

INTRODUCTION



Fig. 1.1 Industrial Food Production Theme (Author, 2017)

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INTRODUCTION

Presently, there is a significant divide between existing food production industries and the everyday occupants of cities. Historically these industries were integrated within a city in the form of marketplaces and was a celebrated part of urban life. The divide seems to be widening drastically as production and refinement facilities are abandoning inner cities and re-establishing in satellite developments on the urban outskirts.

The relationship between Industrial zones and the city is further plagued by the legacy of apartheid planning as the segregation policies used industrial areas as buffer zones between neighbourhoods (Breed, cited in Burmeister, M 2012). Instead of continuously widening the divide, we should rather attempt to reintroduce existing industries into the city with the aim to reduce the urban footprint to a more sustainable form. (Rafeq Jabareen, 2016)

The divide between the existing industrial realm and the public realm can rather be occupied by a community setting for production. Logically this correlation can be achieved by introducing commerce in which architecture can facilitate a reintroduction of industry into the city. This would significantly shorten the supply chain to the end consumer in a more sustainable model for food production.

The industrial infrastructure of the older industries can be utilized as the backbone for multiple individually-driven future industries to attach to as a communal network. As a result, these smaller industries can easily adapt once they become outdated instead of the entire production line being threatened once a product fails in the market.

CONTEXT

In 1870 Pretoria West became one of the first expansions from the historical city centre and until the 1930's showed promise into developing steadily alongside the rest of the city. The development at that time took a drastic shift towards an industrial nature as large scale industries such as ISCOR (now Arcelor Mital) established further West on the outskirts of the city. The Railway lines to the South of the Pretoria West precinct then served as catalyst for industrial development along the Southern Border of the precinct. This industrial redevelopment has had profound implications on the livability of the area until the current day.

Whilst major densification and commercial development has taken place towards the East of Pretoria, the future vision for Pretoria West seems to be unclear. Whilst there is a clear drive towards the densification of the area due to its proximity to the CBD the area still seems to be far less desirable than areas such as Hatfield and Menlyn.

With the rapid improvements made in information technology, industry seems to be down scaling into smaller and varied operations than the massive industrial sites that were brought on by Henry Ford's production-line concept. Whilst these large scale industrial sites can define not only the skyline but also the character of an entire area, these industries are mostly disjointed from the city and form hard edges with no interface with users.

PROBLEM STATEMENT

Many South African Industries are isolated from the city and are therefore quickly becoming out-dated.

The age of Information Technology has brought forth an industrial revolution that is restoring the function of production and fabrication to a community driven state that is driven by and accessible to the individual (Rifkin, J., 2012). A large scale industrial development in Pretoria West has however isolated itself from the city and eradicated the human interaction from its environment almost entirely.

The most concerning of which is the fragmentation of the food industry, that has been a visible and integral part of communities since ancient times in all forms of settlement. These industries took the form of markets and often encapsulated as the most used and celebrated public spaces within the settlements (Komarzyńska-Świeściak, E. 2010). During the height of the production line era, the social and cultural value of the activities related to food production and refinement were traded for scale of production, that would prove more profitable than the traditional models.

A blatant disregard for the social, cultural and urban impacts of these large-scale industries and the isolation of production has led to a damaged and segregated relationship between the city and its Industry. Over time this relationship has changed and it is possible to project a future relationship due to technological changes as industrial development and technological advancement are inherently linked.

RESEARCH QUESTION:

Can Architecture serve as a tool to address the interface between the food processing industry and the city?

DELIMITATIONS

Defining the Precinct Fig 1.4

The railway lines to the West and South serve as hard boundaries whilst the West Capital development to the East is projected to encourage development similar to the density of the current state of Sunnyside neighbourhoods. This is based on a similar travelling distance to and from the CBD. The northern Boundary is defined by the natural topography that contained the original expansion of Pretoria in an East-West Direction.

Food Production Focus

Even though this proposal encompasses the entire realm of living, playing and working in the city, this project will be Specifically Focussing on Food Production and serves to catalyse further development (including the entire spectrum and variety of residential, commercial and industrial buildings) as a future vision. These aspects of a future vision will merely be outlined and not designed in order to focus in on the industrial aspects of the design.

Agricultural Delimitation

Although agriculture forms a part of the overall supply chain, the existing industries only deal with the refinement of these food products. This then falls beyond the scope of the specific project although reference to agriculture is made these systems are not designed and rather a connection is implied through the railway system and Carl street transit system.



Fig. 1.2 Pretoria Figure Ground (Author, 2017)

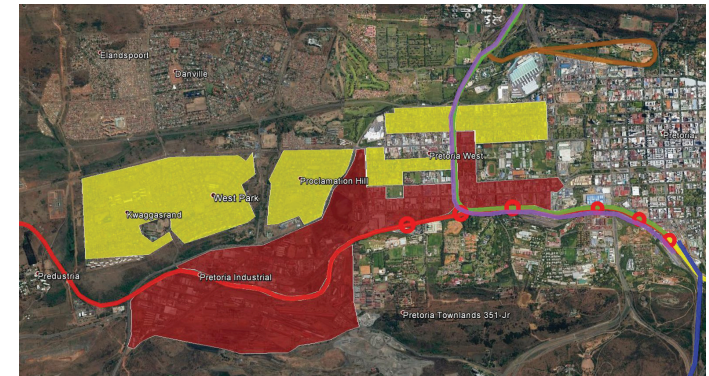


Fig. 1.3 Development of Industrial Belt, Shown in Red (Author, 2017)



Fig. 1.4 Precinct (Urban Vision Group, 2017)

ASSUMPTIONS

This project aims to re-imagine 21st century food production in a world class African city. The theoretical premise in which this project is based utilizes the freedom and creative licence that comes with the singular author hypothesising multiple role-player's interests that is unique to the theoretical scope in which Architectural dissertations reside.

It is thus assumed that within this theoretical environment, consensus has been met between the Tshwane municipality and major food industries in Pretoria West specifically the RCL Foods Pty Ltd company, to retain industry in the city.

The Industrial Complex under investigation is vast and although emphasis was placed on the overall operations, assumptions have been made in terms of certain internal functions and workings as could best be derived from the existing program and the architectural manifestation.

RESEARCH METHODOLOGY

A methodical analysis is used that identifies an optimal opportunity to integrate industrial heritage sites into the urban fabric. The Process is broken up into 6 Stages:

1. Mapping data- physical mapping of the precinct
 - a) Data Set 1: Public Interfaces
 - b) Data Set 2: Urban Sustainability
2. Overlaying of data sets to identify the potential for different areas. Differentiating between high and low potential for positive interaction.
3. Identifying patterns, adjacencies networks, etc. in order to set up a framework for the Pretoria West



Fig.1.5 Urban Corridors (Author, 2017)



Fig. 1.6 West Capital Development (Author, 2017)



Fig. 1.7 Urban Usage (Author, 2017)

precinct. This gives the opportunity to theorize the greater implications of the scheme. A narrative is established that connects the specific site to the urban scale proposal.

4. From the narrative the specific site is identified as the most appropriate site to condense the argument into a single architectural manifestation. The physical mapping is repeated on a smaller scale.

5. A design solution is proposed that responds to the analysis, data, and theory.

6. The proposal is re-evaluated in terms of its urban sustainability and the design is re-iterated multiple times until the project intentions are satisfied and leads to the final design.

DATA SET 1: PUBLIC INTERFACES

During the initial mapping phase, the following data was gathered from the Pretoria West precinct, with a focus on possible interfaces between industry and the public

- Streetscapes as mediators between public and industry
- Urban Usage
- Existing functions of structures
- Morphology of the site and structures

DATA SET 2: URBAN SUSTAINABILITY

In order to quantify the degree of success of the proposed solution as an urban interface project, a rating scale was adopted, namely the Urban Sustainability Rating proposed by de Schiller and Evans (2006). The Rating tool addresses urban sustainability (see Appendix A for a detailed description of each category and its considerations).

The measured categories are:

- Permeability
- Vitality
- Variety
- Legibility
- Robustness

These categories apply not only to buildings but streets and entire areas as well. After a final design had been proposed these categories were once again analysed and the results compared to the original rating. This showed the impact on the surrounding area and the improvement that the intervention made. The ratings were plotted on a graph showing existing ratings in Fig 1.8

THEORETICAL APPROACH

A reflection on the development of food processing industries initiates the theoretical narrative. The shortcomings and contributions of various industrial models are highlighted and a future for industries is projected in light of the current industrial revolution. The narrative is established as a scope and aim for architectural theory.

Theories are selected that address the projected issues that industries will face in future and these are supported by case studies. The Cross-programming theory (Ebert, 2008) addresses the isolation of industrial processes and places the project within the Post-Modern movement in the continuum of architecture.

By addressing the urban disjunction between industry and the city, the entire theoretical approach is scrutinized under the Urban Sustainability Theory that outlines and the research methodology.

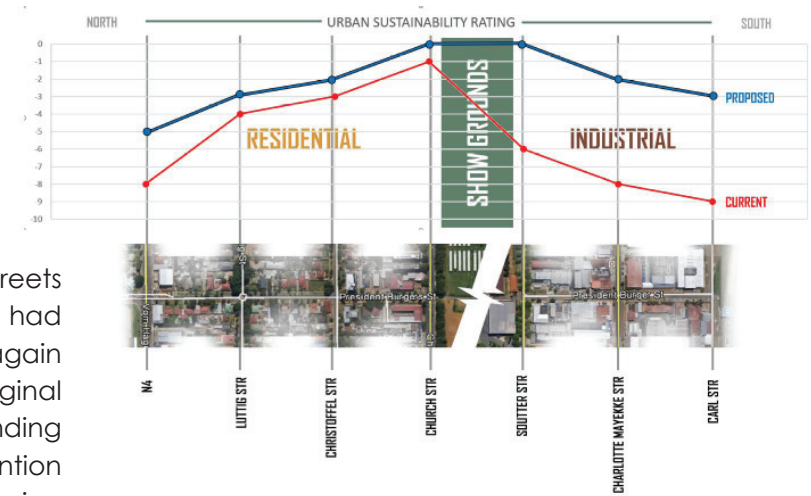


Fig. 1.8 Urban Analysis Graph (Author, 2017)

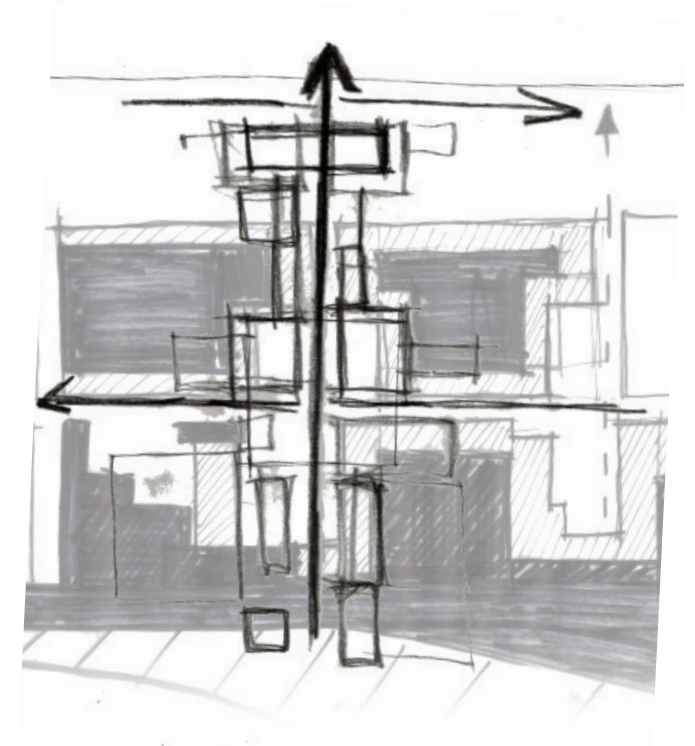


Fig. 1.9 Urban morphology sketch (Author, 2017)

PROJECT INTENTIONS:

The relationship between industry and the city requires a physical intervention that addresses the future of industry, apartheid buffer zones and informal food processing industries' place within a larger context of Pretoria.



Fig. 1.10 Pretoria Rapid Transit Systems (Author, 2017)

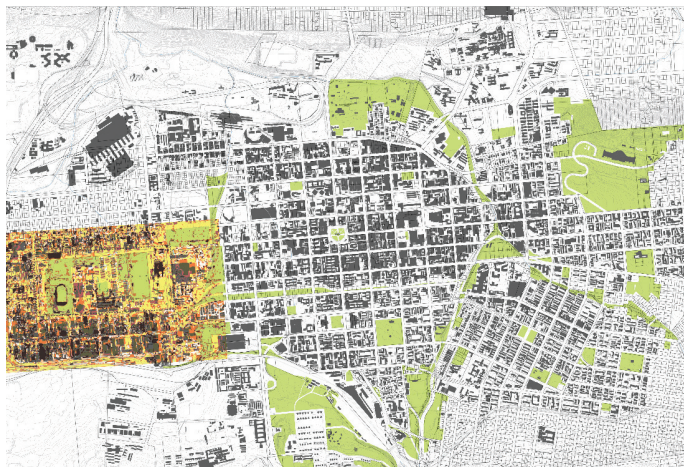


Fig. 1.11 Pretoria West Urban Heat Island effect (Author, 2017)



Fig. 1.12 Pretoria Income Intensity (Author, 2017)



Fig. 1.13 Pretoria Urban Heat Island Effect (Author, 2017)

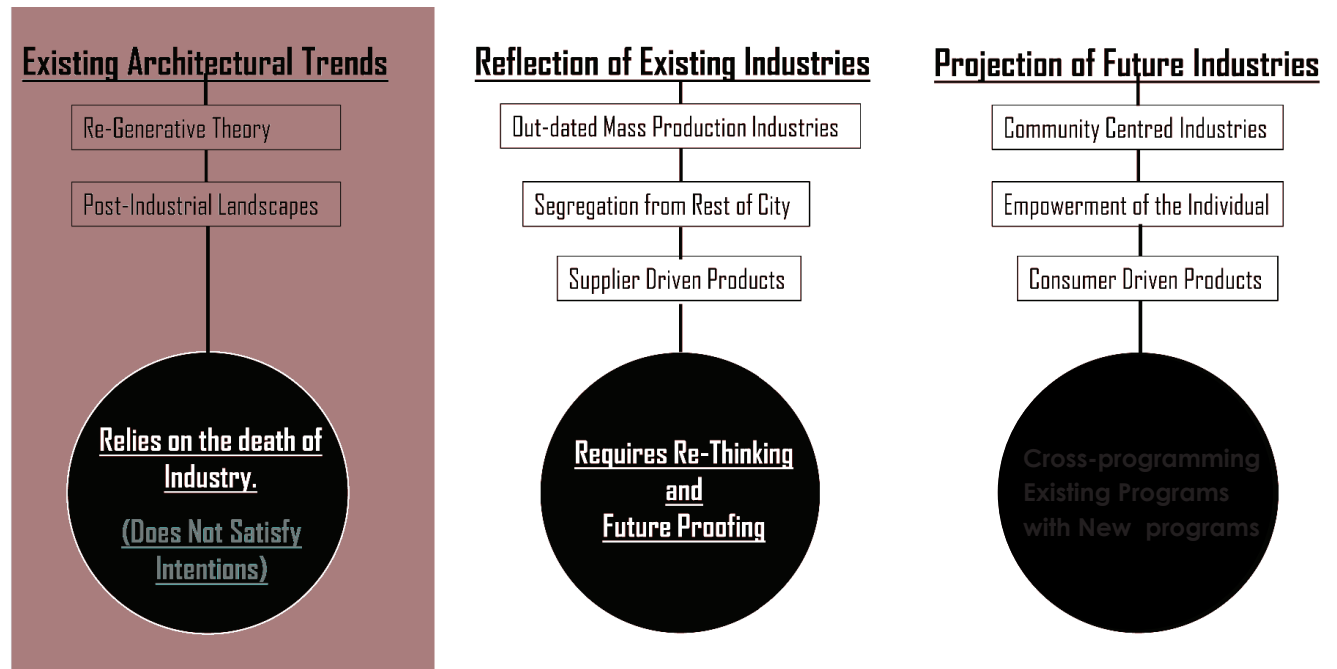


Fig. 1.14 Theoretical Considerations (Author, 2017)