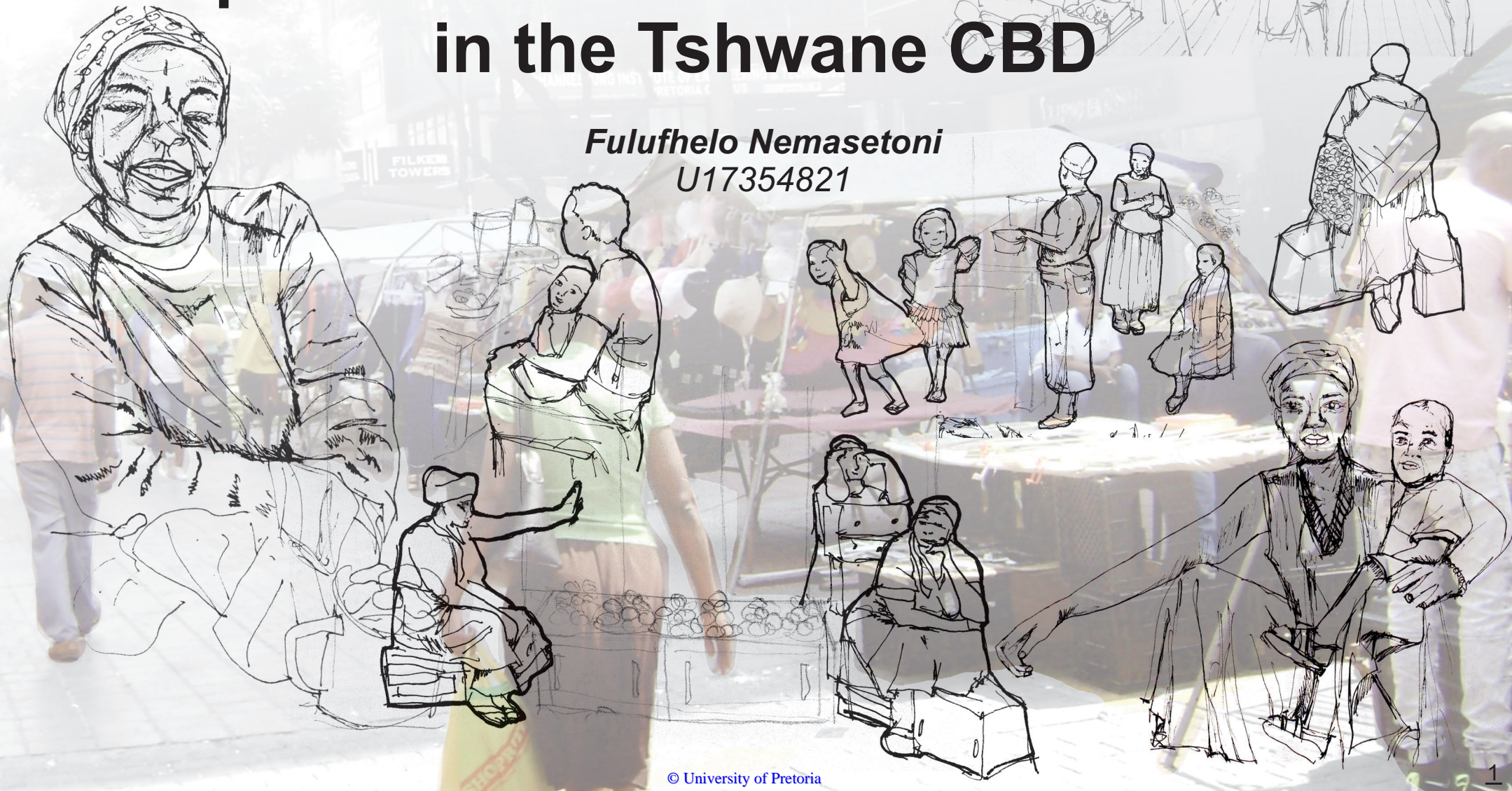


## ARCHITECTURE AS INFRASTRUCTURE

# A Market and Urban Farm for the Empowerment of Women Street Traders in the Tshwane CBD

*Fulufhelo Nemasetoni*  
U17354821



## Declarations

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this essay is my own original work Where other people's work has been used (either from a printed source, internet or any other source), this has been properly acknowledged and referenced in accordance with departmental Requirements



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**SIGNATURE**

**15 Novemeber 2021**

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**DATE**

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In accordance with Regulation 4(c) of the General Regulations (G.57) for dissertations and theses, I declare that this thesis, which I hereby submit for the degree of Master of Architecture (Professional) at the University of Pretoria, is my own work and has not been previously submitted by me for a degree at this or any other tertiary institution.

No part of my thesis has already been, or is currently being, submitted for any such degree, diploma, or other qualification. I further declare that this thesis 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 provided.

**Fulufhelo Nemasetoni**  
**November 2021**

Submitted to fulfil part of the requirements for the degree of Master of Architecture (Professional), Department of Architecture, Faculty of Engineering, Built Environment, and Information Technology (EBIT), University of Pretoria

**University of Pretoria, 2020**

## **Acknowledgements**

Firstly, I would like to thank God for giving me strength to keep going. I would like to thank my family for their continued support throughout my architecture journey. Special thanks go to my husband and my parents.

This dissertation is dedicated to my biggest source of inspiration, my daughter Onalenna. You inspire me to be the best that I can be so that I can be a good example for you.

I would also like to thank my study leader, Mr Cobus Bothma for the great guidance and encouragement. You are much appreciated.

## Dissertation Abstract:

The informal economy is growing at a rate at which the formal economy is failing to accommodate workers and opportunities. This phenomenon can no longer be seen as just a temporary condition.

Although arising from the failure of the formal, the informal could be the way to urban resilience in that it supports and promotes local economies, brings social capital as well income generation. It is adaptable, flexible and always responsive to the current condition using very little, often recycled means.

Women are the most marginalised members of this sector, often being pushed into small-scale survivalist activities due to the many household and childcare responsibilities. Women street traders often have more challenges than their male counterparts such as being seen as easier targets for crime as well as harassment. Mother street traders often have to take their children to work. The aim of this dissertation is for the design of a safe market space for women street traders which also has play learn areas suited to small children.

The concept of architecture as infrastructure was explored in order to design a building that would be a valuable resource in the Bosman Street Station Precinct in the Tshwane CBD. The idea of urban farming in this context was explored as a way to also address the growing food security concerns affecting the poor and vulnerable. The project aims to be an empowerment tool for women street traders.

## Project Details

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<b>Programme:</b>	Informal Market and Urban Farm
<b>Study Area:</b>	Bosmanstraat Station Precinct
<b>Location:</b>	Tshwane CBD

### Client:



Fig 1: A sketch of a mother holding her small child (Nemasetoni 2021)

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# ARCHITECTURE AS INFRASTRUCTURE

## Essay 1: Position and Situation



*Fig 2: A Sketch of the Church Street Market (Nemasetoni 2021)*



## Introduction

High rates of urbanization have led to the influx of people into the CBD in search of employment, opportunities and a better quality of life. The formal system cannot cater for their needs leaving this new urban community often marginalised having to find other means for survival such as the informal economy, due to its ease of entry and low start-up cost.

The informal economy is growing at a rate at which the formal economy is failing to accommodate workers and opportunities. This phenomenon can no longer be seen as just a temporary condition.

Although arising from the failure of the formal, the informal could be the way to urban resilience in that it supports and promotes local economies, brings social capital as well income generation. It is adaptable, flexible and always responsive to the current condition using very little, often recycled means.



Fig. 3 Sketch of a woman migrating to the city (Nemastoni 2021)



## General Issue

It is important as the researcher to understand what is deemed as informal. The word itself implies that the informal is a reaction or some kind of deviation from the formal but in a negatively connotative way. In the South African context, it can be said that, the informal is somewhat unwanted and is seen as arising from the failure of government to develop the formal economy to accommodate its citizens. This view suggests that the informal sector should diminish as more development and economic growth takes place.

Informal businesses include street trading, hawking, various production, services and construction. According to research, street trading is the biggest informal trading industry constituting 41.5 % of the informal economy. Although informal businesses are often unregistered and unregulated, they contribute millions to the economy. According to stats SA the informal economy provided 5,2 % of the total South African GDP in 2015.

This shows that the informal sector is important and an integral part of the overall economy and is a way in which the poor often marginalized people of the country can be active participants in the economy. Thus, more efforts must be made to properly understand this sector in order to accommodate it spatially as well as in economic policy and law making.

When dealing with informality, law makers and planners often have the goal of either “formalising the informal”, (2018) restricting activities of informality or investing in the formal in attempt to absorb the people in the informal sector. The fact is that South Africa is a developing country and as long as this is the case, informality will always take place .

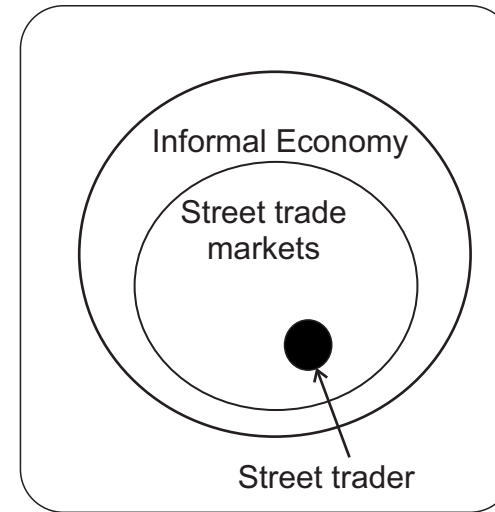


Fig. 4 An image showing the position of the street trader within the informal e e economy (Nemasetoni 2021)



Fig 5. Infographic showing the value of the informal economy in South Africa (StatsSA 2019)

## Urban Issue

Most activities in the informal economy take place on the city streets and other public areas. Empty sidewalks along a busy pedestrian route or close to urban infrastructure such as transport nodes provide opportunity and easy access to market.

These street markets are growing at a very fast pace and are fast becoming the normal street condition as seen in the diagram. Research shows that government does not offer effective support to the informal economy. Street markets have a big impact on the urban morphology and legibility in the CBD and thus must be planned and designed for.



Fig 6. A sketch of street trader's structures on Sisulu Street in the Tshwane CBD (Nemasetoni 2021)



Fig 7. An image showing street trade in the CBD (Nemasetoni 2021)

## Urban Issue (How street trading affects how people experience the city):

Street Trade has an impact on our urban experience of the CBD and there are some positive and negative perceptions:

Fig 8. Image showing the positive aspects and negative perceptions of street trade within the CBD (Nemasetoni 2021)

### Negative Perception



Seen to destroy the character of the area.



Streets become dirty with litter and other wastes.



Unhygienic Environments. Sidewalks can become congested with obstruction to pedestrian flow.



**\* As a result of street trade activities being disregard and not accomodated and planned for In the Tshwane Municipality SDF plan.**

### Positive Aspects



Provide Passive Surveillance on Sidewalk and other Public Spaces



They provide employment or 'space' for the very poor who are often marginalized in the city.



Supply of affordable goods such as food and other products in an easily accessible and convenient way saving pedestrians time.



Increase in social interaction aiding in the creation on a sense of community.



They bring public life and increase activity on the streets of the City.



They add to the character and sense of place.

## **Research Questions & Methodology:**

How can Infrastructure become architecture that facilitates and supports the activities of the street trade industry as well as act as a catalyst for its development in the Tshwane CBD?

### **Research Sub questions and Intentions**

1.4.1 What are the needs of the street trade industry and what types on infrastructures are needed for its development?

1.4.2 What is Architecture as Infrastructure. How can Architecture function as infrastructure and vice versa?

1.4.3 What lessons can be learnt from the existing street markets that can inform the type of architecture and infrastructure needed?

1.4.4 Case Study Analysis. What lessons can be learnt from existing projects that cater for the informal economy and the street trader?

### **Research Methodology**

The research will be focussed on analysing street trade activities in various scales ranging from an overall understanding of the street trade activities within the CBD, street trade markets as well as the street trader him/herself. This will be a qualitative study. The main methodological framework will be that of the ethnographic study. This methodology was appropriate for this study in that it allowed direct interaction with the phenomena being investigated. Detailed information is extracted through analysis of collected data. The data collected should provide detailed accounts describing the entity's behaviours and experiences over a set period of time. (LeCompte & Schensul, 2013:12-16)

### **Data Collection**

The primary data is collected by the researcher on site in the form of field notes, interviews and observations and this information can be extracted graphically through drawings and photographs. On site sketching and photography will be the main method used by the researcher. This will be guided by methods detailed in architectural graphic anthropology which aims to merge the two disciplines, namely, architecture and anthropology, to explore a new kind of understanding between social and spatial contexts. This involves observation of participants to understand the social interactions between users and between users and the spaces they occupy. The data uses principles of inscriptive practices such as orthographic, architectural drawings (plans, sections and elevations) as well as sketches which are then analysed to uncover more meaningful and diverse understanding of people and the built environment. (Lucas, 2020:14)

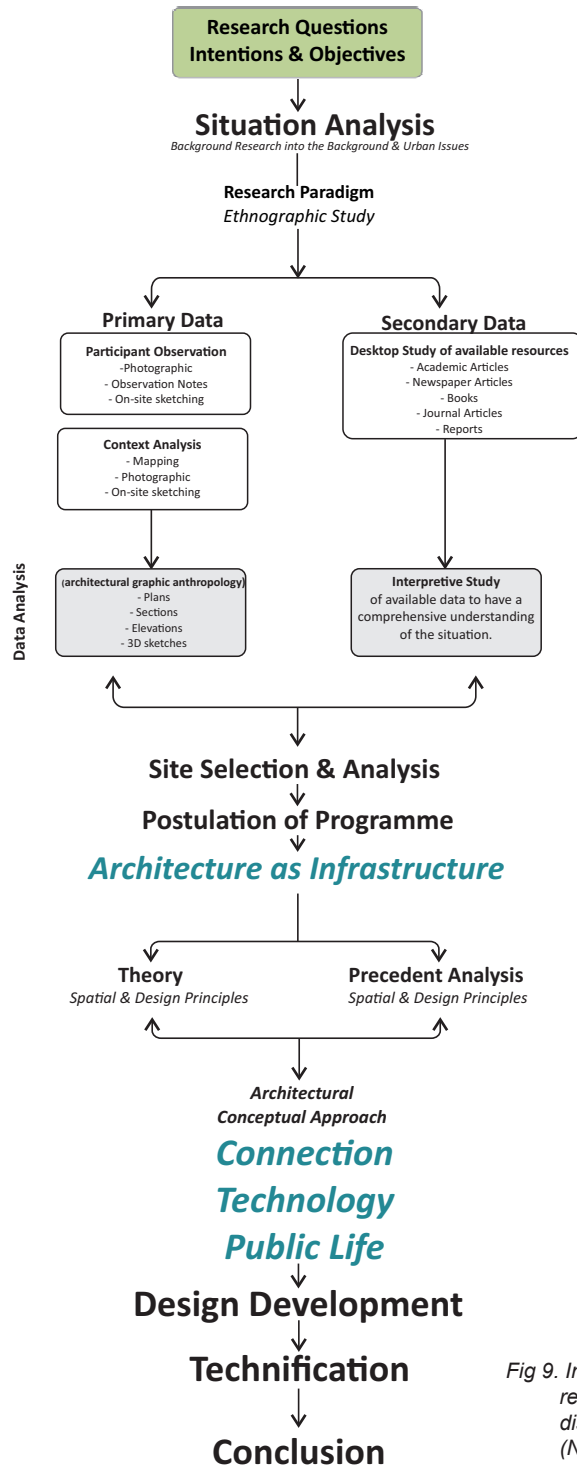


Fig 9. Image showing diagram of research methodology and dissertation research plan (Nemasetoni 2021)  
© University of Pretoria

## Relevance of Study:

The projects intention to be an intervention that aims to empower the most vulnerable group in the street trade community, namely women. Due to this intention, spatial justice theory be used as a normative position as well as the framework for the study.

Spatial justice can be described as a way of distributing space in a way that is equitable. It is a theory that essentially an 'analytical framework' use to investigate how justice and injustice are represented spatially and geographically. (Dufaux, 2009:3-5) By looking at the city through a spatial justice lens, one can ascertain where injustices exist and what strategies can be implemented to undo these injustices.

The aim of spatial justice is to strategize how space can be distributed and planned to ensure that all have access to this valuable resource. In order to achieve this, advantage must be given to the poor. The least advantaged, most vulnerable and marginalised must take priority in city planning. Spatial justice must be prioritized in the planning of the post-apartheid city context as a means to undo the discrimination, segregation and marginalization of the poor and vulnerable groups in South African society. Spatial justice becomes more of a process to facilitate the undoing of apartheid planning principles that still perpetuate inequality and exclusion in the capital city, Tshwane CBD.

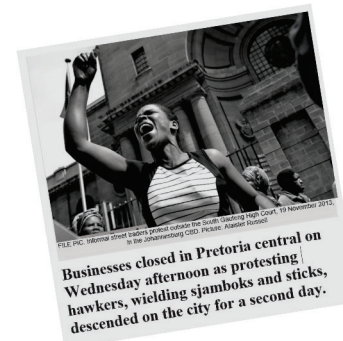
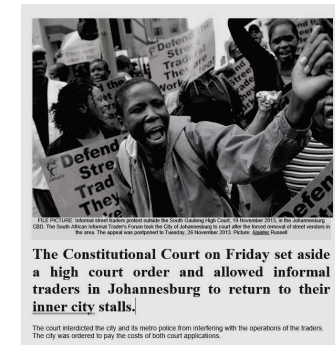


Fig 10. Image showing newspaper cutouts showing some of the challenges street traders are faced with on a daily basis (Nemasetoni 2021)



## Street Trading in the Tshwane CBD (Mapping Data):

Street trading were mapped during a walkthrough of the CBD and this was documented as seen in fig11. This mapping also shows how street trading happens in most areas of the city with higher intensity street markets located within close proximity to important economic, institutional and educational nodes.

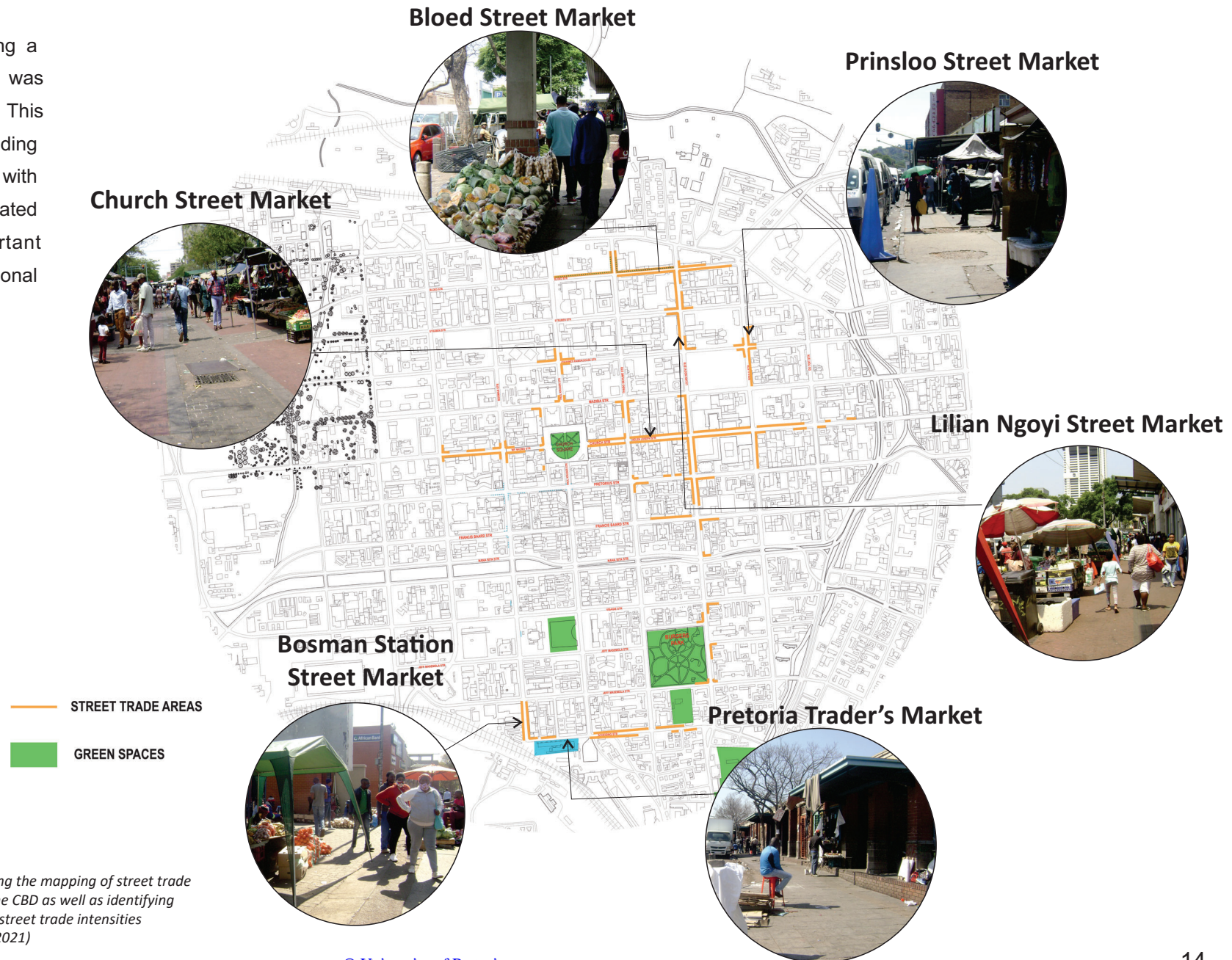


Fig 11. Image showing the mapping of street trade activities in the CBD as well as identifying areas of high street trade intensities (Nemasetoni 2021)

Street Trading in the Tshwane CBD (Mapping Data):

**An Architectural and Graphic Anthropological Study of 6 Informal Street Markets in the Tshwane CBD**

**1. Threshold**

*Architect Herman Hertzberger describes the threshold as being the space that 'provides the key to the transition and connections between' two different spaces with different spatial qualities.*

- **Quality of interactions/ Interactions**
- **context**
- **Space that allows for 'negotiation, display and demonstration.'**
- **Spaces of communication**
- **Spaces of illegality and informality and the legal.**

**2. Temporality**

*Analysis of permanent and temporal zones in the space and the transition between the 2.*

*How temporal spaces are 'constructed' and unassembled.*

**3. Mobility and Circulation**

*Analysis of permanent and temporal zones in the space and the transition between the 2.*

*How temporal spaces are 'constructed' and unassembled.*

**4. Practice/ Skills**

*Network of spaces connecting sites of production with those of negotiation.*

**5. Territory**

*How spaces/ boundaries are defined and articulated.*

- *Study of Boundaries*
- *Study of surfaces*

**6. Materiality**

*Analysis of creative use of materials.*

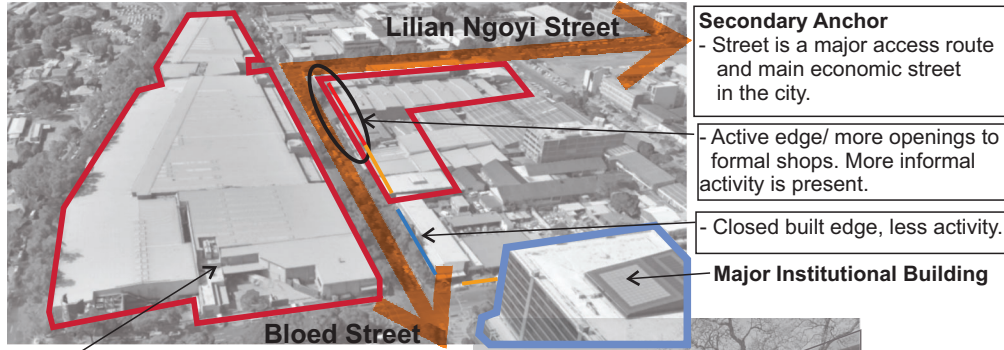
- *Analysis of what materials are used.*
- *Where these materials are sourced.*
- *The lifecycle of these materials*

**7. Links between Formal and Informal Economic Spaces**

*Analysis of context and how the informal street markets are located in relation to formal economic spaces on a macro and micro scale*



# 1. Context: Formal & Informal



**Bloed Street Mall:**  
Main anchor  
- Major economic space  
- Transport infrastructure. (Major Taxi Rank)

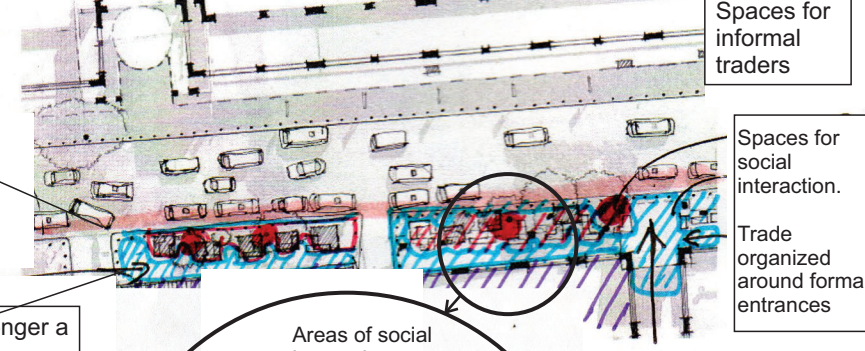
Informal Activity is prohibited on this edge due to mall surveillance and pavement



# 2. Threshold



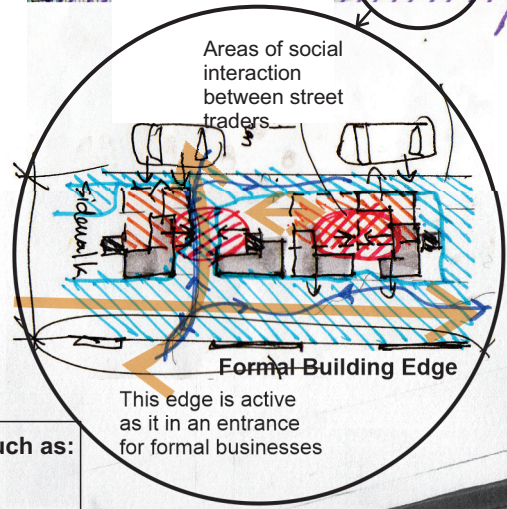
# 3. Territory & Circulation



Street edge is a waiting area for commuters

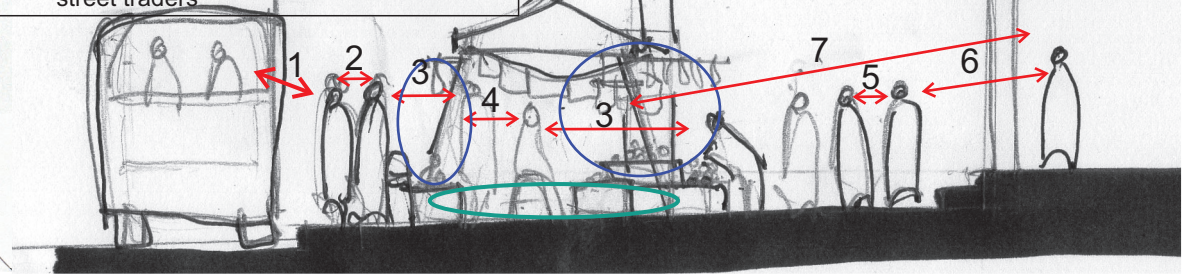
The sidewalk is no longer a linear element but becomes organic

Wayfinding/Walking becomes more organic where one has to weave themselves through the urban



# sections

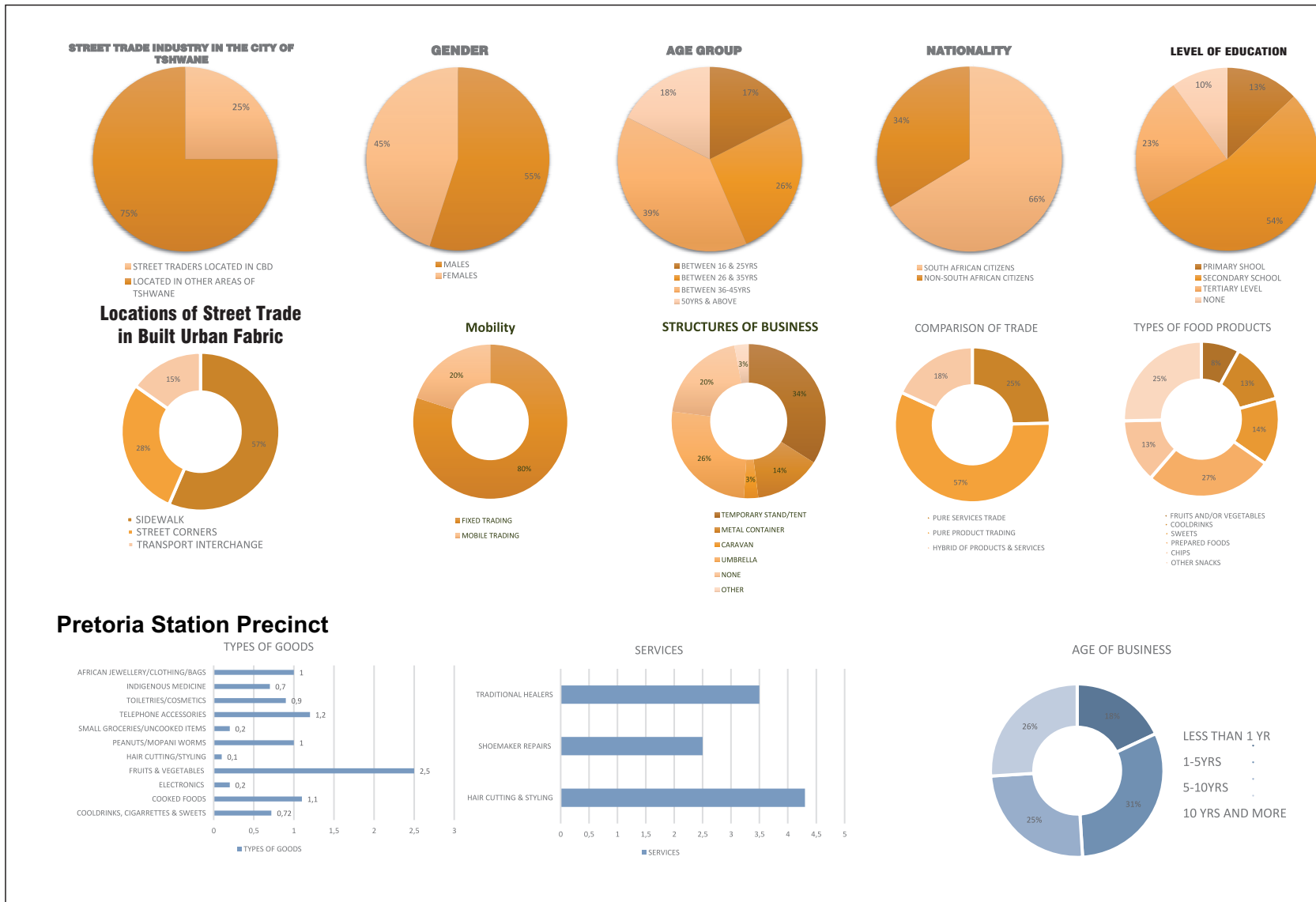
- ↔ Various Social Interactions occur such as:
1. Between commuters and drivers
  2. Between commuters
  3. Between commuters and street traders
  4. Between street traders
  5. Between persons in urban communities
  6. Between customers and formal business owners
  7. Between formal business owners and street traders



Essay 1

Fig 12: This is an image showing a sample of the data collected during the street trade mapping and analysis of spatial qualities (Nemasetoni 2021)

## Types of Street Trading in the Tshwane CBD Demographics:



**OPPORTUNITY FOR BUSINESS SKILLS TRAINING,**

**NEED FOR BASIC LITERACY SKILLS (ADULT EDUCATION)**

**ONLY 7% HAVE ACCESS TO ELECTRICITY**

**83% OPERATE FROM TEMPORARY STRUCTURES.**

**97% HAVE NO FORMAL TRAINING.**

Fig 13. An image showing graphs of street trader demographics in the Tshwane CBD as well as the Pretoria Station Precinct (Nemasetoni 2021)

## 1. The survivalist

Activities are started to generate income for an immediate need or not being able to find employment. It's seen as a temporary measure as a means of survival until employment becomes available. In order to best assist this type of street trader, there must be a focus on improving their standard of living and thus their welfare needs. There needs to a focus on making basic needs such as food, health services and ablutions accessible.



## 2. The self-employed

Persons in this sector have skills and are able to offer a service such as cooking, shoe repair and sewing but are unable to find employment in their fields. They have very little start-up capital to open a formal business. This type of trader would need more intervention aimed at improving their skills so that they can offer better services or produce better products. Skills such as business and financial management would also be beneficial.



## 3. Micro-enterprise

These enterprises have potential to grow and contribute to the overall economy. These are often linked to emergent markets. Persons in this industry choose the informal sector due to low start-up costs and less regulations and restrictions. This type of street trader would need access to business and entrepreneurship management training as well access to affordable spaces to trade and services such as water and electricity.



According to Rogan and Skinner (2018), 73% of street trade activities are survivalist and 27% micro-enterprises who have growth potential and intention.

**There are also other people who play an important supportive role to the street trader and industry.**

**These include the following:**

### 1. Trolley Transporters

People who use wheel barrows, shop trolleys and carts to transport goods from storage spaces to the trader and are paid a fee for this service by the trader.



### 2. Security Guards

Safety is seen as an "economic necessity" due to the fact that crime scares prospective customers and tourist. It also hinders good trading if the trader and their goods are also at risk. Some traders pay 'security guards' to guard their trading areas as well as overnight storage areas. Costs are often shared amongst a community of traders in the same area.



### 3. Drivers

These are persons who own taxis and bakkies who have a business agreement to transport traders to areas such as pension pay points or from places where they buy stock.



## Focus on Women Street Traders Challenges:

According to research, black women make up the majority of street traders in the informal economy. The most vulnerable group in the street trader community is women. (Berry , 2009:14) Because of the high rate of unemployment, women have been found to participate in more survivalist informal street trading activities that are less profitable keeping them stuck in a cycle of poverty, vulnerability and marginalisation. This is because female street traders often have more roles and responsibilities than their male counterparts, such as being the primary caregiver of children as well having more responsibilities in the household. Male street traders can be seen to have more advantaged and often make more from informal street trade activities than their female counterparts.

As mentioned before, the intention of this dissertation is to use the theory of spatial justice as a lens of enquiry. Women will thus be the focus of the study as they are the most vulnerable group as well as being a group earmarked for economic empowerment in the country.

### Challenges faced by female street traders

#### 1. Household and Children Responsibilities

Women street traders often do not have access to affordable childcare services due their low income. Street trade working hours are very long beginning very early in the morning and ending late. Most creches do not operate at these hours and many women street traders have to take their small children with them to work. This poses many risks to the development, health and safety of small children in these situations. (Berry , 2009: 14)

Women have more household responsibilities and also spend more time doing

household chores such as cooking and cleaning which gives them less time to trade and grow their businesses than male street traders.

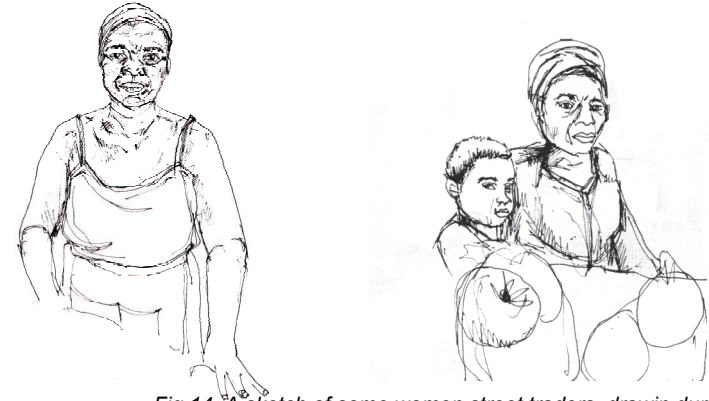


Fig 14. A sketch of some women street traders drawn during mapping of the existing street trade market on Scheiding street (Nemasetoni 2021)

#### 2. Legislation

Women are more affected by poverty than any other group in that they are seen to have lower positions in society due to the patriarchal nature of South African Society. According to Berry, most government departments are already under resourced and thus cannot address challenges specific to women. There is also little legislation and policy that aims at protecting women in the informal sector in the economy. (Berry , 2009:15)

Government interventions are not adequate to accommodate the increasing number of street traders and in some cases create more problems than they solve. This can be seen in the case of the recently built Bree Street Traders Mall which only caters for 500 street traders. It was found that there were thousands of street traders in the Johannesburg CBD who were not accommodated for in the project. The excluded traders became displaced and faced more

## Focus on Women Street Traders Challenges:

harassment from officers as a result of having to operate outside of the trader's mall. (Berry , 2009:16)

### 3. Funding

Informal businesses get no assistance from the formal finance system that is more in support of formal big business. Informal traders find it difficult to access capital from banks which makes it very hard to grow their businesses. This also due to the lack of assets that can be used as surety to be able to access credit. This affects women more in that woman often have to spend more of their earnings on the household needs more than their male counterparts. It has been found that men spend 3x more capital to start their businesses than women are able to making them more disadvantaged by being more underfunded. (Berry , 2009:20)

### 4. Lack of Infrastructure

The lack of infrastructure affects both male and female street traders alike. This includes the lack of weather protected trading areas and structures available at strategic areas such as around transport interchanges and places with public spaces with high foot traffic. There is also a lack of basic services such as clean water, electricity, toilets and waste management in public areas. This affects women more in that lack of hygienic basic services affect women's health more.(Berry , 2009:23)

Due to their physical limitations, women are not able to carry as much goods as men can. Transport costs are also very high which causes women to sell smaller less profitable goods than their male counterparts

### 5. Crime and Harassment

According to Berry, women are more affected by crime than men. This is due to women being more vulnerable and seen as easier targets. South Africa still has high rates of gender inequality with more women being victims of gender-based violence than men. Women also face more harassment from law enforcement officers. (Berry, 2009: 23)

The support and development of the street trade industry in South Africa has the potential to become a viable instrument that can be used to improve the lives of marginalised women by empowering them economically as well as socially.

The approach should be that of enablement and support, as opposed to regulation and control. Interventions should be aimed be very diverse to cater to the diverse needs of this very diverse sector. It is imperative that the researcher has an understanding of the different types of street trader as well as their reasons for entering the informal economy.

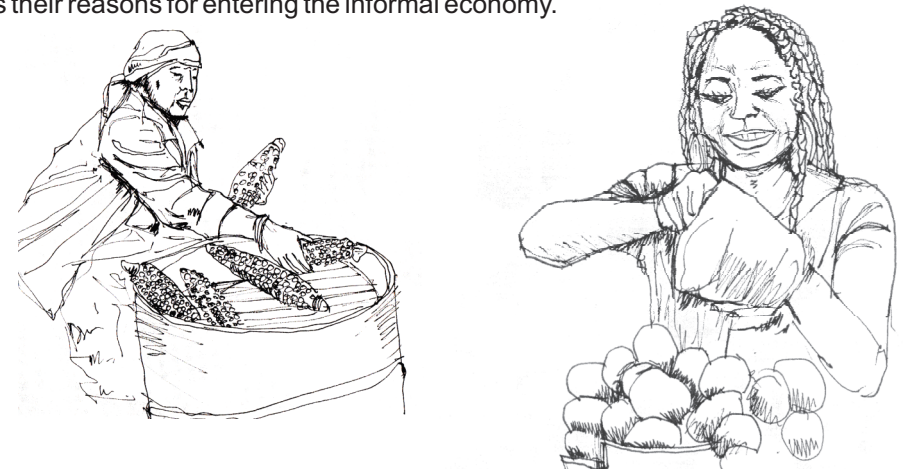


Fig 15. A sketch of some women street traders drawn during mapping of the existing street trade market on Scheiding street (Nemasetoni 2021)

## Site Selection Criteria

There are certain criteria that make a space more conducive for street trading. These include the following:

1. Close proximity to public transport node or area that has a high number of daily commuters passing by.
2. High foot traffic area.
3. Places of historical or cultural importance that could attract tourists.
4. Spaces close to other major formal economic nodes such as a major shopping centre.
5. Possible access to public ablutions and water.
6. It was also important that the area already have existing informal trading.

## Site Possibilities:

### 1. Madiba Street Market Precinct



### 2. Boom Street Precinct



### 3. Bosman Station Forecourt and Precinct



## Final Site Selection

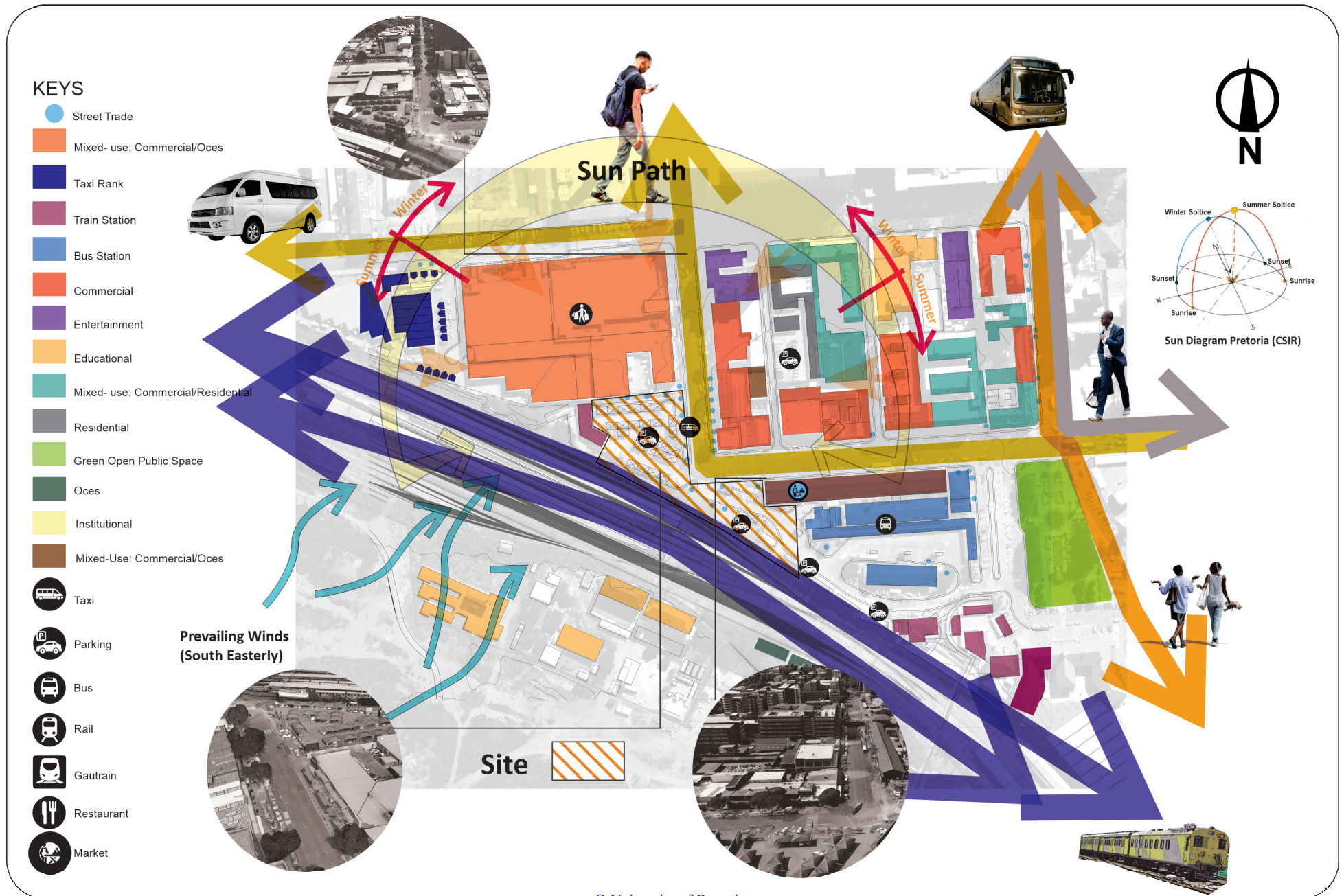


Option 3 was chosen in that it possesses all the criteria as well as a good level of complexity and varying urban conditions that one can respond to. The chosen study area is the main and biggest transport node and interchange in the CBD with a wide variety of public transport of varying scales and types and user groups making it one of the most diverse and vibrant areas in the CBD. Transport modes in close proximity to the site:

1. Pretoria Train Station
2. Bosman Train Station
3. Bosman Taxi Rank
4. Reya Vaya Rapid Transit Bus (various bus stops in close proximity)
5. Gautrain Station

Site Analysis:

Fig 16. Image showing site analysis (Nemasetoni 2021)



Site Selection:



Site  
Study Area

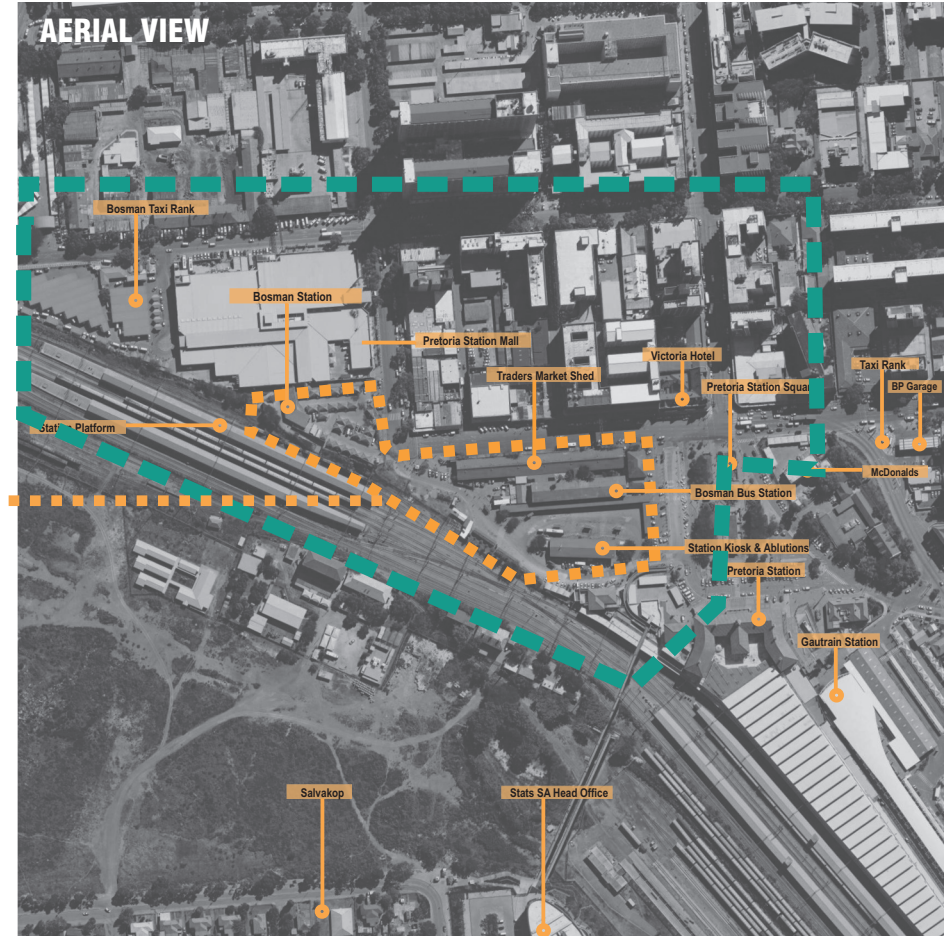


Fig 17 Image showing selected site (Nemasetoni 2021)





## Bosman Station Precinct Collage



Fig 17. Image showing study area collage (Nemasetoni 2021)

### The Study Area: The City's Southern Gateway

This area is known as the 'southern gateway' and is the main entrance or threshold space into the Capital City from the south.

The study area is along the train track from the Bosman taxi rank to the area just before the Pretoria station forecourt and building. The site will then extend up Paul Kruger Street to Bosman Street and then back to the Bosman Taxi Rank.

The main infrastructure will be located in the Bosman Train Station Forecourt, which is currently a parking space. This building will extend into the existing Pretoria Station Informal Market building which is a heritage building. This building will be part of my intervention and will be redesigned while maintaining its heritage value.

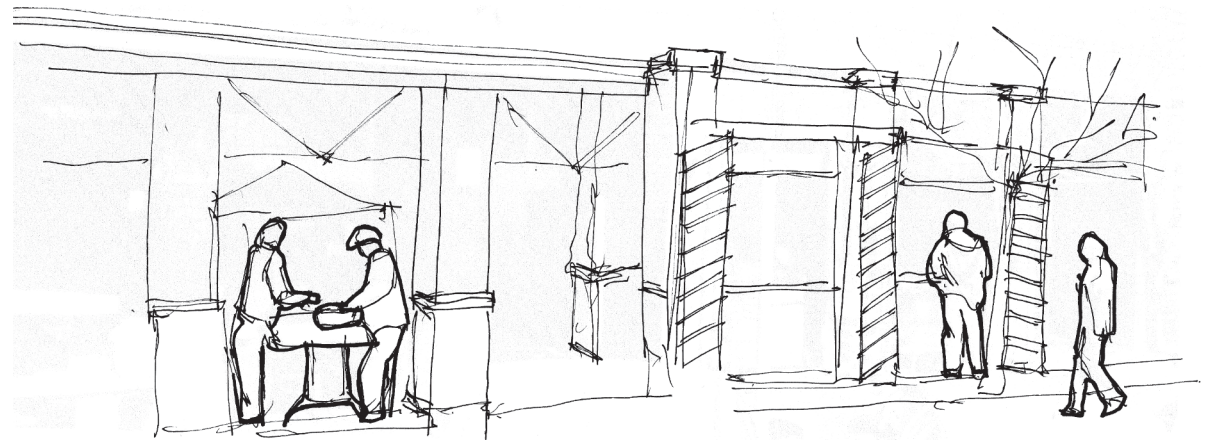


Fig 18. Sketch of study area activities on Scheiding Street (Nemasetoni 2021)

## Site Analysis:

### Vehicular Roads and Parking Areas

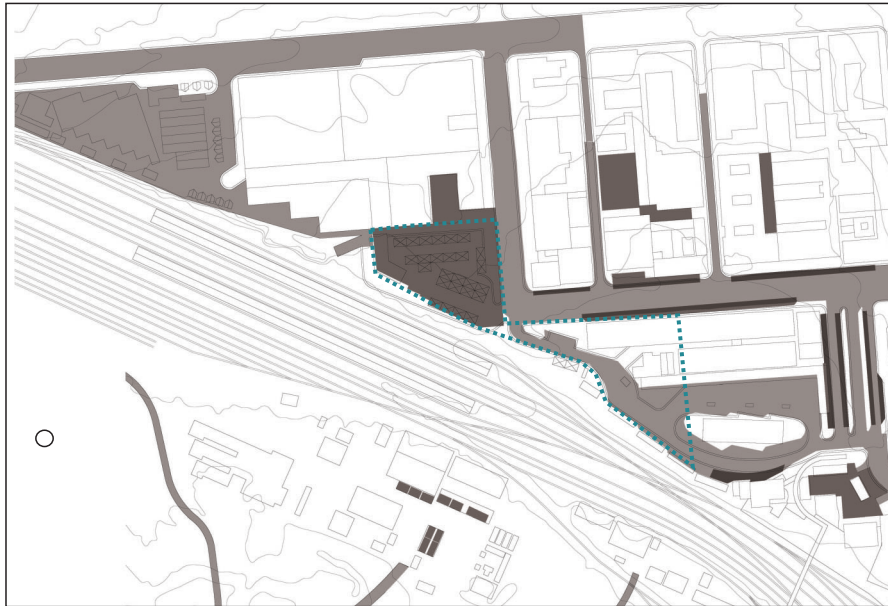


Fig 19. Parking and roads in the study area (Nemasetoni 20210)

The site is currently used a parking space for metrorail employees. Most of the roads have sight parking bays along them. Because of the high number of public transport modes available, users of the space are predominantly pedestrians. The high number of vehicles in the space makes it an uncomfortable and unsafe reducing activity along the sidewalk. Visibility and navigation is affected.

### Pedestrian Routes Mapping

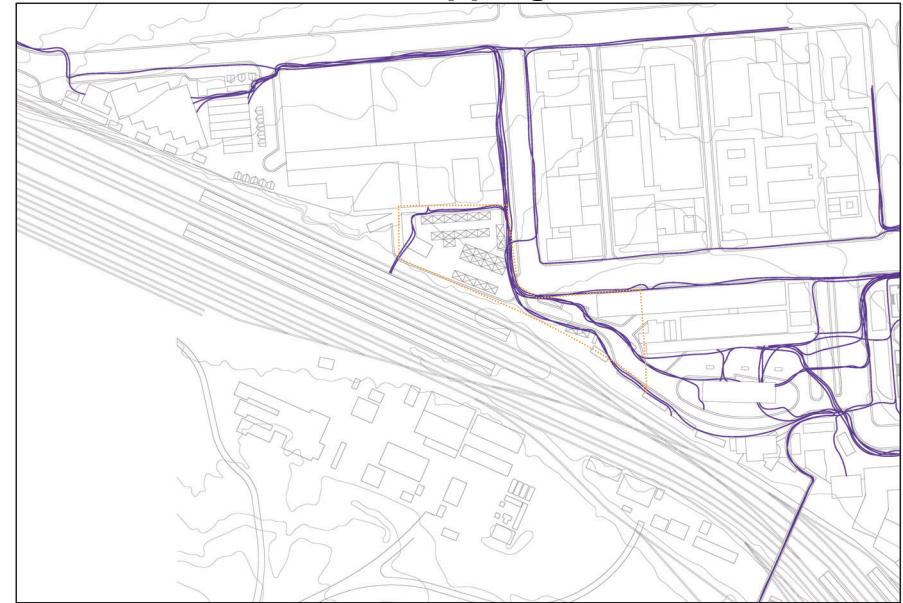
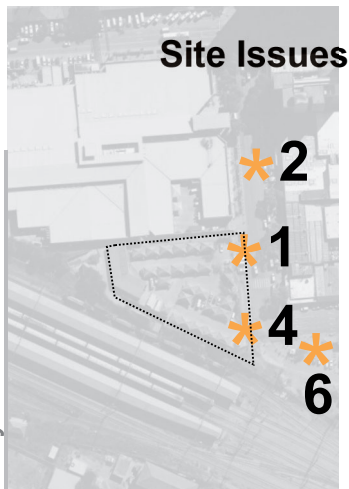


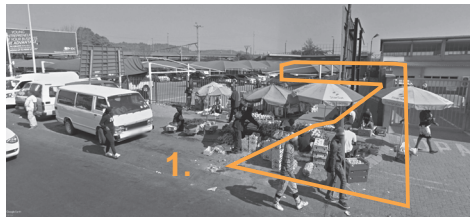
Fig 20. Mapping of pedestrian routes (Nemasetoni 2021)

Most pedestrian movement happens along informal routes mainly from important nodes to Pretoria Station, Bosman Station and Bosman Taxi ranks. Other important pedestrian movements happens to the Pretoria Station mall which is the most important economic node in the area and along Bosman Street. Other important pedestrian movement magnet is the traders market which houses a cooking and eating area which is active especially during lunch hours.

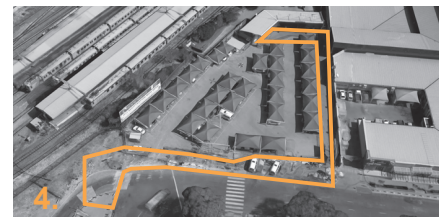


### Site Issues

#### 1. Lack of Connection

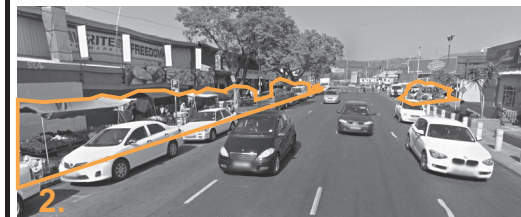


- Between transport nodes



- Between the CBD and Salvakop  
- Between 'Southern Gateway and important nodes and landmarks.  
© University of Pretoria

#### 1. Lack of support for street traders & informal economy



-Lack of services such as water, electricity, sanitation and waste disposal.

## Main Transport Routes, Bus and Train



Fig 21. Image showing main public transport routes in the study area (Nemasetoni 2021)

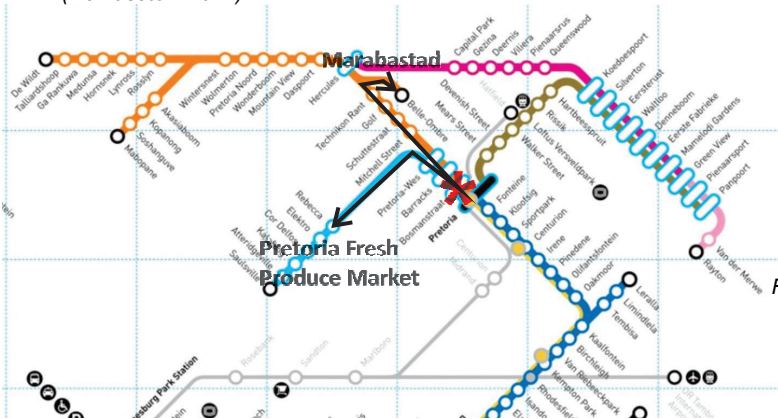
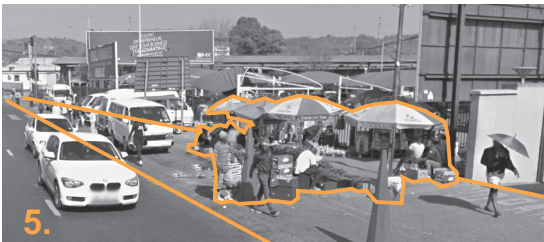


Fig 22. Image showing the mapping of trees and green spaces in the study area (Nemasetoni 2021)

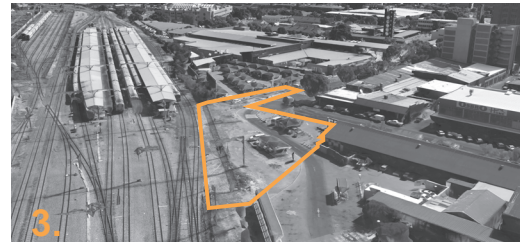
Green areas are limited in the area. Spaces between buildings is often unkept and becomes wasted space and making the precinct look unpleasant and dirty. There are trees and this area but these can be increased to have more shaded public spaces in the area with seating provided to create pause spaces for the various employees who work in the area.

Fig 24 Image showing where Bosman Street Train Station is positioned within the Tshwane Rail Network (Nemasetoni 2021)

## Lack of Public Space for Public Life



- Lack of adequate structures in appropriate areas.
- Lack of spatial planning and demarcated informal trader areas.
- Lack of financial, technical and administrative support and training.



- Many left over/open spaces in the city that are not programmed and left unkept and become hotspots for crime and other illegal activities.

## Heritage Building (Older than 60yrs)

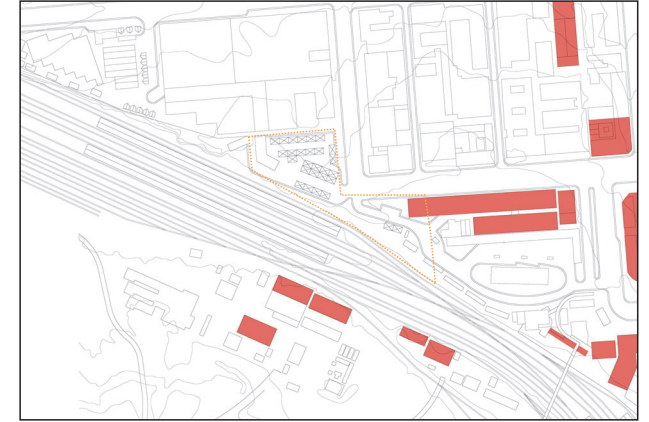


Fig 23. Image showing building older than 60yrs in the study precinct (Nemasetoni 2021)

There are some heritage buildings in the precinct that are very valuable in terms of the history of the CBD. There is very little navigation and info points about these buildings.

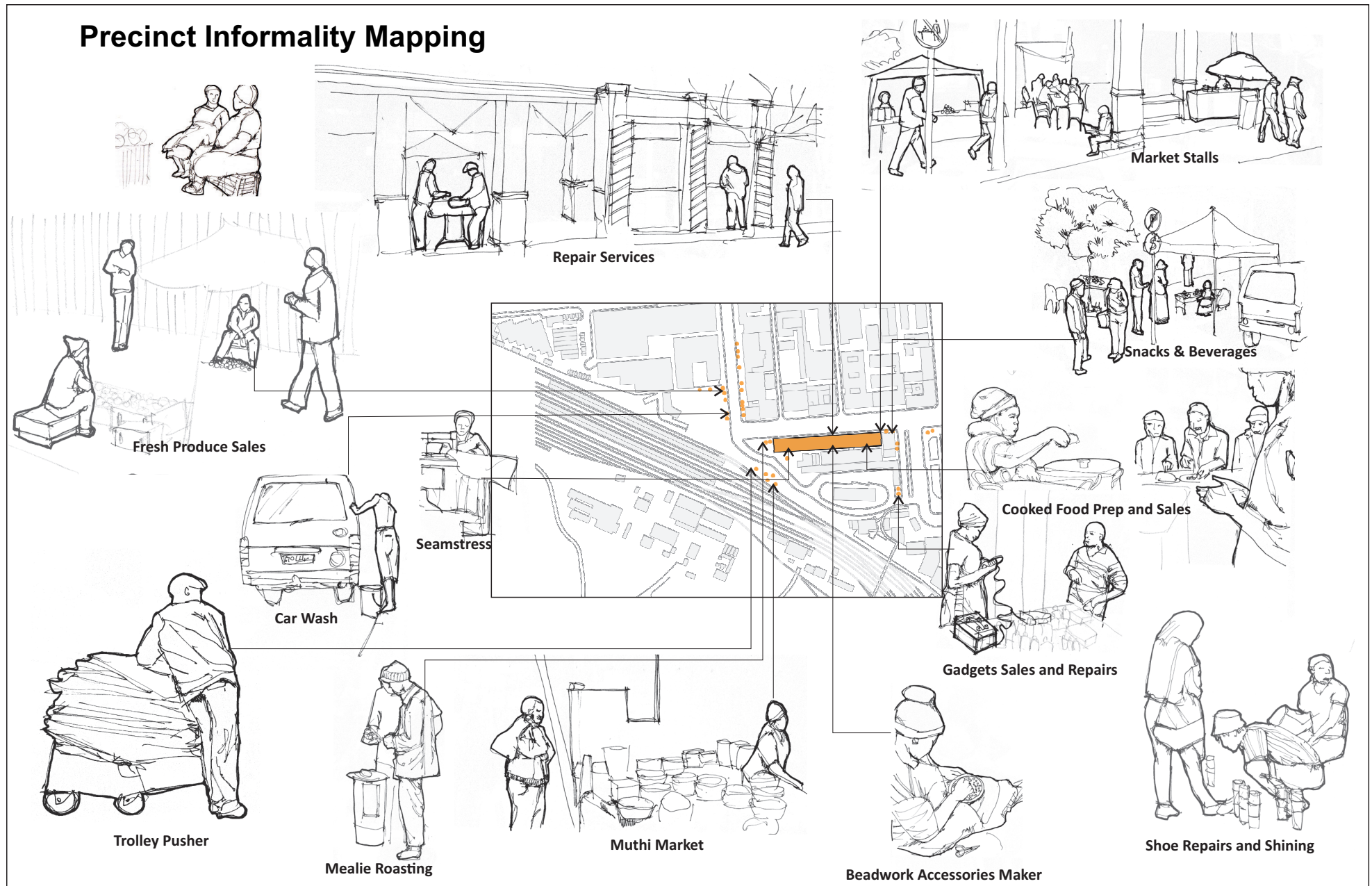
Areas around these heritage sites are developed as public spaces that cater to tourists.



- These areas are wasted space and have potential to become valuable and needed public space and add to public life and community in the CBD.
- LACK OF PUBLIC LIFE/ CULTURAL SPACE IN THE PUBLIC REALM

Site Analysis:

Fig 25. Image showing the mapping of street trading in the study area (Nemasetoni 2021)

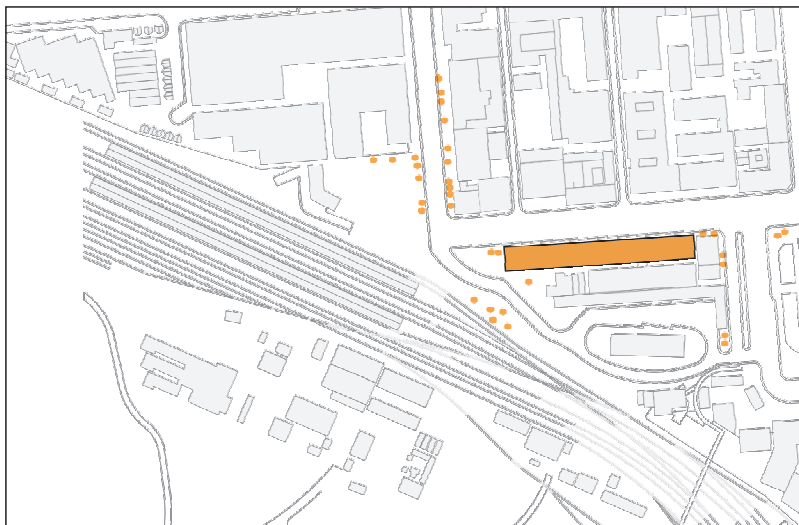


# Connection between formal and informal Trade networks

This area is very important in the informal economic system of the CBD. Firstly, it has the biggest and one of the few informal trader market in the City of Tshwane. The precinct has direct connections to areas such as Marabastad and Pretoria West where Informal traders mainly source their goods.

The existing rail network makes this area very connected to important surrounding areas and also reduces transport costs for informal traders due to the low rail fare to where they source goods and also where they live.

Informal trade has become an integral part of the urban environment in this area and is a destination area especially for urban and surrounding dwellers looking for goods and services not available in the formal market such as muthi (traditional African medicines), indigenous dishes and delicacies and ingredients such as mopani worms and morogo. Other services include barbers, seamstresses, shoe repairs and even car parts and repairs. The informal economy is very important as it responds the immediate needs of the market and can even cater to niche markets and a more diverse specific kinds of people from differing cultures and backgrounds.



## Formal Traders

Main formal trading happens along the southern end of Bosman Street. Most of these are retail stores selling clothing as well as small household wares. Thresholds (pavement areas) become spill out areas where goods are displayed to attract more customers into the shops.

The major formal trading happens in the Station Mall which contains many of the formal supermarket and retail chains in South Africa.



## Informal Traders

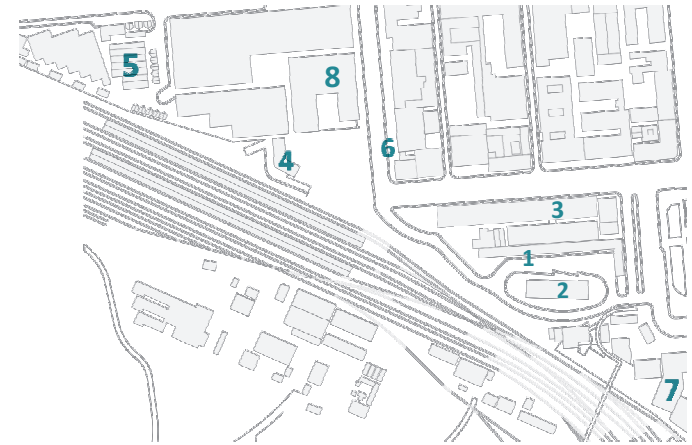
Informal traders in this area constitute 21% of all informal traders located in the CBD. Most are located in the traders market building and its edges due to this being a destination for those seeking products found in the informal market.

Other informal traders are located along both formalised and informal high pedestrian movement paths. Others happen along the main streets creating a secondary street market along the formal shops located along the main roads.

Walls, fences, pavements and other existing infrastructure become appropriated using temporary structures to create stalls and markets.



# Existing Infrastructure: Built Form



## 1 Important Public Transport Infrastructure:

**Bosman Long Distance Bus Station:**  
This is the main bus station into Pretoria from all areas of the country. This space is not adequately designed as it lacks public seating and amenities for the waiting commuters.



## 2 Formal Economic Infrastructure: Bus Station Building 2

This building houses some ticket offices for the bus station as well as a restaurant and restrooms. These, however, are often left un-maintained and inaccessible.



## 3 Informal Economic Infrastructure: Pretoria Station Informal Market Shed:

A refurbished workshop houses the informal market. The Heritage architectural structure has been maintained. The interior comprises of containers that house areas for cooking etc.

The building edge is relatively closed off from the street with most activities being houses inside. The informal traders complained about this space saying it is disconnected from pedestrian and is also too dark and unhygienic.



## 4 Important Public Transport Infrastructure: Bosman Station:

This station is also frequented daily by many commuters and is an important access route to the CBD.



## 5 Important Public Transport Infrastructure: Bosman Taxi Rank:

This taxi rank is the main taxi rank that links the Tshwane CBD to Johannesburg and surrounds. It is a very busy terminal with lots of foot traffic daily.



## 6 Important Access Route: Bosman Street

Important North-South axis in the city and major entry route into the centre of the CBD by both pedestrians and vehicles, public and private. This is a very active street offering various stores, services and institutions.



## 7 Important Transport Infrastructure: Pretoria Train Station:

This train station is the main railway station in the CBD with commuters coming into the CBD and is often called the 'Southern Gateway.'



## 8 Formal Economic Infrastructure: Station Mall

This is the most important economic node in the precinct with various formal stores and services being offered.

Fig 26. Image showing the existing urban built fabric in the CBD.

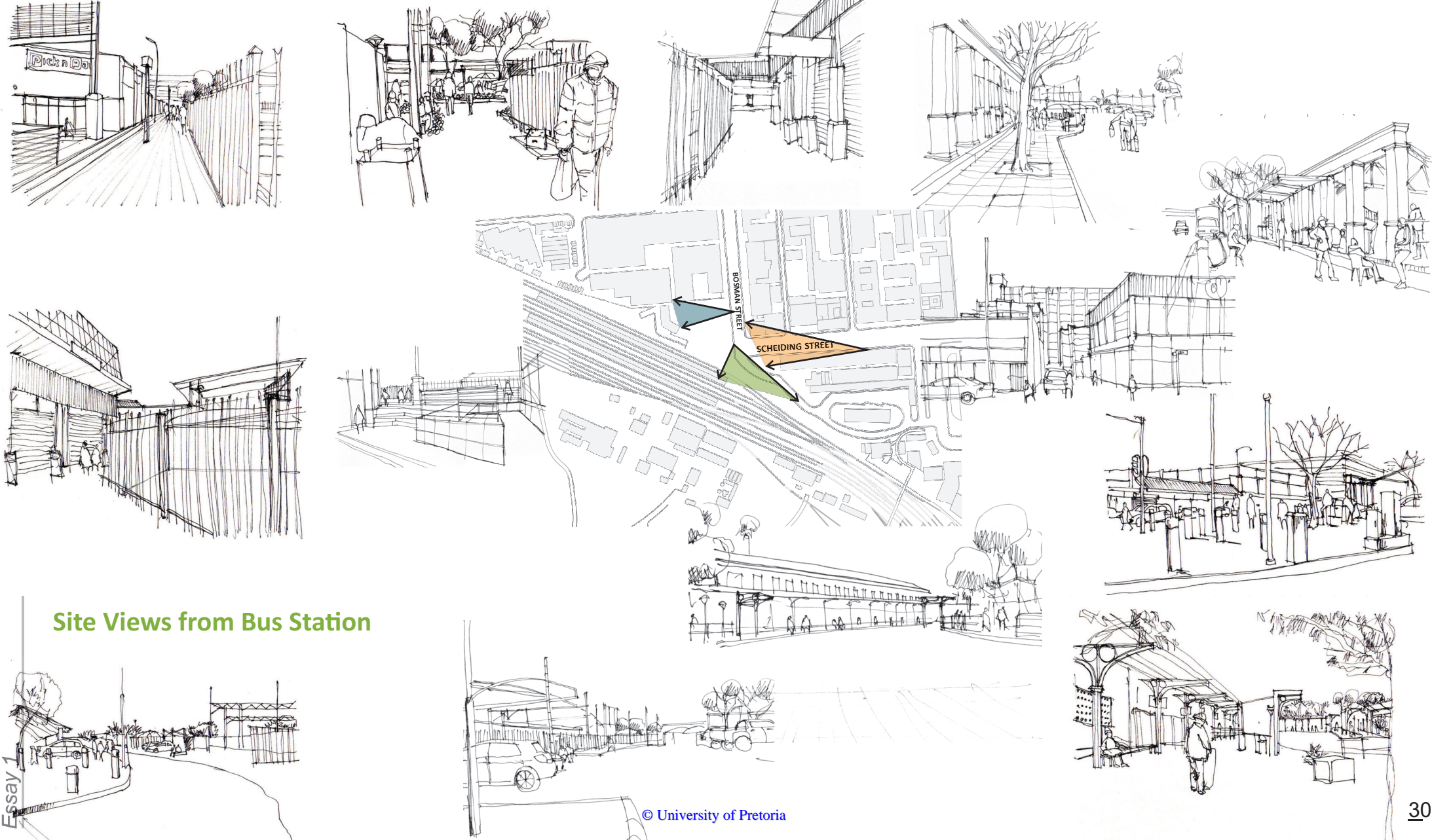
# Site Views

Site Analysis:

Fig 27. Sketches of site views (Nemasetoni 2021)

## Site Views from Bosman Street Train Station

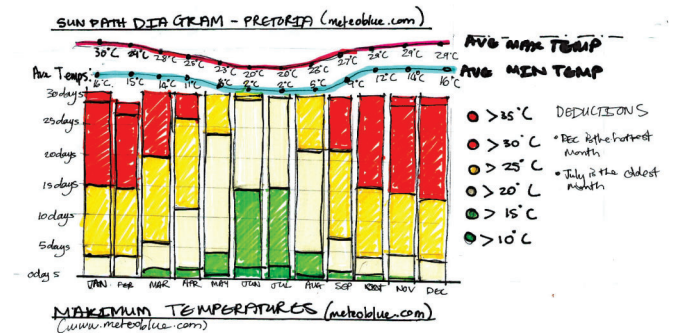
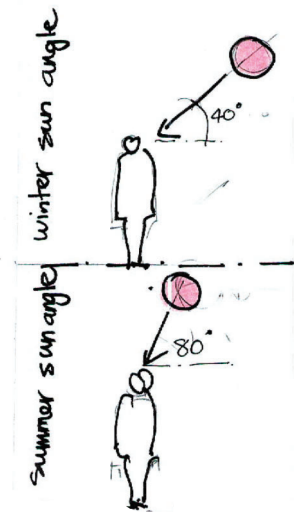
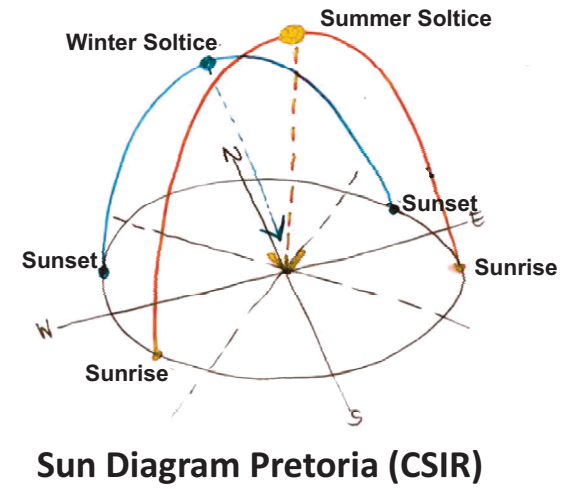
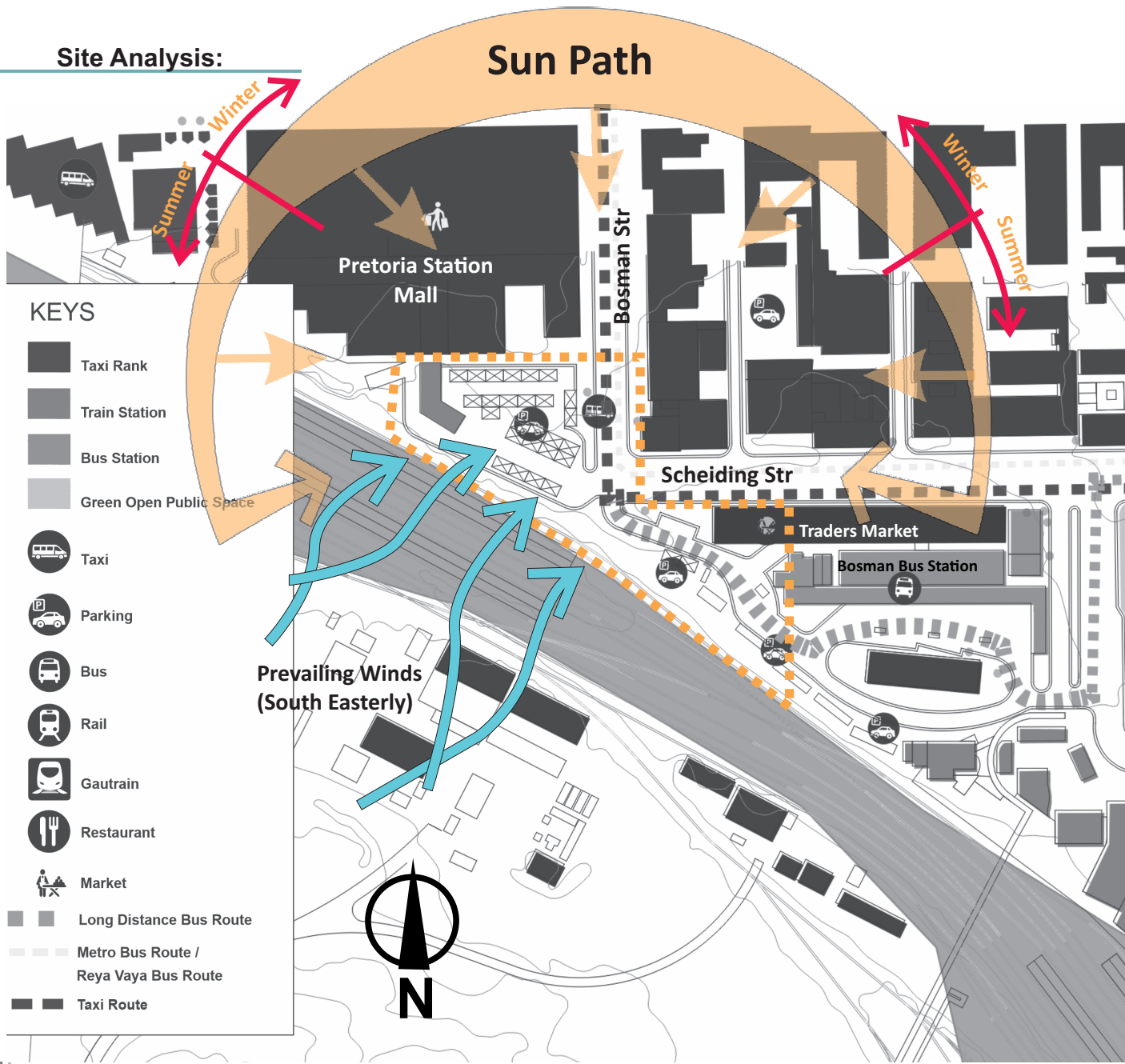
## Site Views from Scheiding Street



## Site Views from Bus Station

Essay 1

Fig 28. Image showing siteclimatic conditions (Nemasetoni 2021)





## Place-making:

Placemaking is the collective re-invention of public space as a communal space for the surrounding community. This is a process whereby where the connection between the shared public space and its users is reinforced in a way that makes it more valuable and meaningful and a place where people are naturally attracted to where they can have meaningful interactions. The "physical, cultural and social identities" that people already attach to that particular space are investigated and improved on and become the foundation on which developments are planned with an aim to highlight these attributes. (Project for Public Places, 2020)

The city ground floor plain is essentially a public space where various people from diverse backgrounds meet and move on a daily basis. This is a space to sell, buy, interact, meet and a myriad of other activities. It is an ever-changing space where city dwellers express themselves as individuals as well as a collective.

A space must be designed as a destination. A certain identity and image that differentiates the space from others must be highlighted as a way to attract people to an area. Within this destination space, there must be other focal points within it. Project for Public Spaces (PPS) states that a space must have at least 10 things to within it that encourage public engagement in order for it to be successful.

According to Project for Public Spaces (PPS), there are 4 spatial attributes that need to be focussed on for the creation of a 'great place.' (Project for Public Places, 2020) These include the following:

### 1. Sociability

- The space must encourage the meeting of friends and acquaintances as well as interaction between strangers.
- Seating must be placed in such a way that it encourages meetings of various scales of groups.
- The area must exude a certain identity that reflects its users to create a sense of belonging and community.
- Public information points where community members can share information encourages a sense of togetherness.

### 2. Uses and Activities

- Availability of play areas for children
- Activities such as public chess boards etc. are located in the space.

- Performance spaces with public seating where artists can perform in front of an audience.
- Public Art preferably by local artists will encourage people to also use the space for the expression of their cultural identity.
- Availability of public infrastructure that support the local economy will increase activity in a space.

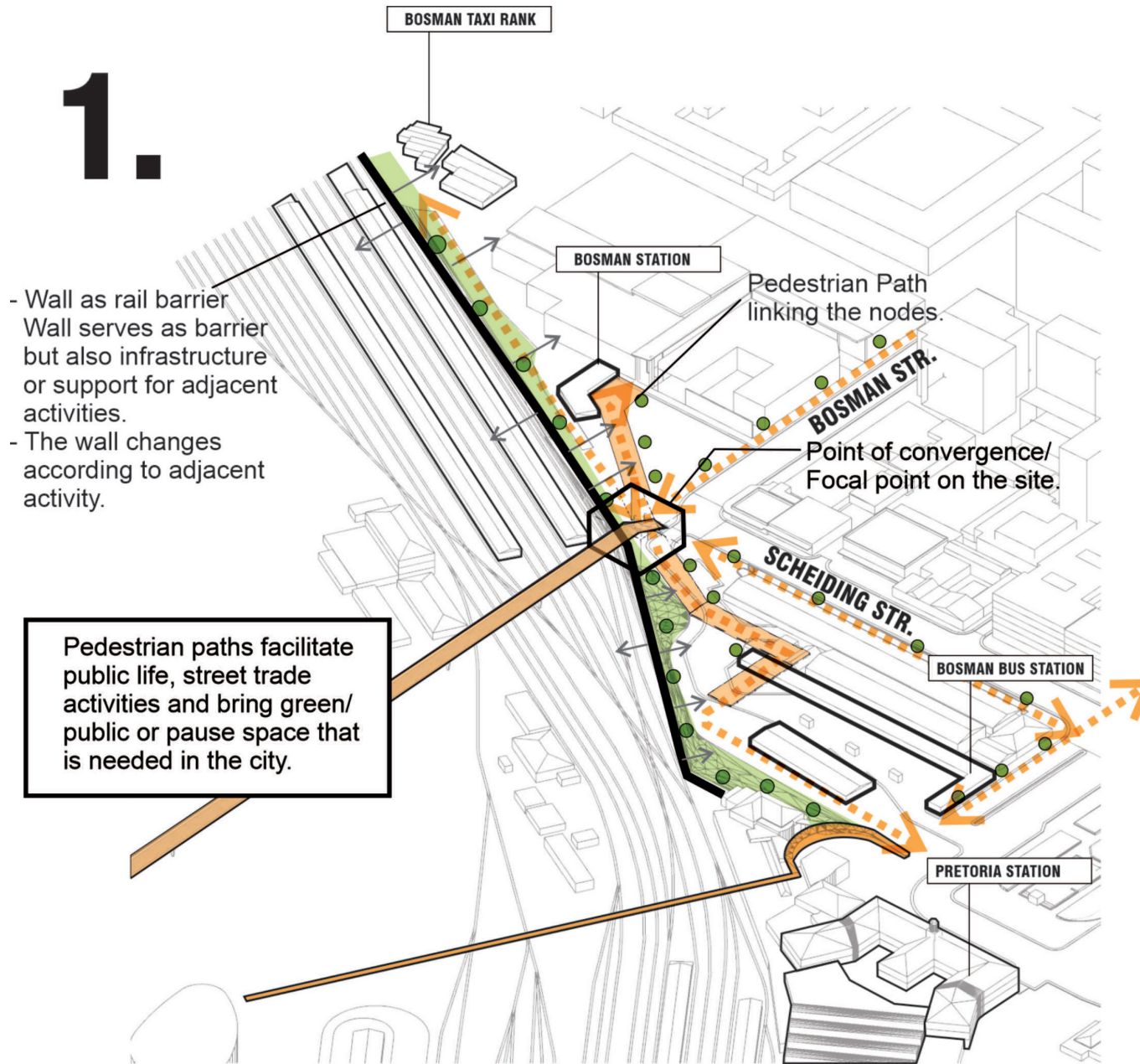
### 3. Comfort and Image

- Improve perception of safety and cleanliness.
- There should be adequate public seating and pause spaces.
- There should be some weather protected areas available.
- Adequate waste bins must be available.
- Public amenities such as water, public toilets and wifi must be available.
- Street lights must be placed to increase visibility and safety at night.
- Vegetation and water features make the space more pleasant and attractive.

### 4. Access and Linkages

- Areas of importance are well connected through visual links, signage and pedestrian routes.
- Pedestrian routes between important areas are safe, pedestrian friendly, clean, unobstructed and convenient to use.
- Movement routes must accommodate people with disabilities
- Different transport modes in the area are interconnected by formal walkways making it easier for commuters to navigate between the various different modes.
- Building edges are designed as active threshold spaces with public seating, trees and shelter.
- Commuter waiting areas and pick up points must be formalised with seating and shading to enhance the use of public transport.
- Street must be designed to accommodate pedestrians, cyclist and vehicles in a safe, appropriate and pleasant way.
- The space must be very walkable to reduce the need for the use of cars and parking.

Fig 29. Axonometric view of masterplan interventions (Nemasetoni 2021)



**Physical & spatial connection between transport nodes.  
Towards an integrated multi-modal transport interchange.**

## Place-making: Precinct Development Plan

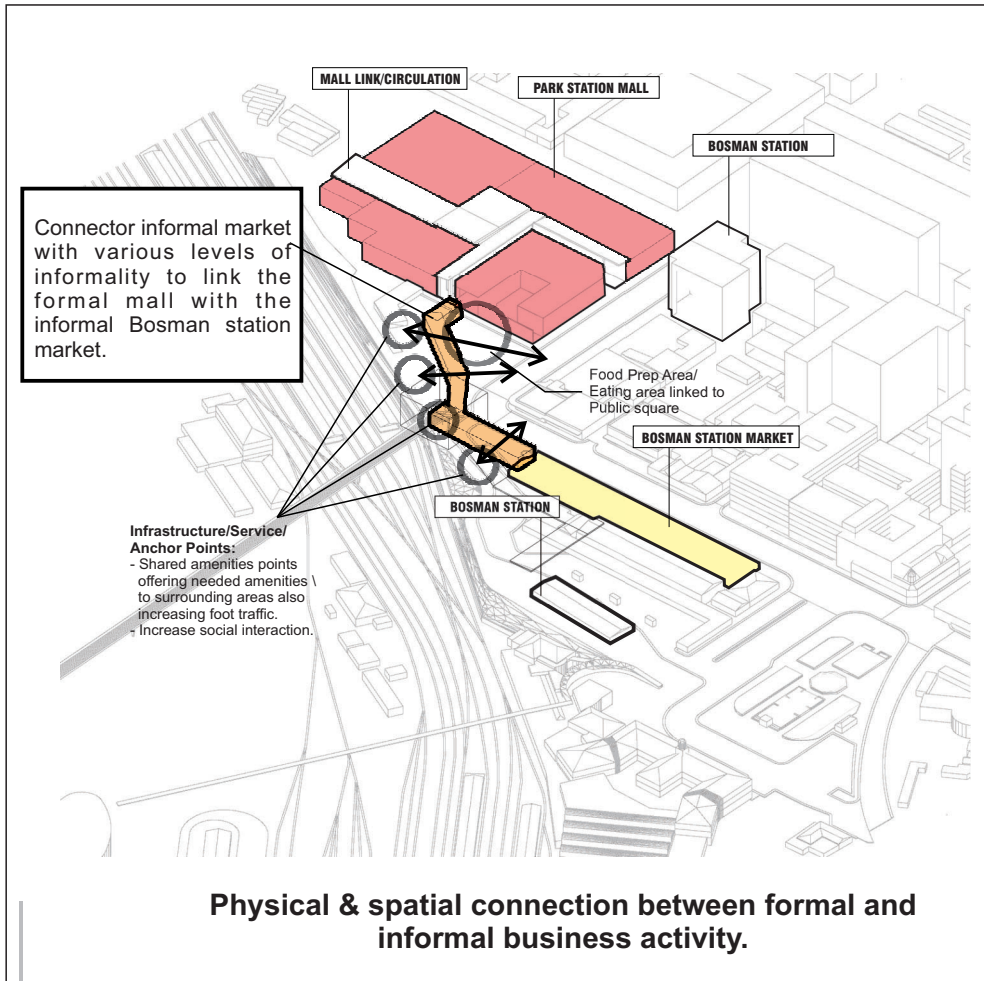


Fig. 30: Axonometric view of study area with development plan interventions .

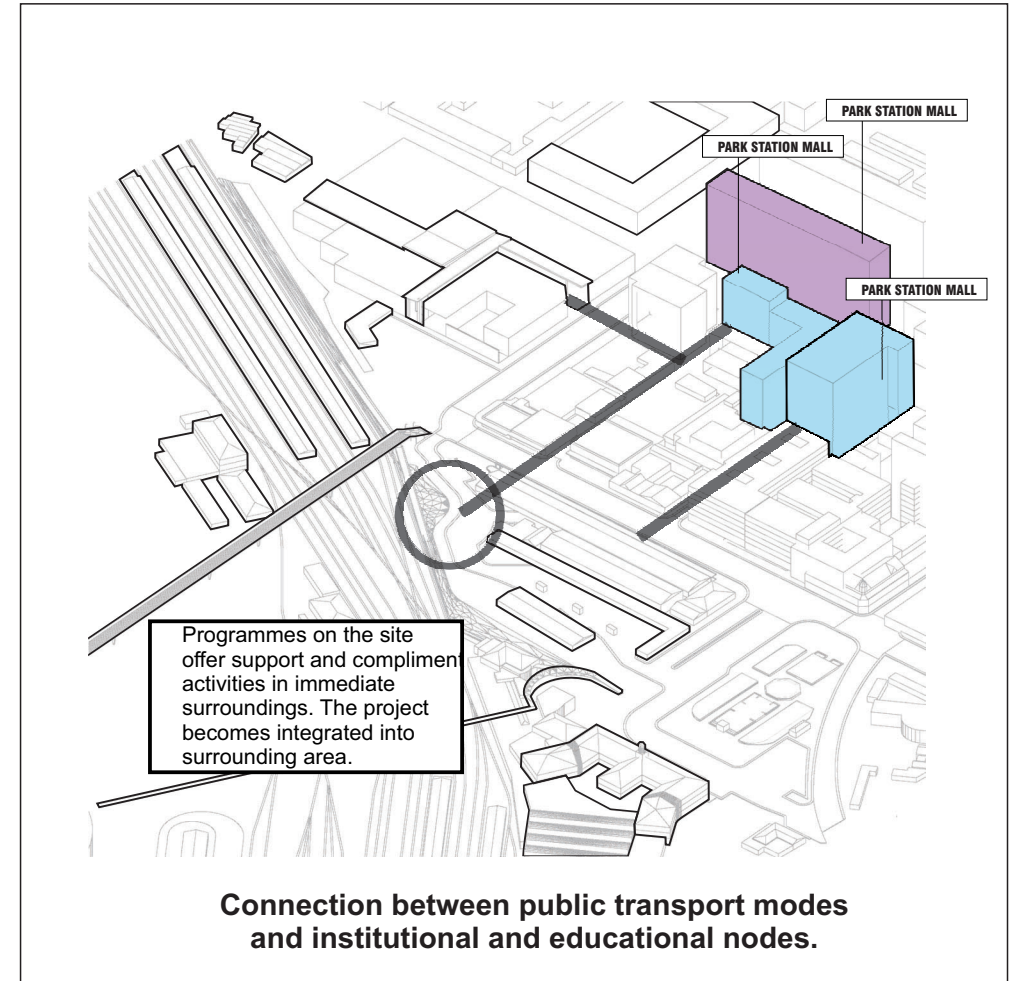
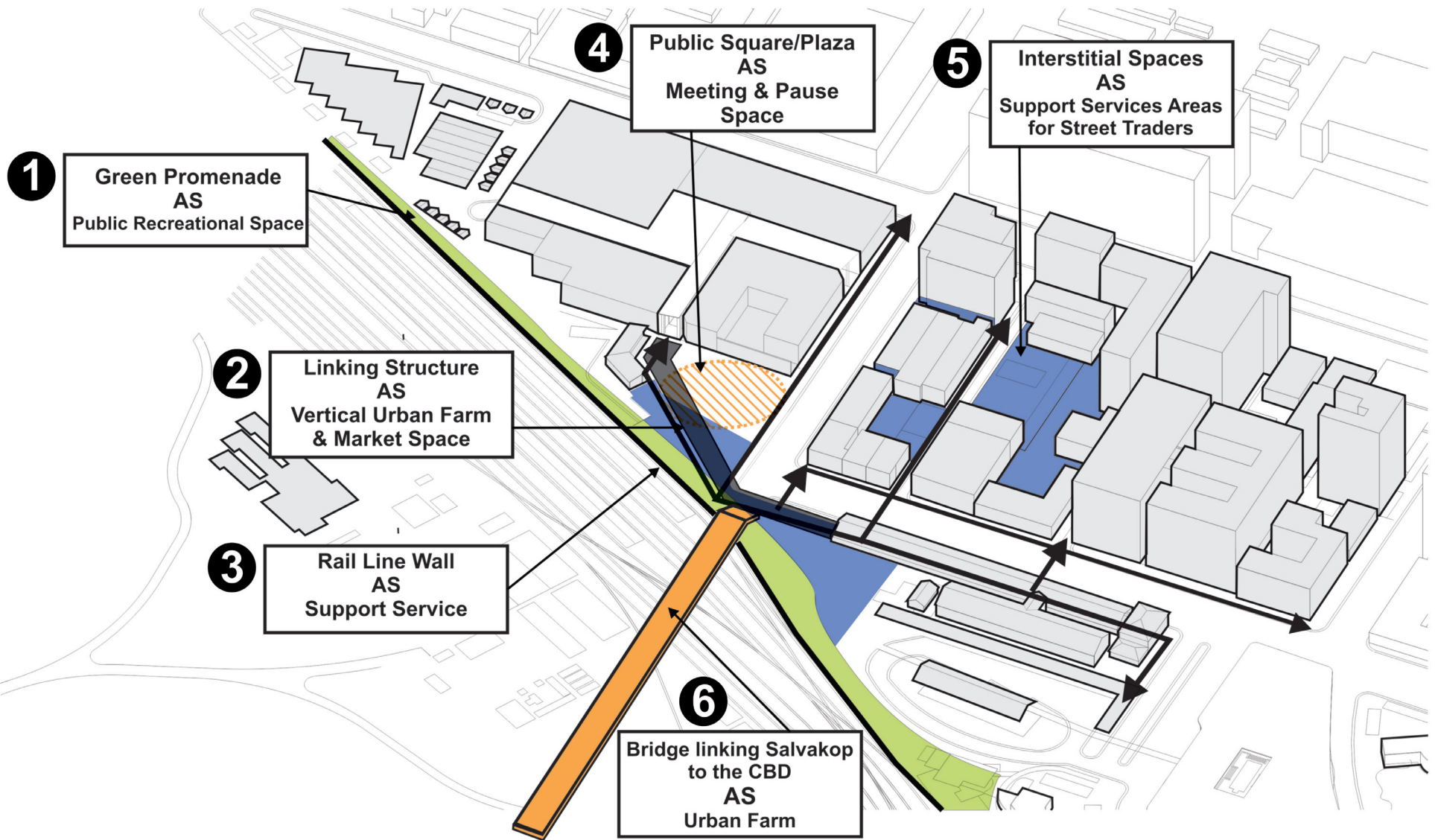


Fig. 31: Axonometric view of study area with development plan interventions .



# Precinct Master Plan

Fig 32. Image showing axo masterplan interventions (Nemasetoni 2021)

# Street Design Guidelines (On-Street Trading) (based on City of Johannesburg Complete Streets Design Guideline Document)

There has been a rapid increase in street trading over the years. There is a need for formalised and demarcated on-street trading space on the city streets. Presently, street trading is largely unregulated and thus

Attribute	Guideline
Location	Sufficient spacing of approximately 5m must be provided between on-street trading facilities to provide effective circulation and increased effective walkway width;
Security	Stalls should not be designed in such a way that criminal activity can be facilitated. They should not be that close together or be placed dark at spaces.
Street Character	Stalls should seek to enhance the street amenities and local character
Environmental considerations	Care should be taken that trading zones areas are still attractive for walking and should not be placed in an disorderly way
Pollution and waste management	Wherever trading stalls are introduced, proper plans should be in place for waste management, pollution control and control of rodents
Uniformity	In general a standard design should be strived for all trading stalls throughout the City taking into consideration the type of goods to be sold, environmental considerations and safety However some precinct could modify such designs linked to the overall look and feel of the precinct
Economy	Trading stalls should minimize the use of space as much as possible to accommodate other street furniture like street lights, bollards, benches, etc. Again at all times a minimum width of 1.5m should be reserved for a pedestrian walkway.

Fig 34. Table showing street design guidelines (Complete Streets Design Guideline, 2019)

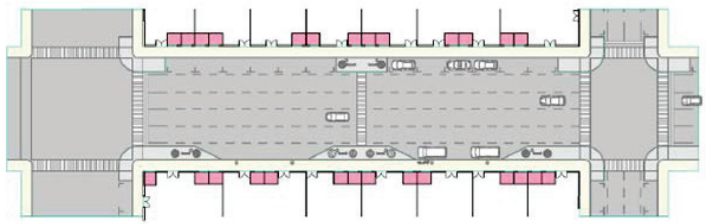


Fig 33. Image showing street plan where street trading is accommodated (Complete Streets Design Guideline, 2019)

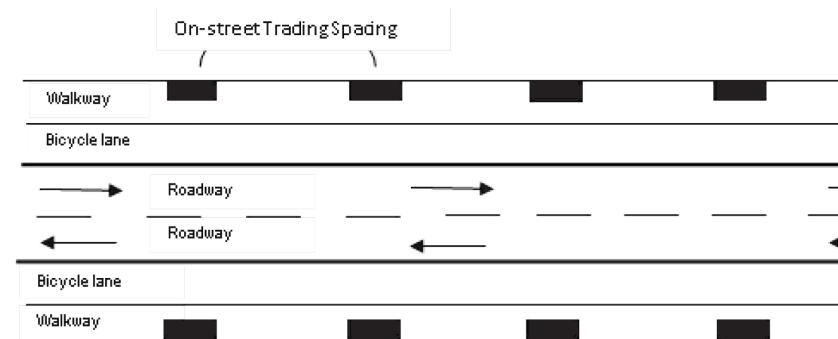


Fig 35. Image showing street plan where street trading is accommodated (Complete Streets Design Guideline, 2019)

# CBD Road/Activity Street - 25m Road Reserve (One Way)

## Street Section



Fig 36. Image showing street design guidelines implementation (Complete Streets Design Guideline, 2019)

## Street Plan



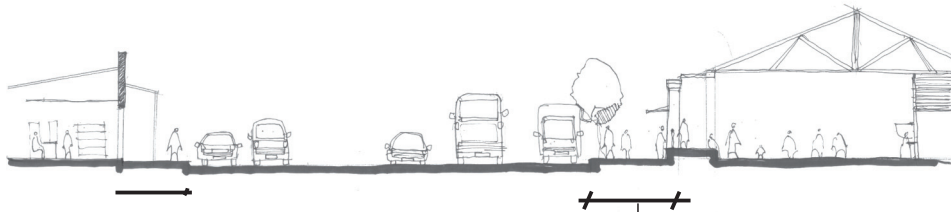
Fig 37. Image showing street plan where street design principles should be implemented (Complete Streets Design Guideline, 2019)

## Complete Streets Sidewalk Elements

1. Street Lighting
2. Street Furniture
  - Banners
  - Waste Bins
  - Tree Grates
  - Bollards
  - Seating
- Public Art & Sculptures
- Way Finding & Information Signage
- Vegetation

# Existing Street Analysis

## Section through Scheiding Street



Narrow Pedestrian way leaves little room for public life

Parked cars create an unsafe threshold space by blocking visibility.

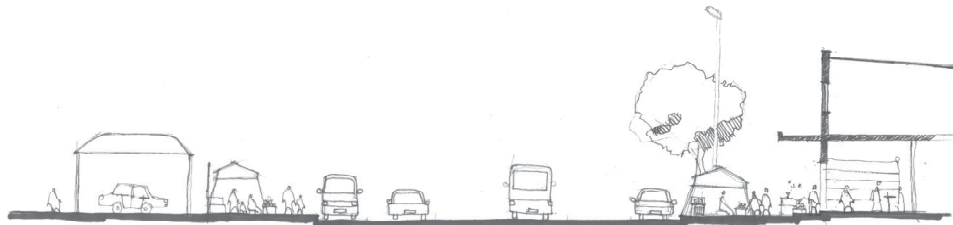
Adequate wide walkway lacking street furniture and amenities such as waste bins, seating and lighting.

This space has become a loading bay area creating an unfriendly pedestrian space.

Existing street trade activities in the market are closed off from the street.

Open corner space is a natural gathering open space but has no street furniture, lighting or public amenities

## Section through Bosman Street



Street Trade structure take over most of the public walkway affecting pedestrian movement.

Street trade structures arranged along the fence

Taxi drop off point has become a parking area for taxis instead.

Public life is not accommodated for.

Public walkway is broken and unkept

Wide Pavement . There is street lighting on the site.

Temporary structures erected on the pavement mainly selling fresh produced and cooked meals.

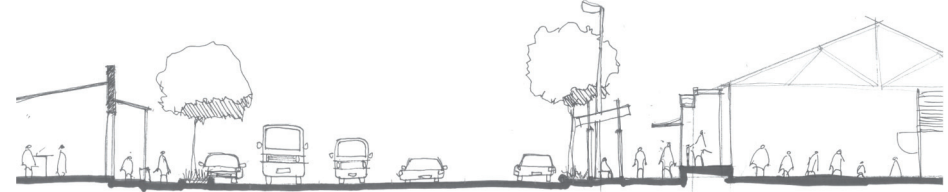
High number of traders to cater to the high commuter numbers.

Formal shops on Bosman spill into the walkway where goods are displayed and smaller items sold in some instances.

There is an arcade created between the traders and retail shops.

# Street Vision

## Section through Scheiding Street



Trees and planters to be added between parallel parking spaces.

Dedicated loading bay and prohibition of truck parking in this area.

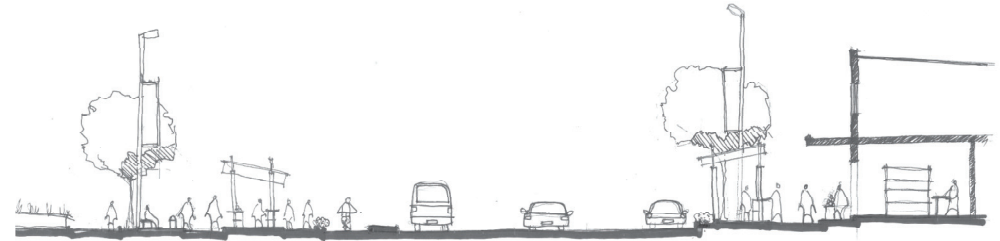
Side parking prohibited.

Formal canopy on the sidewalk.

Street lighting, planters public seating and waste bins

Existing street market upgrade. More wall openings to Scheiding street to allow for more light and open this threshold.

## Section through Bosman Street



Design of public square with planters and public amenities as a pause space in this area

Dedicated cycle lane with taxi drop off island

Taxi drop of area

Creation of double walkway on either side of trader stalls open on either side.

Street lighting and other street furniture on the side walk.

Planters to be added between side parking bays.

Trade stalls to be built creating an arcade.

Stalls can be adjusted to just become shaded areas when stalls are not in use.

Fig 38. Street Sections showing existing street edge conditions as well as edge condition proposals (Nemasetoni 2021)

## Client Justification:

### **Client Justification**

This project should be a joint venture between the Municipality of the City of Tshwane as well as the the main client is the Tshwane Economic Development Agency which is a state-owned company established by the City of Tshwane Metropolitan Municipality. The company has a department that facilitates investment into the agriculture and agro-processing developments aimed at being catalysts for development and economic growth in the city. The other client is the Department of Small Business Development which is also a government body.

There are various funding bodies that are part of the Department of Small Business Development specifically aimed at the informal sector: These include the following:

1. National Informal Business Upliftment Strategy (NIBUS), which provides funding through the Shared Economic Infrastructure Facility (SEIF) for the development of new informal trading infrastructure as well as the maintenance and upgrading of existing infrastructure. (Socio-Economic Rights Institute of South Africa, 2018)
2. The Informal and Micro Enterprise Support Programme (IMESP) is focusses on skills training for informal traders and provides funding for the development of such facilities. (Socio-Economic Rights Institute of South Africa, 2018)

## Towards a Programme Intention:

### **1. Public Market for Women Informal Traders**

The intention of this project is to create a safe market space that is designed to cater to the needs of women street trader. The market will have a focus on childcare, health and welfare services for women and small children. Advantages of Markets in the Urban Context:

### **2. Urban Agriculture Farm**

Food insecurity is also a major driver of why the number of street traders in rapidly increasing. More and more people need to enter the informal economy due to the lack of job opportunities to be able to feed themselves and their families. (Adetutu, 2021)

In a recent study conducted by the NIDS-CRAM (National Income Dynamics Study- Coronavirus Rapid Mobile Survey), it was found that approximately 2.3 million South African Households did not have adequate food and often went to bed hungry. An IPSOS ( ) study approximated that more than 40% of the South African population were affected by food insecurity.

### **Effects of Covid-19 Pandemic on Street Traders**

1. Stringent movement restrictions which were implemented in the beginning of the pandemic affected street traders in that could not acquire special permits to be able to source their goods. Although food supply was classified as an essential service, street traders were excluded.
2. Major job losses resulted in street traders losing many customers. Many experienced loss of goods that became rotten due to lower demand.

The pandemic perpetuated a vicious cycle leading many street traders deeper into poverty and in desperate need of food assistance themselves.



Technology needs to be introduced into this space as a resource for addressing the city's intention of taking issues of climate change and sustainability seriously and becoming an agent of change. By introducing technology which addresses some of the of the major effects of climate change, namely, food insecurity and water shortages, this project can be a valuable resource in the urban fabric. Food insecurity is already a big problem especially for the large number id South African urban citizens living in poverty.

### Vertical Urban Agriculture

During a study done by the School of Development Studies in the University of Natal, it was found that most of the goods sold by street traders were not produced by themselves. This causes their prices to be high due to costs of procuring and transporting their goods. Often, they are competing with larger retailers who have access to large capital and can procure goods at much lower prices. Profit margins for street traders are very low hindering their ability to be able to grow their businesses and earn good incomes. Many of the street traders expressed their desire to be able to acquire skills where they can be producers of their own goods so as to be able to cut costs as well as acquire more skills. This is where the concept of urban agriculture becomes a good solution. By providing urban agriculture infrastructure and space to the street traders, they can produce their own produce, learn new skills, cut their costs as well as reduce the amount of pollution and water wastage that occurs with traditional farming practices.

According to Resh, urban agriculture is a method of farming where food is produced, processed and distributed within an urban setting for the urban market (Resh, 2013:106-121). This type of agriculture mainly uses soilless processes such as hydroponic(water) and aeroponic (vapour) ways of growing food .These are more economic, social and environmental benefits gained by producing food in this way in present times due to high costs of producing food in the following ways:

## Motivations for Urban Vertical Farming

### Purpose for the Urban Vertical farm

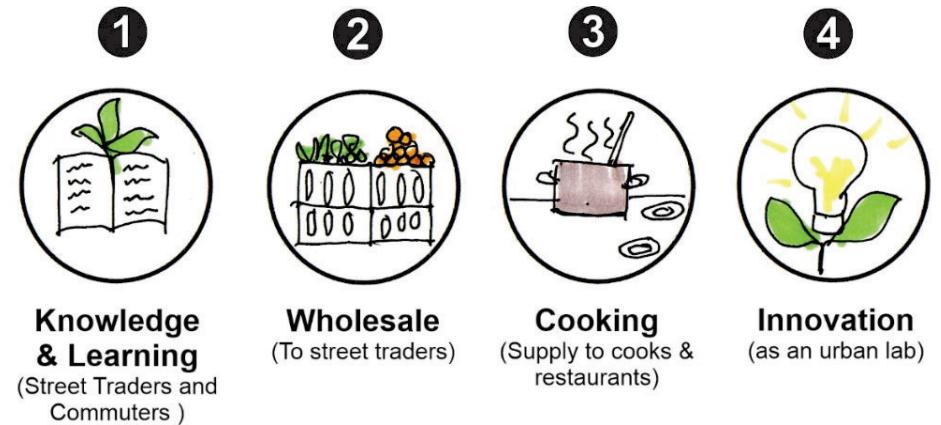


Fig 39: Image showing design programme intentions of urban farming on the site (Nemasetoni 2021)



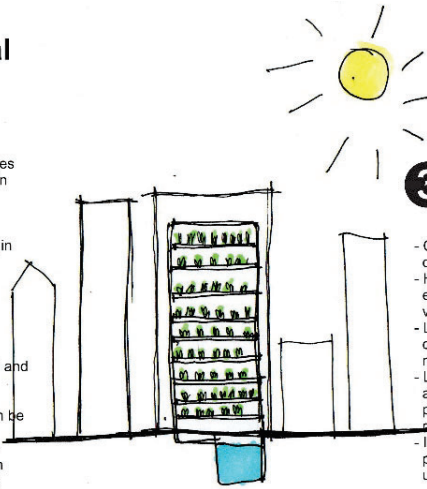
Fig 40: Image showing reasons vertical urban farming is more advantageous than traditional farming methods (Nemasetoni 2021)

## 1 Environmental

- Huge water savings are achieved
- Reduction of water pollution
- Save of land due to vertical and concentrated nature of operations.
- Bring biodiversity into urban landscapes while preserving existing biodiversity in surrounding areas.
- Reduction of air pollution to less fuel consumption.
- Aids in urban heat reduction resulting in cooler cities and buildings

## 2 Social

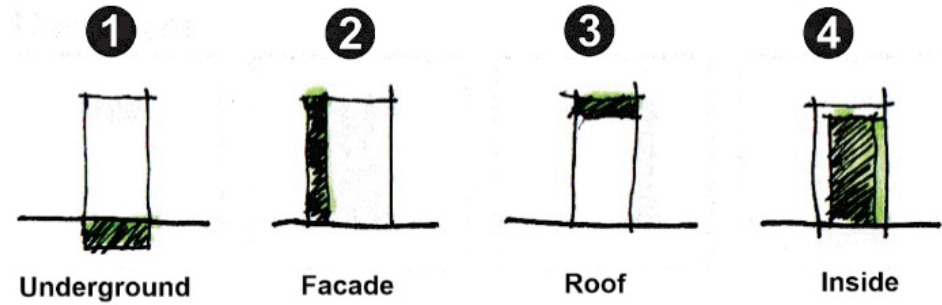
- Creates opportunities for employment and generating incomes
- Raises social capital of an area by bringing different people and can even be made into a community activity.
- Urban citizens are made aware of the processes that go into food production thus bringing a new awareness to the agriculture sector and its importance.



## 3 Economic

- Cost of food price is high due to depletion of available natural resources.
- Hydroponic farming methods are more efficient and yield higher numbers of vegetables in shorter periods of time.
- Less wastage and risk as climate is controlled with extreme climate changes mitigated.
- Less need for transportation, refrigeration and preservative due to the close proximity of produce to the market thus reducing food prices.
- Increase the value of surrounding properties and bring revitalization to the urban landscape

Fig. 41: Image showing the environmental, social and economic advantages of vertical urban farming (Nemasetoni 2021)



Hydroponic  
(water)

Aquaponic  
(symbiotic  
between water  
and aquaculture)

Aeroponic  
(mist)

Fig. 42: Image showing the various types of vertical urban farming as well as different positions where produce can be cultivated within a building (Nemasetoni 2021)