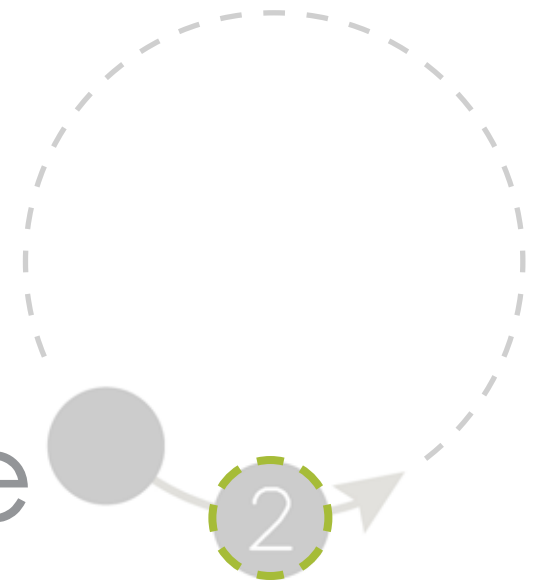




In this chapter, research and its findings are discussed, to inform solutions to the problem statement in Chapter 1. Urban food systems and its flaws are researched in more detail to create a better understanding to what is needed for change. Retail trends and shortcomings are discussed to have better insight in its social implications. A new food system is proposed to be implemented in this area, complementing urban agriculture and open space management. Finally, a design task is formulated to address all the relevant issues.

Research+Response



2.1. Background and Rationale

A general ignorance about the availability of food is found in areas like Pretoria East where resources like food seem inexhaustible. By growing fresh produce locally, within the urban areas, awareness could be raised about how, where and when crops are grown and the production techniques involved.

Urban agriculture (in as much as it produces food), increases food availability and contributes to the overall urban food supply.

In food production, three main sustainability issues can be highlighted:

- food shortages in developing countries
- unhealthy eating habits, little fresh produce
- CO₂ emissions by importing produce from far away

Urban farming tackles all three issues. It could relieve strain on the worldwide food supply, potentially driving down prices. The influx of fresh vegetables increases the basic health of the population, and the closer to home you shop for fresh produce, the smaller the impact on your environment will be.

2.2. Theory: Ecosystems/Ecomimesis

Nature is local and doesn't create waste. And we need to learn how our local ecosystems have adapted to their environment to radically change the way we design everything.

- Owings & Merrill, CASE, Serengreenity

When designing a building like a fresh produce market and the surrounding urban area in the study area, Menlyn, it should be in harmony with nature, learning from nature and respecting nature. These objectives can be found when studying the theory of Biomimicry, which was chosen as one of the fundamental design and research generators for this dissertation.

The biomimicry theory is based on the concept of the buildings we live and work in, designed to function like living organisms, specifically adapted to place, which means that this intervention should have the ability to draw all of its requirements for energy and water from the surrounding sun, wind and rain.

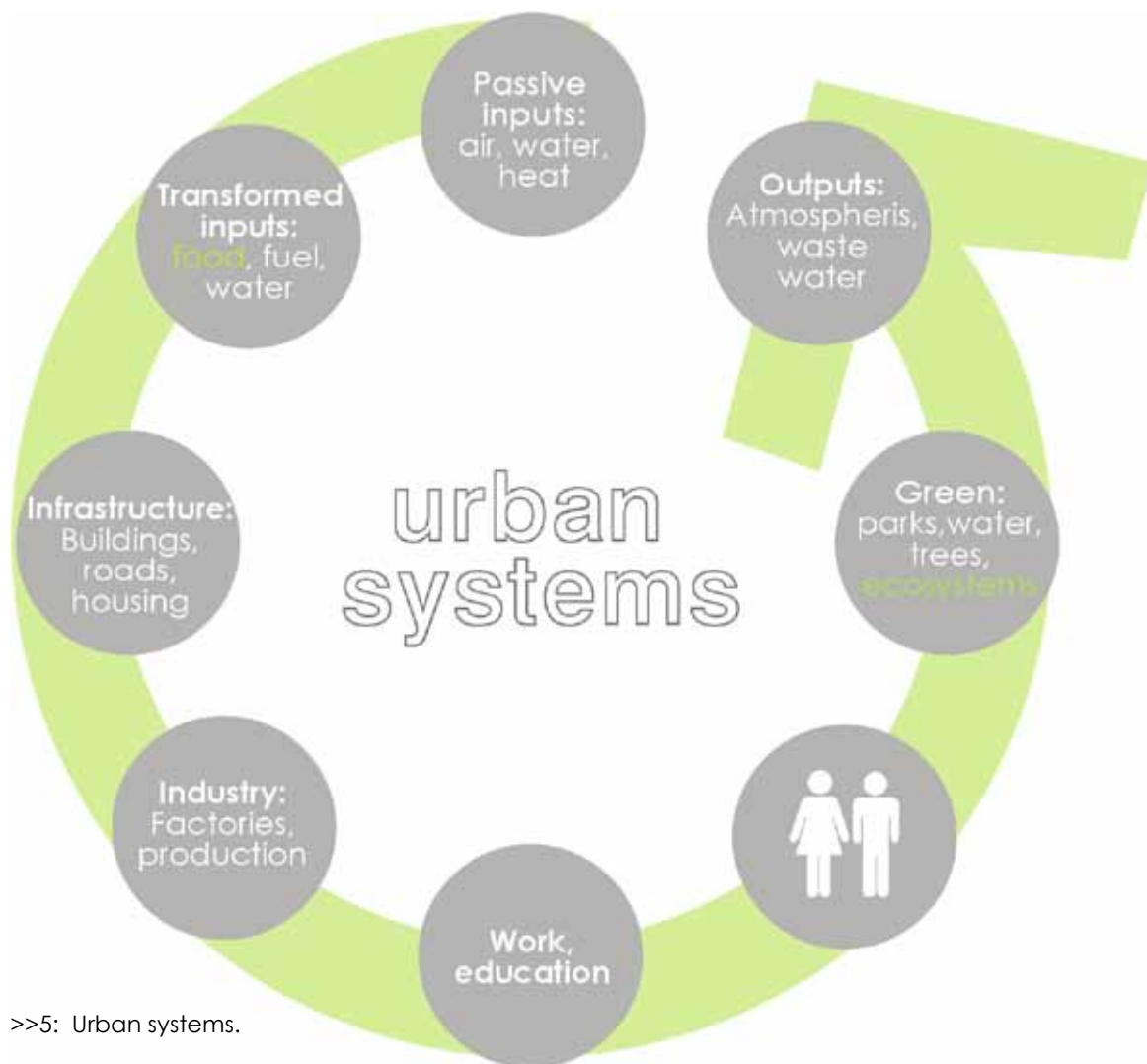
'Ecological design theory – by nature of the interconnected and holistic characteristics of the earth's ecosystems – affects all aspects of human activity that have an impact on the natural environment.' (Yeang, 1995:viii)

Urban ecosystems are the cities, towns, and urban strips constructed by humans. This growth in the urban population and the supporting built infrastructure has affected both urban environments and areas which surround urban areas.

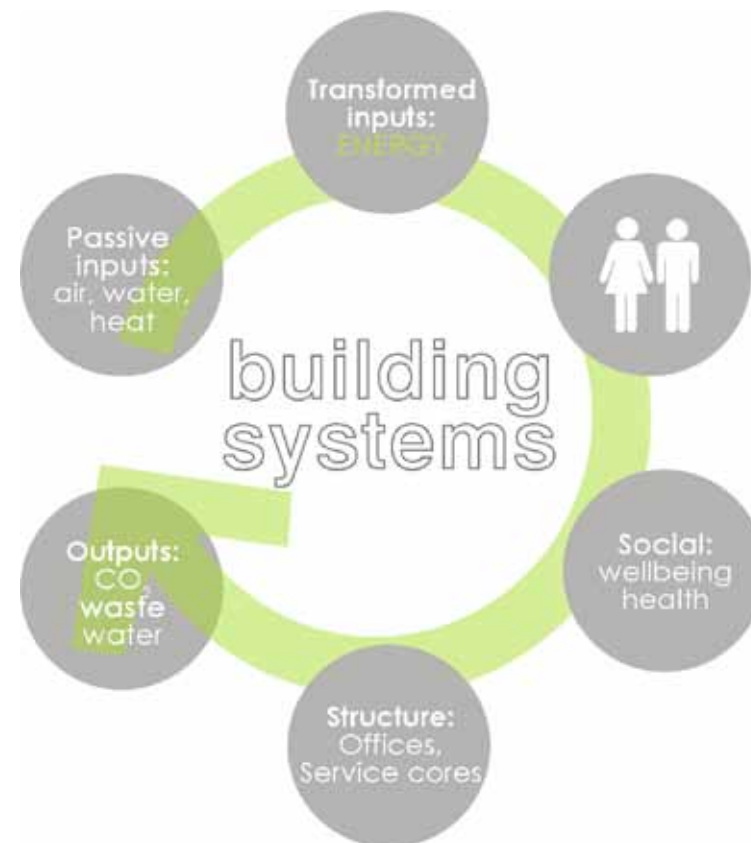
Urban system fail: Food are brought into the city from distant locations, but wastes are disposed locally.

Ecosystems have no waste. Everything is recycled within. Thus by imitating this, our built environment will produce less waste. Most of the emissions and products are continuously reused, recycled within and eventually reintegrated with the natural environment, in tandem with efficient use of energy and material resources. Designing to imitate ecosystems is ecomimesis (Yeang, 2006:22).

The proposed food market will form part of the missing link within this system, within this area of Pretoria East, by producing food and reusing wastes. The growth of fresh produce in open spaces within the urban area creates productive urban landscapes, which bring food closer to the user. This assists in minimising the gap between food production and waste or outputs, by reusing building waste.



>>5: Urban systems.



>>6: Building systems

2.3. Supermarket Culture

Being urban citizens means little free time, valuable time lost in traffic, busy lifestyles and buying food as time-effectively as possible. The supermarket is the only resort for busy urban citizens, however this might not be the best option. The arrival of the supermarket has changed consumers shopping habits as well as the shopping experience. Consumers can get all their shopping in a 'one-stop shop'. Whereas shopping may have once been a fairly sociable experience in the market place or small independent shopping outlet, communication between supermarket shoppers is kept to a minimum by their deliberate design which emphasizes efficient circulation of shoppers and exposure to a wide range of products. The separation of employees from customers contributes further to low rates of social interaction.

With the continuous new developments of shopping malls around every second corner, we are losing a focal point for community life and a place for meaningful interaction between people of different classes, cultures, ages and lifestyles. Many supermarkets have lately started to mimic the idea of independent deli-style food counters with 'expert' sales people. This, however, can in no way replicate the sense of community created at fresh produce markets, nor the level, range and quality of employment (Haese & Van Huylbroeck, 2005: 99).

These social issues can be addressed by the introduction of more fresh produce markets within the City of Tshwane, which means that consumers, the urban inhabitants, might have a higher quality of life and create a new sense of community within the study area and between all citizens. Age, gender, class and culture will no longer be the divide between the inhabitants of the City of Tshwane.

As published in the South African lifestyle magazine *House and Leisure* (Issue 154), the 'market movement' is becoming more popular, even though it is still far from a main stream food trend: "Markets are the new malls"; "The 'market movement' is a reaction to confined, commercial, artificially lit, air-conditioned shopping centers and is in line with the international trend towards meaningful living. An antidote to malls, markets offer a laid-back, sociable outing. Plus they provide the opportunity to buy from small, specialised stores that offer great products..." (Buitendach, 2007:123)

2.4. Urban Food Production

A healthy urban food system means a healthy and sustainably growing community that is economically, environmentally and most importantly a socially productive community. New food production strategies should be applied in the study area, for example on the ample open roof spaces on existing buildings, open spaces within urban areas and also in local gardens. These principles can include various aspects:

- local food production
- regional supply
- eat 'local' and 'slow' foods initiatives

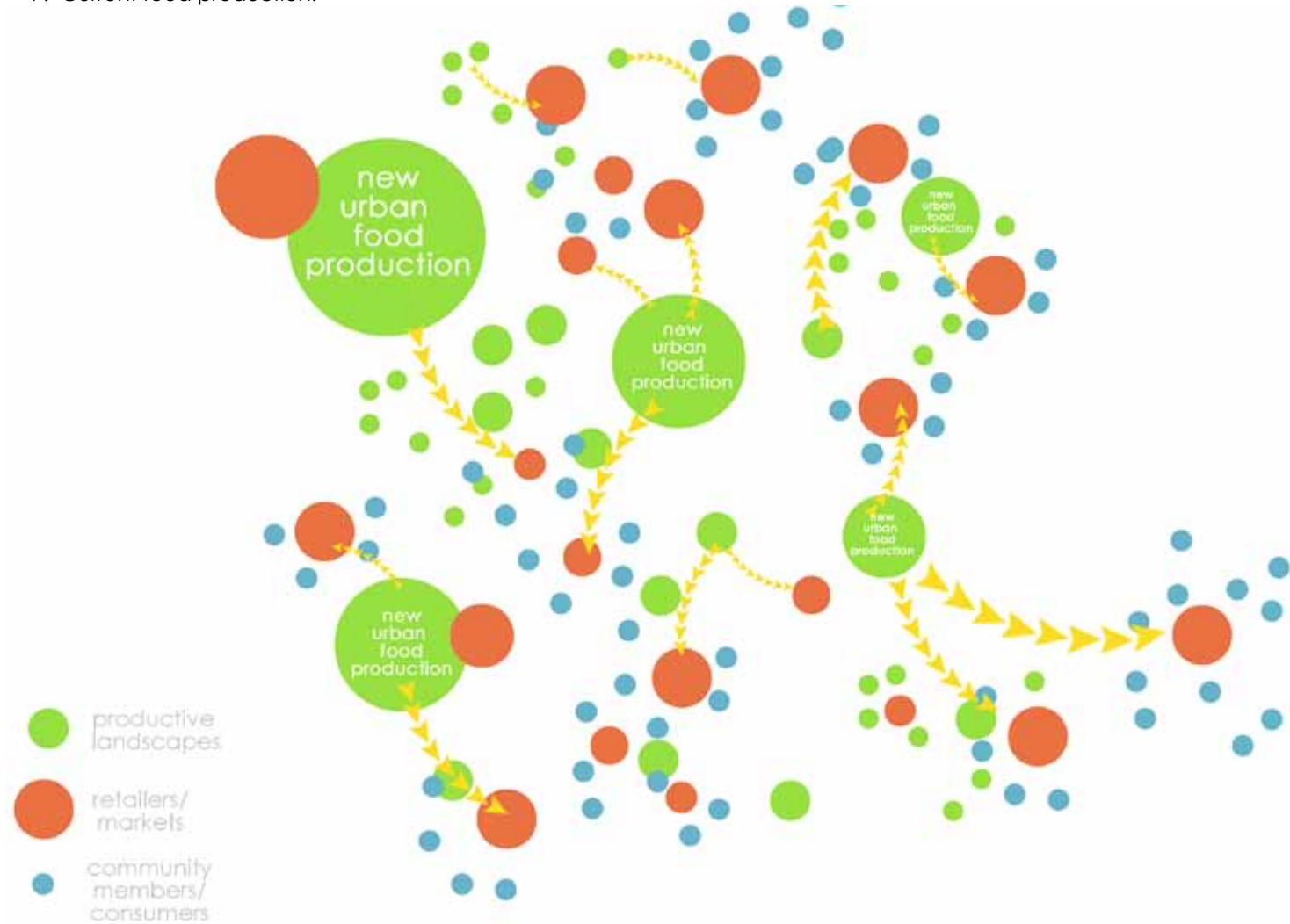
Marketing food directly from producers to consumers, so circumventing the 'middlemen' in the food supply chain, has many potential benefits. For consumers, direct marketing initiatives are providing people with locally grown, fresh, healthy and, in many cases, organic food at affordable prices. Through buying locally grown produce, consumers are giving their support to local producers as well as helping to revitalise local economies.

Local suppliers such as spaza shops could not meet this demand, thus creating the need for a mechanism that meets the aforementioned demand. This led to the rise of supermarkets.

Urbanisation and the possibility for supermarkets to provide a wider variety of food at lower prices have contributed greatly towards the rapid rise and growth of supermarkets. Supermarket development is strongly correlated with the increase in population growth and industrial development. As the population increased in size, the demand for processed food increased. (Reardon, 2003:1142)



>>7: Current food production.



>>8: New urban food production (this is not a factual diagram, but conceptual)

2.5. Research: Current and new Food Systems

2.5.1. Fresh Food Retail

By personally visiting different food retailers, an interesting comparison was drawn between the social and physical environment of supermarkets and farmers' markets in the City of Tshwane mainly. On the semantic differential, the farmers' markets were perceived as more friendly, personal, rural, smaller, and happier settings than were the supermarkets. More than three-quarters of the supermarket shoppers arrived alone while at the farmers' markets, more than three-quarters arrived in the company of others. Interaction counts showed a similar number of conversations in the two settings but more social and informational encounters at the farmers' markets. The lack of extended interaction in supermarkets is seen as a function of its social organisation, relatively low density, and traffic-dominated architectural layout (Sommer, 1981:13).



2.5.2. Current Fresh Produce Retailers

Supermarkets – Checkers, Spar, Pick 'n Pay, Woolworths, Shoprite (these include convenience stores eg. Kwik Spar, Woolworths Food Stops).

Fresh produce supermarket – Fruit & Veg, local fresh produce retailers (eg. Housewives Market), Fruit Spot.

Fresh- and slow-food markets – 'Die Boeremark', 'Hazelwood Food Market', 'Irene Market'.

Below is a matrix of results after visiting the three main fresh food retailers.

	1	2	3	4	5	
clean	●	●	●			dirty
friendly	●		●	●		unfriendly
personal	●			●	●	impersonal
fast	●		●	●		slow
inexpensive	●		●			expensive
artificial				●	●	natural
sociable	●		●	●		unsociable
unorganised		●		●	●	organised
small	●			●	●	big
happy	●	●	●			sad

● supermarket
● fresh produce supermarket
● fresh produce market

Table 1: Personal retail experiences.

2.6. Urban Open Spaces

In the Tshwane Open Space Framework(OSF) Volume 3, published in November 2005, a strategy for urban open spaces within Tshwane has been formulated. The proposed food market will be dependent on open spaces for the production of fruits and vegetables. The Open Space Framework informed the dissertation and has direct relation to it.

Based on the OSF, a few important guidelines were formulated for this specific project:

- reactivating open spaces
- **creating high quality environmental spaces through agricultural gardens**
- **designing a world class market and facilities for fresh produce production and retail**
- incorporating placemaking strategies, for example courtyard spaces, to the precinct framework, to encourage communities to form
- developing agricultural activities to activate deserted open spaces by means of **passive surveillance**, which will result in **safer pedestrian routes** through suburban and business areas
- providing healthier food options provide for better personal health and wellbeing

These factors will aid in creating an environmental awareness and responsibility within the study area. Incorporating the OSF structuring principles into an urban design project like the new food market, will help us conserve our green areas. The OSF encourages interconnected green spaces and the intervention can possibly do this by creating productive landscapes that all connect to the intervention site in some way, even if it is not physically. Current open spaces in the area do get used, but only by a few pedestrians. Placemaking of green areas make these areas more desirable for users(Tshwane, 2005: 2-3).

2.7. Agriculture, Mass Production and Resource Exploitation

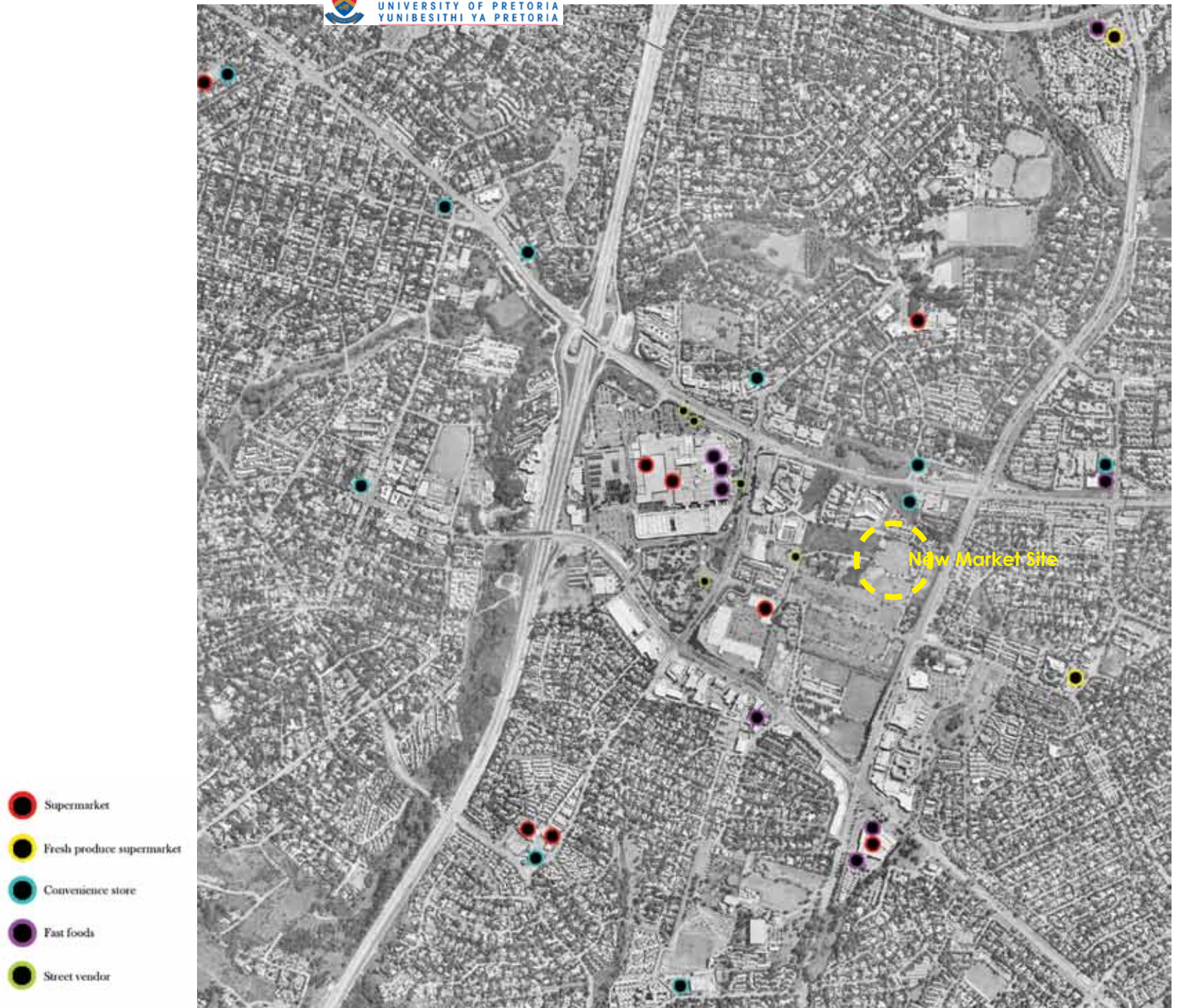
When research is done on fresh food production within urban areas, it is valuable to have a look at agriculture and food production, in its current state, and the issues it brings forward. Agricultural production has changed drastically over the past couple of decades with food production increasing rapidly due to new innovative technology, mechanisation of agriculture, increases in chemical use and specialisation.

Supermarket cheap food policies put local producers at a disadvantage because they cannot compete with produce from areas where land or labour costs less. Long distance transportation of food produces vast amounts of pollution, requires excessive packaging and use of chemical preservatives, uses up large amounts of non-renewable fossil fuels and thus contributes significantly (and needlessly) to climate change (Freemantle, 2008: 15).

The above-mentioned issues in agriculture and food production can be almost eliminated when fresh food is produced within the urban realm. The new food market can contribute in minimising resource exploitation, only by producing food closer to the consumer. Growing food organically reduces the use of chemicals and pesticides. This food production landscapes will not harm ecosystems or biodiversity in the Menlyn area.

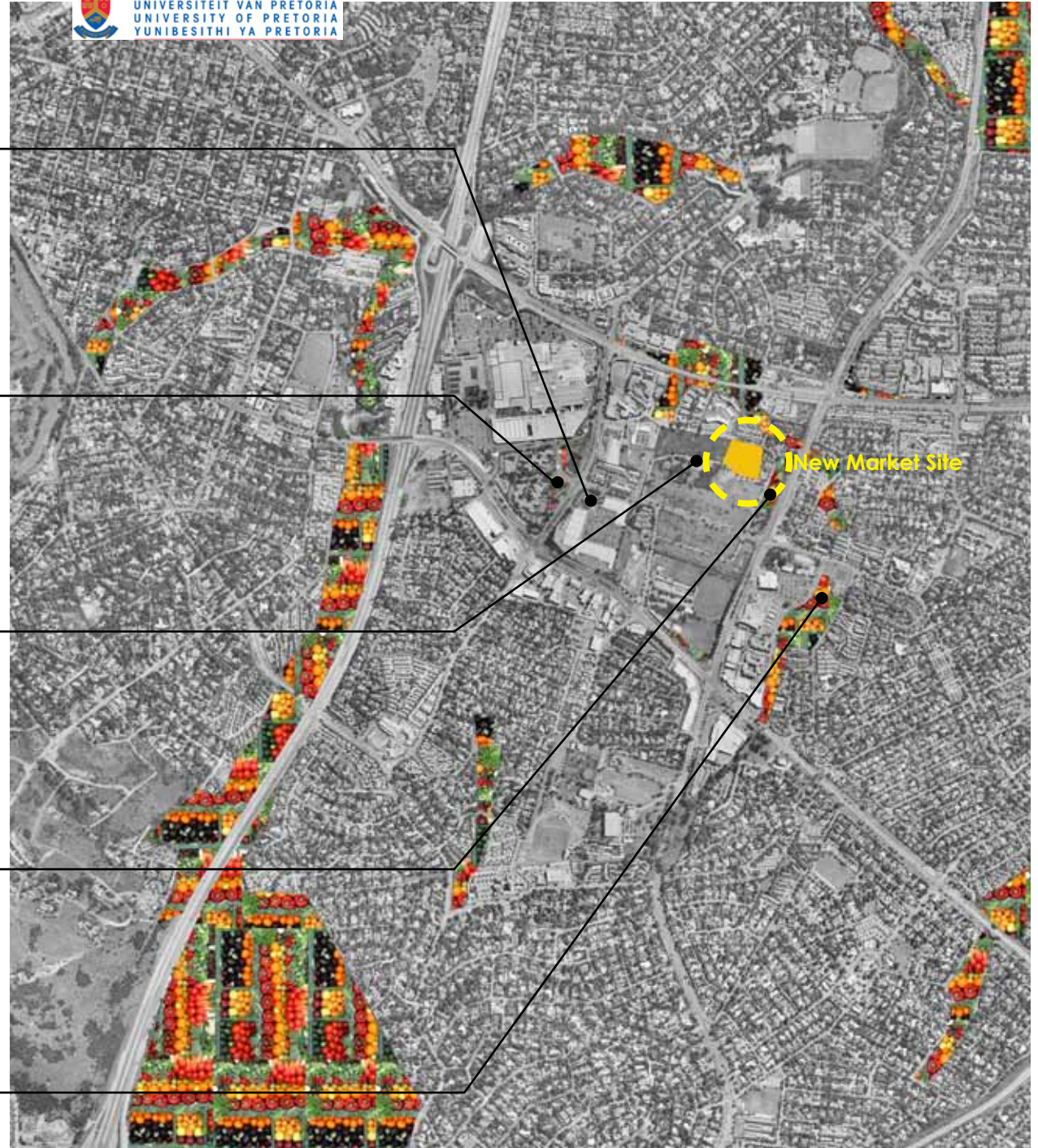


>>16: Urban open spaces – proposed productive landscapes.



>>15: Fresh produce retail locator in area.

>>17-21: Open spaces in close proximity to proposed site.



>>22: Proposed productive landscapes within context of Menlyn area.

2.8. Productive Landscape Typologies



2.8.1. Food Boulevard

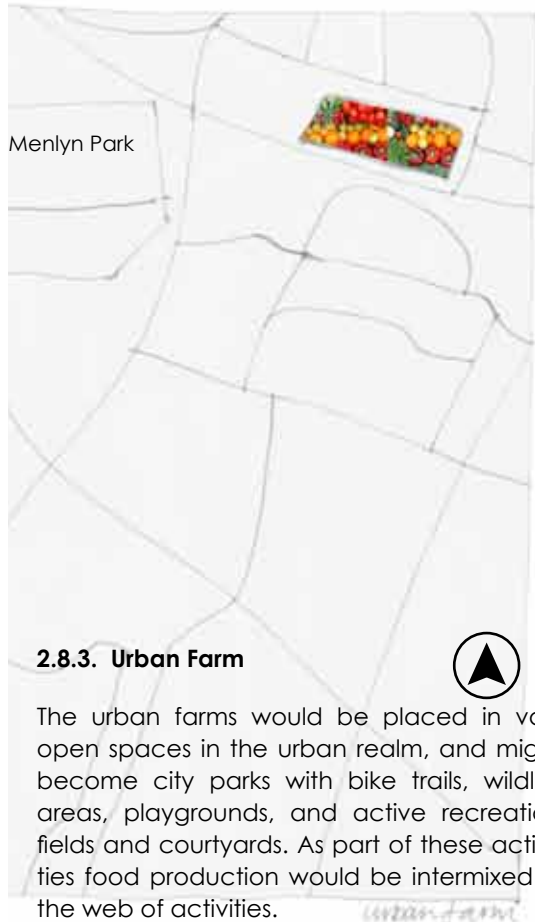
Instead of walking along a busy street and a harsh building edge, pedestrians could follow a food boulevard and become part of the production process. The food boulevard would create a safe route for pedestrians and children.



2.8.2. Private Residence Garden

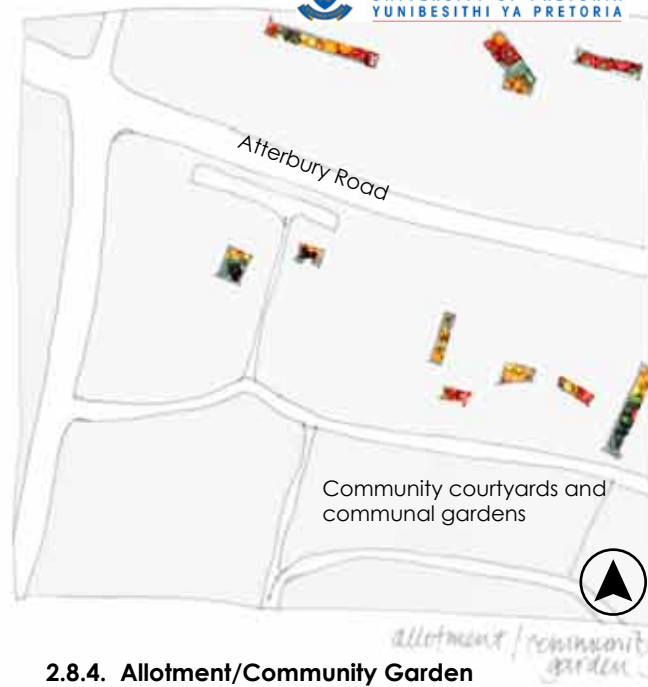
Private residence owners could supplement their vegetables and fruits with those they grow in their own yard, or sell at the market.





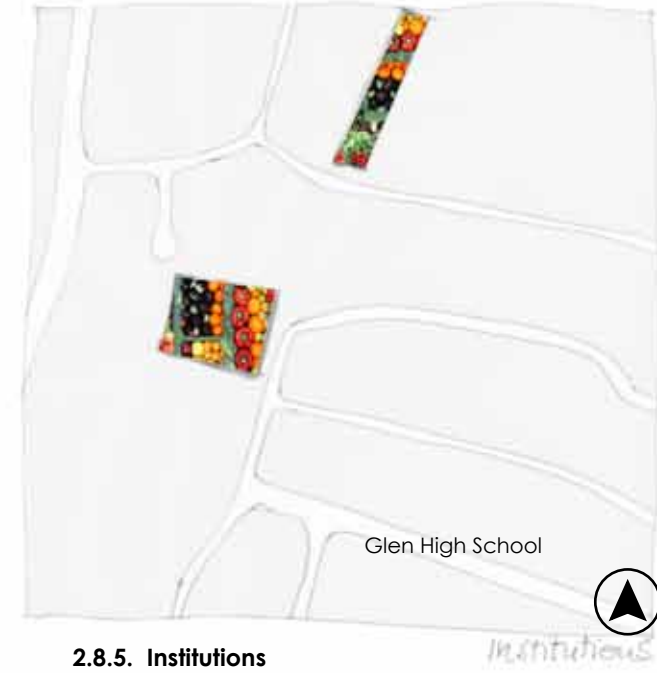
2.8.3. Urban Farm

The urban farms would be placed in vast open spaces in the urban realm, and might become city parks with bike trails, wildlife areas, playgrounds, and active recreation fields and courtyards. As part of these activities food production would be intermixed in the web of activities.



2.8.4. Allotment/Community Garden

Community/allotment gardening on the market site and surrounding areas would allow individuals to work and socialise together while working on each other's plots, creating an income.



2.8.5. Institutions

Institutions like Glen High School might provide services to the community including beginning farmer training, home food processing classes etc, and raise funds by supplying the market with produce.





Conclusion

After researching the specific food retail and food growth aspects of urban systems, a conclusion was made that this market could contribute on three levels: environmentally, socially and economically. Through designing a food market and instigating the growth of fresh produce in urban areas, this could have a good influence on our overall urban landscape.

>>24: Urban market.

2.9. The Design Imperative

This urban food system will be commercially productive and will incorporate open spaces, parks and community gardens into its network.

The new food market and activity node should create a foundation for the marketing of products within the urban food system. This food node or fresh food market is important to the urban food system because it becomes a centre where products within the urban food system can be marketed to the greater city population. The greater city population is now in close proximity because of the new transport interchange node next door. Outdoor markets, retail facilities, performances, nightlife activities and other commercial activities should be located at this node because this is now an intersection of circulation. Diverse nodes and markets can create an active streetscape at every hour.

Aside from the physical and productive sectors of the current food system, food access and health serious concerns both in the country and city. There are very few points of food access for community members. Local pedestrians, community members and businesspeople of the area are dependent on Menlyn Park Shopping Centre for buying food and this limits variety. The new food market will create a platform for marketing for any producer.

This fresh produce market should contribute to the face-to-face ties between producers and consumers and should be seen as a central component of the local food system. The trust and social connection will characterize the new food market, and distinguish the local food system from the global food system.

Buying healthy food should be a pleasurable experience to all, so market layout and design should be refined to offer exactly that. The market should be accessible to all to buy and sell produce. The market will not be an informal market, but very well structured to create easy and even flows throughout. Communal and social gatherings should be possible, where food can be enjoyed together within the market and in the park.

The market building should offer easy access to and from the new transport interchange building. Stopover times should be used to buy food or have a quick bite. Visible building systems and circulation, from within and outside the market building, should create an honest and easily understandable building.

It should be possible to move market stalls around within and to the outside of the market to rearrange spaces according to needs.