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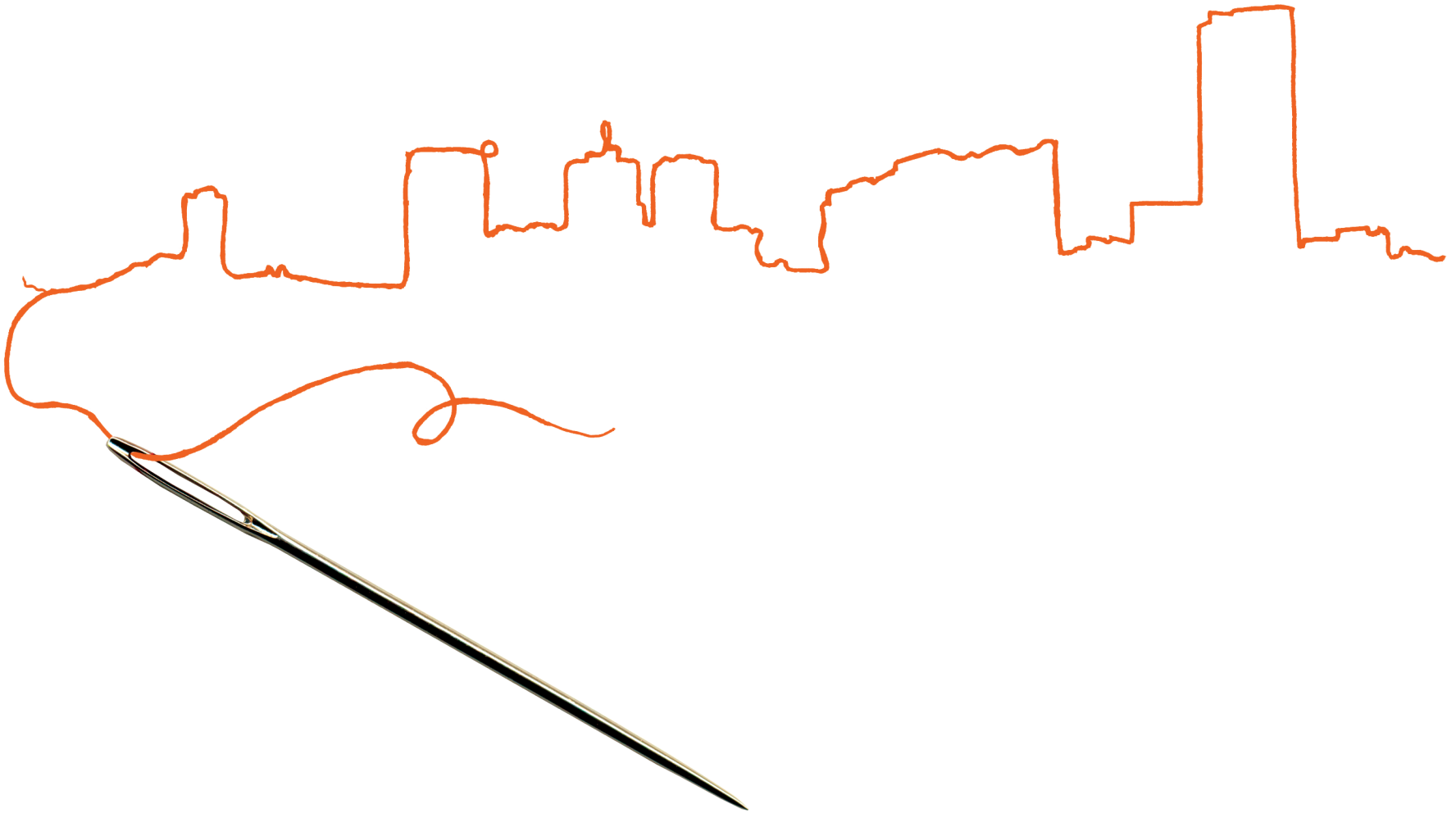

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urban design + mass development_03

urban design_

To try and solve the many problems facing humanity by one intervention will be idealistic. The emerging environmental and food crisis needs to be solved piece by piece. Architecture and urban planning have significant contributions to make, but can merely create the opportunity and set the stage for change. Real change can only becv brought about through collective efforts. Additional factors such as management and implementation will determine the success of any intervention.

“ …the world’s growing population cannot attain a western standard of living by following conventional paths to development. The resources required are too vast, too expensive and too damaging to local and global ecosystems. The western model of development is a once off. We need a new model. ”

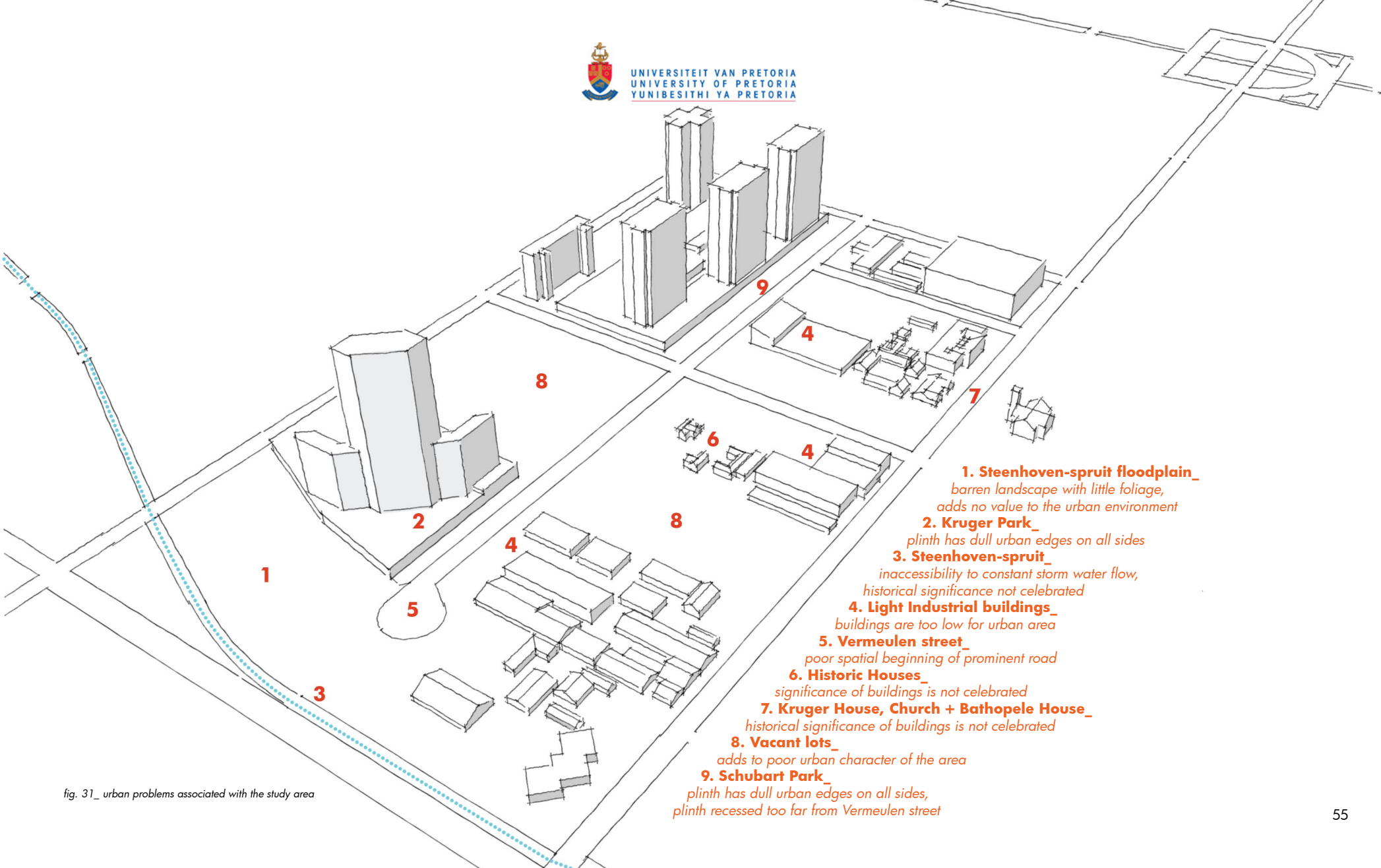
Steffen (2006, p 19)

african city_

The conventional approach to creating new urban environments, especially in developing countries, is largely based on the western approach to develop society and cities. This is problematic for developing African cities, as the social fundamentals on which the city is planned, is completely different. The South African model of the new city should allow for choice, rather than an absolute solution. Choices within the city are created by allowing for the model to adapt over time by layering the social interpretation over the urban master plan. The model should therefore be flexible to the social needs of the people. Urban planning for a South African city should be a system of in-fill, rather than a set of definite rules.

pretoria_

The city of Pretoria is an energy consumer. Similar to most western approaches, Pretoria functions on a linear influx and output of energy and wastes. The city is fed by the surrounding rural environment, but also expects this environment to absorb its wastes.



1. Steenhoven-spruit floodplain_
barren landscape with little foliage, adds no value to the urban environment

2. Kruger Park_
plinth has dull urban edges on all sides

3. Steenhoven-spruit_
inaccessibility to constant storm water flow, historical significance not celebrated

4. Light Industrial buildings_
buildings are too low for urban area

5. Vermeulen street_
poor spatial beginning of prominent road

6. Historic Houses_
significance of buildings is not celebrated

7. Kruger House, Church + Bathopele House_
historical significance of buildings is not celebrated

8. Vacant lots_
adds to poor urban character of the area

9. Schubart Park_
plinth has dull urban edges on all sides, plinth recessed too far from Vermeulen street

fig. 31_ urban problems associated with the study area

In order for the city to protect its dwellers in the future, it needs to become a provider, and stop being a consumer. The city must become a self-sustaining ecosystem.

response_

The solution does not lie in demolishing existing infrastructure and planning. It rather suggests that unused and under utilized space in the city should be used more efficiently. A possible solution would be to convert some of these spaces into productive landscapes. A productive landscape can be characterized as an urban area that has more than one function, acknowledging the value of horizontal land within the city.

These productive landscapes should connect to existing parks and open spaces, thereby creating a new green spine to the city. This new backbone will start to grow over the grid that was designed to accommodate the automobile and private transport, and rather start to serve the needs of pedestrian and cyclist.

The problem of the unsustainable city will not be solved by merely adjusting a few negative elements and adding a few positive ones to the current approach. Consideration as to how people live their everyday lives in cities needs to be investigated.

"A productive landscape will be a park, a place for agriculture, a green lung, a place for recreation and social interaction."

Viljoen (2005, p.11)

objectives_

The aim of the urban framework is to create a sustainable borough within the city limits that will act as a catalyst for future developments of a similar nature. The development must be seen as an admirable example of a sustainable approach for the future of the city.

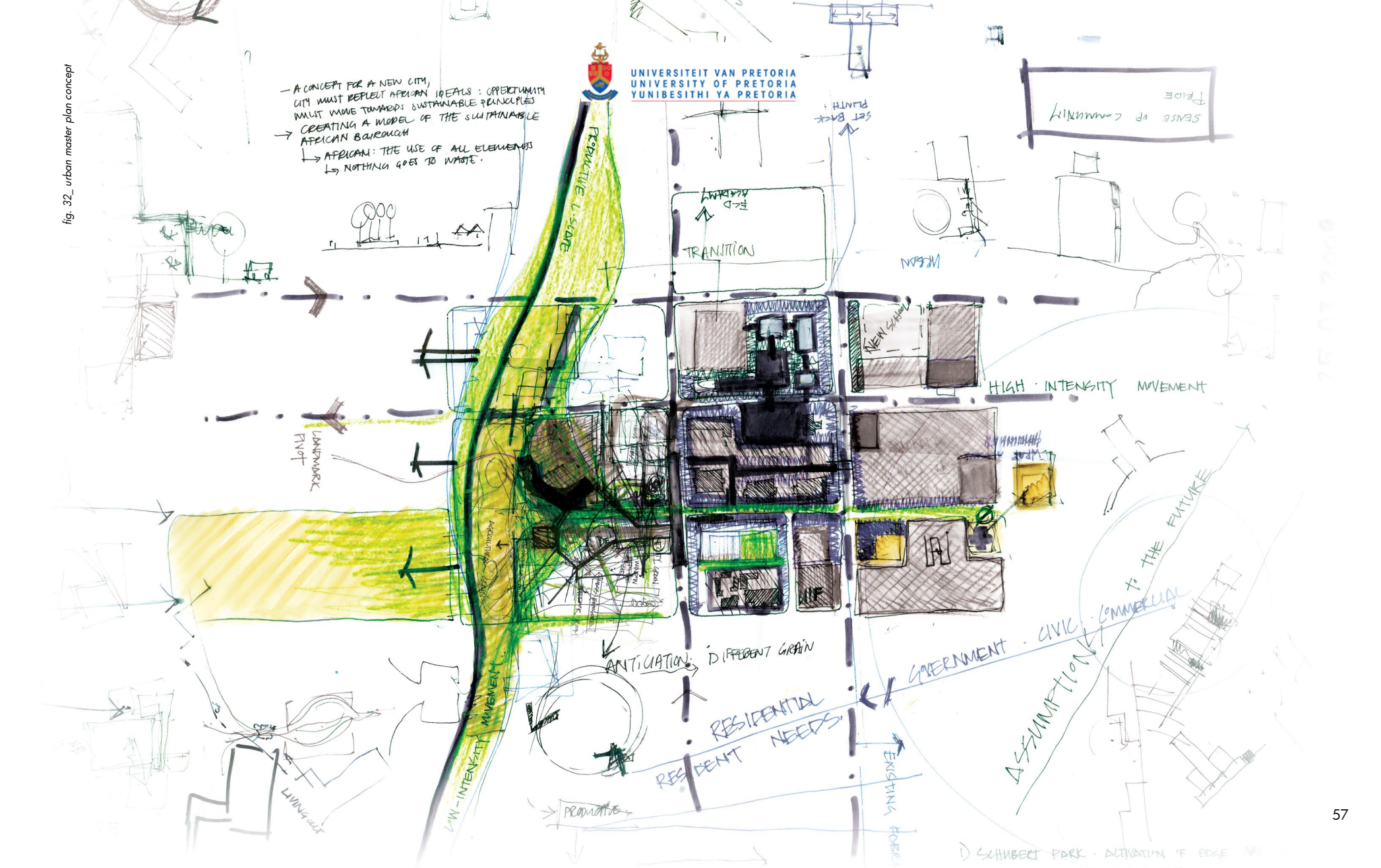


fig. 32_ urban master plan concept

The concept is about connecting dissociated elements that need to collaborate in order to contest the challenges our habitats face. Thus, it is about connection. The aim of the design is to stitch these elements firmly together.

The response will be
to **stitch_** people with agriculture,
to **stitch_** agriculture with the city and
to **stitch_** the city with its people.

aims_

_The framework should add sufficient density to the area

_The everyday needs of the inhabitants should be addressed

_The framework should allow for choice and opportunity for the inhabitants

_Existing natural and man-made urban elements must be incorporated

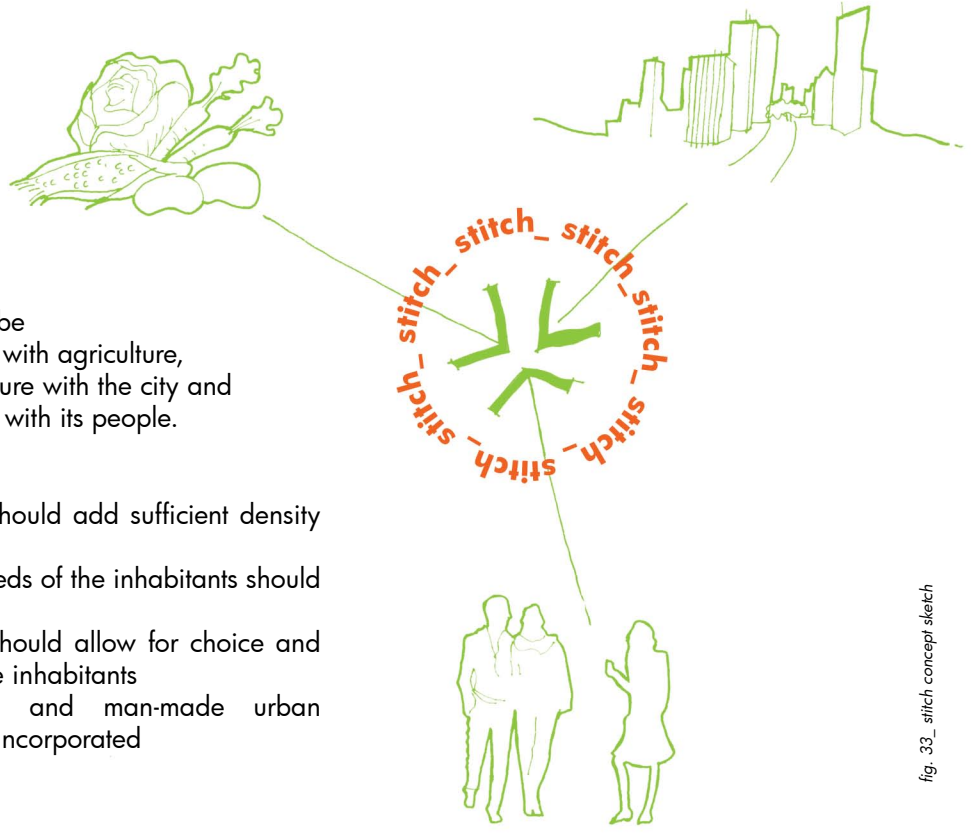


fig. 33_ stitch concept sketch

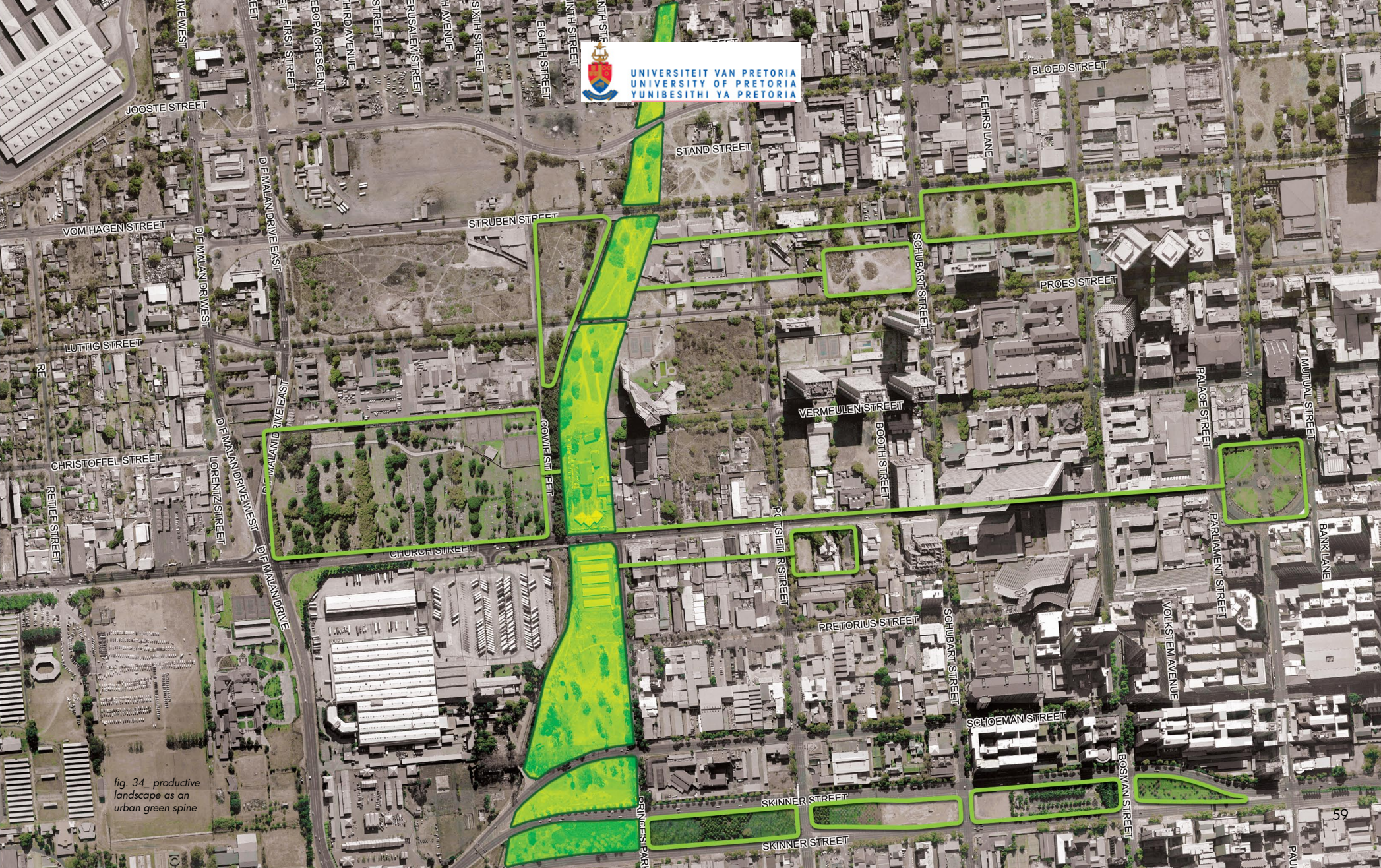


fig. 34_ productive landscape as an urban green spine

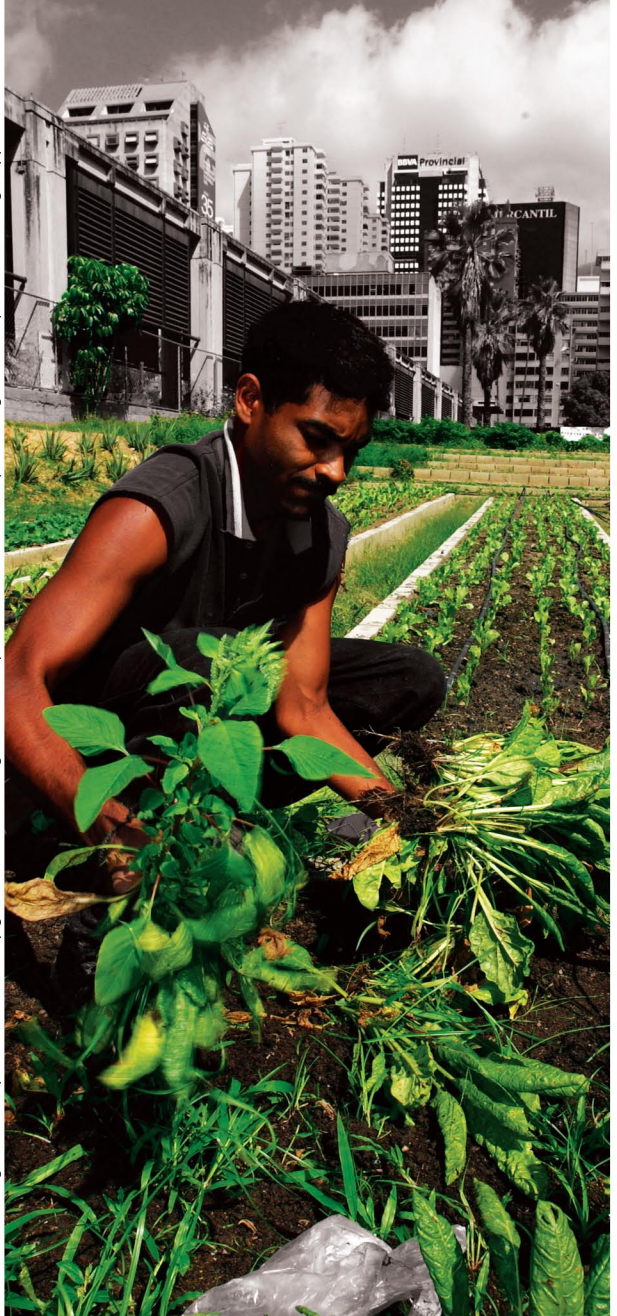


fig. 35_ a compost-based community garden in caracas. the garden is run by seven members, with no previous agricultural experience. © fao: guiseppe bizzarri

precedent study_
caracas, venezuela

According to the UN FAO (2009), the government of Venezuela supported by the UN FAO started urban agriculture in poor parts of Caracas in 2003. 4000 micro-gardens and 20 community gardens were launched in and around the city.

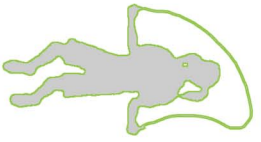
The UN FAO (2009) state that the green gardens, in contrast to the harsh city environments, have become an advertisement for the program by itself. Micro-gardeners are also passing on their skills to other members of the community. According to UN FAO (2009) the President of Venezuela wants to increase the amount of micro-gardens to 100 000, due to the success of the project since it was introduced.

micro-gardens_

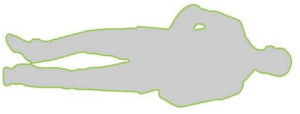
A 1sqm shallow wooden tray is filled with a planting medium, typically composed of rice-hulls and peanut shells. Micro-gardens are fed a nutrient-rich solution on a daily basis, to ensure adequate plant growth. A well maintained micro-garden can produce up to 18kg of tomatoes or 16kg of cabbage in multiple harvests, every year.

fig. 36_ gardeners tell their stories

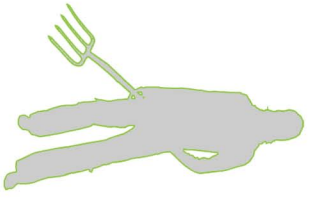
Ms Hernandez
"We have to go a long way down the hill to get fresh vegetables at the market. And they are expensive. With the micro-garden we have access to fresh vegetables for free every day."



Jessica Suárez, 11 years
"I have learnt how to manage the table and the vegetables, what vegetables can be grown, when to water and when to add the nutrient solution, when I have learnt enough I will do a micro-garden at home with my parents."



Mr Michelena, agronomist
"Sometimes people try gardening once and don't continue. We try to take the table back and give it to someone who is doing well, as a reward."



Ms Verenzuela
"I didn't know anything about vegetables and how important they are for your health, now I eat vegetables every day."

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fig. 37_ supervisors make weekly rounds to micro-gardeners to monitor progress. © fao: guiseppe bizzarri

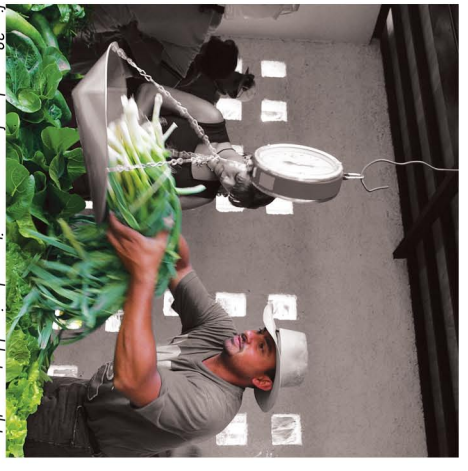


fig. 38_ produce from a community garden is sold at an outlet next to the garden. © fao: guiseppe bizzarri

interventions and opportunities_

1_ Development of Steenhoven-spruit floodplain into a productive landscape, forming a part of the Urban Green Spine.
2_ Development of a landscape intervention that will tie the plinth of Kruger Park with the productive landscape.
3_ Development of an esplanade next to Steenhoven-spruit to form a North-South path.
4_ Densification of the area by replacing existing low-rise buildings with mixed use buildings of an appropriate urban scale.
5_ Development of a new civic square that will play host to the origin of Vermeulen Street.
6_ Development of Vermeulen Street into a promenade.
7_ The connection between the city and the productive landscape should be carefully considered.
8_ Addition of active urban edges to the plinth of Schubart Park.
9_ Unused parking lots can be shared by new buildings in the vicinity.
10_ Location of public orientated buildings that surround the proposed civic square.
11_ Establish prominent connection with Heroes Acre.
12_ Establish connection with 'decumanus' axis and Steenhoven-spruit crossing.

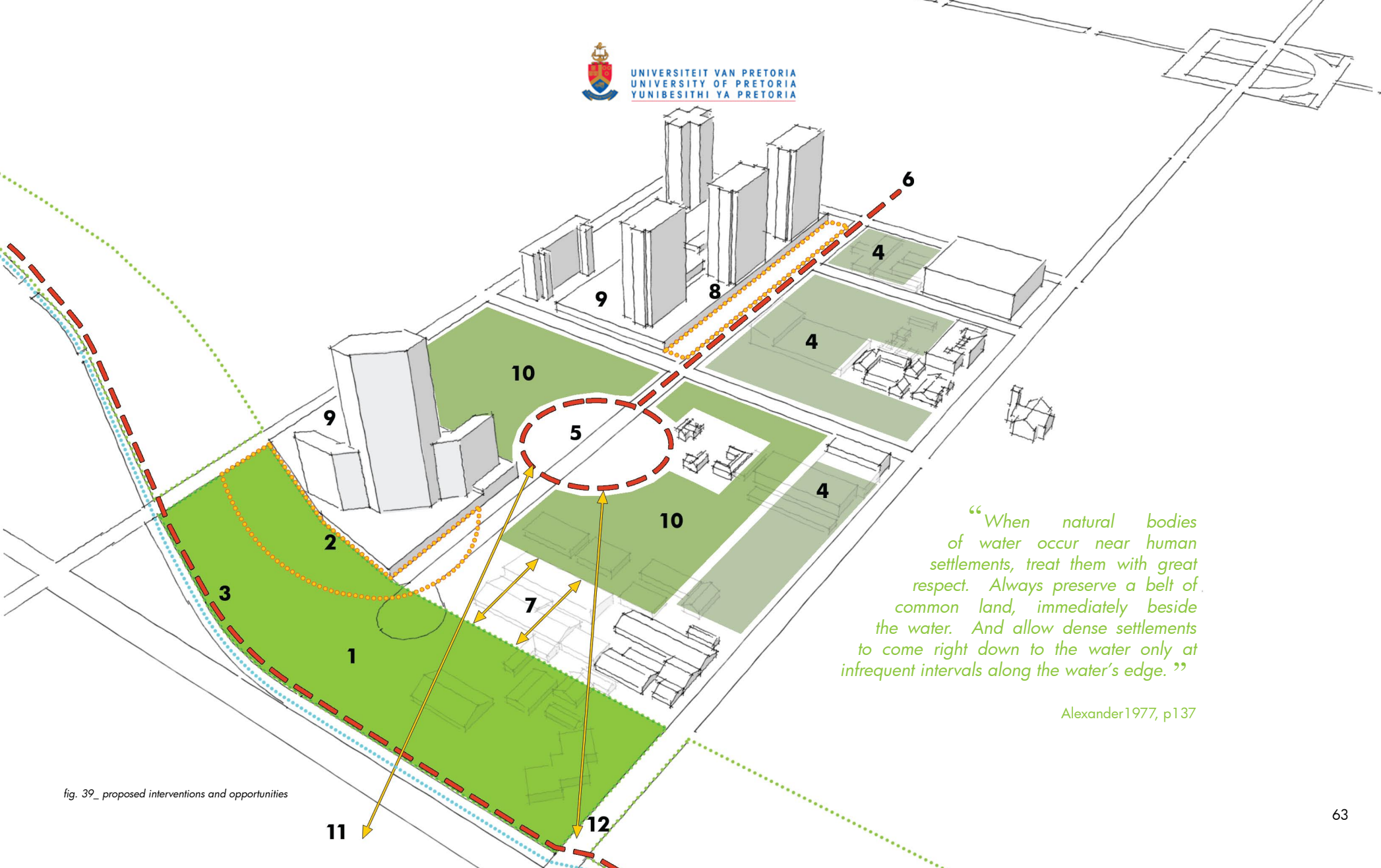


fig. 39_ proposed interventions and opportunities

"When natural bodies of water occur near human settlements, treat them with great respect. Always preserve a belt of common land, immediately beside the water. And allow dense settlements to come right down to the water only at infrequent intervals along the water's edge."

Alexander1977, p137

urban design development_

1_ Development of the Urban Green Spine.
2_ Landscape intervention: Addition of berm to Kruger Park plinth.
3_ Proposed new mixed-use building footprints.
4_ Multi-purpose civic square.
5_ Site for proposed new Agricultural Research Facility.
6_ Site for proposed new Market.
7_ Site for proposed new Taxi Stop.
8_ Market square as umbilical cord between Agricultural Research Facility and Market.
9_ Proposed Community Gardening Lots.
10_ Proposed Active edge: Strip of retail and commercial 'box structures' that will allow informal traders to establish stalls in between.
11_ Proposed Active edge: Retail strip to wrap around plinth of Kruger Park.
12_ Connection between Agricultural Research Facility and Urban Green Spine.

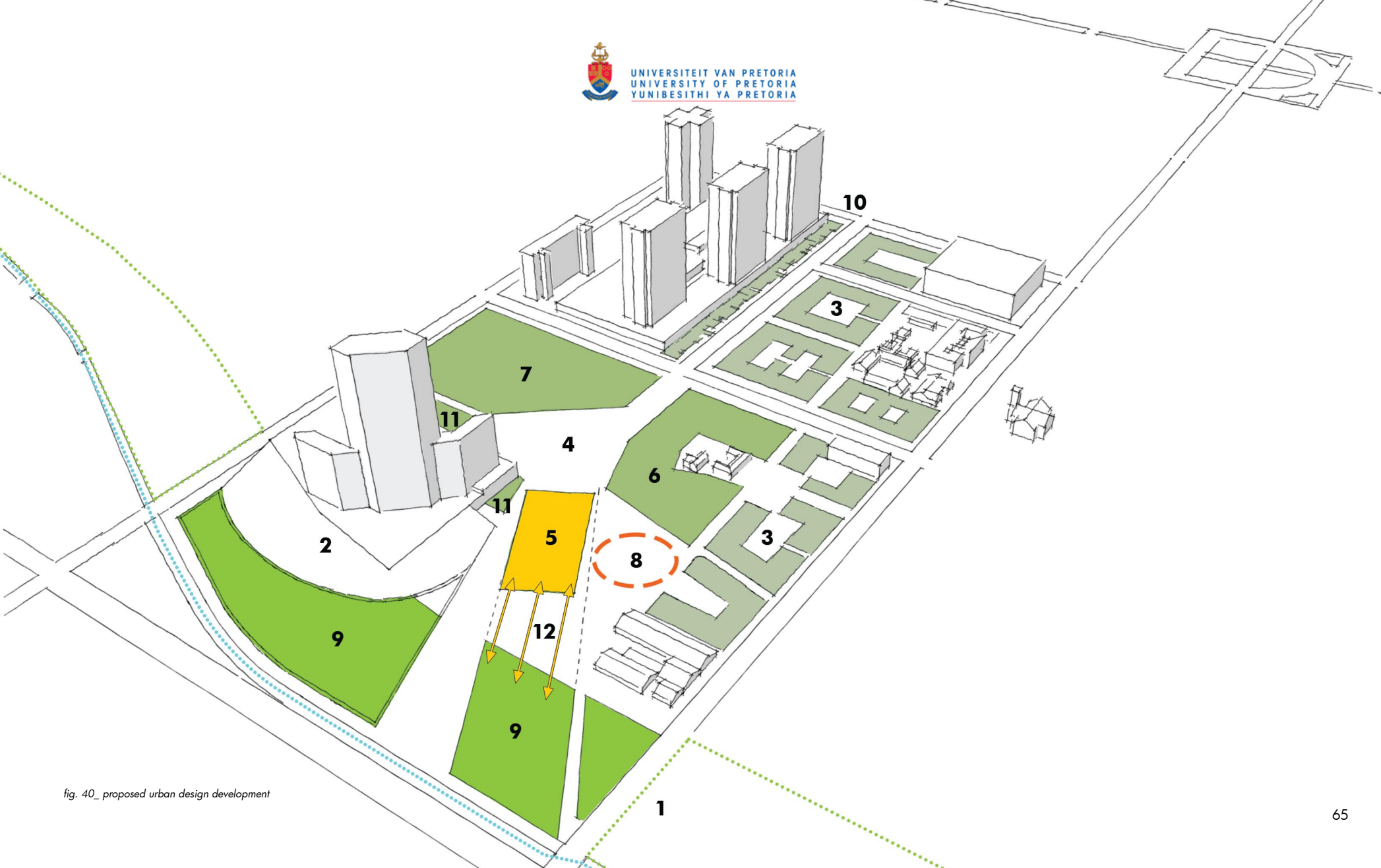


fig. 40_ proposed urban design development

"Landmarks: the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store, or mountain."

Lynch
(1975:48)

scale_

Proposed building heights are planned to be of a good urban scale, but not to contest or match that of Kruger Park or Schubart Park.

1_ Urban Green Spine.
2_ Mixed-use buildings at various heights between 5 to 10 storeys.
3_ Storm water catchment channels become a legible paving pattern over all the connecting public spaces.
4_ Community Gardening Lots.
5_ Agricultural Research Facility vegetable garden.
6_ Development of a pedestrian boulevard with Play Park.
7_ Civic buildings all developed with same plinth height and active edges.

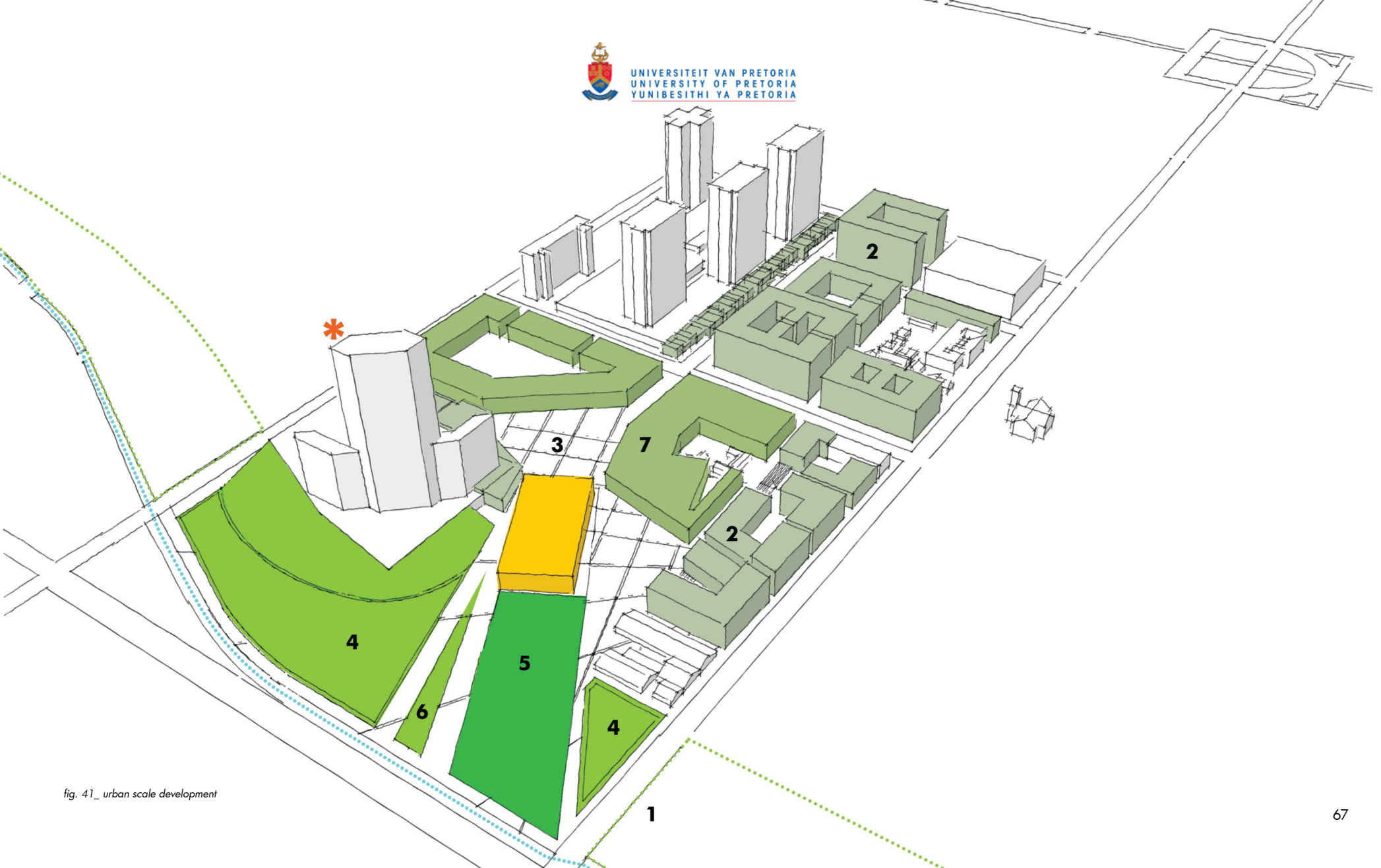
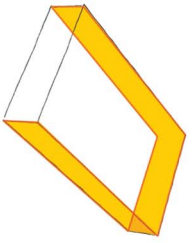


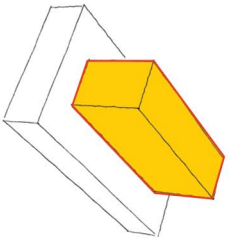
fig. 41_ urban scale development

mass development_



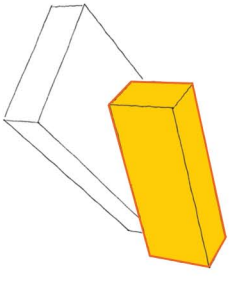
edges_

PLINTH WITH ACTIVE URBAN EDGES
PLINTH DEFINES AND FRAMES URBAN SPACES



tower_

ADDITIONAL FLOOR AREA DEVELOPED
AS A SLENDER TOWER



turn_

TOWER TURNED FOR NORTH-SOUTH
ORIENTATION
TOWER MOVED TOWARDS CIVIC SQUARE

slope_
WESTERN PART OF PLINTH DEVELOPED INTO GREENHOUSE
_ TO CONNECT WITH GREEN SPINE
_ TRANSITION BETWEEN URBAN
_ AND LANDSCAPE
_ LEAST AFFECTED BY SHADOWS OF
_ KRUGER PARK

extend_
ADITIONAL GREEN HOUSE AND PLANTING SPACE NEEDED

stitch_
GREENHOUSE DISINTEGRATES INTO SMALLER, TEMPORARY GREENHOUSES, STITCHING THE BUILDING INTO THE LANDSCAPE.
GREENHOUSE EXTENDS TO A ROOF GREENHOUSE

fig. 42_ building mass development

fig. 43_ perspective drawing of proposed facility mass in the landscape

"...buildings are related to their environment by resting on the ground and rising towards the sky."

Norberg-Schulz
(1980, p10)

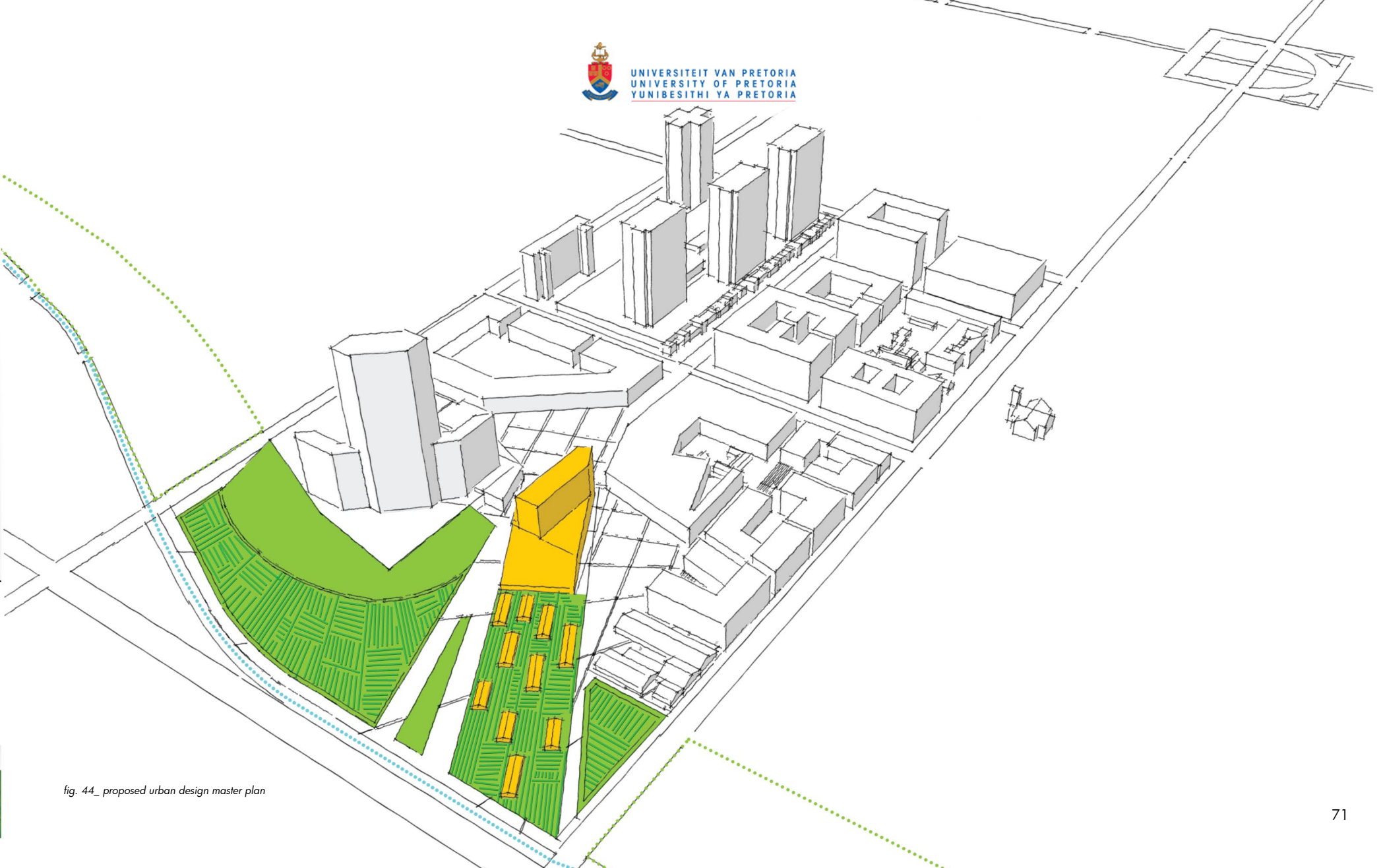


fig. 44_ proposed urban design master plan