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1 Objectives
2 Analysis
3 Site Framework

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05 site in context

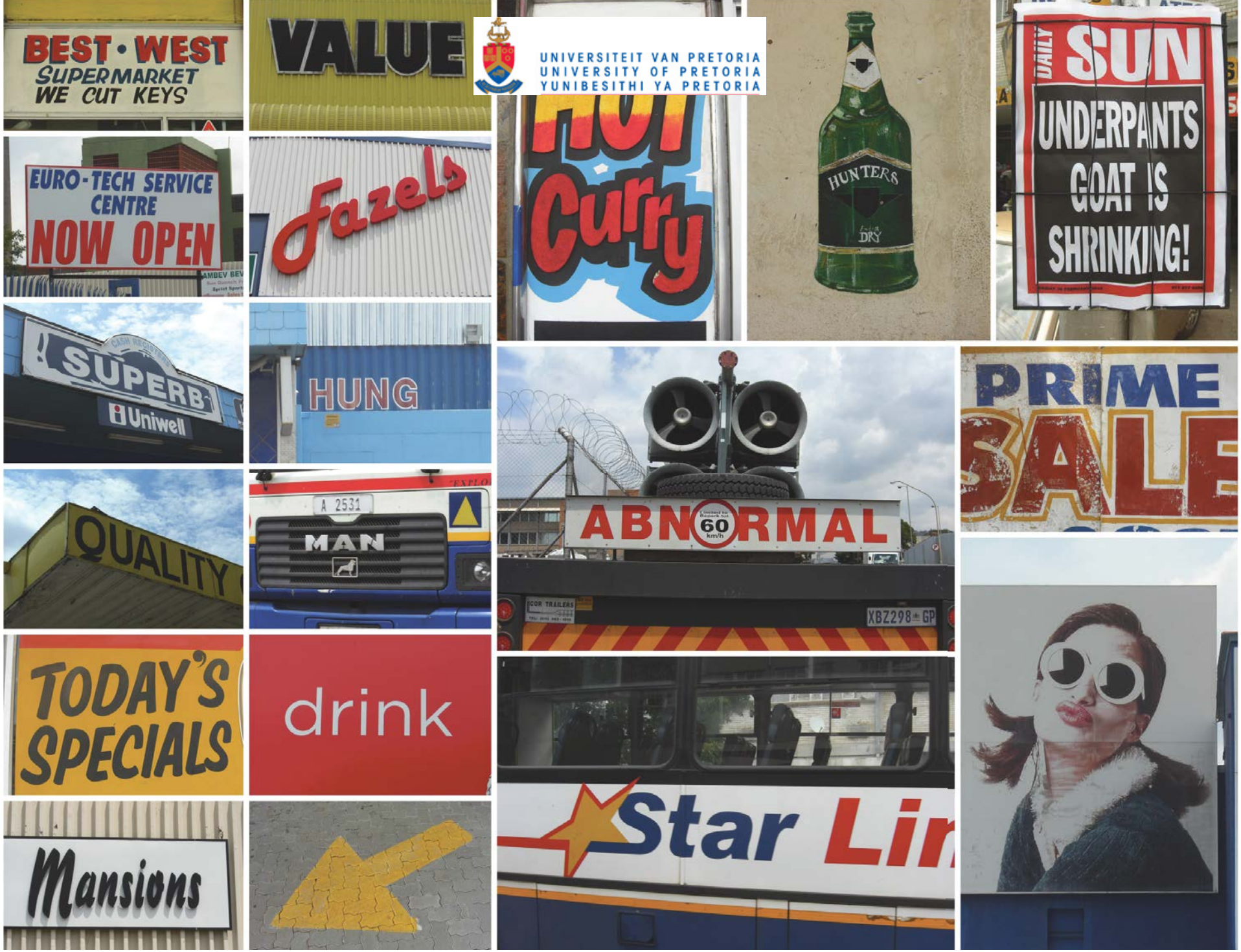

Fig:40. The bright side of PTA West, a digital collage of signage and advertising found in the area (Author 2010).

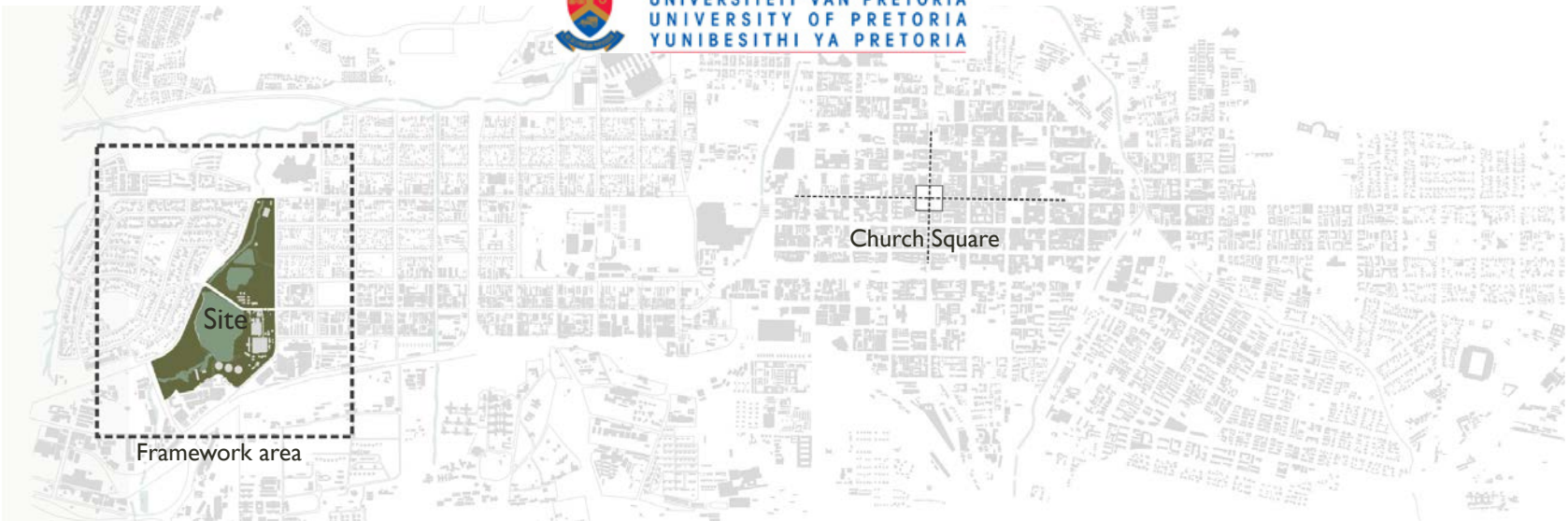

Fig:41. Orientation diagram (Author 2010)

6. Site in context

The group framework supplied an overall vision however more detailed analysis is needed as well as a more detailed framework in order properly address the site. The power plant site currently forms a rift within the urban fabric, separating adjacent communities with little access across it.

6.1. Objectives

- To understand social, ecological and infrastructural system in place
- To integrate site with surrounding urban fabric
- To link site to the broader open space network

6.2. Analysis

6.2.1. Zoning

The area originally consisted of heavy industrial components such ISCOR and the powerplant and low cost housing for its employees. Over time many of these houses have been turned into lots selling cars, workshops and other light medium to light industrial functions. Vehicle sales and repairs forms a major part of the light industrial sector.

Commercial and mixed use clusters have developed along major roads such as Mitchell and Church Street. The recently developed Quagga Centre to the north of the site is the largest mall in the area. There is a southern strip of heavy industrial function along the railway. The area also has a number of schools and colleges.

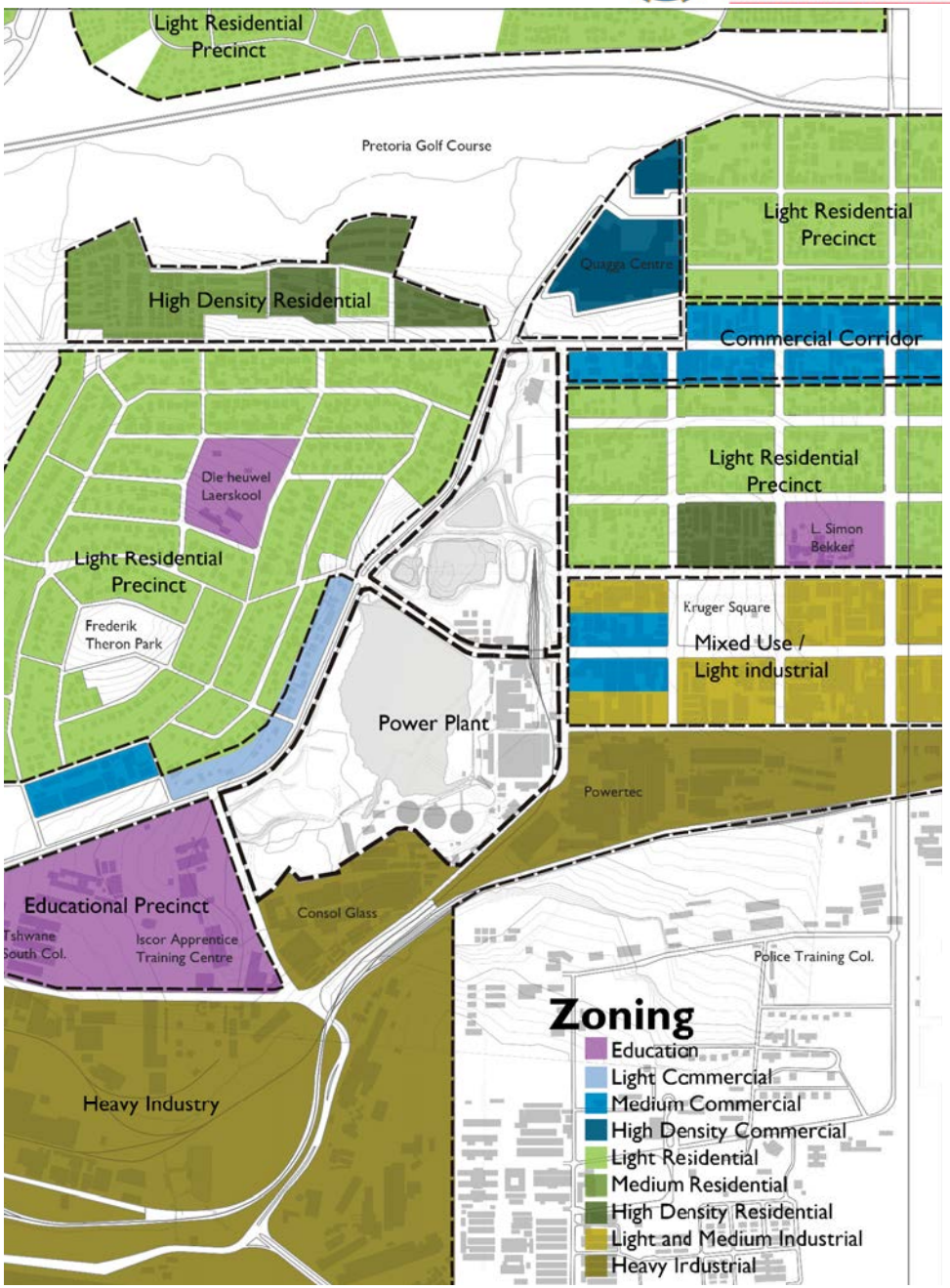

Fig:42. Diagram showing zoning (Author 2010)

Fig:43. Light industrial (Author 2010)

Fig:44. Light commercial (Author 2010) Author)

Fig:45. Residential unit in Proclamation Hill (Author 2010)

6.2.2. Transport

The area is well connected to the CBD as well as areas such as Laudium (R55) and Atteridgeville (Church Street). It is also connected to Brits through the N4 and to Johannesburg through the M7 leading to the N14.

The rail system consists of both freight and passenger lines that are part of the national railway system. Furthermore the area has an existing bus system and will eventually form part of Pretoria's BRT network.

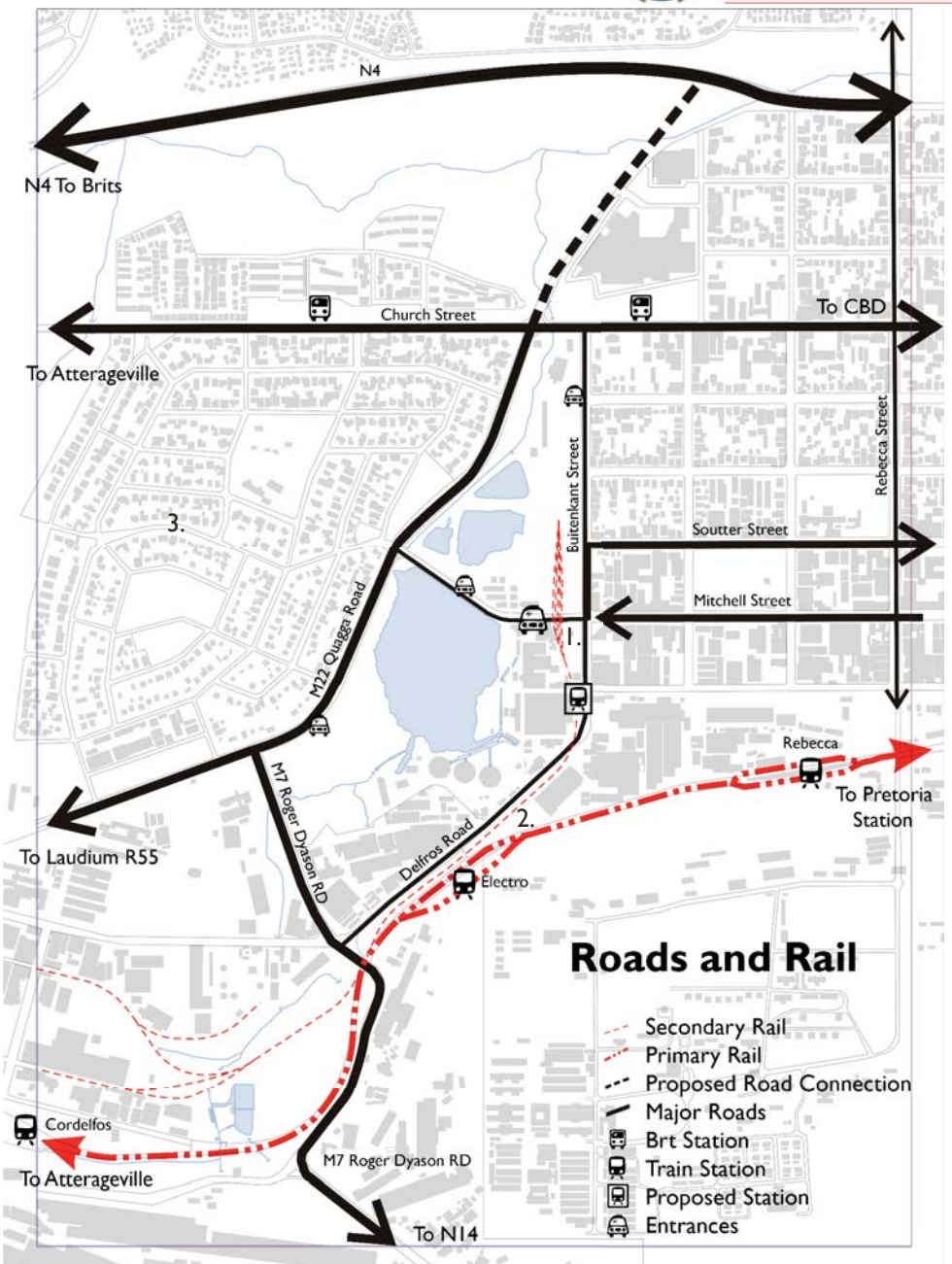

Fig:46. Diagram showing roads and railways (Author 2010)

1.

Fig:47. Intersection of Mitchell and Buitenkant Street (Author 2010)

2.

Fig:48. Electro Station (Author 2010)

3.

Fig:49. Tree lined streets in Proclamation Hill (Author 2010)

6.2.4. Vegetation

Moot Plains Bushveld

The Moot Plains Bushveld biome the natural vegetation type for this region however in PTA West it has mostly been disturbed through development, pollution and invasive species.

Natural distribution

North-West and Gauteng Provinces: Main belt occurs immediately south of the Magaliesberg from the Selons River Valley in the west through Maanhaarrand, filling the valley bottom of the Magalies River, proceeding east of the Hartebeespoort Dam between the Magaliesberg and Daspoort mountain ranges to Pretoria. It also occurs as a narrow belt immediately north of the Magliesberg from Rustenburg in the west to just east of the Crocodile River in the east: also south of the Swartruggens-Zeerust line. Altitude is typically about 1050 – 1450 m.

Vegetation and landscape features

Open and closed, low, often thorny savannah dominated by various species of acacia in the bottomlands and plains as well as woodlands of varying height and density on the lower hillsides. Herbaceous layer is dominated by grasses.

Geology and soils

Soils often stony with colluvial clay-loam but varied, including red-yellow apedal freely drained, dystrophic and eutrophic plinthic catenas, vertic and melanic clays.

Climate

Summer rainfall with very dry winters. MAP from about 55mm in the west to about 700mm in the east. Frost frequent in winter. Mean monthly maximum and minimum temperatures for Pretoria-Pur 33.6°C and -3.1°C for January and June respectively.

Important Taxa

Small trees:

- *Acacia nilotica*
- *Acacia tortilis subsp. heteracantha*
- *Rhus lancea*

Tall shrubs:

- *Buddleja saligna*
- *Euclea undulate*
- *Olea europaea subsp. Africana*
- *Grewia occidentalis*
- *Gymnosporia polyacantha*
- *Mystroxylon aethiopicum subsp. burkeanum*

Low shrubs:

- *Aptosimum elongatum*
- *Felicia fascicularis*
- *Lantana rugosa*
- *Teucrium trifidum*

Succulent shrub

- *Kalanchoe paniculata*

Woody climber:

- *Jasminum breviflorum*

Herbaceous climber:

- Lotononis bainesii

Graminoids:

- *Heteropogon contortus*
- *Setaria sphacelata*
- *Themeda triandra*
- *Aristida congesta*
- *Chloris virgata*
- *Cynodon dactylon*
- *Sporobolus nitens*
- *Tragus racemosus*

Herbs:

- *Achyropsis avicularis*
- *Corchorus asplenifolius*
- *Evolvulus alsinoides*
- *Helichrysum nudifolium*
- *Hermannia depressa*
- *Osteospermum muricatum*
- *Phyllanthus maderaspantensis*

Conservation

Vulnerable - with only 13% conserved mainly in Magaliesberg Nature Area. Threatened by both urbanization and cultivation. Vulnerable to invasion of more aggressive invasive species.

Fig:50. Image of existing vegetation, Highly disturbed (Author 2010)

6.2.3. Hydrology and quality of water

The natural streams in the area have been severely disturbed over time. Large sections of the streams have been canalized or redirected to supply water to the industrial areas. The streams are also very fragmented due to the number of roads and railway lines crossing it. Due to increased run-off many of the intact sections have been eroded.

Areas that have been disturbed have been overgrown by alien invasive species. Streams are polluted by run-off from industrial areas and townships.

The table below shows the chemical composition found in the power plant dams. This water is discharged into Skinner Spruit.

MONTH: NOVEMBER 2009

1. **EFFLUENT SAMPLES**

PARAMETER	UNITS	STANDARD	DATE: 09.11.09 TIME: 08:00	DATE: 26.11.09 TIME: 08:00
pH		5,5-9,5	8,3	8,2
EC	mS/cm	Intake+75	61,8	66,7
COD-O	mg/ℓ	75	41	40
PO_4-P	mg/ℓ	1,0	0,45	0,56
NO_3-N	mg/ℓ	10,0	2,24	5,24
SS	mg/ℓ	25	15	22
F COLI	Count/100 ml	1 000	520	600

2. **EFFLUENT DISCHARGED** (MAXIMUM 383,3 Ml PER MONTH)

TOTAL: 50,54 Ml DAILY AVERAGE: 1,68 Ml

DAILY MAX: 5,13 Ml DAILY MIN: 1,17 Ml

Fig:51. Table showing toxicity screen of water in the man dam

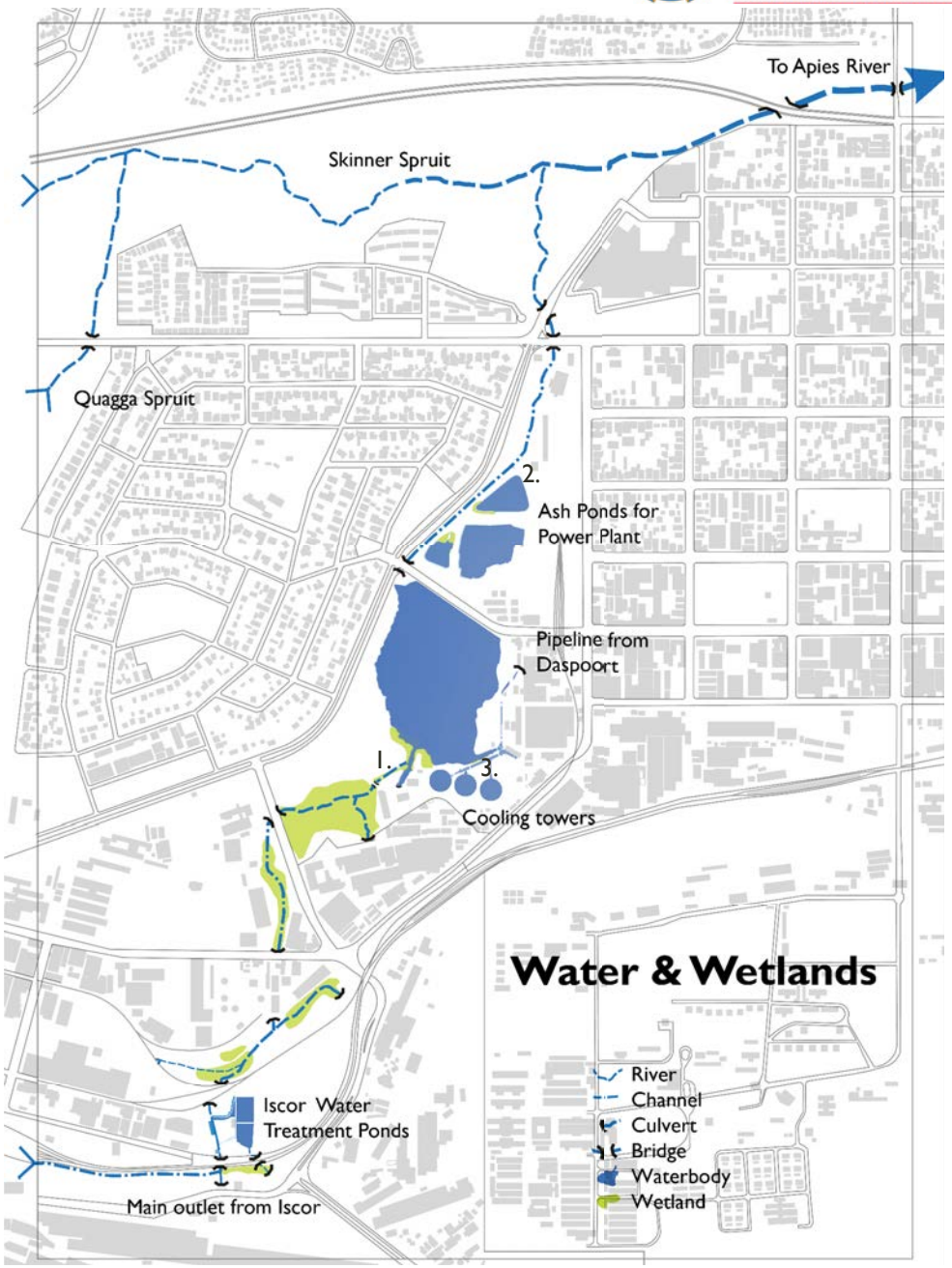

Fig:52. Diagram showing hydrology (Author 2010)

1.

Fig:53. Wetlands and stream flowing into dam (Author 2010)

2.

Fig:54. Northern ash pond (Author 2010)

3.

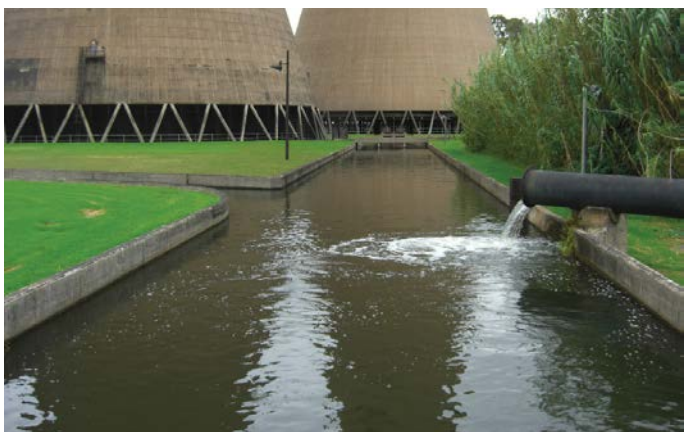

Fig:55. Channel leading from cooling towers (Author 2010)

6.2.5. Open space analysis

The area has a number of fragmented open spaces. Recreational open space includes that of the historic Pretoria golf course, Frederic Theron Park and Kruger square. Most of the open space in this area has been highly disturbed by industrial action over time and would need bioremediation. Spaces are fragmented however can be linked together to form part of the open space network.

Fig:56. Diagram showing open space analysis (Author 2010)

1.

Fig:57. Dumping on brownfields site in industrial area (Author 2010)

2.

Fig:58. Remains of old structure on site (Author 2010)

3.

Fig:59. Open fields in surrounding areas (Author 2010)

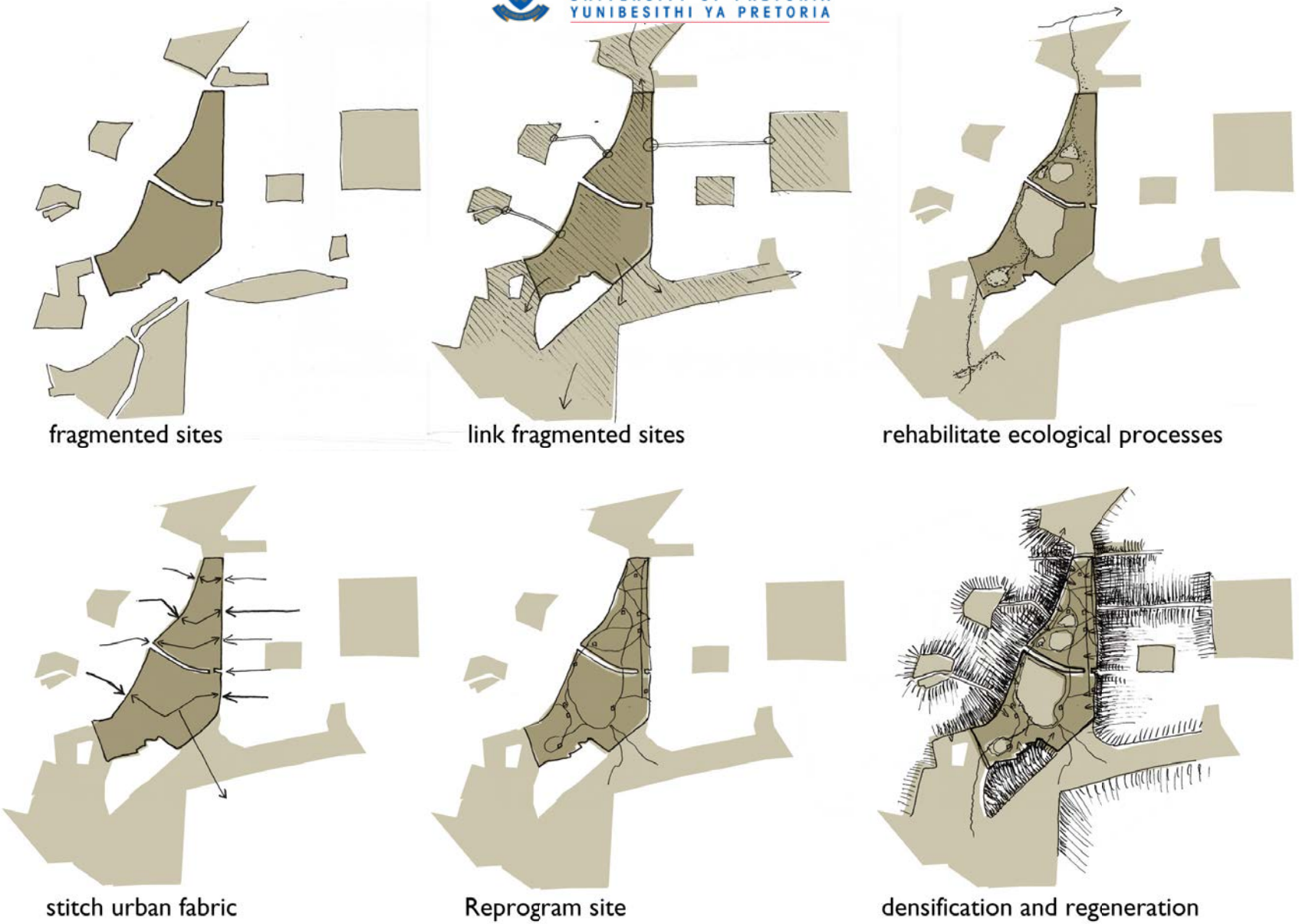

Fig:60. Diagram showing conceptual intentions (Author 2010)

6.3. Framework

The purpose of the framework is to create the necessary links between the site and it's surrounding urban fabric; stitching together open spaces, rehabilitating ecological processes and reprogramming the site in terms of movement and program.

The framework promotes overall density and encourages multi storey mixed use development. The site is integrated into the larger open space network and linked to other important open spaces such as Pilditch through tree lined boulevards.

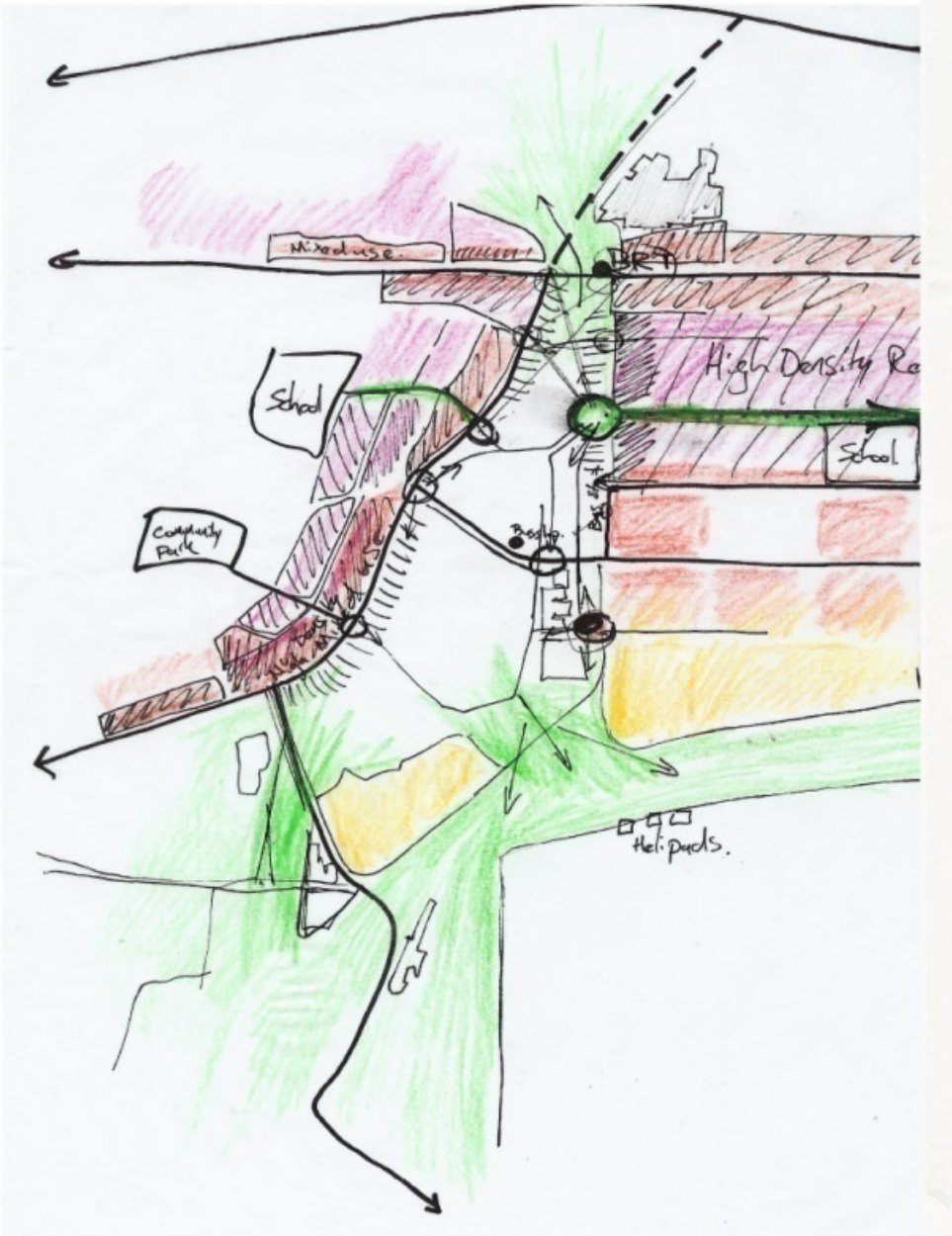

Fig:61. Site Framework (Author 2010)