

# Chapter\_03

## Mapping & Contextual Analysis



Firstly, this chapter will illustrate the mapping and understanding of the railway infrastructure throughout Pretoria at different scales. Furthermore, an extensive analysis is done around the specific station under investigation (Rebecca station). Existing development proposals are critically reviewed and elaborated on. Quantitative data is assessed and exemplified in a qualitative manner to orientate the reader throughout the chapter. Finally, a conclusion is drawn to guide the proposed framework and site development plan (Chapter 4).



rebecca station

site

fig. 25 image from rebecca  
bridge (looking West)



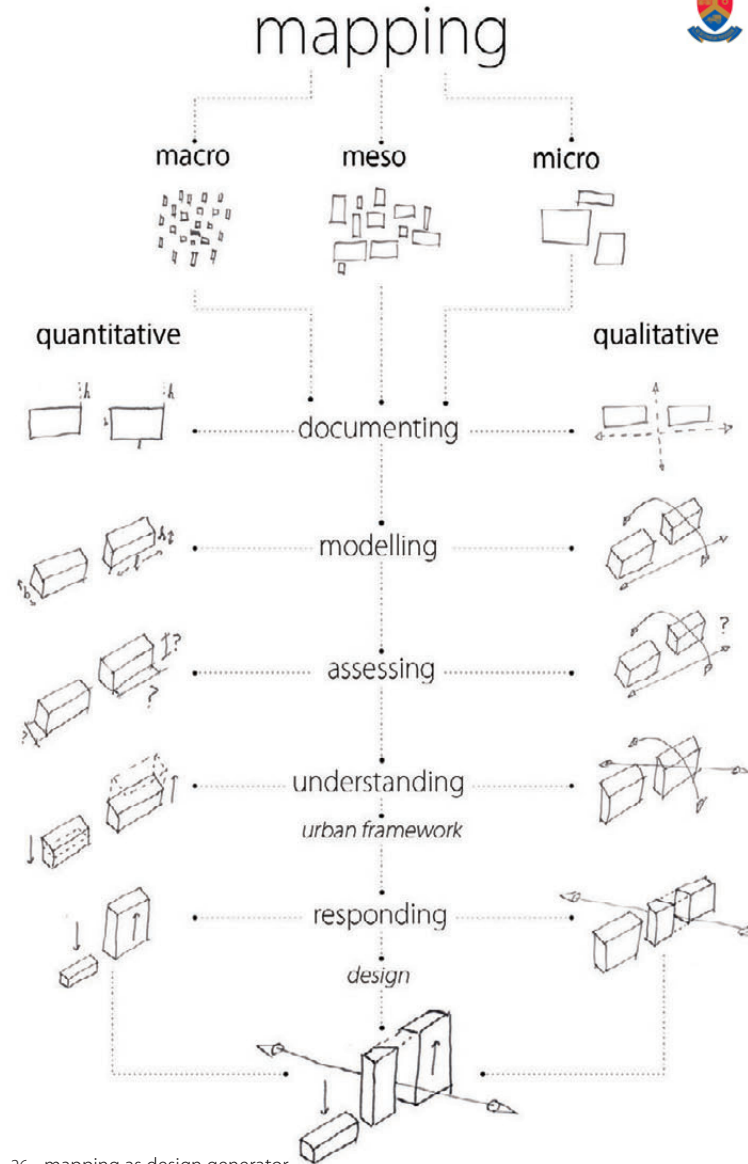


fig. 26 mapping as design generator

## According to the City of Tshwane Spatial Development Framework (TSDF):

-City of Tshwane (2007, p. 18-19)

- New large development initiatives should be planned around public transportation facilities such as train stations, with a strong pedestrian focus. The dependency on private vehicles should be minimised through the development of an adequate public transport system.
- The metropolitan area is well served by rail infrastructure and although the integration of the different rail systems will be a major challenge, it could in future form the backbone of a public transportation system for the entire region.
- The rail together with the first order road system should inform the city's new structure to promote transformation of the urban area.

Considering the mentioned objectives of the TSDF, the main purpose of the macro mapping exercise was to:

Fig. 28

- Identify and analyse the specific location of rail stations throughout the Pretoria region, considering pedestrian movement around these stations (adequate walking distances).
- Map the route genesis of railway users (commuters) working in and around the CBD.

Fig. 29

- Illustrate a comparison between the utilisation of train stations throughout the metropolitan area. Attempting to identify the least used station.
- Identifying specific places, buildings, and environments train users relate to when questioned on the location of a specific station.

## Data was obtained through:

- Interviews:
  - Pretoria West users (employees, residents, and employers)
  - Train users (commuters, social users, and train operators)
- Personal observations
- Existing statistics and urban frameworks

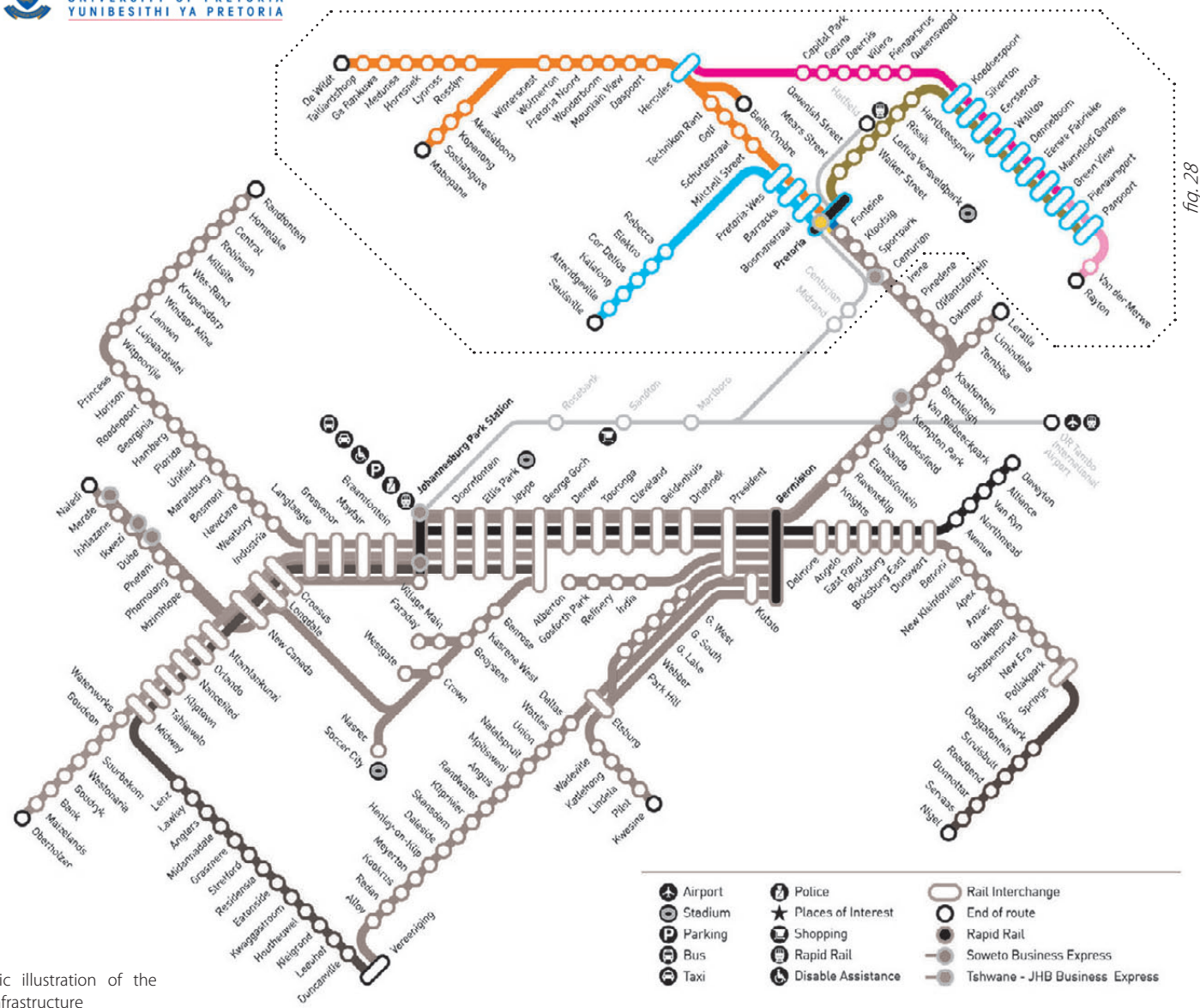


fig. 28

fig. 27 diagrammatic illustration of the Gauteng Metro rail infrastructure



fig. 28 illustrating the origin of rail commuters and densification of train stations throughout Pretoria



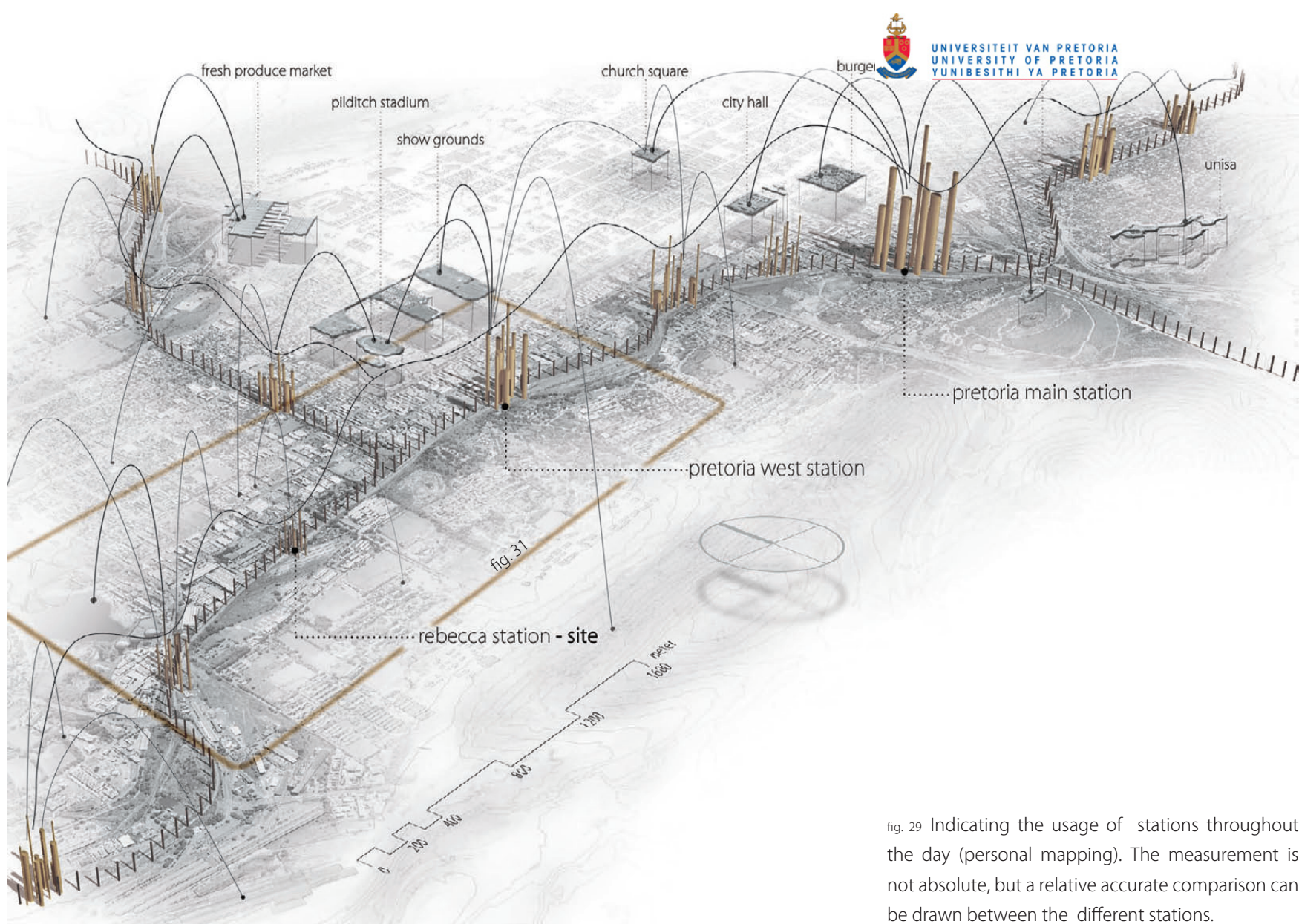


fig. 29 Indicating the usage of stations throughout the day (personal mapping). The measurement is not absolute, but a relative accurate comparison can be drawn between the different stations.

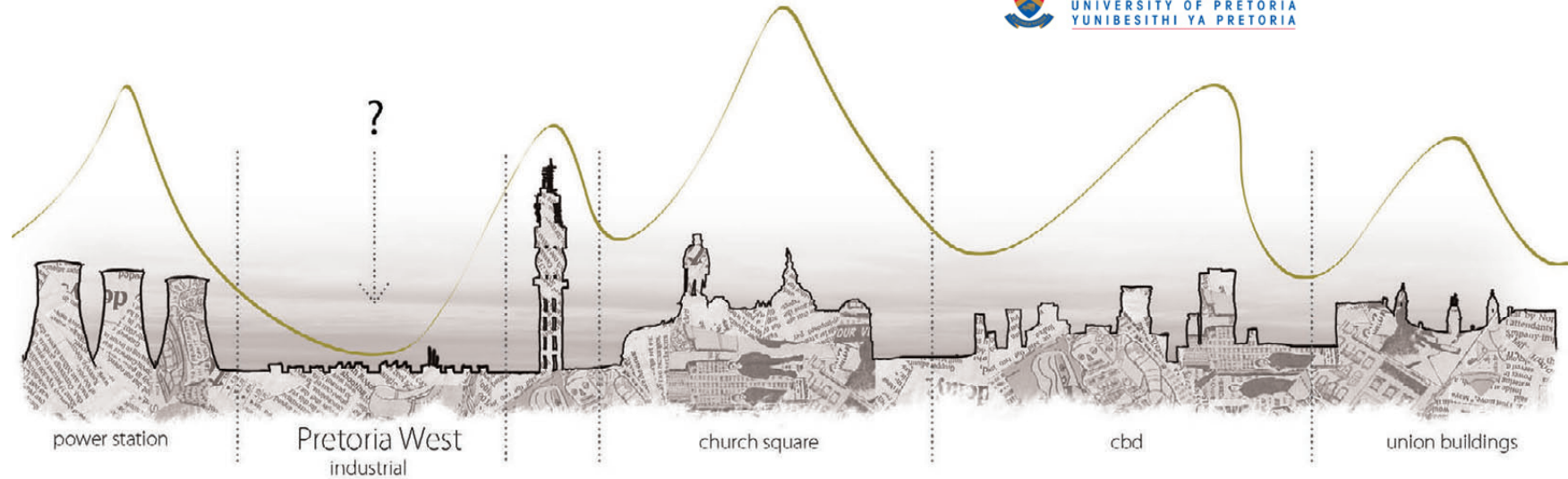


fig. 30 Indicating certain places and buildings citizens relate to within Pretoria

## Findings 'macro' mapping

- As mentioned in the TSDF, the metropolitan area around the CBD, especially to the south and west are well equipped with stations serving the adjacent area.
- Train users relate to certain iconic structures and built environments (fig. 29) when queried on the location of stations due to personal use and the ability to access these environments on foot (adequate walking distances).
- A large portion of employees in and around the Pretoria CBD are commuters living in Ga-Rankuwa, Soshanguve, Atteridgeville and Mamelodi.
- Rebecca station is strategically located to serve the industrial area. However it can be considered as the most underutilised station surrounding the CBD due to the dilapidated and dangerous state.
- Industrial employees travel further distances on foot to stations where they feel safe and allows for social interaction prior to travelling home (avoiding Rebecca station).

*Note: From the findings, further investigation is required to:*

- *Identify the specific problem/s responsible for the current state and avoidance of Rebecca station.*
- *Propose a strategy to revitalise the station to be a catalyst for sustainable growth as depicted in the TSDF.*



# Meso & Micro scale

## Integrated Compaction and Densification Strategy (ICDS) for Pretoria West

### Objective \_ ICDS

Ensuring harmonious, co-ordinated and integrated residential development in and around Pretoria West. (Du Plessis & White, 2008: 1)

According to the ICDS proposal for Pretoria West, the following reasons are identified why it is an ideal location for new development:

- Proximity to a major employment and activity centre, namely the Tshwane Inner City
- Proximity to major public transport opportunities
- The decaying character of the area which makes it ripe for urban renewal and development intervention.

(Du Plessis & White, 2008: 5)

The ICDS regards the neighbourhood and improving the neighbourhood to the extent that it begins to have a positive impact on the lives of the community and the long-term social and/or economic change is ensured in the area (*Ibid*: 7).

- Creating socially cohesive and diverse communities through a mix of housing types and employment opportunities;
- Promoting alternative transportation and energy;
- Promoting efficient use of resources; and
- Locating residential areas close to recreational and commercial services with pedestrian and cycling connections.

## Pretoria West as a sustainable neighbourhood

The future development proposals and strategies for the Pretoria West region goes beyond the merely issue of densification, it should ultimately benefit the community and its users. Consequently, the successful densification of any environment should co-exist with the concept of creating sustainable neighbourhoods. Ignoring the creation of a sustainable environment, densification will result in an unlikable, weak and ultimately unsustainable neighbourhood. The concept of a sustainable neighbourhood is a holistic one, aiming to classify the living conditions within which all people can pursue dynamic and meaningful lives that simultaneously optimise the use of natural resources.

Sustainable neighbourhood planning seeks to achieve lasting environmentally, socially and economically viable communities through design.

The benefits of a Sustainable Neighbourhood:

- Healthier living environments;
- Local employment opportunities;
- Safe and livable environments; and
- Access to public transport

# Landmarks & context

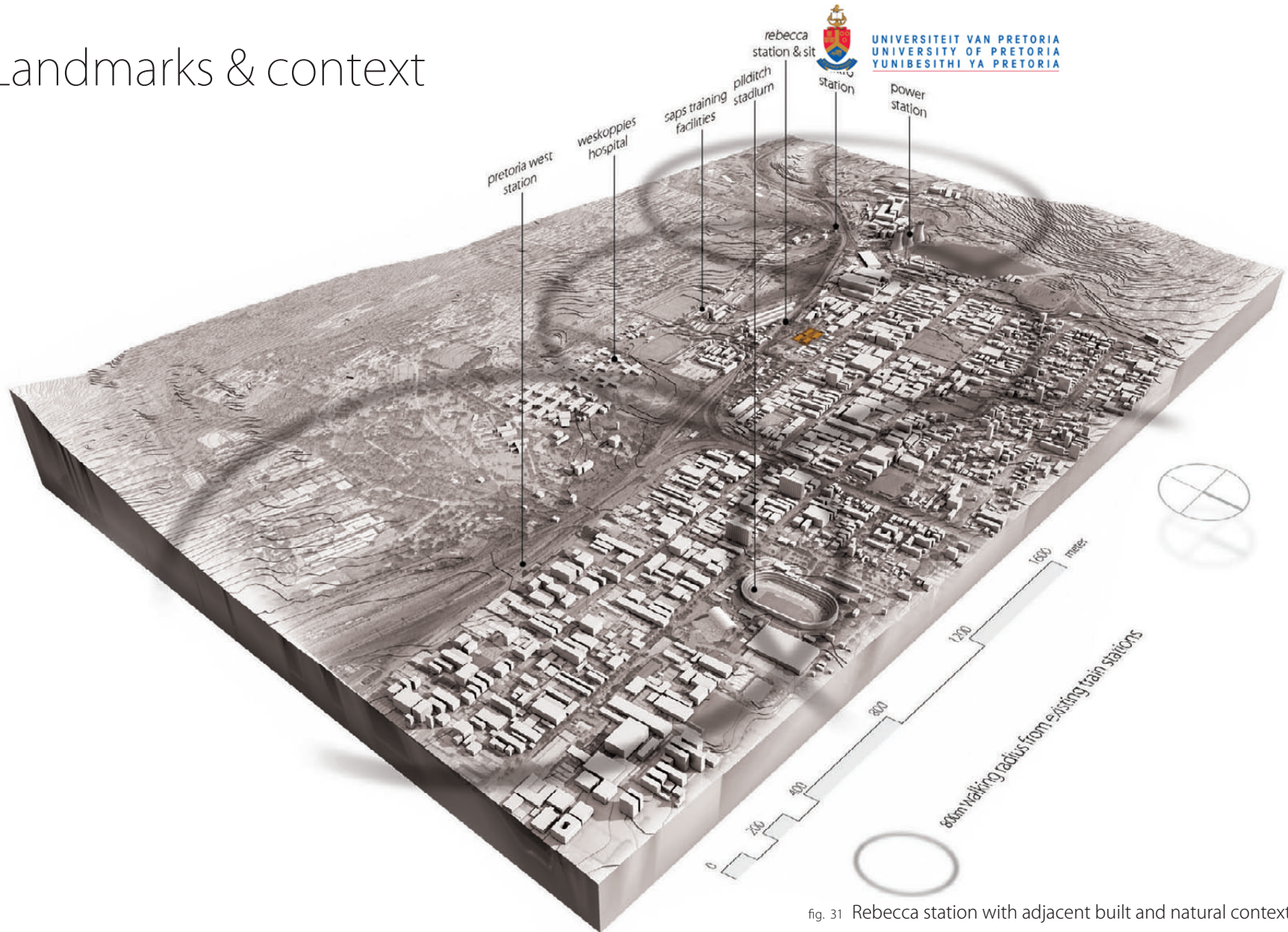


fig. 31 Rebecca station with adjacent built and natural context



# Context Layering



water used by power stations' cooling towers



-fast east-west vehicular movement (from CBD)  
-slow north-south vehicular movement (residents)



sporadic soft surfaces 'green landscaping' between  
industrial environment



trees according to vehicular flow patterns  
(provide shading for commercial customers)



figure ground map indicating built surfaces



hard surfaces causing excessive stormwater run-off

fig. 32 elementary layered components forming existing industrial environment





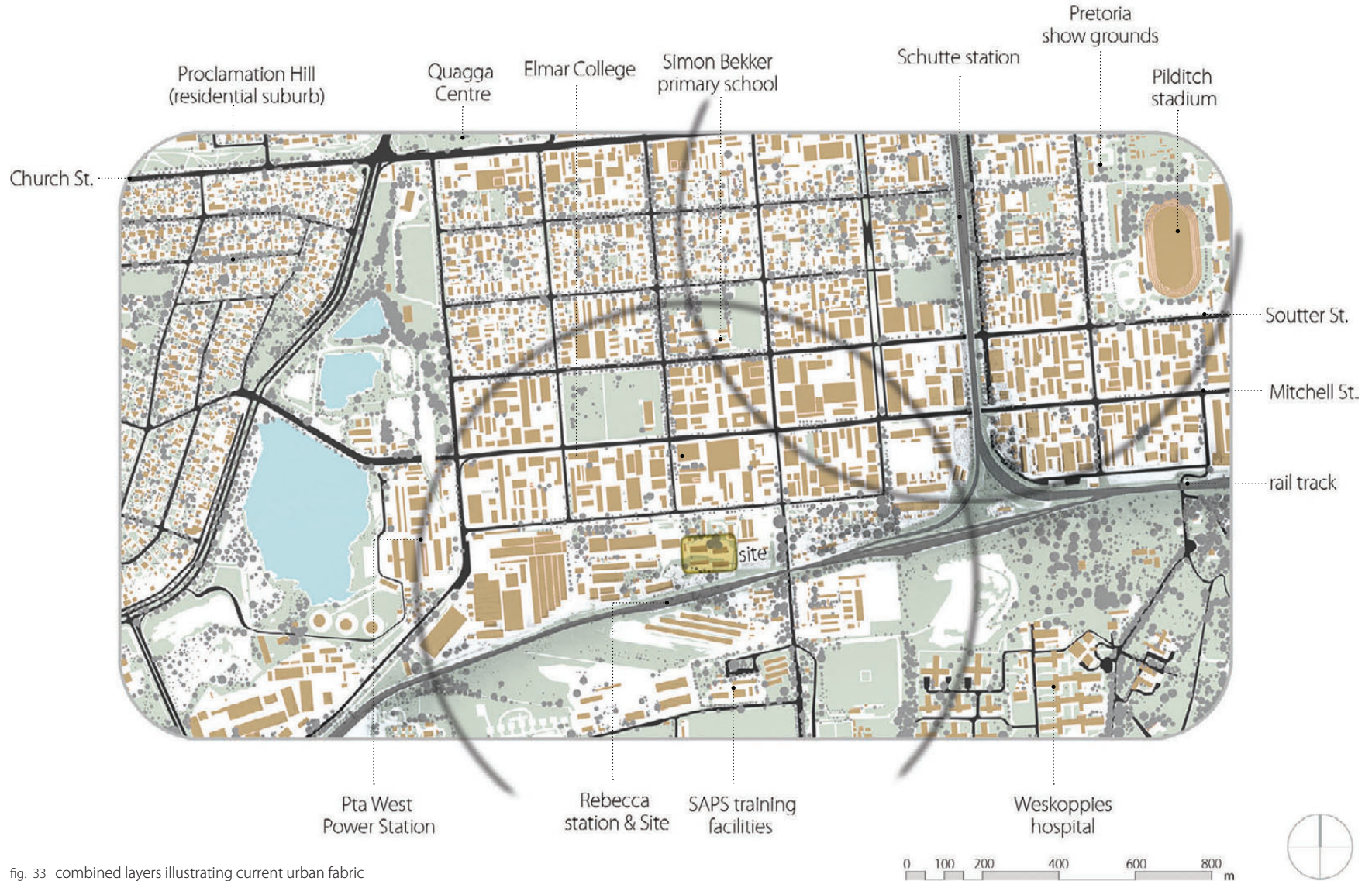


fig. 33 combined layers illustrating current urban fabric



As illustrated, Rebecca station is well situated to serve as a transportation node for the majority of the industrial area. Further urban development to the South is inevitable. Thus, Rebecca station should be revitalised according to a pedestrian flow pattern prior to this expansion. The current railway line and station acts as a psychological boundary. This boundary should be altered into a threshold space between the existing and expected development to the South.

The land use adjacent to the major east-west streets (Church & Mitchell) have all been developed for commercial purposes. Because of the location adjacent to the Inner City, the general character of these commercial streets tends to lean more towards an urban rather than a suburban character. This growing commercial activity has led to the current monotonous environment. Expanding commercial development on the North (Church Street) and the South (Soutter Street) constantly threaten the existing residential sector located between these busy vehicular routes.

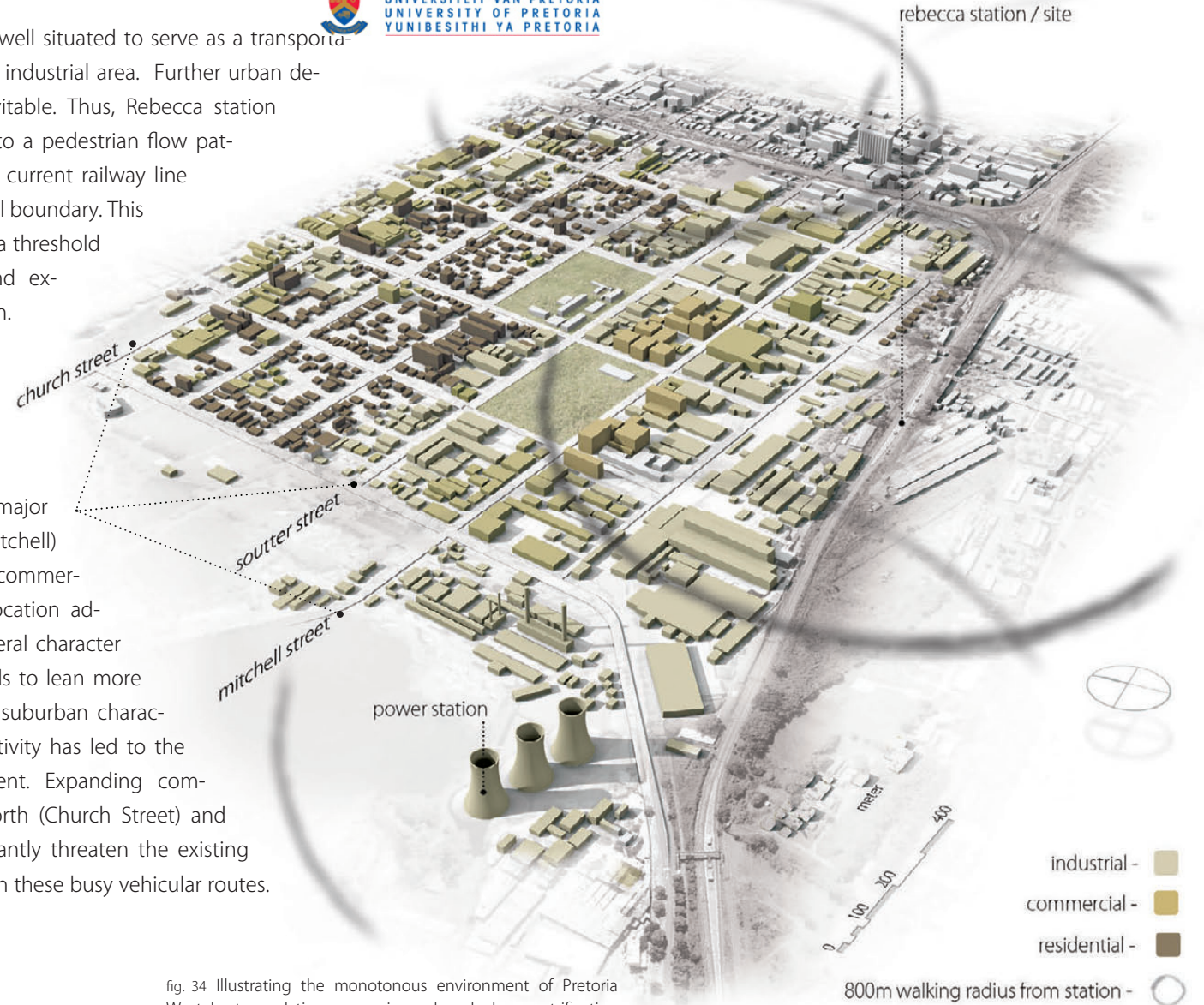


fig. 34 Illustrating the monotonous environment of Pretoria West due to escalating economic needs and urban gentrification

# Movement & Transportation

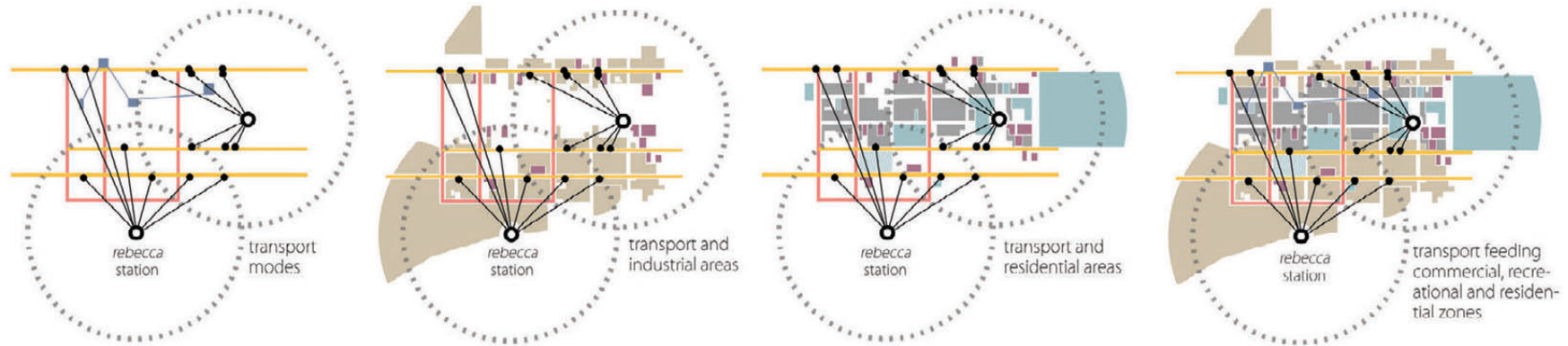


fig. 35 Transportation connections around Rebecca station



## Public Transport Facilities and Densification

Transit Orientated Development (TOD) focuses on the integration of major public transport facilities with the urban development. The aim is to create compact, vibrant pedestrian communities around high quality transport systems “...such as train stations” (Tshwane City Planning and Development, 2010: 6). A TOD neighbourhood has a centre with a rail station, surrounded by relative high-density development and progressively lower-density spreading outwards (*Ibid*:6)

## Findings 'meso' mapping

From the data obtained via the 'meso' mapping analysis, it can be summarised that the cause/reasons for Rebecca station's current under-utilised and dangerous state is it being:

- Inaccessible to users (dept. of public works)
- Visually secluded from the adjacent environment
- Equipped with poor ablution facilities



# Birds eye view of Pretoria West



fig. 36 birds eye view of Pretoria West (southwest - northwest)



fig. 37 birds eye view of Pretoria West (northwest - northeast)



fig. 38 birds eye view of Pretoria West (northeast - eastwest)



steel sheeting

corrugated sheeting

timber

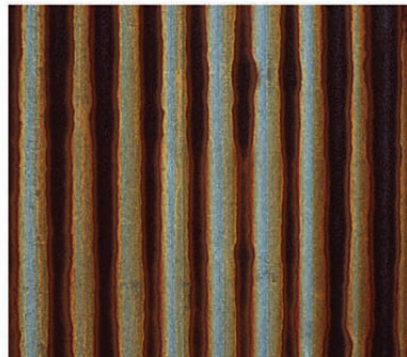
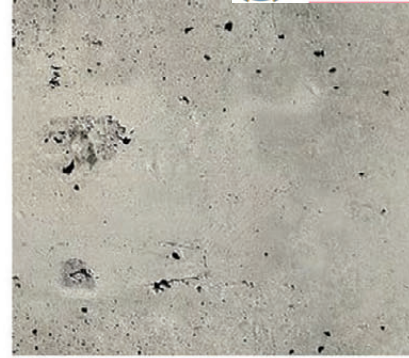


fig. 39 typical industrial textures found in Pretoria West (images by author)



## East - West streetscape



### Characteristics

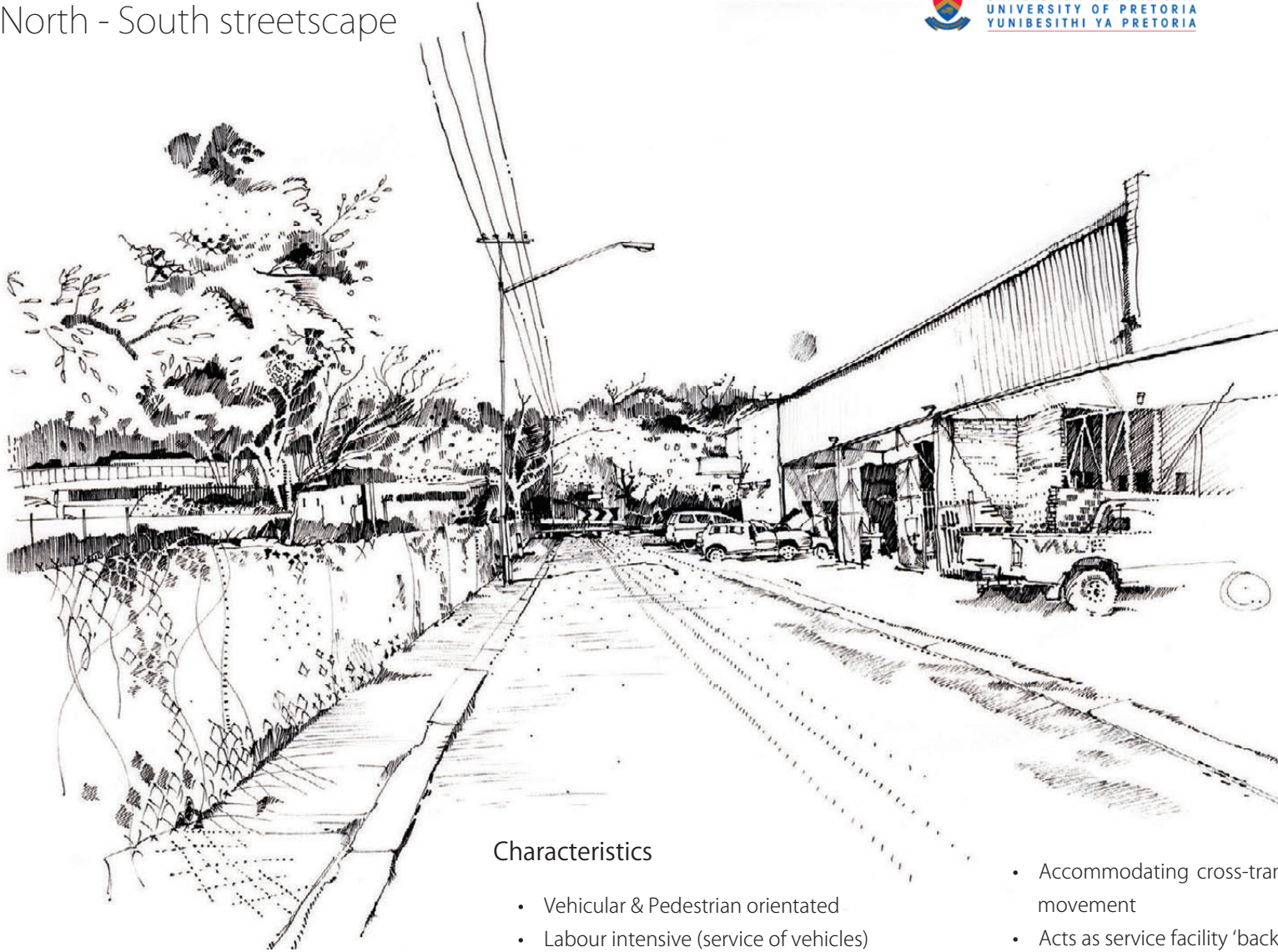
- Vehicular orientated
- Marketing intensive (vehicle services)
- Fast singular directional vehicular movement
- Restricted cross-transitional pedestrian movement
- Acts as access route from and to CBD



## North - South streetscape



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA



### Characteristics

- Vehicular & Pedestrian orientated
- Labour intensive (service of vehicles)
- Slow multi- directional vehicular movement
- Accommodating cross-transitional pedestrian movement
- Acts as service facility 'back-of-house' for East - West streetscape

fig. 41 typical north-south streetscape (Rosetta street)





## Conclusion

In response to the findings mentioned throughout the chapter and the qualitative understanding of the specific area under investigation, one can conclude that:

- There is a definite need for Rebecca station as a commuter facility.
- Rebecca station should be redefined as a mediator between the living and working environment with a strong pedestrian focus.
- The successful integration of high-rise residential developments between the existing commercial fabric is necessary to accomplish a sustainable industrial environment as depicted in the ICDS.
- In addition to the residential proposal, an adequate revitalising strategy is required to satisfy the environmental, social, and economical needs responsible for achieving a sustainable industrial environment.