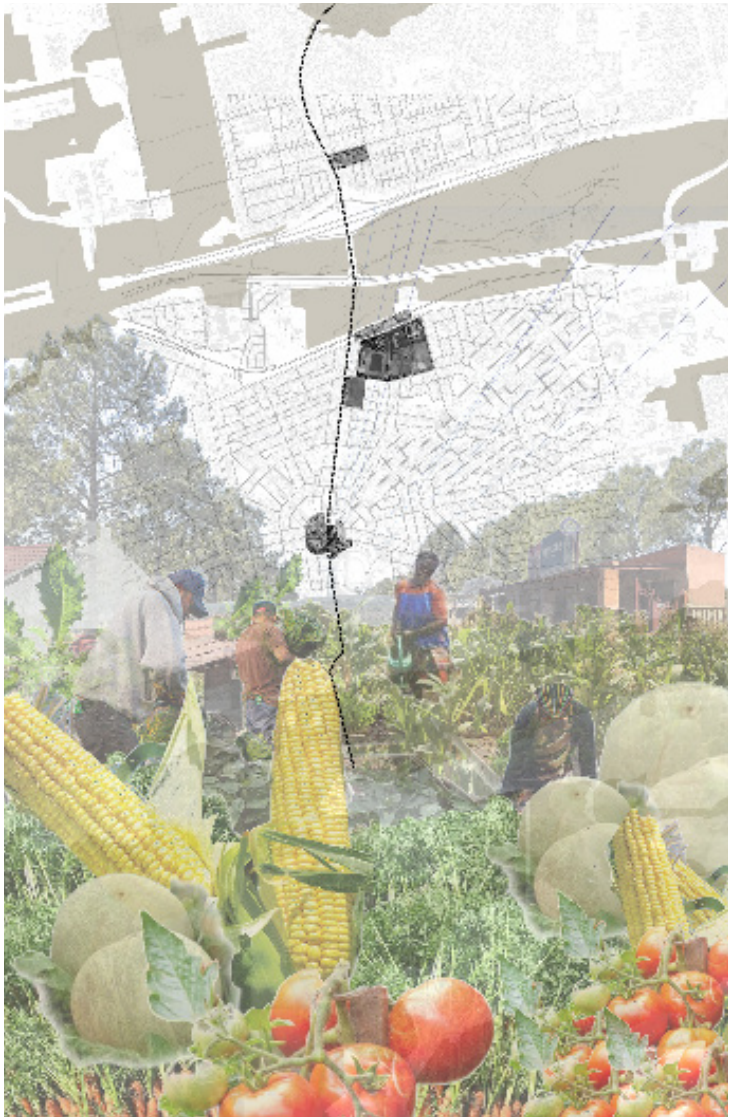

Promoting place and the ecological function of a landscape in ruin

DISCOVERING PLACE

Shemoné King

In accordance with Regulation 4(c) of the General Regulations (G.57) for dissertations and theses, I declare that this dissertation, which I hereby submit for the degree Master of Landscape Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution. I further state that no part of my dissertation has already been, or is currently being, submitted for any such degree, diploma, or other qualification. I further declare that this dissertation is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

All subjects participated voluntary and the ethical approval to engage with people for the purpose of this dissertation was received under the Integrative Green Infrastructure Planning project (GRIP).

Shemoné King
17129550
2022-08-29

PROJECT DATA

Full dissertation title:	Discovering Place: Promoting place and the ecological function of a landscape in ruin
Submitted by:	Shemoné King
University:	University of Pretoria
Faculty:	Faculty of Engineering, Built Environment and Information Technology
Department:	Department of Architecture
Degree:	Master of Landscape Architecture (Professional)
Study leader:	Dr. C A Breed and Ms. Dayle Shand
Studio master:	Mr. Johan N. Prinsloo
Course coordinator:	Prof. Arthur Barker
Site location:	Open space between WF Nkomo and Moroe Street. Farm Portion, 003500000/R, ATTERIDGEVILLE 607-JR, Region 3, City of Tshwane, South Africa.
GPS coordinates:	25º 45'42" S 28º 04' 30" E
Site description:	Public green space and urban surrounds
Client:	City of Tshwane and Private investors
Users:	Public visitors and retail tenants
Research field:	Integrative Green Infrastructure Planning (GRIP)
Theoretical premise	Urban regeneration, lost space redevelopment through green infrastructure planning and the celebration of existing cultures
Programme:	Public landscape with a cultural culinary corridor, supported by allotment gardens and performance spaces

RESEARCH FIELD

Designed Ecologies

"This field is about how we design multifunctional green infrastructure (GI) to help combat challenges of biodiversity loss, climate adaptation and food security. The Designed Ecologies research programme aims to foster the human nature relationship through social and ecological pathways. Several research projects exist within the programme, with both quantitative and qualitative approaches. This includes design experiments that test novel planting schemes and technologies to enhance urban biodiversity and ecosystem services; the refugia abilities of planting palettes; cultural relationships with nature; the role of local biodiversity in place perception and place identity; environmental justice perspectives; the selection of species for climate change adaptation; and the food security potential of indigenous species in vertical planting systems." (Botes, Breed and Shand, 2022)

ACKNOWLEDGEMENTS

To my family, thank you for your constant support and motivation.

To Dr Ida Breed, Ms. Dayle Shand, and Mr. Johan N. Prinsloo, thank you for your guidance, time, and incredible insight.

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ABSTRACT AND TERMS

The central aim of the project is to explore green infrastructure (GI) within an urban context in the Global South. Pauleit et al (2017:5) defines urban green infrastructure as "…a strategic planning approach that aims at developing networks of green and blue spaces in urban areas that are designed and managed to deliver a wide range of ecosystem services. Interlinked with GI planning on a landscape scale, urban GI planning aims at creating multifunctional networks on different spatial levels, from urban regional to city and neighbourhood planning. Due to its integrative, multifunctional approach, urban GI planning can consider and contribute to a broad range of policy objectives related to urban green spaces, such as conservation of biodiversity, adaptation to climate change, and supporting the green economy."

Green infrastructure planning methods will be explored specifically to address the problem of lost space within public open space in the city. Lost spaces are defined by Trancik (1986) as: "…the undesirable urban areas that are in need of redesign – antispaces, making no positive contribution to the surroundings or users. They are ill-defined, without measurable boundaries, and fail to connect elements in a coherent way" (Trancik 1986:4). Nonetheless, Trancik (1986) argues that these spaces can provide opportunities to designers to redevelop and rediscover hidden resources in the urban landscape.

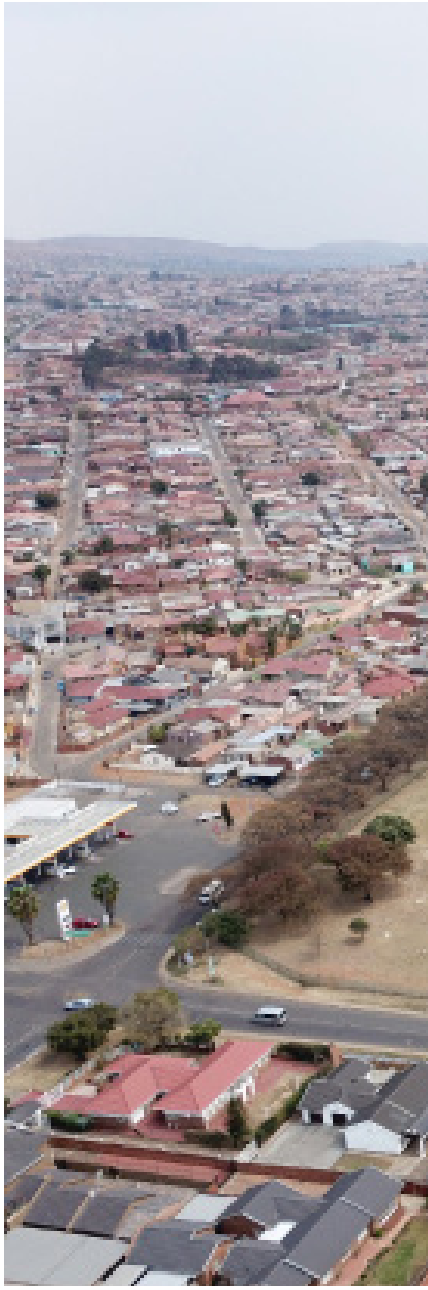


Figure 1: Aerial view of Atteridgeville (Kusel 2021)

TABLE OF CONTENTS

LIST OF FIGURES

City of Tshwane

Region 3

Atteridgeville

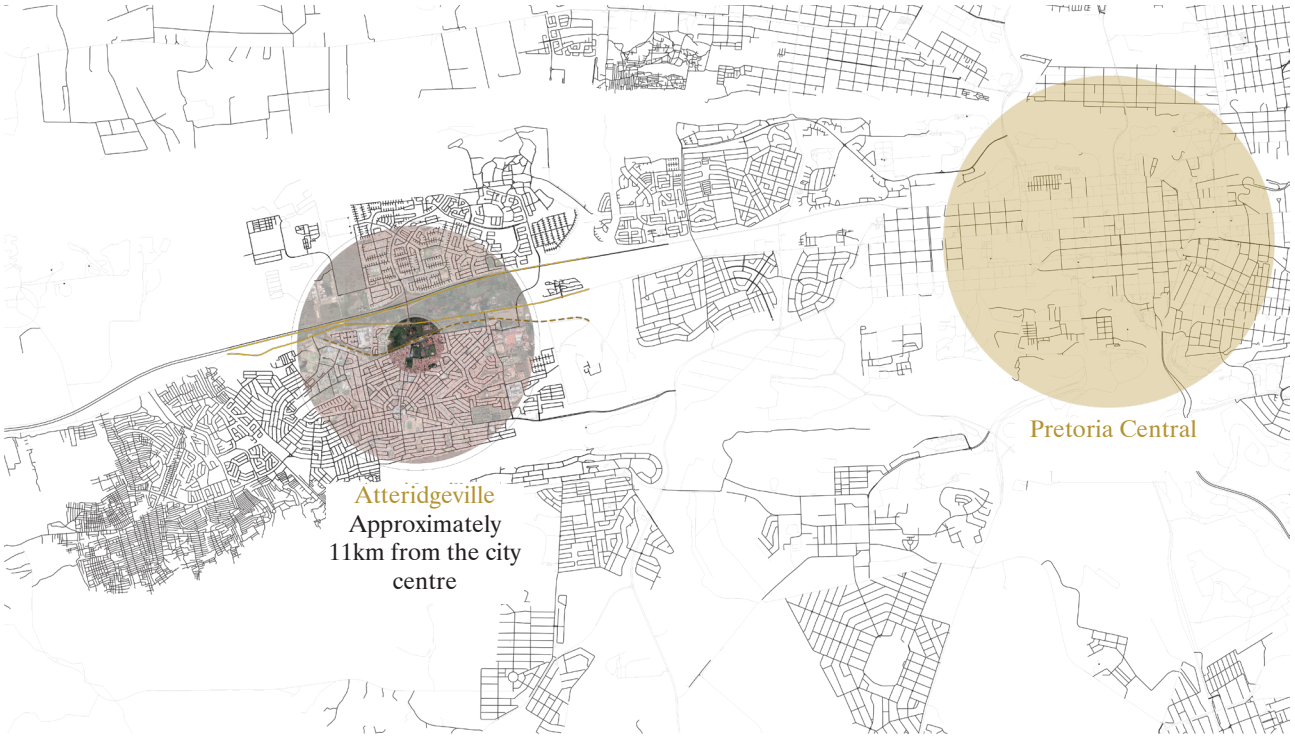


Figure 2: Locality (Author 2022)

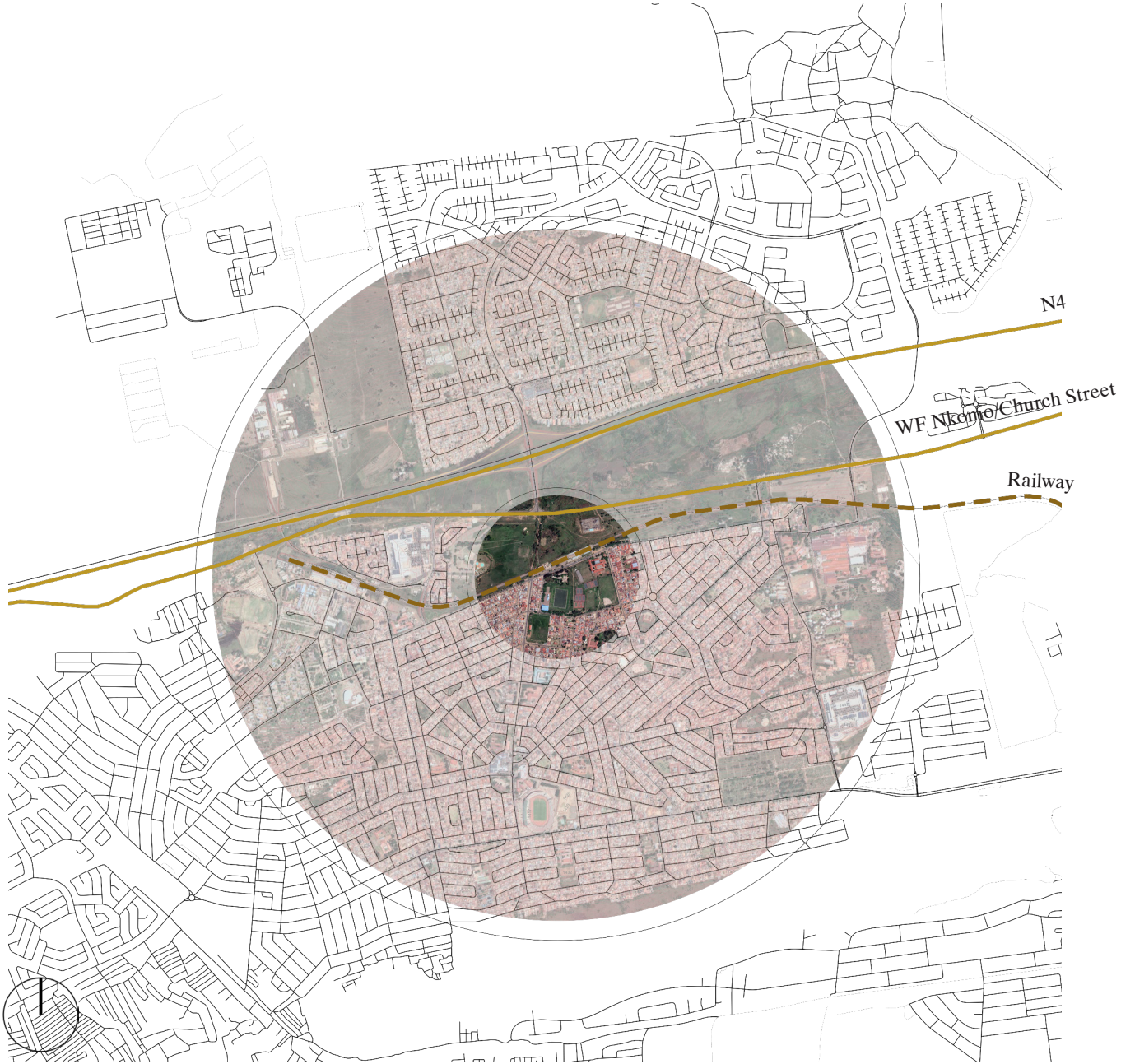


Figure 3: Locality (Author 2022)

ESSAY 1: POSITION AND SITUATION

BACKGROUND

The following essay highlights the main problems and opportunities for the project. The design project is planned for a site within Atteridgeville. Thus, as a starting point the suburb of Atteridgeville will be briefly introduced and discussed to provide context for the problem identification and research question sections to follow. It will also contribute to the motivation for the site selection. Furthermore, the project identifies opportunities of how lost spaces can be redeveloped through green infrastructure planning, as well as through the celebration of the existing cultures in the urban landscape of Atteridgeville, with particular focus on Atteridgeville's existing food culture, in the form of street food.

Figure 4: Photograph of the typical setup of food stalls

in Atteridgeville (Author 2022)

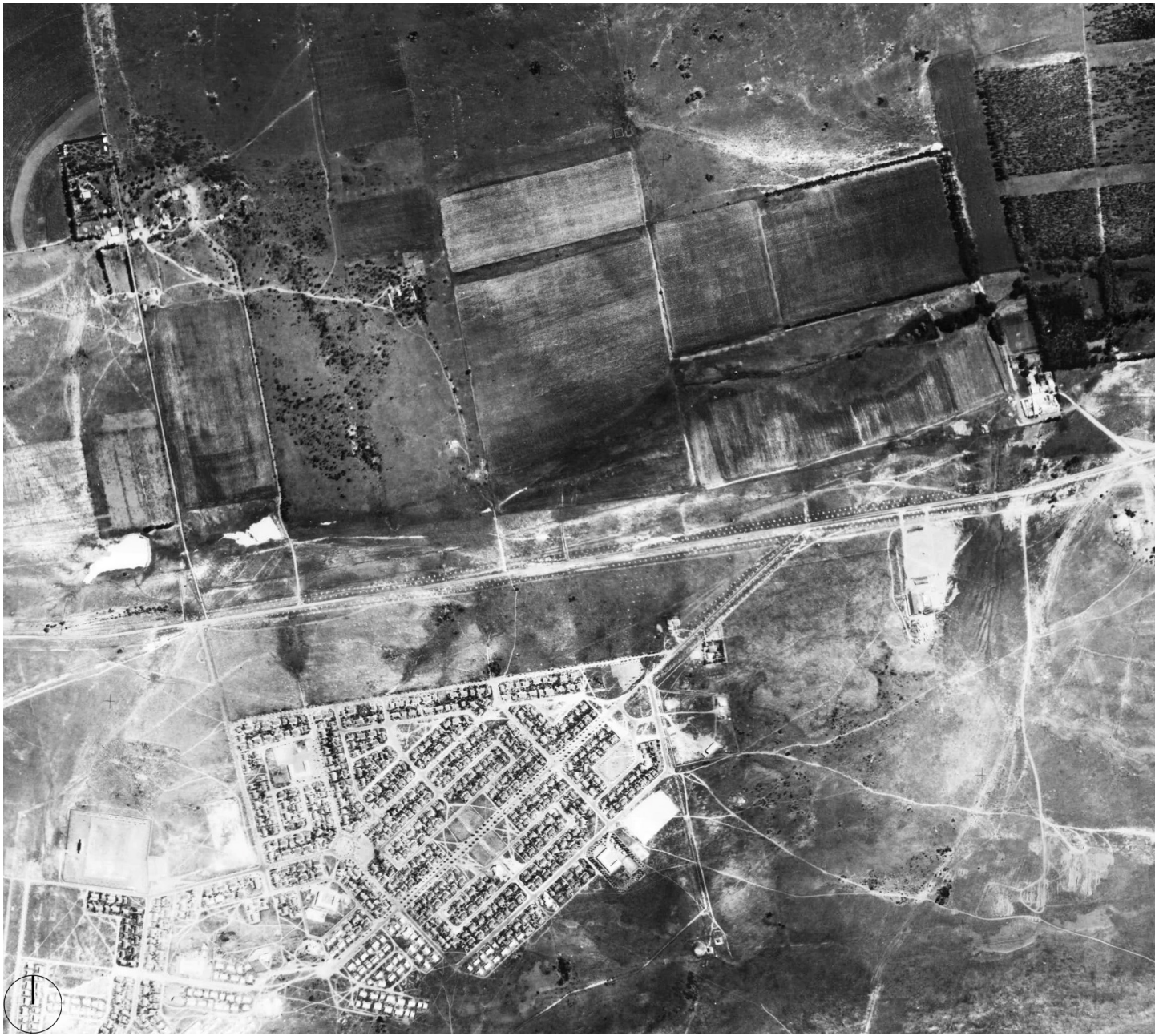


Figure 5: 1948 Historic map of farming activity in Atteridgeville (Kusel 2021)

Additionally, the urban space reveals the opportunity to integrate the historic farming culture. Although areas of farming activity have rapidly been reduced since the 1940's, many areas still showcase the Atteridgeville communities' interest and dependence on farming activity.

The sites of urban farming appears in a variety of different spaces in the urban form. Farming activity in Atteridgeville has the potential to be formalised and integrated with the culinary activities to form relationships between farmers and culinary workers and to allow culinary workers to grow their own vegetables for cooking and selling.

An additional culture with the potential to be celebrated and integrated with culinary activities is the jazz culture, a well-known tourist attraction of the capital (Atteridgeville Township Tour 2022). Developing the public space with a variety of performance spaces allow the opportunity for tourism and development of the culinary activities, developing Atteridgeville as a future destination point within the City of Tshwane

Figure 6: Photograph of the current farming activity in

n Atteridgeville (Author 2022)

1.1 INTRODUCTION TO ATTERIDGEVILLE

Atteridgeville, as a peripherally located suburb of Pretoria in the City of Tshwane, has to a large extent been shaped by the Apartheid Government. It was developed in 1940 as an outcome of Apartheid planning as one of the first 'native locations' to which Black African people were restricted. The built environment was one of apartheid's most significant methods of control, which in its essence promoted segregation of different races. Atteridgeville, characterized by its separated location from the city centre and its well-ordered rectilinear layout reveals the racist and modernist intentions of the Apartheid Government. Modern planning methods were mobilized by the Pretoria City Council to solve the housing problem and townships were separated from the city centre by industrial areas or vacant land. Townships were also planned with a limited number of entry points as a strategy to cut these areas off during periods of unrest and 'greenbelts' were used as buffer zones to segregate residents of different races. The legacy of Apartheid planning methods is still evident in townships such as Atteridgeville due to the characteristics of the modernist city that further emphasizes aspects of spatial segregation lined to the automobile (Kler et al 2007).

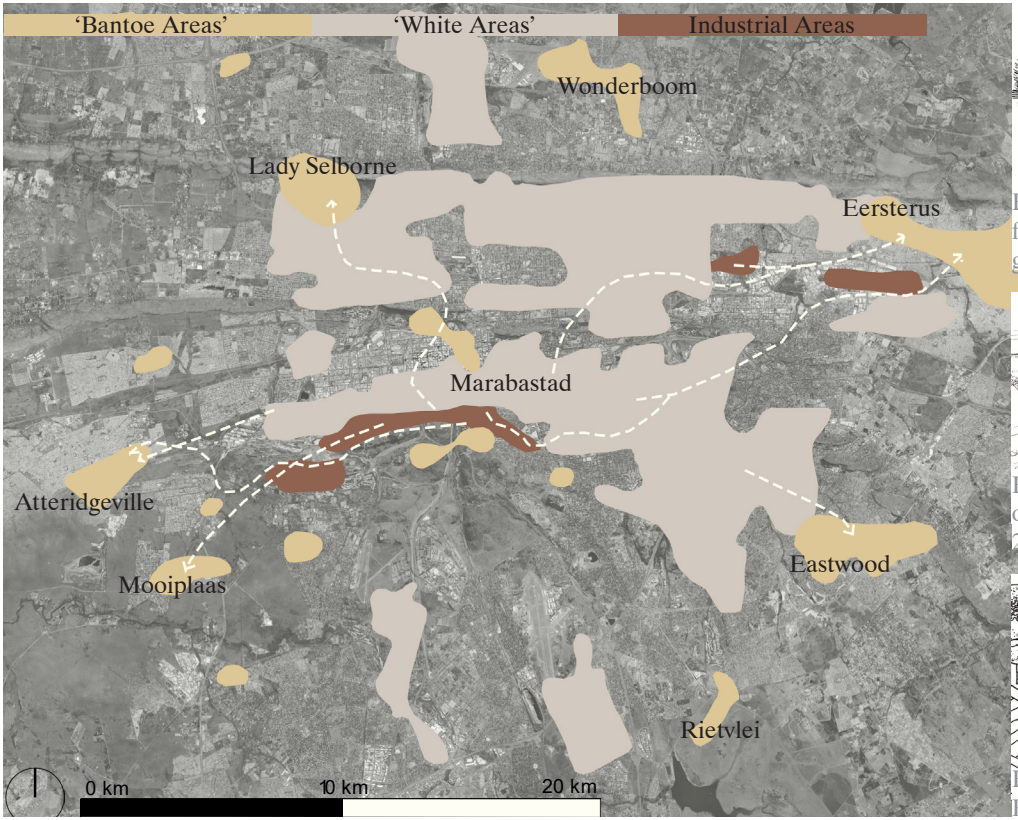


Figure 7: Digramme depicting the forced removal of people from 1951-1955 (Author 2022)

Figure 8: First people moved from Marabastad to Atteridgeville in 1940 (Author 2022)

Figure 9: First houses were built on a functionalist grid (Author 2022)

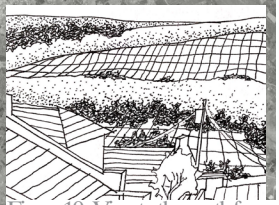


Figure 10: View to the north from Kwaggas Ridge (Author 2022)

1.2 SPATIAL PLANNING AND LOST SPACE

The first developments in Atteridgeville were informed by "functionalist" planning principles. Based on the fact that economic opportunities were reserved for the affluent White people in Apartheid South-Africa, Atteridgeville was developed as a town exclusively for its residential function to house people to work for minimal income in affluent white homes and industries (Kler et al 2007). The residential units were organized on a functionalist grid. Although this approach enables flexibility and expandability, it produced identical buildings and segregated spaces (Kler et al 2007). Krier, (1979), among others, critiques the functionalist approach, stating that this approach has led to the erosion of urban space (Trancik 1986). He explains that density and enclosure of spaces are left out in development and buildings are freely placed, which results in the disruption of the continuity of the landscape and the general loss of sense of place (Krier 1979).

Subsequent to the functionalist approach to the development of Atteridgeville, was the garden city concept, a concept developed by Sir Ebenezer Howard in 1898.

By 1969 the planning of Atteridgeville was informed by the idealized image of the Garden city concept (Anyumba 2017). But, contrary to the original intent of the implementation of the Garden City Concept, the implementation of the concept under the Apartheid regime intended to enable governmental control over urban facilities and zoning regulations. Which means that the concept was implemented for the purpose of benefitting the government of that time and not the Atteridgeville community, as a whole (Bigon 2013).

From the current urban fabric of Atteridgeville, it can be deduced that the garden city concept was not implemented to achieve a healthy interface between man and nature. It is evident that a radial plan was implemented, however no central park with landscaped avenues and boulevards extending from it can be observed, resulting in the scattered assembly of buildings on a radial grid and the interruption of continuity in the landscape leading to the emergence of lost spaces.

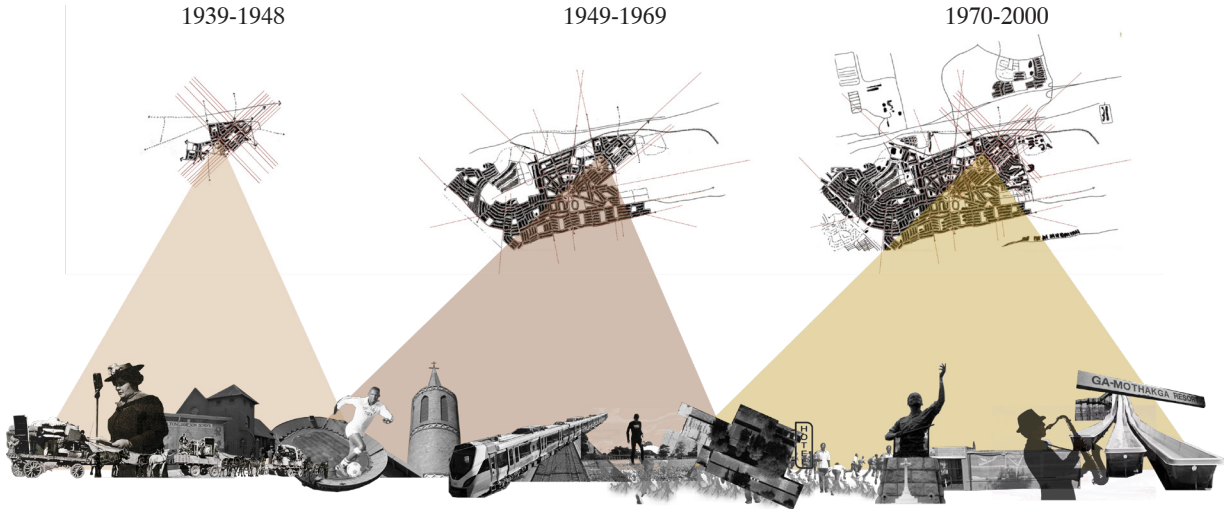


Figure 11: Atteridgeville development (Author 2022)

The current urban fabric of Atteridgeville is also affected by mobility routes, such as the N4 and Church Street, which border Atteridgeville. Although they serve as links to connect Atteridgeville with the city centre, the dominating effect of vehicles in these areas has led to a lack of pedestrian access and non-motorized transport. In addition to this, there are vast open green areas, which can be identified as 'greenbelts ', historically, used to segregate communities (Anyumba 2017). These open tracts of land become "lost spaces", due to the lack of access, no formal activities or use and consequently a loss of cultural meaning in the public green space. Many parks and recreational spaces within Atteridgeville, such as sport centres and the Ga-Mothakga Resort are fenced off and access controlled. The lack of easy access, controlled movement and degraded open spaces has led to a series of fragmented urban public spaces. Moreover, there are cultural sites that have been abandoned in recent years. An example is, the Mphebatho Hotel which has become underutilized and wasted space subsequently affecting the immediate surrounding urban space and further contributes to the emergence of lost space.

These observations of the condition of the urban open space in Atteridgeville are closely aligned with the causes of lost spaces in urban environments which were identified by Trancik (1986). The causes of lost spaces identified by Trancik (1986) includes: The increased dependence on the automobile; the Modern Movement in design of open space; Zoning and Land-use policies; the Privatization of public space; and the abandonment of sites in the inner core of the city (Trancik 1986).

To summarize, the urban landscape has significantly been influenced by the segregation strategies and modern planning methods that were employed by the Apartheid Government to enable control over 'native locations' such as Atteridgeville. The planning methods that were employed by the Apartheid Government continue to have an effect on the urban open space in Atteridgeville today, causing a fragmented, segregated, and underutilized urban public space. This leads to a disruption in the continuity of the landscape and the emergence of lost spaces, and a loss of sense of place and cultural meaning in the public green space.

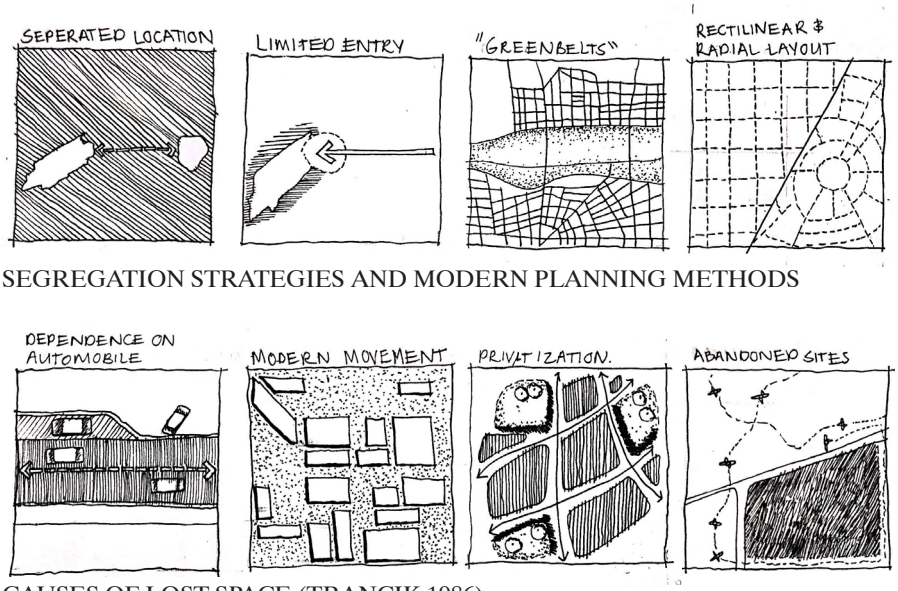


Figure 12: Causes of lost space (Author 2022)

Figure 14: 'Greenbelts' Informal pedestrian route through green space (Author 2022)

Figure 15: Automobile WF Nkomo/ Citron Road crossing (Author 2022)

Figure 16: Privatization Mbolekwa Sport Complex (Author 2022)

Figure 17: Abandoned sites Mphebatho Hotel Ruin (Author 2022)

Figure 13: Lost space in Atteridgeville (Author 2022)

1.3 PROBLEM STATEMENT

As identified above, the urban landscape of Atteridgeville, shaped by the Apartheid Government, as well as the recent planning and management of open space in Atteridgeville has resulted in the emergence of lost spaces which has negatively affected the public green space in Atteridgeville. Therefor the issues of lost space and urban green space are discussed below in terms of the overall affects it has on the availability and quality of urban green spaces, the ecological functioning of urban green spaces, and the cultural identity within urban green spaces.

The Global and Urban issue of green space in Urban Areas

The Global issue

Green spaces in urban environments might decrease in size or become more segregated, as urbanization increases, and cities become denser (Botzat et al 2016). As the urban green spaces are becoming smaller and more segregated, the contribution of urban green space to the conservation of biodiversity in cities are reduced, as well as the urban population's access to related ecosystem services (Mckinny 2008; Beninde et al 2015).

The Urban issue

According to studies conducted in South-Africa, Urban green spaces make up a comparatively small section of the total urban land cover. Furthermore, South-African studies have also revealed that the proportions of urban green space favour the former White residential areas, with the former Black areas noticeably less urban green space (Anderson et al 2020; Gwedla and Shackleton 2015). Additional to the issue of availability of urban green space to poorer communities, is the quality and condition of the urban green space as well as the specific user's expectations and needs that can be acquired through certain nature experiences (Shackleton 2021). Studies of RDP and township neighbourhoods have identified that there is a lack of space to grow specific cultural plants, which are considered critical in strengthening the cultural identity of the neighbourhood (Haynes et al 2018). Many urban green spaces in South-Africa are vandalized or neglected, leading to many of the open spaces being privatized. The restriction of the use of these spaces prevents the green space to contribute to a sense of place (Shackleton 2021).

The issue of lost space in urban areas

Lost space emerges in urban spaces through a variety of urban processes (Kremer et al 2013) and has become a significant barrier to the regeneration of urban areas (Kim 2018). Although ecological processes do occur in some areas of lost space, such as vacant land (Bradshaw 2003), these areas are usually ill-maintained and associated with negative activities, such as dumping (Kremer et al 2013), which leads to the loss of ecological function in lost spaces. Furthermore, the lost spaces that emerge around mobility, as street spaces have lost their commercial and social role, leading to the loss of cultural meaning in these spaces. Lost spaces that have emerged due to the lack of enclosure of these spaces, during urban development has led to the loss of sense of place (Krier 1979). Additionally, the sense of community is also reduced due to lost spaces in the form of abandoned buildings, as these areas attract illegal activities and convey negative images (Goldstein et al 2001).

The Landscape design opportunity of lost space and green space in urban areas

Opportunity exists for designers to redevelop and creatively fill in lost space to rediscover hidden resources in the urban space (Trancik 1986). Through considering the existing form and character of the existing buildings and the surrounding landscape, landscape architecture can establish clear and coherent connections in the old and new use of

urban space, to promote the availability and quality, ecological functioning, and cultural identity of the urban space in Atteridgeville.

Research Questions

1. How can lost space in Atteridgeville be developed through considering green infrastructure principles and important place-making moments?
2. How can the history and cultural identity of Atteridgeville be celebrated through a landscape-based intervention to link people to place?
3. How can the community derive direct benefits from green space whilst considering the existing cultural interactions with the green space?

1.4 METHODOLOGY

Research Methodology

The research conducted for this design project falls within the interpretivist research paradigm. Data observed from site visits and desktop studies, along with the theoretical concepts of lost space, as well as ideas presented in the literature review to follow is reflexively constructed and interpreted. Furthermore, the methods of acquiring data from the site involves interpretive strategies, such as Historiography and Ethnography (Deming and Swaffield 2011).
Thus, this project recognizes the narrative of historic events and human actions. The data is acquired through literature and other graphic evidence, in order to obtain an understanding of the urban space and historical importance.
In addition, an ethnographic approach will be followed by actively acquiring data through observation and interviews.

The observation activities within the community seeks to identify the cultural identity of the community. Furthermore, interviews with food stall owners seeks to understand the varying aspects of the food culture in Atteridgeville. Interviews with community members are focused on people's perceptions of the Mphebatho Hotel ruin, in order to understand its importance in the community, as well as to understand the communities' perception regarding the future use of the site.

Design Methodology

From the investigation conducted in the form of a desktop site analysis and fieldwork, a site has been identified for further analysis based on its potential value for redevelopment. Trancik's (1986) strategies to develop "lost spaces" will be considered for the design project on a framework level as well as for the sketch plan design. These strategies include figure-ground theory; linkage theory; and place theory (Trancik 1986).
Concept development will be informed by Trancik's (1986) place theory to extract the important cultural and historic features from the site analysis and fieldwork. It will also be supported by relevant precedent studies to further develop the food culture as the central theme and programme of the design project.
Further design development will require the analysis and interpretation of the data from the interviews conducted on the site, as well as a set of typological studies to inform the design.
This project will also include the technical investigation of a culinary landscape, along with an investigation of the proposed water systems, planting design and agricultural crops, and materiality.

1.5 SITE SELECTION AND DESCRIPTION

Since the establishment of Atteridgeville in 1940, Atteridgeville has developed into its current state of diverse nodes of residential, recreational, and economic opportunities making it a potential destination point within the City of Tshwane. The important history and development include the development of the Railway station in 1958; the Mbolekwa Sport Complex (under authorization by the City of Tshwane) developed in 1966; and the Mphebatho Hotel Ruin built in 1974 indicate the cultural value of the landscape. The hotel was considered as a site of celebration as it was the first hotel built in a Black African township in South-Africa. The hotel has however not been functioning since the early 2000's. Also, important to note is the jazz culture in Atteridgeville. Jazz events have been held at the Ga-Mothakga Resort since 2008. The railway station; the Mbolekwa sport Complex, the Mphebatho Hotel Ruin; and the Ga-Mothakga Resort are concentrated along important mobility routes connecting to the city center, such as the railway line and W.F Nkomo Street.

These sites, along with the connector routes divide Atteridgeville by forming part of the lost spaces identified above. They also separate the residential and commercial nodes to the south from the undeveloped ecological green belt to the north, preventing ecological connectivity in the urban open space. Thus, the masterplan site selection will be focused along the sites identified above as lost spaces and the green open space which surrounds it, as this area has the potential to not only develop into a destination point with cultural opportunity, but also to connect green spaces in the urban open space to promote the ecological functioning of the landscape.

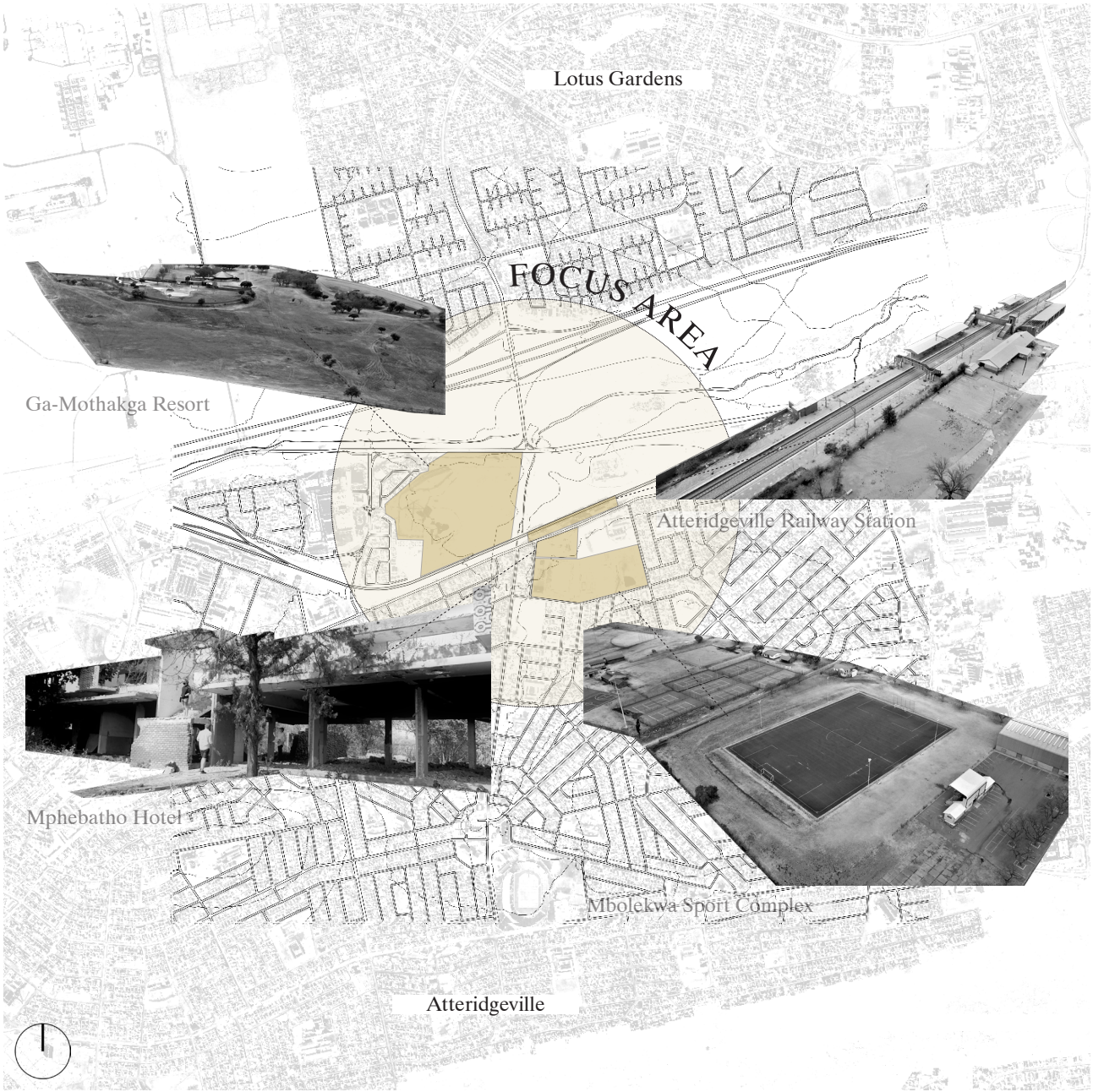


Figure 18: Site selection (Author 2022)

1.6 LITERATURE AND FRAMEWORK REVIEW

From an analysis of the history of Atteridgeville it can be deduced that the urban space, but more importantly the urban green space, has been affected by development strategies implemented by the Apartheid Government and the recent planning and management of open space in Atteridgeville. The following section will discuss the urban open space of Atteridgeville through a review of the existing open green space, discussed in the Landscape Open Space Framework (LOSF) for Atteridgeville. It will be followed by a review of the importance of urban green space in terms of the ecological and socio-cultural benefits that it provides and how green infrastructure can be used to activate and manage the emergence of lost space in urban areas.

The urban open space of Atteridgeville

Five different open space typologies are defined in the Landscape Open Space Framework (LOSF for Atteridgeville 2008) which include: green nodes and ways; blue nodes and ways; grey nodes and ways; brown nodes and ways; and red nodes and ways. This section will however specifically be focused on the green nodes and ways; the brown nodes and ways; and the red nodes and ways for the purpose of potentially linking and strengthening these urban forms to improve ecological systems, activating "lost spaces" by activating the green space and improve accessibility, as well as to enhance symbolic elements in the urban form and provide important placemaking moments.

Green nodes and ways include ecological systems, such as ridge or hill systems in which ecological systems processes and values are concentrated (LOSF for Atteridgeville 2008). The road network and rapid residential development in Atteridgeville creates a disconnection between the hills and the open space network, hence limiting public access and recreational use of the green open space (LOSF for Atteridgeville 2008).

Brown nodes and ways include informal and formalized recreational Open Spaces and different types of "movement" space (LOSF for Atteridgeville 2008).

The LOSF also include agricultural land use as part of the open space typologies. Despite it not being included in the ROSP (Regional Open Space Plan), potential exists for the expansion of agricultural activities on the land between the N4 and Church Street, as the Skinner Spruit flows through this area (LOSF for Atteridgeville 2008).

Red nodes are defined as: "…the most important "Place-making moments" in the city structure." and the Red ways as: "…ceremonial routes and boulevards that link symbolic elements (Red Nodes) or Brown Nodes" (LOSF for Atteridgeville 2008).

According to the LOSF, there is a need for more place-making moments to form part of the open space network. More importantly even though the existing place-making elements allow for visual linkages, the red nodes and ways do not have recreational function (LOSF for Atteridgeville 2008).

Green space: Ecological and Socio-cultural Benefits

It is also important to reiterate that there are several essential ecosystem services that are acquired from green open spaces (Abass et al 2019). Green spaces provide many ecological and socio-cultural functions in urban areas. Green spaces in urban environments play a crucial role in the ecological functioning of the urban environment (Abass et al 2019). Green spaces create habitats for different plant and animal species, consequently contributing to biodiversity. Other environmental benefits include climate regulation and flood control (Abass et al 2019). The natural ecosystem which exists in urban green spaces, can provide recreational space, food, and aesthetic experiences, which in turn encourage social activity (Ka´zmierczak 2013). Green spaces can also contribute the mental and physical health of urban dwellers through a variety of direct positive effects that can be acquired in the form of social engagement, exposure to nature and increased physical activity (Douglas et al 2017).

Furthermore, urban green space can facilitate place attachment, as the public space plays a role in social interaction and social integration (Botzat et al 2016).

Green Infrastructure and the activation of lost space

Urban green spaces must be managed to prevent the prevalence of lost spaces in urban environments. Urban green infrastructure planning can facilitate in transforming lost spaces from derelict sites to sites to sites for greenways, which in turn can form part of the green open space network (Kim 2018).

Pauleit, et al (2017) explains that urban landscapes are all different from each other through the proportion of coverage of urban green and blue spaces; the heterogeneity of green space forming green networks; and urban areas are dynamic i.e., changes in green space caused by urban growth and green space management. These characteristics of the urban green space must be considered for potential green infrastructure planning (Pauleit et al 2017).

Green infrastructure planning does not only have the potential to promote the physical and mental well-being of citizens, but can also aid in biodiversity conservation, improved environmental quality, lowering of the ecological footprint, combat climate change, promote social cohesion, generate economic benefits, engagement with social and environmental problems, as well as lower the risk of natural hazards (Pauleit et al 2017). The physical and mental well-being of citizens are promoted through the ecosystem services which green infrastructure planning can provide. These services include regulating services, supporting services, provisioning services and cultural services (Pauleit et al 2017). Thus, green infrastructure planning throughout the green open space network has the potential to improve the natural open green space system, as well as allow the community to derive direct benefits from the urban green space. Recent studies propose that vacant land be introduced with agricultural features to enable green infrastructure development (Kim 2018; Hwang 2019), thus introducing food networks in green open spaces which will allow the community to derive direct benefits from green spaces. Urban agriculture can improve sustainability, by increasing the tree canopy, provide green space and mitigate stormwater runoff. Furthermore, urban agriculture assists with social resilience, improve quality of life, provide food, and allow for educational and job opportunities (Kim 2018).

Pauleit, et al (2017) identifies seven green infrastructure principles for the successful planning and implementation of urban green infrastructure. The first four principles listed relates to the planning content:

(1) Connectivity: "…interlinking green spaces functionally and physically." (Pauleit et al 2017:16).

(2) Multifunctionality: "…combining different functions to enhance the capacity of urban green space to deliver valuable goods and services. The ecosystem services concept is suggested for operationalizing multifunctionality." (Pauleit et al 2017:16).

(3) Gray-green integration: "…integration and coordination of urban green with other urban infrastructures in terms of physical and functional relations." (Pauleit et al 2017:16).

(4) Multiscale: "…linking different spatial scales within and above city-regions." (Pauleit et al 2017:16).

The last three green infrastructure principles relate to the planning process:

(5) Strategic: "Urban GI planning is based on long-term spatial visions supplemented by actions and means for implementation, but it remains flexible over time." (Pauleit et al 2017:16).

(6) Interdisciplinary and transdisciplinary: "…integrates knowledge and demands from different disciplines such as landscape ecology, urban and regional planning, and landscape architecture, and it is developed in partnership with different local authorities and stakeholders." (Pauleit et al 2017:16).

(7) Socially inclusive: "…collaborative, socially inclusive processes." (Pauleit et al 2017:16).

1.7 STATEMENT OF APPROACH

Lost space in the urban open spaces are seen to limit green open space functionally and physically, leading to the loss of a place's important history and cultural identity. Relph (1976) explains that the creating, experiencing, and maintaining of significant places are important as they "…are sources of security and identity for individuals…" and are "…a fundamental aspect of man's existence in the world…" (Relph 1976:6).

An investigation of the historic and cultural influence of a place, as well as the effects on the planning of the built environment was used to identify the existing character of a place and can aid in identifying the existing opportunities and threats for the development of a specific place.

From an understanding of the ecological and socio-cultural benefits that green spaces provide; this project will consider the green infrastructure planning principles identified by Pauleit et al (2017) to improve the natural open green space system and to promote the physical and mental well-being of citizens.

Furthermore, this project will aim to discover place in the suburb of Atteridgeville by linking and strengthening place-making moments in the green space system through a phenomenological approach of accepting the human experience and meaning.

ESSAY 2: DESIGN RESEARCH

BACKGROUND

Open space systems have unique place identities; however, lost spaces impede the generation of place identity and leads to the loss of cultural meaning in public space. Discovering place in Atteridgeville requires an urban approach to connect lost space and important place-making moments. The programming of open space must express place identity, and allow community interaction and development, which will in turn allow opportunity for the suburb to attract potential visitors and become a destination point within the City of Tshwane.

To focus the design investigation, the existing built environment, and the open space system of Atteridgeville must be understood, followed by the important history and cultures of the local communities. Thus, requiring a multi-scale approach in terms of analysis and the identification of issues and opportunities.

An urban approach will be taken first to develop lost spaces through a study of the urban solids to voids and the elements which link different parts of the city. Furthermore, lost spaces can also be developed through identifying and adding components of history and culture (Trancik, R., 1986). Thus, the urban analysis will be followed by a study of the important aspects of history and cultures in the community.

Analysis of the specific conditions of the site, along with precedent studies, are used to develop an appropriate programme for the site, which will be focused on how specific place-making programmes (red nodes and ways) can be integrated with the open green space system and ecologically important areas (green nodes and ways) The programmatic design-informants will lead to a concept which will guide the development of the design.

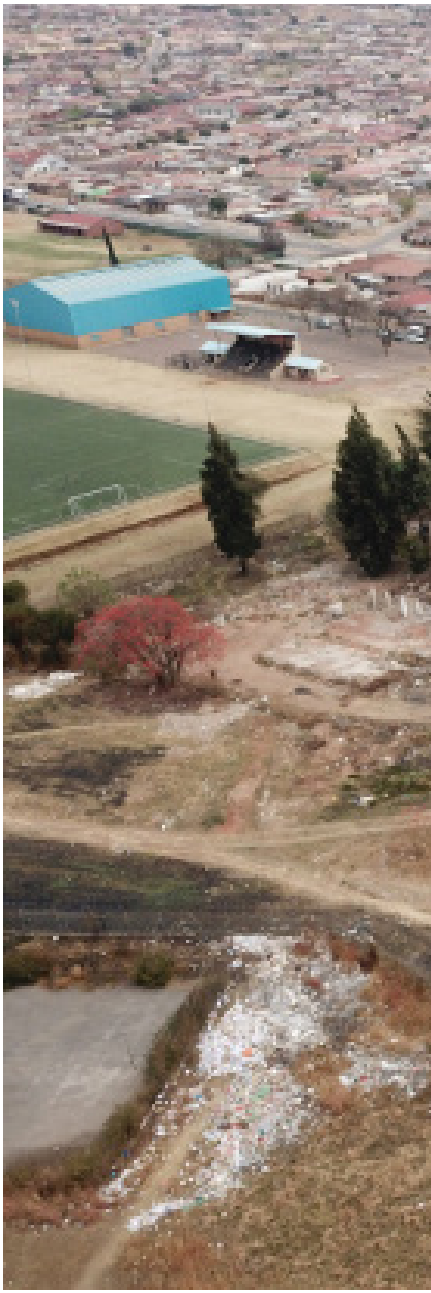


Figure 19: Aerial view of Atteridgeville railway station

(Kusel 2021)

2.1 URBAN CONDITIONS

The urban layout of Atteridgeville reveals a divided suburb, resulting in the lost spaces identified in Figure 12. From an ecological point of view, the green nodes and ways, which are areas in which ecological systems are concentrated, have been encroached on by development. The rapid urban development of the surrounding context has also caused ecological sites to be divided. The green belt on the northern periphery of Atteridgeville is divided from the Atteridgeville hills and Kwaggas Ridge, south of Atteridgeville. Divided ecological sites leads to the issue of decreased ecological functioning of the sites, as well as the open green space system (LOSF for Atteridgeville 2008).
The existing blue nodes and ways in Atteridgeville, consisting of the Skinner Spruit and various wetlands running to the east through the green belt also has have the potential to form ecological links. However, the ecological functioning has also been reduced by development, as the tributary joining Skinner Spruit from the south has been canalized along Komane Street (LOSF for Atteridgeville 2008).

Minimal red nodes and ways can be observed in the urban fabric, and as such minimal place-making moments. As proposed in the LOSF, place-making moments must be integrated with open green space systems, however the open green space system lacks recreational function and consequently opportunity for place-making elements and visual linkages (LOSF for Atteridgeville 2008).
In consequence, the condition of the green nodes and ways; the blue nodes and ways; and the red nodes and ways are contributing to the issue of lost space in Atteridgeville, as these components are not integrated throughout the open green space system.

Figure 20: Green nodes and ways
(Author adapted from the LOSF)

Figure 21: Blue nodes and ways
(Author adapted from the LOSF)

Figure 22: Red nodes and ways
(Author adapted from the LOSF)

Regional Spatial Development Framework (RSDF)

The Regional Spatial Development Framework has zoned areas for specific types of development. The focus area mainly consists of green space, zoned as an Ecological Support Areas (ESA). The focus area is surrounded by nodes to be developed as local nodes and these areas are connected by the main rural roads, which includes Citron Road, Moroe Street, Komane Street and Seeiso Street (RSDF 2018). The Saulsville Railway Station, west of the focus area is zoned as the area for transport orientated development (RSDF 2018). For this reason, the Atteridgeville railway station, within the focus area, will be developed as a local transport node, focused on the pedestrian user. However, it will provide access for vehicles to the station from W.F. Nkomo Road, on the northern periphery of the focus area. Thus, a four-way intersection is proposed by the Citron Road / W.F. Nkomo Road intersection, to provide vehicular access to the Atteridgeville Railway Station. This will provide further potential for the focused area to be developed as a local node to be integrated into the Regional Spatial Development Framework and connect the main rural roads.

Land use

Figure 23 illustrates the existing for land use development (Tshwane Web GIS 2022). Atteridgeville is seen to comprise largely out of residential areas, making up most of the land between the green belt and Kwaggas Ridge. Educational zones are dispersed throughout Atteridgeville, however, only provide secondary and primary educational opportunity, with no opportunity for tertiary education. Municipal, governmental, and business zones are grouped along Komane Street, activating the street edge in this area. Activity is, however, cut-off where Komane Street meets the Atteridgeville Railway station. The railway separates Atteridgeville from the green space to the north, disconnecting the area.

Other zones surrounding the Atteridgeville Railway Station have also been identified as lost space, such as the privatized Mbolekwa sport Complex and the Mphebatho Hotel Ruin.
The existing urban zoning reveals zones of importance in the community, which are used daily by the residents of Atteridgeville. The municipal, business, and governmental zones grouped along Komane Street forms an important urban spine. To situate the focus area within the larger context, it is proposed that the urban spine be continued to the north, providing ease of movement through the focus area to Lotus Gardens.

Circulation

The primary vehicular routes which include the N4, W.F Nkomo Street, Citron Road, Moroe Street, Komane Street and Seeiso Street border the existing open green space. Although the high dependence of vehicles on these routes are affecting pedestrian access and access within the open green space system, the primary pedestrian routes exist along these vehicular routes. Limited informal access can be observed from the primary routes into the open green space. Informal pedestrian access points mainly exist between Komane street and Citron Road revealing the desire for pedestrians to cross the open green space to and from the Komane Street / Moroe street intersection and the W.F Nkomo Road / Citron Road intersection. The informal pedestrian access points have given rise to dumping and safety issues within the open green space, thus it becomes critical to formalize these the access across this open green space.

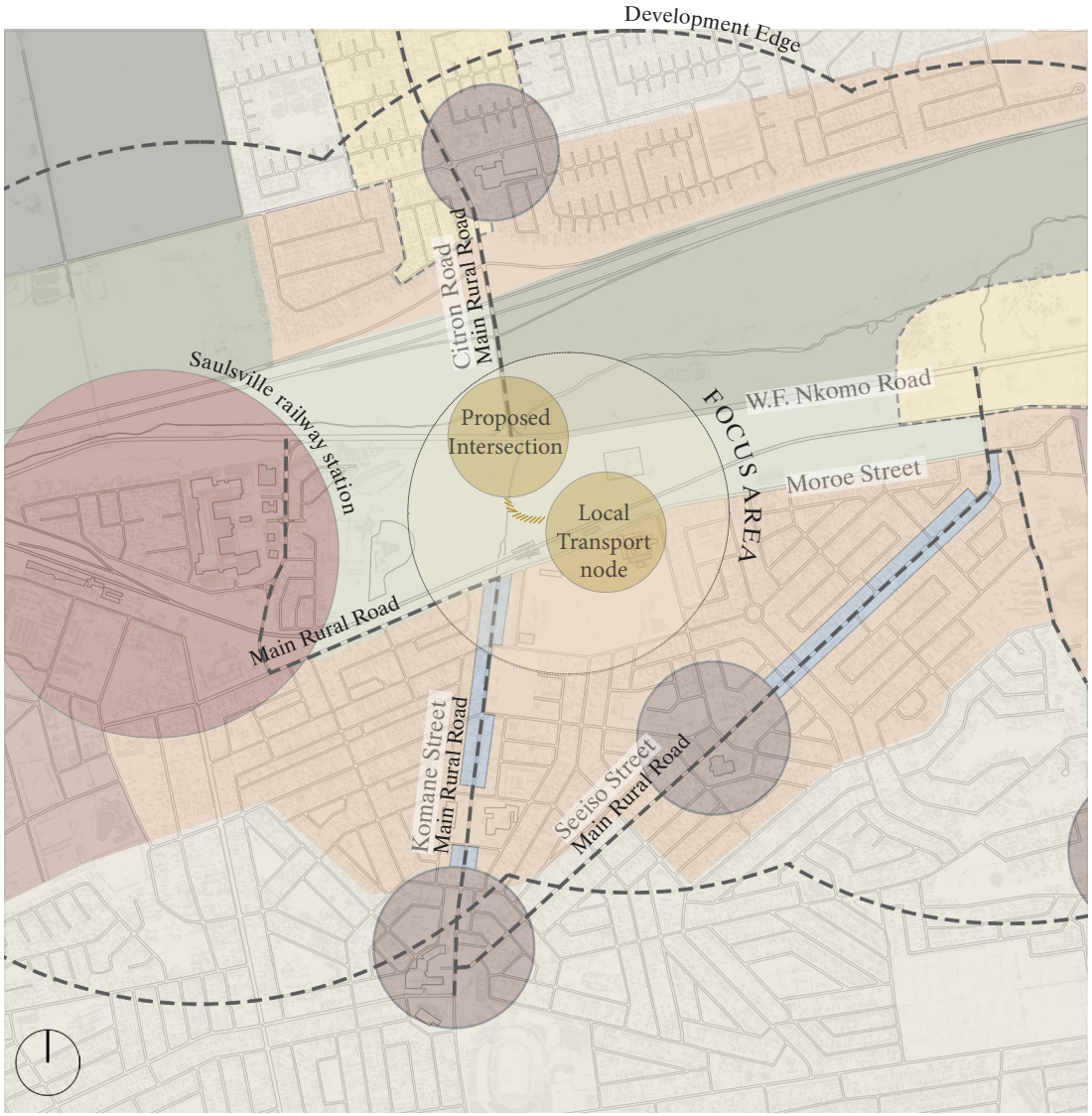


Figure 23: Regional Spatial Development Framework(Author adapted from the RSDF 2018)

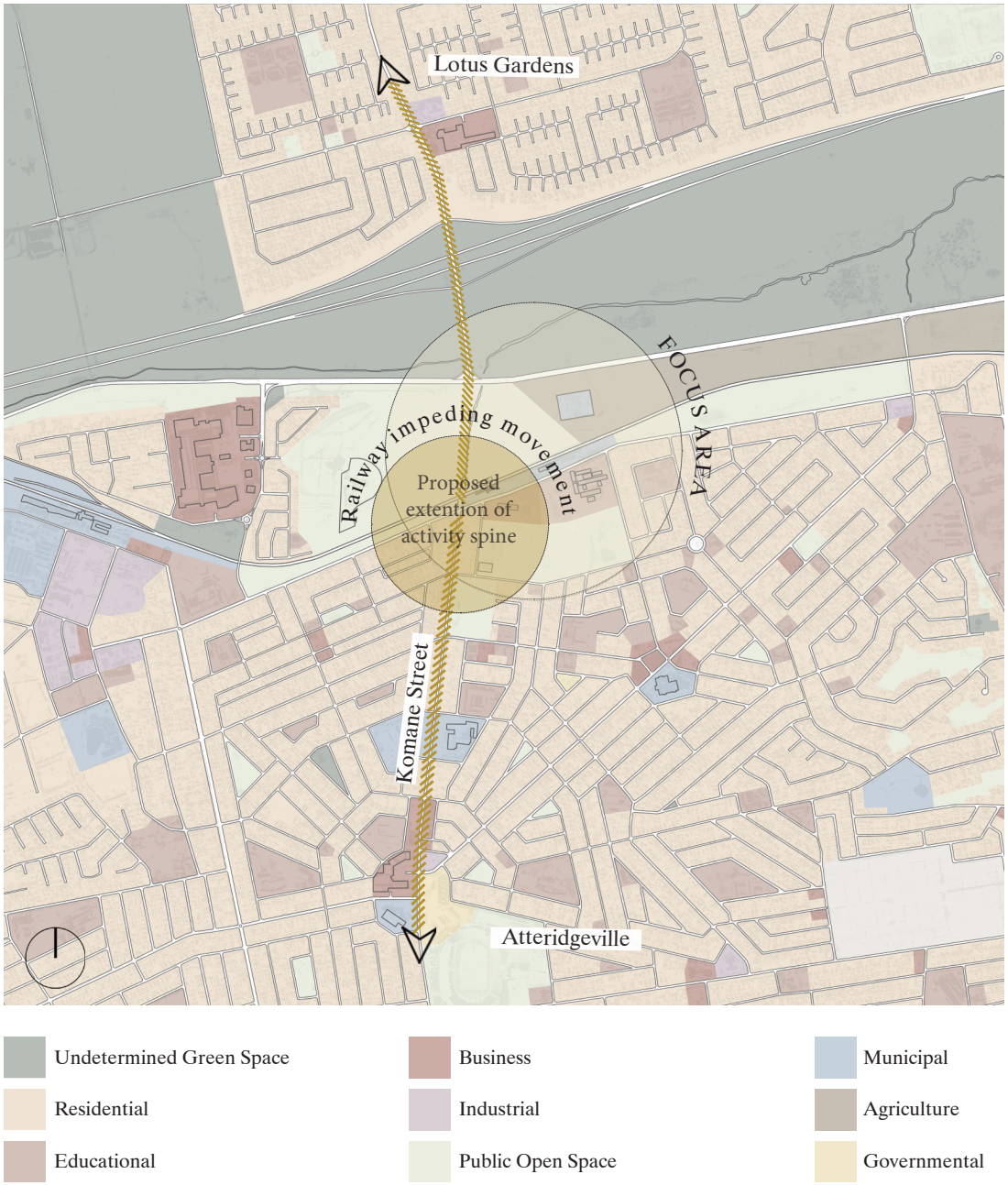


Figure 24: Land use map (Author adapted from Tshwane Web GIS 2022)

From an analysis of the existing pedestrian circulation within the focus area, it can be seen that a desired path exists across the green space, between the pedestrian bridge crossing the railway and W.F. Nkomo Road. This path is identified as the primary pedestrian route to cross the green space, allowing pedestrian users to travel between Lotus Gardens in the north and Atteridgeville in the south.
It is proposed that such a pedestrian route to form part of the development of the green space to preserve familiar movement routes and allow the proposed development to fit within the larger framework.

Another desired path, diagonally crossing the green space, can also be observed. This path connects W.F. Nkomo road to the Atteridgeville Railway Station. Users travel this route to move to and from the Railway Station, however, can be unsafe as pedestrians need to cross the railway to get to the Train Station. It is proposed that a secondary Train Station building be developed on the northern side of the railway to control pedestrian access to the railway, as well as to serve as a taxi drop-off point, which can connect taxi users to the railway.

Figure 25: Vehicular circulation (Author)

Figure 26: W.F. Nkomo pedestrian node (Author)

Figure 27: Pedestrian bridge pedestrian Node (Author)

Figure 28: Moroe Street pedestrian node (Author)

Figure 29: Pedestrian circulation (Author)

Pedestrian Users:

-Railway users
-Food stall users
-Community to shopping centers
-Waste management workers

Pedestrian routes along vehicular routes

Informal routes within green space

Pedestrian Nodes

2.2 PRECEDENT STUDY [01]

Tourist and Leisure Centre_Vila-Seca, Salou, by EMF Landscape Architects

This project physically connects the municipality of Salou to neighbouring urban areas, through green infrastructure development. Large, multifunctional green corridors are developed within the urban space which articulates the public heritage of the areas. The project aims to provide resilient public development, adaptable to the surrounding urban landscape, as well as the current and future population (EMF 2017).
Atteridgeville, developed from a township into the urban landscape it is today, requires the consideration of the future populations. Green corridors, with a consideration of culture has the potential to not only improve environmental sustainability, but also to develop a landscape that is rooted in time and place. This project illustrates how placemaking moments (red nodes and ways) can be integrated with ecologically important areas (green nodes and ways).

Figure 30: Masterplan illustrating culrural spaces integrated in the public space through green corridors (EMF 2017)

Figure 31: Scheme basses subsurface purification , lateral channel treated water (EMF 2017)

Figure 32: Scheme permanent irrigation ponds and floating plant islands (EMF 2017)

Figure 33: Green corridor (EMF 2017)

2.3 URBAN APPROACH

As discussed in Essay 1, Trancik's (1986) strategies to develop lost spaces involves the Figure-ground Theory, Linkage Theory, and Place Theory. It is critical for the designer to take an integrated approach to incorporate all three theories for the purpose of defining and manipulating the urban solids to urban voids; to organize connections between different nodes; and to respond to the unique elements of the urban space and to respond to the specific human needs (Trancik, R., 1986).
The following investigation will discuss the structure of Atteridgeville in terms of the three theories, for the purpose of layering elements in the urban space of Atteridgeville to collectively connect different parts of the urban space. Figures 26-28 below, illustrates the potential of these concepts in the Atteridgeville urban space

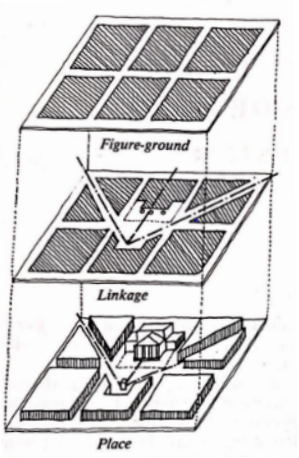


Figure 34: Urban design theories to develop lost space (Trancik 1986)

Figure 35: Figure ground Theory : relationship of urban solids to voids (Author)

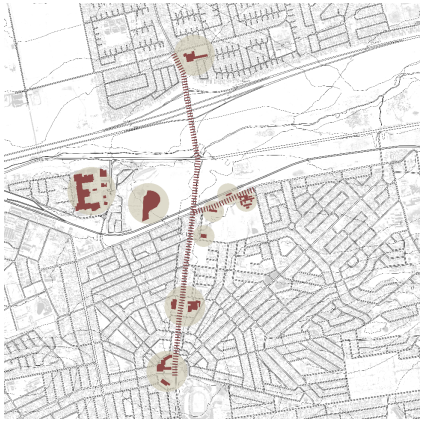


Figure 36: Linkage Theory : Movement routes that connect parts of the urban space (Author)

Figure 37: Place Theory: The existing urban form and the cultural and historical contexts (Author)

Figure-ground Theory

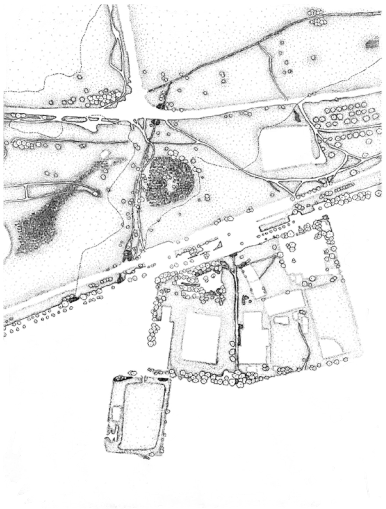
The Figure-ground Theory is "founded in the study of the relative land coverage of buildings as solid mass ("figure") to open voids ("ground")" (Trancik, R., p. 97, 1986).
The urban solids are defined by the "Public Monuments or Institutions", the "Predominant field of urban blocks"; and the "Directional or edge defining buildings". The purpose of this investigation of the urban form is to interconnect the different solids through design where urban voids can start to emerge and create linkages in the urban solid network (Trancik, R., 1986). "Public Monuments or Institutions" are solids which serve as centrepieces and visual foci points in the urban fabric. The visual foci points which can be identified from the area includes the Mphebatho Hotel ruin; the Community Centre, situated within the Mbolekwa Sport Complex; Phelindaba Secondary School and the Atteridgeville Train Station. The Atteridgeville train Station, along with the train station infrastructure, as well as the pedestrian bridge which crosses the railway can be identified as the "Directional or edge defining Buildings". The "Predominant field of urban blocks" is formed by a grid pattern, but juxtaposition of the smaller to the larger blocks exists (Trancik, R., 1986).
Figure 39 simply illustrates the relationship of the urban solids to urban voids in Atteridgeville. From this illustration, the disconnection of Atteridgeville, south of the railway and the green open spaces, north of the railway becomes clear. Despite the fact that urban voids can be observed in between the urban solids, on the south, it has already been argued that these spaces are lost spaces, as they consist of privatized and abandoned sites. The urban fabric, north of the railway consists merely of urban voids, with no integration of urban solids. Consequently, the urban solids and voids are not well integrated, as a result of the lost spaces and the barrier of the railway.
The existing pedestrian bridge, crossing the railway, permits movement, however, is observed to be an undesirable route, resulting from various factors.

Consequently, pedestrian users cross the railway in areas that are not safe, such as the stormwater channel, located next to the bridge. Beside the fact that it was explored for this design project to demolish the existing bridge and propose a more accessible and desired route to cross the railway, it would not be economical. Thus, for this design project, opportunities will be explored to better integrate the existing bridge with the surrounding landscape, to provide a more desirable route for pedestrian users.
To integrate the existing urban solids and urban voids, the green space, north of the railway, needs to be developed. The lost spaces, south of the railway, such as the Mphebatho Hotel ruin and the privatized sport complex need to be re-imagined allowing pedestrian permeability and use.

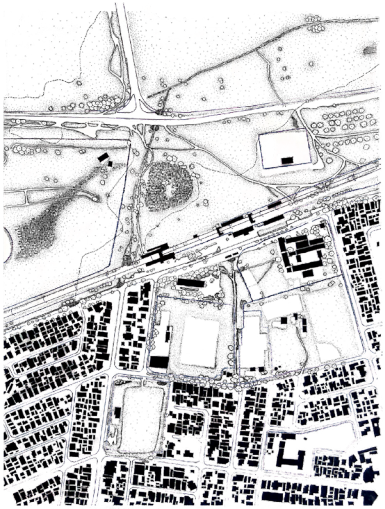
Figure 38: Existing pedestrian bridge crossing the railway (Author)

Figure 39: Existing pedestrian bridge crossing the railway (Author)

Urban solids



Urban voids



Urban solids and voids

Figure 40: Mapping of solids and voids in Atteridgeville (Author)

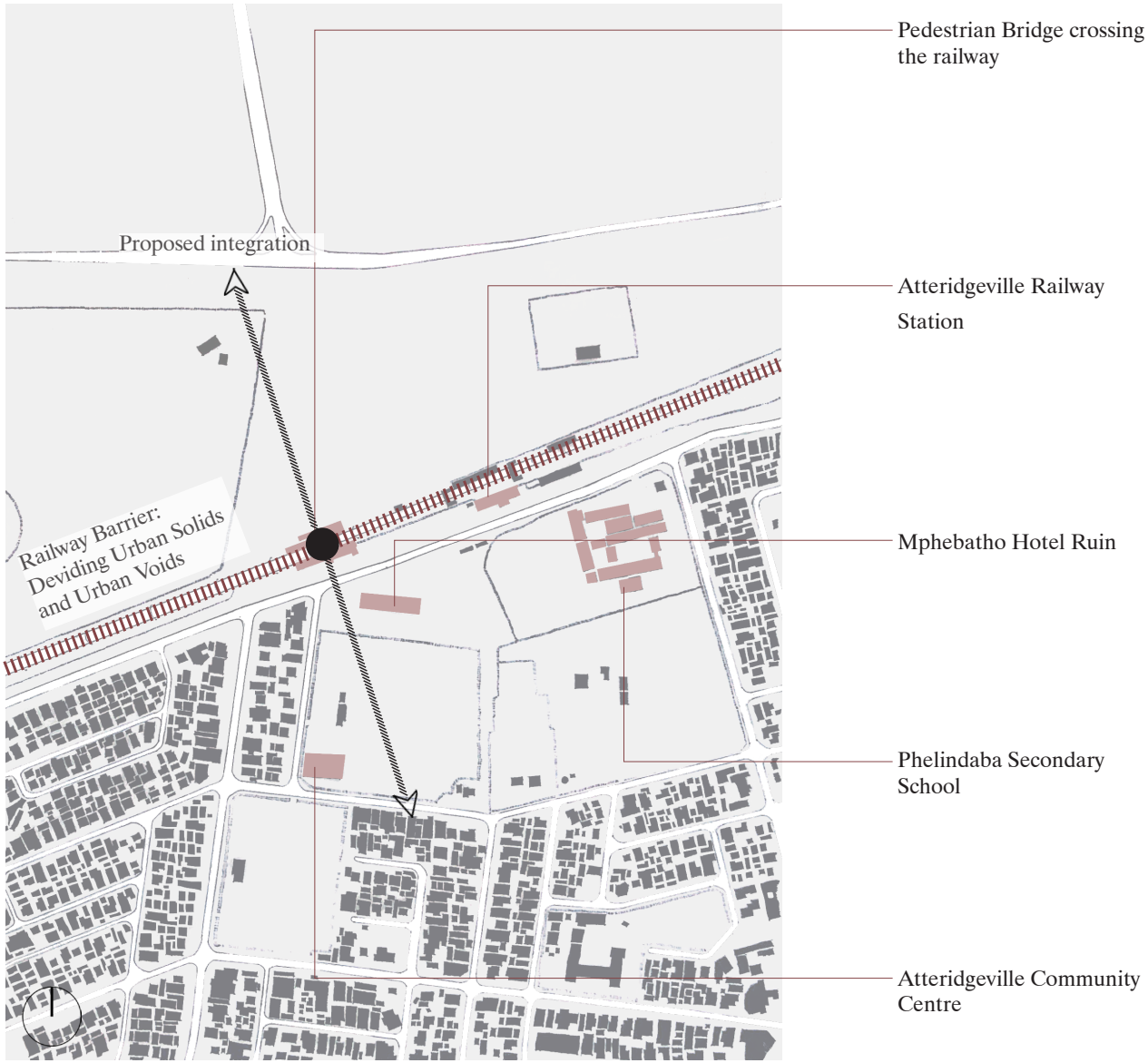


Figure 41: Relationship of urban solids to urban voids (Author)

Accessible to different users (ramps and stair) Location (close to movement routes)

STRENGTHS

Undesirable to use (hard edges, unnatural movement, hard surfaces)

WEAKNESSES

Connect with pedestrian link to WF Nkomo Rd Add structures (resting platforms, access points, planting and materials)

OPPORTUNITIES

Does not protect the user from changing weather conditions (heat and rain)

THREATS

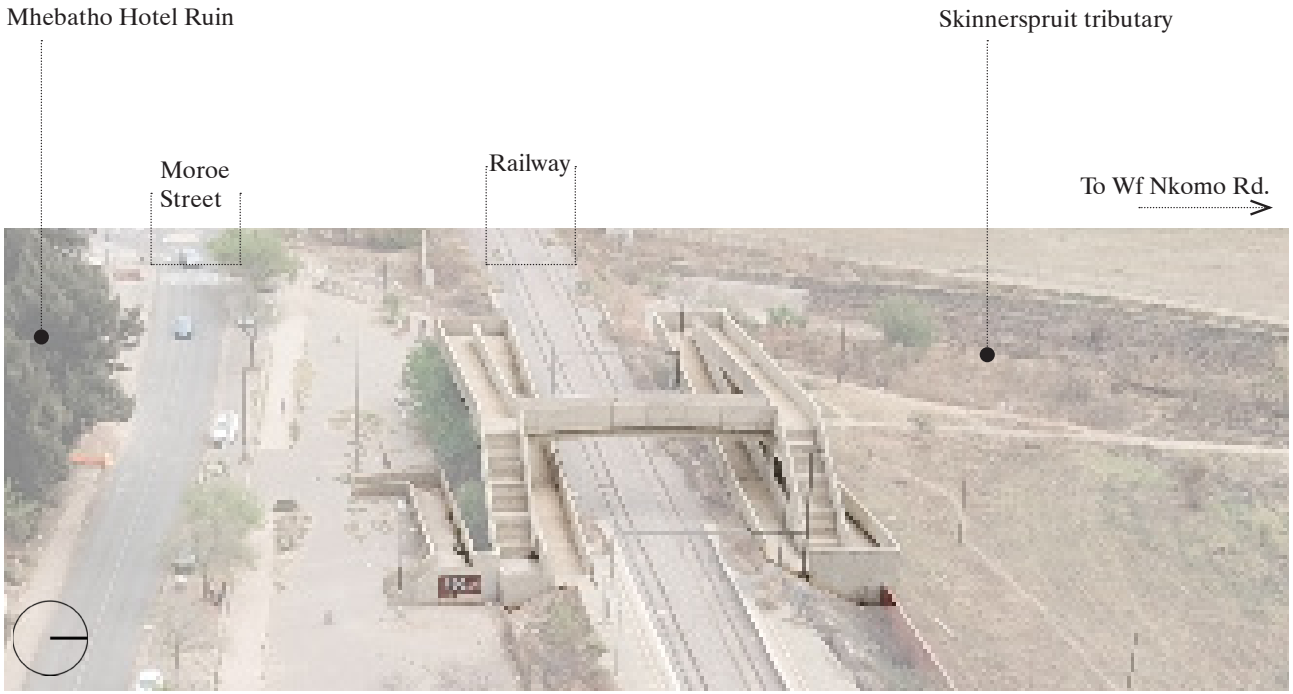


Figure 42: The existiing bridge S.W.O.T analysis (Author)

Linkage Theory

Linkage Theory is "formed by streets, pedestrian ways, linear open spaces or other linkage elements that physically connect parts of the city." (Trancik, R., p. 97, 1986).
"Compositional form"; "Mega form"; and "Group form" is defined by Trancik (1986) as the three formal types of spatial linkage. Compositional form is the type of urban linkage which is made up of individual buildings. Linkage is implied by individual buildings in the urban form. Mega form connects structures through imposing linkages on a larger framework in order to connect different functions to make a structure. Group form does not imply nor impose linkage (Trancik, R., 1986). The aim for this type of spatial linkage is allow connections to naturally evolve. The Linkage theory investigation supports and strengthens the Figure-ground Theory, therefore, the proposals made from the investigations of urban solids and urban voids will be developed in the investigation of spatial linkage.
There are three formal types of spatial linkage. Firstly, the individual buildings, which consist of the important destinations in the urban space were considered. Secondly, a framework is imposed, to set up an area which will give structure to the urban open space. Lastly, considering proposals made in the Figure-ground investigations, new linkages can evolve from the urban framework.
The investigations of Figure-ground and Linkage theories sets up the base for masterplan development. These theories aids in the generation of an open space framework which considers the existing urban solids and urban voids and improve spatial linkages, through new proposals, from the investigations.
In conclusion, the green nodes and ways; blue nodes and ways; and red nodes and ways, depicted in Figures 34-36, has the opportunity to be developed to better integrate urban solids and urban voids and provide linkages throughout the urban space. Continuing the important ecological sites (green nodes and ways; and blue nodes and ways), to the south of the urban space and potentially connect to Kwaggas Ridge, allows for ecological connectivity.
Thus, for masterplan development, it is proposed that the green spaces, south of the railway, be developed to improve ecological connectivity, through bio-swales , to capture surface runoff, as well as suitable planting to prove tree canopy and habitat creation. Introducing place-making moments (red nodes and ways) to the north of the railway can further enhance the relationship of urban solids and urban voids, as well as linkage in the urban space. It is proposed that this space be programmed to allow for the existing cultures of Atteridgeville, introduced in Essay 1, to be celebrated.
The cultural landscape, existing out of the proposed culinary corridor, urban farming, and performance spaces, forms the focus of this dissertation and will be discussed further in the sections to follow.

Figure 43: Masterplan proposal (Author)

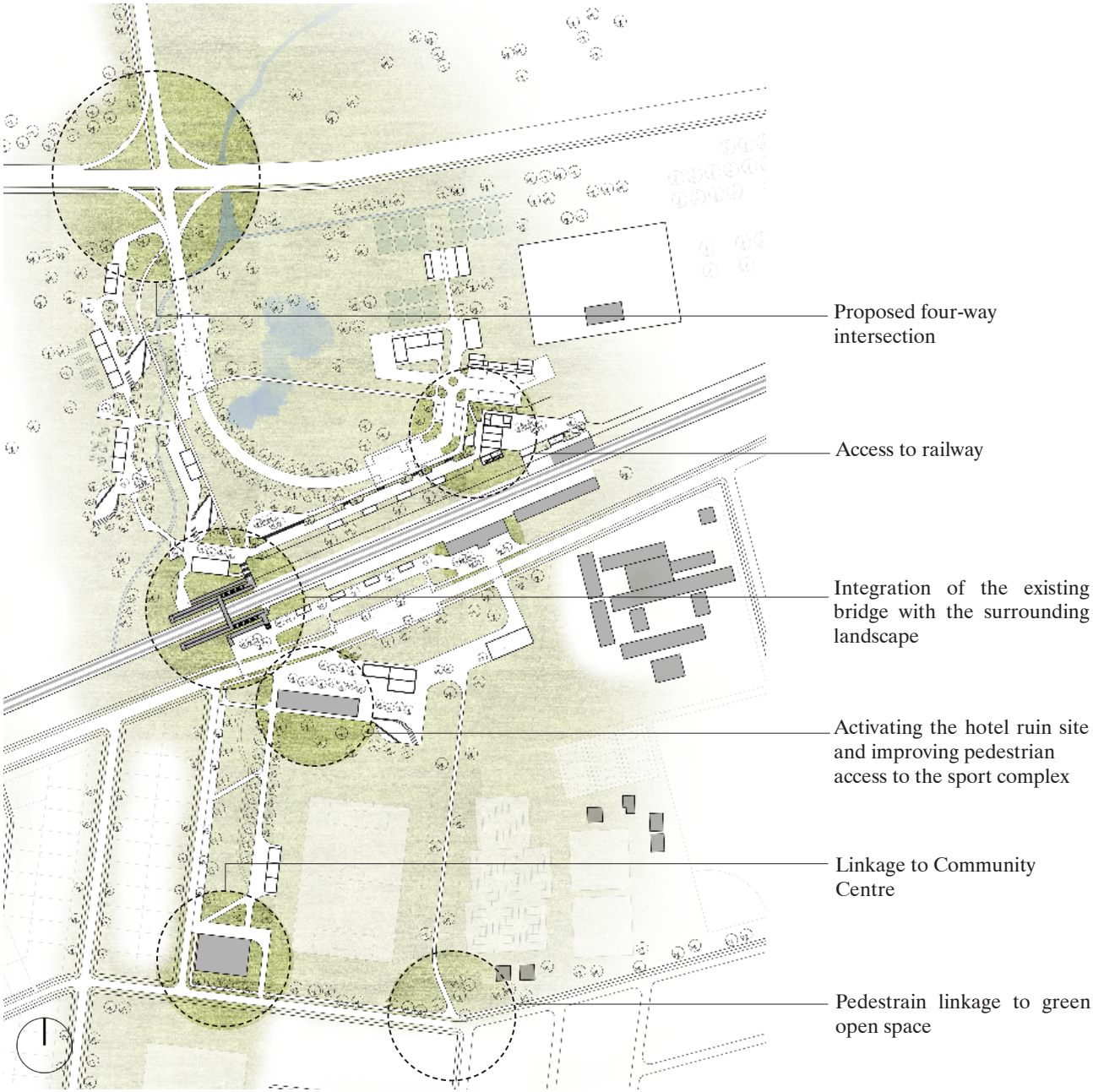


Figure 44: New spatial linkages (Author)

2.4 CULTURAL AND HISTORICAL APPROACH

Place Theory

Place Theory "adds the components of human needs and cultural, historical, and natural contexts." (Trancik, R., p. 97, 1986).
Voids have the potential to link the urban form, however Place Theory aims to uncover meaning through the tangible as well as the intangible urban space to create place. The intangible urban space involves the element of time, just as the physical urban form does, but also includes the local history, users' needs and visual perceptions, users' cultural values, the indigenous materials used as well as economic and political realities (Trancik, R., 1986).
The culinary, farming and jazz culture, identified as the main cultural activities, were briefly introduced in Essay 1. The Mphebatho Hotel ruin was also identified as an important historic landmark, despite the fact of it not being a historic building. The Hotel ruin still carries great importance and meaning to the residents of Atteridgeville. The cultural activities along with the Mphebato Hotel ruin forms part of the distinctive identity of Atteridgeville, and will be discussed in the sections to follow, along with precedent studies which will inform the programmatic requirements of the design project. The culinary informants will be discussed in more depth as the programming of the site will be centred around the development of a culinary corridor.

Mphebatho Hotel Ruin

Although the site has been neglected and vandalized since the early 2000's, interviews conducted with the community members have revealed that the site still carries meaning among community members. Most of the interviewees were aware of the site's importance of being the first hotel built in a township in South-Africa and many of the interviewees discussed the different services that the hotel building offered to the community as its function changed over the years. Since 1974 the building served as an accommodation with dry-cleaning facilities. The building was also used as a pub where the residents could socialize and buy alcohol. The memories of these activities that occurred on the site shaped a memorable relationship between the residents of Atteridgeville and the Hotel ruin. Consequently, it is proposed the building be repaired and reused, to be developed as a place-making moment (red node) in the landscape to be integrated with the public space and the proposed ecological ways (green ways). The proposed programme of the site will be influenced by the programme of the culinary corridor, however the interviewees specifically advocated for the site to be for educational and public use. Thus, it is proposed that the site be programmed as a tertiary culinary school, as the building once used as hotel will provide sufficient space for practical kitchen areas, as well as rooms on the second floor which can be used for student living, and other services. Developing the building as a culinary school will expand on the existing culinary culture of Atteridgeville, and can support the development of the culinary corridor, by allowing the food stall owners the opportunity to learn more about cooking through public presentations by the culinary school. The rest of the site is proposed to be developed as public space with a library and space for community presentations, creating a campus-like atmosphere and allow public use and pedestrian permeability.

Figure 45: Mphebatho hotel ruin (Author)

Jazz Culture

A culture of jazz music is associated with Atteridgeville (Atteridgeville Township Tour 2022), with jazz events held annually at the Ga-Mothakga Resort. There are also several jazz pubs dispersed in the suburb.

Farming Culture

From an investigation of the historic maps of Atteridgeville, it can be observed that farming land once made up most of the suburb but has drastically been reduced by the rapid development. It is however interesting to see that the farming culture endures and is still shared among the community in different areas of the open green space system.

Culinary Culture

Atteridgeville also has a distinct food culture, which is noticeable upon immediate arrival in Atteridgeville, with food stalls appearing on the main mobility routes. A deeper analysis of the food stalls, through typological studies and interviews reveals the distinctiveness of the food culture, as well as what this activity means to the community.

The programming of the culinary corridor will be supported by the jazz and farming cultures to provide a recreational urban corridor, integrated with placemaking moments and ecological function. The programme of the culinary corridor requires spaces for eating. Eating spaces can be integrated with busking spaces to celebrate the jazz culture. Farming activities along the culinary corridor allows the opportunity for the potential stall owners to grow their own vegetables for cooking. Spatial explorations of each culture were done to start to visualise what these spaces would look like along the culinary corridor (Figure 44-46).

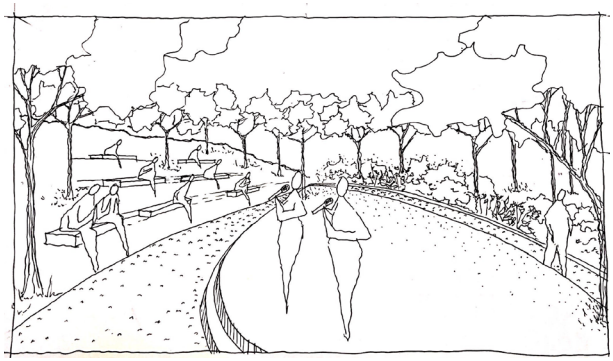


Figure 46: Busking spaces (Author)

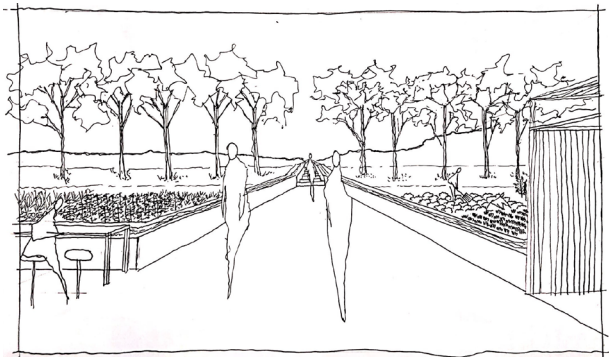


Figure 47: Urban farming spaces (Author)

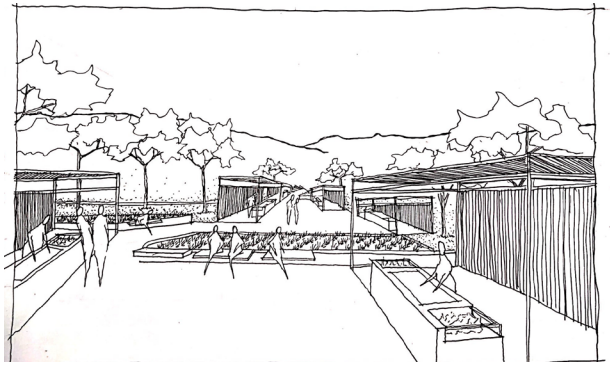


Figure 48: Cooking spaces (Author)

Figure 49: Food stalls observed in Atteridgeville (Author)
Refer to figure 51-55 for the spatial typologies of each food stall

Types of Food being Cooked

From an analysis of the interviews conducted with the food stall owners in Atteridgeville, an understanding of the type of food that is preferred could be derived. Interviews with five different food vendors in Atteridgeville have revealed many similarities, but also varying aspects of the food culture in Atteridgeville. Typical food that is cooked by most of the food vendors are many kinds of meat such as chicken which is mostly boiled, cow heels , cow head and tripe. Most of the vendors also cooked pap in large pots which is then served with the meat. Only a few of the vendors sold vegetables such as cabbage, sugar beans, mashed potato, and spinach. The vegetables are prepared and cooked on an electrical or gas stove. Atchar was observed to be served with the meals, by most of the food stalls. The analysis of the types of food being cooked, will inform the requirements of the proposed food stalls, such as food preparation and cooking spaces. The preferred vegetables that are cooked in the existing stalls will inform the type of crops proposed in the farming spaces along the culinary corridor.

Meaning of Cooking Food

Cooking also carries a special meaning among the food vendors. All the vendors expressed what cooking has meant to them and the memories that they have with it. They shared memories of their families, hometowns, and friends of whom specific food reminds them of. Meaning in the cooking of food is also extended to the work opportunity that cooking has provided to the people in Atteridgeville. The importance of the food stall and cooking of food is also shared among the community, creating a social platform where the community can interact and build relationships among each other and with the food vendors.

Movement Routes

From the interviews, the existing movement routes of the stall owners can be derived. Some of the food stall owners buy their produce form the local supermarkets, however the majority travel to supermarkets in Pretoria West, which further supports the proposed location of the culinary corridor, near the Atteridgeville train station.

Food Stall Typologies

From a typological study, it can be seen that all of the stalls are located along a busy street edge. The busy street edge is followed by an area which allow for the community to gather and socialize while their food is being prepared. In most instances, the gathering space is integrated with the area where the food is being prepared, cooked, and eaten. This integration allows the customers and the cooks to interact among each other. The cooking, preparation and eating of food makes up the final area of the stall. Water is provided to the customers in a water dispenser in almost all the stall typologies. The water is provided for the purpose of washing hands before and after eating, as customers eat the food with their hands. The different spaces are covered by permanent, makeshift pergola structures to protect the users and the food being cooked from the changing weather conditions. The permanent pergola structure also suggest that the food stalls remain in the specific area it is located.

The typological study forms an integral part of the analysis of the food culture, as it will further inform the requirements of the layout of the culinary corridor, as well as to preserve the existing culture of food stalls in Atteridgeville.

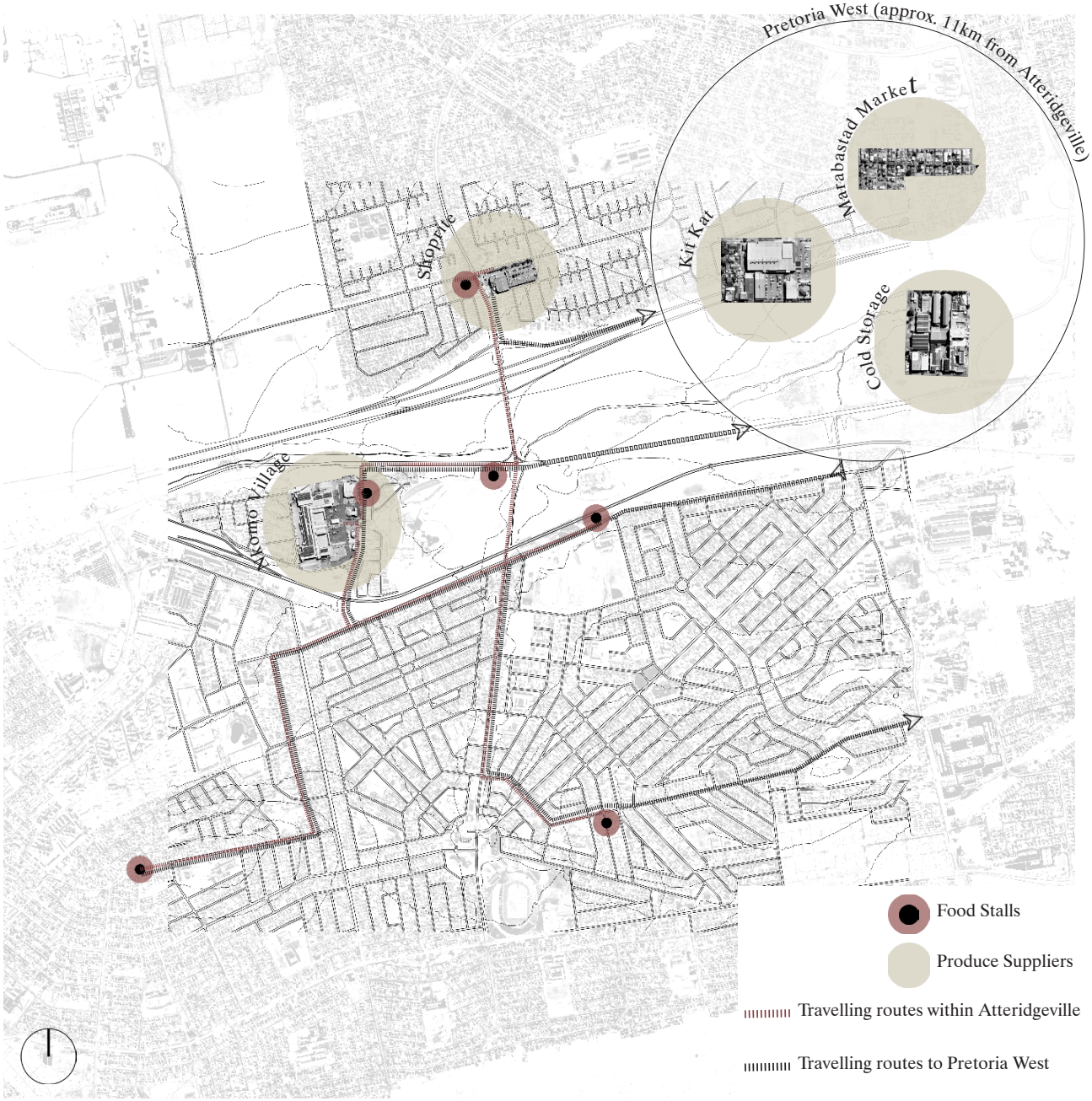


Figure 50: Food Stall Owner Movement Routes Author)

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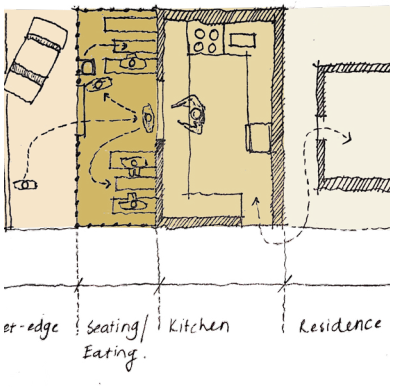

Figure 51: Ditlou's Kitchen typology
Maunde Street (Author)

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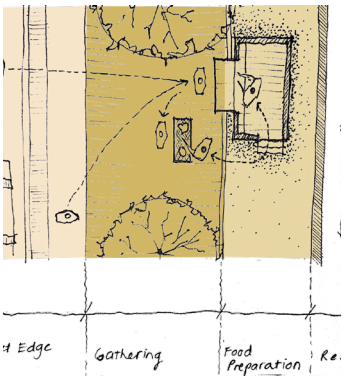

Figure 52: Dindo's Kitchen typology
Tlou Street (Author)

03

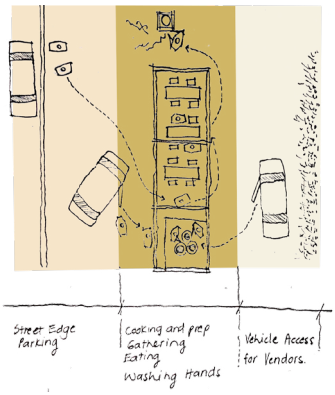

Figure 53: Corner Monate typology
W. F Nkomo Road (Author)

04

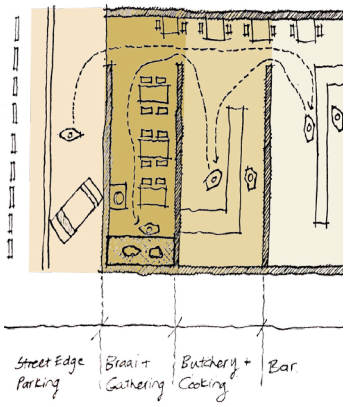

Figure 54: Braai Spot typology
Ruth First Street (Author)

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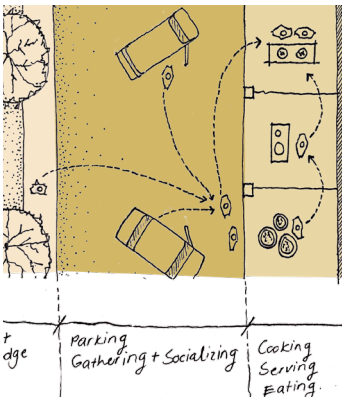


Figure 55: Stall 5 typology
Moroe Street (Author)

2.5 PRECEDENT STUDY [02]

Moyo Urban Farm and Restaurant_V&A Waterfront, Cape Town by Tsai Design Studio

This project aims to tell the story of food, through the combination of a market and restaurant space which is supported by relevant ideas, such as sustainable technologies and urban farming. The story of food can be noticed in the programming of the design, displaying food in all its stages. The cycle of food starts with the growth of produce, which is then sold as a commodity in the market space and used in the restaurant. Spaces for consumption of the food from the restaurant is also provided. The organic waste of the food is used for composting, to be used as fertilizer (Tsai Design Studio 2013).
While telling the story of food, this project also illustrates a sustainable culinary landscape. The concept of the cycle of food is applicable to this design project, to improve the sustainability and functioning of food stalls in Atteridgeville. Combining the different programmes related to food will also allow the multi-functional use of the landscape and improve its ecological function.

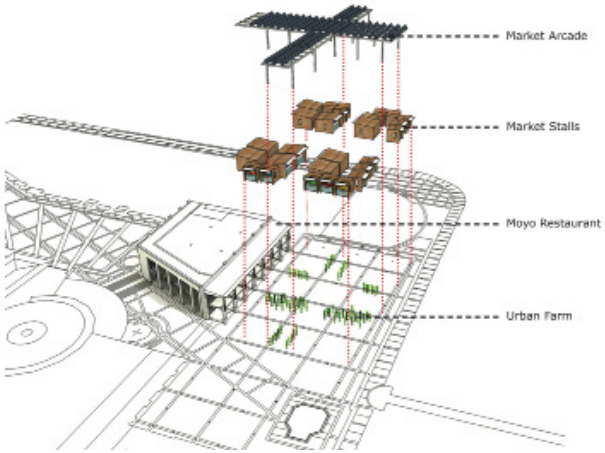


Figure 56: Concept diagram (Tsai Design Studio 2013)



Figure 57-59: Conceptual elements (Tsai Design Studio 2013)

Figure 60: Market arcade (Tsai Design Studio 2013)

Figure 61: Market stalls (Tsai Design Studio 2013)

2.6 PROGRAMME

The design project incorporates the important historic and cultural aspects analysed into the open green space system, through proposing specific programmes within the green space, which is suitable in its context. The programming of the focus area is focused on the development of a culinary corridor, along the axis of a primary pedestrian movement route, along the Skinner Spruit tributary. To further enhance the programme of the culinary corridor, supporting infrastructure and programmes is proposed for the multi-functional use of the landscape, as well as to incorporate the different processes of the food system.

The Culinary Corridor

The culinary corridor represents a market space of food stalls along a linear access route. The market space is interspersed with experiential and educational food gardens, spaces for seating and eating, as well as busking areas, for jazz performers. This adds a recreational function to the market space.

The Culinary School

The Culinary School, proposed on the Mphebatho Hotel ruin site, forms an extension of the culinary corridor, through providing space for public culinary presentations to take place on the site. The exterior of the Culinary School building is set out as a public campus, with a community library an office spaces for the management of the stall units.

Culinary Experimenting

The Culinary experimenting area, consisting of public cooking areas presents the opportunity for the community to come together to cook food and socialize.

Productive Urban Landscape

The proposed road, extending from Citron Road connects the public to the Atteridgeville Railway Station and a productive urban landscape. The productive landscape represents the farming of vegetables to be supplied to the community, the Culinary School, and the stall owners. A composting system, comprising of the composting of organic food waste (Bokashi composting) and garden waste is proposed for the use of the compost in the vegetable gardens. The compost can also be sold to the community and the stall owners for their private vegetable gardens. As the culinary programmes will generate a considerable amount of food waste, the Bokashi system allows the opportunity for the culinary school and the stall owners to sustainably dispose of organic food waste.

Atteridgeville Train Station

The proposed train station building, to the north of the railway, allows the food stall owners to easily commute from Atteridgeville to Pretoria West, to buy meat products. Students can also easily commute to and from the Culinary School. The programmatic proposals made on the site is supported by the Atteridgeville Train Station, as the landscape serves as a departure and arrival space that is representative of Atteridgeville as a place of significant history and culture.

The Culinary Corridor

Productive Urban Landscape

Atteridgeville Train Station

Culinary Experimenting

The Culinary School

Figure 62: Programme (Author)

2.7 CLIENT PROFILE

The City of Tshwane, with the relevant departments involved (Environment and Agriculture Management, Roads and Transport, and Economic Development and Spatial Planning) was identified as the main clients for this design project, for the development of the public open space.

Private business owners will be involved, specifically in the development of the Culinary School and the Bokashi Composting area. The specific users of the design project will include tertiary students, visitors, and the Atteridgeville community, but most importantly, the food stall owners.

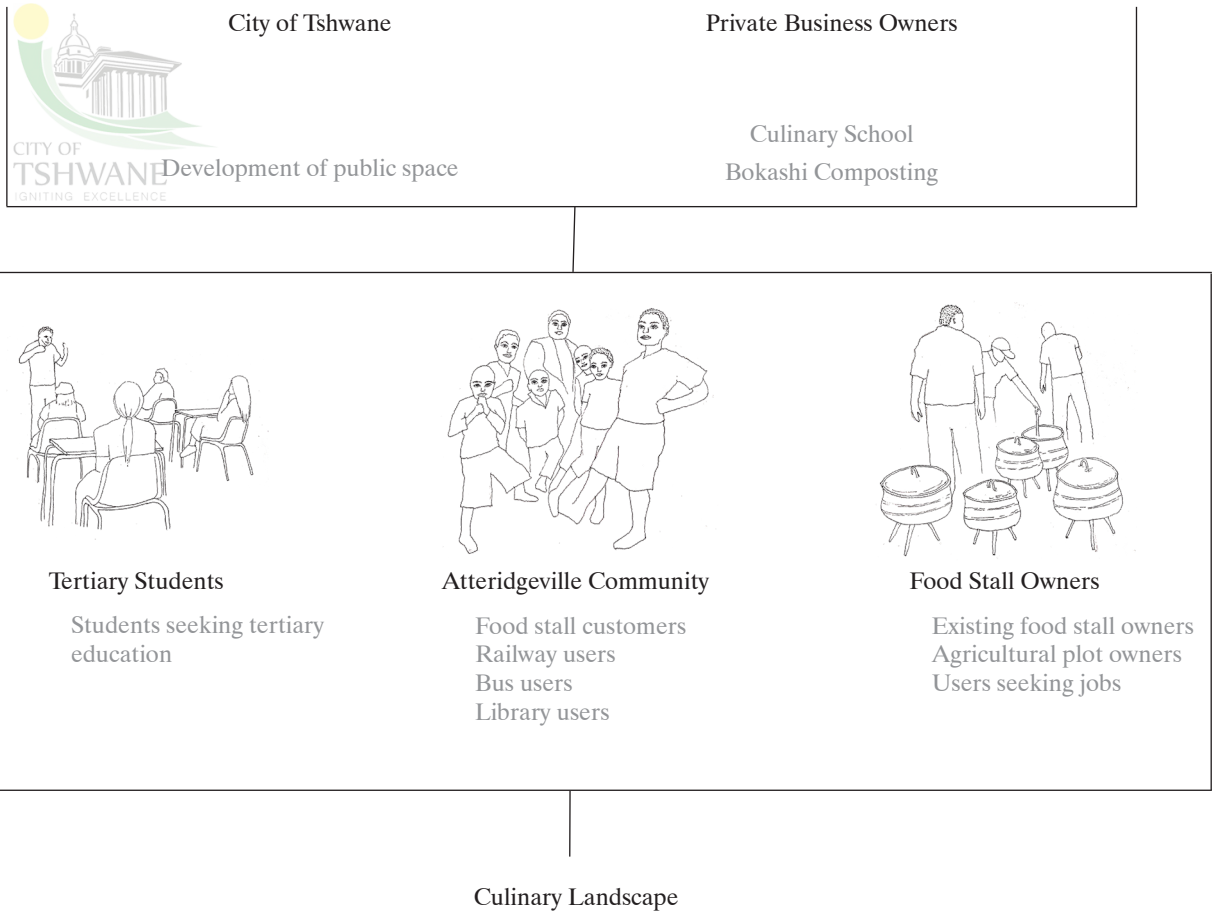


Figure 63: Client profile (Author)

2.8 DESIGN DEVELOPMENT

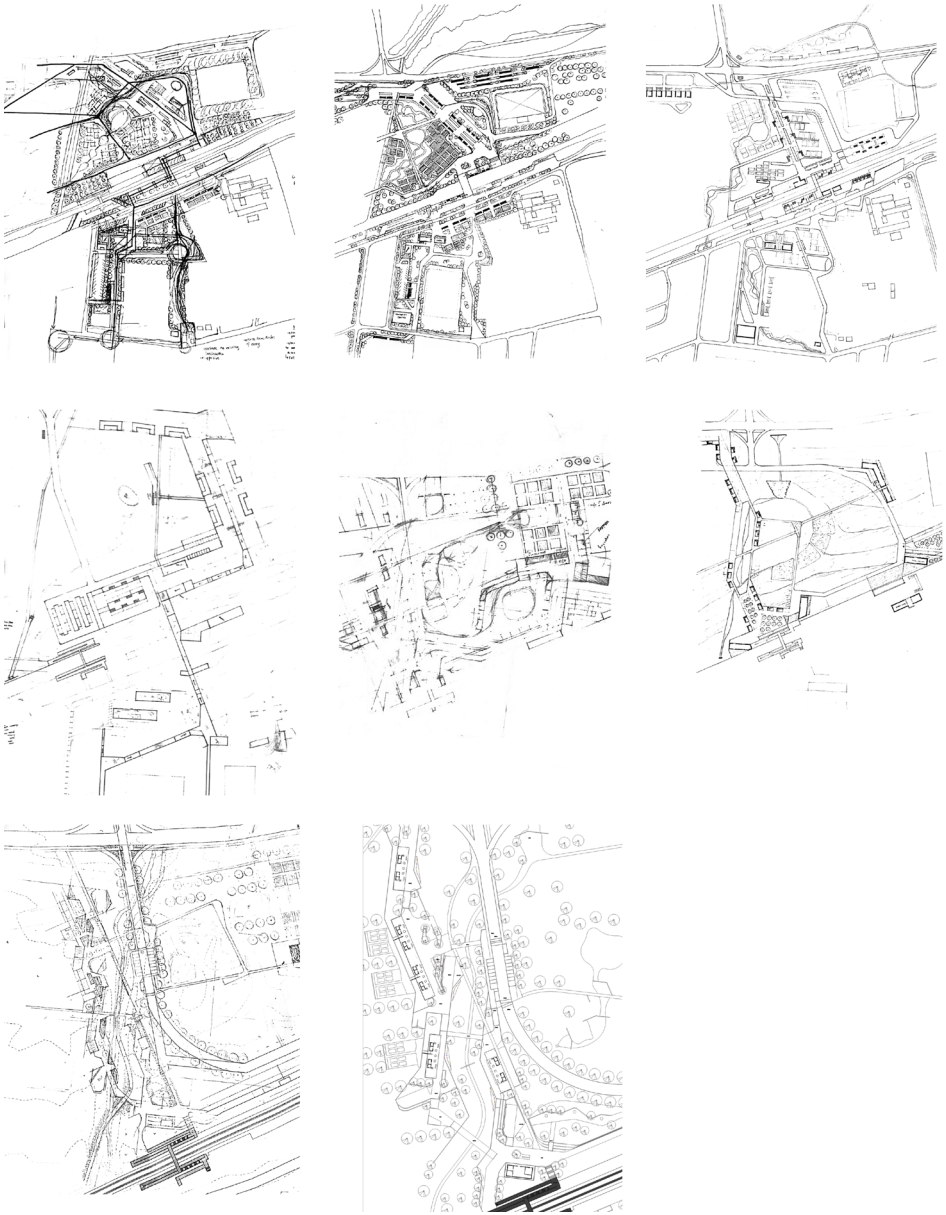


Figure 64: Design development (Author)

2.9 SKETCHPLAN

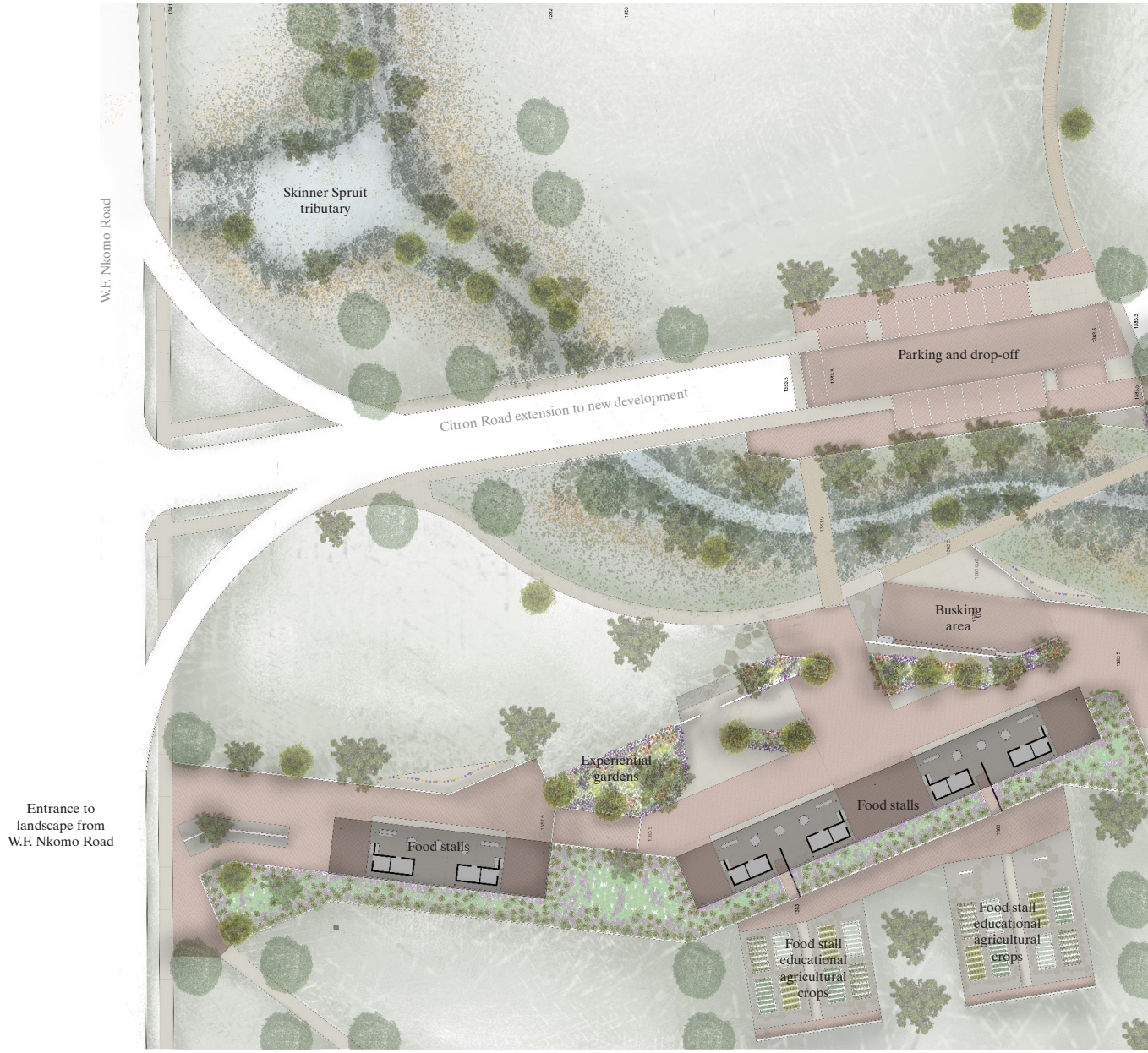


Figure 65: Sketchplan (Author)

ESSAY 3: DESIGN SYNTHESIS

BACKGROUND

The following essay discusses the specific physical conditions of the focus area, as well as specific site features observed, which informs the development and typology of the design. These informants are followed by the setting out of the relevant systems involved in the different stages of food. The specific systems involved informs the overall planting strategy taken on the site. This is followed by a study of the existing materials observed in the area, as well as precedent studies which guides the material palette of the project and support the programmatic proposals made.

Figure 66: Aerial view of area for technification (Kusel

2021)

3.1 SITE ANALYSIS

Soil

The focus area is situated within the Timeball Hill stratigraphic geological unit which underlay the study area. This unit represents sedimentary rock lithological units in the focus area, which is made up of shale and arenite (EIAA 2022). Fine textured soils are developed in this area due to the shale present, and coarse textured soils are developed from the arenite present in the sedimentary rock lithological unit (EIAA 2022). The soil on the study site is representative of the Ba7 land type unit (EIAA 2022). This land type unit presents soils with yellow brown apedal subsoils with a fluctuating water table, less than 1.5m from the surface (EIAA 2022). This soil type is suitable for farming as it is coarse textured and well drained. The historical image of farming activity in 1940 (in Essay 1) supports the potential of farming in this area.

Ecological Sensitivity

The focus area is located within an Ecological Support Area (ESA), and it is of importance that the area supports the ecological functioning of Critical Biodiversity Areas (CBA), as well as deliver ecosystem services (SANBI 2022). It is evident however, that the land has been transformed over the years by human influences. Consequently, the site's sensitivity degraded and is suitable for development. However, sensitivity measures will still be considered in this design project, through conserving the existing indigenous vegetation, and the improvement of the hydrological system.

Hydrology

A tributary stream of the Skinner Spruit runs through the area, to the north. The contours are representative of the low undulating hills formed on the site, with water draining into the lower areas. The Skinner Spruit tributary, running through the site presents the opportunity for the water to be diverted and used for irrigation of the proposed agricultural crops.

Figure 67: Geology (Author)

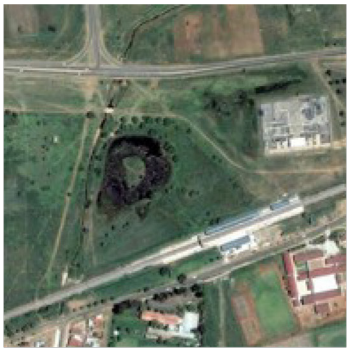
Figure 68: Sensitivity (Author)

Figure 69: Hydrology (Author)

Vegetation

The study site falls within the Endangered Marikana Thornveld vegetation unit, located in the Savannah Biome of South-Africa (Mucina and Rutherford 2006). This vegetation unit is described as:
"Open Acacia karroo woodland, occurring in valleys and slightly undulating plains, and some lowland hills. Shrubs are denser along drainage lines, on termitaria and rocky outcrops or in other habitat protected from fire." (Mucina and Rutherford 2006). The vegetation recorded on the study site is representative of the Endangered Marikana Thornveld vegetation unit. Figure 55 illustrates the existing vegetation observed on the site, grouped in three different vegetation groups:
Grassland vegetation: This vegetation group makes up the largest portion of the area and mainly consists of geophyte (bulb) and grassland species. The grassland area has a high percentage of species relating to the area it covers (EIAA 2022). Consequently, it is important to conserve as much as possible of these areas with design development. A few alien invasive species can be observed in this area which includes Pennisetum setaceum (Fountain grass), Campuloclinium macrocephalum (Pompom weed), Cirsium vulgare (Spear thistle), Pinus radiata (Monterey pine) and Solanum elaeagnifolium (Silver-leaf nightshade). Alien invasive species must be controlled and eradicated.
Wetland vegetation: This vegetation group appears in the lower portions of the undulating hills of the area and mainly consists of graminoid and forb species. Many of the species observed in these areas, such as Miscanthus junceus (Wireleaf daba grass), Phragmites australis (Common reed), Typha capensis (Bulrush), Berula erecta subsp. erecta (Lesser parsnip) and Mentha aquatica (Water mint) have rehabilitation and water treatment qualities and will be beneficial to conserve (Sampson 2022). Arundo donax (Giant reed) is the only alien invasive specie recorded in this area.
Drainage line vegetation: This vegetation group appears along the tributary of the Skinner spruit, which runs through the site. A narrow strip of wetland vegetation appears along the edges of stream followed by woody species. The drainage line, however, also presents many alien invasive species such as Arundo donax (Giant reed), Ipomoea purpurea (Common morning-glory), Lantana camara (West Indian Lantana), Melia azedarach (Chinaberry), Morus alba (White mulberry), Solanum mauritianum (Bugweed), Tithonia rotundifolia (Red sunflower), Xanthium strumarium (Rough cocklebur).


2004

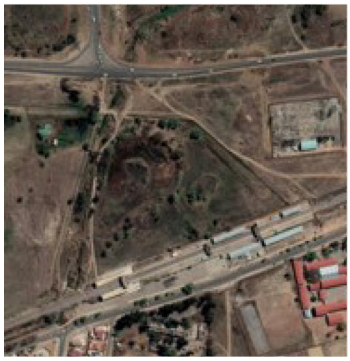

2005


2009


2012


2014

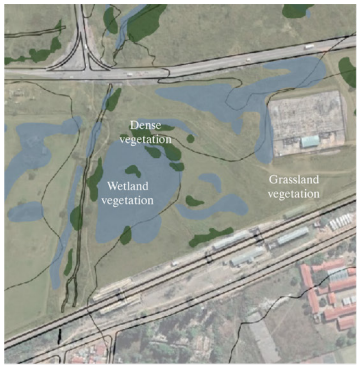

2016


2018

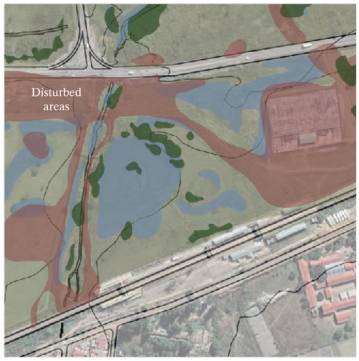

2020


2022

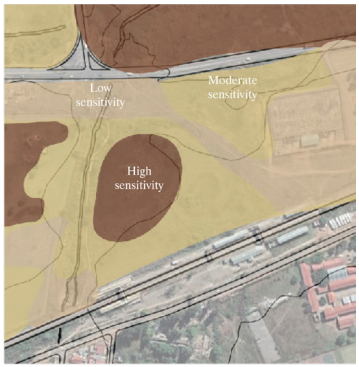
Figure 70-78: Previous uses of site (GoogleEarth)



Vegetated areas

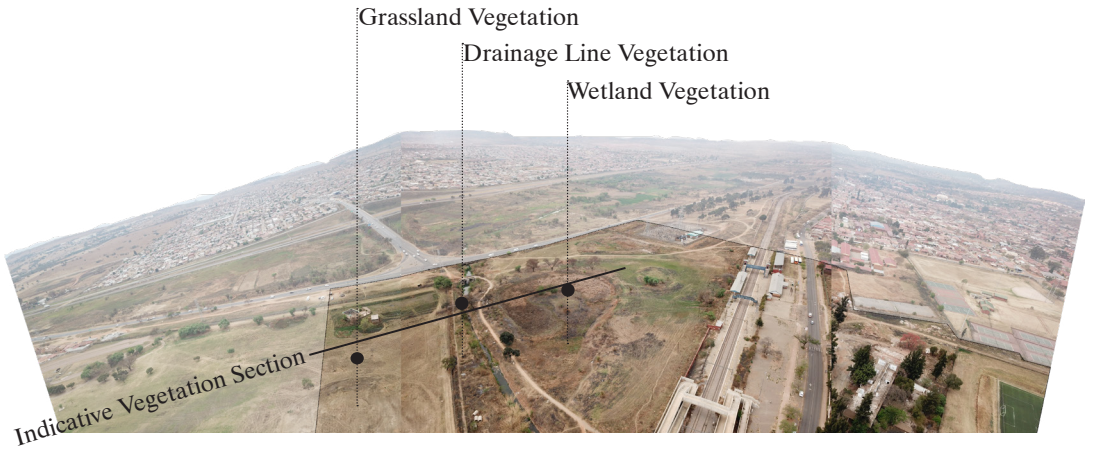


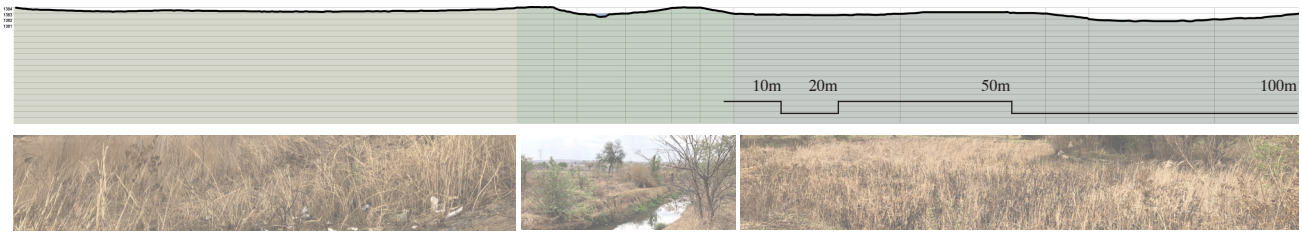
Disturbed areas



Site sensitivity

Figure 79-81: Site Sensitivity (Author)





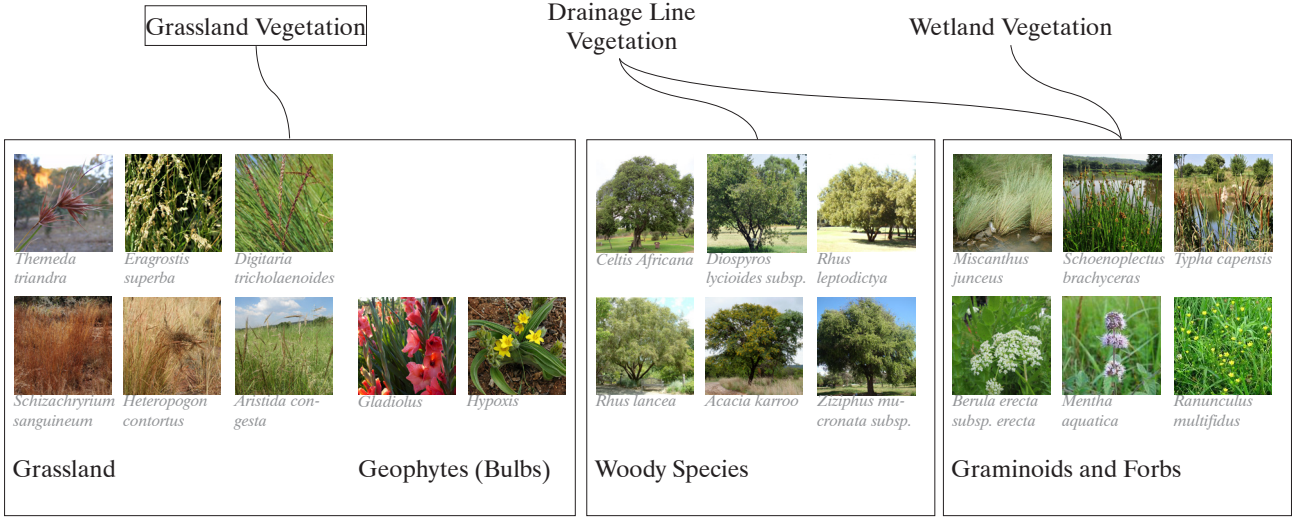


Figure 82: Vegetattion (Author)

3.2 PRECEDENT [03-05]

Banks of the River Avelames_Vila Pouca de Aguiar, Portugal
by LuÍs Rebelo de Andrade

This project borders the Pedras Salgadas nature park. Through the development of the banks of the river, once dividing the park from the residents of the town, the river forms part of the park and embraces it. The banks of the river were reshaped by a series of dykes to allow a more natural path of the river to take form, as well as allow the river to meet with the surrounding terrain. The construction of bridges to crossing the river, allows for the users the possibilities make use of and enjoy it as a space. The programming of benches, small beach areas and piers were informed by the users of the town and the romantic spa era: where families and friends could come together (Andrade 2015).
This project is focused on the users experience and interface with a river. It is relevant to this design project, as the existing movement route for development is dictated by the Skinner spruit tributary. To accommodate the stream and for the development of the primary movement route into a landscape of culture and food, the design proposal will consider the approaches taken in this precedent for the new development to not be restricted by the Skinner spruit tributary.

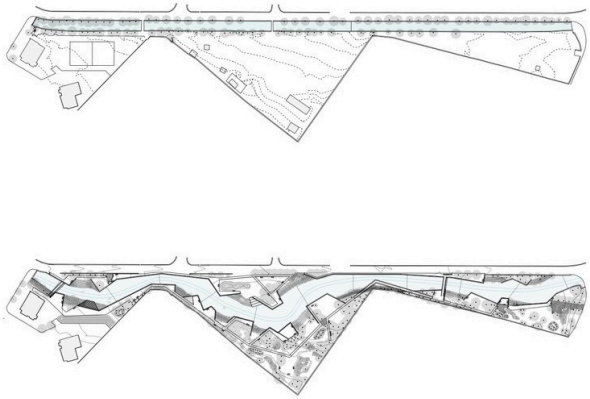


Figure 83: Reshaping the river (Andrade 2015)

Figure 84-86: Public enjoyment space surrounding the river (Andrade 2015)

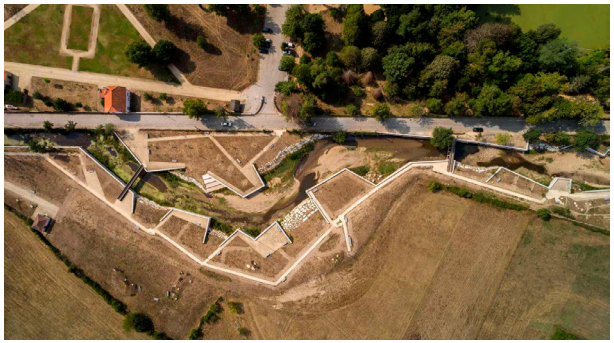


Figure 87: Plan view of the new river course (Andrade 2015)

Figure 88: Public enjoyment space surrounding the river (Andrade 2015)

Ground Reconstitution Strategy_Urban Outfitters Navy Yard Headquarters, Pennsylvania by D.I.R.T Studio

This project resembles an innovative approach to the traditional "hog-and-haul" demolition approach. The existing expanse of concrete surfaces were dug up and salvaged to be reused in the new paving proposal for the site. The large pieces of concrete excavated from the site were set out to create a new pattern of paving, with stone dust and trees filling the openings (Margolis 2007).
This material use is specifically considered for the technification of the culinary corridor, as many areas of building rubble was observed in the Atteridgeville area. Through using salvaged concrete in this way, the prosed development of the culinary corridor will allow surface water to drain, as well as provide shaded areas along the movement routes through tree planting.

Figure 89: Ordering of salvaged concrete on site (Margolis 2007)

Figure 90: Aerial view of slavage concrete along a pathway (Margolis 2007)

Figure 91: Interspersed vegetation (Margolis 2007)

Figure 92: Interspersed vegetation (Margolis 2007)

Pavilion of Remembrance_Thames Barrier Park, London
by Patel Taylor and Groupe Signes

The food stalls proposed, along the public space of the culinary corridor requires roof structures, for the food stall owners and other users to make use of the space during rain events, as well as to provide comfortable spaces to prepare the food. For the purpose of systems functioning, the proposed roof structures must harvest rainwater to irrigate the agricultural spaces proposed for the food stall owners.
The Pavilion of Remembrance's structure is successful in providing an experiential space, through the tectonic appearance of the structure. This allows the user to experience the surrounding landscape. The sloped polycarbonate roofing panels permits rainwater to be harvested from the pavilion. However, the flat ceiling allows the user's focus to be on the surrounding landscape.

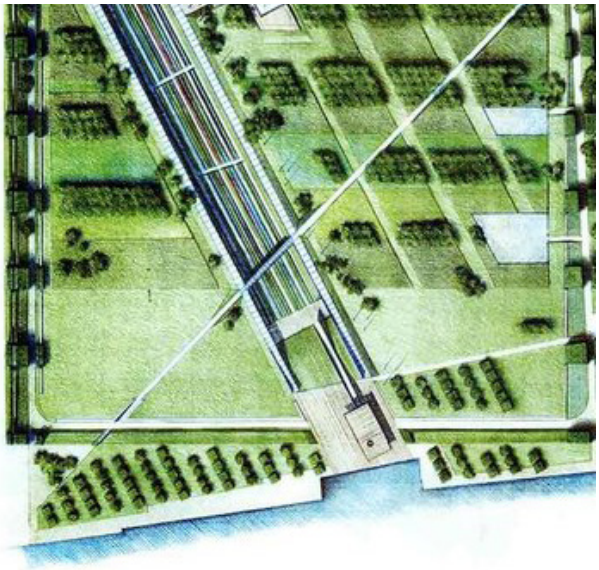


Figure 93: The Pavilion within the surrounding landscape (Taylor 2000)

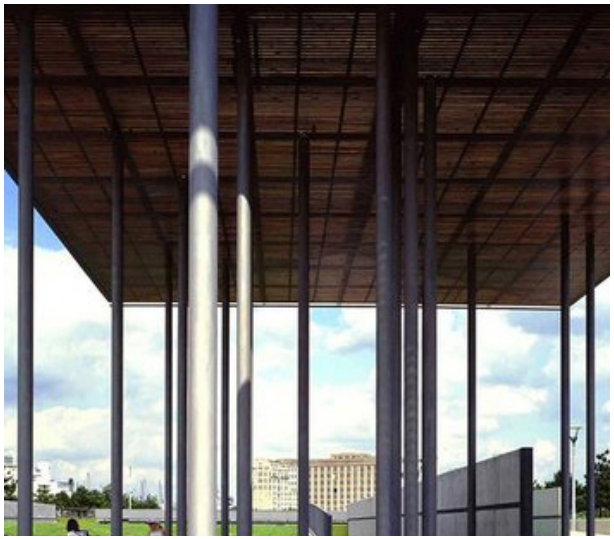


Figure 94: Tectonic roof structure(Taylor 2000)

Figure 95: Tectonic roof structure in the landscape (Tayor 2000)

3.3 SITE FEATURES

Primary pathway

From an analysis of the existing pedestrian routes of the focus area, in Essay 2, a primary existing pedestrian route, along the Skinner spruit tributary was identified. The route is used continually throughout the day by pedestrian users and connects Lotus Gardens, on the north, to Atteridgeville on the south, making it a fundamental feature and the main existing function of the focus area. The route, in its existing state, is however, undeveloped, unsafe, and lacking sense of place. To improve the functionality and consequently, the safety and placemaking opportunity of the existing route, it is proposed to develop it as a culinary corridor, integrated with other recreational functions, such as busking spaces and experiential food gardens.

Skinner Spruit tributary

The tributary of the Skinner spruit, running through the focus area adds to the issue of pedestrian safety and sense of place, as some areas are overgrown and does not allow visual and physical accessibility. The stream is also polluted by litter and can cause public health and safety issues. Litter traps and wetland planting, with water cleaning properties, is proposed along the stream to improve the ecological functioning of the Skinner spruit and to ensure public safety.
The stream has an approximate width of 2 meters and a depth of 1 meter. It is 300 meters in length, across the study site with a gentle gradient of 0.013 (less than 1 degrees). For the purpose of this design project, the proposals made will be focused on the public interface with the stream, and the improvement of its ecological function, thus it will be assumed that the existing width and depth of the stream is sufficient for the amount of water that runs through the site, as there is no evidence of flooding in the existing natural canal.

Contructed wetland

A constructed wetland can be observed in the centre of the focus area. From the physical analysis of the site, it was seen that the wetland is dried up, due to the subsurface water supply pipe being blocked. Thus, a new wetland system is proposed in this area, for the purpose of cleaning the water from the Skinner spruit tributary to be used for the irrigation of the proposed urban agriculture, which will tie in with the programme of the culinary corridor.

Monterey pine plantation

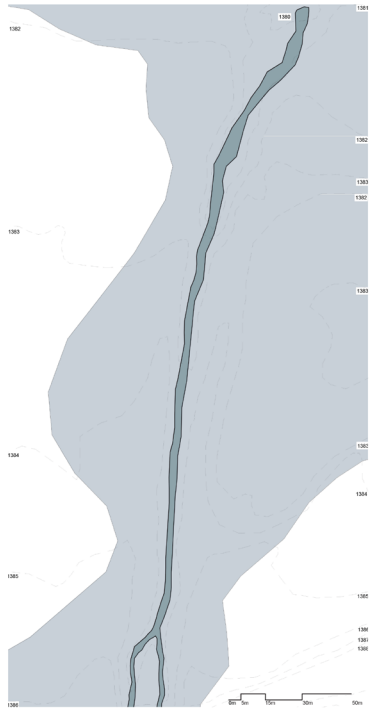
A Pinus radiata (Monterey pine) plantation can be observed to the east of the focus area. The trees were planted in rows for the purpose of cultivation, however the project suspended, and the plantation merely exists as visual feature. To continue the axis and activity of farming, it is proposed that the productive urban agriculture continue along this axis.

Through the mapping of the existing conditions, along with a study of the existing features of the focus area, the area reveals the potential to be re-programmed as a landscape based on the different stages of food. The existing primary pathway through the focus area is the most significant feature of the landscape, pertaining to it being used daily by pedestrians and its function of connecting the surrounding context. It was decided that this movement route be redeveloped to accommodate the daily user and attract possible visitors to Atteridgeville, from the Atteridgeville train station. The existing movement route will be programmed to celebrate and integrate existing cultures in Atteridgeville, to discover and celebrate Atteridgeville as a place.

Figure 96: Skinner Spruit tributary (Author)

Figure 97: Constructed wetlands(Author)

Figure 98: Primary pathway (Author)

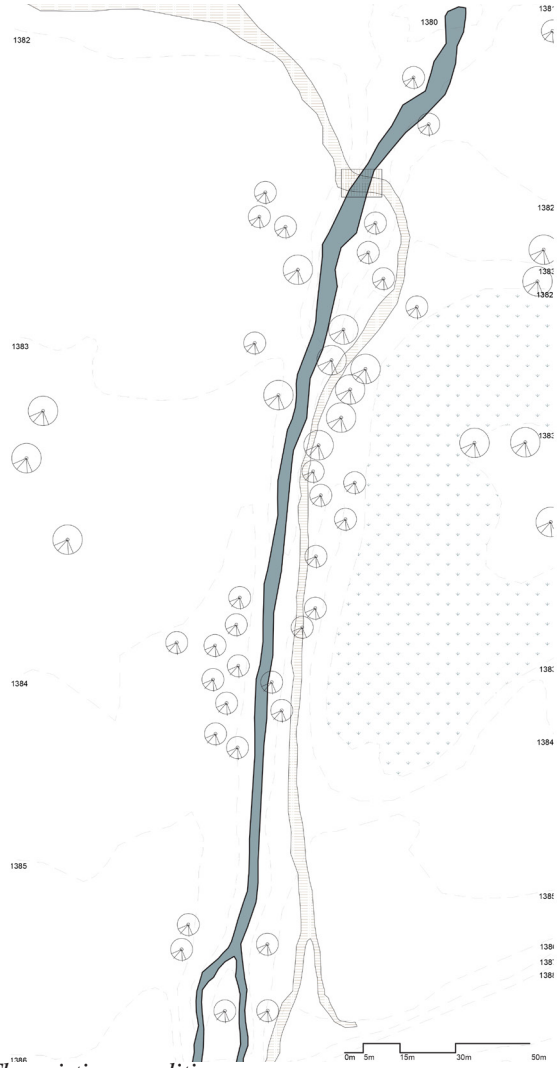


Skinner Spruit tributary
Adds to the issue of pedestrian safety and sense of place, as some areas are overgrown and does not allow visual and physical accessibility.

Constructed wetland
A dried up constructed wetland can be observed in the centre of the focus area, prohibiting pedestrian movement.

Primary pathway
The route, in its existing state, is however, undeveloped, unsafe, and lacking sense of place. The existing movement route is dictated by the linear shape of the Skinner Spruit..

Figure 99-101: Site features (Author)



The existing conditions

The sole function of the site in its existing condition is the north / south movemnent of pedestrians.

The new conditions

The proposal aims to improve pedestrian accessibility and the development and design of culinary spaces alongthe Skinner Spruit tributary which promotes sense of place and green infrastructure development. This is done by diverting the stream at certain areas to mimic the natural path of a stream and allow public spaces of the culinary landscape to meet the stream.

Figure 102-103: The existing and the new (Author)

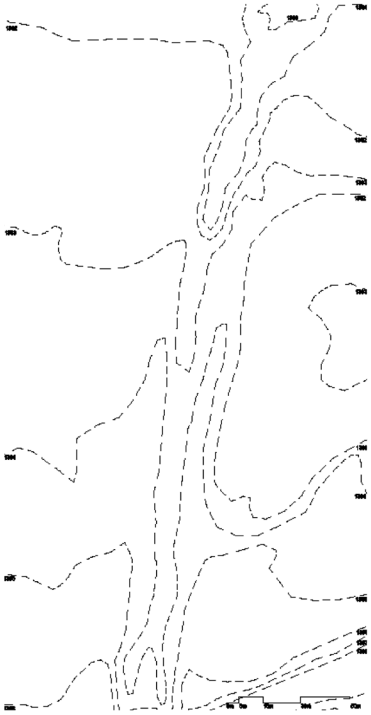
Key:

Existing contours

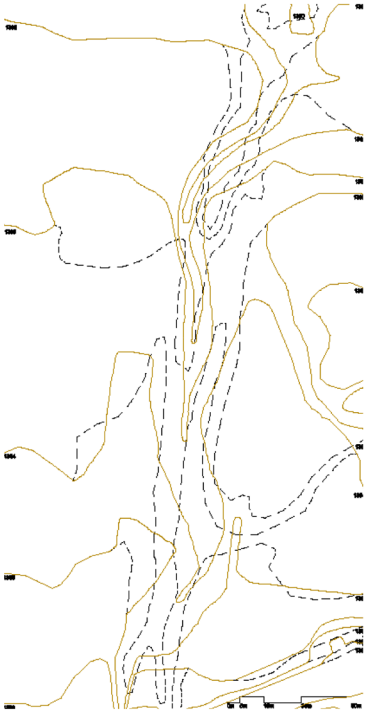
Manipulated contours

Cutting

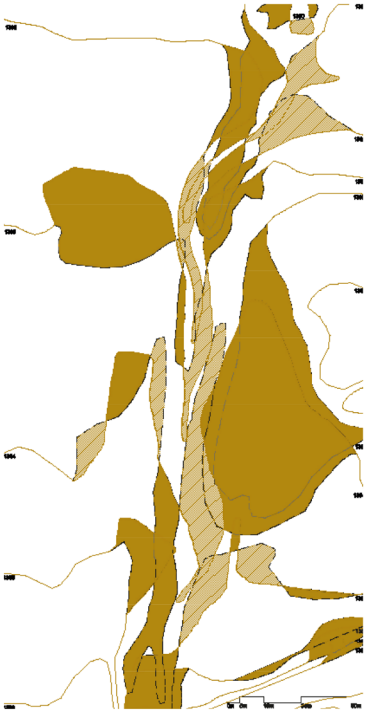
Filling



Existing contours
The existing contours need to be manipulated to divert the stream at certain points and to allow the development of public spaces along the stream.



Manipulated contours
To implement the new design, approximately 3400 m^3 of soil needs to be added.



Cutting and filling
The soil excavated from the proposed wetlands and retention pond, is used to fill the areas along the stream.

Figure 104-106: Contour manipulation (Author)

3.4 SYSTEMS FUNCTIONING

Water harvesting from the Stream

Water is harvested from the Skinner Spruit tributary to irrigate the proposed productive landscape east of it.
The amount of water required for the irrigation of the productive landscape is diverted from the stream through the partial damming of the stream, by a weir structure. The weir structure consists of a cast concrete structure and a riprap scour protection layer. The water is diverted into an intake structure which captures the litter and silt from stream. The intake structure is directly connected to a pressure pipe to take up the water required for irrigation. The water is transported to a wetland system through a drain structure, at a gradient of 1%. The series of wetlands are lined with water purification plants, for the cleaning of the water to be suitable for the irrigation of the productive landscape. The filtered water is stored in a retention pond, connected to a pump. Once it is needed to irrigate the crops, the water is pumped to the surface and the crops irrigated using gravity (furrow irrigation). The excess water is diverted back into the Skinner Spruit, through a bioswale.

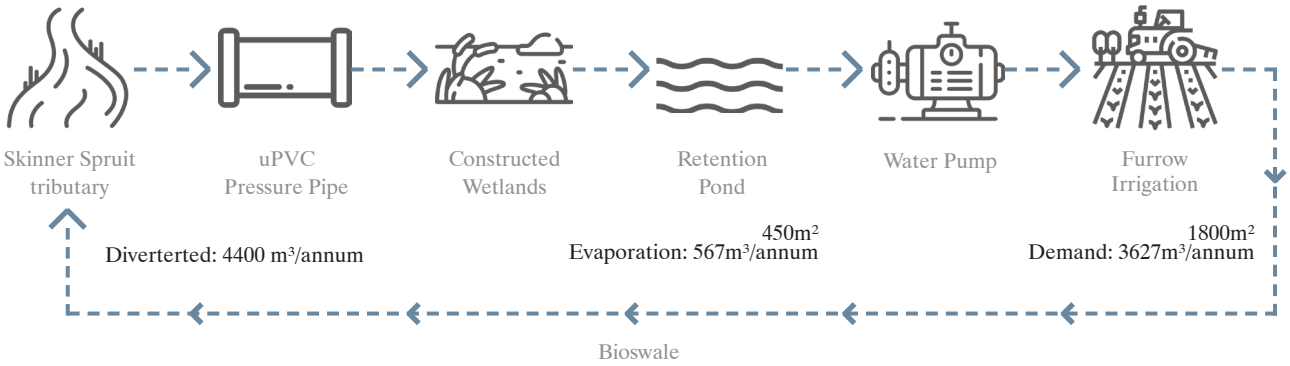


Figure 107: Water harvesting from the Skinner Spruit (Author)
See Appendix II.

Rainwater harvesting

The rainwater harvested from pergola structures of the food stalls is used to irrigate the food crops in the culinary corridor.
The rainwater collected from the corrugated polycarbonate roof sheets is transferred, with the use of a gutter and a downpipe, to a hydrocyclone filter. The hydrocyclone filter is used for the removal of dust and other small solid particles from the collected rainwater. The water is then transferred to a water storage tank, connected to a water pump. The grey water is used for the irrigation of food gardens, the water closets, and the hand washing stations. A bioswale transfers the excess water from the food gardens, into the Skinner spruit tributary. A municipal connection is proposed for the kitchen area for the preparation of food.

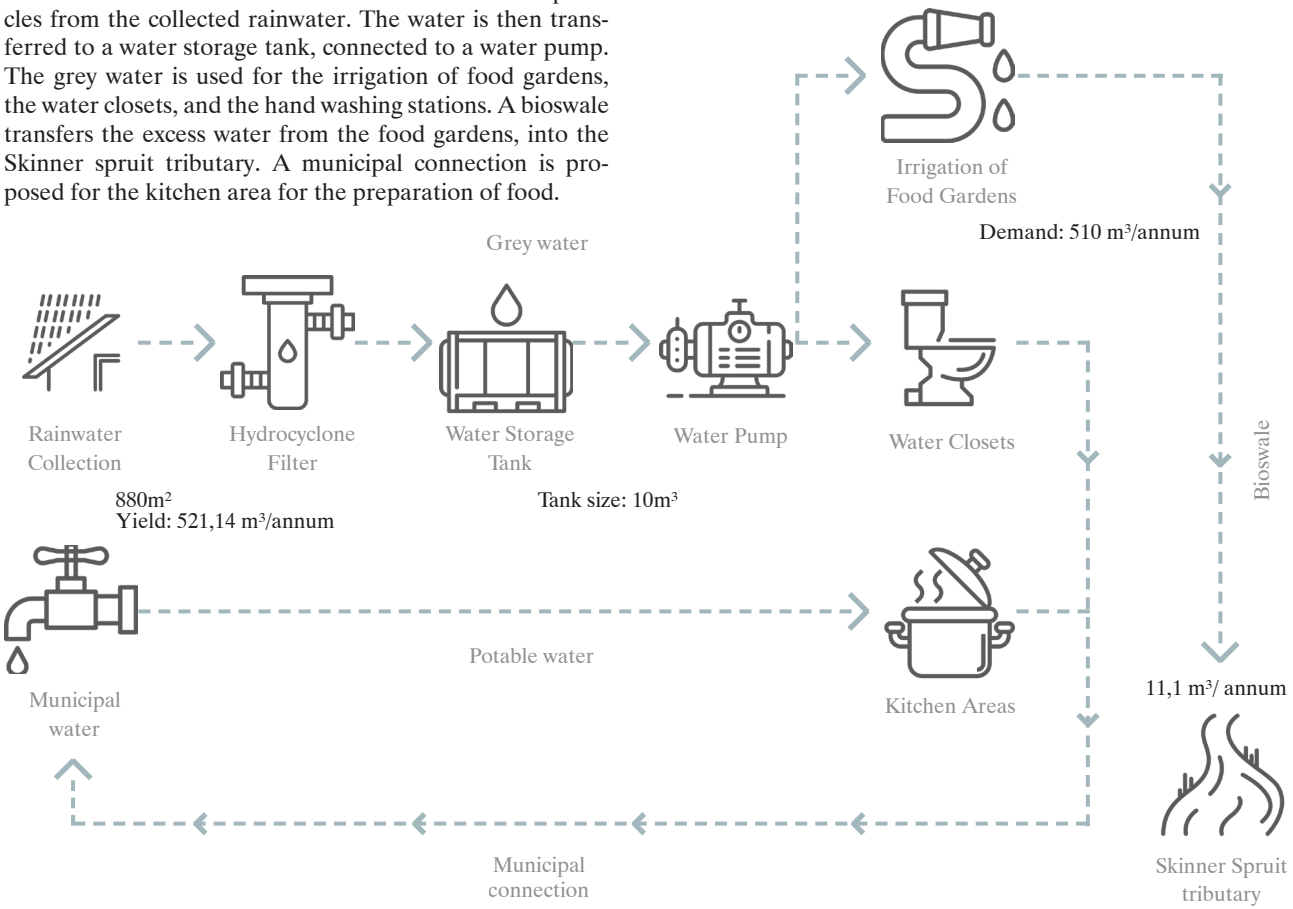


Figure 108: Rainwater harvesting (Author)
See Appendix II.

Food System

The water harvested on site, using the Skinner Spruit tributary and the pergola structures of the food stalls is used respectively in the productive landscape and the food gardens of the culinary corridor.
The vegetables produced from the productive landscape is processed (stored, cleaned, and packed) on site and distributed to local stores and the Culinary School. The community and the food stall owners are given the option to visit the productive landscape to buy vegetables. The food is then sold to and consumed by the community and other visitors coming from the railway station or used to cook in the public cooking areas. The food distributed to the Culinary School is used by the students for educational purposes. The food bought by the food stall owners are cooked and sold to the community. The stall owners' private vegetable gardens are also used for cooking in the food stalls. The culinary corridor provides seating and eating spaces for the community to consume the food, as well as experiential food throughout the space, for the recreational and educational function of food gardens.

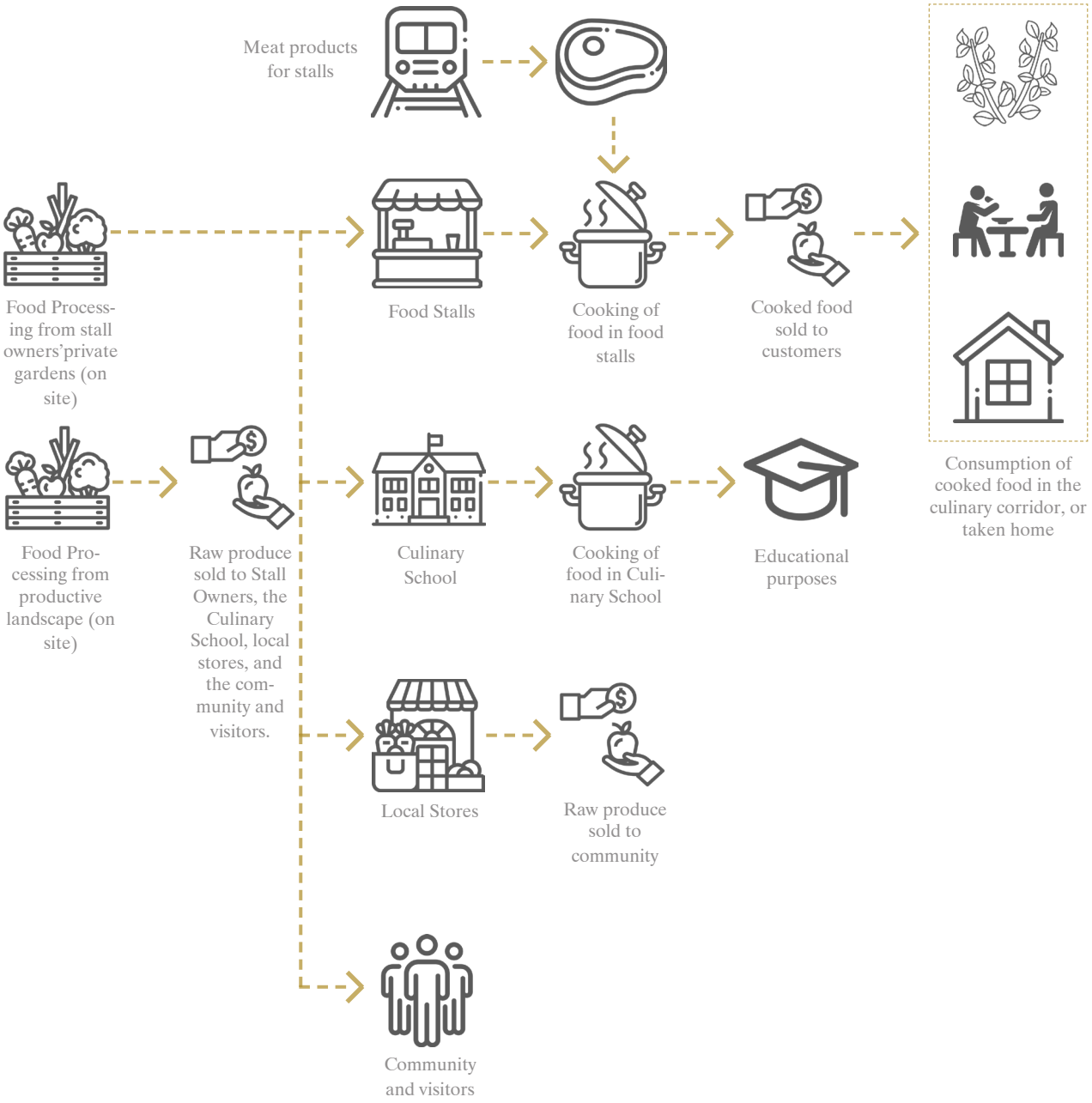


Figure 109: Food system (Author)

Organic Waste Management

As the programme of the site will generate a considerable amount of food waste from the culinary corridor and the agricultural crops, the opportunity is taken to introduce the Bokashi composting system. The Bokashi composting system is used to recycle organic food waste to make compost, by using yeasts and anaerobic bacteria (lactic acid bacteria). Cooked food, dairy, protein, and fruit and vegetables can be used in the Bokashi composting system, making it an ideal system to integrate, for the culinary programmes proposed.
The process of producing compost, to be used in the landscape entails the following:
Specific bins for organic food waste are situated on the sites (food stalls, Culinary School, and public cooking areas). The food waste is collected at the end of each day and taken to the Bokashi composting centre to be treated with Bokashi. A full bin of food waste, treated with Bokashi, is sealed for two weeks for pre-compost fermentation to take place. The bins are kept at room temperature, in the composting centre, as the composter does not smell. The bokashi tea is drained from the bucket daily. The tea is diluted with water (1:300) and then used to fertilize the gardens. After two weeks the pre-compost is added and mixed into a composting pile (organic plant waste that is still decomposing), and the covered with 20cm of compost material. After two weeks of the pre-compost is added, the compost in the compost pile is ready for use (What is Bokashi composting 2020. The compost is sold to the urban farm, the stall owners, and the community to enrich the soil for their respective gardens.

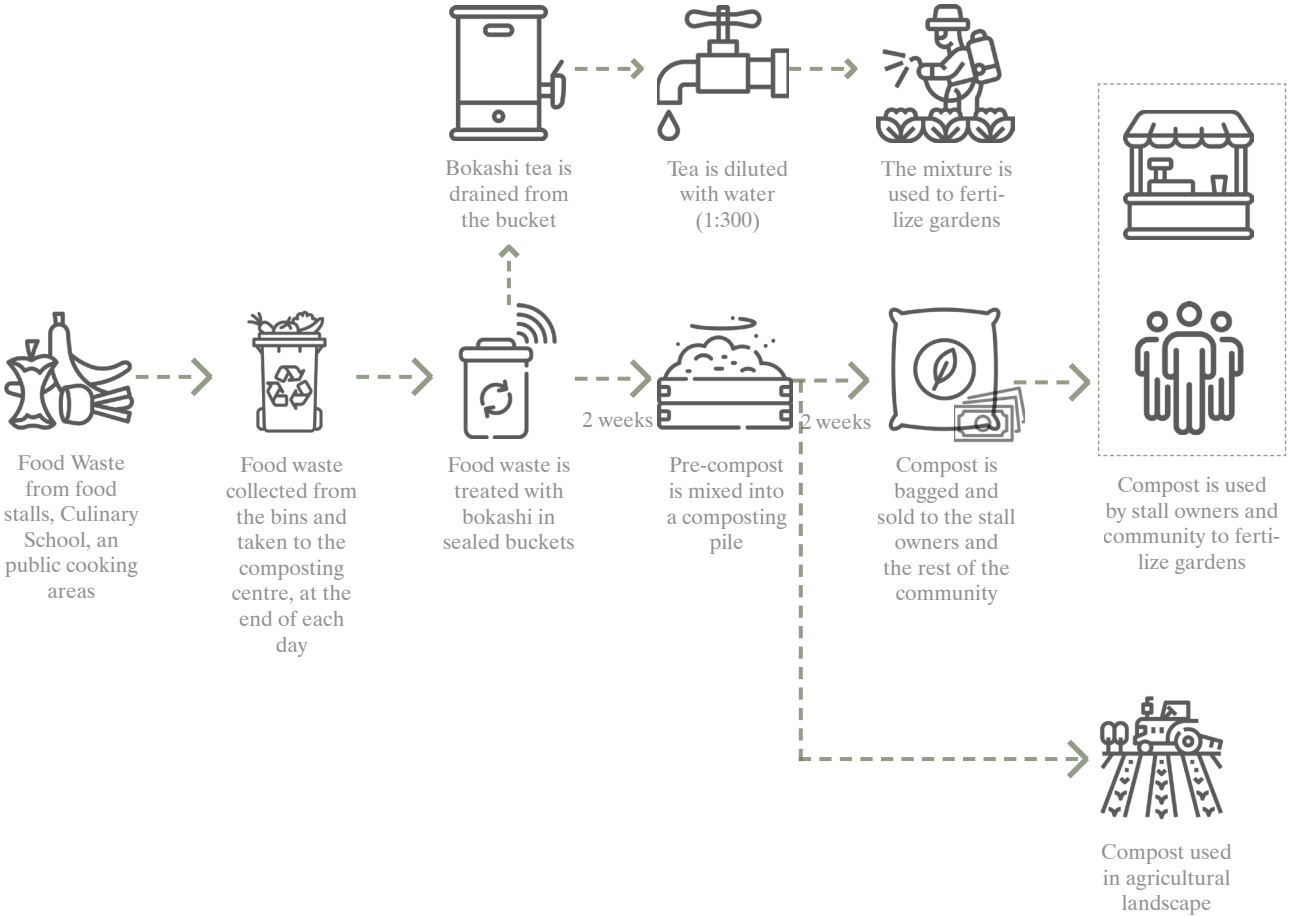


Figure 110: Organic waste management (Author)

3.5 PLANTING

The planting strategies taken for this design project can be ordered into 6 groups, in terms of the proposed programme of the specific areas: Protected Grassland areas; Rehabilitation and Treatment areas; Agricultural crops in the productive landscape; Agricultural crops along the food stalls; Herb gardens; and Experiential food gardens.

Figure 111: Planting strategy (Author)

Protected Grassland Areas

From the analysis of the existing vegetation recorded on site, it was established that as much as possible of the grassland areas must be protected. Thus, for this planting group, the existing grassland species are conserved. Areas where erosion has occurred is reseeded with the indigenous grasses found on site. Specific areas, along development edges, is introduced with indigenous woody species, for the purpose of guiding movement of the development, as well as creating shaded areas.

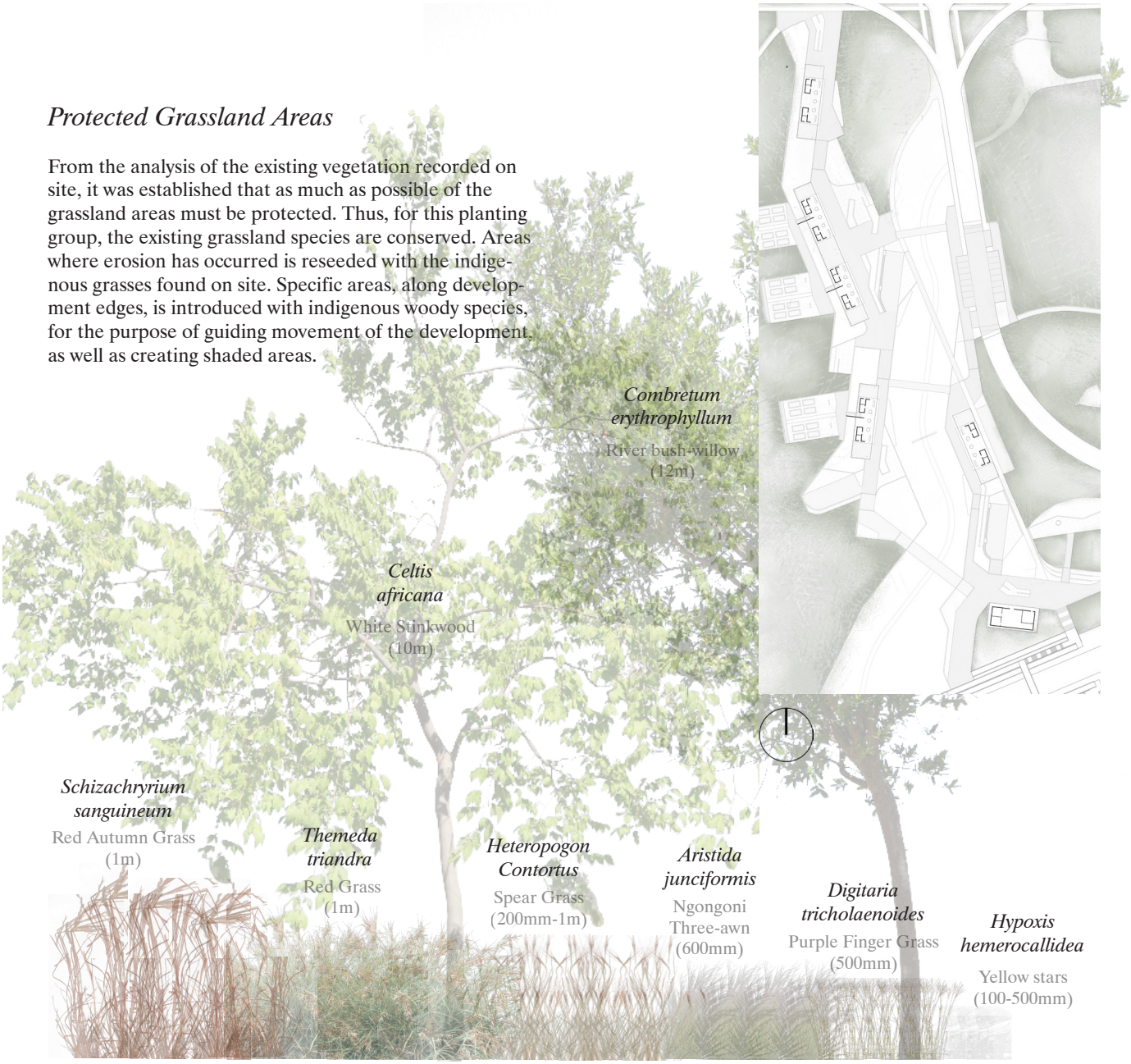


Figure 112: Grassland vegetation (Author)

Rehabilitation and Treatment

The proposed wetland system is lined with specific wetland species with water filtering and treatment qualities for the purpose of cleaning the water diverted from the Skinner Spruit tributary, to irrigate the agricultural crops. The Skinner Spruit tributary is also lined with these species, to passively clean the water, as well as stabilize the banks of the tributary.

Figure 113: Rehabilitation and treatment vegetation (Author)

Agricultural crops in the productive landscape

The choice of crops chosen for the productive landscape was guided by a study done on the specific agricultural which community of Atteridgeville currently have shown interest in. Members of the community use the crops identified, either for their own use in private gardens, in group gardens in semi-public spaces, or in the crops observed in the public open spaces (Van Averbeke 2009). The purpose of this combination of agricultural crops in the focus area, is to develop the public open space through agricultural crops which resembles the current culture of farming activities in Atteridgeville, as well as allow the community, the food stall owners, and other visitors to visit the agricultural area and buy produce.

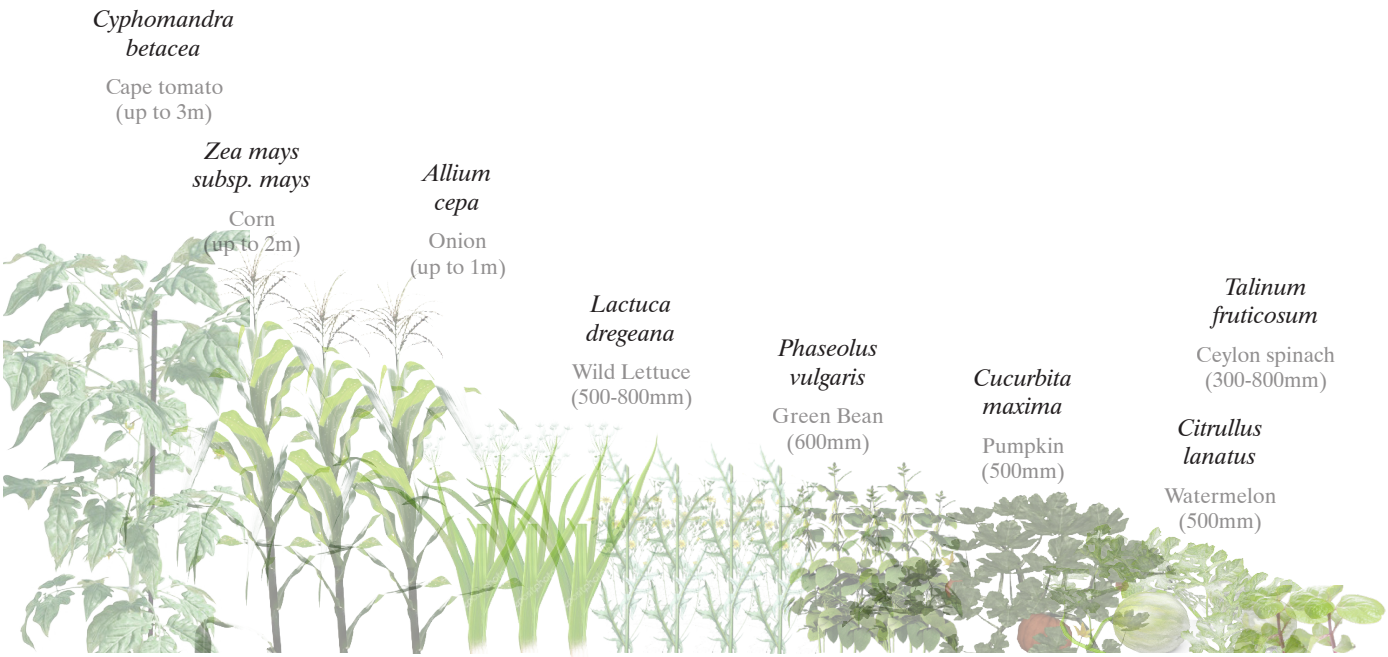


Figure 114: Agricultural crops (Author)

Agricultural crops along the food stalls

The agricultural plots organized along the food stall units are set out to be used by the food stall owners to grow their own produce. The type of agricultural crops planted in these areas consists of the typical food that the stall owners are currently serving in Atteridgeville, such as: Cabbage; beans; potatoes; and spinach.

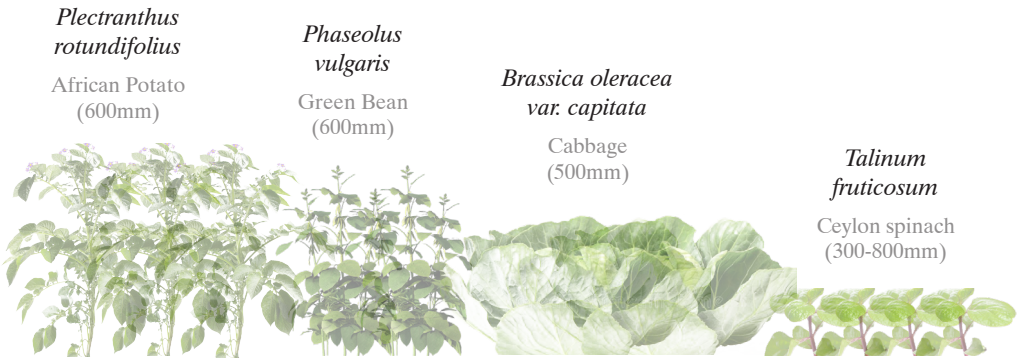


Figure 115: Food stall crops (Author)

Herb gardens

The agricultural gardens also incorporate herb gardens, consisting of species which area natural pest deterrents. The species identified are: *Mentha longifolia* (Wild mint), *Eriocephalus africanus* (Wild rosemary), and *Ocimum africanum* (Lemon Basil).

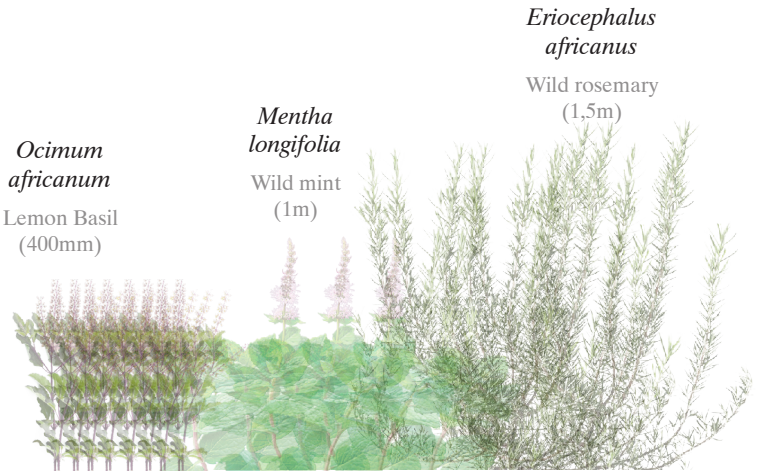


Figure 116: Herb gardens (Author)

Sensory gardens

The sensory gardens are situated along the public corridor of the food stalls. The species selected further enhances and celebrates the culinary programme of the project. Species selection was guided by species important for the Marikana Thornveld vegetation unit, as well as their edible, aromatic and medicinal qualities.

Key:
- Foliage
- Sun requirements
- Water requirements
- Estimated height
- Birds / butterflies
- Medicinal
- Fragrant
- Edible

Trees:

Evergreen
Full sun
Water wise
5x4m

Diospyros lycioides
(Blue bush)

Evergreen
Full sun
Water wise
5x5m

Rhus leptodictya
(Mountain karee)

Deciduous
Full Sun
Water wise
9x9m

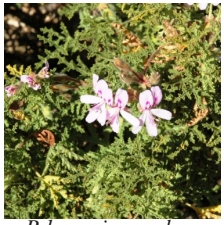
Ziziphus mucronata

Shrubs:

Evergreen
Full sun
Water wise
1-2m

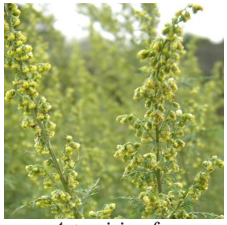
Lippia javanica
(Fever tea)

Evergreen
Full sun
Water wise
1-1,5m



Pelargonium radens
(Rasp-leaved)

Evergreen
Semi shade
Water wise
0.5-1m



Artemisia afra
(African wormwood)

Figure 117-126 : Sensory gardens (Various)

Perennials:

Deciduous
Semi shade
Water wise
200-400mm

Pelargonium tongaense
(Tonga pelargonium)

Deciduous
Full sun
Water wise
300-800mm

Hilliardiella oligocephala
(Bicoloured vernonia)

Evergreen
Full sun
Moderate
500mm

Helichrysum odoratissimum
(Everlasting)

Evergreen
Full Sun
Water wise
100mm

Othonna carnosa
(Othonna)

3.6 MATERIALS

Existing materials

For the purpose for the design proposal to fit into the context of Atteridgeville and develop a familiar palette of materials to the users a material study was done in the Atteridgeville area.
Steel, clay face brick and concrete are used throughout the railway infrastructure. The pedestrian bridge crossing the railway consists purely of concrete. Steel columns, steel roof sheets and clay face brick are used extensively throughout Atteridgeville.
The use of materials in the Mphebato Hotel Ruin adds the interesting combination of material use to the palette. The structure consists of a basic column and beam structure with concrete floor slabs. Clay face brick walls were used to enclose the structure. A significant feature of the structure is the use of mosaic tiles in specific areas throughout the building. This feature forms a familiar image in the landscape, adding to place-making in Atteridgeville and important to preserve and be continued in the material palette of the design project.
All the materials discussed are suitable for use in terms its availability, as well as robustness, as the public infrastructure is often stolen. Thus, structure and material proposals will consider the choice and fixing of materials.

Figure 127: Clay face brick (Author)

Figure 128: Steel construction (Author)

Figure 129: Steel construction (Author)

Figure 130: Concrete construction (Author)

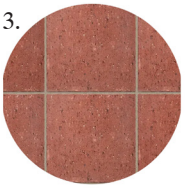
Figure 131: Concrete, brick and mosaic (Author)

Figure 132: Mosaic on the Mphebatho hotel ruin(Author)

Proposed materials

1. 
Exposed concrete surfaces

2. 
Brushed Rhinowood timber decking

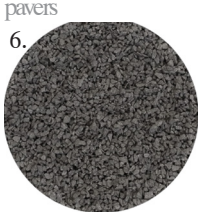
3. 
220 x 220 x 50 mm Corobrik Burgundy Doppio clay brick


200 x 98,5 x 65 mm Corobrik Burgandy Doppio clay brick

4. 
200 x 100 x 60 mm Corostone concrete pavers


Powder coated hot dipped galvanised steel

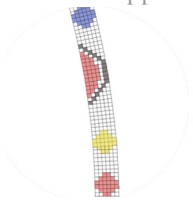
5. 
Reused concrete pavers

6. 
13 mm gravel


Simes powder coated hot dipped galvanised steel urban lamp post


Recessed wall light fixture for cast concrete

7. 
Mosaik design on cast concrete



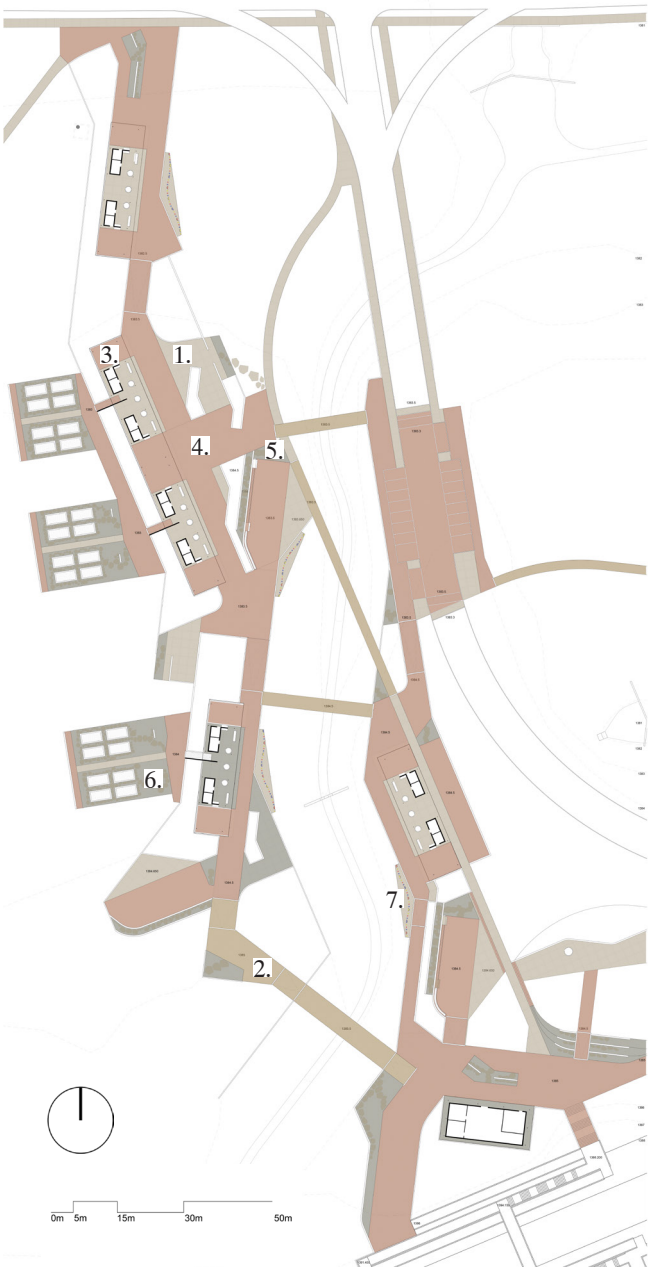
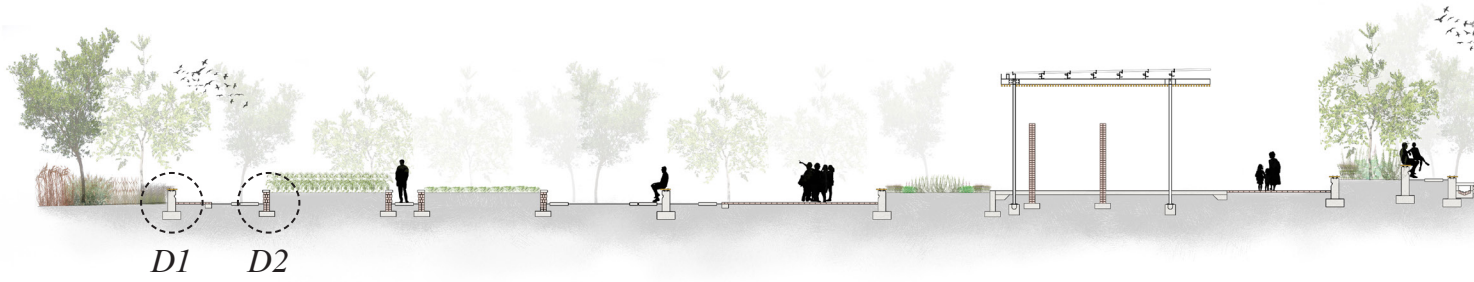
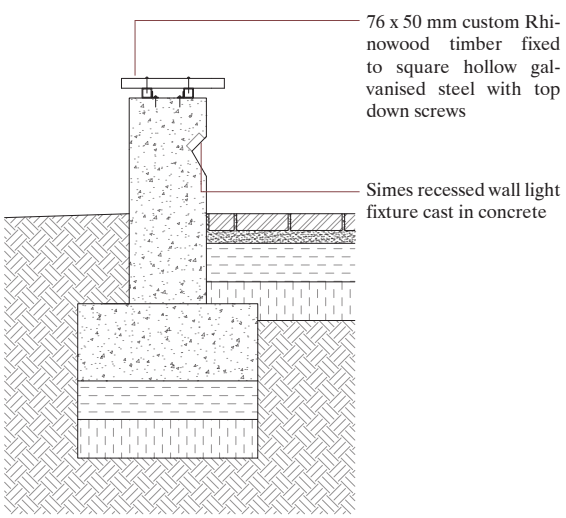


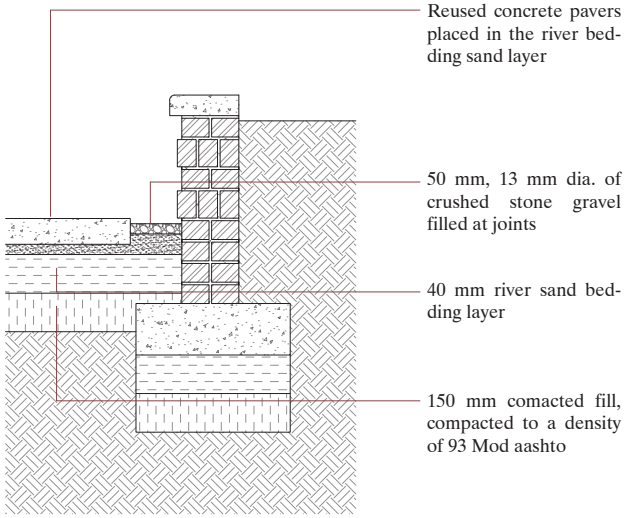
Figure 133-144 : Proposed materials (Various)

3.7 SECTION AND DETAILS



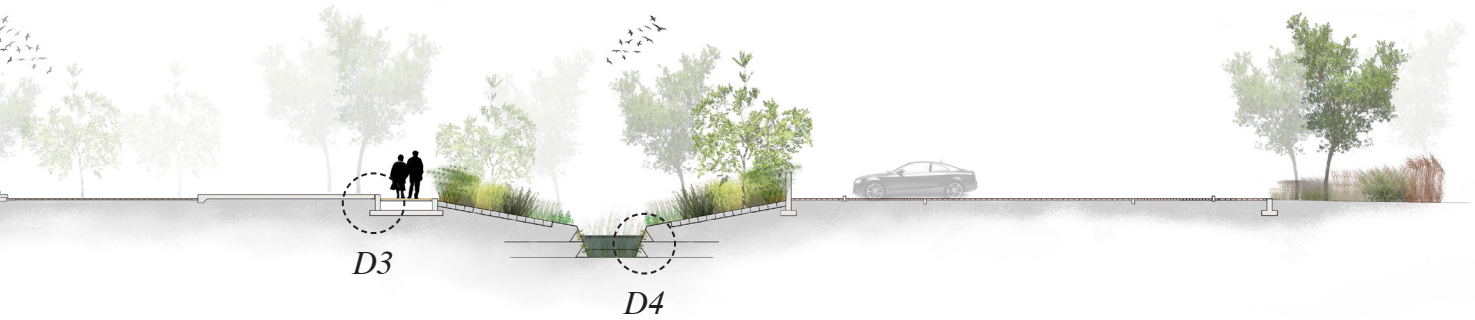


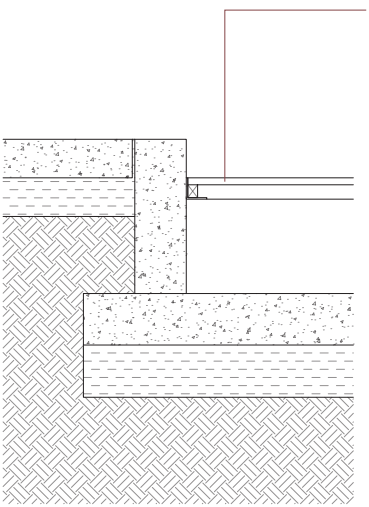
D1: Cast concrete bench



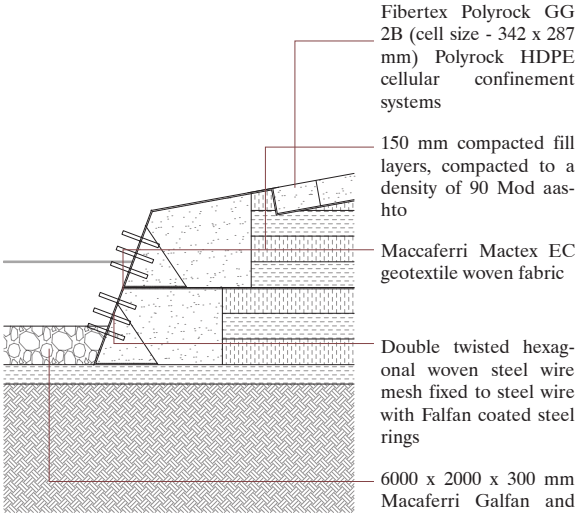
D2: Planter edge

Figure 145 :Section and details (Author)





D3: Timber decking



D5: Green terramesh

3.8 RENDERS

Aerial view

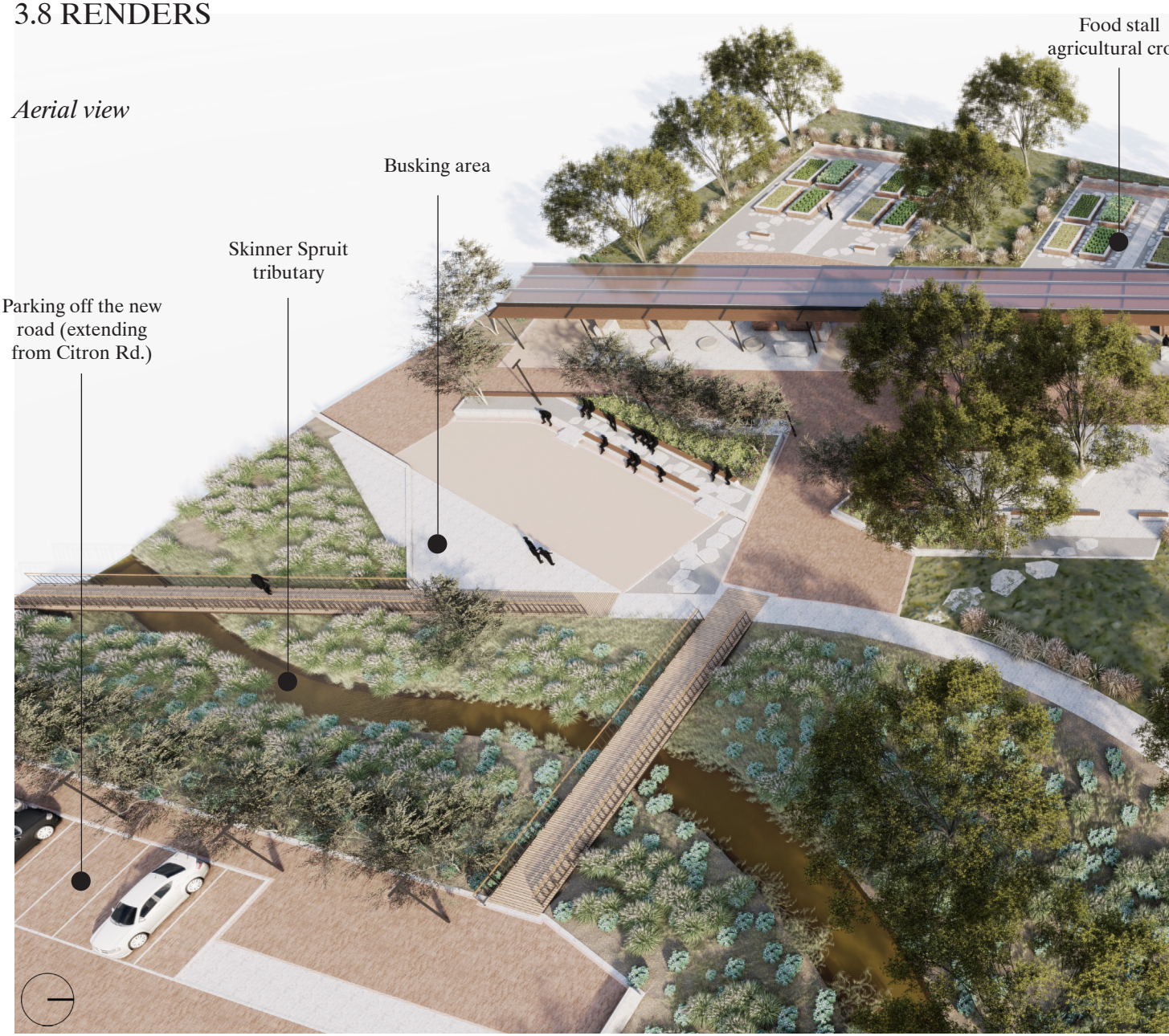
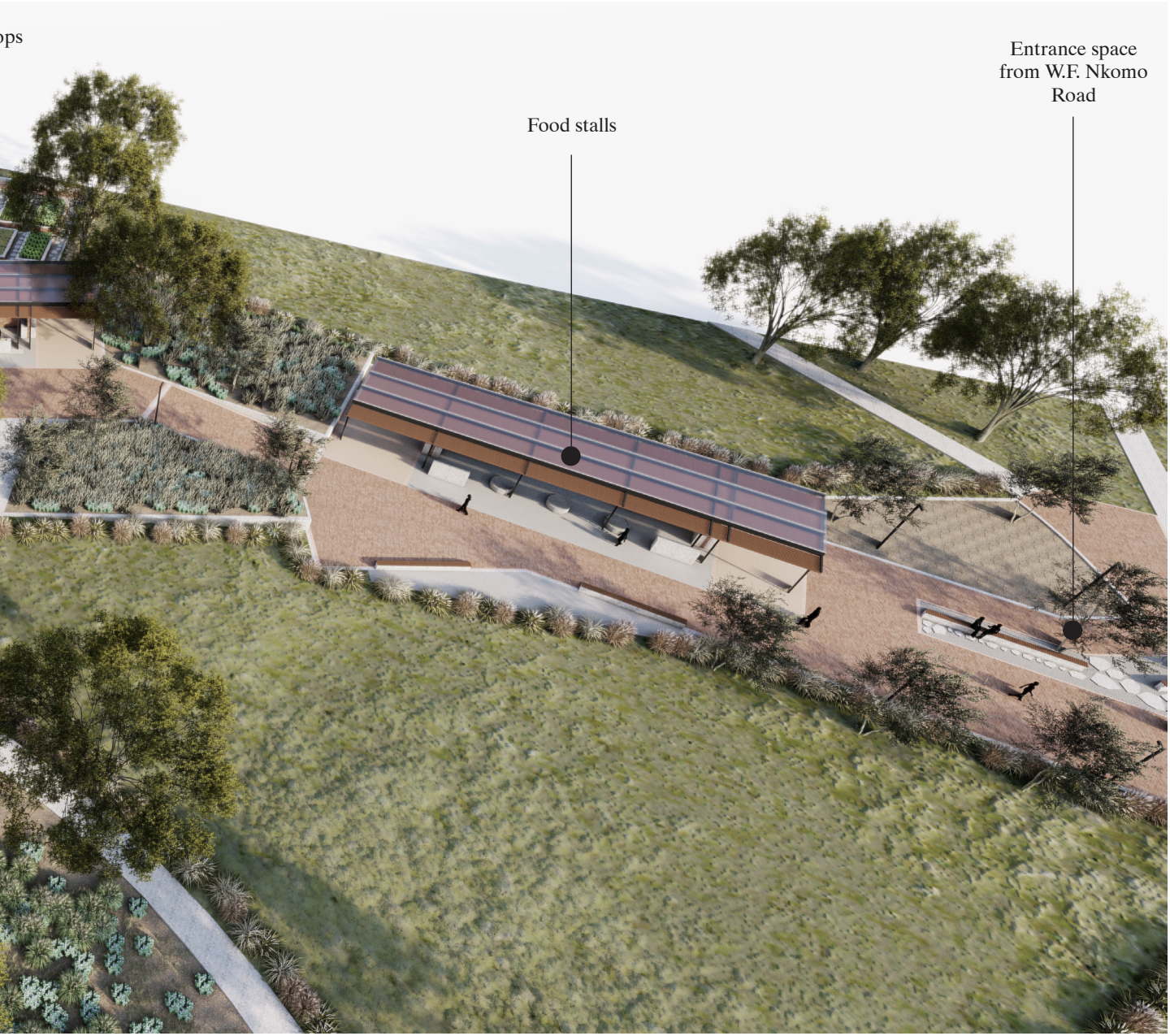


Figure 146: Aerial view (Author)



Entrances

Figure 147: Entrances (Author)

Food stalls

Figure 148 : Food stalls (Author)

Busking areas

Figure 149 : Busking areas (Author)

Food stall crops

Figure 150 : Food stalls crops (Author)

Night views

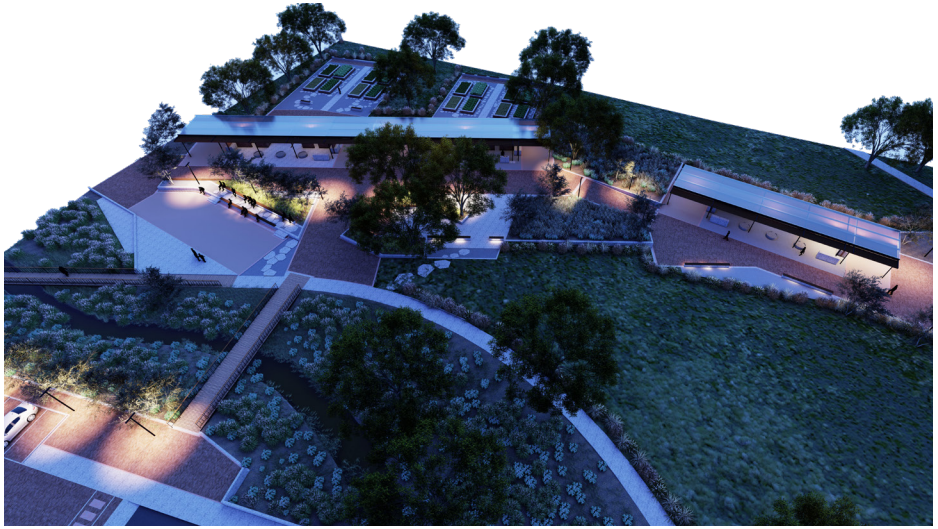


Figure 151 : Night views (Author)

Perspectives

Figure 152: Perspectives (Author)

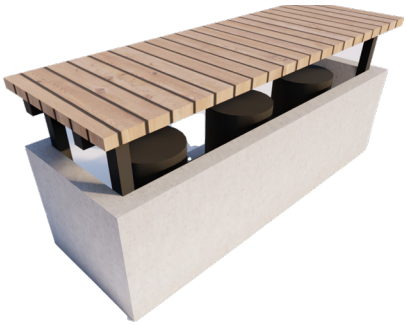
Urban furniture

Simes powder coated hot dipped galvanised steel urban lamp post

Busking area

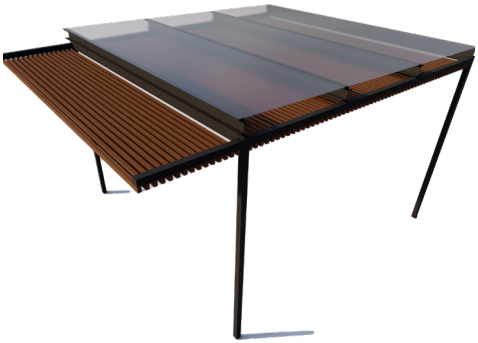
Food stall bar tables

Figure 153 : Urban furniture (Author)



Recycling bins

Recessed wall light fixture
for cast concrete
(seating wall)



Food stall pergola structure

ESSAY 4: REFLECTION

The intention of this project was to propose a landscape development in Atteridgeville that is rooted in 'place', for the main purpose of overcoming the issue of lost spaces emerging in urban areas. It was discovered that lost spaces have resulted in the degradation of the ecological functioning of the overall green open space framework. Thus, it was important to take a multi-scale approach in the analysis, as well as programmatic proposals of the design project. Through considering the ecological functioning parallel to the existing cultures and history of Atteridgeville, allowed the development of programmatic proposals that are relevant to the context of Atteridgeville, but more importantly celebrates it as a 'place'.

Upon first arrival in Atteridgeville, it was apparent that a distinctive food culture exists and has the opportunity to be celebrated. An in-depth study of the various food stall spaces revealed the special meaning associated with cooking food in Atteridgeville, and how it provides a platform for members of the community and surrounding communities to come together through food. The aim for this project was to reinterpret the current food culture in Atteridgeville, through integrating other significant cultures identified, such as the jazz culture and the farming culture. This integration further celebrates and supports the different stages of food, from production in agricultural areas to the consumption, and composting, forming a culinary corridor within an open green space.

The culinary corridor is situated within a larger framework and aims to physically connect lost spaces through celebrating significant place-making elements of Atteridgeville.

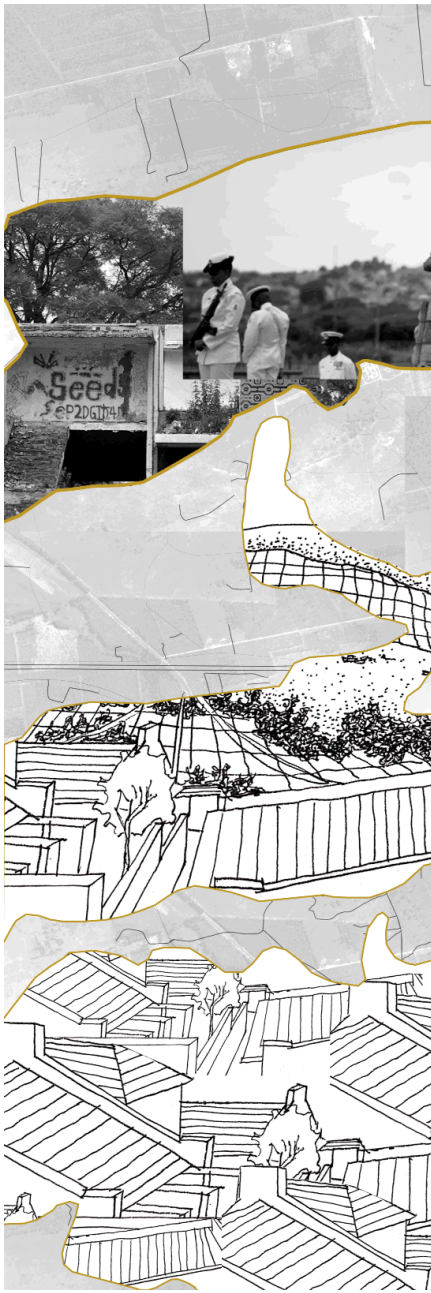
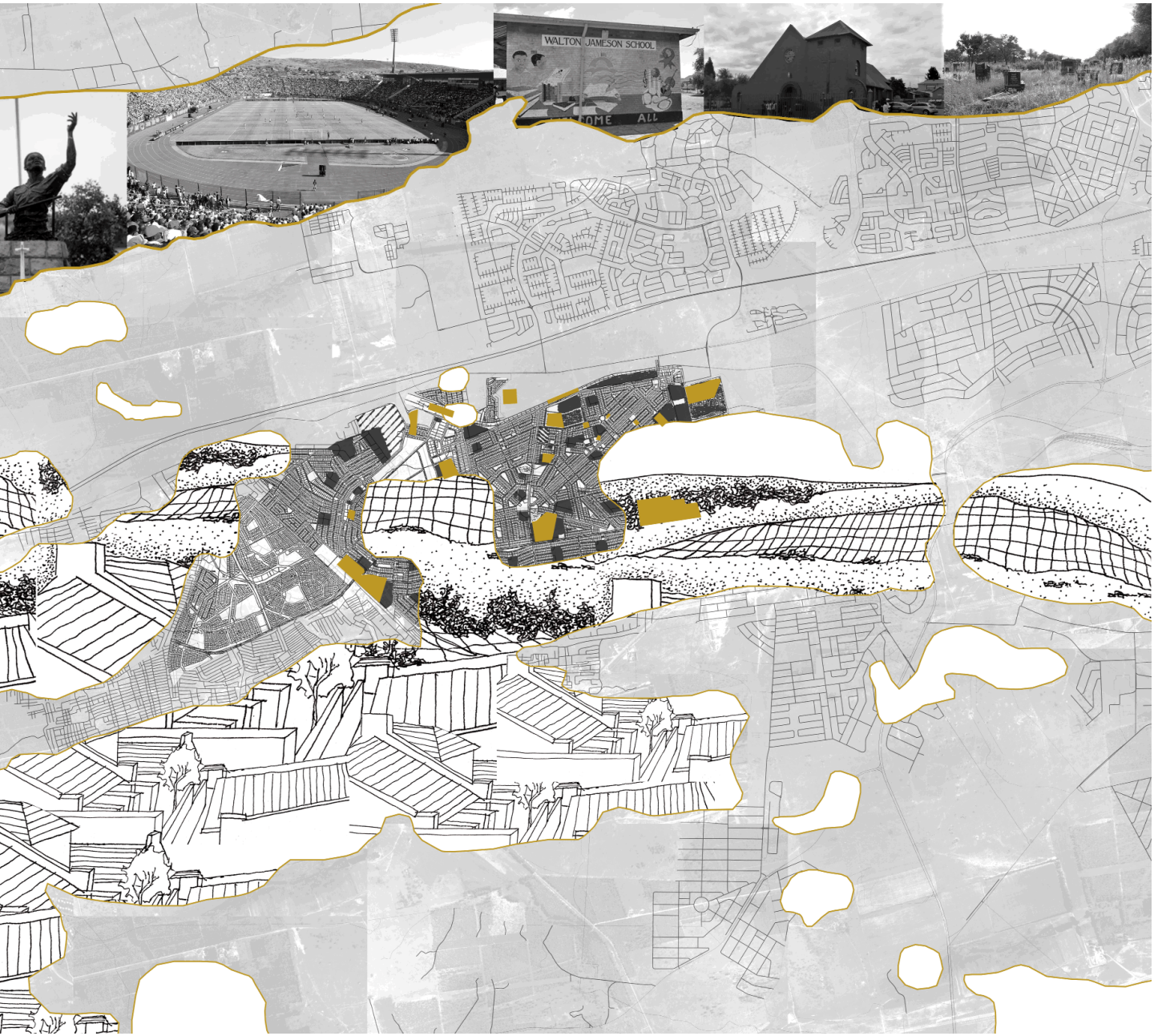


Figure 154: Reflection (Author)



This project addresses the issue of lost space on multiple scales, as well as through the consideration of the tangible and intangible components of place. This results in a layered approach to developing lost space, which enhances the existing urban form and proposing new spatial linkages, through applying green infrastructure principles. Through this approach, new spatial linkages enhance place-making opportunities, and vice versa.
This project celebrates important historical and cultural aspects of the site through integrating different programmes of cultural meaning into one functional system of landscape based around the existing food culture.
The occurrence of lost spaces in urban environments has a detrimental impact on the urban green space, the users, and the surrounding urban fabric. Thus, it is critical that these spaces are developed through a muti-scale and multi-layered approach.

It is the landscape architect's role to situate projects within a larger framework of the existing urban open space, to allow the emergence of new spatial linkages. Projects are often implemented with no consideration of the existing cultures and significant history, resulting in landscapes that are unfamiliar to the user. It is the landscape architect's role to uncover the existing cultural and historical influences of a site to create landscapes that are meaningful and rooted in time and place.

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APPENDIX I
INTERVIEWS

Interviews with stall owners

Interviewee A:

Q: What are the typical foods associated with Atteridgeville?
Interviewee A: Beef stew (prechopped steak, cooking oil, green pepper, and onion), chicken, cabbage, mash potato, sugar beans (brown), pap, and beef chops.

Q: Do you have any special memories associated with cooking food?
Interviewee A: Memories of my grandmother who taught her how to cook and memories of the restaurant I worked at in town (Church Street), the skills that I learnt there I can use now.

Q: What would you say is the traditional way to cook food in Atteridgeville?
Interviewee A: Cow leg and tripes. They boil cow legs, cow head and tripe and then only adding salt and no spices.

Q: What are the types of food that you cook here?
Interviewee A: Ox liver, beef stew, fried chicken, steak.

Q: How long have you been selling food in Atteridgeville?
Interviewee A: 2 years.

Q:Do you have a personal connection to cooking food?
Interviewee A: Yes, because I am the person everyone would go to regarding cooking, and they know I am good, and I love it.

Q: Why did you start your business in Atteridgeville?
Interviewee A: I work from here because this is my home, and I don't have to pay rent. In town it would be a lot more expensive.

Q: Why did you choose this specific location to sell food?
Interviewee A: Busy Street, there are many taxi drivers passing through here.

Q: Have you faced any major complications selling your food here?
Interviewee A: Business can be slow, and food is then wasted, because it is prepared in the morning for the rest of the day. There is also sometimes not enough stock to sell.

Q: Do you enjoy your work? Why?
Interviewee A: Yes. I can work for myself.

Q: Where do you buy your produce?
Interviewee A: Marabastad Market

Q: What would you say is the specific culture of cooking food in Atteridgeville?
Interviewee A: Most meat here is boiled, because the chicken that is sold here is a hard body chicken.

Q: Who normally buys your food?
Interviewee A: There are different people everyday

Q: What else do you provide to your customers?
Interviewee A: Water for washing hands, drinks, seating, shade

Q: Do people eat their food here or do they take it home?
Interviewee A: Most of them sit here.

Q: What do the customers do while the food is being prepared?
Interviewee A: The people socialize with me and with each other

Q:Where do you get water from?
Interviewee A: Municipal water from the tap.

Q: What time during the day is it the busiest?
Interviewee A: 10:00-11:00.

Q: What do you do with the food that is left over?
Interviewee A: Give it to the family and children. Bones are given to a guy in the neighbourhood to give to his dog.

Figure 155-157: Interview A photographs (GRIP students 2022)

Interviewee B:

Q: What are the typical foods associated with Atteridgeville?
Interviewee B: Tripe, Cows head, and chicken feet.

Q: Do you have any special memories associated with cooking food?
Interviewee B: Tripe, I used to eat it at home in Limpopo, its nostalgic.

Q: What would you say is the traditional way to cook food in Atteridgeville?
Interviewee B: The people here don't spice their food; they just add salt. This is streetwise because it gives people the option to either spice their food or not.

Q: What are the types of food that you cook here?
Interviewee B: Chicken, Archaar (Polony, cheese, chips, eggs, Vienna, Burger and Russian on bread).

Q: How long have you been selling food in Atteridgeville?
Interviewee B: Almost a year.

Q:Do you have a personal connection to cooking food?
Interviewee B: I just love it. Once you start to love it you enjoy doing it.

Q: Why did you start your business in Atteridgeville?
Interviewee B: Primarily because of Covid, we wanted something that would generate us money.

Q: Why did you choose this specific location to sell food?
Interviewee B: It is close to the mall so there is also a lot of people that work here.

Q: Have you faced any major complications selling your food here?
Interviewee B: Sometimes there are not enough customers or not enough stock.

Q: Do you enjoy your work? Why?
Interviewee B: Yes. It is fun.

Q: Where do you buy your produce?
Interviewee B: Butchery, in Nkomo mall.

Q: Who normally buys your food?
Interviewee B: Regular customers and new customers come to buy food from us.

Q: What else do you provide to your customers?
Interviewee B: We provide seating and water for them to wash their hands.

Q: What do the customers do while the food is being prepared?
Interviewee B: Socialize, we try and make the customer feel welcome. We exchange ideas and become friends.

Q: What time during the day is it the busiest?
Interviewee B: Usually in the afternoon around for when people leave work they buy dinner here, but also during lunch time.

Figure 158-159: Interview B photographs (Author 2022)

Interviewee C:

Q: What are the typical foods associated with Atteridgeville?
Interviewee C: Different sections in Atteridgeville prefer different food. The central section prefers cow head, tripe, cow heels ox-liver and stews.
Braaied chicken, chicken feet and heads in the South of Atteridgeville

Q: Do you have any special memories associated with cooking food?
Interviewee C: It is happy memories, but also sad memories. Because sometimes I crave it but other times it reminds me of people who used to cook and that have passed away.

Q: What are the types of food that you cook here?
Interviewee C: Pap, cow head, tripe, cow heels, hard boiled chicken, and ox livers.
Cow head and hard boil chicken sells the most.

Q: How long have you been selling food in Atteridgeville?
Interviewee C: 3-4 years.

Q:Do you have a personal connection to cooking food?
Interviewee C: When you cook you must give it your all, the food is like a small baby, and you know a baby can sense when you are happy or unhappy. When you cook you must cook with love.

Q: Why did you start your business in Atteridgeville?
Interviewee C: Due to lack of jobs and this high rate of unemployment.

Q: Why did you choose this specific location to sell food?
Interviewee C: It is very busy here in W.F. Nkomo Road, and it goes straight to town.

Q: Have you faced any major complications selling your food here?
Interviewee C: It is very muddy here when it is raining. And when there is too much rain, it also kills the cooking fires.

Q: Do you enjoy your work? Why?
Interviewee C: Too much, because of the passion that I have for food. And, the people and socializing, everything about it.

Q: Where do you buy your produce?
Interviewee C: Pretoria Cold Storage

Q: Who normally buys your food?
Interviewee C: Regular and different customers, it depends, some weeks we only get regular customers and other times there are different customers each day.

Q: What else do you provide to your customers?
Interviewee C: Water to wash hands (before and after eating), peri-peri, salt, shade, tables, and chairs, we also sell cooldrinks which people normally buy after they have eaten.

Q: Do people eat their food here or do they take it home?
Interviewee C: It is 50/50. The people who eat it at home buy it for their family or eat it later that day.

Q: What do the customers do while the food is being prepared?
Interviewee C: Some people just relax and sleep or they talk to us and ask about the food.

Q:Where do you get water from?
Interviewee C: Tap of the Hospital or the Saulsville hostels. No access around here.

Q: What time during the day is it the busiest?
Interviewee C: Morning Rush , around 09:00 and Lunch time, around 13:00.

Figure 160-161: Interview C photographs (Author 2022)

Interviewee D:

Q: What are the typical foods associated with Atteridgeville?
Interviewee D: Pap and Meat (Beef and Wors and Chicken) Most customers like to braai, but they also eat stew.

Q: What would you say is the traditional way to cook food in Atteridgeville?
Interviewee D: We spice the food with 6 Gun.

Q: What are the types of food that you cook here?
Interviewee D: The vegetables that we sell here is cabbage and sometimes spinach. The meat that we sell here is char, biscuit, ribs and wors.

Q: How long have you been selling food in Atteridgeville?
Interviewee D: 6 Months.

Q: Do you have a personal connection to cooking food?
Interviewee D: Yes, I like to cook how my mother taught me, but we cook differently here at the restaurant.

Q: Why did you start your business in Atteridgeville?
Interviewee D: I was looking for work

Q: Have you faced any major complications selling your food here?
Interviewee D: No

Q: Do you enjoy your work? Why?
Interviewee D: Yes, I see a lot of people and learn a lot from them like other languages and I just enjoy talking to the people that come in here.

Q: Where do you buy your produce?
Interviewee D: We buy the meat from Kit Kat and the vegetables from Shoprite.

Q: What else do you provide to your customers?
Interviewee D: Water to wash their hands, braai spots, chairs and tables, shade, and drinks.

Q: Do people eat their food here or do they take it home?
Interviewee D: Most people eat here

Q: What do the customers do while the food is being prepared?
Interviewee D: Socialize.

Q:Where do you get water from?
Interviewee D: Municipal tap on site.

Q: What time during the day is it the busiest?
Interviewee D: From 18:00 to 22:00

Interviewee E:

Q: What are the typical foods associated with Atteridgeville?
Interviewee E: African food. Tripe, cow head, and cow leg.

Q: What would you say is the traditional way to cook food in Atteridgeville?
Interviewee E: Boiling and adding salt

Q: What are the types of food that you cook here?
Interviewee E: Tripe, Chicken, Cow heals and cow head.

Q: How long have you been selling food in Atteridgeville?
Interviewee E: 5 years.

Q:Do you have a personal connection to cooking food?
Interviewee E: Always loved cooking from a young age and I cooked for my family.

Q: Why did you start your business in Atteridgeville?
Interviewee E: Atteridgeville is a convenient place to sell food because there are always people on the street.

Q: Why did you choose this specific location to sell food?
Interviewee E: Busy location, people come here to the train and with taxis and cars.

Q: Have you faced any major complications selling your food here?
Interviewee E: None.

Q: Do you enjoy your work? Why?
Interviewee E: Yes, and I can socialize with different people.

Q: Where do you buy your produce?
Interviewee E: Meat from Pretoria West. And the pap from the local tuck shop.

Q: What do the customers do while the food is being prepared?
Interviewee E: Some people eat it here and others take it home to eat later.

Q: Where do you get water from?
Interviewee E: Municipal water

Q: What time during the day is it the busiest?
Interviewee E: 11:00

Figure 162-163: Interview D photographs (Author 2022)

Figure 164-165: Interview E photographs (Author 2022)

Interviews with the community regarding the Hotel Ruin

Interviewee A:

Q: What do you think of the site on which the old hotel is located on?
Interviewee A: I think the site is in a good location and that it has potential.

Q: What do you think should happen on the site?
Interviewee A: I run an NGO (Non-Governmental Organization). My plan was to make it a home or a station. Most of my youth, they are struggling with applying for jobs.

Interviewee B:

Q: What do you know about the site?
Interviewee B: It was built in the 1980's. It was the first hotel in Atteridgeville.

Q: How do you know about the Hotel?
Interviewee B: I was born in Atteridgeville in 1984.

Q: Until when was it used as a hotel?
Interviewee B: It's been a long time, about 20 years.

Q: Did you ever visit the hotel?
Interviewee B: I was too young, but my parents visited it and they liked it very much.

Q: Do you think it is an important building in Atteridgeville?
Interviewee B: It is not important now. A lot of junkies are sleeping inside it. They rob people and then run back into the building.

Q: Would you say that the Hotel carries a special memory in Atteridgeville?
Interviewee B: Yes, it was once special to the people.

Q: Do you know how it came to the ruined state that it is in now?
Interviewee B: No

Q: Do you think the building must be demolished or be re-used?
Interviewee B: I heard that they are going to demolish it because they want to put a library there.

Q: Do you think it would be successful as a library?
Interviewee B: Yes

Interviewee C:

Q: What do you know about the site on which the old hotel is located on?
Interviewee C: It used to be a hotel and accommodation place, like a guesthouse.

Q: Did you or your family ever use the hotel?
Interviewee C: I don't think my family ever used it, but there was a lot of people around Atteridgeville that used it. It used to be used by sport teams that came to play in Atteridgeville. I think the PSL have utilized it before as accommodation for players.
It used to also be a pub and there was a bottle store on the other side of the Hotel.

Q: How do you feel toward the Hotel being built here in Atteridgeville?
Interviewee C: While I was too young, so I don't know. But, looking at it now and the state that it is in, there's pollution, people using drugs there and living there, so I think It served its purpose at the time. It would have brought visitors and jobs for the community.

Q: Why do you think that it got to the ruined state that it is in now?

Interviewee C: It is hearsay, I know that the owner passed on and it was a situation of he did not write a will and he had children but there was no decision made regarding who would take ownership. There was a dispute, the children could never agree. So, the hotel stopped functioning entirely and the bottle store only stopped functioning around 2016.

Interviewee D:

Q: What do you know about the site?
Interviewee D: It was a hotel and there was also a bottle store and they also used to bet horses here. There was also dry-cleaning.

Q: When did people stop using it?
Interviewee D: In 1995.

Q: Did you ever use the hotel when it was a hotel?
Interviewee D: Yes, I enjoyed this place.

Q: Do you have special memories of the site?
Interviewee D: Yes, I enjoyed coming here with my friends and drinking. It was a nice space to relax.

Q: Do you think that this building must be reused or demolished?
Interviewee D: It should be demolished, and they should start something else.

Q: What do you think should happen on the site?
Interviewee D: I think it must be a library and a place for students to come

APPENDIX II
WATER CALCULATIONS

Water harvested from the Skinner Spruit

Skinner Spruit water source:

Month	Weekly Yield (m^3)	Monthly Yield (m^3)
January	100	0
February	100	400
March	100	400
April	100	400
May	100	400
June	100	400
July	100	400
August	100	400
September	100	400
October	100	400
November	100	400
December	100	400
Annual Total (m^3)		4400

Agricultural Irrigation Demand:

Area Agriculture (m^2): 1800

Month	Weekly Irrigation (m)	Monthly Demand (m^3)
January	0,05	360
February	0,05	360
March	0,03	216
April	0,03	216
May	0,03	216
June	0,025	180
July	0,025	180
August	0,025	180
September	0,03	216
October	0,03	216
November	0,05	360
December	0,05	360
Annual Total (m^3)		3060

Evaporation Loss:

Area of Detention Pond (m^2): 450

Month	Evaporation rate (m/week)	Evaporation rate (m/month)	Total loss (m^3/month)
January	0,04	0,16	72
February	0,035	0,14	63
March	0,025	0,1	45
April	0,02	0,08	36
May	0,015	0,06	27
June	0,01	0,04	18
July	0,01	0,04	18
August	0,02	0,08	36
September	0,03	0,12	54
October	0,035	0,14	63
November	0,035	0,14	63
December	0,04	0,16	72
Annual Total	0,32	1,26	567

Total water demand after evaporation loss:

Month	Total demand (m^3/month)
January	432
February	423
March	261
April	252
May	243
June	198
July	198
August	216
September	270
October	279
November	423
December	432
Annual Total (m^3)	3627

Water Budget:

Month	Monthly Yield (m^3)	Monthly Demand (m^3)	Monthly Balance	Potential Volume (m^3)	Volume in Tank (m^3)
January	0	432	-431,9	450	450
February	400	423	-23	450	450
March	400	216	139	589	589
April	400	252	148	737,1	737,1
May	400	243	157	894,1	894,1
June	400	198	202	1096,1	900
July	400	198	202	1298,1	900
August	400	216	184	1482,1	900
September	400	270	130	1612,1	900
October	400	279	121	1733,1	900
November	400	423	-23	1710,1	877
December	400	432	-32	1678,2	845,1
Annual Average (m^3)	4400	3627			

Estimated detention pond capacity (m^3): 900
Minimum volume of water in detention pond (m^3): 450

Rainwater harvested from the roof structures:

Water source:

Description	Area (m^2):	Runoff Coefficient (C)
Roof Structures	880	0,9

Total Water Yield:

Month	Average Rainfall, P (m)	Catchment Yield (Yield = PxAxC) (m^3)
January	0,136	107,71
February	0,082	64,94
March	0,075	59,40
April	0,051	40,39
May	0,013	10,30
June	0,007	5,54
July	0,003	2,38
August	0,006	4,75
September	0,006	4,75
October	0,071	56,23
November	0,098	77,62
December	0,11	87,12
Annual Total	0,674	521,14

Agricultural Irrigation Demand:

Area Agriculture (m^2): 300

Month	Weekly Irrigation (m)	Monthly Demand (m^3)
January	0,05	60
February	0,05	60
March	0,03	36
April	0,03	36
May	0,03	36
June	0,025	30
July	0,025	30
August	0,025	30
September	0,03	36
October	0,03	36
November	0,05	60
December	0,05	60
Annual Total (m^3)	510	

Water Budget:

Month	Monthly Yield (m^3)	Monthly Demand (m^3)	Monthly Balance	Potential Volume (m^3)	Volume in Tank (m^3)
January	107,71	60	47,7	112,7	10
February	64,94	60	4,9	117,6	10
March	59,40	36	23,4	141	10
April	40,39	36	4,4	145,4	10
May	10,30	36	-25,7	119,7	5
June	5,54	30	-24,5	95,3	5
July	2,38	30	-27,6	67,6	5
August	4,75	30	-25,2	42,4	5
September	4,75	36	-31,2	11,1	5
October	56,23	36	20,2	31,4	10
November	77,62	60	17,6	49	10
December	87,12	60	27,1	76,1	10
Annual Average (m^3)	521,14	510	11,1		

Tank capacity (m^3): 10
Minimum volume of water in tank (m^3): 5