

# Introduction

## Introduction

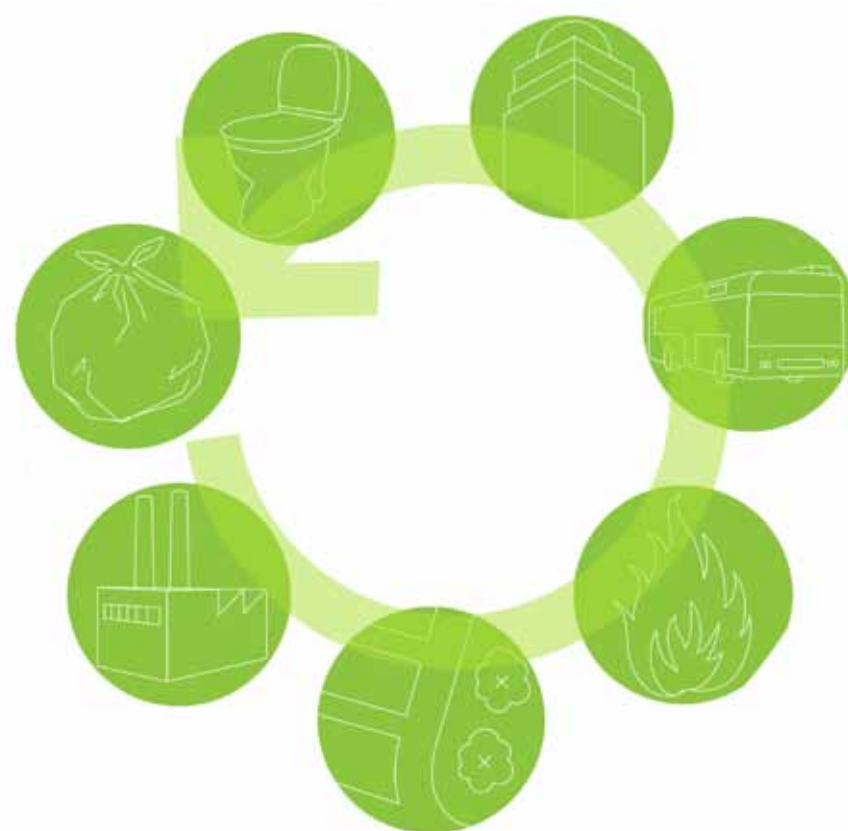
*"The significant problems we face today cannot be solved by the same level of consciousness that created them". – Albert Einstein (1946)*

The human population is less knowledgeable than desired in the field of sustainability. In the 21<sup>st</sup> century, agriculture should be integrated into the fabric of the city. This dissertation will cast light on the cultivation, procession and distribution of food within urban areas, and the creation of continuous interaction between the fresh food production system and the living system. The goal of this dissertation is to discover new and rediscover old ideas on more successfully sustainable cities and food production within the urban realm.

Opposed to Modernist architecture from the 20<sup>th</sup> century, which drew inspiration from the machine, I believe future architecture should draw its standards and insight from the natural world.

The vision for Pretoria is to become a more sustainable city, and accommodate more sustainability-conscious citizens. Research is necessary on how to promote the growth of more sustainable urban systems and nodes. Architecture does not have to guard against change, or be wasteful, but should adapt to the changing man-made natural environment. Ways in which the urban environment could be adapted in order to respond more sensitively to the realities of global warming, should be discovered. By introducing a fresh produce market and an urban farming ecosystem, this study will show the intertwining of humans and the natural environment. Even in an urban context it is necessary to allow sustainable growth and coexistence.

When food is produced closer to the user, within the urban context, a new buying culture could be started. An alternative to the supermarket need be implemented into our cities to give urban citizens the opportunity for a healthier life, more towards nature. The implementation of fresh food markets throughout our city removes the divide between humans and nature, also the social divide between different groups in our society could be minimised, as food markets are platforms for interaction and community building.



>>1: Current urban system/cycle.

### 1.1. An Urban Food System

Our current food system is slowly starting to change, not so much on remote farms that still provide us with the majority of our food, but in cities, neighborhoods and towns. This is a good change, and we as designers should support this change. In the publication *'Farmers' markets: the small business counterrevolution in food production and retailing'* (2006: 6), Alan Cameron states that food production can be woven into the fabric of our cities by using open green spaces as productive landscapes, and rooftops as farmland. This is a revolution that is providing all urban citizens with an important safety net where they can grow some nourishment and income for themselves and their families. Moreover it is providing an oasis for the human spirit where urban people can gather, preserve something of their culture through produce and foods, and teach their children about food and the earth. The revolution is taking place in small gardens, under railroad tracks and power lines, on rooftops, at farmers' markets, and in the most unlikely of places. It is a movement that has the potential to address a multitude of issues: economic, environmental, personal health, and cultural (Cameron, 2006: 6).

This revolution is slowed down and killed by the supermarket culture. Supermarkets have immense power over the way we grow, buy and eat our food. They are shaping our environment, our health and the way we interact socially. This situation has remained unchallenged because consumers have been sucked into supermarket lifestyles; persuaded that the opportunity to select from four different brands of cubed carrots at eight in the evening represents choice and value. However, the tide may be turning.

Currently more people realise that the produce bought from the local supermarket is untraceable. They search for the word 'organic' on any fresh product. By personal experience, this word somehow immediately enjoys superiority over the average packet of carrots. Where did it come from? How was it grown? What pesticides and insecticides were used, or was it grown organically? When one buys one's vegetables and fruit directly from a local farmer, not only will one know the answers to these questions, but one will also contribute to minimising the carbon footprint by buying locally.

Unease about the real cost of our daily bread is spreading among consumers. As consumers and designers we must start looking at alternative sources. An urban food system that has the agenda to guide the development of a sustainable and integrated system of food production, processing, distribution, marketing, consumption and waste management in an urban landscape, might be an answer. According to Grimm (2009: 8), food production must be included into the daily activities of all community residents through recreation and communal gatherings.

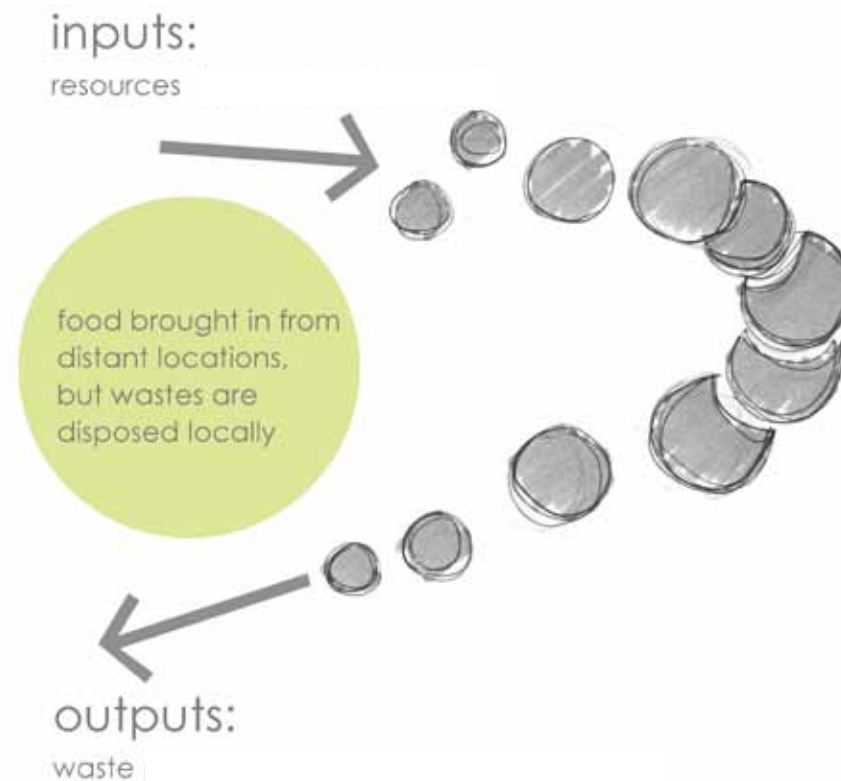
### 1.2. Mimicking Ecosystems in Urban Food Production

When looking at ways of introducing a healthy and effective food system, a good theoretical foundation should inform the design and proces. Nature can be mimiced, as nature has what is needed to function properly. The theory of drawing inspiration from nature is termed Biomimicry.

In this dissertation inspiration will be gathered from nature's eco-systems, and the way that the City of Tshwane's urban systems could relate to it. Refinement of urban systems, with design decisions taken carefully, could contribute towards changing these systems to become more like ecosystems. Current systems in our city are open ended: food is brought in from afar, and wastes are disposed of locally. By discovering the missing link in urban systems, we can close systems to become urban ecosystems.

According to statistics, 80% of the world's population will be living in cities by the year 2050. "Africa is projected to more than double its population by 2050. While Africa is still predominantly rural, much of coming growth will be in urban areas – from 294 million in 2000 to 742 million in 2030." (Mc Keegan, 2010) The impact this should have on cities like the City of Tshwane, will be more far-reaching than one would think. Food will be one of the issues related to this, together with a higher concentration of CO<sub>2</sub> emissions. These factors should be taken into account when designing buildings in urban areas, such as the proposed food market.

The missing link in urban systems, that I propose to investigate, is what happens between waste disposal and food production. Inputs and outputs of the urban system should be linked so that a closed system can be created. (See illustrations 2 and 3.)



>>2: Broken Urban systems. Inputs and Outputs.

### 1.3. The Proposed Project

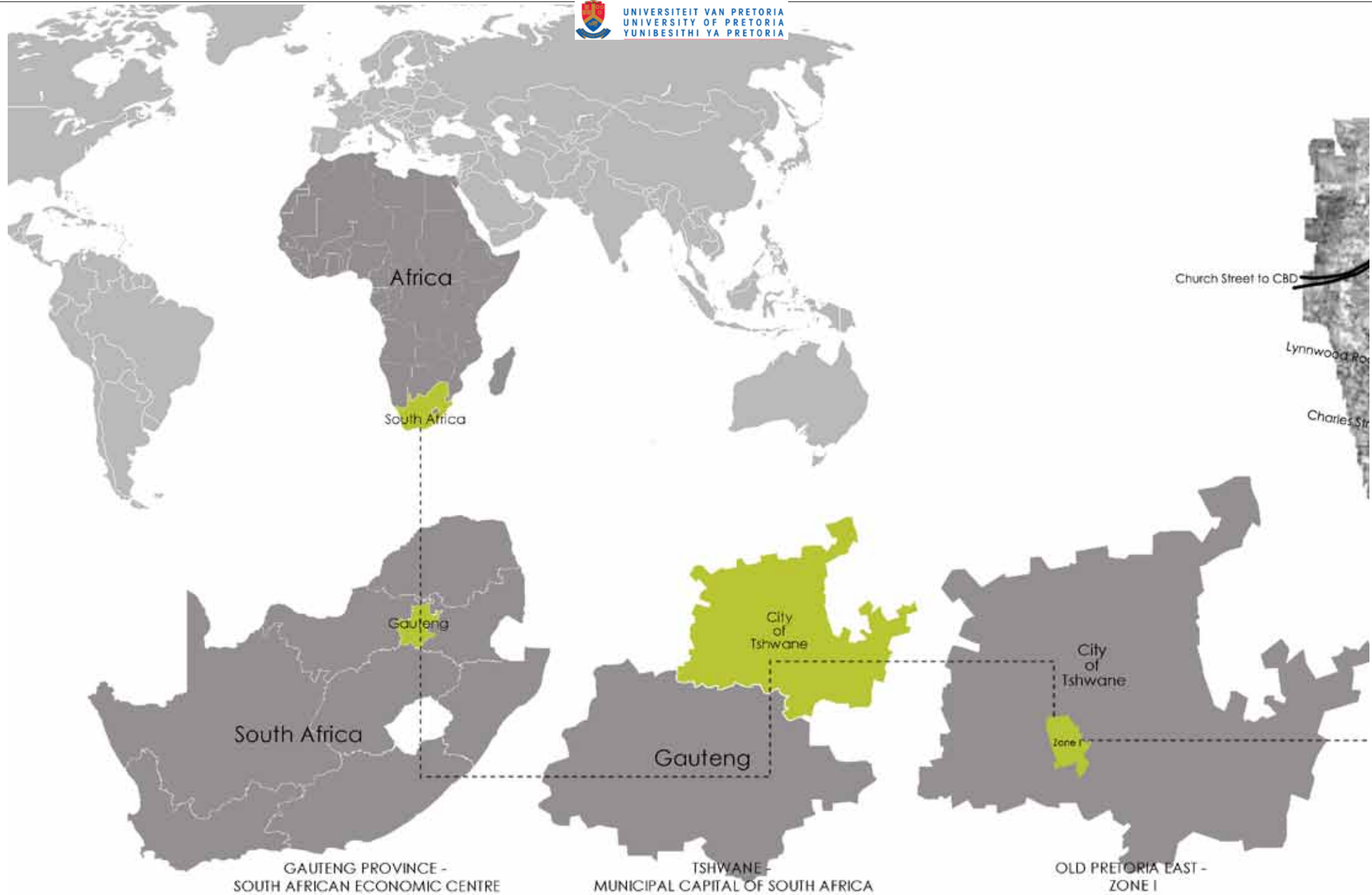
The chosen site for this proposed food market is within the boundaries formed by Garsfontein Road to the south, Atterbury Road to the north, Genl. Louis Botha Ave. to the east and Lois Ave. as the western boundary.

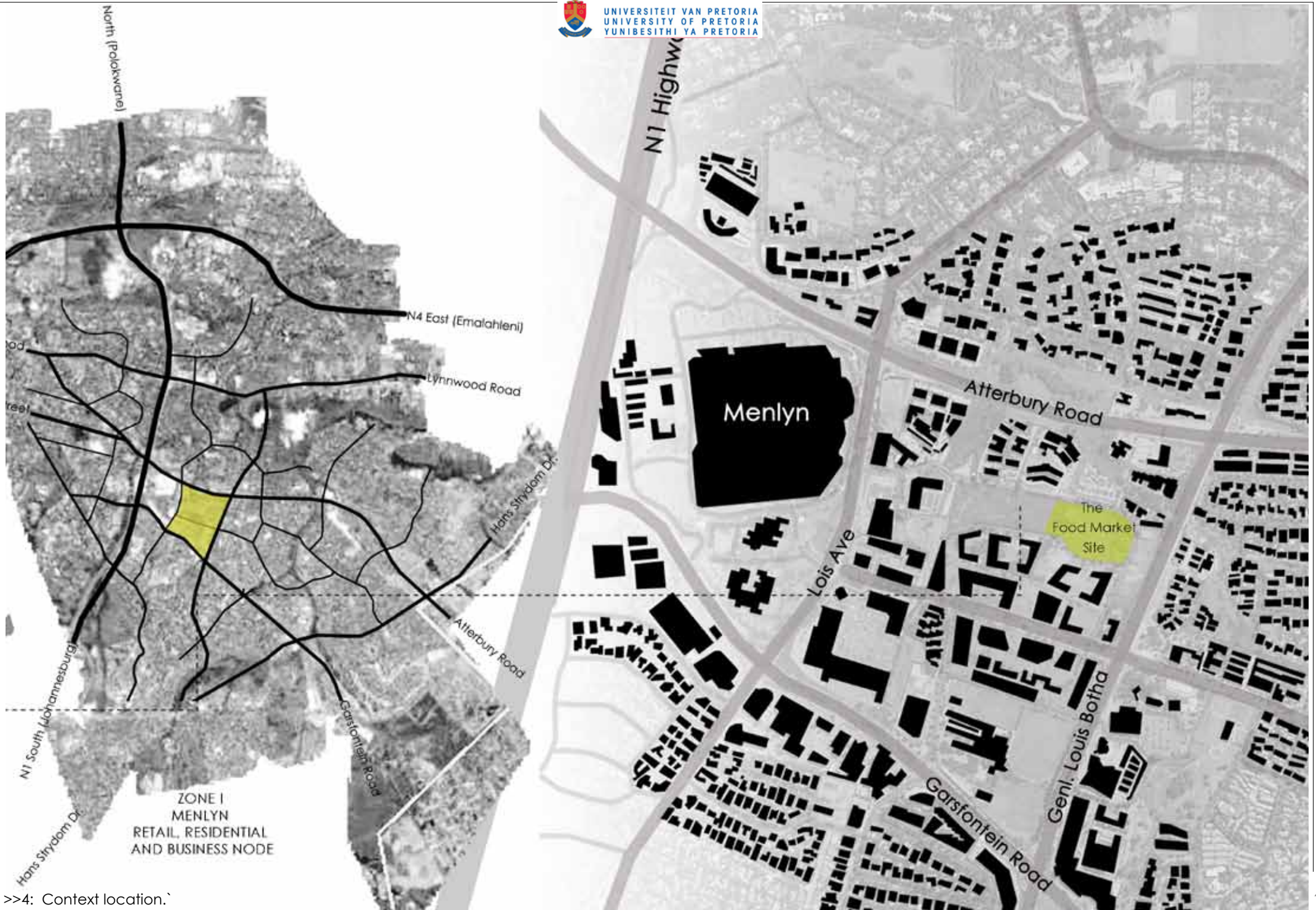
The focus is on daily fresh food supply for pedestrian users of the Green Precinct, business people from the Menlyn business node and commuters that use the new public transport node. Produce will be sold at the proposed fresh produce market. The aim is to reduce vehicular distances travelled by farmer suppliers outside Gauteng, and to create closer communities within this area.

This urban food system integrates live, work, and play into the activities of a productive landscape.

A multi billion rand 'green-city' precinct development is also situated within the above-mentioned boundaries. A mixed-use development is proposed to be housed in this precinct, with retail, housing and office opportunities. A newly proposed intermodal transport interchange development is envisioned for this precinct, off which the involved fresh food market will feed, reasoning that this will become an energy node in the City of Tshwane. Anticipated users of this precinct would be: pedestrians, working class and business class, people of the low- and high income bracket of the population of Pretoria.







>>4: Context location.

#### 1.4. Problem Statement

Current urban systems do not allow for food production within the urban realm. An alternative to food production and super-market buying needs to be researched and introduced to allow for a more sustainable urban environment, better social communities and a sustainable local economy.

In this dissertation, the following research questions need be answered:

- Does the incorporation of productive landscapes into the urban realm create a more sustainable city?
- Will this fresh food market feed positively off the transport interchange node closeby?
- Can an intervention like this revitalise and regenerate the environment?

#### 1.6. Programme

Marketplace

Fresh produce production (hydroponics)

Bakery and butchery

Restaurants and 'slow-food' take aways

Fresh produce packaging area

24-hour activity outdoor space

Educational facility for street vendors



### 1.7. Importance of Project

- To instigate interaction between buyers and sellers, opposite to supermarket buying.
- To create a sense of community between the whole hierarchy of users, by introducing courtyard spaces for social interaction.
- To establish relationships between urban dwellers.
- To widen people's view on life – turn life towards nature / organic living.
- To create a sense of ownership – allotment gardening (productive landscapes).
- To create the opportunity for all age groups, income groups, institutions, businesses and schools to become entrepreneurs.
- The market should replace the artificial, impersonal, unsociable supermarket outings with natural, sociable and personal experiences.
- It should showcase sustainability and a greener life and raise awareness.

### 1.8. Project Aims

The food market intervention should

- provide a platform for a life more towards nature;
- create spaces to inspire community gatherings;
- provide a platform (market) for entrepreneurs to sell produce / food;
- inspire community involvement through productive landscapes;
- provide safer areas by means of passive surveillance – active productive landscapes; and
- establish specific relationship/community building opportunities for users.

### 1.9. Research Methods

Research will be done by the study of precedents. Little information is available on market design, but there are a few markets that could be used as precedent studies to inform design decisions. These markets will be visited in order to see how they function. Theoretical resources like books and published works will be consulted for agricultural background. As urban farming is a relatively new concept, there is not an abundance of examples of urban farms that are already built, and in a complete 'off the grid' state, but loads of research and prototype research designs have been done. These are valuable information resources.