

are the major clients, however location has resulted in a third, minor client being involved, the Pretoria Technikon.

1.3 Ethnobotanic Research Centre [EBRC]

A research facility is to be established to unify these institutions, the Ethnobotanic Research Centre (EBRC) is to fulfill this function. It will serve as a place for plant research through consultation with traditional healers and laboratory testing. The EBRC will act as an educational tool by exposing the importance of these medical systems, through this, the culture that resides within this practice will be exposed.

Plant propagation will take place within a series of terrariums that specialise in medicinal plants from the climatic zones found around the country, which will be open to the public.

2. Context

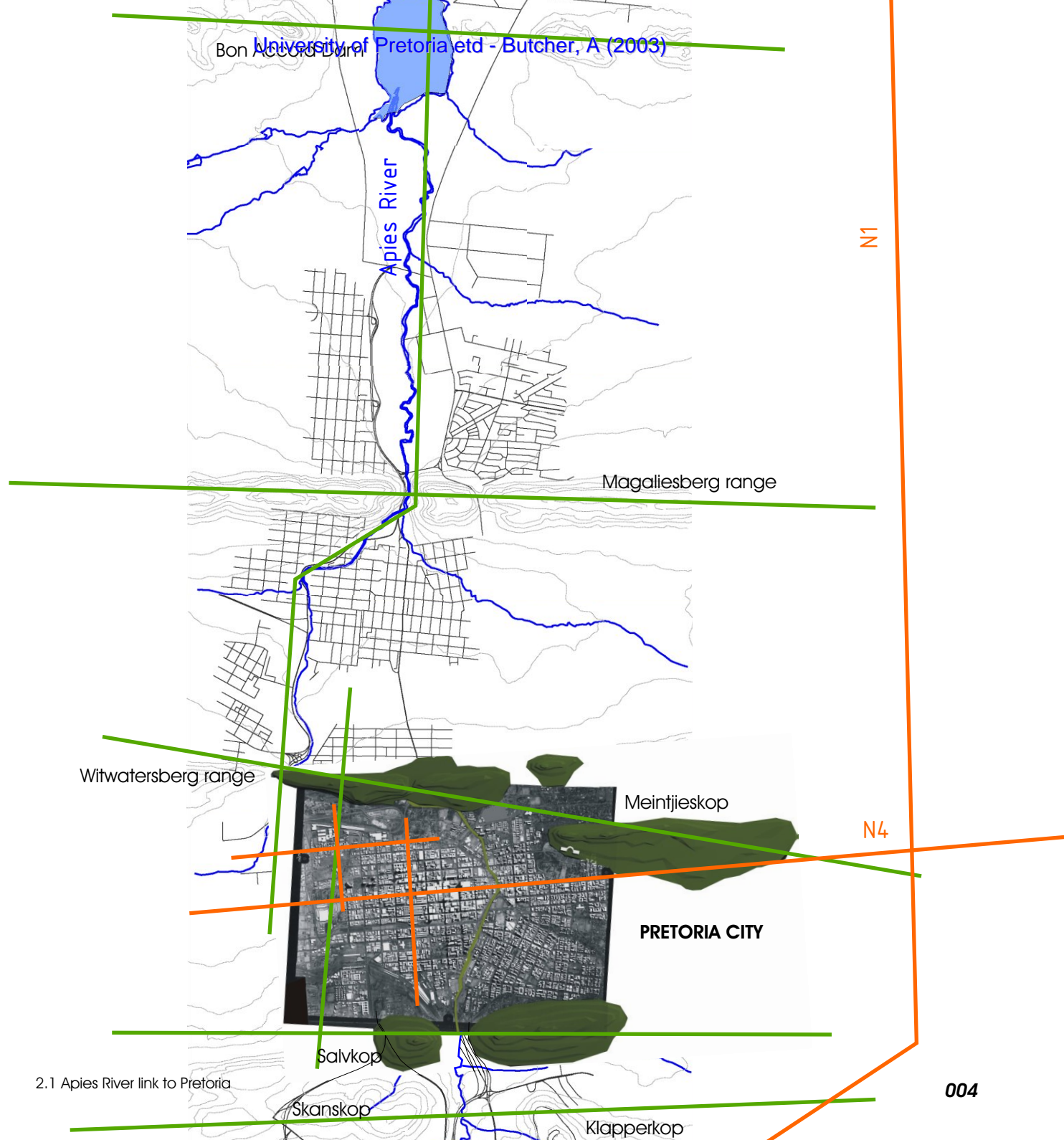
2.1 Macro Analysis

Pretoria city lies between two green belts to the north and south. These greenbelts are linked to a series of parallel greenbelts by means of the Apies River which begins in the Fountains Valley to the south of the city. Along the river there are a number of ecological assests, these include; the Groenkloof Nature Reserve, Wonderboom Nature Reserve, Bon Accord Dam, the three ridges (Salvokop at UNISA, Witwatersberg at Daspoort, Magaliesberg at Wonderboompoort) and tributaries of the Apies, which itself is a greenbelt.

Roads generally run parallel and perpendicular to the Apies River, with two highways, the N4 and the N1 forming the major axis. The N1 links Pretoria and Johannesburg to the South, with the N4 linking Pretoria to Hartbeespoort in the west and Witbank in the east. This axis continued from the micro axis in the city, formed by the crossing of Church and Paul Kruger street. This axis is repeated on a smaller scale within the city at Marabastad.

The environment becomes more rural towards the north forming important regions of indigenous vegetation, which are linked to the city through the mentioned movement spines.

These paths and nodes form the growth/gathering/trade cycle for medicinal plants for Pretoria and its surroundings.



2.1 Apies River link to Pretoria



2.2 View south over Groenkloof nature reserve from Salvokop



2.3 View South over Pretoria from Union Buildings

2.2 Meso Analysis

2.2.1 Green open spaces

Within the city there are a number of formal and informal green spaces. The formal spaces are indicated in the open space map (See fig.2.4). Informal green spaces include the ridges in the north and south, the Apies River, Steenhoven Spruit, Walkerspruit and land south of Marabastad undeveloped due to land claims.

2.2.2 Urban Spaces

While the green spaces surround the CBD, the urban spaces run through it, creating a strong north / south axis linking the

public transport nodes of Belle Ombre in the north and the Pretoria train station in the south (See fig.2.4)

2.2.3 Cultural Installations

Places of cultural significance within the city are indicated in the cultural map (See fig.2.5). There is also a line of historical assets that run along the Apies River (figxxx).

If the cultural map and the open space are overlaid, we see a picture of linkage and place (Trancik, 1986, p98). This image indicates an implied cultural ring around the CBD that is intersected with a physical cultural axis. Parallel to this axis in the north south direction, greenbelts inform the edges



2.4 Green and Urban open spaces

Green spaces

- 1-Pretoria Zoo / Zoological gardens
- 2-Heroes Acre
- 3-Burgers Park
- 4-Calaldonian sports grounds
- 5-Union Buildings gardens

Urban spaces

- 1-Church Square
- 2-Pretorius Square
- 3-Zoo
- 4-Melrose House
- 5-Sammy Marks Square
- 6-Strijdom Square

of the CBD.

The cultural axis, due to its link to transport nodes and cultural facilities carries a high pedestrian movement. The cultural ring is not as active as the cultural axis as the installations are not connected through sight lines and paths.

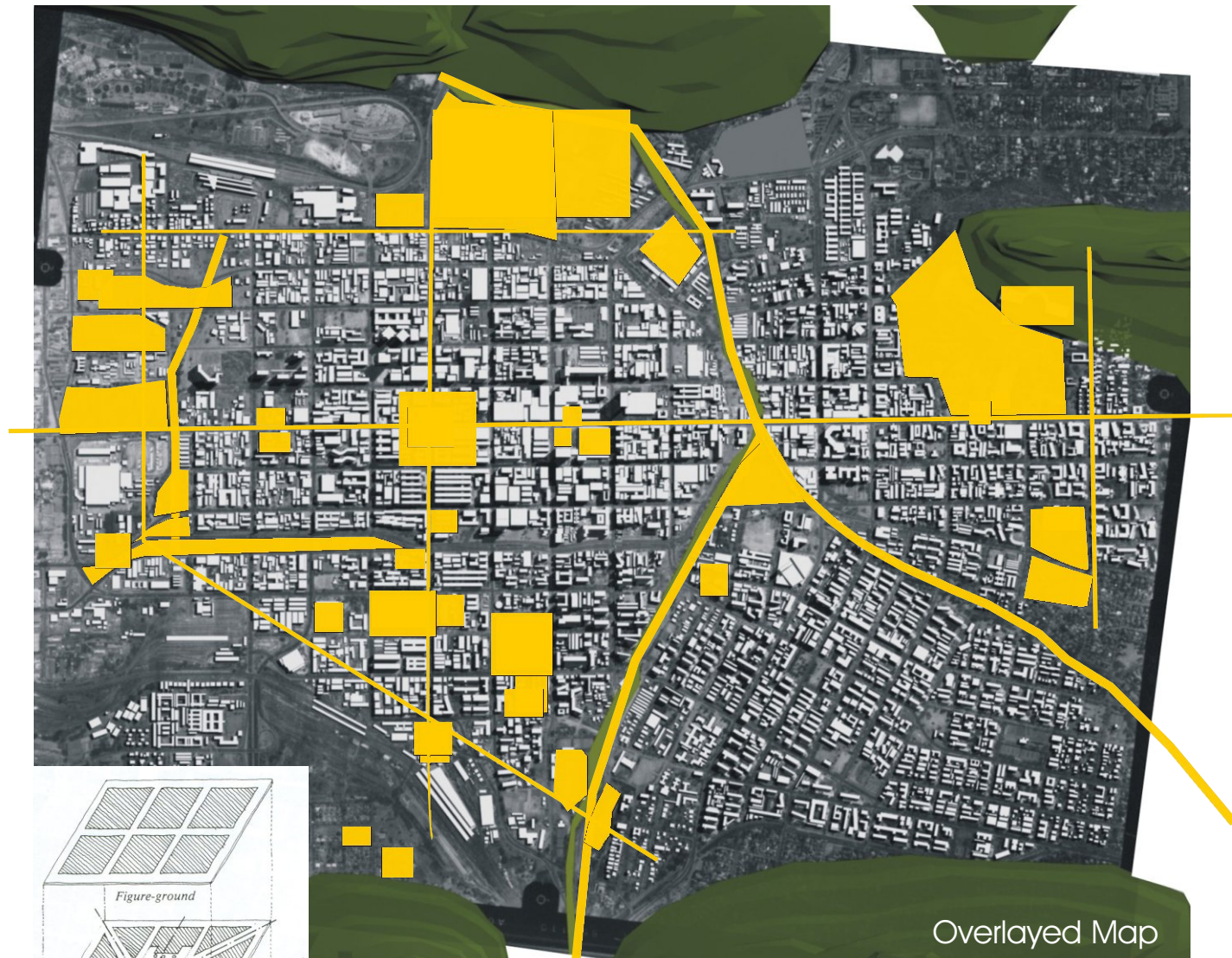


2.5 Cultural installations in Pretoria

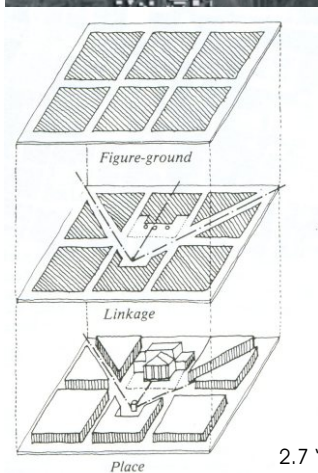
- 1-Pretoria Zoological gardens
- 2-Aquarium and Snake park
- 3-State Model School Museum
- 4-Church Square
- 5-Palace of Justice
- 6-Old Raadsaal
- 7-African Window

- 8-Transvaal Museum
- 9-Museum of Science and Technology
- 10-City Hall and Pretorius Square
- 11-Melrose House
- 12-Pretoria Station
- 13-Union Buildings

- 14-Pretoria Art Museum
- 15-Oeverzicht Art Village
- 16-NZASM Houses
- 17-Paul Kruger's Church
- 18-Kruger House
- 19-State Theatre
- 20-Burgers Park



2.6 Combined maps showing linkage and place



2.7 'Linkage' and 'Place'

Church Street moves through this linkage system and connects to the Union Buildings, creating a sub-axis link to the Pretoria Art Gallery.

2.3 Urban Form

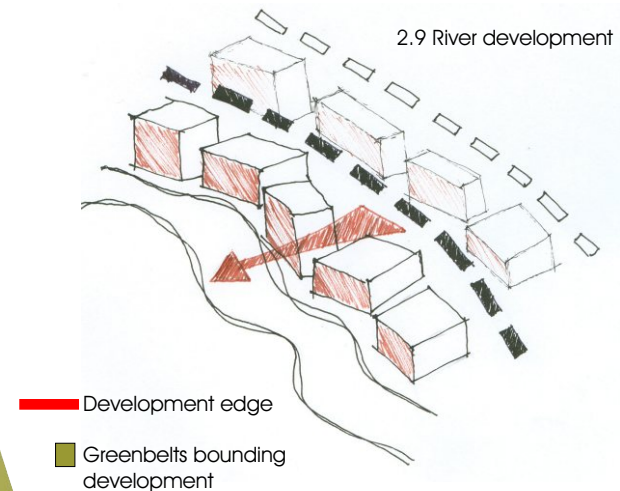
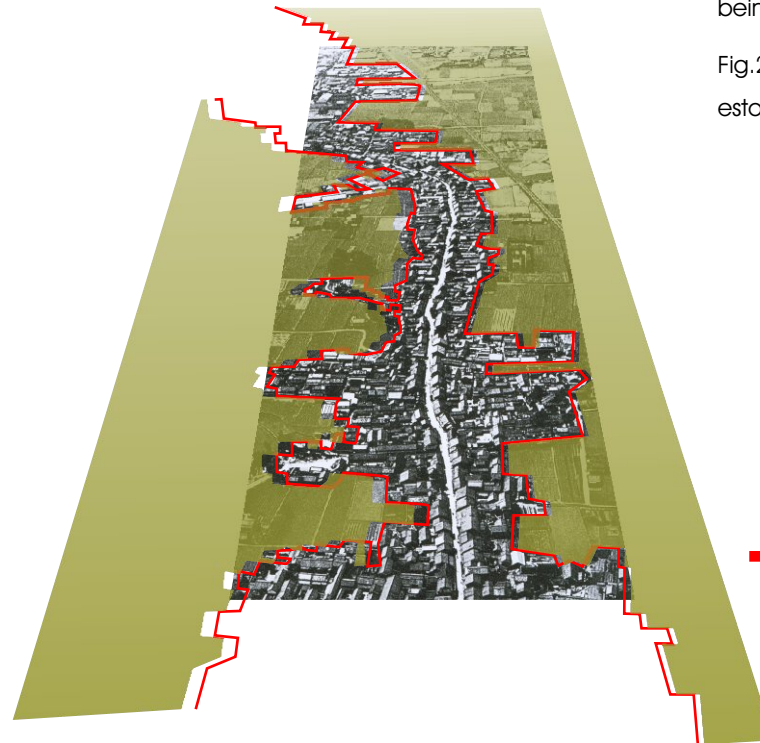
Many cities in the vicinity of rivers will inevitably develop on the river banks whereby its water can be used for transport, as a food source and channelled for irrigation. Because the river is such an important resource, development along it celebrates the river and becomes an intense spine of activity. Fig.2.8 shows how this type of development has taken place in a Japanese Agrarian rural village. The river starts as the interactive node with further development spreading away from it leaving the town bounded by greenbelts.

The buildings develop with the responsive face towards the source of activity, in this case the river. With the responsive face river facing, interaction with the development and

activity spine is assured.

Pretoria can be considered as a relatively young city, only being established 1855. It was not forced to develop on the river, but was rather defined by the river, while water was provided to the city from the Fountains via water furrows. Instead, in part due to its political footings and the knowledge of what a contemporary city should look like, the Pretoria community was established above the river around Church Square on a grid that was defined by openings in the Daspoort and Schurweberg ridges (Fisher. Le Roux. Mare', 1998, p61). Development occurred in the same way as previously mentioned with the buildings responsive face interacting with the activity node of Church Square. As each layer of development occurred, it would inherit the responsibility of being the defensive edge.

Fig.2.11 shows in 1859 how Pretoria had already been established on a grid system. This development occurred in

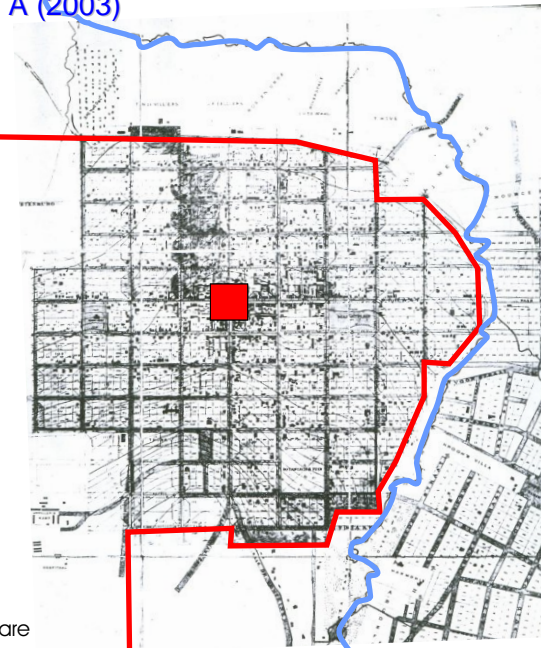




2.10 Pretoria Map 1889



- Church Square
- Defensive edge of development



2.11 Pretoria Map 1859

an east/west direction due to the steeper gradients of the ridges in the north and south. Fig.2.10 indicates when the development reached the river, already by 1889, the grid pattern was disrupted and could not continue in its conventional manner. With the responsive face towards Church Square, the defensive edge was left facing towards the river. With its back on the river, a number of green spaces were left along the river forming a weak greenbelt, unfortunately with no interaction these spaces became lost, hostile spaces.

Development could only take place in an east/west direction, so it continued in a similar pattern on the eastern side of the river to that on the western side, however, the responsive face was towards the west which allowed for interaction with the river, but the river was never celebrated

as a natural resource.

As the city expanded, there would have been little emphasis on preserving the natural environment within the city because of the vast landscape of fauna and flora surrounding it. Development pushed the biophysical environment further and further away leaving a few isolated patches that only remain because they are uninhabitable, these being the Apies River and the ridges in the north and south.

Fig.2.9 shows the idea of how development on a river turns its responsive face to the river while forming a defensive edge behind it. Later development forms its responsive edge to interact with previous development, thus creating an activity spine along the river.

2.4 Site

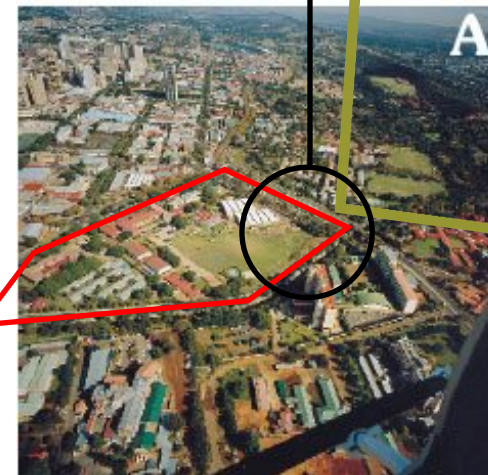
The reasons for choosing the site are mostly based around maximising resources. Much of the research done with medicinal plants is with highly infectious bacteria, viruses and their related diseases, such as Tuberculosis, Aids etc. (Meyer, 2003). This work is currently done in the isolated laboratories at the MRC, it would not be economical to build more of these laboratories as they have the capacity for an increase in use. For this reason the EBRC needs to be linked physically to the MRC.

A large component of the EBRC is the plant propagation within the terrariums as well as the open-air medicinal plant cultivation. It would be preferable if the site fitted into an existing greenbelt, while large spaces would be needed for the terrariums. Although brownfields sites are favoured in terms of sustainable development, it is justifiable to use a greenfields site if most of the site will be used to grow indigenous vegetation. In the Apies River Urban Design Framework there is an initiative to reintroduce indigenous plants to the Witwatersburg Ridge. There is an opportunity to continue this throughout the city by being linked to the ridges via the Apies River as at this point the rural environment meets the urban environment. Another advantage of being on the river is the possibility (through damming) of the establishment of a wetland for maximum plant diversity and using the water for irrigation.

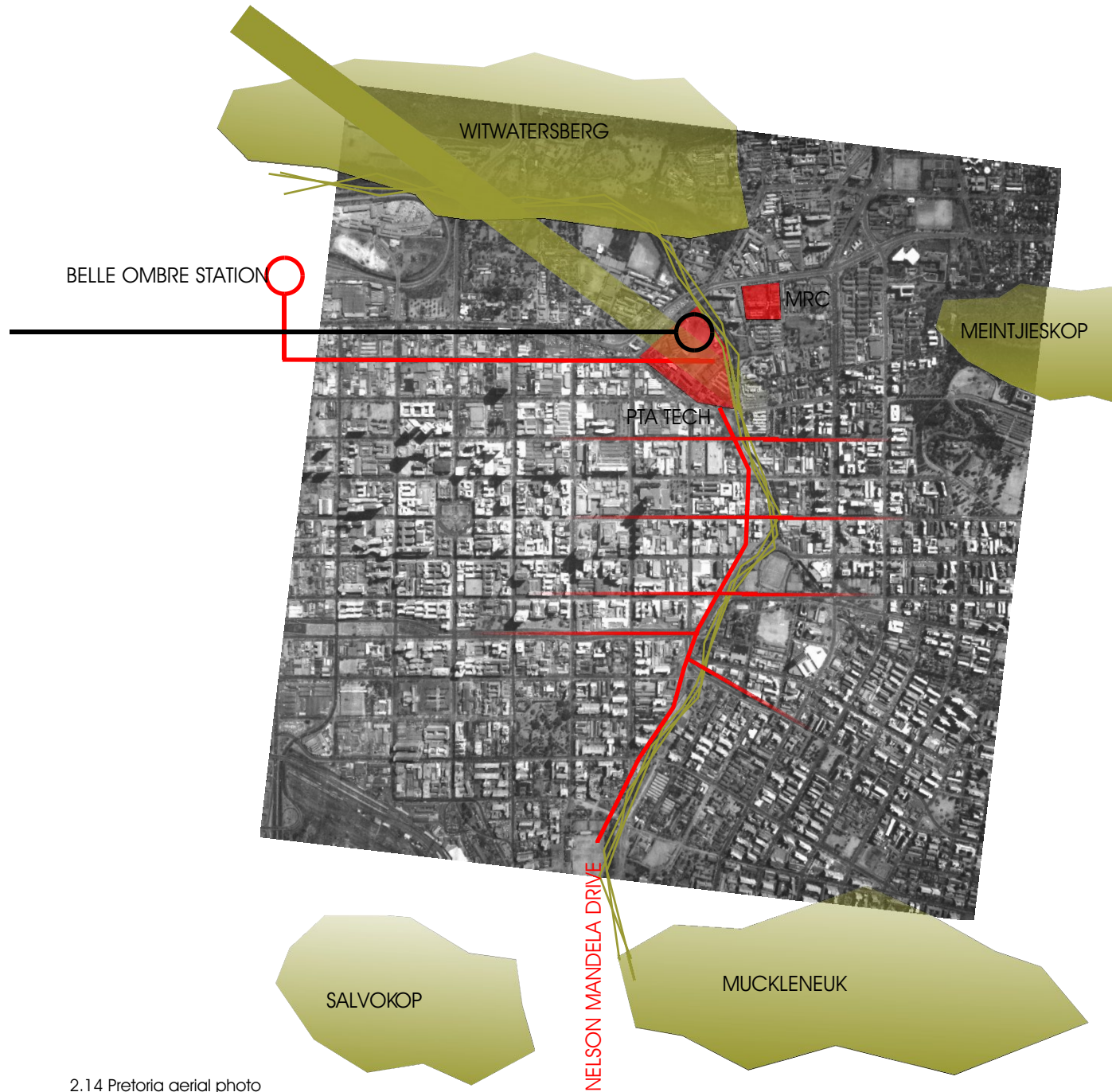
There needs to be a strong link to the existing medicinal plant trading node in Marabastad so as to direct this practice in a more sustainable direction. By connecting to Marabastad, there is also the possibility of creating an important link to

Belle Ombre train station as it is through this gateway where much of the harvested plants are brought into the city.

2.12 Site overview from the south



2.13 Site overview from the east



2.14 Pretoria aerial photo