

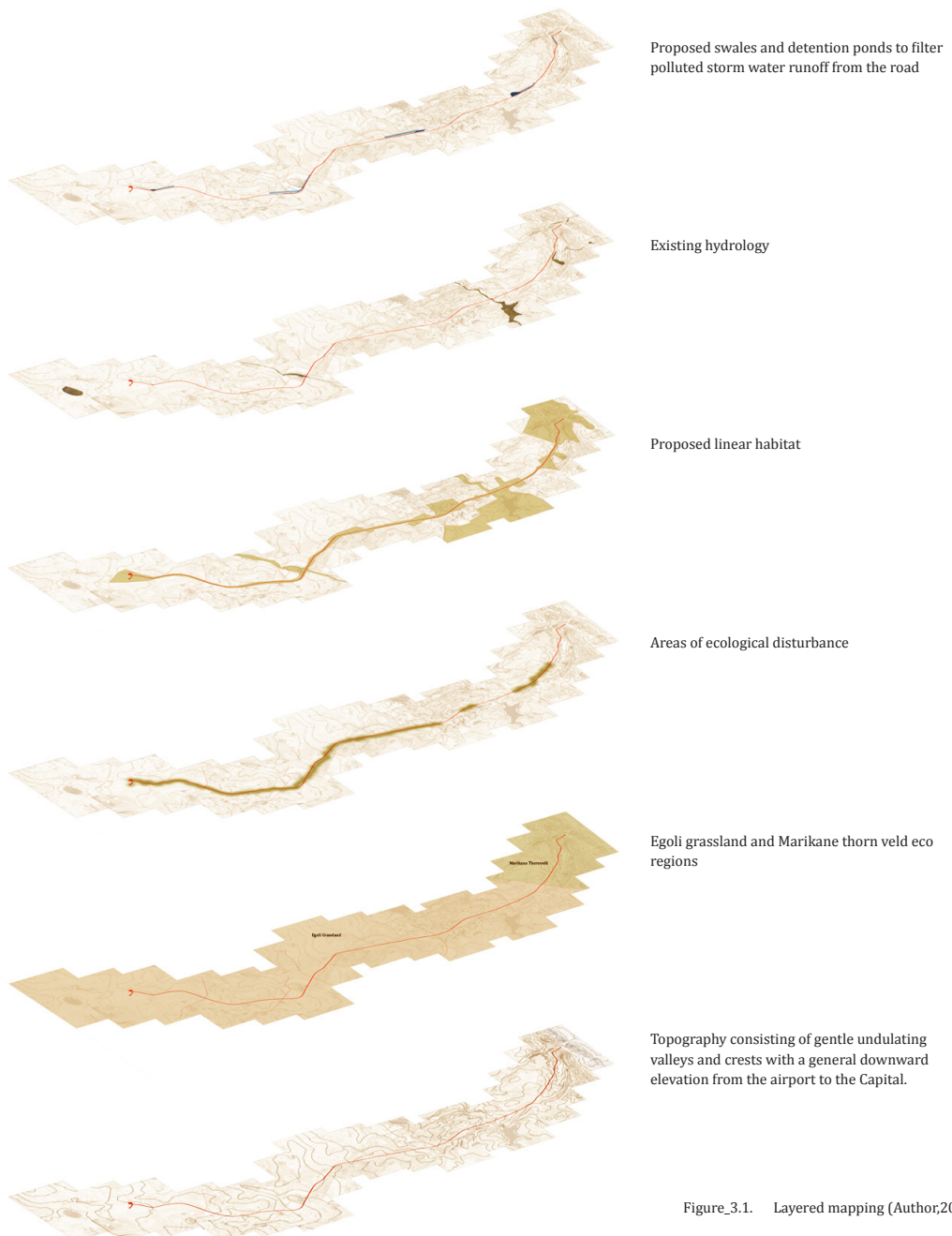
Chapter 3 Framework



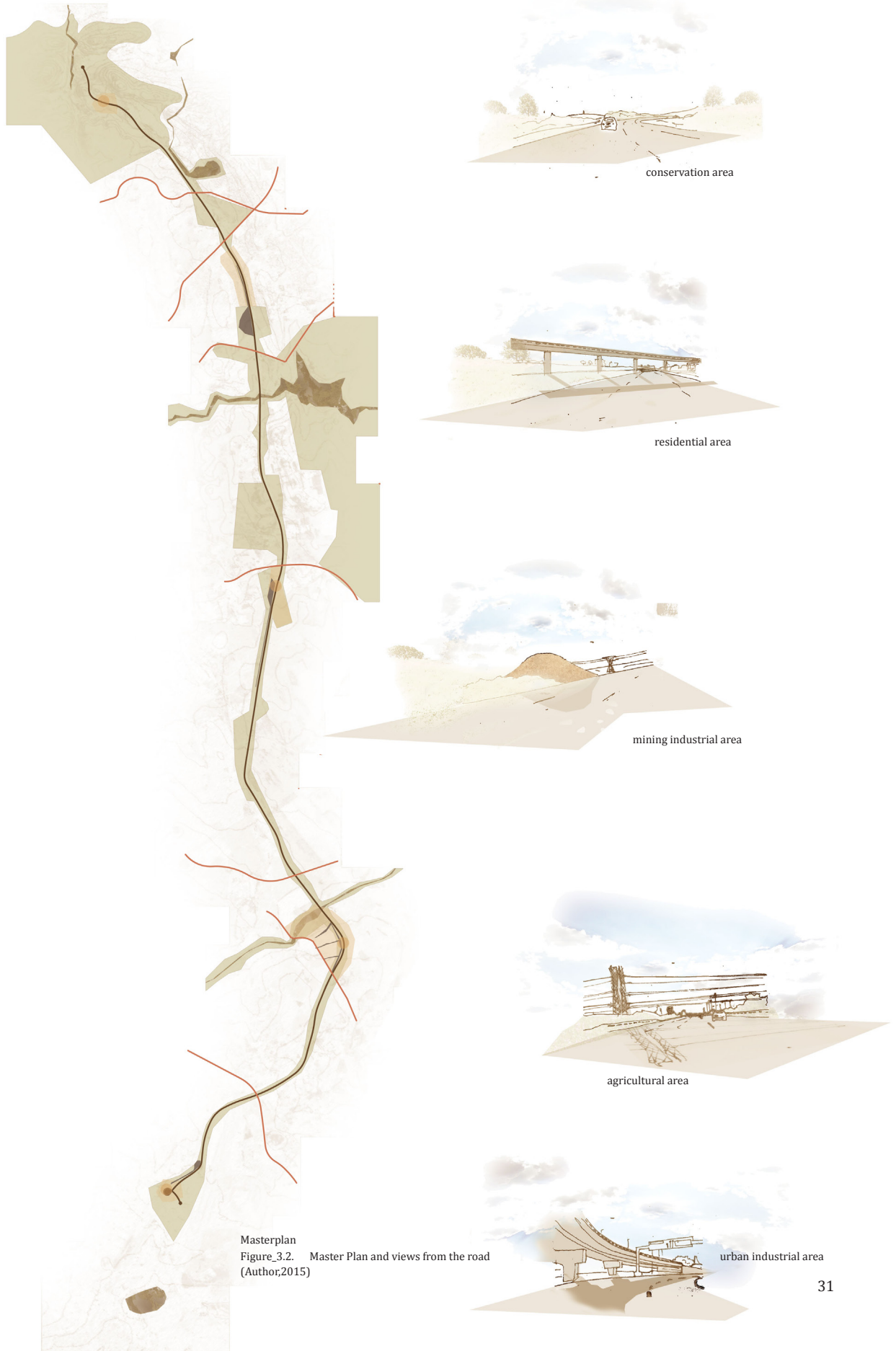
1. The freeway as a linear regional habitat

The intention of the framework is to facilitate a process towards utilising the road reserve for ecological benefit. Wide medians and road verges offer potential for habitat creation and may even serve in the future as productive agricultural land.

The framework will further be examined in terms of Lynch's principles and how by looking at the route through the lens of regional character, elements of the landscape can be illuminated.

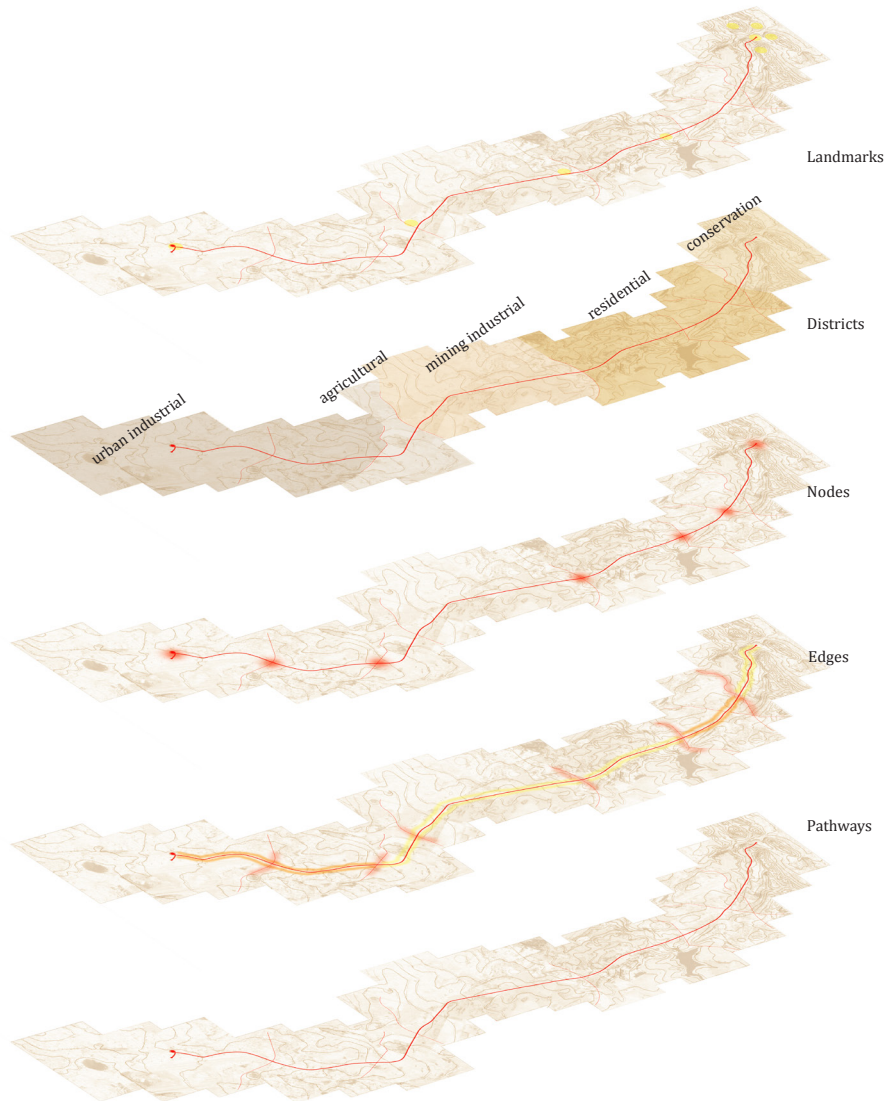


Figure_3.1. Layered mapping (Author,2015)



1.1 Freeway

The movement route in this dissertation is the freeway. It is a fixed linear route along which the driver moves. Subtle variation in topography creates a fast dynamic movement route. The general speed limit is 120km/hour with slower speed restrictions at the start and end of the route. The main focus of the design interventions will be from a south-north direction, from the airport to the capital.



Figure_3.3. Application of Lynch's principles to the R21 (Author,2015)

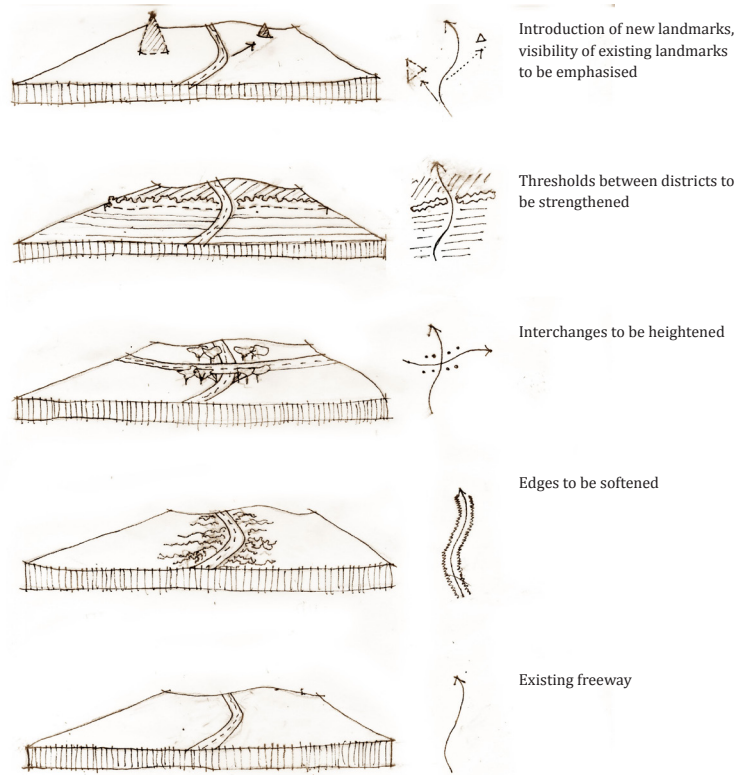


Figure 3.4. Conceptual image of Lynch's principles (Author,2015)

1.2 Edges

By challenging the notion of roads as physical barriers and recognising them as potential connectors these overlooked spaces can become the parks of the future. By linking the corridor through planting design and swales the freeway becomes a linear habitat. Regional plant species are selected to inform the driver of his whereabouts. The *Melinus repens* is selected for disturbed areas and the *Melinus nerviglumis* for stable areas. Masses of these species together with less ornamental grass species planted within the road reserve will form a pink crystal corridor in flowering season, creating a unique and iconic experience.

Current v-shaped concrete channels convey storm water onto adjacent property. The framework proposes a series of vegetated swales to slow down the rate of run off, which lead to a series of dams where heavy metal from the road are cleaned before recharging ground water. This will enable the driver to view the native fauna and flora species these swales will house.



Existing edge profiles



Melinus repens in disturbed areas

Melinus nerviglumis in stable areas

Creating a sense of unity along the road corridor achieved through planted edges



Rehabilitation Species

Cenchrus ciliaris

Chloris gayana

Cynodon dactylon

Digitaria eriantha

Ergrostris tefi

Panicum maximum



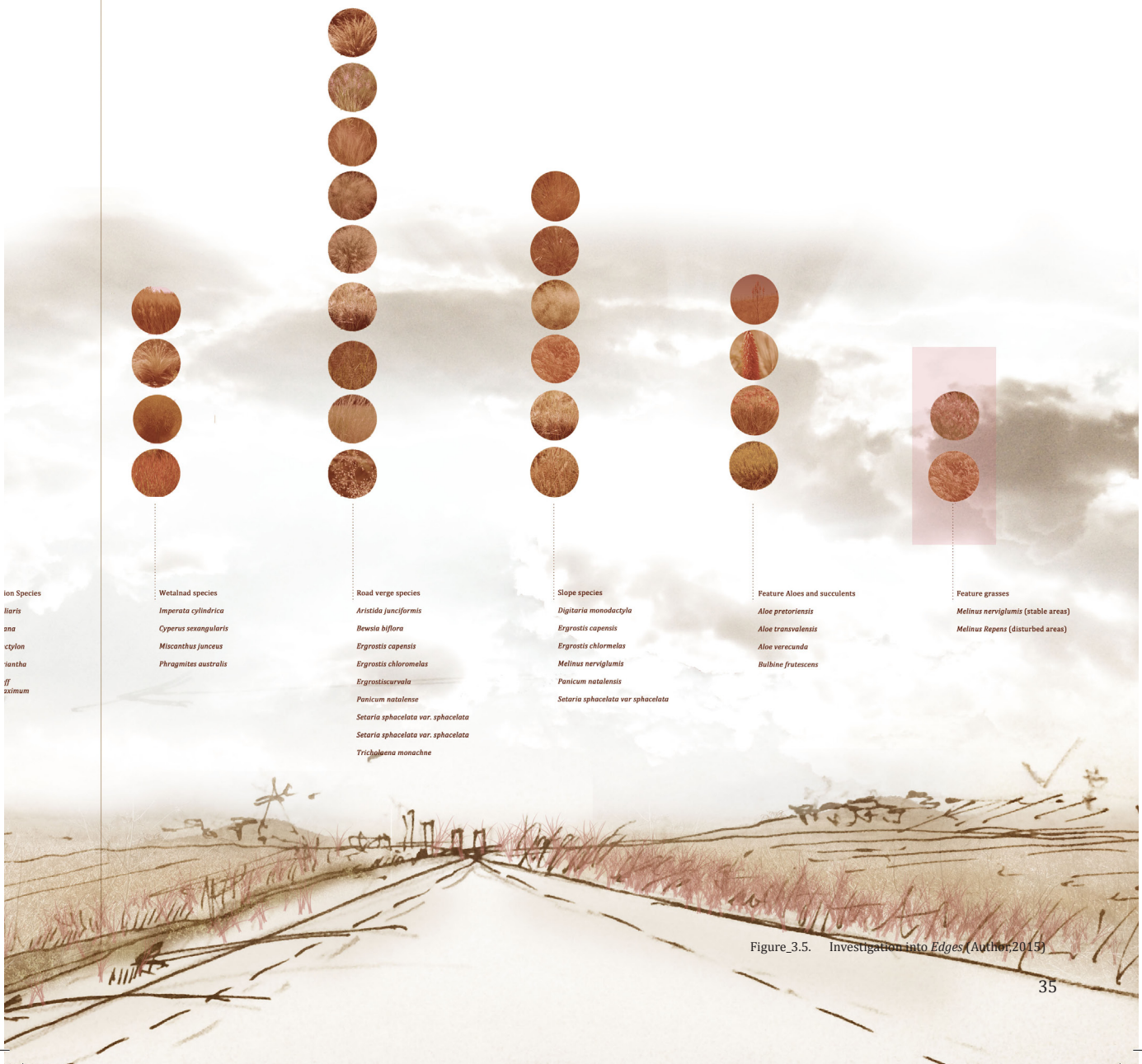
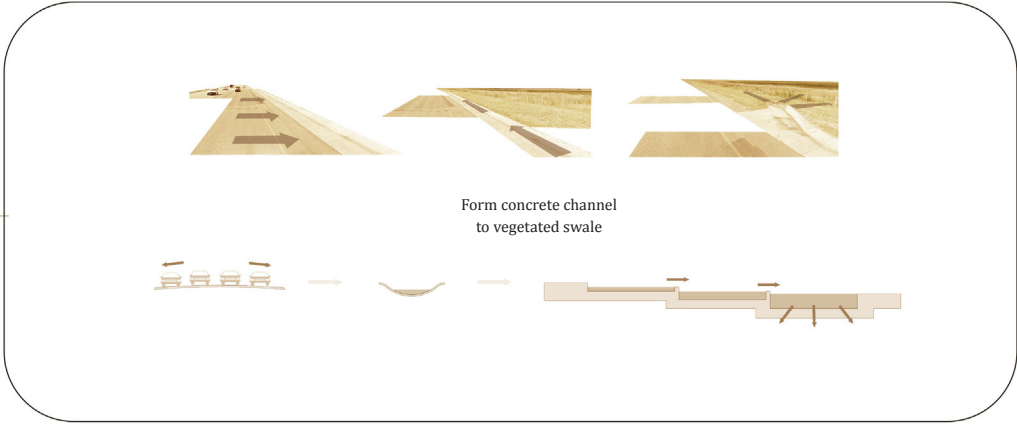
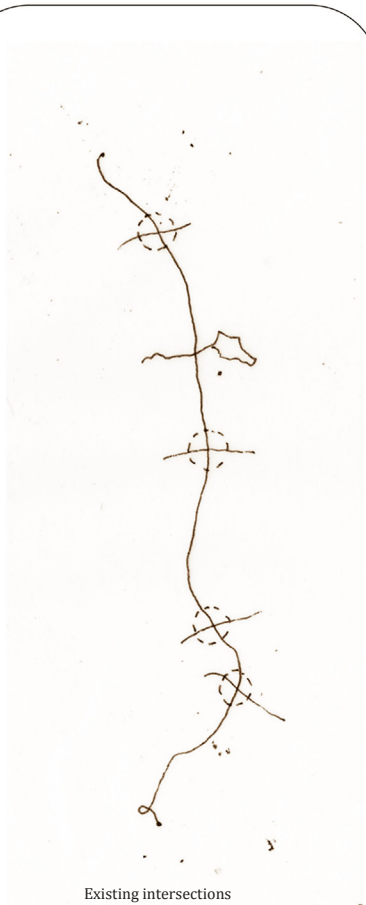


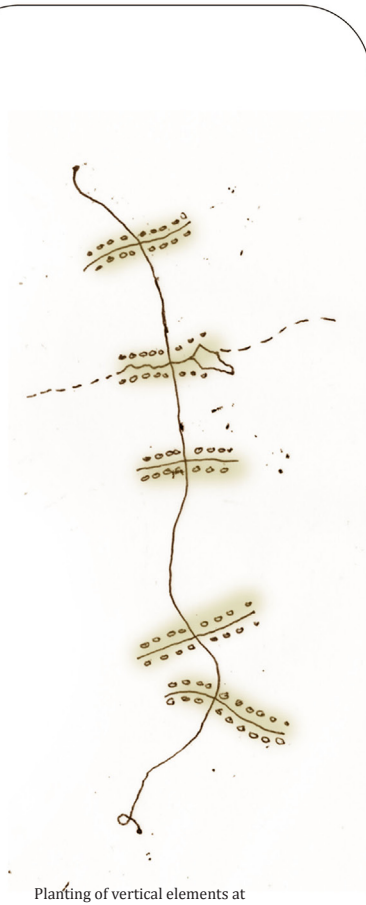
Figure 3.5. Investigation into Edges (Author, 2013)

1.3 Nodes

Along the route there are a number of intersections which form the nodes of the route. These existing nodes create important thresholds from one district to another. Emphasis on thresholds between districts is achieved through vertical planting structure which creates a spatial gateway between different land use types. This spatial strategy helps to coordinate the boundaries of land use zoning and may aid in determining where development may and may not occur. The same planting types will be used to remind the driver of the route one is on. Again, a use of regional species are selected to achieve the desired effect.

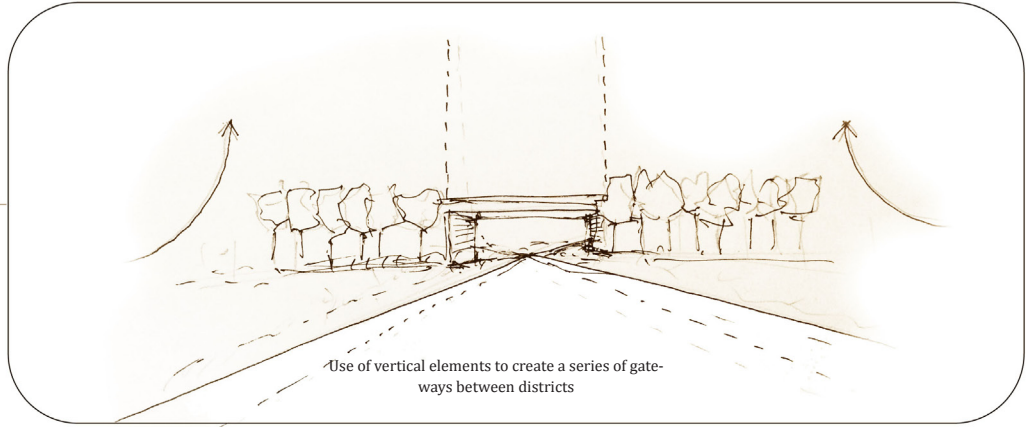


Existing intersections



Planting of vertical elements at existing intersections





Use of vertical elements to create a series of gateways between districts



Feature Aloes and succulents

- Aloe pretoriensis*
- Aloe transvalensis*
- Aloe verecunda*
- Bulbine frutescens*

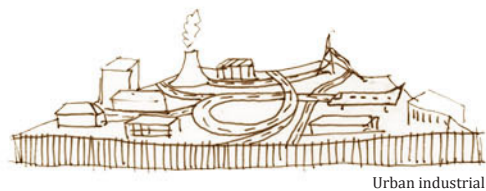
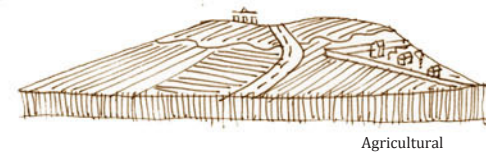
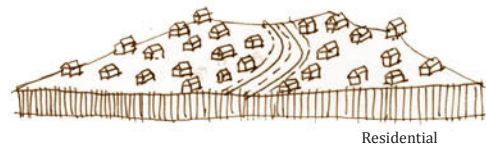
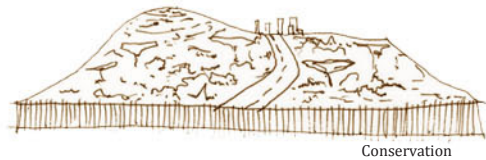
Tree species

- Euclea crispa*
- Pappoea capensis*
- Olea europaea subsp. africana*

Figure 3.6. Investigation into Nodes (Author, 2015)






1.4 Districts

Five distinct districts were identified along the route. Each district environment presented a series of either social, ecological or cultural problems and opportunities which can be addressed by the discipline of landscape architecture. The five regions discussed are presented in a south-north direction, starting from the airport to Pretoria. The environments are urban industrial, agricultural, mining industrial, residential and conservation. The author investigates these subregions of the Highveld by searching for key features on a site specific level and using these feature to enhance ones perceived experience of the region. Each district forms part of the region's cultural and biophysical authenticity and thus these regions should be celebrated as part of what makes up the Highveld landscape.



Figure_3.7. Investigation into Districts (Author,2015)

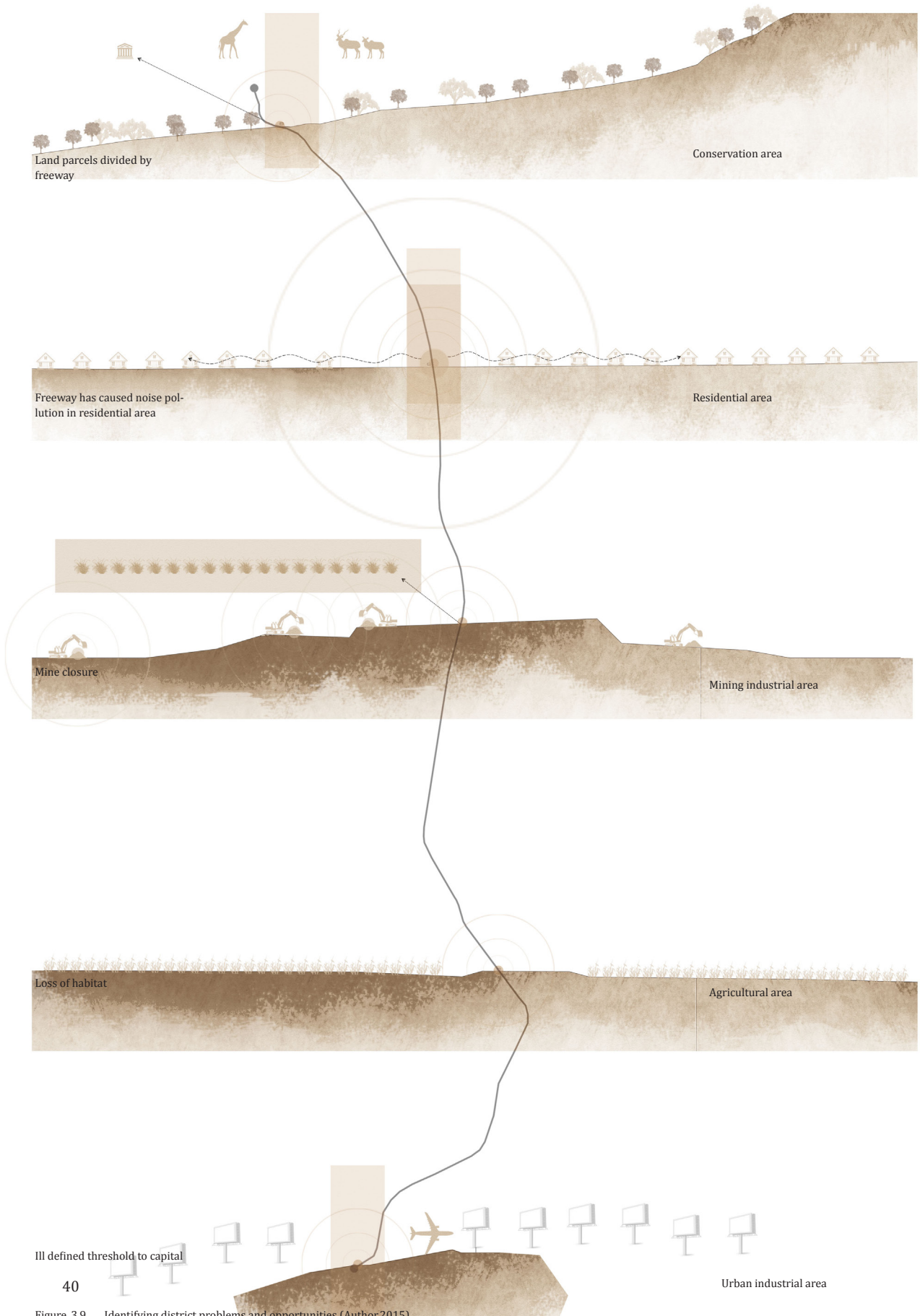
A site matrix was compiled by the author to identify problematic areas and opportune areas within the districts as well as characteristic elements found in each environment. The term 'locked' used in the matrix refers to an aspect which is hidden or not perceived as aesthetically pleasing.

	District Site	Problem	Solution	'Locked' Regional Characteristic	Opportunity
Urban industrial	A  Spaghetti junction at O.R Tambo International Airport	Ill defined threshold to capital	Gateway	Steel, lights, billboards, asphalt	Lighting gateway
Agricultural	B  Afrgri agricultural fields	Loss of habitat	Vertical habitat structure	Electricity pylon	Pylon nesting structure
Mining industrial	C  Sterkfontein brick quarry	Mine closure	Rehabilitation	Overburden soil	Soil sculpture rehabilitation
Residential	D  Irene residential	Noise pollution	Acoustic barrier	Brick housing typology	Brick design sound barrier
Conservation	E  Groenkloof and Klapperkop nature reserves	Severed land parcel	Animal bridge	Shale rock and threatened aloe species Distant view of historical monument	Eco bridge built from shale that displays threatened aloes Bridge can fram view

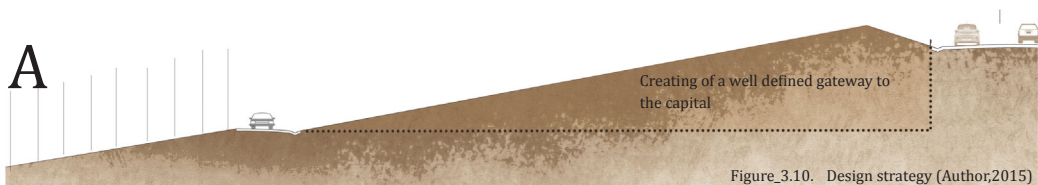
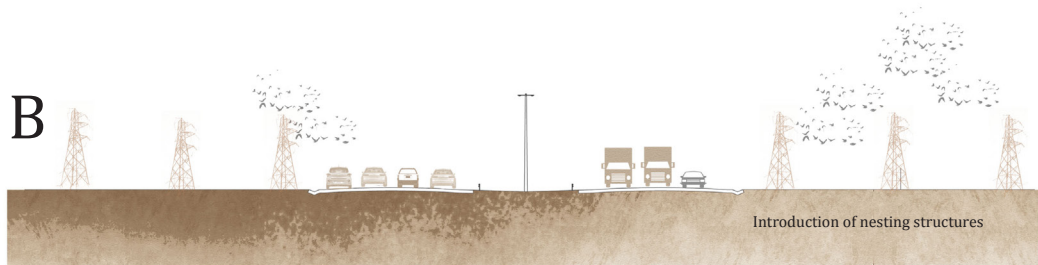
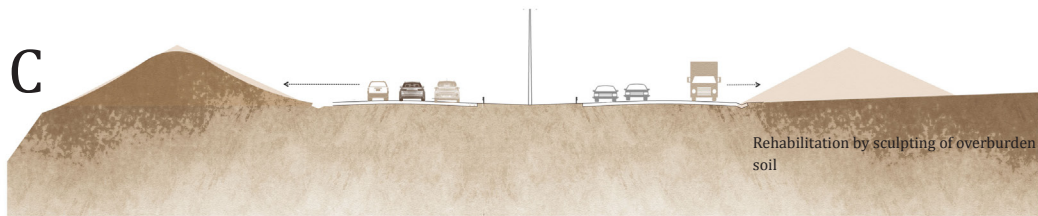
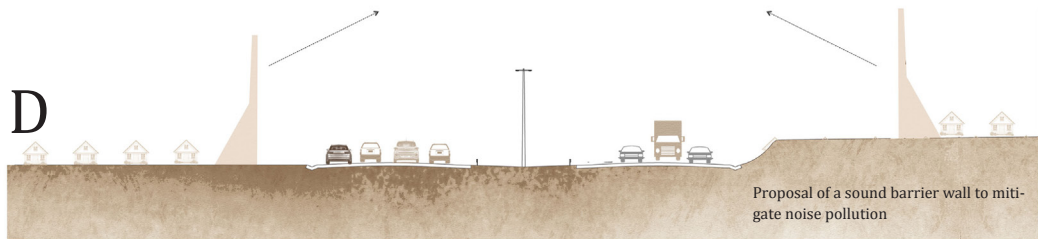
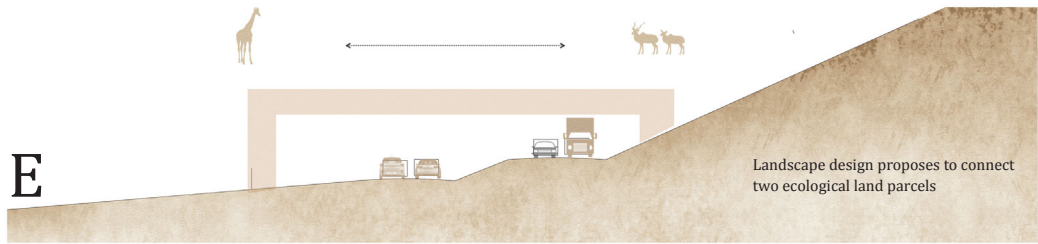
1.5 Landmarks

Through addressing the problems and opportunities with in the districts, the author investigates ways in which landmarks can be created with inspiration from the intrinsic features of each district. These landmarks embrace the character of the district, with in the Gauteng Highveld context.

Figure_3.8. Site Matrix (Author,2015)



Figure_3.9. Identifying district problems and opportunities (Author,2015)



Figure_3.10. Design strategy (Author;2015)