

RESEARCH REPORT

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

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DECLARATION OF ORIGINALITY

I declare that the mini-dissertation,

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

which has been submitted in fulfilment of part of the requirements for the module of **Design Investigation 802 (DIT)**, at the University of Pretoria, is my own work and has not previously been submitted by me for any degree at the University of Pretoria or any other tertiary institution.

I declare that I obtained the applicable research ethics approval in order to conduct the research that has been described in this dissertation.

I declare that I have observed the ethical standards required in terms of the University of Pretoria's ethic code for researchers and have followed the policy guidelines for responsible research.

Signature: 

Date: 28 June 2024

Abstract

Public parks are an essential type of urban nature as they provide access to nature and its ecosystem services, particularly within marginalised communities that don't have alternative nearby access. However, parks within the City of Tshwane are in poor condition. Furthermore, the influence of Eurocentric ideologies such as Apartheid and Colonialism remains prevalent through unequal green space distribution, non-native tree species and the lack of acknowledgement of alternative constructs of nature. This is further exacerbated by the lack of academic literature documenting African human-nature relationships and how landscape architects should incorporate them appropriately. This report investigated twenty-one residents' nature-related stories through semi-structured interviews and observations within three parks of different conditions. The study showcased that people valued natural landscapes and parks, but current parks prioritised social functions rather than ecological ones. Findings indicated an overlap in the value and use of public parks, perceptions of natural landscapes and botanical knowledge. The outcome of the study is the identification of design informants that contribute to more appropriate public park design approaches, informed also through botanical knowledge.

Keywords:

City of Tshwane, botanical gardens, urban nature, public parks, human nature relationships, nature-related stories, landscape architecture

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List of Acronyms

CoT:	City of Tshwane
HNR:	Human nature relationships
ESS:	Ecosystem services

Definitions and key theoretical concepts

The following summarised definitions provide the context of terms for the background and study. See page 12 for further definitions.

Afrocentric: “centred on or derived from Africa or the Africans” “emphasising or promoting an emphasis on African culture and the contributions of Africans to the development of Western civilisation” (Merriam Webster, 2024a:109).

Botanical Gardens: “institutions holding documented collections of living plants for the purpose of scientific research, conservation, plant display and education” (Botanic Gardens Conservation International, Not dated). “shop windows of biodiversity”, “living libraries” (Poulsen, 2020).

Eurocentric: “centred on Europe or the Europeans”; “reflecting a tendency to interpret the world in terms of European or Anglo-American values and experiences” (Merriam Webster, 2024b).

Urban Nature: “urban formal and informal green space that includes public parks, street trees, gardens, rivers, green infrastructure and forests” (Hoyle, 2020).

1. Introduction

The first section contextualises the issue of current urban natures.

1.1 Background

As cities globally expand, land uses change to accommodate new residents and services. (Ward, Parker & Shackleton, 2010:49). The consequence of this is a priority for development and the decline of available urban nature and their ecosystem services (Ward *et al.*, 2010:49). Green infrastructure provision, including local parks and open spaces, are overlooked in favour of grey infrastructure and housing provision (Schäffler & Swilling, 2013). However, these spaces play a valuable role in urban environments' mental, recreational, social, ecological, economic and aesthetic functions (Shackleton & Blair, 2013:104-105). For some residents, especially in low-income residential areas and within flats in the inner-city districts, without private gardens, it is the only place to access nature (Shackleton & Blair, 2013; Venter, Shackleton, Van Staden, Selomane & Masterson, 2020). This exemplifies the importance of urban nature conservation.

Current green space planning is governed and influenced by Eurocentric ideals and does not reflect alternative constructs of nature (Cocks, Shackleton, Walsh, Haynes, Manyani & Radebe, 2020:104-105). As sub-Saharan Africa is the fastest-urbanising region in the world (Titz & Chiotha, 2019) there is an increased interest that green space planning reflects Afrocentric human nature relationships (HNRs), knowledge systems and preferences of urban nature (Shackleton & Gwedla, 2021:9).

South Africa's history of Colonialism and Apartheid enforced deliberate spatial inequality and unequal green space distribution (Shackleton & Gwedla, 2021). The racial discrimination led to forced removals of black African residents from home landscapes, limited access to formal green and recreational spaces and the dismissal of Indigenous knowledge systems as Indigenous groups were excluded from the planning phase (Landman & Makakavhule, 2021:542-543; Shackleton & Gwedla, 2021:2). In addition, Eurocentric knowledge systems influenced urban nature conditions through replicated Western-style garden culture, along with the introduction of non-native plant species and memorials (Shackleton & Gwedla, 2021). These urban natures are characterised by an emphasis on recreational activities and that man is separated from nature (Cocks *et al.*, 2020:104).

While recreational services are important, the current urban nature conditions do not facilitate more multifaceted HNRs. Cocks *et al.* (2020) states that many African communities, practice biocultural diversity where nature and culture are interconnected. In particular, the use of the natural environment to cultivate and harvest wild plant species for medicinal, cultural and edible functions (Cocks & Wiersum, 2003). As people urbanise across the country for socioeconomic and educational opportunities, they encounter different natural landscapes that do not resonate with their typical HNRs or the resources they are accustomed to at home (Njwambe, Cocks & Vetter, 2019:416). This continues as landscape professionals and local authorities exclude community members from the design and planning process of urban nature (Shand, 2022:37) and there are limited literature sources on Afrocentric nature preferences and uses (Shackleton & Gwedla, 2021). Therefore, urban nature spaces remain Eurocentric.

Within the City of Tshwane, the available urban nature spaces vary in condition. There are restricted private spaces, including sports fields on institutional campuses, home gardens, government-owned green spaces and fenced-off open spaces. Meanwhile, public institutions such as parks decay with broken infrastructure, damaged statues, irregular maintenance, safety issues and illicit activities (Landman & Makakavhule, 2021; Shackleton & Gwedla, 2021; Shand, 2022). However, these spaces remain valuable and are used often. As city officials appoint landscape and urban planning professionals to design adequate public green spaces, designers play a major role in access to natural features and ecosystem services (Shand, 2022). But time, budgetary constraints, limited resources and operational management issues can impact the success of these spaces. This leads to the standardisation of parks to alleviate distribution and maintenance pressure (Shand, 2022:152). As a result,

parks that acknowledge place-based circumstances are rare. Another type of urban nature is botanical gardens. These play a significant role as education centres for schools, conservation of rare and threatened Indigenous plant species, scientific research, and showcase fauna and flora through herbariums and gardens (Poulsen, 2020; Ward et al., 2010:50). However, the current visitor profile is limited as these are not along public transport routes (Ward et al., 2010).

1.2 Research problem

Urban nature is integral to residents' lives, providing essential benefits, but urban development poses a threat to its existence (Ward et al., 2010). Eurocentric ideals have historically shaped urban natures, reflected in the prevalence of non-native plant species and the lack of alternative constructs of nature (Cocks *et al.*, 2020; Shackleton & Gwedla, 2021). There is a noticeable gap in research on local human-nature interactions and their impact on design approaches (Landman & Makakavhule, 2021:542). In contrast, botanical gardens prioritise the conservation of Indigenous plant species, but accessibility remains limited (Ward et al., 2010). Constraints in green space provision have resulted in standardised parks that overlook place-based circumstances (Shand, 2022:152). This investigation aims to expand knowledge of current park perceptions, nature-related stories and the potential for a contemporary take on botanical gardens and knowledge in public open space, identifying design informants to contribute to more appropriate design approaches in Landscape Architecture. In this case, the study focuses specifically on public parks.

1.3 Research questions

The central research question driving this study is:

What locally appropriate, and representative design informants can be identified from an investigation into the nature-related stories that people tell about 'home' landscapes, to promote more authentically representative urban, public and primarily open spaces in various South African contexts?

The sub-question is further tailored down to:

How do current park perceptions, nature-related stories and an investigation of botanical knowledge inform the Landscape Architectural approach to public parks in the City of Tshwane?

1.4 Research objectives

The following table outlines the study's main research objectives that are tied to specific research phases.

Table 1: Research objectives and phases
Source: Author, 2024, (adapted from Shand (2022:8))

Objective 1 Interrogate the current design approach of public parks through the lens of Eurocentric influence and nature-related stories.	PHASE 1	Investigate the influence of Eurocentric ideologies within South African urban nature.
		Highlight and document current public park conditions and perceptions of Eurocentric features.
	PHASE 2	Investigate improved design approaches recommended in similar research studies.
		Inquire about people's perceptions, value and use of current public parks and natural landscapes.
		Identify design informants from nature-related stories relevant to public parks.
	PHASE 3	Consolidate literature sources and findings to suggest recommendations for improved design approaches of public parks.

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Objective 2 Examine and document knowledge of alternative human nature-relationships.	PHASE 1	Inquire about people’s association with nature, its value and use, as well as how they define nature.
		Collect nature-related stories at play in the Global South, which can impact the approach to public parks.
	PHASE 2	Document place-based stories through interpretation drawings.
Objective 3 Investigate the potential of botanical knowledge to inform design approaches.	PHASE 1	Research the historical and contemporary functions of botanical gardens.
		Explore people’s value and use of botanical gardens.
	PHASE 2	Compare current park perceptions and preferences, botanical gardens and stories related to natural landscapes.

2. Literature review

2.1 Key theoretical concepts

The first section includes the definitions of key terms and theoretical concepts within the context of the study. Additionally, it also delineates the terms that will be used in the rest of the research paper as there are many similar terms used in different literature.

Biocultural diversity: Cocks *et al.* (2020:105) explains the term as the interconnected relationship between people and nature. The original concept described the link between Indigenous communities and natural resources but has evolved to include contemporary urban contexts and dynamic nature relationships (Cocks, Alexander, Mogano & Vetter, 2016). Within the South African context, biocultural diversity is evident in the use and value of nature among many rural and urban residents. Uses include spiritual associations and utilitarian functions to collect wild plant species as demonstrated in Figure 1

Colonialism: refers to Western colonialism where European nations conquered vast areas in America, Asia, Australia, and Africa, leading to the spread of European institutions and culture (Nowell & Webster, 2023). While this expansion provided economic, political and resource benefits to the colonisers, it often resulted in significant disadvantages to Indigenous communities (Kohn & Reddy, 2024).

Decolonising space: a process to reconsider the embedded colonial ideas of space and offer an alternative usage and understanding of environments appropriate to the local conditions (Landman & Makakavhule, 2021:542).

Eurocentric construct of nature: Cocks *et al.* (2020:104) defines the occurrence as nature is opposite to man and people attempting to tame and control nature as demonstrated in Figure 2. Spaces are designed to prioritise appreciation of nature's beauty, increased biodiversity, recreation, sport and to improve residents' physical and mental health. Examples of Eurocentric urban nature include botanical, memorial gardens and English-style parks (Cocks *et al.*, 2020; Shackleton & Blair, 2013).

Home and natural landscapes: refers to nature described beyond the urban environment, when people describe activities related to rural contexts and childhood experiences and include terms such as "village" (Njwambe *et al.*, 2019:413).



Figure 1: Biocultural diversity present in South African communities

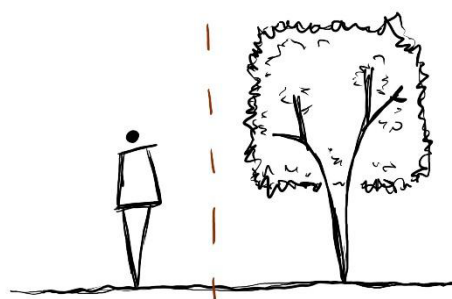


Figure 2: Eurocentric construct of nature

Source: Author, 2024

2.2 The inherited legacy of Colonialism and Apartheid within South African urban nature

The following section of the literature deals with some of the negative effects that Eurocentric landscape design approaches have left in South African public open green spaces. The section also touches on the lack of design approaches that consider alternative, place-based associations of nature in the Global South.

2.2.1 Colonialism and Apartheid

After the arrival of the Dutch settlers in the Cape of Good Hope in 1652 and British settlers in 1820, there was an array of Eurocentric ideologies that were systematically adopted in South African spatial planning. These are still evident in contemporary South Africa (Cocks *et al.*, 2016:821). The Eurocentric construct of nature was put at the forefront of global policies, sustainable development goals and urban development which impacted the local ecological systems and the way nature was adopted in urban conditions (Cocks *et al.*, 2020:104). During green space planning, Indigenous communities weren't involved and therefore their local knowledge systems and identity were dismissed (Landman & Makakavhule, 2021:542-543; Shackleton & Gwedla, 2021:2). In turn, urban green spaces lack alternative associations and meaning with nature, which contributes to the global decline of biocultural diversity as reported by (Cocks *et al.*, 2020:105).

Moreover, these practices replicated the western view of urban nature which led to English-style parks, botanical and memorial gardens. Shackleton and Gwedla (2021:6) describe the characteristics of English-style parks that have manifested themselves in local parks, in the form of extensive lawns, large trees, and flowerbeds, decorated with artwork and memorial plaques. Landscape architects and gardeners further replicated Western gardens as they planted non-native plant species from countries in Europe, Australia, Central and South America, especially in the former Colonial core of Central Business Districts (CBD) and affluent areas (Shackleton & Gwedla, 2021:2-5). These include invasive species that are costly to maintain and threaten existing biodiversity. Cocks *et al.* (2020:104) argue that these spaces replicate the Eurocentric construct of nature, with manicured and controlled nature, meant for admiration, recreation and sport and not interaction. Shackleton and Gwedla (2021:6) raise the concern that although these recreational services are important to residents, it does not facilitate the multifaceted human-nature relationships of South African communities.

Another remaining legacy informed by colonialism is the environmental injustice brought about by the deliberately varying distribution of public green space and residential areas according to race groups (Shackleton & Gwedla, 2021; Venter *et al.*, 2020). Shackleton and Gwedla (2021:3) report that larger and more frequent green spaces were planned near low-density affluent white neighbourhoods. Furthermore, these advantaged areas had higher density and diverse street trees, along with the CBD. Meanwhile, townships were lacking in formalised tree planting initiatives altogether (Shackleton & Gwedla, 2021:4). The injustices continue through access to formal and informal green spaces. Cocks *et al.* (2020:111) highlight that pasture areas, known as commonages, were specifically assigned to white farmers to generate income, which disadvantaged other race groups. Additionally, the unequal distribution of urban forests disproportionately affected black African residents, depriving cultural groups that associate forests with their ancestral spirits and rituals of access to these spaces (Shackleton & Gwedla, 2021:3&6).

The spatial injustices initiated during the colonial era, continued during Apartheid from 1948 until 1994 as people were legally separated according to race. Laws restricted black South Africans to live in townships, characterised by inadequate services, recreational spaces and access to public nature (Cocks *et al.*, 2020:109; Shackleton & Gwedla, 2021:3). After 1960 many people were further forced to move to the ten established homelands and lost ownership of their farmlands (Cocks *et al.*, 2020:109).

Shand (2022:16) explains that the leisure practices within South Africa are askew, as public recreational facilities including public parks and gardens in the CBD were demarcated according to race. Black African residents were reliant on nearby nature, municipal commonages and insufficient public parks, while white affluent communities

had large domestic gardens or enclosed parks (Cocks *et al.*, 2016). These inequalities remain evident in current urban nature conditions.

2.3 Current urban nature conditions in Post-Apartheid South Africa

Shackleton and Gwedla (2021:8) report that even after the end of Apartheid in 1994, the past spatial inequality and exclusion remain embedded in current urban natures. The following literature expands on the current conditions of urban nature and how the influence of Eurocentric design approaches remains prevalent.

2.3.1 Current public park conditions reported in similar research

Shackleton and Gwedla (2021:5) reported on resident's perceptions of public green spaces within South Africa. In poorer neighbourhoods, there was a perception of neglect of public green spaces due to no or minimal tree provision, poor and irregular maintenance, absence of litter bins or irregularly emptied bins, vandalism of infrastructure, dung of livestock, unsafe play equipment, and less space for greenery due to high housing density. While in more affluent neighbourhoods, similar issues were raised, but less frequently. The parks were generally better maintained as fewer households required access to public green spaces with private yard space.

Shand (2022:161-183) similarly reported varying conditions within three CoT public parks with evidence of damaged infrastructure, illegal dumping, litter and overgrown vegetation. Meanwhile, one park in a historically white neighbourhood was better maintained. Within the study, residents raised concerns about safety, maintenance and management. (Shand, 2022:183). Even though the conditions were poor, residents still frequently visited the parks. Communities within the urban periphery potentially have a higher risk of experiencing environmental injustices due to budgetary constraints and conflicting urban planning agendas. As city officials attempted to reverse colonial and Apartheid legacies this led to a standardised approach to public parks. But as evident in Shand (2022:184) study, park users felt dissatisfied with their nearby nature places. The public parks had minimal natural features, lacked biodiversity and promoted social functions and amenities over ecological benefits and nature connection.

2.3.2 Perpetuation of the Eurocentric design influence within South African urban nature

The spatial injustice issues regarding public green spaces remain largely unaddressed due to the high housing density and lack of adequate space. As an example, Shackleton and Gwedla (2021:4) report that Reconstruction and Development Programme (RDP) housing schemes, implemented by the government after 1994 to reverse some of the enduring planning issues related to housing, are plagued by a lack of access to green infrastructure as the streets are too narrow for street trees. Black African people have received access rights to commonages, which is positive but not yet implemented on a grand scale. As the example mentioned by Cocks *et al.* (2020:111) Komani residents in the Eastern Cape utilise the land for grazing, collecting wild resources, sports and cultural ceremonies. Shackleton and Gwedla (2021:6) further, expand on shortcomings as they report a high portion of remaining non-native tree species within the CBD and affluent neighbourhoods. However, a greater proportion of native plant species have been planted in townships and RDP neighbourhoods. But often there is insufficient space to grow plants with cultural significance at home yards (Shackleton & Gwedla, 2021).

Meanwhile, Cocks *et al.* (2020:120) argue that local authorities haven't reconsidered public parks to incorporate local preferences and meanings. As an example, newly established public parks in townships post-1994, remain solely recreational destinations instead of incorporating Indigenous plant species with cultural significance to residents (Cocks *et al.*, 2020). However, even if this was the case, (Shackleton & Gwedla, 2021:6) raise the issue that residents are prohibited from collecting plant species for medicinal and cultural rituals within urban parks. In many urban parks, memorials, remembrance plaques and physical symbols of colonialism and Apartheid remain. Landman and Makakavhule (2021:542 & 546) highlight the complex debate about statues of historical figures. Many people damage these symbols as they represent hurtful memories. But they can also be

historically significant, and mark a history that can't simply be erased. Lastly, even newly established memorial sites that pay homage to liberation struggle heroes remain tourist destinations, as they often align with European ideals, misrepresenting non-European values (Cocks *et al.*, 2020:110). This perpetuates the colonial legacy as it prioritises design to cater for a Western audience, instead of authentically representing the local heritage and its significance to Indigenous communities.

In summary, the influence of Eurocentric Landscape design within South African public parks:

1. Variations of English-style parks with extensive lawns, large trees and flowerbeds (Shackleton & Gwedla, 2021:6):
2. Non-native plant species (Shackleton & Gwedla, 2021:6)
3. Memorials and statues of prominent figures (Landman & Makakavhule, 2021:541,542 & 546)
4. Prohibited biocultural diversity activities, such as plant collection (Shackleton & Gwedla, 2021:6).
5. Focus on recreational and ornamental features (Cocks *et al.*, 2020).
6. Dismissal of Indigenous nature use (Landman & Makakavhule, 2021)

2.4 Afrocentric Nature-related stories in similar research studies

The following set of literature sources expands on the role and use of South African natural landscapes.

Cocks *et al.* (2020) conducted a study in the Eastern Cape on how Xhosa-speaking residents use urban natures. They especially visited commonages and forests to connect with nature, their ancestors, other people of the natural world and God. These spaces serve as places to escape the city, socialise and collect natural resources (Cocks *et al.*, 2020:112-114&118-119). Shackleton and Gwedla (2021:6) reported similar nature activities, including religious ceremonies and worship, and livestock grazing. Within the literature, the ability to collect plant species for cultural, medicinal, traditional and spiritual rituals was often highlighted. These practices are usually not allowed in formal urban nature spaces, so they occur in informal urban green spaces or are postponed until residents return to their home landscapes (Shackleton & Gwedla, 2021:6). Njwambe *et al.* (2019:418) add that urban residents refrain from performing spiritual practices due to the absence of ancestors and the impracticality of congested living conditions.

An important factor highlighted was how different activities were associated with different nature categories:

2.4.1 Home yard spaces

Cocks *et al.* (2020) illustrate the value of yard spaces for important rituals as residents highlighted that their ancestors resided in the kraal and they communicate with them through a tethering pole. In addition, performing animal sacrifices occurred at home. Njwambe *et al.* (2019:423) similarly reported that ancestral spirits were linked to homesteads and graves. Significant plant species, including vegetables, religious and medicinal plants to cure illnesses and cleanse the body, were cultivated at home (Cocks *et al.*, 2020:114).

2.4.2 Forest spaces

Cocks *et al.* (2020:113) reported that Xhosa-speaking residents perceive forests as sacred spaces, where descendants communicate with ancestors that reside there. This happens in conjunction with the presence of birds, mammals, insects and the wind. Within these areas, cultural practices including male initiation ceremonies and teachings of animal slaughter occur. Njwambe *et al.* (2019:424) identify that walks and firewood collections happen within forests.

2.4.3 Local commonages¹

Cocks *et al.* (2020:111-112 & 118) explained that urban residents use commonages for animal grazing, vegetable gardens for household consumption and income, natural resource collection including firewood, wild fruits and building materials, sports and cultural events. Traditional medicinal, edible and plant species for spiritual rituals are also gathered here (Cocks *et al.*, 2020).

2.4.4 Water spaces

Cocks *et al.* (2020:116) mentioned that residents visit local dams and rivers during holidays with family and friends. They valued their restorative properties and recalled childhood memories associated with water and playing (Njwambe *et al.*, 2019:426-427).

2.4.5 Public Parks

Shand (2022:183 & 187) observed and documented public park use within the City of Tshwane, which revealed that the current parks facilitated more social functions instead of ecological and ecosystem service (ESS) provision. Parks were used for typical recreational activities including children's play, rest, relaxation, exercise, walking and lunch breaks (Shand, 2022:164). Both Shand (2022) and Cocks *et al.* (2020:108-110 & 116) mentioned social activities, gathering with family and friends, playing sports such as soccer and cricket, braai, holding community meetings, and park runs. Shand (2022:184) gave evidence that parks are an extension of home through food preparation in groups. Other activities noted by Landman (2015:92) included vendors often located on the peripheries of parks, photography, informal markets and church services. Shand (2022:166) further noted that parks become places where illicit activities occurred in secluded areas including drug and alcohol abuse, gambling and dumping. Furthermore, Shand (2022:165 -168) noted adaptations within the parks as public parks did not suit community needs, through informal desire lines, bollards that were removed and replaced to accommodate events, trees and picnic sets as play equipment for children and paving bricks used as seating, soccer posts and to play marbles.

Some human-nature interactions observed within the parks included the utilisation of shade from trees by vendors and residents, boulders as play equipment, individual gardening initiatives and appreciation of natural features (Shand, 2022:173-182). Otherwise, when natural features weren't maintained, they deterred people from using them such as children playing in the street rather than the overgrown lawn.

2.5 Improved design approaches from similar research studies

Beningfield (2006:224) states that even though many South African residents associate meaning with natural landscapes, many attempts to showcase South African identity remain within architectural elements and buildings. The next review of relevant literature sources provides insight into a new design approach that addresses the improvement of public space with a focus on appropriate design and planning approaches, representation of alternative worldviews and personal histories, ways to decolonise public space and incorporate bio-cultural diversity.

Shand (2022:252) investigated the current public park-making process and introduced a new design approach as a combination of nature-orientated design solutions, human-nature and social relationships and lived experiences. Shand (2022:252-258) recommends guiding principles for nature-based park-makings, which includes "knowledge and capacity building", "engagement" involving community participation, "inclusive praxis" to ensure collaboration between community and planning professionals during the entire process, "design informants" considering tangible and intangible ecological and social informants. This involves a place-based

¹ Local commonages refers to municipal land that is public and grants access to residents for grazing land, agriculture, natural resources and other productive activities (Department of Land Affairs, 1997)

approach, where each park is individually considered, along with how natural features and ecosystem services can be incorporated to benefit the residents.

Young and Vosloo (2020:92-93) also mention the importance of active community participation during the planning and design phase. They recommend that placing the potential users at the forefront, to guide the narrative will contribute to a better understanding of the complexity of the context and intangible interpretation. Graham Young describes the success of this approach, through his design of *Isivivane*, a memorial space that encapsulates cultural traditions, experiences and features identified during public participation (Young & Vosloo, 2020:93 & 113). Additionally, community participation contributes to ownership of public spaces, and when managing authorities actively work to give meaning to a place it motivates long-term involvement from the community (Kil, Holland & Stein, 2014:478).

Young and Vosloo (2020:113) described that designers cannot give meaning to place, but they can evoke an emotional response and memories through embedded representations of people's culture, and identity in design. For people to actively engage and feel connected with the final design feature they recommend that the arrangement of elements should entice curiosity and further understanding of a place's meaning and memory. Importantly, Young and Vosloo (2020:92) warn that this connectedness isn't evoked through literal symbols but rather through abstract features with multiple interpretations, both universal and common. The approach should be an open narrative, that expresses an ongoing process and multiple identities and histories. This builds on the approach by Beningfield (2006:223) who argued that the design should be flexible, layered with different meanings and incomplete, able to evolve alongside the community. This idea supports a major theme of the literature, that is: to acknowledge ambiguity, to recognise multiple knowledge systems and perceptions of nature, instead of a single Eurocentric vision.

Landman and Makakavhule (2021:545-552) focused on the topic of decolonialising space through tangible spatial interventions, by recommending a three-stage process, based on their academic literature review. Firstly "remembering", through acknowledging past misrepresentations of people. Then "re-imagining" existing events that represent alternative meanings. An example of this could be placing new public art or monuments across from historical statues, to start a new dialogue of understanding the past and present. Lastly "transforming": by creating a narrative of the past and future in the present for new stories to emerge. These transformations mustn't just consist of add-on features or decorations but rather bring a systematic shift, acknowledging past shortcomings and involving communities.

Cocks *et al.* (2020:119-121) also advocated for the decolonisation of urban nature through biocultural diversity, emphasising the importance of acknowledging black African HNRs. This involves a deep understanding of local nature associations, meanings, stories and needs within urban nature, which can be incorporated within urban planning to create spaces that resonate with residents. They recommended that these areas serve as everyday spaces for residents, rather than exclusive tourist destinations. Both Cocks *et al.* (2020:120) and Shackleton and Gwedla (2021:7-9) stress the incorporation of appropriate Indigenous plant species. Additionally, Shackleton and Gwedla (2021:7-8) encourages local authorities to acknowledge the unequal green space distribution and adopt a co-design approach. This approach should include conservation policies to preserve Indigenous species, the integration of urban street trees and green space planning that aligns with residents' needs.

2.6 Historical and potential functions of botanical gardens

The following literature sources highlight the role of botanical gardens as an integral type of urban nature, from historical contexts to their contemporary significance.

The functions of botanical gardens have evolved over the last few decades. Hill (1915:186) credits Chinese botanists as its founder as they used gardens for cultivating and evaluating medicinal herbs to cure illnesses. In

the ninth century, physic gardens were established at monasteries and later at European universities to study medicinal plants (Krishnan & Novy, 2016:1; Poulsen, 2020). During the colonial period, European explorers expanded botanical gardens to include rare and exotic species collected during travels. With increased scientific studies, educational gardens at universities included herbariums to display plant information and laboratories for plant research (Hill, 1915:205-206). By the early eighteenth century, greenhouses and conservatories were added, to protect plants from the weather. European colonies in the tropics, became trade centres for exotic plants, leading to the establishment of spice gardens to cultivate nutmeg and cloves so that Europe could partake in the spice trade. Followed by the economic distribution of tea, cotton, coffee, quinine and rubber plants (Krishnan & Novy, 2016). In the late twentieth century, the focus shifted to conservation, education and public awareness of biodiversity (Bennett, 2017; Krishnan & Novy, 2016). Bennett (2017) reported that post-independence countries like South Africa and Australia emphasised decolonisation and nationalism by establishing more botanical gardens with Indigenous plant species in the 1960s.

Today, botanical gardens continue to emphasise conservation of Indigenous plant species and research on endangered species, moving away from their colonial interests (Ward *et al.*, 2010:54). They also serve socio-ecological functions, hosting events and concerts, creating jobs and offering educational programmes directed towards schools. Ward *et al.* (2010:50) reports on the additional value botanical gardens contribute to urban green space in South Africa by attracting tourists, displaying rare flora, showcasing local traditions and community identity as well as supporting horticulture conservation and climate change mitigation efforts through various programs. However, accessibility and limited public transport links remain a challenge, as reported by Ward *et al.* (2010:51-52) as visitor profiles tend to be predominantly white, English-speaking, middle-aged and middle to high-income. Visitors mainly seek to admire nature, exercise and enjoy fresh air, while garden management emphasises educational and ecological benefits. Garden visitors recognised that the gardens promoted conservation.

2.7 Gaps identified

There are several knowledge gaps identified in the literature, with a common overlap being the limited understanding of alternative human-nature interactions and their translation within landscape architecture. Often the development of a new national identity is confined to buildings, despite many cultural practices being associated with the landscape. Shackleton and Gwedla (2021:6) and Cocks *et al.* (2020) highlighted the limited attempts in landscape architecture to incorporate alternative meanings of nature and establish a sense of place in urban settings in South Africa. There is a lack of literature and principles guiding appropriate public park design within South Africa (Shand, 2022:252). While other studies have identified safety and management issues within public parks, it is also necessary to investigate other public park perceptions focused on the meaning of place and emotional connectedness. Shand (2022) also recommends further investigation of community perceptions of public parks, particularly their cultural ecosystem service benefits, due to their intangible nature. Ward *et al.* (2010:55) emphasise the need for research on new approaches to the social inclusion of botanical knowledge within urban green space planning.

3. Research methodology

3.1 Study area and context

The study was conducted within three public parks in Region 3 of the City of Tshwane as depicted in Figure 3. This region was chosen as it represents multiple neighbourhoods with varying degrees of access to nature. The eastern part of Region 3 is characterised by affluent suburbs where residents enjoy large private gardens and enclosed parks, meanwhile rapidly expanding communities in the western periphery rely on nearby nature and inadequate community parks (Shand, 2022:1&16). Many people migrate to this region for educational and economic opportunities.

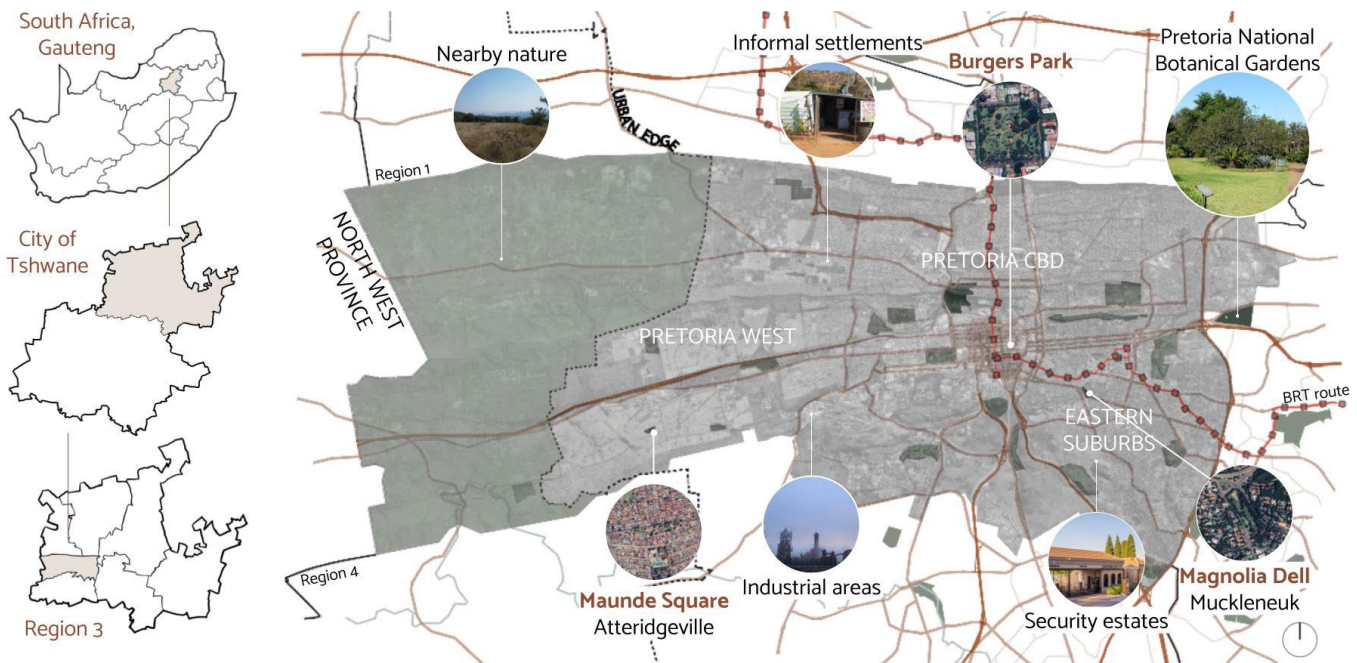


Figure 3: Unequal green space distribution in CoT Region 3 and location of three parks.
Source: Author, 2024

3.1.1 Burgers Park, Pretoria CBD

The park is declared a South African heritage site. Burgers Park was established as the City of Tshwane's first botanical garden in 1874 (Hardijzer, 2018). Over the years, many European botanists and curators, appointed by the government, were responsible for the layout and plant selection. They brought influences from the Global North, including flower, shrub and tree seeds from the Royal Botanical Garden in Kew, England and other areas in Europe and America. It contains many Eurocentric features from its original state. The botanical garden was converted to a public park in 1892. Today the park is still used as a green space within the CBD, with frequent visitors.

3.1.2 Maunde Square Park, Atteridgeville

Atteridgeville was demarcated by the government as a separate residential area for 'black' African residents in 1939. Many people were moved from other neighbourhoods such as Marabastad to Atteridgeville as it was linked with newly developed houses (South African History Online, 2016). Maunde Square Park is alongside the active Maunde street and has businesses and residences on either side. Originally, it was a dumping site and an informal trade market. In 2015 the Tshwane Metropolitan Municipality opened the park as part of an initiative to add two parks per ward, to improve access to recreational facilities in marginalised areas. The park serves as a pedestrian thoroughfare between homes, work and school, but visitors also linger longer to sit on the park benches, play and braai.

3.1.3 Magnolia Dell Park, Bailey's Muckleneuk

Magnolia Dell Park is a designated heritage site in the City of Tshwane. This park is located near suburbs, office parks, schools and the University of Pretoria. In 1940, two hundred and fifty Magnolia trees were planted on the site, which had previously been used for dumping from nearby roadwork (Show me Pretoria Tshwane, 2019). The flowers of the trees continue to attract visitors to the park during the winter months. The park's layout was designed in 1967 by Harry Bruinslich, the then-director of parks and recreation for the Council of Pretoria (Show me Pretoria Tshwane, 2019). Today, the park is frequently visited by patrons of the on-site restaurant, nearby employees and families with children.

3.2 Research methodology

The study adheres to the pragmatic research philosophy, which promotes the use of mixed methods to understand human behaviour, with multiple interpretations of reality (Kivunja & Kuyini, 2017:35). Additionally, an ethnographic approach was followed, as a qualitative strategy to collect data through research methods including on-site interviews and observations (Caulfield, 2023). This brought insight into how societies function within public park settings.

3.3 Sample size

The research team conducted field research and data collection within the three public parks over March and April 2024 on weekdays in the morning and during midday. The parks, situated in three historically unique contexts, offered diversity to the sample, in that they attracted socio-demographically different visitors, with varying perspectives and perceptions. Seventeen interviews were held, with individuals and groups, aged eighteen years and older. Participants were selected through convenience sampling, in that they were approached for interviews because of their presence in the parks (Nikolopoulou, 2023).

3.4 Data collection

The data collection process within each study area unfolded as follows:

1. The research team approached park users. After introducing themselves as UP researchers, they proceeded to explain the purpose of the study.
2. If the respondents agreed to participate in the study, they were given a brochure with additional information about the study and contact details to address any further queries. The respondents had to sign a consent form, as proof of their participation, which was also signed by the research team.
3. The research team gathered primary data through semi-structured interviews facilitated by a questionnaire, supplied by the study leader. One study member asked the questions and recorded the conversation with a voice recorder. Another member made notes of the conversation.
 - a. The questionnaire consisted of fifteen questions and the interview time depended on how each respondent expanded on the different questions.
 - b. It was organised into four sections: first, general biographical details that were observed by the researchers (no personal details were asked); second, questions relating to home and perceptions of nature; third, questions that compared the study area with other parks in the City of Tshwane; and concluded with questions about the conditions of the relevant park and its features.
4. Within the questionnaire, several techniques were employed to gather information. Most of the questionnaire consisted of open-ended questions to collect qualitative data, such as inquiries about activities the respondents performed in natural landscapes. One question made use of quantitative data where respondents were required to rate the park conditions on a scale of five.

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

5. Another technique used was photo-elicitation, where respondents were shown various images of natural settings. This approach offered insight into respondents' interpretations and connections to these environments based on their reactions (Bignante, 2010).
 - a. It included depictions of formal Eurocentric gardens (Figure 4), a public park with social activities (Figure 5), a public space with cultural symbols (Figure 6), an area with natural pools (Figure 7), a forest space (Figure 8) and an image with animals and wild grass (Figure 9).
 - b. This approach facilitated conversations about people's preferences and dislikes about nature. People were able to highlight what features reminded them of home and activities associated with nature.
6. The research team also gathered information about the park through observations:
 - a. Each team member filled in an observation log during the site visit, hereby capturing information about the study areas' bio-physical conditions, level of activity, socio-cultural behaviours and what park features are utilised or disregarded.
 - b. The research team also documented observations through photographs and sketches in journals. (no individuals were observed).
 - c. Observation maps were used to document activities and park features.
7. The recorded interviews were transcribed using transcription software, within *Microsoft Word*.



Figure 4: View at the Union Building gardens overlooking the Pretoria CBD
Source: Wolmarans, D. 2007



Figure 5: Social activities within a public park
Source: Shand, 2019



Figure 6: Khoi shelter exhibition at Green Point Urban Park
Source: unknown

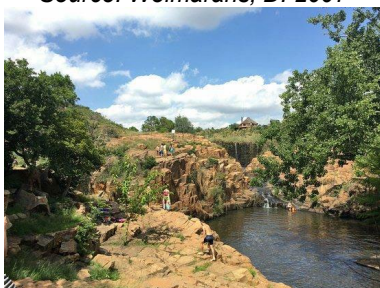


Figure 7: Natural pool and activities at Nkwe Pleasure resort
Source: SteveOM73, 2017

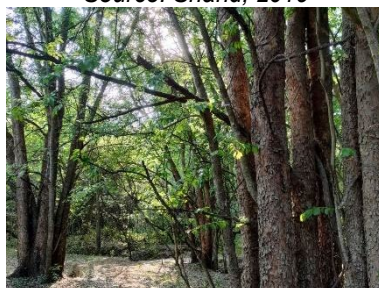


Figure 8: Moreletakloof forest
Source: Shand, n.d.

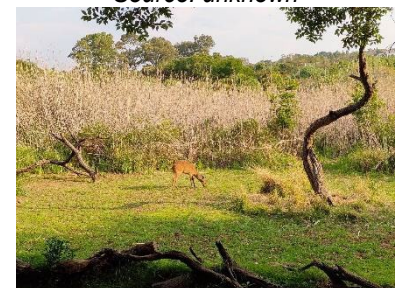


Figure 9: Animal and wild grasses
Source: Shand, n.d.

3.5 Data analysis

1. The transcribed documents, notes and photographs were added to the qualitative data analysis software, *Atlas.ti 24* to find recurring themes (Figure 10). A combination of deductive and inductive coding was used.
 - a. The supervisor provided an initial set of codes as deductive coding, including, *park preferences*, *human-nature narratives* and comments about individual photos.
 - b. Additional codes were added by the researcher, for example, *botanical gardens*.
2. Graphic drawings were made about the nature-related stories mentioned in interviews.
3. Quantitative data was analysed in *Microsoft Excel* to present statistical information.

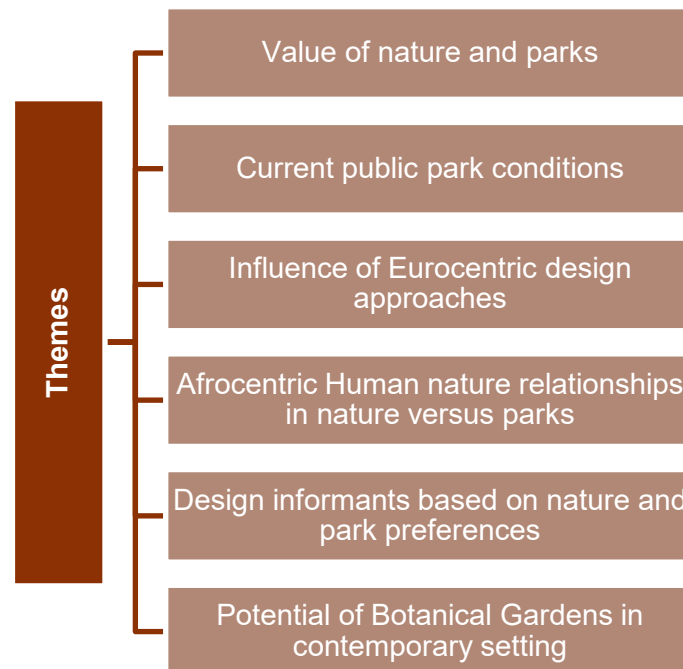


Figure 10: Code themes used for data analysis.
Source: Author, 2024

3.6 Ethical considerations

The study adhered to the ethics approval process as outlined by the University of Pretoria Faculty of Engineering, Built Environment and Information Technology. The Faculty Committee for Research Ethics and Integrity granted ethical clearance in March 2024, bearing the reference number: EBIT/31/2024 (see Annexure A). The outlined conditions required the research team to restrict the data captured to the relevant research study, maintain the respondent's anonymity and secure their consent for participation. There was no discrimination in who was approached for interviews, but park users who were sleeping, resting or appeared to not want to be disturbed were not approached. All interviews were conducted voluntarily. The completed questionnaires and transcripts were securely stored in a lockable cupboard to safeguard their confidentiality and integrity.

4. Results

The following section includes the study findings and follows the order of the questionnaire.

4.1 Sample Characteristics

The study included twenty-one respondents, four group interviews and thirteen individual interviews. Most respondents (67%) were male (Figure 11), predominantly adults (62%) (Figure 12) and 'black' African (90%) (Figure 13).

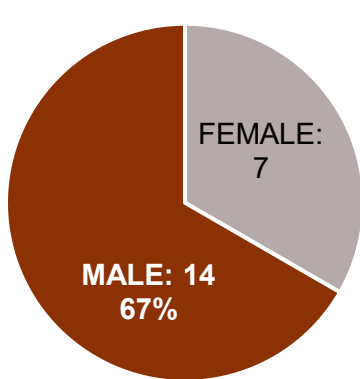


Figure 11: Gender distribution of respondents in the study

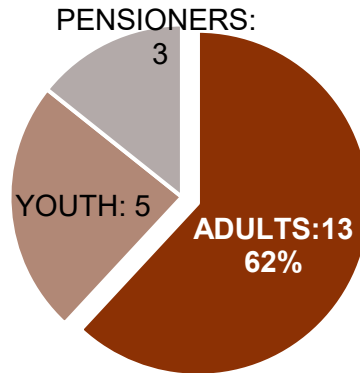


Figure 12: Age distribution of respondents in the study

Source: Author, 2024

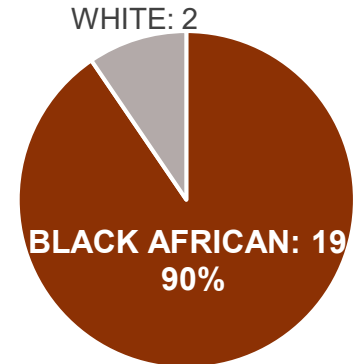


Figure 13: Race distribution of respondents in the study

Most respondents did not grow up in the City of Tshwane (67%) (Figure 14), respondents volunteered information about their choice to migrate for educational and economic opportunities. This provided various perceptions based on rural and urban backgrounds.

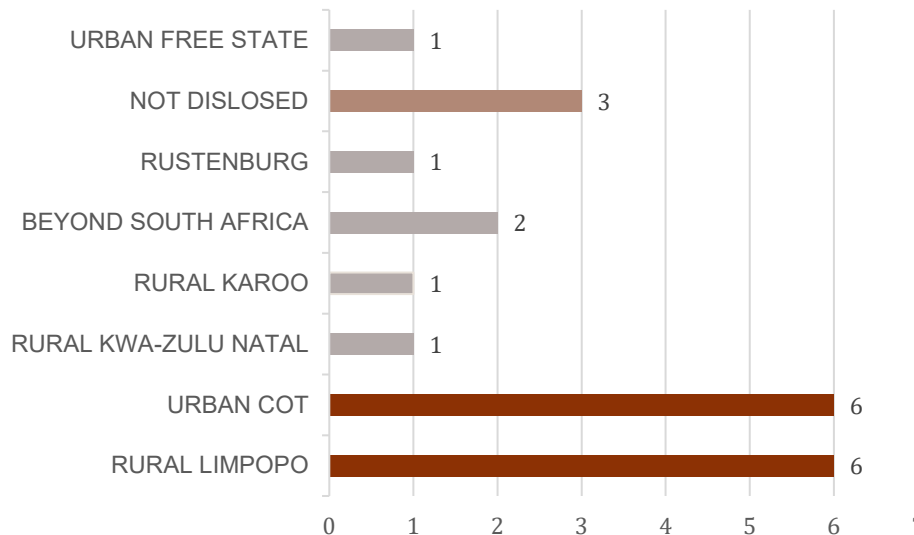


Figure 14: Home background distribution of respondents in the study.

Source: Author, 2024

4.2 The Value of Nature and Parks

In this study “parks” refers to designated public green spaces within urban settings. Meanwhile “nature” refers to natural environments and features which could include natural and rural landscapes. The first section of the interviews brought insight into how respondents defined nature in the Global South. Respondents also highlighted the role nature and public parks respectively play.

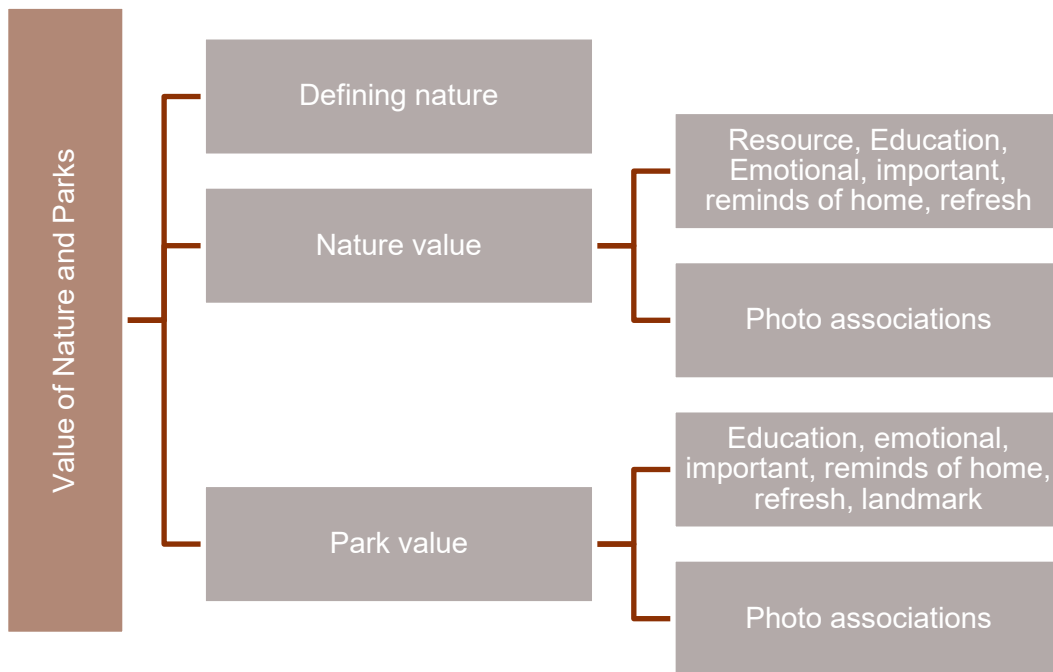


Figure 15: Code families relevant to section 4.2

4.2.1 Respondents definition of nature

Figure 16-Figure 18 depicts the words used to describe nature. Within all three parks respondents included parks. Notably this occurred less in Maunde Square Park than in the other two parks.



Figure 16: Respondent's definition of nature in Burgers Park



Figure 17: Respondents' definition of nature in Maunde Square Park



Figure 18: Respondent's definition of nature in Magnolia Dell Park

Source: Author, 2024

Respondents included trees, forests, wind, wild animals, livestock and water, which indicates their definition of nature includes entire ecosystems. One respondent described nature as a connected system:

Nature is part of God. Like biodiversity, animals, plants, people, they have this dynamic between animals and nature. We feed on animals and plants. Everything is connected, automatically you're connected to nature.

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

4.2.2 Respondents Value of Nature

Figure 19 depicts the qualitative phrase respondents used when they discussed the role nature fulfils and their feelings towards it.

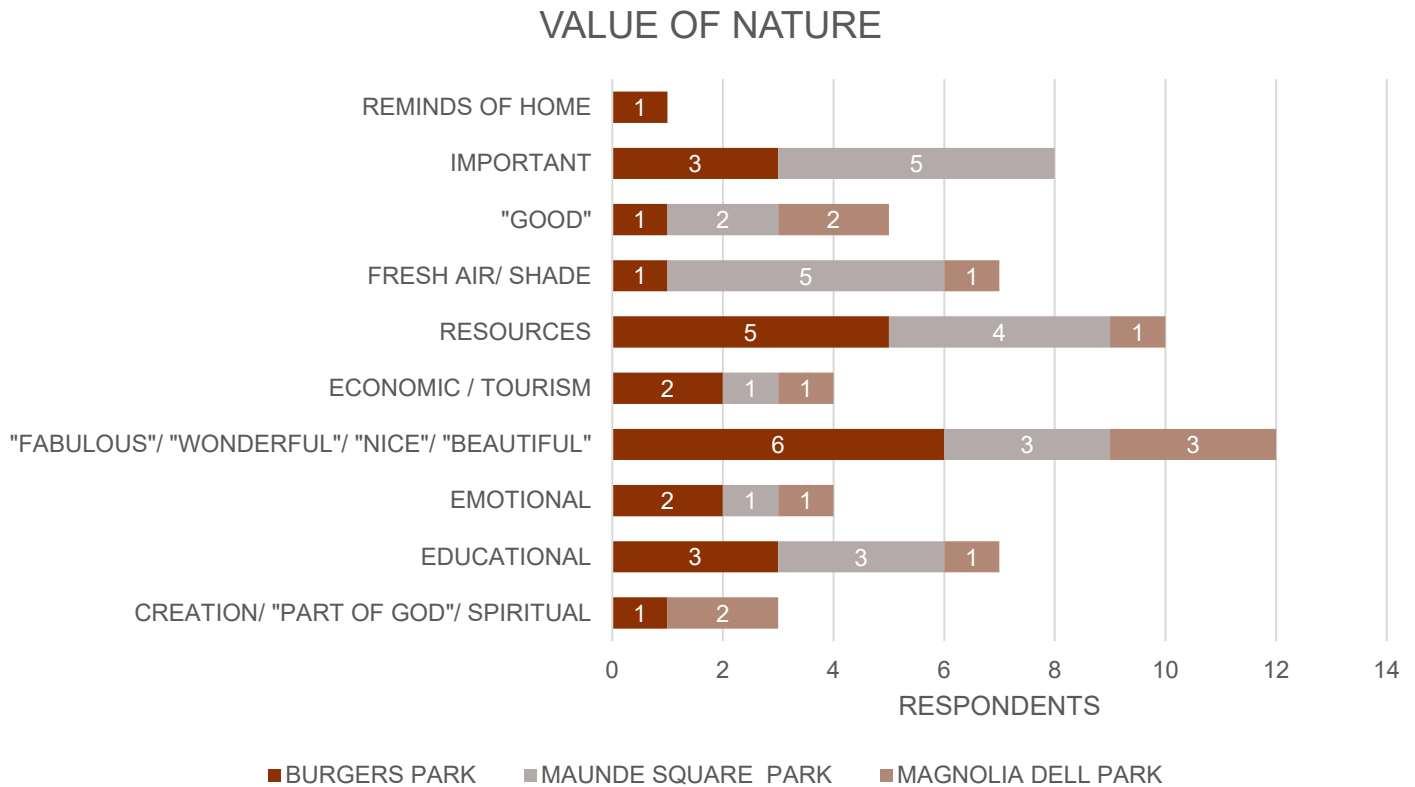


Figure 19: Respondents' value of nature

Source: Author, 2024

In Maunde Square Park all five (5) respondents mentioned that nature played an important part in their lives. Respondents described the ecosystem services (ESS) nature provides without using the term. Respondents highlighted cultural ESS including mental, spiritual economic and aesthetic nature values:

Nature is peace of mind. The bird sounds. Just the trees, the wind. That's my peace of mind.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

I'm a very spiritual person, so in most cases, I love being in nature, it's more calm. And you get to think a lot.

FEMALE, BURGERS PARK, INTERVIEW 7

It's attraction. It's beautiful. So, nature can also benefit economically if you look on the tourism perspective. People travel to see such places. So, it's quite nice.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

Respondents highlighted the educational benefits and importance of having access to nature. They emphasised that exposure to natural environments allows them to learn about unfamiliar plant species, understand the role and benefits of natural features and gain valuable life lessons:

We grew under the Bantu education. We never thought to care about trees. They never taught us of that park. As you go around travelling, you can see [...] Our people need education, especially about trees, they are very, very important.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

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It's very important to be close to nature. We learn a lot from it. The things that I never learnt when I was growing, but because of nature you learnt them. For example... I make sure that I don't jump inside the water, there might be dangerous creatures inside. You know that you must not sleep on the bush... then you've got ticks- so you learn all the way.

MALE, BURGERS PARK, INTERVIEW 6

Respondents noted the regulating ecosystem services provided by natural environments, such as fresh air, protection from weather elements, climate change mitigation and shade from trees. One respondent highlighted these benefits but pointed out a nuanced perspective; while people recognise the importance of nature and its benefits, they prioritise development, which may sometimes take precedence over nature conservation:

RT:² What role does nature play in your life?

Oh, it actually plays quite a lot of things, for example when we talk about climate change. I think nature helps to kind of minimize the impact of climate change, for example, the floras that helps to regulate, you know the carbon emissions, just to renew the oxygen for us as humans. But also, now I'm sitting here- why not sit in the sun? So, I need the plants, the trees also for the shade, clean air. [...] And how do we live about nature? It is so important for me to say that as much as we are so interested in development and all those kind of things. But how about we also spend time just to care for the nature. We take a lot from nature, but we contribute less to make sure that it's good, it's well taken care of.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

The same respondent noted the provisioning ESS³ and the difference in the availability of food resources in natural landscapes compared to an urban environment:

... it's expensive living in the city. At home, you never used to stress about a lot of things, and here if you want food, you have to buy. But in the villages, there's a lot of trees there every season we know we have something to reap.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

Other respondents similarly valued resources found within natural landscapes including fresh water, building materials and firewood.

² RT= Research Team

³ Provisioning services including food, water, medicinal plants

4.2.3 Respondents Value of Parks

Respondents provided valuable insights into the significance of parks, detailing their reasons for visiting them and the role these spaces fulfil. Figure 20 illustrates their diverse responses, highlighting the importance of recognising the various needs and preferences of the communities.

VALUE OF PARKS

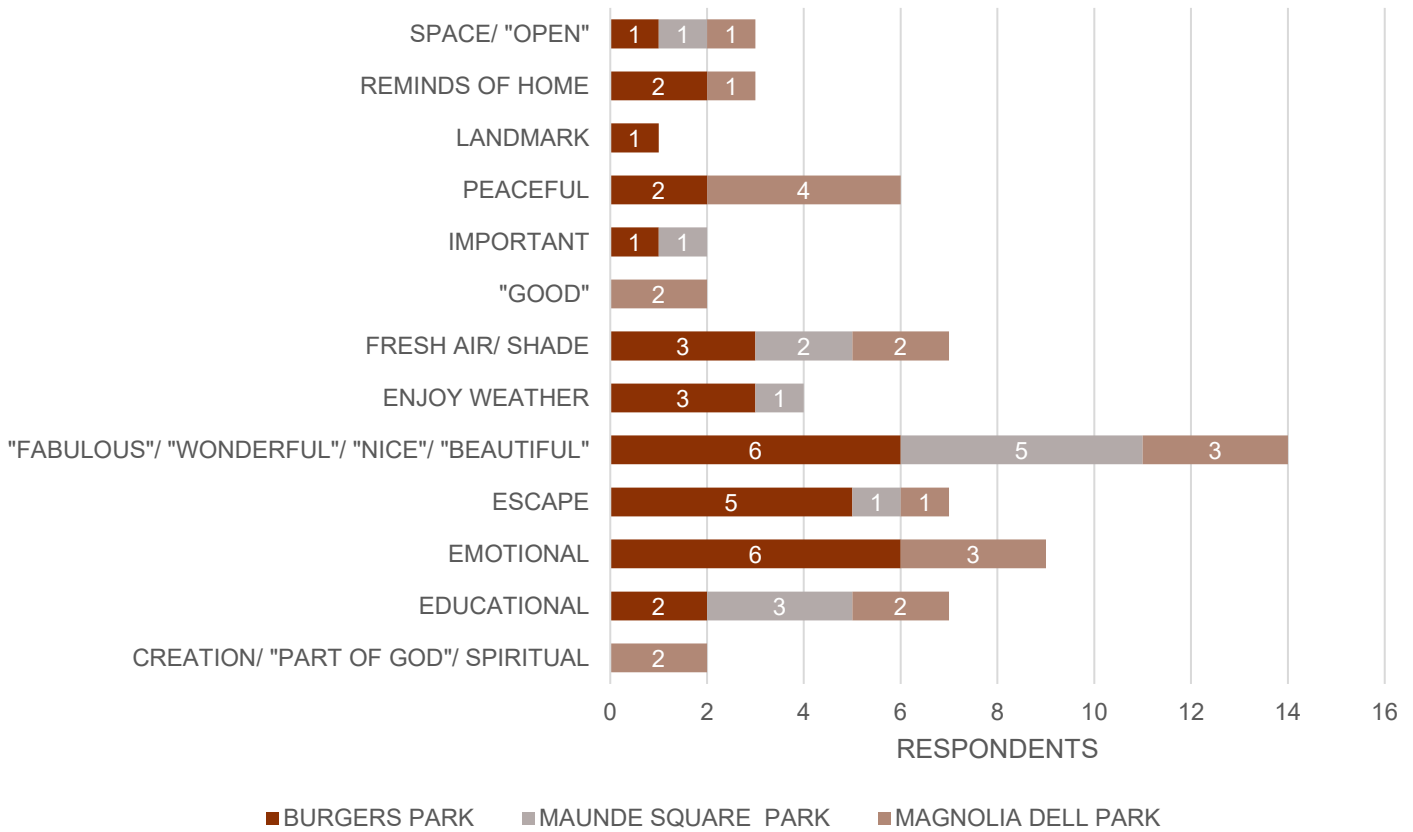


Figure 20: Code occurrences of respondents' perceptions of park value within the three parks.

Source: Author, 2024

Respondents acknowledged similar ESS such as cultural and regulating. Provisioning services were not mentioned by respondents. In Magnolia Dell Park and Burgers Park, respondents specifically highlighted the emotional and peaceful value of parks, noting that it reminds them of their home landscapes. However, this aspect was not mentioned about Maunde Square Park:

Yeah, I grew up in the village. So when I come to the park sometime I feel the same... same things... like the ones I see when I am at home.

MALE, BURGERS PARK, INTERVIEW 1

Yeah, I feel like... I'm at the suburb because it's quiet. I used to stay with my family at Kempton Park, so I used to go to the park that side. So it reminds me of ... [deep breath] ... I'm at the suburb.

FEMALE, BURGERS PARK, INTERVIEW 5

It still makes me feel like home because there's trees, there's wind, there's grass.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

However, the same respondent also pointed out that, when referencing the Eurocentric depiction of parks in Figure 4, that park does not remind her of home but instead evokes a reminder of the busy urban environment.

So, I'm from a village, it's quiet there's mountains. There's too much nature. So, I like that. With this picture [Figure 4] it reminds me that I'm in Pretoria because there's flats, it's busy. [...] the sounds of cars and bells. It's too busy and too loud. So this kind of space [Figure 9] I like because it reminds me of home, it's nature.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

Respondents highlighted that parks in urban environments provide an opportunity to escape the noise of the city along with other people, particularly evident in Burgers Park. They also emphasised that parks offer a space to connect with nature, which is often lacking in their urban residence:

This is good when you stay in the city. There is an Afrikaans word, "ontvlugting" [escape]. When you sit in the room, and you come to this park. It's open ... and you can relax. And it's silent, you can see some animals, birds, stuff like that. So, the park is for me is very necessary in the city.

MALE, BURGERS PARK, INTERVIEW 2

This park is just because... we are in the city and also at the flat there's no space. It's the only place where we can sit together, get fresh air, and shade from the tree. It's only this one... we have left.

MALE, BURGERS PARK, INTERVIEW 4

It's a township, It's very busy. So it's not quiet. So when I come here it's like my peace of mind. Where I come from it's not peaceful, it's busy and there's noise everywhere.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

[Refers to Figure 4] This one you see nature and it's close to... like a city ... which means people who are living there, they can get a fresh air from that. Even they can come and refresh.

MALE, BURGERS PARK, INTERVIEW 4

Another benefit mentioned by respondents was that parks provide additional space for events, including weddings and funerals, as well as recreational activities like rugby and soccer, which cannot typically be accommodated in urban residence yard spaces. A respondent provided insight into the effects of historical spatial planning of townships and how it fails to meet the community's needs within urban nature:

These townships, when they were initially designed, they've got small streets. It's better if you've got a pavement, about a meter from the street. In African funerals you go as a crowd. It is a big thing. They also use it to put tents here and have some feast at the park. Sometimes they use it for weddings. That's because of space. Maybe at home they don't have enough space. They utilise the park. Even the political parties are using these parks in their campaigning. They come and put flags here and go around campaigning and tell people to come to the park here.

FEMALE, MAUNDE SQUARE PARK, INTERVIEW 4

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

Respondents noted that parks provide the opportunity not only to learn about plant species but also about people, representing their history and stories:

Nature is a place where kids can learn a lot. Like you can see now here, these are different trees, of which some of them we don't have at home.

FEMALE, BURGERS PARK, INTERVIEW 7

This park used to be nice like museum, so when you don't take care of this one, history is going.

MALE, BURGERS PARK, INTERVIEW 1

RT: So you come to these types of places every day with your kids?

RP: Yes, yes. For them to see also other things, so that they can be happy and see how other people prevail. [...] Learning about people, watching them enjoying life, they do the picnic. They do whatever.

MALE, MAGNOLIA DELL PARK, INTERVIEW 2

One respondent highlighted the value of parks as a landmark in the city, contributing to navigation and providing a safe environment:

It helps me to navigate my way because whenever I'm lost I can just identify the park then I know where I am, that's all. [...] You can say it's like a place of safety for most people. They know if you are in the park, you are safe. I can easily navigate where you are and get you there, so they should keep it clean and alive.

FEMALE, BURGERS PARK, INTERVIEW 7

4.3 Current Park Conditions through Observations and Perceptions

Respondents described the different park conditions.

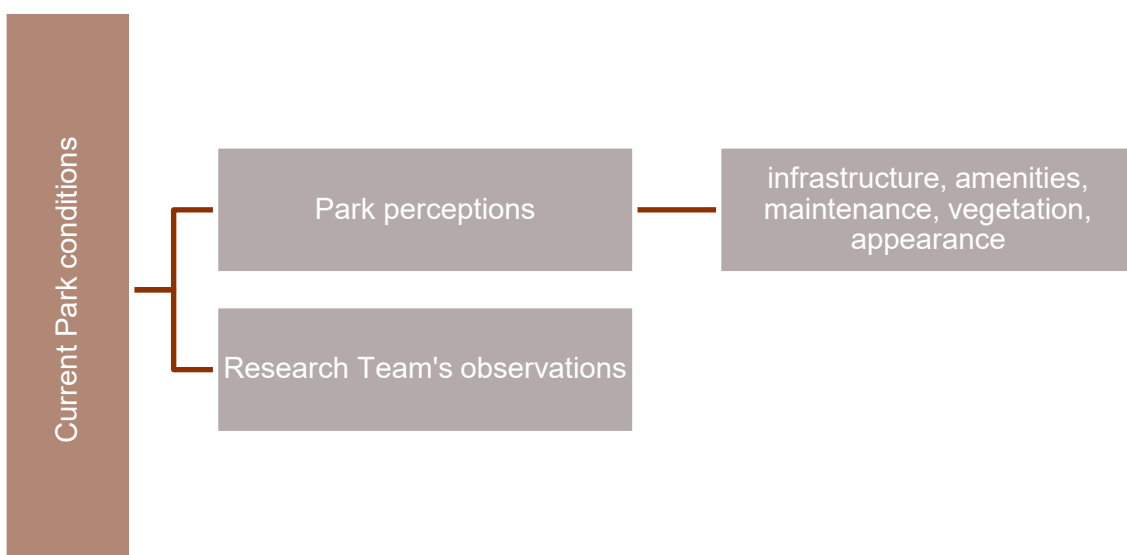


Figure 21: Code families relevant to section 4.3

Source: Author, 2024

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

Respondents had positive and negative remarks about the park conditions. Figure 22 indicates that recurring issues were mentioned within all three parks, regarding irregular maintenance, damaged infrastructures, safety concerns, park cleanliness, overgrown vegetation, insufficient shade, litter and illegal dumping.

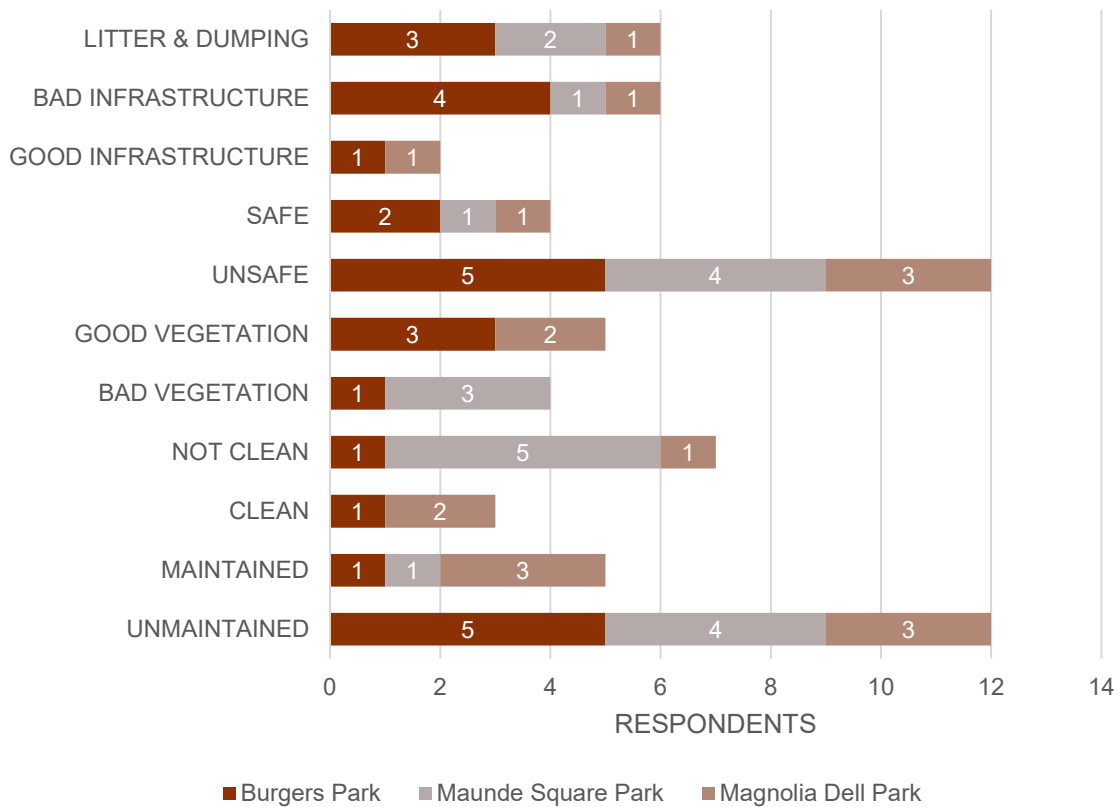



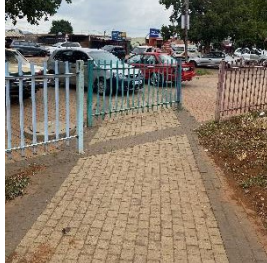










Figure 22: Perceptions about the park conditions mentioned by respondents.
 Source: Author, 2024













Table 2 presents further observations by the research team regarding the conditions of the park. Common issues noted across all three parks included damaged pavements, broken structures, insufficient pathways and lack of vegetation information. Each park exhibited distinct challenges. Burgers Park showed signs of decay with broken infrastructure and under-utilised structures, indicating neglect over the years. Maunde Square Park had a predominance of hardscaping and minimal natural features, resulting in fewer features to connect with nature. Maintenance conditions were uniform in Maunde Square Park and Burgers Park. In contrast, Magnolia Dell Park, appeared better maintained, although discrepancies were observed in maintenance levels between areas near the restaurant and the opposite side of the park. See Annexure B for additional photos.

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

Table 1: Current park conditions

	Burgers Park	Maunde Square Park	Magnolia Dell Park
Infrastructure & amenities	<p>Broken fences and play equipment. Empty pond Inaccessible and vandalised buildings, and structures are no longer in use. Bad ablution conditions. Not enough benches. Broken bins. Mixed maintenance levels.</p>	<p>No play equipment & limited play space. Bollards were used as seating. Inconvenient fence placements. No ablutions. Concrete benches and bollards Broken & overflowing bins. Broken garden bed. Irregular maintenance.</p>	<p>Play area in good condition near restaurant. Empty pond. Locked ablutions. Water fountains. Mixed maintenance levels. Clean spruit, litter closer to the outlet.</p>
	 <p>Figure 23: Broken play equipment</p>  <p>Figure 24: Underutilised screen for sport matches.</p>	 <p>Figure 25: Broken garden bed.</p>  <p>Figure 26: Inconvenient fence placement</p>	 <p>Figure 27: Play area</p>  <p>Figure 28: Water fountain</p>
	 <p>Figure 29: Light used as bin.</p>  <p>Figure 30: Broken pergola over avenue</p>	 <p>Figure 31: Concrete benches</p>  <p>Figure 32: Overflowing bins</p>	 <p>Figure 33: Litter and less maintenance</p>  <p>Figure 34: Locked ablution facilities</p>
Vegetation	<p>Overgrown vegetation on pathways. Tall grass Lack of information about plant species (only small signs). Trees, garden beds and lawns</p>		

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

Grass patches. Recently trimmed hedges	Limited shade from trees. Empty and littered garden beds. Predominantly pavement over lawns	No pathways. Flower beds on the west and “wild” vegetation on the eastern side
 <p>Figure 35: Recently maintained hedges at statue.</p>  <p>Figure 36: Grass patch where soccer is played</p>	 <p>Figure 37: Empty garden beds.</p>  <p>Figure 38: Overgrown vegetation on pathways</p>	 <p>Figure 39: Overgrown vegetation on pathways</p>  <p>Figure 40: Tall grass and no pathways</p>
 <p>Figure 41: Overgrown vegetation on pathways.</p>  <p>Figure 42: Small botanical signage.</p>	 <p>Figure 43: Tall grass where people walk.</p>  <p>Figure 44: Predominantly pavement.</p>	 <p>Figure 45: Flowerbeds on the western side that the community helped to plant.</p>  <p>Figure 46: Wild vegetation on the eastern side</p>

Source: Author, 2024

4.4 Perceptions of Eurocentric design influences on CoT public parks

The following section provides insights into respondents' perceptions of the influence of Eurocentric features, along with their presence and conditions within parks.

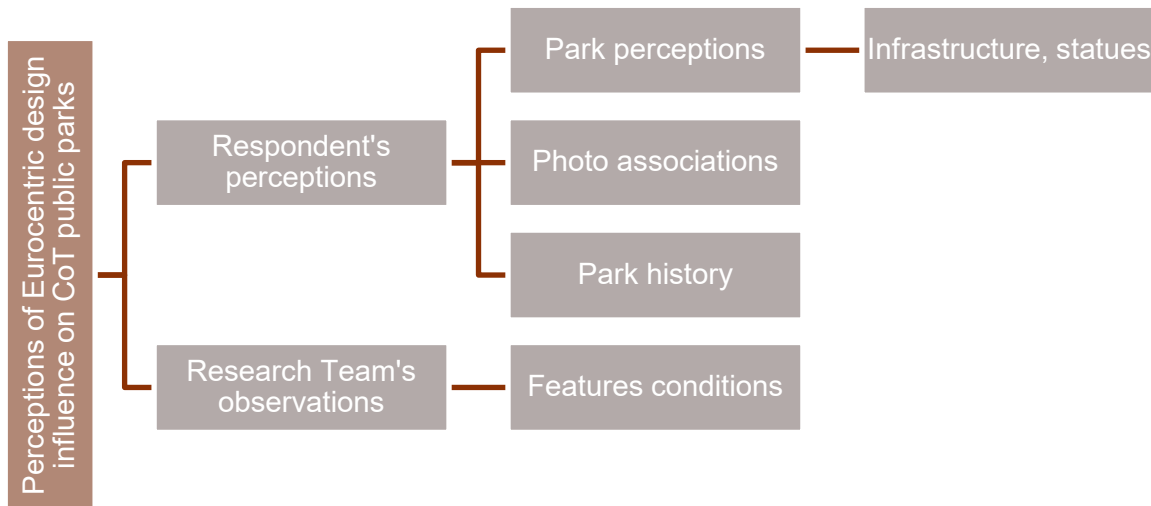


Figure 47: Code families relevant to section 4.4

Source: Author, 2024

All three parks exhibited Eurocentric features, including memorials, Victorian-style furniture and non-native vegetation. Similar benches and bins were found in both Magnolia Dell Park and Burgers Park (Figure 49 & 52), suggesting a standardisation of park elements across different contexts. Burgers Park, designed in a Victorian style by past European curators, had the most Eurocentric features as detailed in Table 3. Both Magnolia Dell Park and Burgers Park showed a decline in the quality of Eurocentric structures. Most respondents were unaware of the park's history. Respondents did not express negative associations with these Eurocentric features. Instead, they highlighted the benefits provided by structures like the bandstand, kiosk and greenhouse:

There used to be birds [refers to greenhouse] ...

MALE, BURGERS PARK, INTERVIEW 1

You see this park before, man. It was very nice... We're having live DJs on that thing [refers to bandstand]. This one was a shop; people were selling over here [refers to kiosk] We had a nice fish pond. It's no longer there. And if you want to see like flowers and stuff, you got that green... glasshouse. When you want to watch soccer, just come and sit down here that TV was still working by then... [refers to big screen]

MALE, BURGERS PARK, INTERVIEW 6

However, respondents had mixed perceptions about whether nature should be controlled, especially when discussing Figure 48 which showcased controlled vegetation. Some respondents expressed positive associations about its maintenance and beauty:

When you look at the... Horticulture. The way it's being made, flowers, trees it is well trimmed. You can see the grass is well kept. There are flowers. It's beautiful. That's some beauty... I think it's Union Buildings. You see, the grass must be made. I mean, even this grass [in Maunde Square Park] is not maintained. They come... when the grass is so big [indicating height]. They come and cut. Then they just go.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

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While others had negative associations, viewing it as artificial and manipulated. One respondent expressed negative feelings towards the control of nature:

I don't like this one. [Figure 4] This is the Union Buildings. It's too quiet. It's a lot of artificial.

FEMALE, MAUNDE SQUARE PARK, INTERVIEW 4

I think the reason why maybe here, there's quite a lot of plants is because it's a government institution. But if you look around the city, it's just tall buildings ... there's no room for nature ... people are just looking for a place to stay. So, they have to get rid of the plants ... they had to plan how to put this tree here. This isn't really for me; I can't say this is nature. It is manipulated...the plants you see..., they had a plan, landscaping type of a thing, to say this is how we want them to look like and all that, but nature, it's not like a person gets to decide how nature should look like. I think nature has a way of shaping itself. It's a way to sustain itself... without men having to interact, to intervene with nature. Having to trim the plants and make them look favourable to us and attractive, so that we can take nice pictures and all that.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5



Figure 48: Image of Union Buildings that respondents discussed

Source: Wolmarans, D. 2007

Table 3 further indicates the neglected structures and empty ornamental ponds. Although there were limited discussions about statues, one respondent mentioned that people damaged them. While the statues did not appear damaged on the day of observation, this damage could have occurred previously.

RT (Research Team): How do you feel about the statues?

They're nice. But now they're getting fucked up. [laughter]

RT: Is it people that are messing it up?

I think it's people.

RT: Do you think they don't like it?

Yeah.

MALE, BURGERS PARK, INTERVIEW 1

Interrogating the potential for incorporating botanical knowledge and values into contemporary City of Tshwane public parks

Additionally, a respondent observed a positive association with the statues, noting that people took photos in front of them. In Maunde Square Park, a respondent mentioned that the memorial was his favourite feature:

Yeah, it's just the statues, I saw people come take photos at the two statues.

MALE, BURGERS PARK, INTERVIEW 4

RT: What's your favourite feature of the park?

Well, is this, little monument here... That's the only feature we have here [refers to Figure 51]

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

Lastly, it was observed that vendors utilised a historical plaque, describing non-native plant species, as a bench (Figure 65).

Table 2: Current Eurocentric features, their conditions and adaptations









	Burgers Park	Maunde Square Park	Magnolia Dell Park
Eurocentric features	<p>Statues commemorating figures Victorian-style pavilion, benches, lampposts, bollards and a bandstand imported from Scotland. Neglected Neo-classical pavilion, greenhouse and nursery Extensive lawns Non-native plant species</p>	<p>Memorial monument</p>	<p>Victorian style benches and bridge. Peter pan and Wendy statues. Extensive lawns Non-native plant species</p>
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Figure 49: Victorian-style bench</p> </div> <div style="text-align: center;">  <p>Figure 50: Non-native memorial tree that commemorates Eurocentric figures</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>Figure 54: President Burger statue, added in 1954.</p> </div> <div style="text-align: center;">  <p>Figure 55: Greenhouse added in 1974</p> </div> </div>	<div style="text-align: center;">  <p>Figure 51: Memorial commemorates "Two parks per ward initiative."</p> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Figure 52: Victorian-style bench</p> </div> <div style="text-align: center;">  <p>Figure 53: Victorian-style bridge</p> </div> </div> <div style="text-align: center; margin-top: 20px;">  <p>Figure 56: Non-native Magnolia trees Source: Ollis, 2015</p> </div>
Current conditions/ changes	<p>Empty ornamental pond Damaged & neglected structures Memorial plaque used by vendors for seating</p>		<p>Empty ornamental pond Removed statues</p>



Figure 57: Empty ornamental pond



Figure 58: Current Victorian-style bandstand with broken roof and balustrade



Figure 59: Original filled pond.



Figure 60: Pond transformed into a skate park



Figure 61: Plants growing through the broken greenhouse.



Figure 62: Neglected nursery



Figure 63: Original bronze Wendy statue

Source: Discover Tshwane, n.d



Figure 64: Current empty statue



Figure 65: Plaque that indicates historical trees, used as seating

4.5 Afrocentric Nature and Park Use

The following section unpacks how respondents described nature and park use, to establish whether the same activities can occur within natural and urban landscapes.

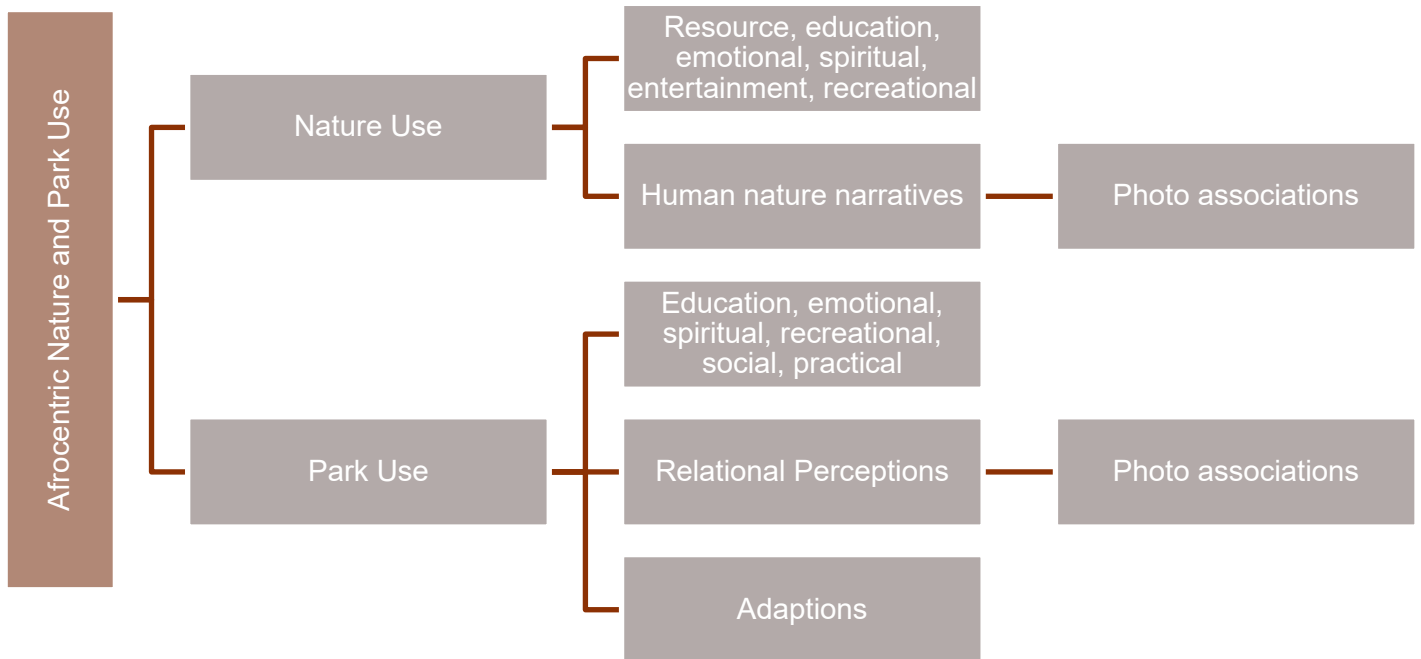


Figure 66: Code families relevant to section 4.5

Source: Author, 2024

4.5.1 Nature use

The respondents described various nature activities along with their relevant location and conditions. Table 4 highlights recurring nature uses such as observing animals, emotional connections, collecting resources and playing. Additionally, individual nature-related stories are showcased through illustrations.

Table 3: Nature activities described by respondents.

Recurring Nature use	All three parks			Locations & descriptions
	Educational activities (animal & plant observations) (springboks, monkeys, warthogs, bulls, tigers, antelope)			Bushes, farms, game reserves
	Hike			Mountains, jungle, forest
	Emotional (refresh, fresh air, de-stress, think and walk)			Trees, forest
	Collect resources (building materials, firewood, food)			Mountains, forests, bush, yard
	Hunt (including kudus, impala, springbok)			Farm, forest, bushes, jungle, grass, trees
	Play (including soccer, tennis)			Mountains, farms, open fields, villages,
	Water (Swim & play)			Beach, mountains, rivers
	Enjoy the weather & protect yourself from rain and sun			Trees
Different Nature Use	Burgers Park	Maunde Square Park	Magnolia Dell Park	
	Shelter			
	Misbehave			
	Emotional (Relax)	Emotional (Admire nature's beauty)		
	Take care of livestock (including donkeys, cows, goats, pigs)		Take care of livestock (incl. cows)	Mountains
	Cultivate (produce)	Cultivate & collect resources (incl. medicine & produce)		Bushes, trees, mountains, rivers, home yard
	Entertainment (music) Fish Riding boats	Entertainment (incl. socialise, fish)		Dam
	Spiritual (pray)			Ant holes, bushes, mountains, water

Source: Author, 2024

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Within Burgers Park and Maunde Square Park, respondents mentioned visiting bushes and forests to collect resources, including building materials for rondavels and firewood. Another respondent described hunting with his dogs in the forest:

But what we use to do, is to hunt. Kudus, Impala and Springbok. So, whenever I get to the bush, I'm calling my dogs, I'm going ... to find meat ... and then when we catch that meat there we ... we open it up and eat the inside... the intestines, the livers. And... we're going to... take the body at home, but the rest of it we will eat there. Yeah. That's the boy's thing.

MALE, BURGERS PARK, INTERVIEW 6

Many respondents described how they learn about plants and animals through observations:

I like this one [Figure 9] ... Because I like National Geographic. I like watching animals, how they're living ... I learn a lot from animals. [...] This one is where we can find cattle. Sometimes we saw a lot of springboks... wild hog [warthog].

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

We do have species [refers to plants] here... we do like to see them though... you learn from them [...] You need to know how they live also.

MALE, MAUNDE SQUARE PARK, INTERVIEW 2

Additionally, respondents mentioned the edible plant species that they sourced near mountains, bushes and home gardens⁴:

We sometimes have fruits from the mountains, prickly pears (ditoro). So, there's food in the nature. [...] My homes they have a huge yard, so they ploughed maize. There's guava trees, peach, mangoes, bananas and so forth, even potatoes... It was nice, and you can even go into the bushes and eat what we call machili, mothlatswa, wild fruits. It's very nice.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

You know what they do at home? ... every house they give them portion of land[...] So we go there, then we plough... watermelon ... mielie ... We did grow mabele. There will be a time- [laughs] ... whereby ... we ... go to plough ... to harvest.

[...] RT:⁵ What is your favourite landscape feature?

...planting. Morogo [...] That I can harvest.

FEMALE, BURGERS PARK, INTERVIEW 5

⁴ See Annexure C to see relevant plant species mentioned in the study

⁵ RT= Research Team



Figure 67: Author's interpretation of sourcing edible plants within home landscapes

One respondent in Maunde Square Park mentioned medicinal plants found within the natural landscape at his rural home:

Now we have a lot of ... diseases that are coming in and those plants they can actually help. I never used to use the grandpa's [referring to the headache powder] and all that at home... When I grew up, my grandpa was like, just go and take a walk in the bush and we got this plant, Hlonya. That's the plant in Sepedi.... You just dig it, and then you boil it, then you drink it. It's very sour, and within a day you are completely healed. We even use the aloe [...] But you see at least this big tree [referring to the pepper trees in the park], where there's some benches, that one I know it can be used for flu. So, we used to steam with it. You just put it in the pot, close it and then boil it, then you inhale the steam. Then in a day, aaah, you're good. You can even drink the water.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5



Figure 68: Author's interpretation of the medicinal use of pepper trees

Within all three parks, especially Burgers Park, respondents mentioned, the benefit of nature in helping them de-stress, think and relax by looking at trees and listening to birds sing. Within Maunde Square Park, only one respondent had a similar association where he described the emotional interaction while walking in a forest:

I like to walk in the forest. Walk and think about...yourself... Think a lot about what you see- the hemisphere, how it smells. ... I like the Amazon, yoh I like that place. I wanna go there. [...] Even the wood you would see me like, I would stay there, buy much, much much marshmallows... I will make fire and stay there. It's a nice place though. I would live here [refers to forest photo].

MALE, MAUNDE SQUARE PARK, INTERVIEW 5



Figure 69: Author's interpretation of walking through forest

Respondents mentioned praying within the mountains. One respondent in Burgers Park described her spiritual interactions within bushes where ant hills are present, connecting with her ancestors:

Sometimes I do visit the bushes, especially where there's ant holes. That is our way of connecting to the ancestors... it's mostly the bushes and the rivers only... Whenever I feel bad I just go there and I speak my heart out because I prefer being alone most of the time. So that's the only place I get ... peace I guess. [...] It's mostly away from the noise, away from town or anything like that. Anywhere where there's tall trees or there's grass where you can access ant holes-

FEMALE, BURGERS PARK, INTERVIEW 7



Figure 70: Author's interpretation of communicating with ancestors through ant hills

Additionally, respondents described recreational activities such as playing sports in open fields, fishing and boating in dams. One respondent mentioned a game, called Masekitlana⁶ played with rocks:

We used to play with... rocks... we play the game ... they call it "Masekitlana"... it's girls who play it.

FEMALE, BURGERS PARK, INTERVIEW 5

⁶ Masekitlana is a seSotho traditional game, played by children within townships and rural areas. Players sit around a hole dug in the ground with a stick. One player has two stones and tells stories while others listen. They hit the stones according to the tone of the story, for example softly happy and harder when sad. The other players listen and react (Joseph, Ramani, Tlowane & Mashatole, 2014; Kekae-Moletsane, 2008).



Figure 71: Author's interpretation of Masekitlana game from personal conversations and information from Kekae-Moletsane, 2008

As respondents associated memories from their home landscapes with certain photos, they mentioned other recreational activities. In all three parks, some respondents recalled jumping into the water from the mountains as kids and adults when shown Figure 73:

... where the dam starts. There's a mountain and a river, so we used to climb on top of that mountain. We jump inside the water, even though it was dangerous, but it was nice. [Laughs]. You know and my grandmother always... yelling at us for doing that, but I... I love it. [...] Even now when I'm grown up, I'm doing it.

MALE, BURGERS PARK, INTERVIEW 6

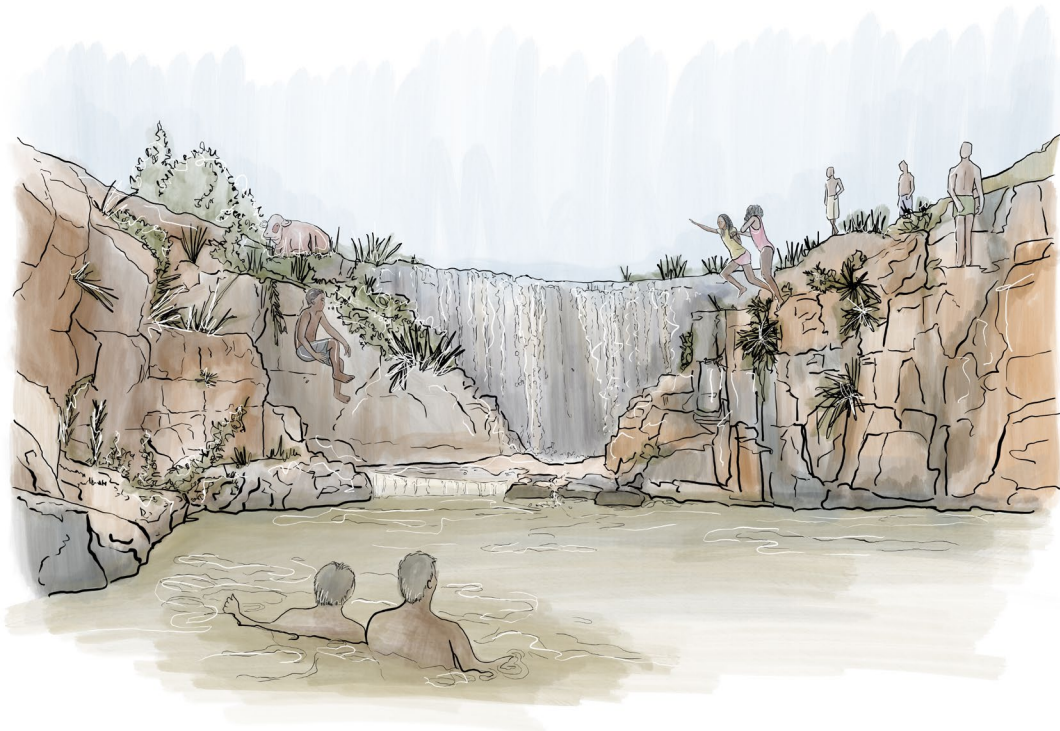


Figure 72: Author's interpretation of people playing in water

Another respondent described playing hide and seek in the mountains:

We used to go... to that mountain. It's got big stones there where you can hide from each other. We used to play... hide and seek there. Yeah, even now. Nowadays, kids they ... used to go too. [...] There is some animals like monkeys, but they... didn't bite anyone, since we are... starting to play in the area.

MALE, BURGERS PARK, INTERVIEW 4

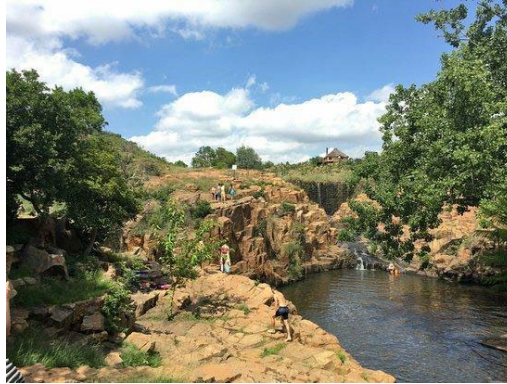


Figure 73: Image that reminded respondents of recreational play in the mountains

4.5.2 Park Use

Respondents further described park activities that they engage in and observe. Figure 74 -76 illustrates where these activities took place, where people gathered and detailed the observations made by the research team.

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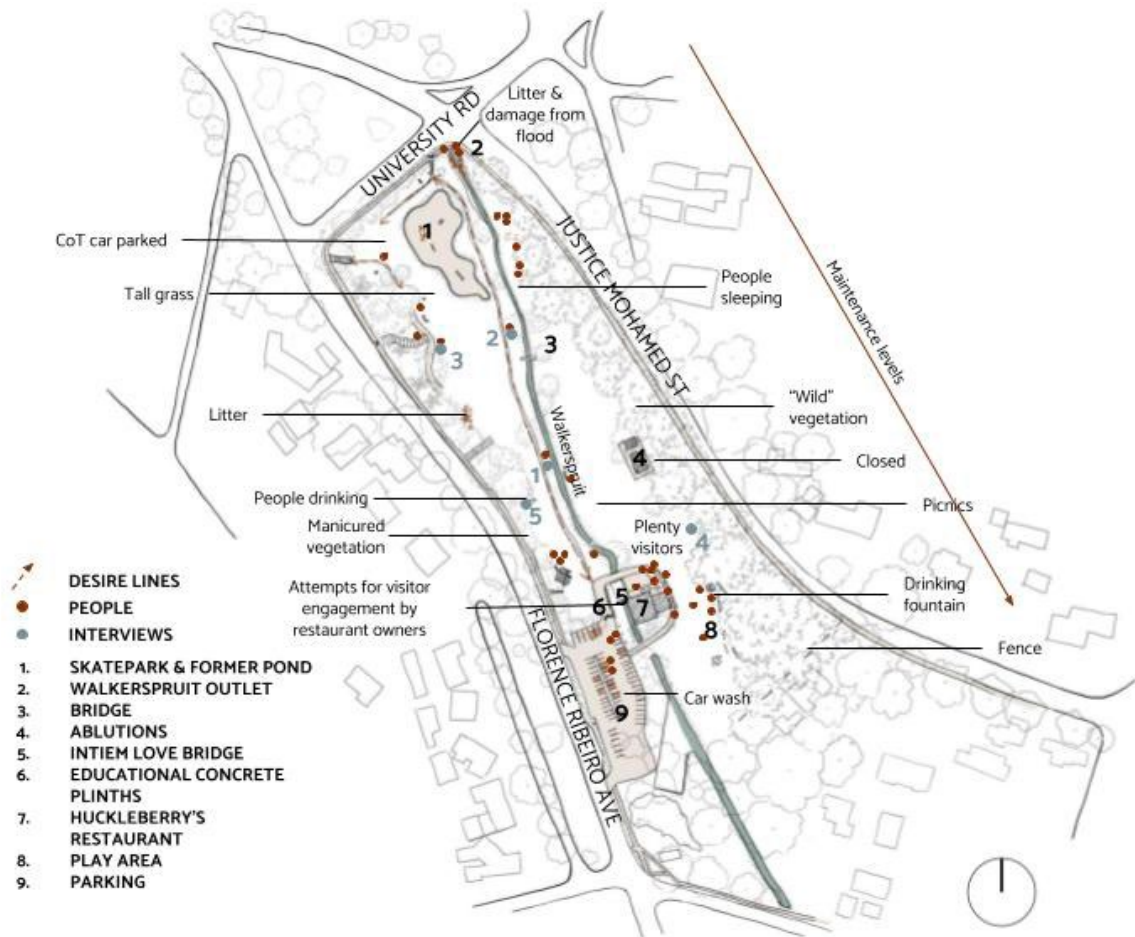



Figure 76: Magnolia Dell Park observations on 21 March & 5 April 2024

Source: author, 2024

Table 5 demonstrates recurring park activities including observing animals, plants and people for educational purposes, recreational play and events, relaxation and illicit activities. The individual park use is further described below.

Table 4: Park activities described by respondents.

Recurring Park Use	All three parks			Locations
	Play (sports: soccer & rugby) & children play, games			Lawns & over chess board, play area
	Socialise			Water, lawn, benches
	Educational observations of animals (doves), people (playing sports, picnics) & plants			
	Exercise (dog training, yoga, gym, aerobics)			Lawn
	Rest			Lawns, benches, in sun, under tree shade
	Emotional (refresh, de-stress, relax, enjoy views & silence)			
	Eat (picnics, lunch breaks)			
	Take photos			Statues
	Entertainment (listen to music)			Benches, Big screen
	Refuge for unhoused			Under trees, in corners, infrastructure
	Illicit activities (Substance abuse, drinking alcohol, smoke) <div style="text-align: center;">  </div>			Benches, under trees, in corners
	Transitional space (wait for train/ transport, car at nearby shop) <div style="text-align: center;"> <p><i>Figure 77: Cough syrup bottles found throughout the parks</i></p> </div>			Benches, lawn
	Events (festive season)			
Enjoy weather			Trees	
Different Park Use	Burgers Park	Maunde Square Park	Magnolia Dell Park	
	Events (weddings, birthdays, political parties)	Events (funerals & after tears ceremonies, political parties)	Events (weddings, birthdays)	
		Parking & Car wash	Pavement	
	Gardening			

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	Food donations hand-out	Band stand	Braai		Restaurant		
			Skate	Pavement	Skate	Empty pond	
	Spiritual (church)				Spiritual (meditation)	Lawn, grass, under trees	
	Work	Benches					
			Illicit activities (Gambling, dumping) 				
			Traditional medicine 				

Figure 78: Board for gambling

Figure 79: Traditional healer at the corner

Source: Author, 2024

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In Burgers Park and Magnolia Dell Park respondents noted spiritual activities such as church ceremonies and meditation occurred on lawns, highlighting the calming influence of the flowing stream at Magnolia Dell Park. One respondent described how the parks facilitated her meditation:

I like doing meditations ... I can just get my phone and I play some special music. I go to a place where there are trees and it's quiet. So I find it [the park] accommodating... Sometimes I just want to be relaxed on my own and I can go to places like the parks. It's quite cool, no noise.

MALE, MAGNOLIA DELL PARK, INTERVIEW 5

In contrast within Maunde Square Park, a respondent described that the park is used for parking instead of connecting with nature and argued that this is why there is more pavement than natural features:

They're just using it as a parking lot...It's a car wash. It's a chill spot. But when we talk about nature, we can't refer to this. [...] This park, it's modified to meet the needs of the people. Maybe that's what they want, they want it to look like this. We might be more interested in the natural look and all that, but that's not how they want it. So, the reason why they built it like this, it's because they knew that they're going to use it for parking.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

As respondents described how other people used the parks, they had mixed perceptions and raised concerns about safety, unhoused people, substance abuse and gambling.

R: How do you feel about other people using the park?

Not all of them use the park right. [...] Some are working with dogs, they are training dogs, some are just looking like those guys, they are just sleeping. Some even urinate, just there, using the Park in the wrong way. And some come for leisure.

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

These parks are used as a drug den. People smoke here... teenage drinking... Everything happens in the park because it's not well supervised. It's very rare you'll see policemen coming to patrol here. They just pass by...


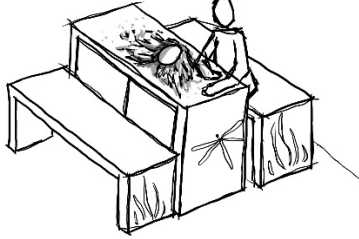




You see what they're doing? This is the daily occurrence. Playing dice. This is what happened to our parks. But it's [parks] meant for kids. But even if kids are there, they come and chase them away...You can look at this one here. This seating you see on top, there's a board [pointing to table in park]. If they wanna gamble.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

4.4.3 Adaptions

Table 6 indicates how residents adapted the park to suit their needs by using stones from a boundary wall as goalposts, making desire lines and restaurant owners added educational plinths.

Table 5: Adaptions observed within the parks.

Adaptions	Burgers Park	Maunde Square Park	Magnolia Dell Park
	 <p data-bbox="414 598 952 646">Figure 80: Author's sketch of soccer goalposts sourced from the boundary wall</p>	 <p data-bbox="996 582 1534 630">Figure 81: Author's sketch of graffiti artwork on bench</p>	 <p data-bbox="1601 582 2094 662">Figure 82: Educational plinths with animals found in the park drawn in different South African languages</p>
	 <p data-bbox="504 949 862 981">Figure 83: Deviation of pathway</p>	 <p data-bbox="1041 949 1489 997">Figure 84: Desire lines where no formal pathways were available</p>	
		 <p data-bbox="1041 1284 1489 1316">Figure 85: Soccer is played over chess</p>	

...small kids come and play soccer over the chess board = [laughter]. That's because they don't have football grounds, so any open space they utilise.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

4.6 Design Informants through Nature and Park Preferences

The following section indicates responses that inform a design approach based on the residents' preferences for park and nature spaces.

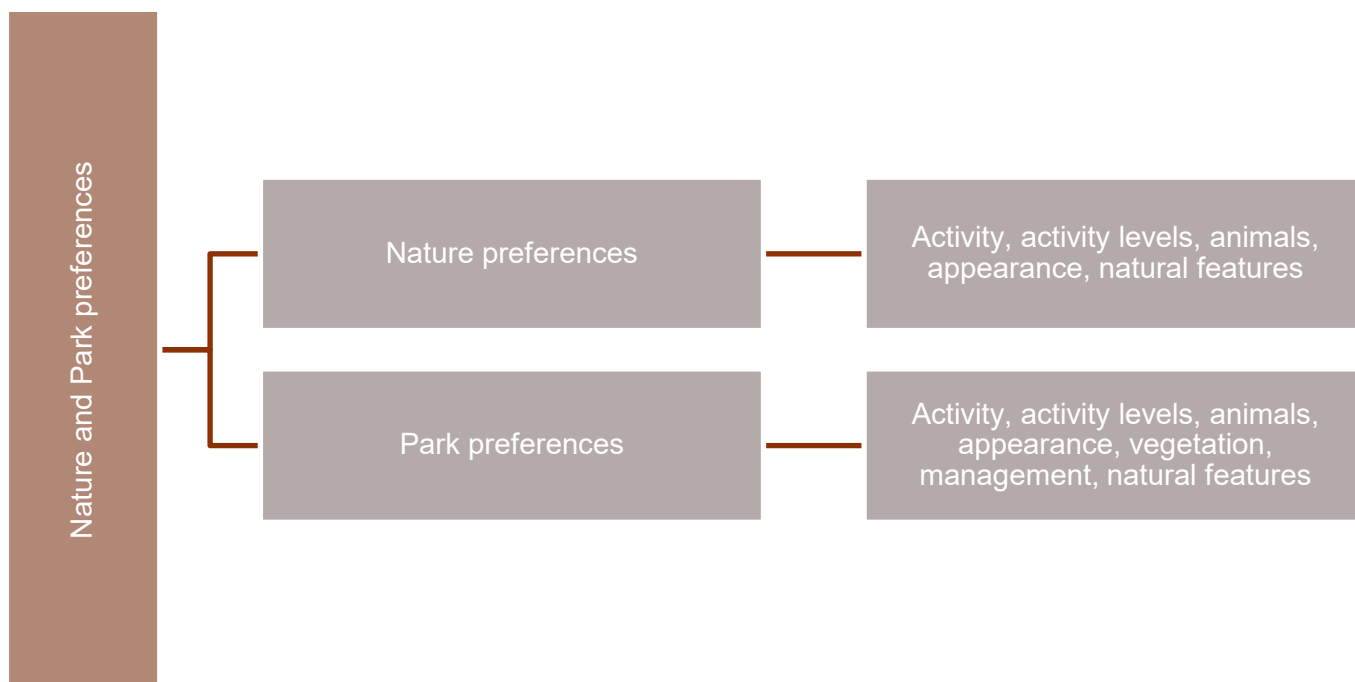


Figure 86: Code families relevant to section 4.6

Source: Author, 2024

4.6.1 Nature preferences

This section is based on respondent's preferred natural features and landscapes that they described as part of their activities in nature in section 4.5.1. These spaces include areas with rivers, dams, waterfalls, the ocean, mountains, wild animals, bushes, grasses, trees, forests, and windy areas.

I enjoy the environment as primitive as possible [...] The wilder the better [refers to Figure 9].

MALE, BURGERS PARK, INTERVIEW 2

A respondent mentioned that her spiritual communication with her ancestors happened in a quiet, sacred space, where there aren't a lot of people. She described how this activity happens in the urban environment, but that she preferred her home landscape where it is sacred:

RT: Do you have spaces in the city that you're able to do that as well?

Here it is only in location- but they are not the same. It's just those abandoned bushes on the outskirts of the township... where I kind of get closer to what I do at home. [...] Back at home it is a sacred place. But here you know, a lot of people go across such places, especially coming back from work. So, I cannot say it's that sacred, but... It is something.... More like a substitute place. [...] I prefer going home. For me it's like recharging. [...] There are other people there. Especially people who go there to pray. Sometimes it's people who go there to seek help. [...] It's mostly away from the noise, away from town or anything like that ... especially where's there's not a lot of traffic where people pass.

FEMALE, BURGERS PARK, INTERVIEW 7

4.6.2 Park preferences

The following is based on responses to questions about physical features people like and dislike within parks, what they would change or like to see within parks and the reason that they visit other parks.

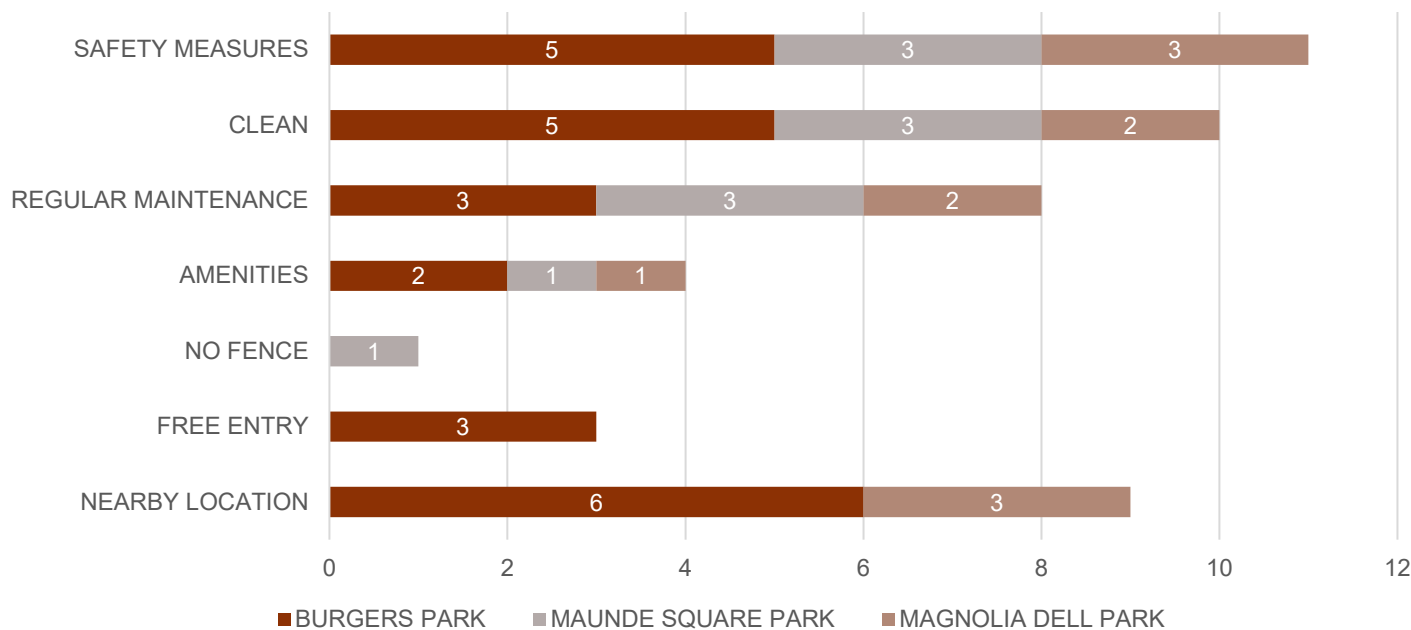


Figure 87: Management preferences respondents mentioned.

As Figure 87 depicts many respondents' expressed preferences regarding management, safety and maintenance in parks. They emphasised the need for additional amenities such as ablutions, drinking fountains and comfortable seating. In Magnolia Dell Park respondents identified the restaurant as well-maintained, which attracts visitors, whereas other parts of the park were perceived as less maintained. In Maunde Square Park and Burgers Park, respondents stressed the importance of more regular maintenance by both the community and municipality, particularly concerning litter, broken infrastructure and vegetation upkeep. Overall, respondents emphasised the importance of public parks remaining easily accessible with free entrance. However, due to safety concerns, some suggested safety measures such as fencing, security guards, cameras, controlled access, improved nighttime lighting and facilities for unhoused people. One respondent in Maunde Square Park argued against fencing parks, despite its potential benefits for park preservation, citing concerns that it might restrict people's ability to connect with nature:

It should just be accessible... I think the reason why they close it is just for preservation purposes ... there are some people that don't even care about nature. Someone could just go in there and just fish those fishes in the ponds out. ... It might be one of the those that are doing tourism ... They conserve the parks. But for me, it shouldn't be like that, because as people we should be able to relate with our nature. ... get to understand better, like the importance of nature.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

Figure 88 provide insight on respondents' park appearance and activity preferences.

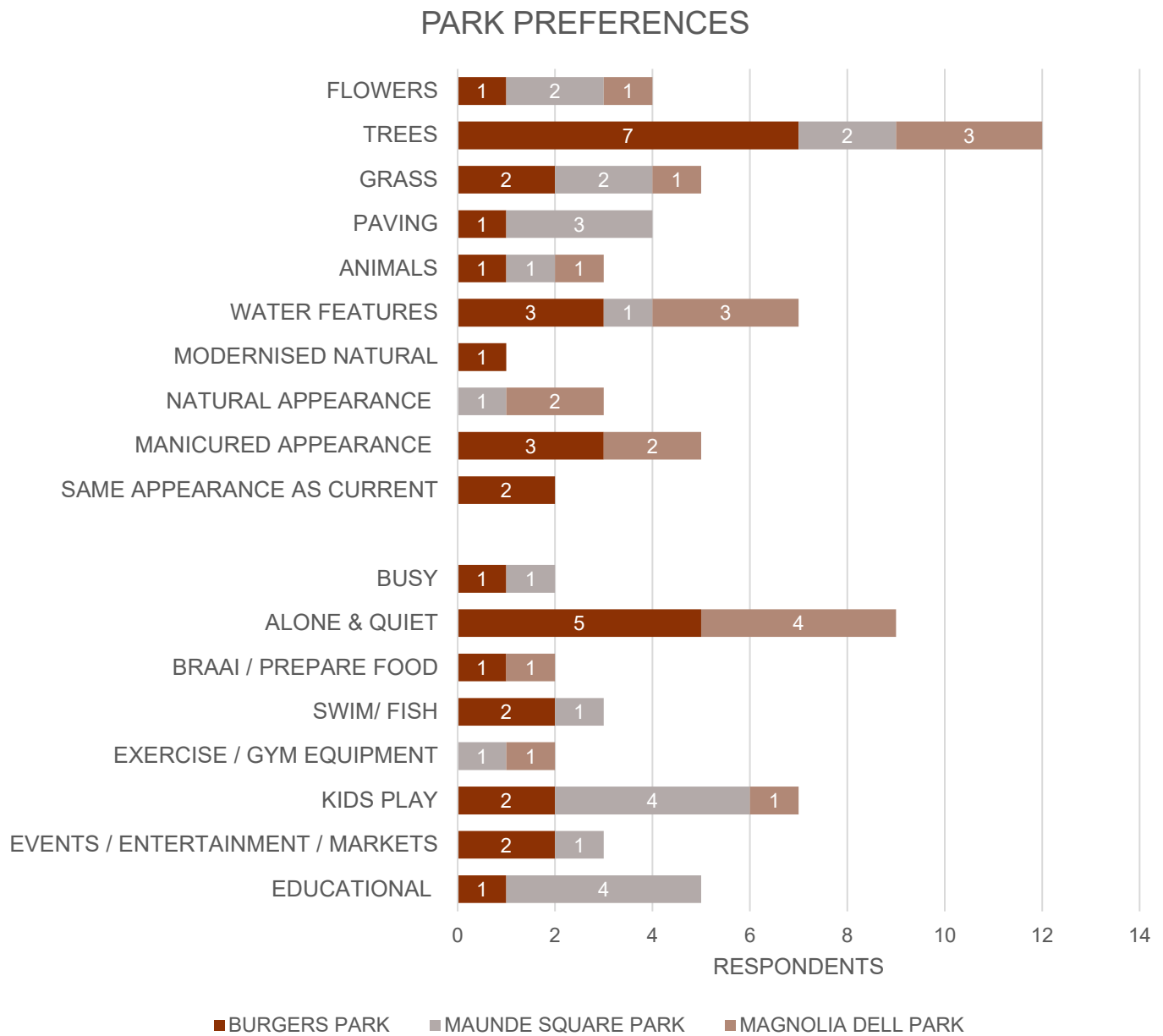


Figure 88: Respondents park appearance and activity preferences

Source: Author, 2024

a) Activity levels and activities

Most respondents preferred quiet parks, where they could be alone, but a respondent noted that it is difficult to find spaces like that in the city. They mentioned that they want designated areas in parks that are quiet and identified that the greenhouse would have been suitable if it wasn't damaged. Another respondent said that they don't want too many activities in the park as it will bring noise:

Most of the photos I can tell they are quiet, except for the one that looks like a park, there's a lot of people there. [refers Figure 5] [...] Here it's the same- it's not like I have a choice. I have to settle for this.

RT: Would you prefer to go home to those nature spaces or just spaces that's a bit quieter?

The Potential of South African Public Parks: Interpreting Afrocentric Human-nature Relationships through Botanical Gardens

I prefer going home ...because the life here is too fast. There's a lot of people. There's a lot of noise. ... I prefer home than all these crowded spaces.

RT: What would you change about this park?

The noise... but we cannot do anything about it cause it's in town, so there's bound to be noise. It doesn't meet my spiritual needs. ...Unless they fix... the greenhouse... .. It's quieter. There's glass around it, but it's abandoned.

FEMALE, BURGERS PARK, INTERVIEW 7

I prefer it more quiet like this because if they try to add activities then it will start to get loud... kids will come and be loud. Then nobody can come here to relax. I think this way... it's more controlled and there's less noise...

MALE, BURGERS PARK, INTERVIEW 3

Alternatively, a respondent in Burgers Park preferred a busy park as they associated crowds with safety. Another respondent in Maunde Square Park associated parks as social spaces with many people and events:

RT: What other parks do you visit?

Moroe park. We come on 16th and 25 December. You won't even enter the Atteridgeville. They park even outside the church even that side, the way its full. People from outside, from Limpopo from other countries, they come to Moroe park, to enjoy.

FEMALE, MAUNDE SQUARE PARK, INTERVIEW 4

Several respondents provided insights into the types of activities they would like to take place in parks, ranging from social to entertainment activities. In Burgers Park respondents recalled past activities that occurred in the park, such as live performances, DJs and sports viewing. They also expressed an interest in future activities including events, markets, exercise with gym equipment, dancing, singing and spaces for food preparation. Additionally, respondents noted that certain activities are currently restricted in the parks, including braai and open fires, due to concerns about potential veld fires.

RT: Is this park, a place you identify with?

Before, yes, it was ... Because at home we have the entertainment area. We have DJs. But now nobody comes here.

RT: Do you think a park in the city can have the same activities that you associate with home?

Yes, I think it can...they can just upgrade it ... and take it back where it was like. Have more functions into it...have more people coming to sit and enjoy their time ... [...] The entertainment ... if they just put the TV on for the soccer live like they used to do, because in the time of the 2010 World Cup, we are watching soccer here. This park was always full and everybody was loving this place. When you clock off at work- you have a TV at home. But you just want to come and watch it in the park with people. It's an outdoor area where they've got the fresh air ... it's wonderful.

MALE, BURGERS PARK, INTERVIEW 6

Yeah, there are a lot of things I wish to do man. Like I would create a lot of things, maybe like events each week ... bring kids to play something, maybe like music, drama. All that singing, dance all that. [...] On Sundays we used to come here and buy vegetables and fruits... Everyone was coming. ... And now they left.

RT: Would you like the markets to come back to this park?

Yeah it's cool, hawkers maybe.

MALE, MAUNDE SQUARE PARK, INTERVIEW 2

... maybe some exercises around the parks... even if you don't have equipment, you can also exercise. Maybe some... let me say after school lessons.

MALE, MAUNDE SQUARE PARK, INTERVIEW 1

RP_01: ...if you can think of things like socials, you must be allowed to do things like braais, also a place where we can prepare our meals you know.

RP_02: Most of the parks I have visited before, there's some gym equipment there, here it's just mostly for kids.

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

Respondents emphasised the need for more play equipment for children, particularly in Maunde Square, which currently lacks a designated play area. One respondent expressed disappointment that parks, which are intended for children, often fail to cater to their needs and sometimes deter them due to illicit activities. Suggestions included adding sand pits, swings and water features:

They should put play equipment for small children to come and play here... You know, kids love to play, but they don't have playing equipment here. [...] I've got grandkids. I can bring my grandkids to come and play here. Sit here, watch them, you see. But even if I come with them, they've got nothing to play with. ... You see, even like a kindergarten creche, you find there's a space like this. There's sand in there, you know kids love to play. They should just have some swings for kids. It should be meant for kids. [...] If they can have something like this [Figure 7] a small fountain for kids to swim.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

Other respondents also appreciated various water features, such as the original fish pond at Burgers Park and the sound of the Spruit in Magnolia Dell Park. One respondent even suggested that parks should include a water feature where people could swim:

RT: Do you think this park can look more like these pictures that reminds you of home?

Yeah, I think if there was water somewhere... so that people can go there and swim. And there'll be people who teach us to swim [laughs].

FEMALE, BURGERS PARK, INTERVIEW 5

b) Educational

Some respondents, especially in Maunde Square mentioned that they enjoy educational features within parks, but raised the issue that it is not prevalent in parks. It is limited to small signs, present in Burgers Park and Magnolia Dell Park, but they are overlooked. One respondent mentioned that she would enjoy the park more if there was more botanical information available:

If I had a chance, I would bring my daughter here because she's somebody that loves plants and trees. I don't know what's fascinating about them, but she loves them [...]

she's very inquisitive. She will ask "what is this one? What is that one and all those things."

RT: Do you see any information about plants here?

There is none. There is not even signs here.

FEMALE, BURGERS PARK, INTERVIEW 7

Other respondents had positive associations with Figure 89 as they highlighted the information boards about plant species and the representation of people's histories:

RT: What do you like about it? [refers to Figure 6

Just to learn about different types of plants in nature... And some information that I will find.

MALE, MAUNDE SQUARE PARK, INTERVIEW 1

Also this one is good here. There are different kind of plants and here, I think there are names of the plants, this one is the message for the tourist, if you are new here, you will read about these plants.

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

It seems like it's a different type of garden here, different sections. I see trails here, buildings behind, trees, structures. I see the boards. You could learn- maybe it tells you about how the Khoisans were living here back then. I see the skeleton bones. Maybe of an animal. You could see that the stones, they are like they created in like a round circle. It looks like it was a fireplace.

RT: Do you wish to see more things like this in parks, where you can learn from how people lived?

RP: Yeah, what was happening back then like I would say, maybe like 30 decades back.

MALE, MAUNDE SQUARE PARK, INTERVIEW 2



Figure 89: Image with information signs that respondents discussed

c) Appearance

Other responses provided insight into how respondents feel a park should look like, revealing mixed opinions. Some respondents argued that urban nature should not necessarily replicate natural landscapes but should instead maintain a clean and well-maintained appearance with trimmed vegetation, similar to Figure 4 and Figure 5.

RT:⁷ How would you feel if the park looked more like Figure 9 ?

Yeah, it's gonna... be nice, but now I want it ... to be... nice like this one [Refers to Figure 4] [...] Cause in town ... in town.

RT: So do you feel in town it must look like Figure 4? But at home the landscape is like that?

Yeah

MALE, BURGERS PARK, INTERVIEW 1

RP_01: I like this one [refers to Figure 4] You can see the views of the city. Also, the park looks great. It's clean.

RP_02: I also love that one.

RT: Now, I want you to select two pictures that remind you of home.

RP (Respondent)_01: These two [Refers to Figure 7] [...] The river at home looks similar to this one. [Figure 8] This one, when you go to the habitat there are tall trees.

RP_02: [Figure 7] I stayed near the mountain, so we used to play there. [Figure 9] reminds me of the dry grass where we used to see animals.

RT: Do you feel like that this park can look more like these three pictures?

RP_02: Nah it can never look like this because... these are mountains... it's nature where we find them. You can't take a mountain from home and put it here right? [Laughs] ... This park is also taken care of, so there is no way it can be dry. Yeah, it's ... it's perfect the way it is.

RP_01: It's nice the way it is because like if you can look at these ones, [refers to Figure 9], It doesn't make sense for this animal to be around here. [laughter] Well, this one [refers to pigeons in park]. Yeah, they can fly...[...] and this one it's artificial [Refers to Burgers Park]. ... I don't know what to say, but you know, this one is natural. I think it's fine the way it is. Safe. [...]. It's very hot so ... imagine if we have this [Figure 9] grass here, people won't be able to sit down...

MALE & FEMALE, BURGERS PARK, INTERVIEW 3

In Magnolia Dell Park, respondents compared the eastern “wild” (Figure 90) with the western “manicured” side (Figure 91). A few respondents mentioned that they prefer both appearances, as the natural landscape represented their home landscape while the manicured side is favourable to take photos. One respondent mentioned that the eastern side could attract snakes.

⁷ RT= Research Team(Department of Land Affairs, 1997)



Figure 90: Western manicured gardens at Magnolia Dell Park



Figure 91: Eastern "wild" vegetation at Magnolia Dell Park

Source: Author, 2024

At the back it's nature, I love that because I come from that. So, it's natural it's made. The front is just beautiful because it's made. The way it is set up, it's fine. It's nice because if I want to take pictures then I can just stand there and take my beautiful pictures at the beautiful garden.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

RT: Which side do you prefer?

RP_01: The manmade part

RP_02: I prefer both.

RT: Is there a reason why you prefer the manmade one?

RP_01: It's safe, you might find a snake there [at the eastern side].

TWO MALES, MAGNOLIA DELL PARK, INTERVIEW 5

While in Maunde Square Park a respondent mentioned that they prefer Figure 7 and Figure 9. as they described the appearance as nature. However, they didn't feel that a park in an urban environment could look similar, they rather associated a park's appearance with Figure 4.

I don't like this one. [Figure 4] This is the Union Buildings. It's too quiet. It's a lot of artificial.

RT: What would you like to see more?

Something like this! [Figure 7]. You see this is nature [Figure 9].

RT: Would you like to see this in this park?

Inside the city it won't be... Unless that side. I can go to the mountains.

RT: Like which of these pictures, do you think a park should look like?

... like this [refers to Figure 5] ... kids can play.

FEMALE, MAUNDE SQUARE PARK, INTERVIEW 4

A respondent mentioned another park that she visited that looked like a modernised version of nature with water activities.

There is one place in Tembisa. It used to be deserted, but now they have like improved it to something like a water park. People can go fish and swim, and there are also water slides for kids. So it's something that looks like nature but modernised.

FEMALE, BURGERS PARK, INTERVIEW 7

d) Vegetation

Some responses indicated the types of vegetation respondents preferred within parks including flowers for aesthetical value:

Planting more flowers cause we have trees here. We don't have flowers...

MALE, MAUNDE SQUARE PARK, INTERVIEW 1

RT: Do you wish there were certain types of plants or animals in this park?

Yeah, roses because they are attractive.

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

Respondents mentioned grass as a feature that allows rest and meditation. While others mentioned that they prefer paving over grass as grass can irritate their skin and require less maintenance. Others had concerns that tall grass could attract mice, snakes and litter:

I like the grass because usually when I come here, I take my shoes off and walk around the grass and listening to the sound of the water. [...] It meets my spiritual needs when I want to have my own moment.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

If I was to care for this, definitely I was going to remove all this paving. Maybe I can have paving for like a foot path... So that people don't step on the grass and all that... just plant more vegetation. Then it will look more of a park than what it looks now.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

... if we have grass, they don't maintain them. Sometimes you will think you're passing through a jungle, so the paving is fine.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

Paving is better just because most of the people now they've got allergies of the green grass. So when it's paved, it's gonna be simple and better.

FEMALE, MAUNDE SQUARE PARK, INTERVIEW 4

Many respondents mentioned trees as their favourite landscape feature in parks as they provide shade, a place to rest, remind them of home and are utilised during meditation. One respondent in Maunde Square Park mentioned that he would like to see more medicinal and edible plant species within the city, but that development took priority over natural features.

RT: Do you use any other plants?

RP: Yes, I actually love the natural medicine more than the one in the pharmacist ... Just extracting from nature and use it maybe boil it and drink it. I know quite a few... but here... there's nothing here. Yeah, but where I come from-... you see the surface are paved. So, they had to get rid of the plants so they can build houses ... we kind of losing those important plants that we need for food, for medicines and all that. Now we just plant this alien plants that are consuming a lot of water. [...]

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

However, even though the respondent wanted more people to have access to these plants, he preferred that it was for observation and education rather than picking it. This is due to concerns of over-harvesting that threatens the existence of these plants.

When I say access, this is not to say they have access to just taking plants there. No, just for sightseeing to see the plants... You know, there's some indigenous plants that and now they're getting extinct. Because of these invasive plants and all that demanding a lot of water, so we can't risk that.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

e) Animals and Biodiversity

Animals were frequently highlighted in respondents' human-nature relationships, with many expressing a preference for observing wildlife. However, they emphasised that these animals should remain in their natural habitats rather than in urban settings:

I like the animals like this (Figure 9)

RT: Is it something you would like to see in the city?

In the city, you cannot find the animals. You cannot find these types of bushes. This is farms, game reserves, it's where you find these types of animals.

MALE, MAUNDE SQUARE PARK INTERVIEW 2

Most of the animals that I like are wild and we can't have wild animals here.

MALE, MAGNOLIA DELL PARK, INTERVIEW 3

[Figure 9] Well, we won't have game in the township. Oh, they will kill them and eat them.

MALE, MAUNDE SQUARE PARK, INTERVIEW 3

A respondent mentioned that he preferred parks that incorporate living organisms beyond vegetation, through fish ponds and animals present.

They try you know to make it look natural. But there's nothing natural about it. I think they should be natural... There has to be more trees, I think and ... grasses of course. I think the reason why it's not looking more natural; they can't just allow a lot of trees... maybe they could be a havoc for snakes, and it's residential. Jan Cilliers Park looks more

natural, because of some ponds, fishes, so it's not only the trees and the grasses. There's life there. There are birds. It gives you a sense of nature, so I think that one is better than this one.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

4.7 The value of botanical gardens

Discussions about botanical gardens only occurred as respondents mentioned them, therefore it was limited to three respondents. The discussions gave insight as respondents discussed the role and benefits of these spaces in the city.

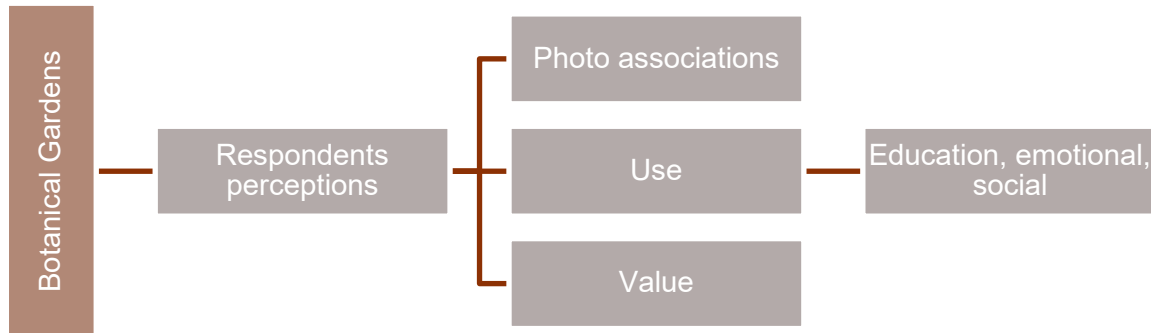


Figure 92: Code Families relevant to section 4.7

Source: Author, 2024

Respondents associated Figure 6 and Figure 8 with the typology of botanical gardens. Respondents valued its educational and recreational benefits as a quiet and safe space, where people picnic and play:

I'd say this one reminds me of botanical gardens [refers to Figure 6] The plants and these marks about the plants, the history of the plants.

[...] RT: Are there any other nature spaces in the city that you like to visit?

There's that Botanical Garden that I've been to where I usually go and sit like this, it's a park as well, a government park. [...] It's near the busy road. It's very quiet as well, and if you sit you will enjoy it. [...] We usually go there and do our picnic there and we take the ball with, and we play with my son. It is easy to get there. And it's safe.

FEMALE, MAGNOLIA DELL PARK, INTERVIEW 1

Another respondent mentioned their role of conservation, a place to observe animals and plants and their emotional value, to admire and connect with nature:

RT: Do you know of a botanical garden in the city? And what is the overall role of it?

I know one in Silverton... it's more for conservation, but also, ... we say it's a garden. You know there should be variety of plants and animals, you know... I mean if a person is interested in nature, I should be able to go to that place to find that emotional satisfaction ... where I can just sit under the tree and relate with the nature. If you check people like poets, they actually like, go to sit where they're just birds chirping and all those kind of things [...] When we get to such places, that's where you can start thinking properly and

you can relate with nature, you get to admire the beauty of nature and actually maybe the roles that it plays, get to breathe clean air and all those things.

MALE, MAUNDE SQUARE PARK, INTERVIEW 5

4.8 Research results summarised

Figure 93 illustrates the overlapping value and use of public parks, nature landscapes and botanical elements as identified by the respondents. Similar activities occur across these different landscapes but in distinct contexts and manners. Educational activities are prominent in all landscapes, involving observations of animals and plants. Public parks additionally provide insights into human interactions. Recreational aspects include various forms of play, eating and exercise, unique to each setting. Emotional benefits, such as relaxation and refreshing, are associated with all three types of spaces. Spiritual activities are also noted whether in sacred natural landscapes or through meditation in parks.

Exposure to natural resources, particularly medicinal and edible plant species, is available in natural landscapes but restricted for display in botanical gardens. Parks and botanical gardens share similarities in the same set-up and activities like play and exercise, along with the value of an escape in the city. Conservation efforts were primarily associated with botanical gardens, whereas parks were appreciated for their practical roles as transitional spaces and extensions of homes.

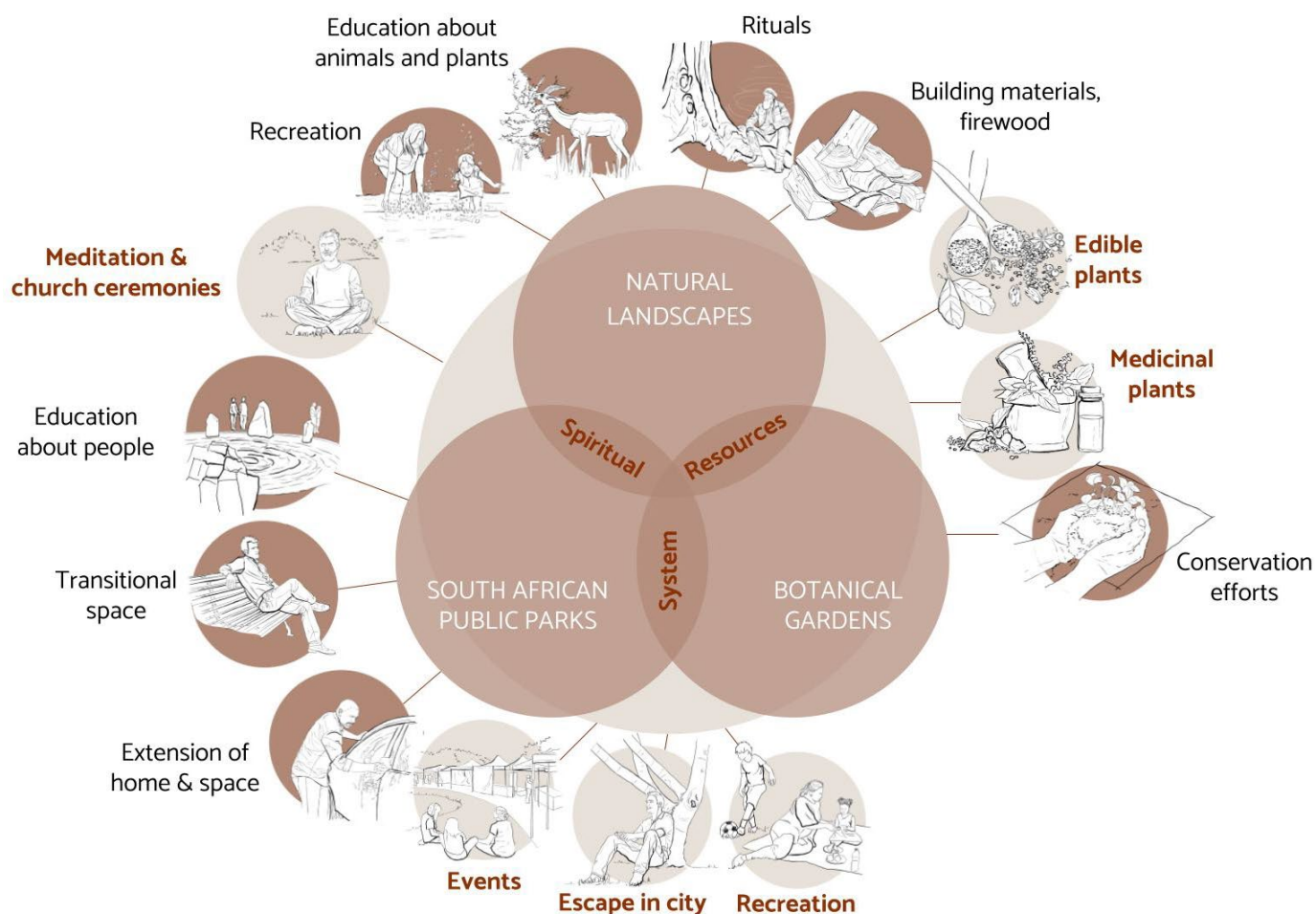


Figure 93: Overlap between public parks, nature and botanical gardens.

Source: Author, 2024

5. Discussion

The outcomes of the research have provided insight into park perceptions and the potential to reflect local human-nature relationships. Figure 94 demonstrates the structure of the discussion section, with the relevant topics from the literature review and results on the far right. The section ends with a reflection on the limitations of the study.

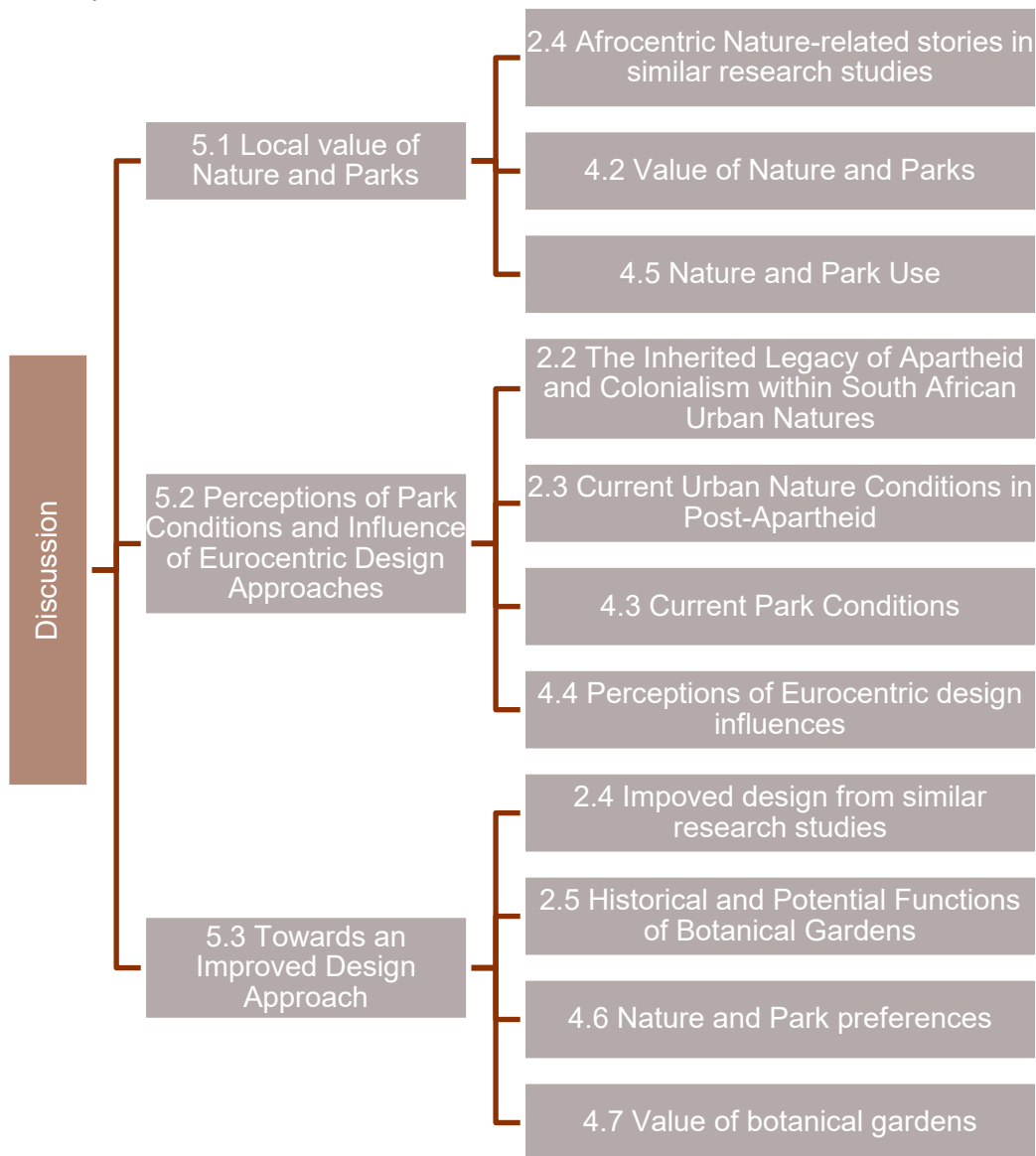


Figure 94: Outline of discussion
Source: Author, 2024

5.1 The Value and Use of Nature and Parks

The study affirms the multifaceted and interconnected relationship between residents and their natural environment as described by Cocks et al. (2020), Njwambe et al. (2019) and Shackleton and Gwedla (2021). Nature was valued for its resources, ecosystem services, emotional and spiritual connotation, and educational value. In Cocks et al. (2020) study, respondents expressed a preference for visiting landscapes in their natural state, including forests, commonages and informal green spaces, with limited visits to public parks. However, in this study, respondents defined parks as integral to nature and highlighted their value as a reminder of home, places to escape busy urban conditions, extensions of space for events, landmarks and spaces for learning about others. Despite poor conditions, parks were frequently used similar to the study of Shand (2022), underscoring the importance of good quality public parks, particularly for marginalised communities in townships and the CBD, where apartment and yard space are limited and public transport

alternatives are scarce. Conversations about nature conservation echo Ward et al. (2010:49) concerns that preserving urban green spaces is crucial amidst rapid urban development. Local authorities must recognise these spaces' significance as other infrastructural elements take priority over nature conservation.

Although respondents in Maunde Square Park indicated natural features as important, respondents associated parks less with nature and home landscapes compared to the other two parks. This suggests that the current park with its lack of natural features and dominance of hardscaping is inadequate. It serves more for social activities like parking, car washing and events than ecological functions, also noted in Shand (2022) study.

The results reveal overlaps in nature value and use as mentioned in other literature sources such as communicating with ancestors, interacting with animals, visiting rivers, and cultivating and collecting plant species for edible and medicinal use (Cocks *et al.*, 2020; Njwambe *et al.*, 2019). Unique contributions include specific mentions of plant species usage, stories about speaking to ancestors through ant hills, traditional games, and memories associated with mountains, which were not extensively covered in other literature sources. Differences emerged in how respondents spoke about activities from their home landscapes with fondness and nostalgia, contrasting with more critical views of park experiences, which was similarly noted by Njwambe *et al.* (2019:424-426).

Similar park activities were noted as documented by Shand (2022:184-185) which include typical recreational uses, transitional space, social activities and similar illicit activities. Park users made adaptations like artwork, stones for goal posts and educational plinths, highlighting deficiencies in current park design that do not fully meet resident's needs, echoing findings from Shand (2022).

Additionally while Njwambe *et al.* (2019:428) found no spiritual connections within the city, this study demonstrates that respondents value parks for spiritual meditation and outdoor church ceremonies. However spiritual activities like communicating with ancestral spirits through ant hills, remain tied to home landscapes and informal green spaces that are considered sacred. This study supports the theory of Njwambe *et al.* (2019:423) that congested urban conditions hinder cultural rituals. Furthermore, everyday practices such as collecting produce, wood and water, that are commonplace in rural environments are viewed as impractical in urban settings, similarly observed by Njwambe *et al.* (2019:429).

5.2 Perceptions of current park conditions and the influence of Eurocentric design approaches

Decaying park conditions remain the limited option residents have to connect with nature in the city, as respondents often highlighted that there are no viable alternatives. All three parks consistently faced issues related to irregular maintenance, safety concerns, litter, cleanliness, overgrown vegetation, damaged infrastructure and inadequate public amenities. However, distinct disparities were evident among the three locations underscoring spatial inequality in green spaces. Magnolia Dell Park, situated near affluent suburbs appeared better maintained compared to Burgers Park in the CBD and Maunde Square Park in a township. However, this disparity can partly be attributed to the efforts of restaurant owners who maintain one side of Magnolia Dell Park. These findings align with similar research by Shackleton and Gwedla (2021) and Shand (2022:161-164), highlighting varying conditions and perceptions of public parks in the City of Tshwane.

Magnolia Dell Park exhibited mixed maintenance levels, with good play equipment but signs of decay present. Maunde Square Park was characterised by minimal natural features due to a design approach that prioritised social functions like car washing over ecological benefits, a concern similarly raised by Shand (2022). Meanwhile, Burgers Park faced infrastructure challenges. As the parks demonstrate common and unique

issues, it highlights the need for place-based approaches to park design and management, rather than replicating standardised designs across different areas.

Many original Eurocentric features remain in the parks, especially in Burgers Park. Interestingly, respondents did not express negative associations with these features or the park's history but were more concerned about its current usability issues. Other respondents enjoyed the presence of the statues, while others were indifferent and repurposed memorial plaques as vendor benches. While there is limited information about the removal of the bronze Peter Pan and Wendy statues in Magnolia Dell Park, Jones (2020) claims that they were stolen. This suggests that while these statues did not commemorate controversial figures, they held little relevance to community members, presenting opportunities for alternative uses.

Some respondents preferred a manicured appearance and trimmed vegetation for its picturesque qualities, as exemplified by the Eurocentric gardens at the Union Buildings. These observations indicate that respondents had predefined expectations of what urban nature and parks should look like. However, there is also an indication that some individuals view manicured landscapes as artificial and believe that control over nature is inappropriate, as it does not reflect natural environments. Despite this, there have been few attempts at alternative approaches to urban nature. As a result, people remain accustomed to the current state of parks.

5.3 Towards an Improved Design Approach

The research contributes to existing findings on how urban nature should be approached in South Africa. The study supports a shift from standardised approaches towards urban nature, acknowledging ambiguity and advocating for alternative constructs of nature (Cocks *et al.*, 2020). Similar to Shand (2022) and Young and Vosloo (2020), a co-design approach involving public input is recommended to address community needs within parks. Respondents expressed a preference for diverse park environments accommodating various activities and activity levels. While most respondents favoured quiet, secluded spaces reminiscent of natural landscapes, they noted that such spaces are hard to find in the city. Some suggested designated areas in the park, that utilise structures such as greenhouses. In contrast, others preferred busy parks for safety and social interaction. They suggested desired activities including, live performances, markets, exercise areas and spaces for cooking. Desired enhancements included more play equipment and water features for emotional and recreational needs. However, empty ponds within existing park conditions demonstrate that water management and scarcity could be detrimental to this preference. Respondents enjoyed educational observation of both people and natural features. In addition, there was a preference for educational elements beyond basic information boards, which are easily overlooked. But these improvements should not be restricted to add-on features, rather public parks would need to be flexible to adapt to evolving needs as recommended by Beningfield (2006) and Young and Vosloo (2020).

Opinions on park appearances varied widely among respondents. Some advocated for manicured parks citing concerns about maintenance, allergies and snakes which were commonly associated with tall grass and wild vegetation. In contrast, others prefer wilder natural settings that remind them of their natural landscapes at home. This suggests consideration towards paving and lawn spaces that can accommodate practical functions as well as ecological ones. Preferences for vegetation types included flowers for aesthetic enjoyment, grass for meditation and trees for shade and rest. Respondents also expressed interest in introducing vegetation with medicinal and edible properties, emphasising the conservation of Indigenous practices. This approach aligns with Shackleton and Gwedla (2021) and the removal of invasive non-native plant species for native plant species that require less water and are better adapted to local environmental conditions.

Furthermore, the study indicates a positive response to natural features beyond vegetation, particularly the presence of animals such as birds, insects and fish in ponds. While wildlife was generally seen as incompatible with urban settings, integrating suitable animals can enrich urban nature without compromising human functions. Overall, these findings support similar results of Ward et al. (2010:54) that residents prefer diverse natural scenes, activities, fauna and flora, safe and accessible urban green spaces.

The preferences expressed by respondents for urban green space closely mirror the historical and contemporary roles of botanical gardens. Respondents recognised botanical gardens for their multifaceted value in education, recreation and conservation, despite current limitations in accessibility and visitation rates. Historically, botanical gardens have served as hubs for medicinal studies (Hill, 1915), reflecting the importance of traditional medicinal uses reported by respondents. They also play a crucial role in environmental education showcasing Indigenous, medicinal, water-wise and edible plant species, that align with the educational interests of respondents (Poulsen, 2020). In addition, they provide recreational opportunities that resonate with respondents' preferences such as observing native fauna and flora, event spaces and offering space for exercise. Respondents highlighted the potential benefit of structures associated with botanical elements including greenhouses. Furthermore, botanical gardens support conservation efforts by preserving Indigenous and culturally significant plant species, contributing to decolonisation and the upliftment of Indigenous communities as noted by Bennett (2017). While these conservation benefits were not specifically noted by many respondents, they did underscore the recognised value of nature spaces and that they should remain.

The following design informants have been identified to consider public parks, based on their context. It includes design informants similarly identified by Shand (2022:257) and Young and Vosloo (2020):

1. Natural features: identifying significant plant species that hold cultural or practical value for residents to utilise as potential resources.
2. Climatic and maintenance conditions: establish whether strategies such as low-maintenance vegetation, and water-wise plant species should be incorporated.
3. Multi-species design: Identifying fauna of the area that can be naturally incorporated.
4. Activities & features subject to change: identify how spaces should adapt to suit community needs.
5. Individual and universally recognisable symbols.
6. Community: skills, knowledge, games, traditions, practices, rituals, human nature relationships, activities and activity levels, and informal role players such as local vendors.

Figure 95 demonstrates a design approach with the identified overlaps between natural landscapes, botanical gardens public parks, and design informants.

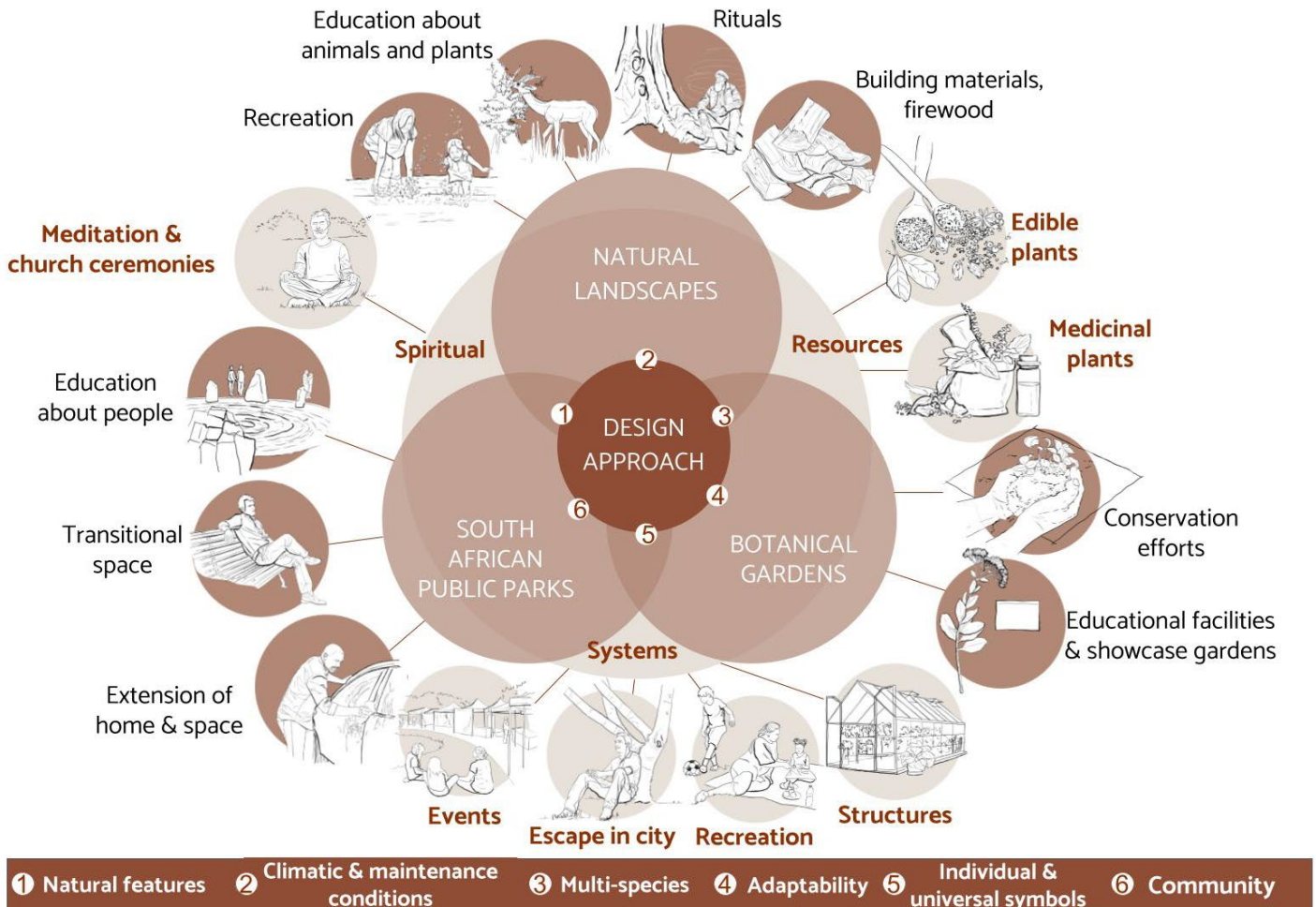


Figure 95: Summary of design approach

Source: Author, 2024

5.4 Limitations

It is important to acknowledge that the generalisability of the study is limited to only twenty-one individuals' opinions, therefore the results do not represent views about public parks and home landscapes. The data collected within Magnolia Dell Park about home landscapes is limited as the research team collected data in this park first, while in the other two parks, more questions about home and natural landscapes were asked. There is a lack of data on botanical gardens due to limited related questions, therefore the results cannot confirm people's perceptions. Due to language barriers, there could be misinterpretations of phrases, plant species, park names, questions and responses. The study still contributes to expanding knowledge on appropriate approaches to urban nature within the Global South.

6. Conclusion

6.1 Research results summarised

In this study, it is evident that residents have an interconnected relationship with nature, as outlined by Cocks *et al.* (2020), Njwambe *et al.* (2019); Shackleton and Gwedla (2021). Respondents considered public parks integral to their experience of nature, serving as reminders of home landscapes, places to escape urban conditions, extensions of space and home, landmarks and spaces to learn about other people. However, the parks exhibited decaying conditions, including irregular maintenance, overgrown vegetation and damaged infrastructure. When comparing Magnolia Dell Park, situated near affluent suburbs, with Burgers Park in the CBD and Maunde Square Park in a township, disparities became evident highlighting spatial inequality in green spaces. Despite these poor conditions, parks are frequently used as the only means to connect with nature, emphasising the necessity of good quality public parks. This is especially crucial for marginalised communities and high-density neighbourhoods, where yard space is condensed, and public transport to alternative areas is scarce. As urban green spaces are threatened by rapid urban development, this study echoes Ward *et al.* (2010:49) emphasising the importance of conserving these areas.

The study revealed similar nature use to other literature sources, including communicating with ancestral spirits, interacting with animals, the use of edible and medicinal species, traditional games and recreational activities. Respondents spoke fondly about activities within the natural landscapes contrasting with more critical views of park experiences. Similar park activities documented by Shand (2022:184 -185) included typical recreational spaces, social and illicit activities, along with adaptations made by park users, highlighting the deficiencies of current park design. Although recreational services were recognised as important, current parks do not facilitate other nature relationships valued by African communities. This was evident in Maunde Square Park which prioritised social functions through hardscaping over ecological benefits, resulting in people having less association with the park as part of nature. African HNRs remain unrecognised and impractical within public parks. Certain spiritual activities remain tied to sacred home landscapes and informal green spaces and everyday practices in rural environments are perceived as impractical in current urban conditions. This is further exacerbated by current park practices that prohibit activities such as plant collection. There remain few attempts to challenge the current legacy of Eurocentric design influences within urban nature.

Most respondents did not raise issues with Eurocentric features within public parks, as some expressed preferences for the manicured appearance, while others were indifferent. It was clear that the fundamental legacy of Apartheid and Colonialism remained through predefined expectations of what parks should look like, along with unequal green space distribution in townships, the presence of non-native tree species, and memorials with little meaning to park users. Meanwhile, some residents highlighted preferences for alternative representations of nature, viewing existing formal green spaces as artificial and overly controlled, not reflecting natural landscapes.

The research contributes to existing findings on how urban nature should be approached within South Africa, advocating for a shift from the current standardised approach to a place-based approach. Respondents expressed a preference for diverse park environments accommodating various activities and activity levels, designated quiet spaces, more play equipment, water features, practical considerations of paved and lawn areas, educational elements, and natural features not limited to vegetation but also incorporation of fauna. However, respondents also expressed interest in introducing native plant species with edible and medicinal properties. These involve fundamental changes to the design approach, not just add-on features. Public parks need to be flexible to adapt to evolving community needs.

There was an overlap between public park preferences, perceptions of natural landscapes and the historical and contemporary functions of botanical gardens. Botanical gardens were valued for their educational, recreational and conservation roles. Through continued conservation, they can also contribute to the decolonisation of space and uplifting Indigenous communities. The study identifies design informants advocating for a place-specific approach, that balances social and ecological considerations.

6.2 Recommendations

Further research is needed to broaden knowledge of people's perceptions of public parks in other areas of the City of Tshwane. For future studies, multiple site visits to various public parks at different times of the day and utilising photo elicitation to start conversations about home landscapes will contribute to richer data collection.

Words: 18796

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8. Annexures



Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en
Inligtingtegnologie / Lefapha la Boetšenere,
Tikologo ya Kago le Theknolotši ya Tshedimošo

21 March 2024

Reference number: EBIT/31/2024

Miss MH de Kock
Department: Architecture
University of Pretoria
Pretoria
0083

Dear Miss MH de Kock,

FACULTY COMMITTEE FOR RESEARCH ETHICS AND INTEGRITY

Your recent application to the EBIT Research Ethics Committee refers.

Conditional approval is granted.

This means that the research project entitled "Home away from home: Interpreting human-nature relationships to identify design-informants for urban landscapes" is approved under the strict conditions indicated below. If these conditions are not met, approval is withdrawn automatically.

Conditions for approval:

Where applicable, the permission(s) from owner(s) of the case location(s) needs to be obtained before the researcher conducts the intercept surveys/interviews. The name(s) of the case location(s) cannot be revealed unless the permission from the owner is obtained.

When conducting intercept surveys, the researcher needs to avoid intrusive or confrontational approaches.

During the observation study, no people are to be observed and their identities are not to be captured.

This approval does not imply that the researcher, student or lecturer is relieved of any accountability in terms of the Code of Ethics for Scholarly Activities of the University of Pretoria, or the Policy and Procedures for Responsible Research of the University of Pretoria. These documents are available on the website of the EBIT Ethics Committee.

If action is taken beyond the approved application, approval is withdrawn automatically.

According to the regulations, any relevant problem arising from the study or research methodology as well as any amendments or changes, must be brought to the attention of the EBIT Research Ethics Office.

The Committee must be notified on completion of the project.


The Committee wishes you every success with the research project.












A handwritten signature in black ink, appearing to read 'Kai-Yi'.

Prof K.-Y. Chan

Chair: Faculty Committee for Research Ethics and Integrity
FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY

4.2 Park Conditions through Observations and Perceptions

	Burgers Park	Maunde Square Park	Magnolia Dell Park			
Park conditions:						
Features, Infrastructure & Amenities	<p>Broken fences and play equipment. Empty pond Inaccessible and vandalised buildings, structures no longer in use. Bad ablution conditions. Not enough benches. Broken bins. Mixed maintenance levels.</p>	<p>No play equipment & limited play space. Bollards used as seating. Inconvenient fence placements. No ablutions. Concrete benches Broken & overflowing bins. Broken garden bed. Irregular maintenance.</p>	<p>Play area in good condition near restaurant. Empty pond. Locked ablutions. Water fountains. Mixed maintenance levels. Clean spruit, litter closer to outlet.</p>			
	 <p>Figure 1: Locked gates with openings.</p>	 <p>Figure 2: Opening in boundary fence.</p>	 <p>Figure 3: Corner finish of garden bedding</p>	 <p>Figure 4: Inconvenient fence placement.</p>	 <p>Figure 5: Play area</p>	 <p>Figure 6: Water fountain</p>
	 <p>Figure 7: Broken fence</p>	 <p>Figure 8: Broken play equipment</p>	 <p>Figure 9: Concrete benches</p>	 <p>Figure 10: Overflowing bins</p>	 <p>Figure 11: Litter and less maintenance</p>	 <p>Figure 12: Locked ablution facilities</p>

	 <p>Figure 13: Screen where people could watch sports no longer in use.</p>	 <p>Figure 14: Light used as bin.</p>	 <p>Figure 15: Burnt bin.</p>	 <p>Figure 16: Transformer box placed in front of a pedestrian crossing.</p>	 <p>Figure 17: Litter and vegetation branches unmaintained</p>	 <p>Figure 18: Clean spruit</p>
	 <p>Figure 19: Broken pergola over avenue</p>	 <p>Figure 20: Hidden area at kiosk with litter</p>	 <p>Figure 21: Bollards for seating</p>	 <p>Figure 22: Dumping</p>	 <p>Figure 23: Walkerspruit outlet</p>	
<p>Vegetation</p>	<p>Overgrown vegetation on pathways. Tall grass Limited information about plant species (only small signs). Trees, garden beds and lawns</p>					
	<p>Grass patches. Recently trimmed hedges</p>	<p>Limited shade from trees. Empty and littered garden beds. Predominantly pavement over lawns</p>	<p>No pathways. Flower beds on west and "wild" vegetation on eastern side</p>			













	 <p>Figure 24: Recently maintained hedges at statue</p>	 <p>Figure 25: Grass patch where soccer is played</p>	 <p>Figure 26: Empty garden beds.</p>	 <p>Figure 27: Overgrown vegetation on pathways</p>	 <p>Figure 28: Overgrown vegetation on pathways</p>	 <p>Figure 29: Tall grass and no pathways</p>
	 <p>Figure 30: Overgrown vegetation on pathways.</p>	 <p>Figure 31: Small botanical signage</p>	 <p>Figure 32: Tall grass where people walk.</p>	 <p>Figure 33: Predominantly pavement</p>	 <p>Figure 34: Flowerbeds on western side that community help to plant</p>	 <p>Figure 35: Wild vegetation on eastern side</p>
<p>Eurocentric features</p>	<p>Statues in good condition. Victorian style pavilion benches, lampposts, bollards and a bandstand imported from Scotland. Neo-classical pavilion Greenhouse and nursery Extensive lawns Non-native plant species</p>		<p>Memorial monument</p>		<p>Victorian style benches and bridge. Removed statues. Extensive lawns Non-native plant species</p>	



Figure 36: Victorian-style bench



Figure 37: Victorian-style bollards



Figure 38: Memorial commemorates "Two parks per ward initiative."



Figure 39: Victorian-style bench

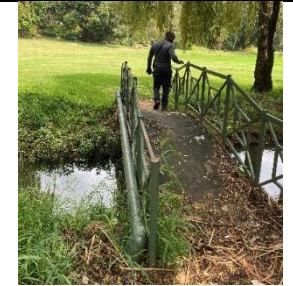


Figure 40: Victorian-style bridge



Figure 41: Victorian-style pavilion
Source: MiggieSA, 2013



Figure 42: Non-native memorial tree that commemorates Eurocentric figures



Figure 43: Non-native Magnolia trees
Source: Ollis, 2015



Figure 44: Scottish memorial statue added in 1923



Figure 45: President Burger statue, added in 1954.

Changes that have occurred

Empty ornamental pond
Damaged structures



Figure 46: Original ornamental pond
Source: unknown, 2013



Figure 47: Empty ornamental pond



Figure 48: Original Victorian style cast iron bandstand imported from Scotland where concerts and charity events were held.



Figure 49: Current bandstand with Broken roof and balustrade, used for food donations.



Figure 50: Greenhouse added in 1974



Figure 51: Plants growing through the broken greenhouse.



Figure 52: Interior of greenhouse.



Figure 53: Neo-classical pavilion with kiosk added in 1911



Figure 54: Current neglected and underutilised kiosk, where food was still sold after 2007.



Figure 55: Original curator's cottage based on the Erasmus castle with Romantic and Art Nouveau style added in 1904
Source: William H, 2012

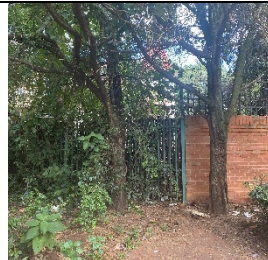


Figure 56: Current entrance to curator's cottage








Figure 57: Neglected nursery



















Figure 58: Plaque that indicates historical trees, used as seating

Source: Author's photographs, 2024

Annexure C:

	Plant species mentioned	Common name	Use	Source
Medicinal plant species				
	<i>Helichrysum odoratissimum</i>	most fragrant helichrysum (Eng.) imphepho (isiXhosa & Zulu)	Herb used as incense to protect and purify the body spiritually	Cocks, Shackleton, Walsh, Haynes, Manyani and Radebe (2020:114)
	<i>Artemisia afra</i>	wild wormwood, African wormwood (Eng.) umhlonyane (isiXhosa)	Used to treat colds, coughs and upset stomachs	
	<i>Ruta graveolens</i>	Common Rue (Eng.) Vendrithi (isiXhosa)	Medicinal remedies	
	<i>Dicoma anomala</i>	Fever or Stomach bush (Eng.) (Sepedi: Hlonya)	Medicinal remedies - Headaches	
	<i>Not specified</i>	Aloe	<i>Not specified</i>	

	<p><i>Schinus molle</i></p>	<p>Pepper trees</p>	<p><i>To treat flu</i></p>	
<p>Edible plant species</p>				
		<p>Spring onions</p>		<p>Cocks <i>et al.</i> (2020:114)</p>
		<p>Lettuce</p>		
		<p>Maize</p>		
		<p>Pumpkins</p>		
		<p>Chillies</p>		
		<p>Fig</p>		
		<p>Plums</p>		

		Prickly pears (Eng.) Ditoto (Sepedi)		Author's interviews
		Sour plum (Eng.)		
	<i>Vangueria infausta</i> Burch	wild medlar (Eng.) umViyo (Zulu, Ndebele)		
	<i>Englerophytum magalismontanum</i>	Transvaal milkplum (Eng.) Motlhatswa (Sepedi & Tswana)		
		watermelon		
		Sorghum		
		morogo		
		Peaches		








		Mangoes		
		Bananas		
		Potatoes		
		Guava trees		
Spiritual plant species				
	<i>Olea europaea subsp. cuspidata</i>	Wild Olive (Eng.) umnquma (Zulu, Xhosa, Swati),	Branches used during religious rituals for animal sacrifices	Cocks <i>et al.</i> (2020:114)
	<i>Tulbaghia violacea</i>	Wild garlic (Eng.) Itswele lombomba	Deter <i>umamlambo</i> (snake of men)	Cocks <i>et al.</i> (2020:114)
	<i>Tillandsia sp.</i>	Air-plant (Eng.)	Charms used in times of emergencies. Protects households from lightning and malevolent forces	Cocks <i>et al.</i> (2020:114)

Image source: SANBI PlantZA

Cocks, M., Shackleton, C., Walsh, L., Haynes, D., Manyani, A. & Radebe, D. 2020. Decolonisation of nature in towns and cities of South Africa. *Urban nature: Enriching belonging, wellbeing and bioculture*. United Kingdom: Routledge.