

# -----[ III ]----- P R E T O R I A W E S T



## **PRETORIA WEST**

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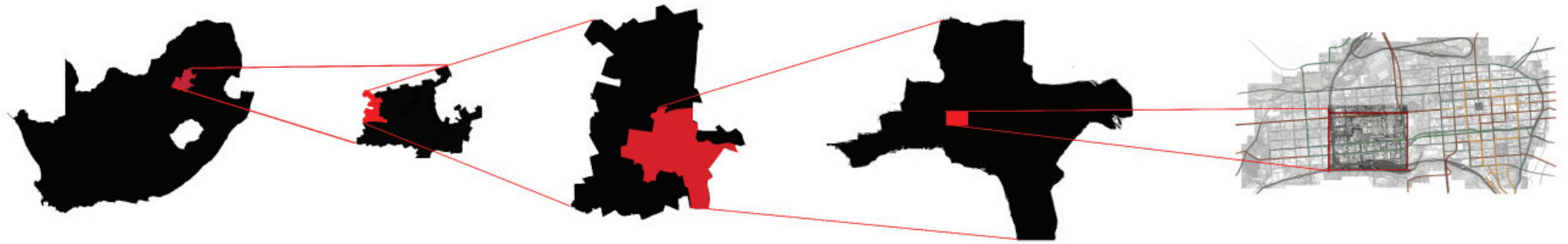


Fig. 3.1 Precinct Location Within South Africa (Urban Vision Group)



Fig. 3.2 Precinct location within Pretoria (Urban Vision Group)

## PRETORIA WEST IN A SOUTH AFRICAN CONTEXT

The abundance of natural resources such as iron ore and coal shaped the way that energy is generated and attracted large refinement industries to establish within South Africa. Coal power stations were erected on the outskirts of cities and railway infrastructure connected mines to the power stations to supply them with coal. These infrastructural systems allowed for private industries to connections and industrial development. The development of Pretoria is marked with the settlement of a mayor stakeholder establish onto the existing infrastructure, namely Iscor (currently Mital steel Pty. Ltd)

Various industries established on the Western outskirt of Pretoria in systematically an industrial belt formed along the railway lines. The creep of industry imposed itself onto existing residences who were unfortunate enough to see industries such as the Ruto Mill silos be erected next door. To this day some original dwellings are present on the industrial complex as it slowly grew beyond the erf boundaries.

Figures 3.3 and 3.4 Show areal photographs of the mital complex and powerstation. The initial development of the Proclamation Hill Suburb is evident as an extension to the workforce that accompanied these industries. The railway infrastructure later saw the development of industries to spreading to the East.

## WEST CAPITAL DEVELOPMENT

Up to date no significant development has taken place within the precinct since the previously mentioned influx of industries to the area. As the eastern suburbs of Pretoria West saw rapid development spawning from the CBD, the residential fabric of Pretoria

West remained largely underdeveloped. Formal commerce and informal trade did established along main arteries. but seldom past the original single dwelling density. Pretoria West's dormancy period will soon be disrupted as the Tshwane 2055 Vision proposes the redevelopment of West Capital (Western outskirts of the CBD) and inhabitants should see Pretoria West reach a similar density as current day Sunnyside, due to similar distances from the City Centre. Refer to Figures 3.6 and 3.7

By redeveloping the precinct the industrial presence needs to be addressed as the existing informal trade. Pretoria West exists as a typical historic buffer zone (Giraut, F. 2009) that still segregates Atteridgeville from the CBD. The social impacts of the apartheid regime is particularly visible in the Marabastad Markets to the North of the precinct, where informal traders were forcefully removed during police raids.

Pretoria West offers a unique opportunity due to the current mix of residential, commercial and industrial uses. Relevant to the research question; Can architecture serve as a tool to reintegrate industry into the city? Is the proximity of this industrial belt that will no longer find itself at the outskirts of the city, but rather at the heart of it.

## URBAN ISSUE

The industrial morphology of Pretoria stems from the establishment of the industrial infrastructure from the Power Station, mining activity, cement factory and other large scale industrial operations that were allowed to be erected to the far West of the original zoning for Pretoria's suburbs. Most notably, in terms of infrastructure, is the presence of Iscor that saw the extension of the railway system to

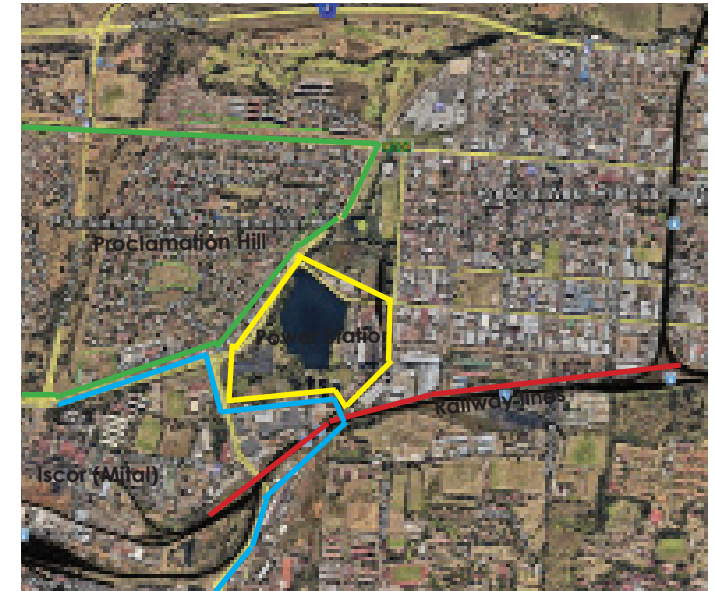


Fig. 3.3 Current day Pretoria West Aerial Photo (Google Earth, 2017)

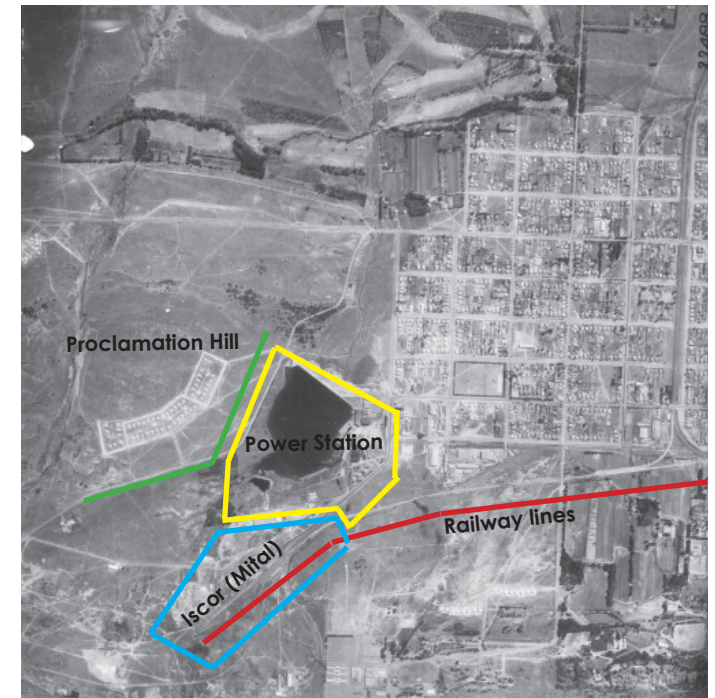


Fig. 3.4 Pretoria West Historic Industrial Development Photo, (Tshwane GIS, c. 1955)



accommodate its needs. This infrastructure led to the further establishment of industries in Pretoria West and ultimately the sprawl of the food industries along the railway lines, a few blocks South of the Pretoria Showgrounds.

Industrial areas, railway lines and highways were often utilized as buffer zones between white and black neighbourhoods in the apartheid city (Giraut, Frederic 2009). In this case the industrial area in Pretoria West formed a barrier between the CBD and Atteridgeville, leaving the Western part of Pretoria underdeveloped. This tactic by the apartheid government initiated a segregative relationship between industry and city rather than a relationship that is supportive to each other.

The imposition of industry over the then existing residential fabric put a further strangle hold on development in the area as large barricaded industrial complexes formed. The new industries eradicated the residential gardens along with most of the landscape. The informalities of everyday life was lost as these overly engineered environments became solely focussed on a Fordian\* production line. (\*Modelled on the industrial process utilized by Henry Ford) Any and all aspects that do not directly contribute to this purpose were thus eradicated from the site.

## URBAN ANALYSIS URBAN SUSTAINABILITY METHOD

Given the implied scale and urban integration required to fulfil the project intentions, it is necessary to measure the impact on the urban fabric. As described in Chapter I : Research Methodology Evans and Schiller serves as a design tool to measure

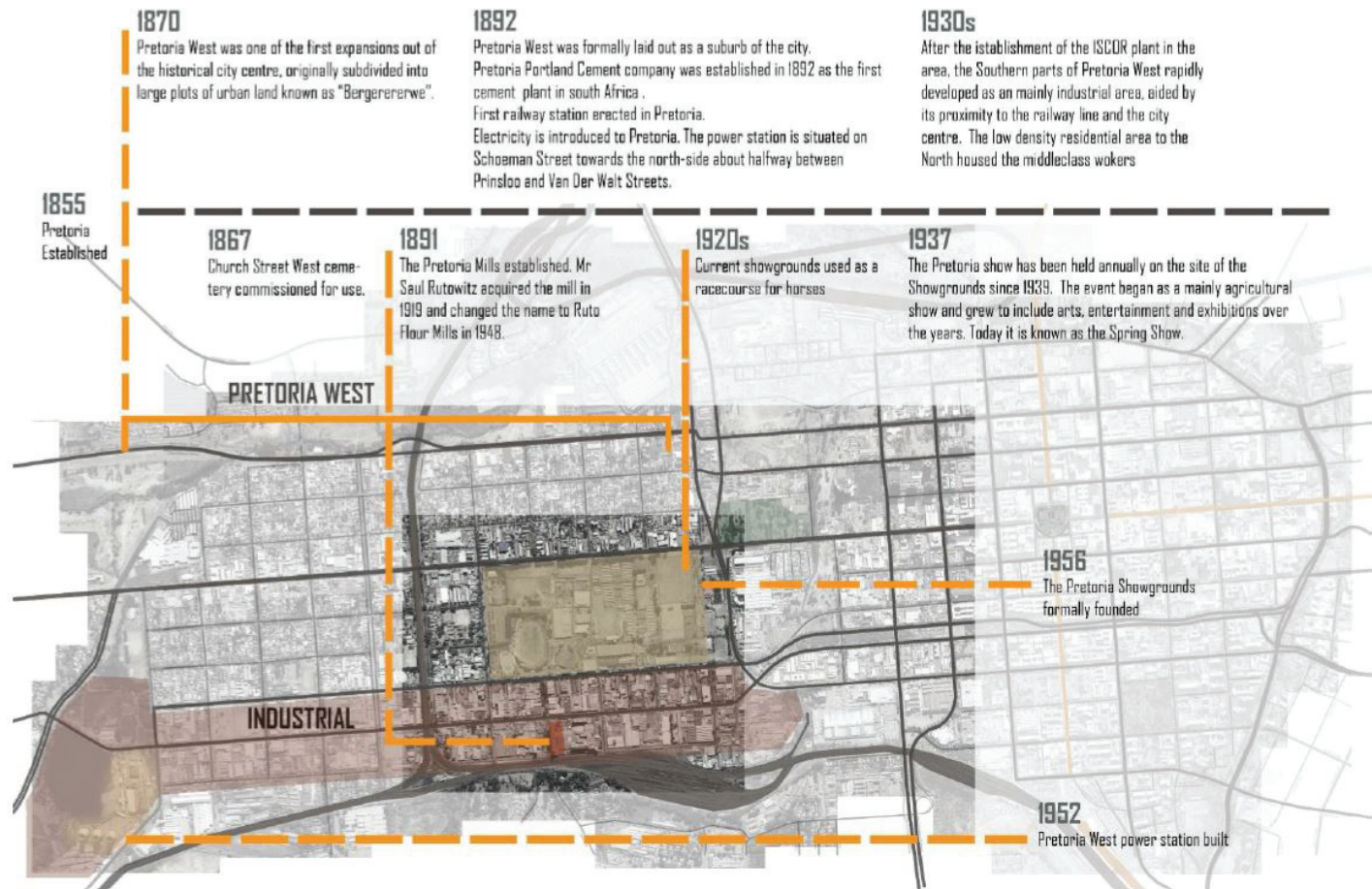


Fig. 3.5 Precinct Development (Urban Vision Group)



Fig. 3.6 Pretoria West Density (Author, Google earth, 2017)



Fig. 3.7 Sunnyside Density (Author, Google earth 2017)



the success of urban interventions, in 5 categories (De Schiller, S. and Evans, J.M., 2006). These being:

- Permeability
- Vitality
- Variety
- Legibility
- Robustness

The application of this urban sustainability strategy requires a measure of the condition before and after the proposal and can be utilised as a theoretical tool for measuring design decisions. Each category was scored according to the specific criteria before any design solution was proposed. This gave a quantifiable benchmark for the current integration or lack thereof, between the city and industry.

Above is an example of the scoring table for Robustness according to the Urban sustainability theory. Each street was intersecting with President Burger street (the proposed establishment of the production corridor) was assessed in these terms and then the collected data displayed in a graph that represents the overall sustainability of the area. (Fig 1.8 - Fig 1.12)

The negative impact on the urban fabric caused by the heavy industry in the form of the RCL milling operation between Carl Street and Charlotte Mayekke Street (Mitchel street) is clearly visible in the above graph. Simultaneously the positive effect of the Showgrounds and more residential fabric to the northern side of the Pretoria Showgrounds is

also evident. This Graph along with Figure: xx (Street elevations) clearly indicate that the industrial belt to the South of the precinct, although scoring less in urban sustainability, is purely industrial based and would collapse once these industries move out.

Henceforth, if industries are to remain in our cities and in future become increasingly integrated into the urban fabric that they would be subject to the same scrutiny as commercial and residential developments in terms of public duty, sustainability and architectural appropriateness. The contribution of the informal setting to the wellbeing and richness of the streetscape should also be incorporated into the architectural solution and would promote economic empowerment for individuals.

This would become important to the functioning of the entire precinct as the ingress of users is largely contributed by the train station. It must be noted however that the overwhelming factor for the industrial sector scoring so low is the fact that it is extremely isolated from the rest of the urban fabric, with only the informal traders contributing to any notable form of variety and mixed use.

In the graphic below the industrial complex is entirely walled without even visual permeation on street level. The street merchants, informal container squatting and light industrial supply of goods to the train station creates a street culture based around trade, softening the harsh surroundings posed by the formal industry.

The relationship between these industries and the street

merchant is also notable. I supply the street merchants with ingredients at a substantially discounted price as bulk distribution between vendors is commonplace. Merchants would then supply the industry's workforce with high protein and high carbohydrate content meals such as Mague\*

\* a favoured traditional African drink amongst industrial labourers. At the end of the day the unsold produce is packaged and travels by train to the various townships surrounding Pretoria.

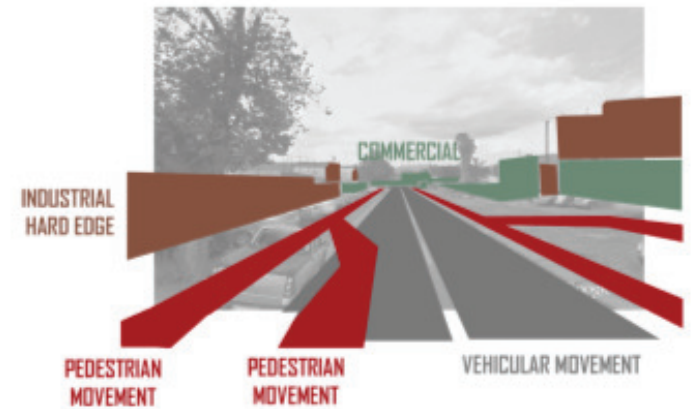


Fig. 3.8 President Burger Str Streetscape (Author, 2017)

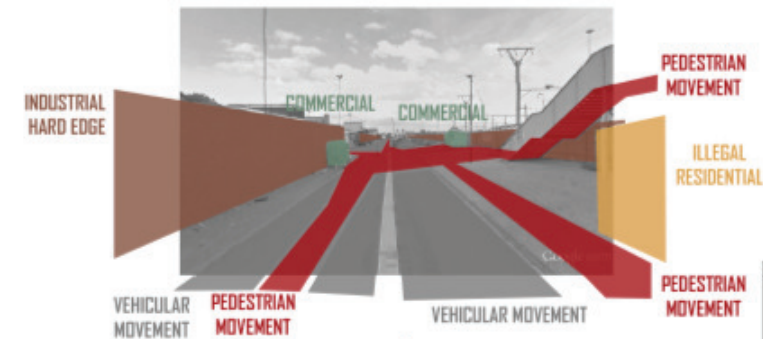
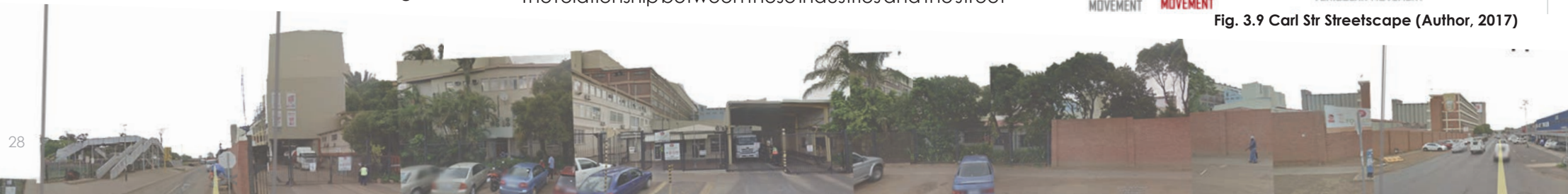


Fig. 3.9 Carl Str Streetscape (Author, 2017)



### STREETSCAPES AND URBAN SUSTAINABILITY RATING

The productive corridor spanning between the RCL Sugar and Milling operation and the Tshwane Market extends across varying streetscapes. With the streets surrounding the Pretoria Showgrounds being the most pedestrian friendly whilst the Northern and Southern most streets giving way to heavy motor vehicular traffic. The varying urban sustainability ratings is plotted in Fig. 3.10.

The overall pedestrian experience and public function of the streetscape is devised into separate elements that each facilitates a single use. The heavily ordered streetscape functions efficiently in transportation of and circulation but leaves little for the user to engage with.

All along President Burger Street informal traders offer interaction to pedestrians and crosses the interaction between the pedestrian, vehicular, and infrastructural movement. The informal sector adds to the variety, vitality and robustness, whilst the formal sector adds to the legibility and permeability of the streetscape.

It is notable that the urban use of the city blocks directly translate into the sustainability of the streetscape. The industrial and heavy infrastructural presence along the Southern streets receives a low score due to the hard edges that are formed by industrial developments. The streets surrounding the showgrounds fair far better due to the presence of commercial buildings that invites the public in.

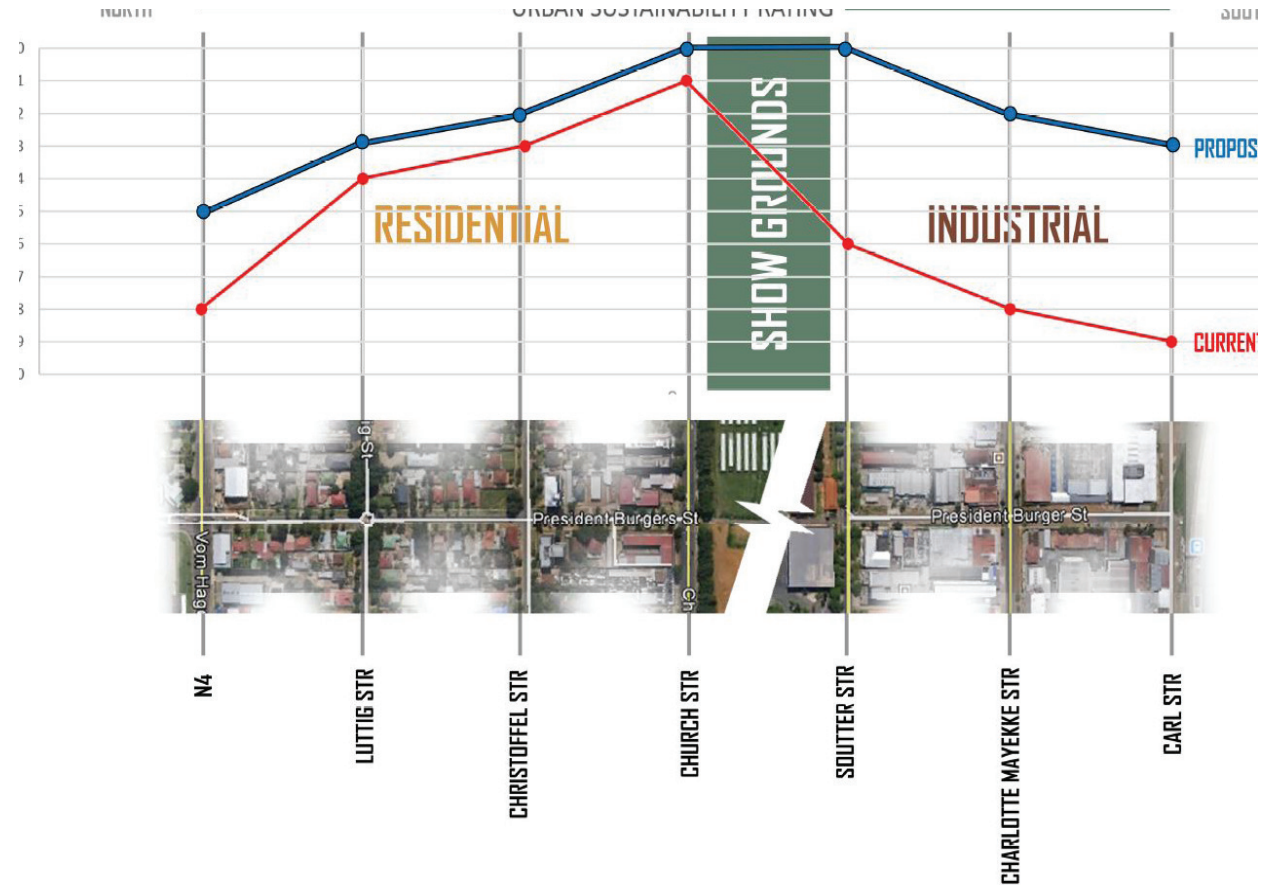


Fig. 3.10 Urban Sustainability Rating (Author, 2017)

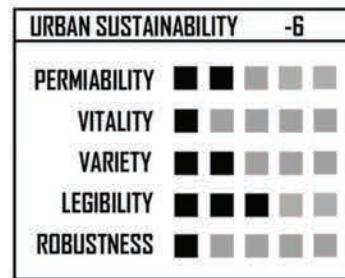


Fig. 3.11 President Burger Sustainability Rating (Author, 2017)

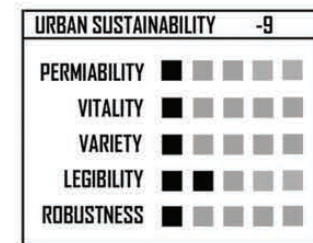
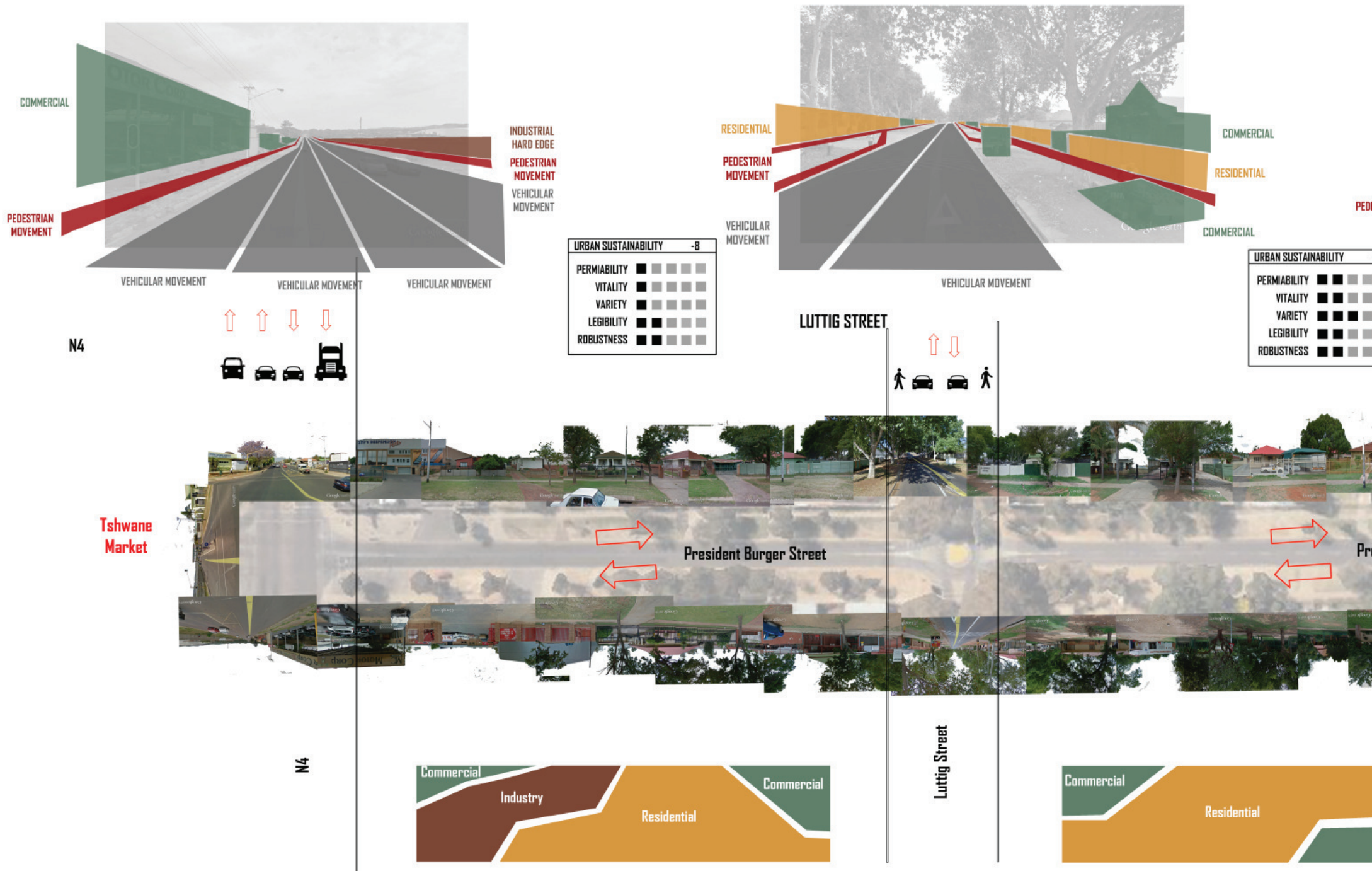


Fig. 3.12 President Burger Streetscape (Author, 2017)



Fig. 3.13 President Burger Street Elevation (Author, 2017)





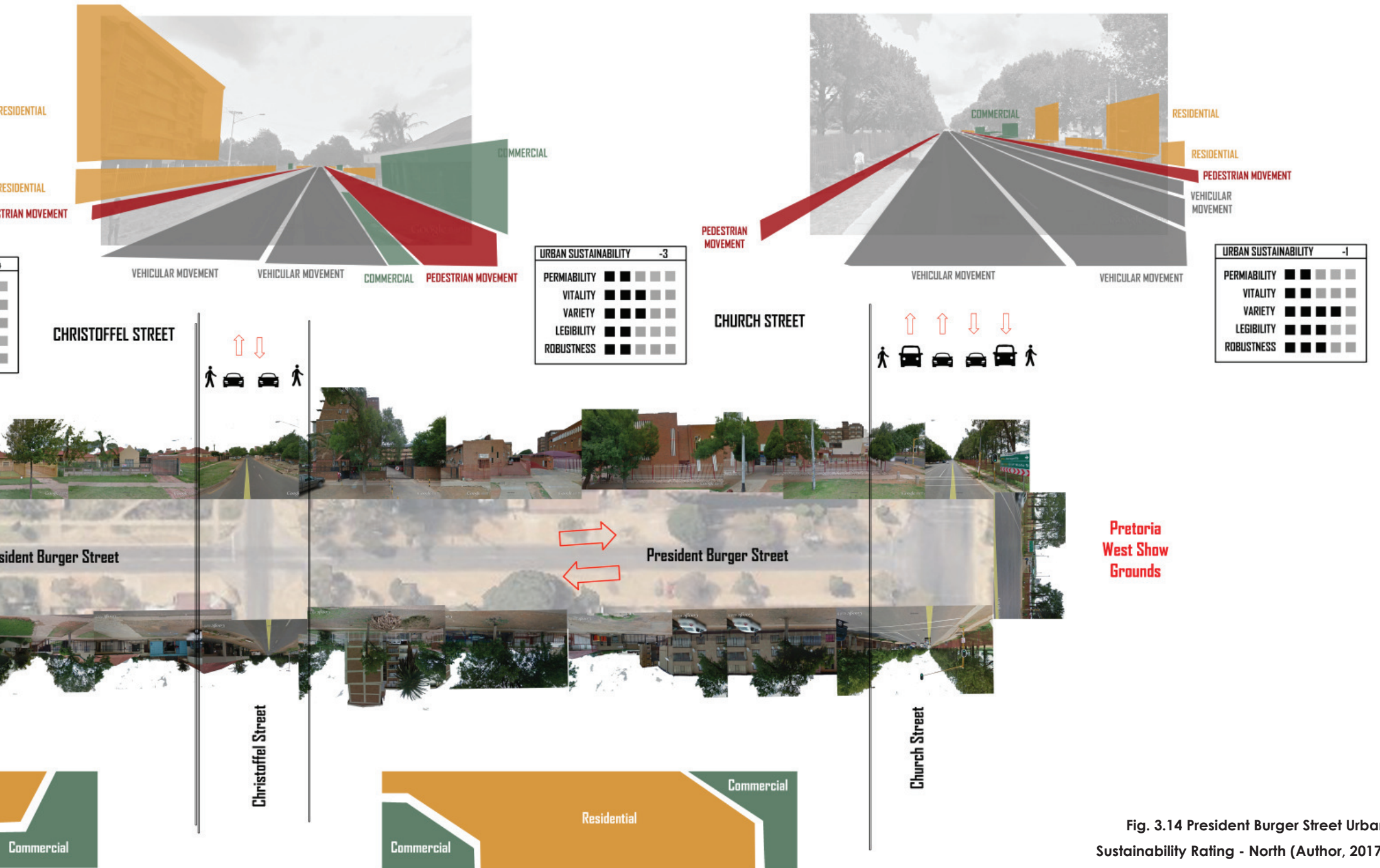
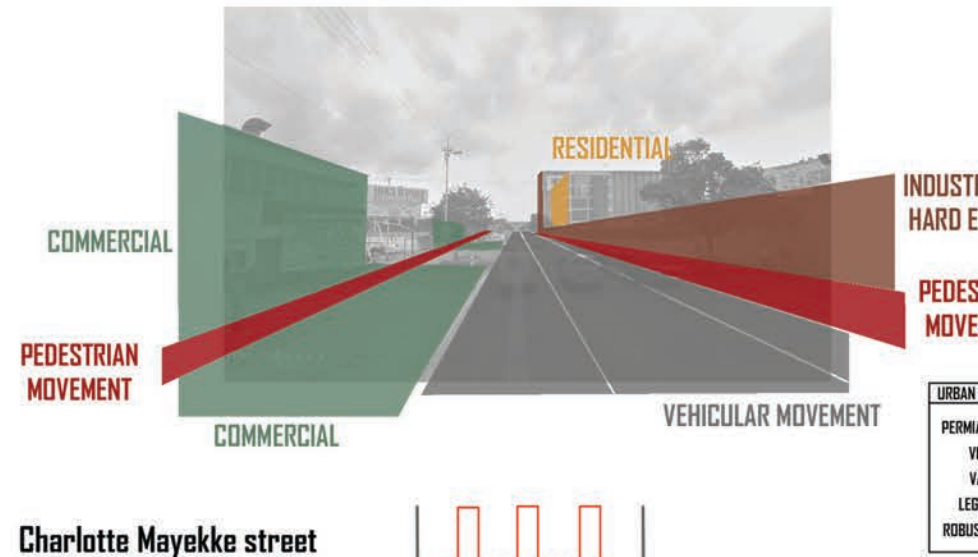
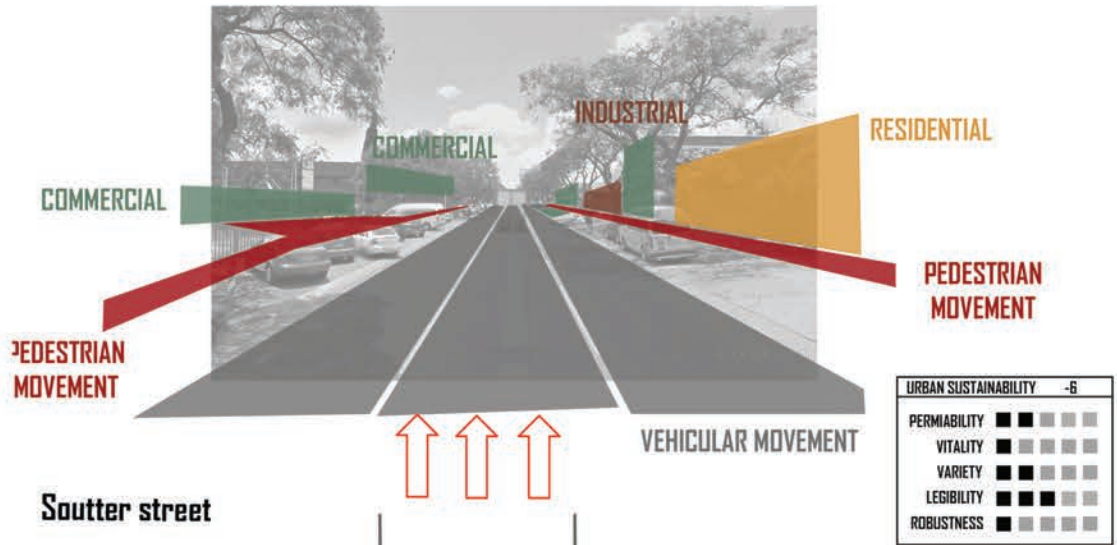


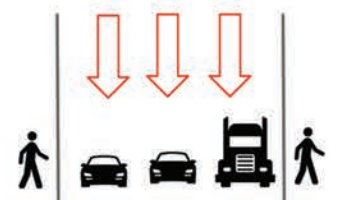
Fig. 3.14 President Burger Street Urban Sustainability Rating - North (Author, 2017)





Soutter street

Charlotte Mayekke street



Pretoria Show Grounds



Soutter street



Charlotte Mayekke street



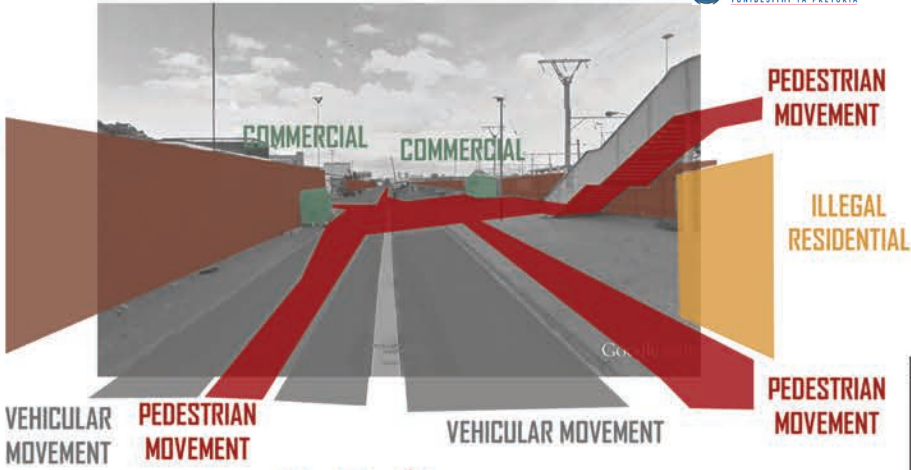
RIAL  
DGE

TRIAN  
MENT

SUSTAINABILITY -8

ABILITY	■	■	■	■	■	■	■	■	■
TILITY	■	■	■	■	■	■	■	■	■
ARIETY	■	■	■	■	■	■	■	■	■
IBILITY	■	■	■	■	■	■	■	■	■
STNESS	■	■	■	■	■	■	■	■	■

INDUSTRIAL  
HARD EDGE



PEDESTRIAN  
MOVEMENT

ILLEGAL  
RESIDENTIAL

VEHICULAR  
MOVEMENT

PEDESTRIAN  
MOVEMENT

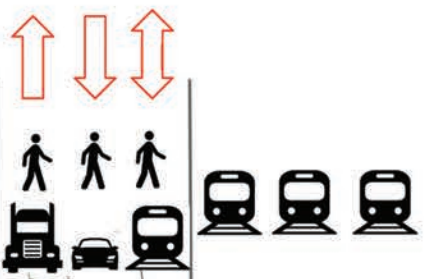
VEHICULAR MOVEMENT

PEDESTRIAN  
MOVEMENT

URBAN SUSTAINABILITY -9

PERMIABILITY	■	■	■	■	■	■	■	■	■
VITALITY	■	■	■	■	■	■	■	■	■
VARIETY	■	■	■	■	■	■	■	■	■
LEGIBILITY	■	■	■	■	■	■	■	■	■
ROBUSTNESS	■	■	■	■	■	■	■	■	■

Carl street



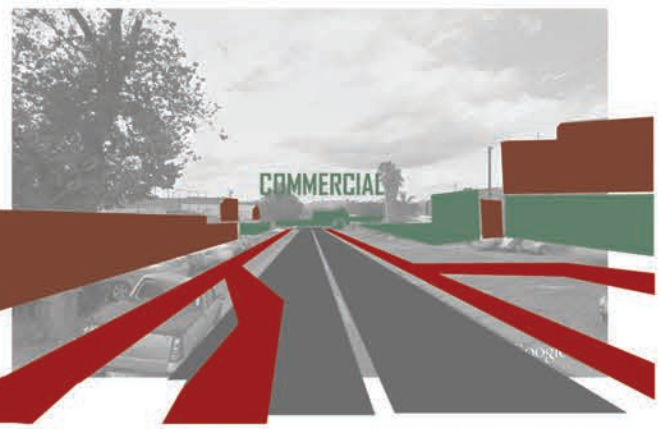
President Burger Street

Pretoria  
West Train  
Station

Industry

Carl street

INDUSTRIAL  
HARD EDGE



PEDESTRIAN  
MOVEMENT

PEDESTRIAN  
MOVEMENT

VEHICULAR MOVEMENT

PRESIDENT BURGER STREET

Fig. 3.15 President Burger Street Urban Sustainability Rating - South (Author, 2017)



## EVOLUTION OF URBAN FRAMEWORK A PRODUCTION CORRIDOR

An urban analysis study of existing uses and programs was developed into a master plan that establishes a productive corridor between the RCL FOODS milling industry and the Tshwane Market. The productive corridor connects various other food industry to the market and to the raw materials supplied by the rail system and milling industry.

The concept is derived from the urban morphological study that traced industry in Pretoria West back to the establishment of Iscor's steel industry. Feeder industries that refine and manufacture steel products located themselves as close as possible to the Iscor, which supplied them with raw materials, i.e. steel.

The systematic flow of materials from one industry to the next in an end to end fashion suggested routes that materials could flow down from the railway deeper into the precinct until dispersing into the city into various different products.

Just as the production models of the second industrial revolution were adopted from one industry to the next, the feasibility of applying this feeder routes was tested. By tracing separate industries related to the supply, production and processing of food within the precinct two definite anchor points were established. A high number of related food industries were discovered within the precinct and it was concluded that the proximity to other industries is intentional.

This concept extracts the essence of the role that Pretoria West plays by supplying the rest of the city with the products it requires. Marabastad in turn can be viewed as portraying a trading role through

the richness of informal markets that source most of their produce from the Tshwane Market. With its role defined the character of Pretoria West starts to take shape. By celebrating this character, the influx from the West Capital development can be organised to spur small business growth.

As Pretoria has grown far beyond its historic footprint the food industries of Pretoria West no longer find themselves on the outskirts of the city, With the West Capital expansion of the CBD, these food industries will find themselves right in the heart of the city.

## URBAN VISION PRETORIA PEDESTRIAN ROUTES

Due to Pretoria's historic East-West expansion, defined by the topographical constraints to the North and South a recurring model for pedestrian movement is present in the city. This can be observed in the pedestrian movement on Paul Kruger Street spanning from Pretoria Central Station to Church Square in the CBD of Pretoria. The above-mentioned model is adopted and implemented as a precedent specifically relevant and historically bound to Pretoria's morphology. By implementing this model in Pretoria West it establishes a physical connection between the RCL Milling Industries (as well as the Pretoria West train station) in the South to the Tshwane Fresh Produce Market in The North. Due to existing infrastructure of the food networks in the area there seems to be an abundance of existing large depots, for instance Kingsley Depot and food production industries, for instance Theron's Meat Market and Pretoria Cold Storage in the area. I propose that these industries could benefit from adopting a similar architectural in so far as that they connect to the industrial street market.



Fig. 3.16: West Capital Development (Author, 2017)

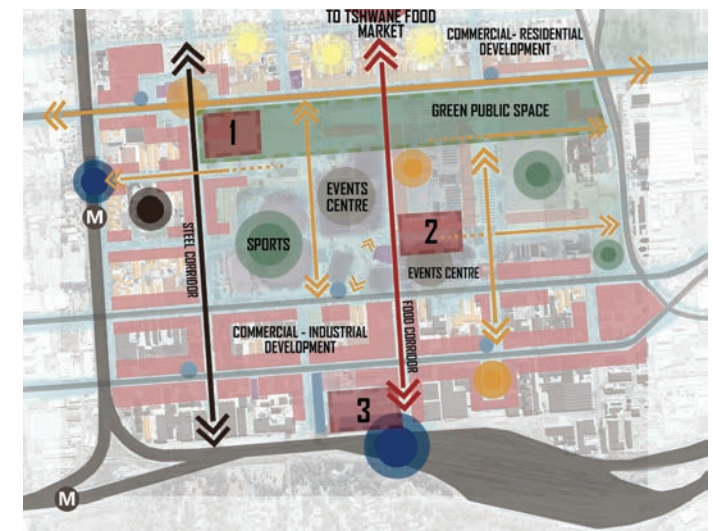


Fig. 3.17: Urban Density (Urban Vision Group, 2017)

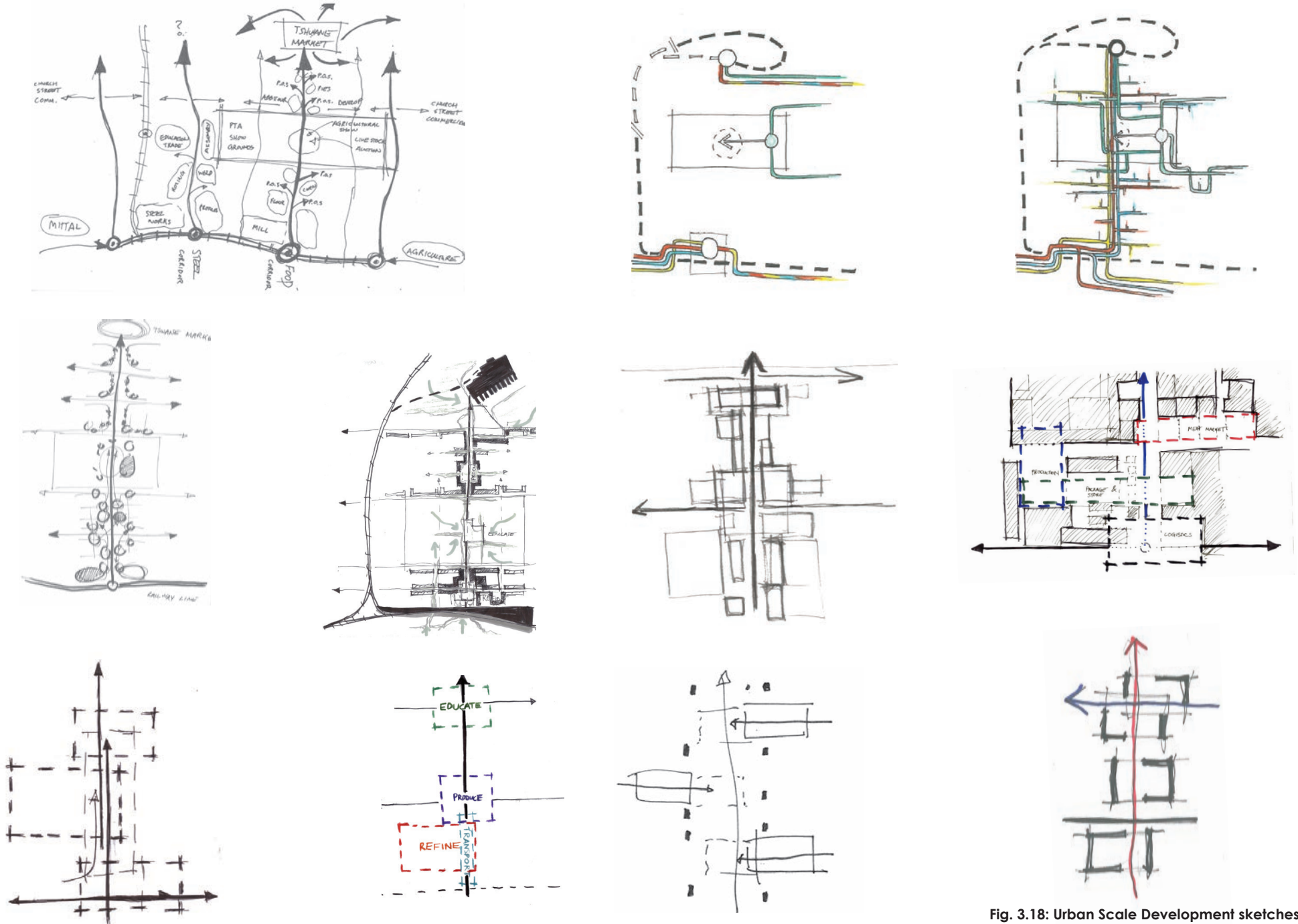


Fig. 3.18: Urban Scale Development sketches (Author, 2017)



## THE ROLE OF PRETORIA WEST: SUPPLYING PRODUCE TO THE MARABASTAD MARKETS

On an urban scale the role of Pretoria West can be defined as the industrial supply chain. Firstly, a supply chain to the Informal markets of Marabastad and secondly to the formal traders throughout Pretoria.

The Tshwane Market and RCL Milling Division is currently supplying both nationally and internationally, but research in terms of future food production industries have indicated supply chains should be reduced to a regional level in order to become sustainable and stay competitive (Srai, 2016). It is therefore important to isolate and focus on the impact that these industries can have on their direct environment.

Environment in this subject matter is not limited to the natural environment but should include the city's citizens, its economy and built environment into an ecosystem.

Often when referring to sustainability and the impact of the built environment we only consider limiting the negative effects that our buildings have on the natural environment. The aim should rather be to extract the

potential positive effects that our buildings could have on the entire eco-systemic understanding of the city instead of focusing on merely limiting its negative impacts. With the understanding that buildings can have both negative and positive contributions to the city, one can start to design appropriately.

## FOOD PRODUCTION AS AN ACTIVITY

Within the current models of food industries, production is isolated and increasingly mechanized. Food production can be viewed as an activity in itself and could catalyse a wide spectrum of activities, as can be seen in the street markets in Japan (Colverd and McLean, 2013) as well as the South African example of Warkwick Junction (Skinner, C. 2008: 233)

The existing structures contain a potential catalytic activity that could be extended towards the public. The design opportunity, when coupled with the research question, requires that the architectural solution lie between the existing structures and the public space, in this case the street. The intention is to extend the current production line towards the street



Fig. 3.19 Informal production corridor through Pretoria Showgrounds (Author, 2017)

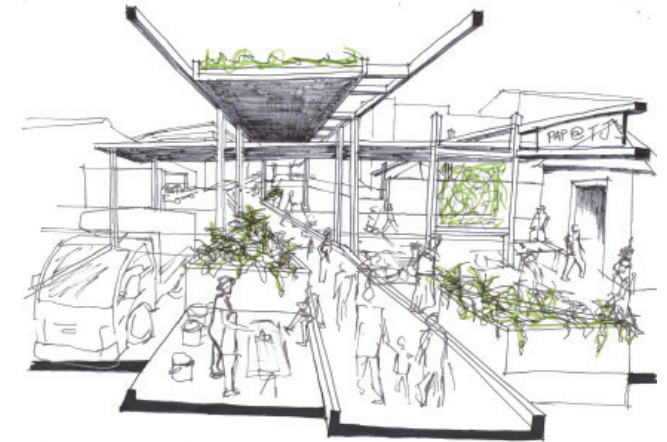


Fig.3.20 Early vision for President Burger street (Author, 2017)

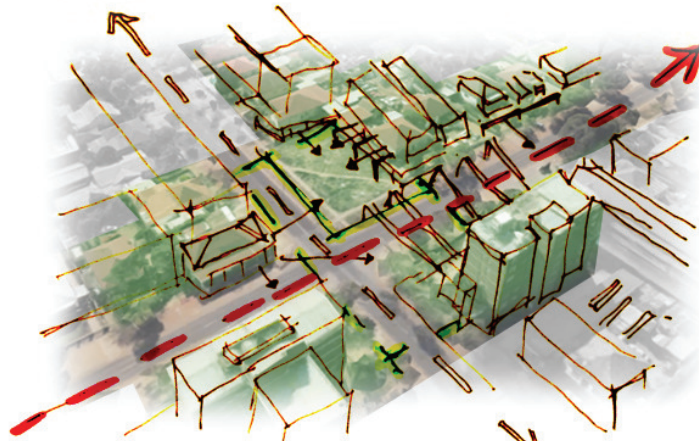


Fig.3.21 2 Brothers Square Design (Author, 2017)

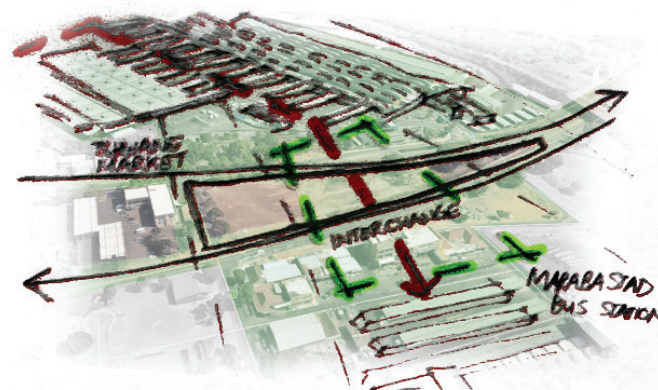


Fig.3.22 Tshwane Market/Marabastad Connection (Author, 2017)

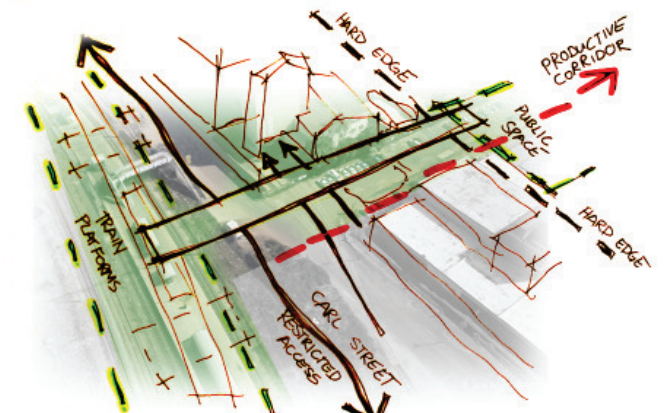


Fig.3.23 Carl Street Bridge (Author, 2017)



and in doing so bleed the activity out from the formal industry to the informal industry.

Informal trade in Pretoria is most prevalent in close proximity to transportation interchanges and along the streets. It is therefore important to incorporate the relevant streetscape and train station into the design in order to fully embrace the street culture that these vendors bring with them. My intention is to align the outcomes more accurately to reflect the legislative shift that the post-apartheid strive has brought; from an oppressing the informal traders towards embracing and uplifting them. (Skinner, C. 2008: 233)

### PRODUCTIVE CORRIDOR AS URBAN CONTRIBUTION

It is possible that just as the informal and formal relationships exist, that a rigid and flexible relationship can exist between the larger and smaller industries. The intention is thus not to completely protect these industries from changes in the market place or from technology, but rather to allow portions of the intervention to cease to function as they become outdated and be replaced by newer more efficient parts.

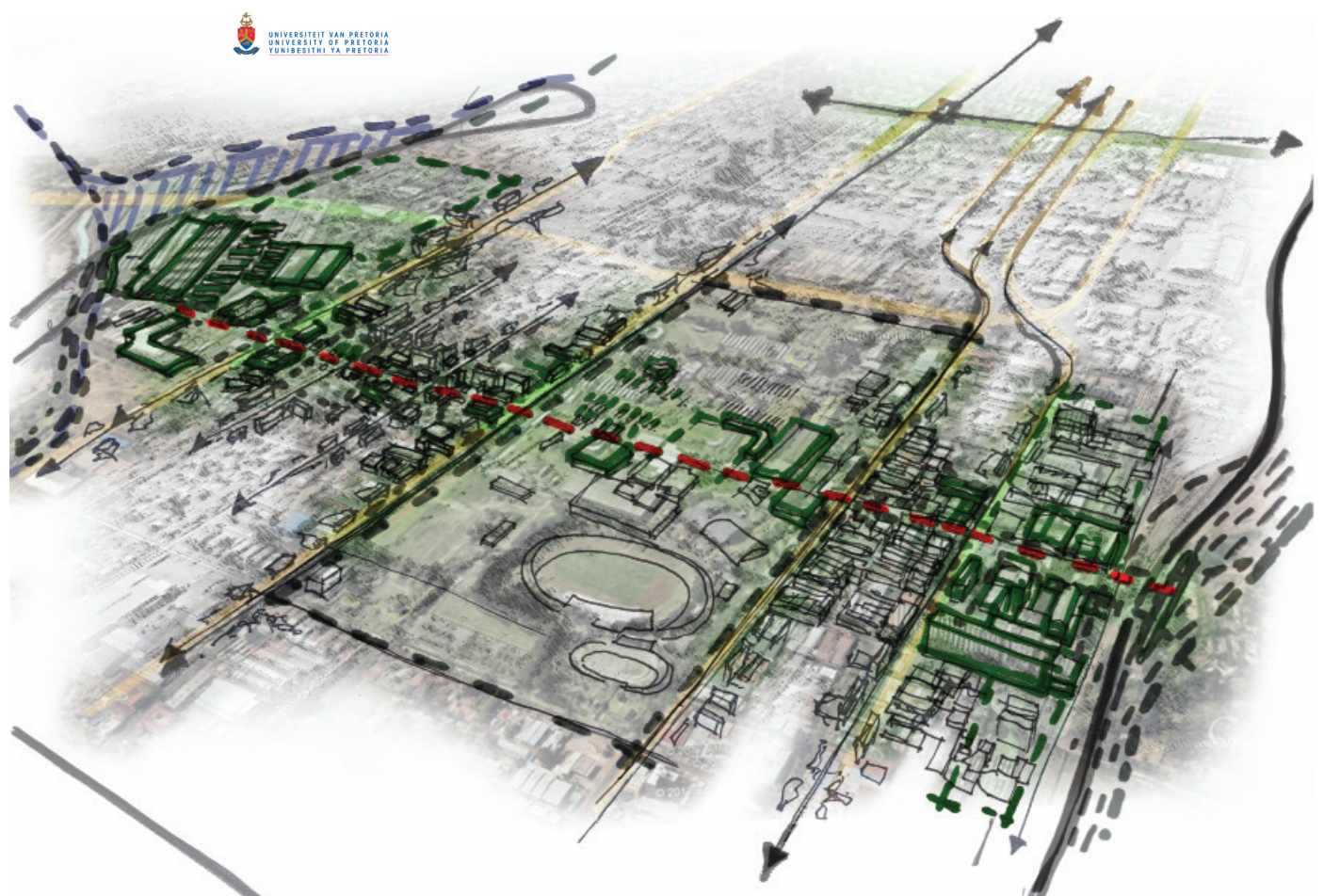


Fig. 3.27 President Burger St. Proposed productive corridor (Author, 2017)

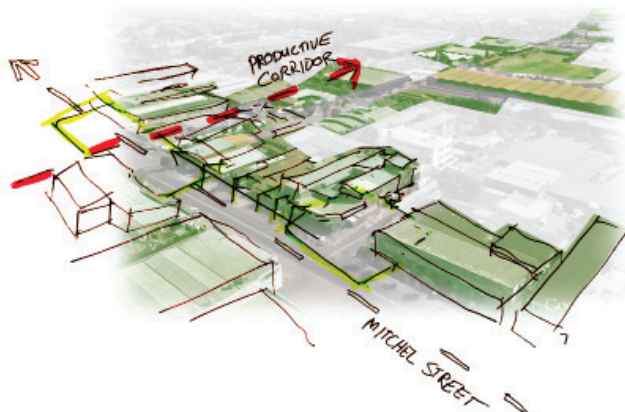


Fig. 3.24 Meat Market Connection (Author, 2017)

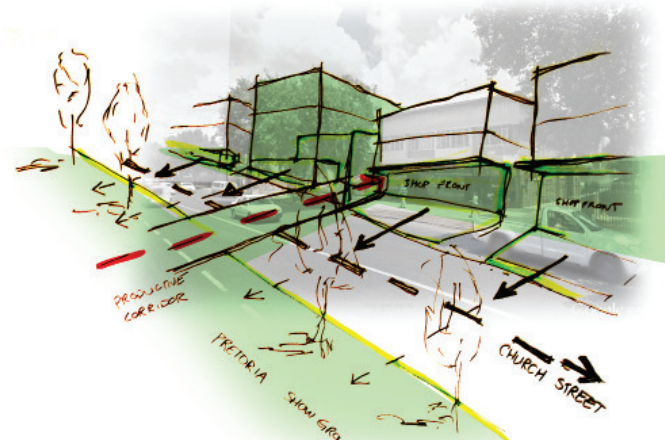


Fig. 3.25 Church Street Commerce (Author, 2017)

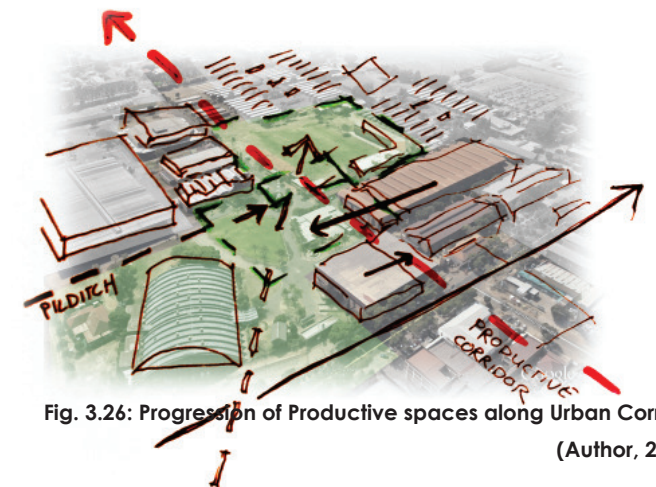


Fig. 3.26: Progression of Productive spaces along Urban Corridor (Author, 2017)

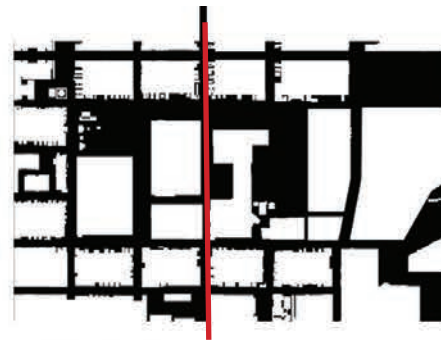


This effectively solves one problem with another problem. Stagnation in technological advancement is combated by the introduction of an economically "hostile" market place that requires constant adaptation.

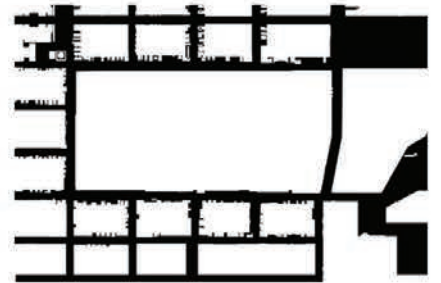
This notion is continued through the planning of interdependent industries as well as the attitude towards technification and systems. Just as industries are allowed to be replaced, systems and technologies should also be allowed to be upgraded and replaced.

This adaption of the eco-industrial parks theory relates to an eco-systemic world view wherein the city is seen as a constant developing organism. Nothing can thus be viewed as a stagnant object, and must be allowed to be developed and adapted. The future thus only becomes a moment of continuation from the past.

The acknowledgement of the dimension of time as it relates to space directly implies a dynamic, evolving and fluctuating built environment. The implication of time on space has two distinct implications: Firstly, the user experiences the built environment as a progression through three-dimensional space, where the journey from point A to B is not the same as the journey from point B to point A. Secondly, the building itself progresses in time through various iterations as it is constantly adapted to suite ever changing needs.



PROPOSED PUBLIC SPACE



CURRENT PUBLIC SPACE



OPTIONAL PUBLIC SPACE

Fig. 3.28: Figure ground study of Pretoria West Showgrounds as Public Space (Author, 2017)



Fig. 3.29: Food Production Corridor Vision (Author, 2017)







Fig. 3.30 Initial Envisioning of President Burger Street as a Connective Route (Author, 2017)



Fig. 2.31 President burger Existing Street Elevation (Author, 2017)