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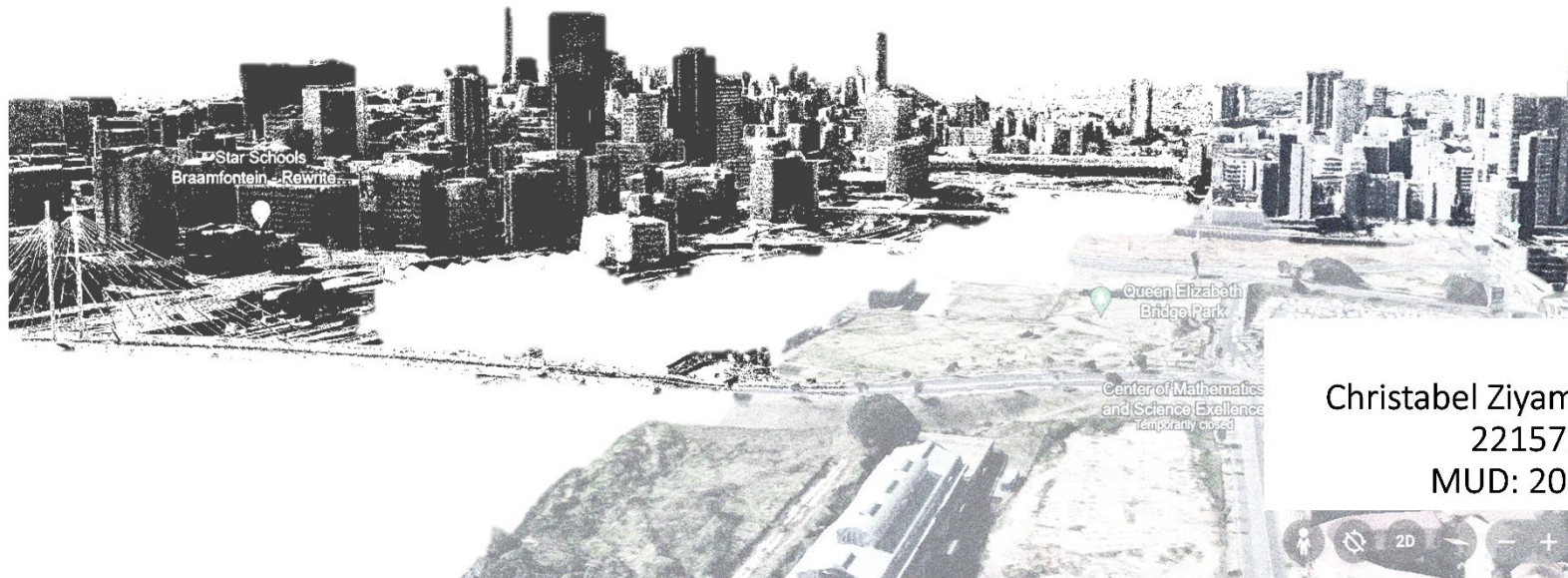
Christabel V Ziyambi

A dissertation submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in fulfilment of the requirements for the degree of Masters in Urban Design.

Johannesburg, 2025

JOHANNESBURG CENTRAL PARK

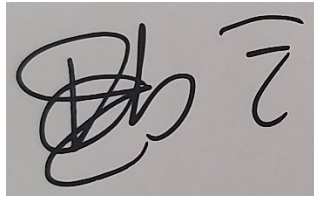
Continuing the Urban Form through Landscape



Christabel Ziyambi
2215753
MUD: 2024

DECLARATION

I declare that this thesis* is my own unaided work. It is being submitted to the Degree of Master of Science in Urban Design to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

A handwritten signature in black ink, appearing to be 'D. E.', is placed over a grey rectangular background.

.....
...23..... day of ...February,2025.....

DEDICATION

To the best family always, thank you for the untiring support, cheerleading and re-building when I needed it. The Ziyambis, Makhanya's, Dhliwayos and the Nkomo's. We truly underestimate how special our relationship is.

Anny you are not only the best mother but the best sister and every day I learn from you.

To Rharha, thanks for always being willing to run through ideas with me. You are inspiring.

ACKNOWLEDGEMENTS

Thank you to Prof Nnamdi for taking the risk.

Thank you for Tahira Toffah for making time.

ABSTRACT

The urbanization process, up to early 2000s is the main cause of empty spaces – Andrea di Giovanni

The research contributes to literature related to 'urban voids' in that it investigates the 'anti-space,' manufactured by the rail infrastructure site dividing Newtown and Braamfontein. The research investigates urban voids in the urban environment, discusses the mechanisms that are responsible for its production and the impact that the rail infrastructure site has had historically and still has for the city, its policy makers and users of the city.

The terms 'leftover,' 'urban void,' and 'anti-space,' are used to describe sites that are, underused and neglected by the dominant patterns of use in the city. This is synthesized with literature on the urban regeneration of South African public space and landscape urbanism to create a framework that results in 'landscape' as a 'positive urban void,' facilitating urban cohesion.

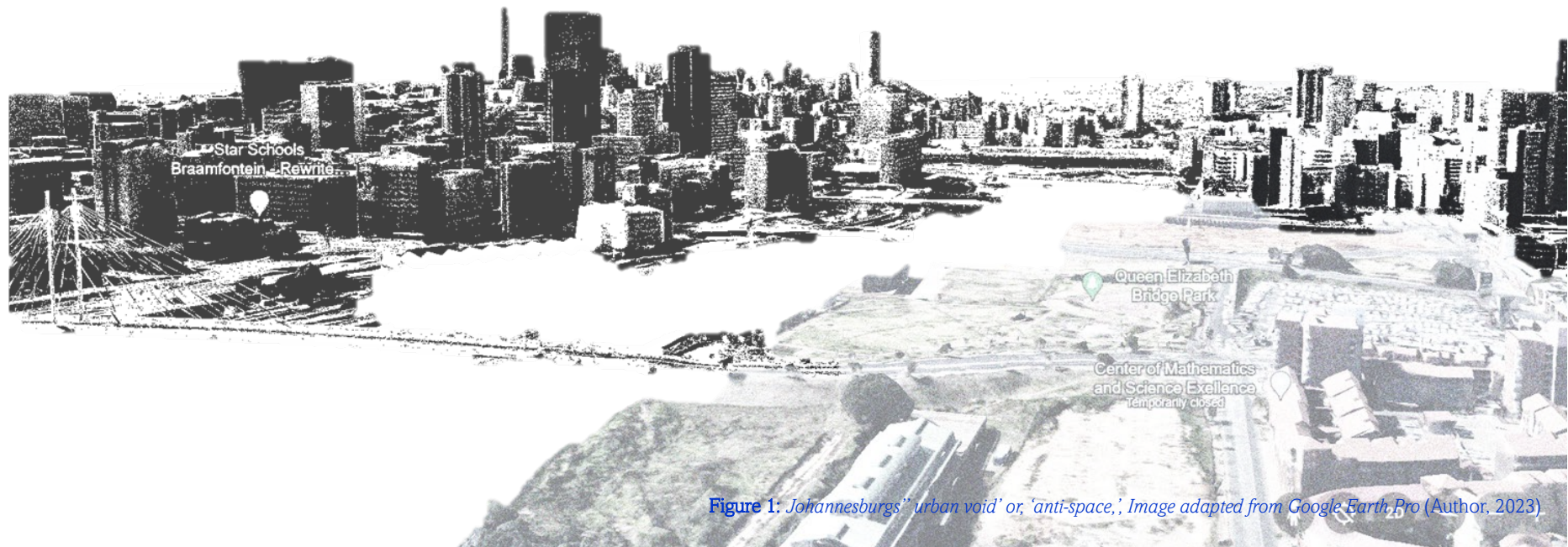


Figure 1: Johannesburg's 'urban void' or 'anti-space,' Image adapted from Google Earth Pro (Author, 2023)

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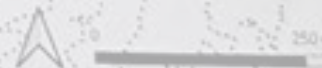
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CHAPTER 1: INTRODUCTION

CHAPTER SUMMARY

This chapter introduces the drivers of the production of urban voids at different scales, namely, from an urban, regional and district level. Key terms related to the transformative opportunity of urban voids into public open spaces are explored and contextualised to the city. The second chapter provides detailed literature on the concept of urban voids and highlights the challenges and opportunities that urban voids provide. Six case studies are used to determine principles and concepts used to resolve urban voids globally with the intention to establish principles that would be applicable in the Global South. Chapter three provides the rationale and aims of the study. Chapter four provides a detailed analysis of the site and highlights key considerations. Chapter five concludes with the design proposal, and detailed sections and suggestions on the urban management of the site after development.

Source: Contour map adapted from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024,



The UN-Habitat, - Davids 2007, pg 57(2018) Issue Paper on Public Space as a function of SDG, 11 states that for a prosperous and well-functioning city, 15% - 20% of the urban land be dedicated to public open space excluding streets and sidewalks. Public spaces facilitate social and ecological cohesion through interaction and encouraging environmental function (Carmona, 2019; Landman and Nel, 2022; Ramos-Vidal and de la Ossa, 2023; Van Karnenbeek, 2021).

In rapidly urbanizing cities such as Johannesburg, public space is in competition with urgent land-uses such as housing, transit infrastructure and uses that support economic mobility (Landman and Nel, 2022; Roque et al., 2020). Existing public spaces are victims of mono-function, neglect and privatisation thereby not adapting to transformative influences of the urban environment (Carmona, 2019; Landman and Nel, 2022). Due to urban growth, public space lacks definition, is fragmented socio-spatially and economically (McFarlane, 2018; Trancik, 1986). The solution is to identify lost or alternative spaces that can be transformed into valuable public open space to solidify the urban fabric and pull together previously disconnected districts (Landman, 2016; Trancik, 1986). Below is a representation of voids within the Gauteng Province Figure 2. (Google Earth, 2017; Author, 2024).

This research will attempt to understand the nature of lost space between Braamfontein and Newtown and how it can be used to heal a fragmented urban fabric through green public open space. It is repurposing lost or anti-space within the urban form to become an instrument to catalyse social and spatial cohesion.

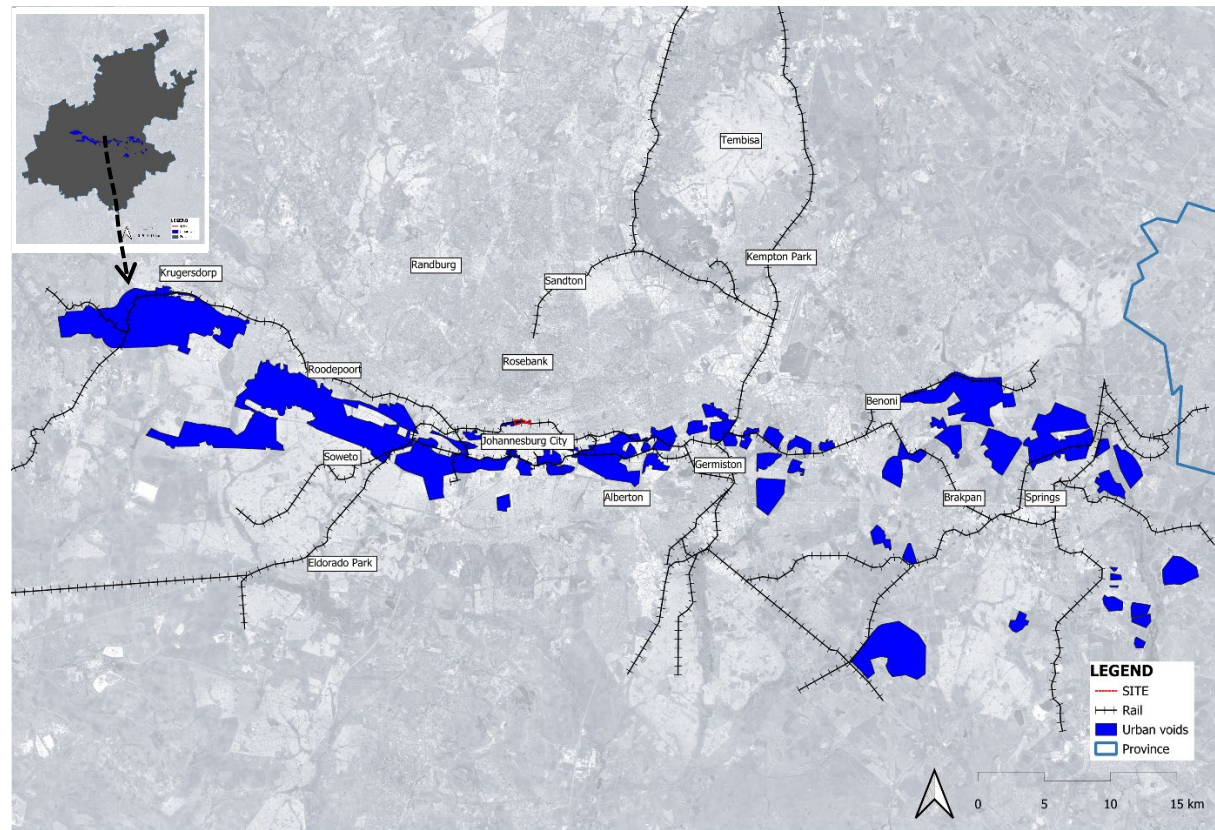


Figure 2: Urban voids within Gauteng (Author 2024)

Source: Aerial from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

1.1 URBAN ISSUE| Urbanisation

South Africa is within the top ten African countries with high urbanization rates and approximately 70% of its population living within urban areas (SWAC/OECD, 2022; Statista, 2022; Africapolis, 2023). This rate is projected to grow specifically around the major cities and associated townships (SWAC/OECD, 2022; Africapolis, 2023). As one of the fastest growing and the most populous city, Johannesburg grew by approximately 708 people per week between the period of 2011 - 2023 (StatsSA, 2023). The predicted population growth and the agglomeration of Johannesburg and Pretoria has become a major consideration for policy, planning and design as cities are faced with the challenges of creating sustainable and liveable urban environments (Mubiwa and Annegarn, 2013; CJMM, 2016; Africapolis, 2023). Furthermore, discussions globally and locally are focused on preserving biodiversity and cultural heritage, securing food resources and equality in publicly accessible spaces (South African Government, 2023; CJMM, 2016; Bačlija, 2013). Projected and current population growth supports the need for more public open space within the inner city. As a result, open and green spaces are limited and under pressure to accommodate the pressures of urbanisation and urban

densification (Murphy and O'Driscoll, 2021). According to di Giovanni, (2018) in the early 80's the growth of the city was rapid and not properly governed resulted in dis-continuous urbanization and produced residual spaces. the principle of compact cities was not prominent and that is the cause of vacant spaces (Giovanni, 2018). As shown below, irrespective of urbanisation process, the city developed and retained its urban voids, see **Figure 3** (Beavon, 2001; SANLC, 2018).

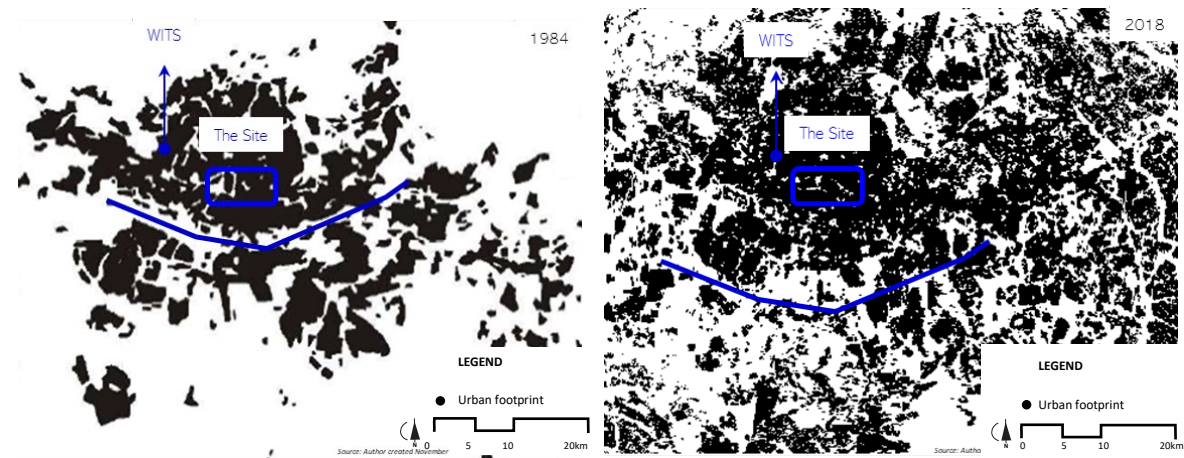


Figure 3: Urban footprint 1984 and 2018 adapted from (Beavon, 2001; SANLC 2018)

Urban morphology, refers to the systems that have resulted in the physical structure of a city, therefore built environment (urban form), transport and movement, migration, and growth of people (Graham and Marvin, 2002; McFarlane, 2018). Its transformative (transformation).

1.2 REGIONAL ISSUE | Policy and public open space

Public open space is at risk from development as it is usually perceived as undeveloped land (CJMM, 2016; Rahmann and Jonas, 2011; Madanipour, 2010). Pre-globalization cities implemented urban renewal projects fashioned around the garden movement and the result was planned public spaces to reflect the societal and economic activity of the time (Madanipour, 2010; Miller, 2002). Joubert Park is an adequate reflection of what was happening internationally through its development in 1887 and subsequent threat to temporarily reassign it for use as a taxi rank in 2015 (Munro, 2015). Globalization activated the privatisation of urban development and open space became a factor of market forces requiring economic justification (Madanipour, 2010; Bačlija, 2013). The trend within the city of Johannesburg follows that of international examples whereby open space is produced for a detailed program of activities and economic mobility, rather than the contribution to social interaction, well-being, and inclusion (Rahmann and Jonas, 2011; Madanipour, 2010). The value of public open spaces has shifted from spaces that beautify a city to psychological contributors that represent the cities character. To retain as much open and green spaces for ecological function and recreational purposes,

cities within South Africa are mapping and preserving public open spaces, designating them as natural open spaces integrated into municipal planning (SANBI, 2014; CJMM, 2016). Recent studies within the global south are beginning to focus on the appropriation and conversion of available spaces in the form of brownfields and lost spaces (Kataria, 2021; Landman, 2016; Van Karnenbeek, 2021; Matthew McConnachie and Shackleton, 2010; Houssay-Holzschuch and Thébault, 2017). This is the challenge facing many rapidly urbanizing municipalities is availability of funds to purchase land to dedicate to open space in locales with the most pressure for it (Rahmann and Jonas, 2011; Madanipour, 2010; Petrigna and Petrigna, 2023). Through this research the author has identified one such space that is underused but beneficially located to serve as an urban park for the city, refer to **Figure 4** (CoJ, 2017a). This site will be assessed in three layers, how morphological forces created the anti-space, the cost of its existence and its potential regeneration.

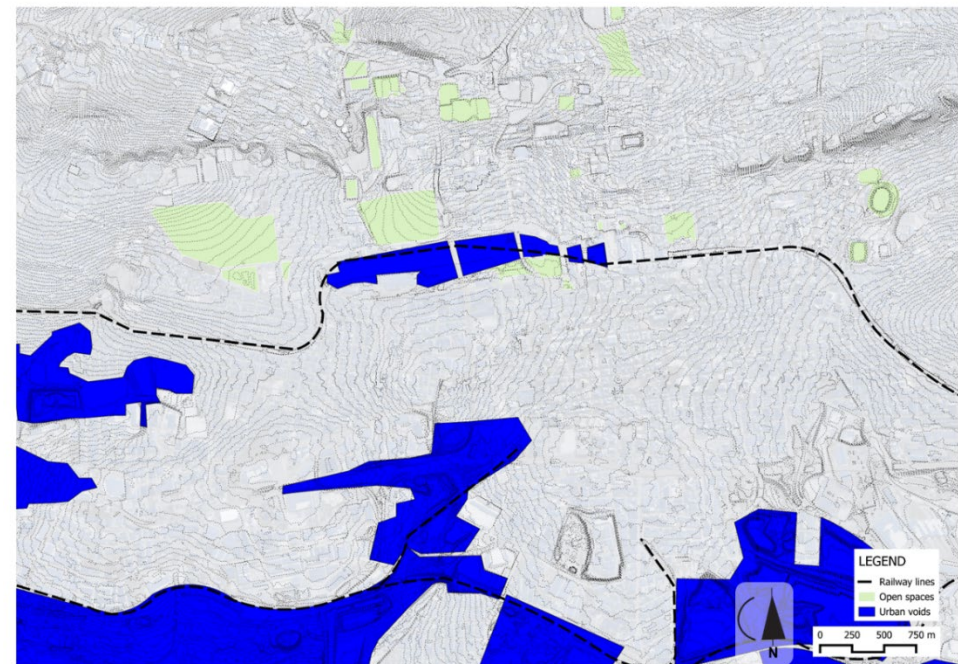


Figure 4: *The void in Johannesburg, adapted from CoJ GIS dataset, accessed 14 November 2023 (Author, 2023)*
Source: Aerial and contours from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

1.2.1 Creation of the anti-space – between Braamfontein and Newtown

As the urban population continues to expand, decisions to address mobility and transportation become important. Consideration about transport is important because not only does it ensure accessibility to neighbouring areas but assists the economic development of a region (Beavon, 2001; Luoma, Sivak, Zielinski, 2010). Similarly, the urban development of Johannesburg has been influenced by inferences and planning on transportation infrastructure and mobility (Luoma et al., 2010; Mubiwa and Annegarn, 2013). Johannesburg's railway lines were once at the centre of its mining-based economy and was the economic life of the surrounding neighbourhoods (Beavon, 2001; Smith, 2005). Furthermore, the decisions on transport and mobility within Johannesburg were used as structures to spatially divide the urban form and create inequality by reducing access to the economic centre (CJMM, 2020; Smith, 2005). Post-industrialisation, macro-economic and technological advancements have undermined the economic role of rail infrastructure, resulting in closures, and continued decay (McCallum, 2019; Patel, 1988). In the 'City of Gold', the economy had been based around a

network of rail lines stretching from Boksburg to the East to Johannesburg (Beavon, 2001). From early 1960s the construction of the North-South M1 highway through Braamfontein and Parktown, see **Figure 5** (Latilla, 2014) shifted the focus of the City's economic hubs from the Central Business District, south of Braamfontein and Hillbrow to the northern suburbs as decentralization began (Gutsche, 1970; Beavon, 2001). Leaving a scarred landscape of mine tailings and disused rail infrastructure.

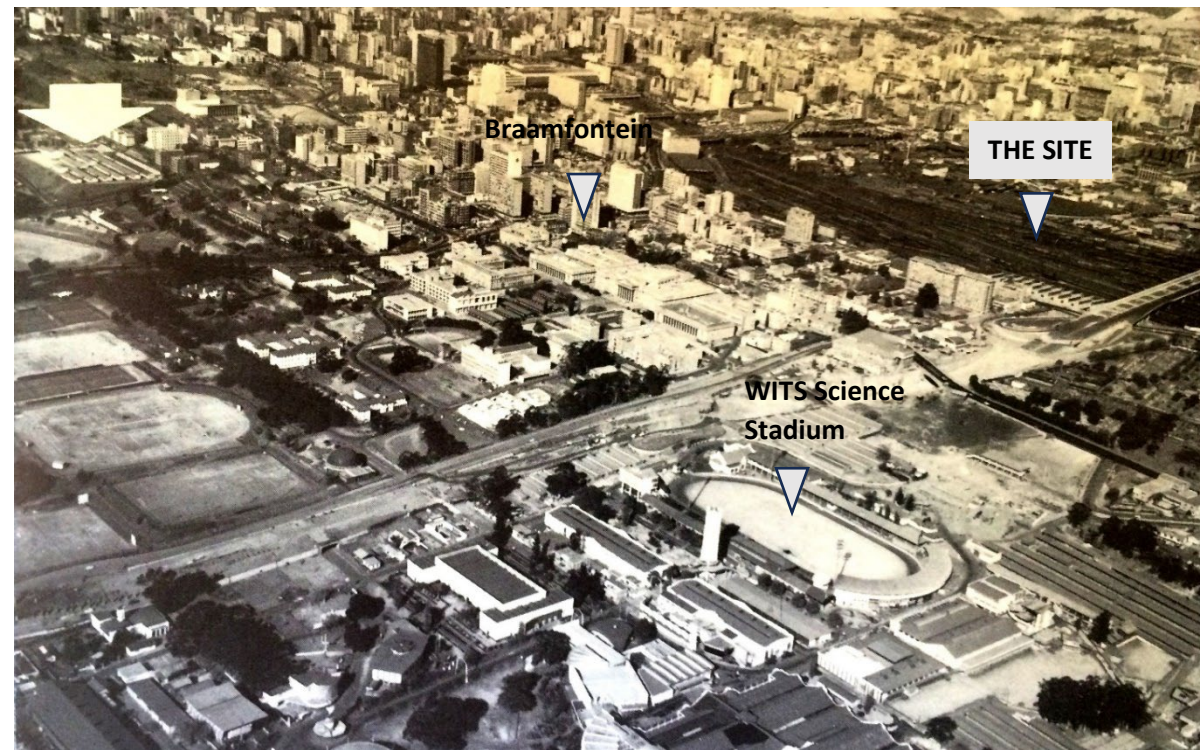


Figure 5: Aerial view of Braamfontein, looking north towards CBD, the new highway under construction in 1969, the railway line was already a linear allocation in the urban form (Latilla, 2014)

The changing fortune of Johannesburg's transportation network wrought physical changes to the urban fabric. The result of this urban transformation as observed by the author, is the decay and abandonment of rail infrastructure and the dereliction of buildings in the areas adjacent to the rail line in Newtown, Braamfontein and the CBD. This created an urban void within the urban fabric, see **Figure 6** (CoJ, 2017b).

The area between the suburbs Braamfontein and Newtown has been functioning as a railway from the establishment and formalisation of the city in 1894 connecting Johannesburg to Mozambique, then Lourenco Marques (Beavon, 2001; SAHO@21, n.d.). It has always been segregated from, and segregating the urban fabric. The area south of the rail is reported to have been the site of the first slums in the city what was known as Brickfields and a former *coolie area*, known now as Newtown (Latilla, 2021). It has a course grain and the street grid aligns to that of the city. The alignment indicates the urban design intention of the suburbs reading as a continuous street grid, seperated by the railway line, see **Figure 6** (CoJ, 2017b). The site goes against the grain. The author is of the opinion that an urban park, with urban recreational facilities and access to the transport networks, would integrate the urban fabric.

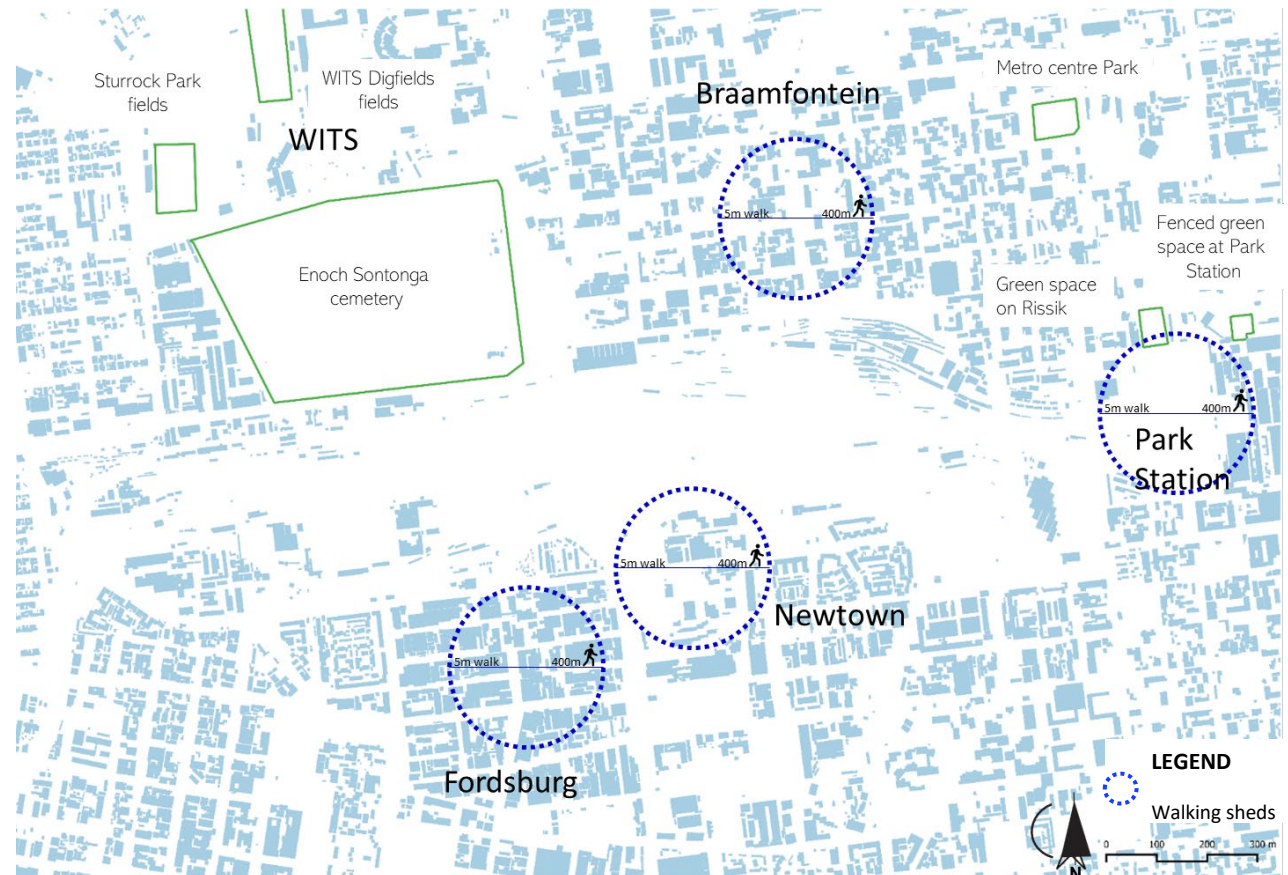


Figure 6: Relationship between the railway and the city including walking sheds, (Author, 2023)

Source: Base map adapted from CoJ Spatial Dataset, <https://Ags.Joburg.Org.Za/Cgismobi/> accessed 14 November 2023

1.2.2 The cost of urban voids

Before the question of the cost of urban voids can be addressed, an understanding of the public space and its value is required. Public space is defined by Mehaffy and associates (2019), as a city-wide network of connective tissue that is experienced at different scales. The different scales are actualised through completely public spaces, fully private spaces and transitional zones that sit between the two former zones as seen in **Figure 7** (Mehaffy et al., 2019).

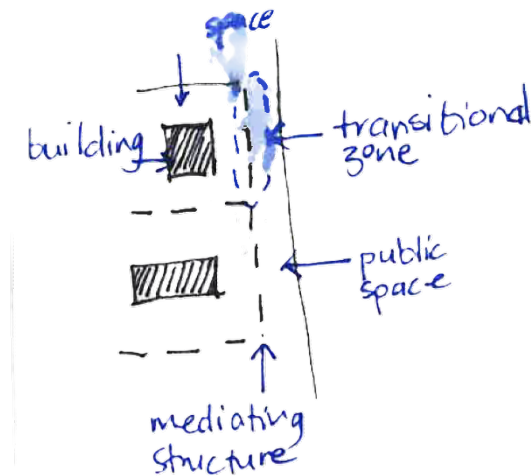


Figure 7: Public space graphic, reduced from Mehaffy and associates (Author, 2023)

Similarly, Madanipour, (2010) defines public space as “places outside the boundaries of individual or small-group control, mediating between private spaces and used for a variety of often overlapping functional and symbolic purposes”. “Publicness” or “privateness” is determined by the temporary or permanent rules that are set by the users of the space and includes structures that delineate these spaces (Mehaffy, Elmlund, Haas, 2019). Therefore, public space is where the conflicts of publicness or privateness play out, conflicts over noise, use, occupation, competition to name a few. To mediate these conflicts, zonings and regulations were created as structures to connect public and private spaces (Mehaffy et al., 2019). Therefore without the conflicts that arise from the delineations, the “publicness” of space is removed. However publicness is necessary because it is where the freedoms of different actors play out and allocates cultural value to land (Mehaffy et al., 2019; Corbin, 2003). Resultantly public space is the platform whereby public engagements and reconciliation occurs.

The room-like network of spaces becomes a network of places subjected to iterative, partial, or adaptive transformations over time. The transformations are an important feature because they result in the character of the urban form that gives cities their identity (Mehaffy et al., 2019). Therefore without the form-specifying changes, cities or spaces become unidentifiable. The main issue with public spaces is that spaces are created without an understanding of the organic self-organising relationships between public and private space and through the implementation of mechanical mediating structures (Jacobs, 1961; Mehaffy et al., 2019). Public spaces mirror urban society in changes that they have experienced because where once public open spaces were embodied in the social fabric of a city, now they are part of the impersonal and fragmentary environments (Madanipour, 2010). The car is another instrument of mechanical segregation that has shaped how publicness is formed, influences city form and how space is consumed (Jacobs, 1961; Trancik, 1986). Regulatory and mechanical mediating structures have become elements of geographical and social fragmentation. Synonymously, a void is fragmentary (Mirriam Webster, 2024) and in South Africa, mediating structures were used to exclude most peoples need to access the city’s public space and the resources, artificial or natural that they connect with.

A main characteristic of public space is how it is *described, perceived, and valued* (Corbin, 2003). An element used to *describe* space is how its cultural and non-definable as well as physical delineations.

Physical delineations exist as structural elements that spatially define a space and highlight access points and connections to adjacent spaces (Mehaffy et al., 2019). These physical elements afford the users a method to choose their level of public exposure and to regulate the degree of “publicness”(Corbin, 2003; Mehaffy et al., 2019).

In the absence of these elements a space is *perceived* as ‘empty’ or ‘vacant’ (Corbin, 2003). This is because it lacks the fundamental principle of ‘containing’ which is intrinsic to the definition of void. Mirriam Webster (, 2024) describes a void, as *containing nothing*, which alludes to a material dimension providing a border or edge, scale, visual and sensory recollection and as a noun, voids represent a *gap or opening*. Therefore vacant can be related to physical occupation and emptiness with material absence.

Although voids have negative connotations as defined by the dictionary definitions of the word, Corbin (, 2003) contrastingly explains that vacant land expresses availability. Lynch and Southworth, (1990) argue that *waste spaces* are needed for the flexibility to incorporate future use and for the survival of other species. Voids attract children and other marginalized populations not intending to fill the spaces with litter or conducting illegal activities (Lynch and

Southworth, 1990; Corbin, 2003). Voids supply an opportunity for access not only to land but to resources that are supplied to these formerly affluent spaces (Corbin, 2003; Lynch, 1993; Mehaffy et al., 2019). Therefore, the *value* of land lies in its potential for future occupation and is a sign of the potential for growth. Empty urban areas disconnect the local communities (Northam, 1971; Armstrong, 2006) as is evident within the city of Johannesburg refer to **Figure 8** and lower the quality of life of the traversers and adjunct users of the site simultaneously blighting the surrounding areas (Newman et al., 2018; Accordino and Johnson, 2000). Extended periods of disuse increase the economic and social cost of urban voids and cause further urban decline (Hudson and Shaw, 2012; Han, 2014; Greenstein and Sungu-Eryilmaz, 2004), thereby decreasing economic growth of an area and deterring future development (Newman et al., 2018; Han, 2014; Accordino and Johnson, 2000). Lastly, urban voids due to their disruption to the urban tissue, disturb the urban context, visually, disconnect the appearance of the urban structure and reduces the aesthetic value of the city (Newman et al., 2018; Trancik, 1986). Simplistically, public space described through structural elements, is perceived through its ability to contain as afforded by its structural elements and is valued according to the ability to contain a functional purpose. Urban voids provide an opportunity to repurpose abandoned transport infrastructure into useful recreational spaces (Lynch, 1990)



Figure 8: Empty urban area disconnecting and dividing the city (Author, 2024)
Source: Aerial map adapted from Google earth accessed 28 January 2024, <https://earth.google.com/>

1.2.3 Johannesburg's Urban Void

Strategically located in the vicinity of major transit and transfer stations within the city, this railway yard is an urban void catalysed by zoning legislation.

Social segregation

It contributes to the social and economic segregation between people and activities and across different categories (Kramer, 2017; Legeby, 2010; Garnica-Monroy and Alvanides, 2019), such as Braamfontein which predominantly houses students and an economy centred around them, in contrast Newtown is centred around recent school leavers and up-and-coming young. Spatial disconnection has led to challenges with access to communities, common resources (Trancik, 1986; Legeby, 2010) such as restaurants, bars, funders interested in uplifting urban environments. Newtown is dependent on its reputation as a cultural precinct and the city coffers to improve the public realm.

Spatial segregation has limited access to other important features of the city (UN-Habitat, 2015; Legeby, 2010) such as the historic Mary Fitzgerald Square and Market Theatre, the University of Witwatersrand and State Theatre. Spatial justice is associated with distribution and access to resources and opportunities

considering the location of the services. Lefebvre introduced that spatial fragmentation was a by-product of a capitalist society (Madanipour, 1996; McFarlane, 2018) and is what is discussed in the book 'Splintering Urbanism'. The book explores how privatization, specifically the 'unbundling' of infrastructure and the application of upgraded technologies led to intensified inequalities throughout the urban environment (McFarlane, 2018; Graham and Marvin, 2002). Furthermore, integrated and connected cities are compact, advance sustainable development and resilience (UN-Habitat, 2012).

Movement systems disrupted

Congestion caused by the high degree of vehicular use within the surrounding areas, not only reduces the quality of the public realm, but restricts pedestrian and vehicular circulation and constrains district connectivity (Legeby, 2010; Moghimi, 2017). Therefore movement within the space and around the space, including pedestrian systems are compromised.

Physical form fragmented

Modern methods of planning space resulted in segregation of uses and economic activity (Trancik, 1986; Legeby, 2010; Madanipour, 1996; Kramer, 2017). The void discontinues streets between Braamfontein and Newtown, destroying the physical connection between the areas. If place is created because space is credited with value, by the people who interact with this environment, giving it a unique identity different from the surrounding areas, then the storage of the trains is a mis-use of the space (Trancik, 1986; Madanipour, 1996; Madanipour, 2006). The space is a missed opportunity for equitable recreational opportunities.

The public realm surrounding the site is characterised by a cacophony of varying facades and materials which reduces the perception of urban spatial organization and therefore legibility of place (Lynch, 1964; Gehl, 2010). Zoning laws and individual development direction in the city direct elements rather than focusing on unifying legibility (Peterson and Littenberg, 2020; Kramer, 2017). Due to the scale of the rails the spatial structure of the site has not evolved with the community patterns. The modernisation of planning legislation has resulted in the loss of allowing for large scale public spaces such as "commons".

City making is credited to be a function of shared spaces that cross physical limitations and urban design responds by supplying a spatial organization structure that is suited to the new society (Kramer,

2017; Madanipour, 1996; Madanipour, 2006). Therefore, the space is an opportunity for a public realm that strengthens social relationships and provides a community environment that offers amenity.

As the site occupies an area of approximately zero-point two eight square kilometres (0.28km²), it is one eighth the size of Table Mountain and therefore is substantial. Sandwiched between Smit and Carr street on the north and south, it is bordered by Rissik Street to the east and Carr street curves and becomes Subway street to the west. It is delineated by the arterial routes of the M1 highway, Bertha, Biccard and the doorstep to the city, Park Staton overlooks it. Therefore its *value* as a resource lies in its accessibility not only to different inter and intra-provincial transport modes, but its proximity to the Central Business district. It separates the vital and vibrant knowledge centre of Braamfontein from the economic hubs of Newtown and CBD of Johannesburg city, see **Figure 9**. The *perception* is that for one to access Newtown and the city, one must traverse the site. It is a by-the-way space that was once an important rail transit

node at the pinnacle of the mineral's economy. The experience is one of a very strong east-west spatial divider that supports economic variability between the north and south. The space has not been influenced by adaptive transformation and change of use but was once of significant cultural importance. It has been overlooked for regeneration and repurposing and its structure is one that demarcates the north and south. Therefore without demarcating devices and a functional purpose, space is left invisible (Mirriam Webster, 2024; Corbin, 2003).

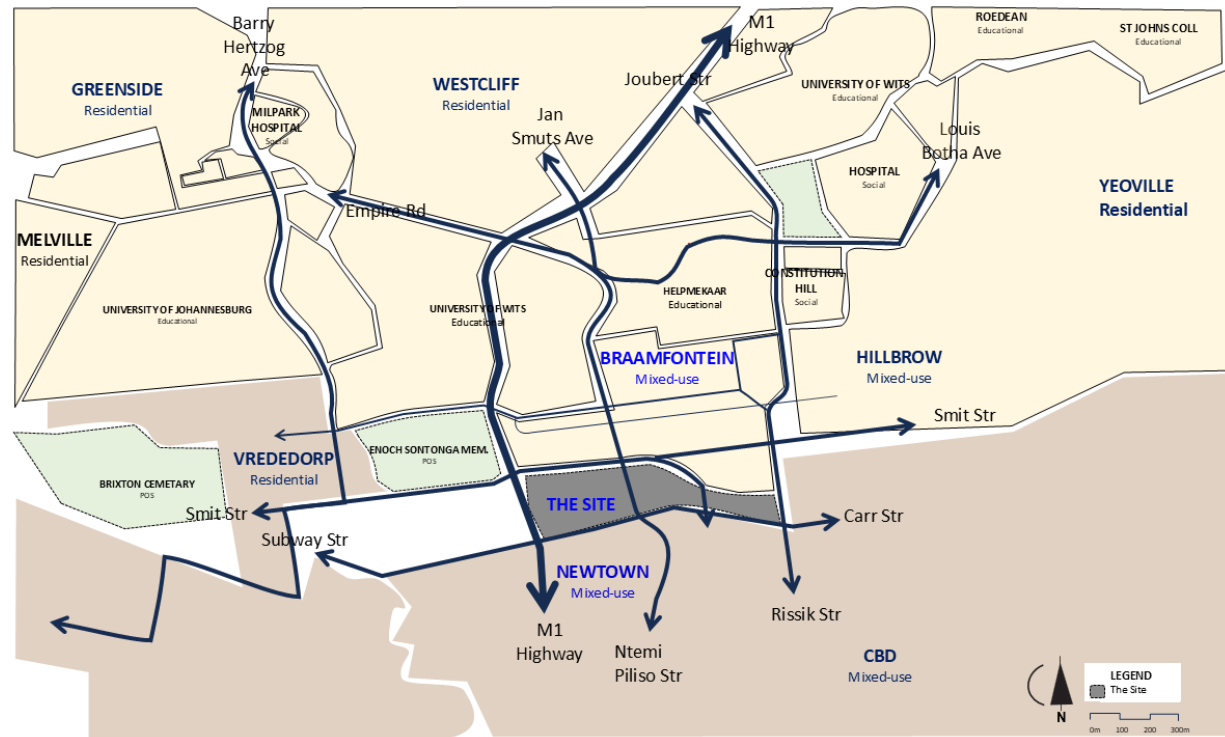


Figure 9: *The site in context with neighbourhood* (Author, 2023)

Source: Adapted from CoJ aerial Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

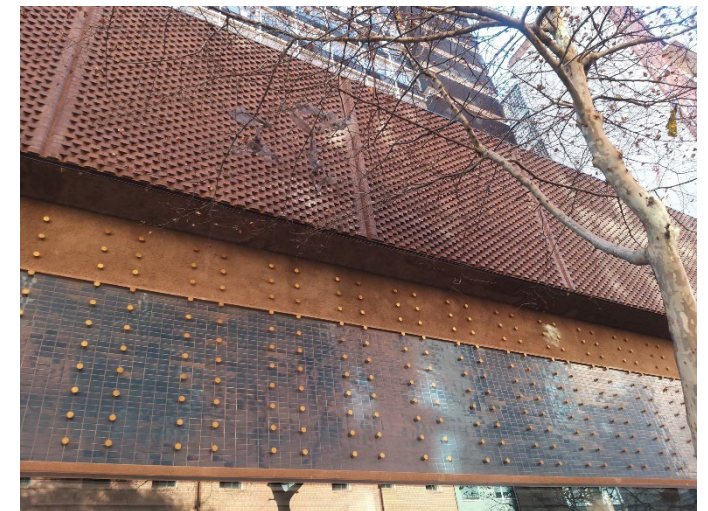


Figure 10: The pictures show the vibrancy, textures and character found in Braamfontein (Author, 2023)

CHAPTER 2: RESEARCH APPROACH

CHAPTER SUMMARY

This chapter provides the rational and aims of the study.

"The voids of the city are spaces which disrupt the urban tissue, leaving it incomplete and throw into question the use of those spaces. Sometimes called urban ruins, they are at the limit between private and public space, without belonging either to the one or to the other. Urban voids are containers of memory, fragments of the built city and the 'natural' environment; memories of the city which constitute a random, unplanned garden." -

Source: Contour map adapted from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

2.1 AIM

‘The focus of this study will be on the urban voids caused by the deindustrialisation of major transit infrastructure referred to as anti-space’. It is a remnant of modernism, highlighting the primacy to industrialisation, highways, railways, buildings, and the resulting left-over spaces (Edwards, 2005; Peterson and Littenberg, 2020). This research investigates how landscape can be used to consolidate urban form and reconcile society.

2.2 OBJECTIVES

To catalyse the potential of the identified void within the city of Johannesburg, the objective of the research is to repurpose a similar void as described in the literature into a productive resource for the city. The research proposes to use open space as a framework to reintegrate two districts that have been disconnected through former planning practices.

2.3 RESEARCH QUESTION

How can urban design consolidate urban form to create a public space that will unsegregated

the urban communities in Johannesburg and reinstall the urban user into the community fabric?

2.4 RATIONALE

The rationale for this paper is that literature has shown that urban voids have several negative effects. Simone, (2004) argues that separation, physical or ephemeral creates a lack of social cohesion that increases incidences of crime and regressive behaviour. Urban voids, disrupt the urban fabric (Trancik, 1986; Peterson and Littenberg, 2020), disconnect communities (Armstrong, 2006; Northam, 1971), reduce the quality of life of urban users (Accordino and Johnson, 2000; UN-Habitat, 2013), attract unsavoury uses and users (Carmona, 2010; Hwang and Lee, 2020), contribute to urban decline (Greenstein and Sungu-Eryilmaz, 2004; Hudson and Shaw, 2012; Hwang and Lee, 2020), decrease economic investment (Han, 2014; Newman et al., 2018; Hwang and Lee, 2020), and inhibit future development (Han, 2014; Accordino and Johnson, 2000). Still there is literature arising from scholars advocating that these are spaces of opportunities for creativity and as Tempelhof has shown an occasion for positive appropriation with minimal intervention (Akkerman and Cornfeld, 2009; de Sola-Morales Rubio, 1995; Hwang and Lee, 2020). Developing urban voids can be used as re-densification methods (Northam, 1971; Hwang and Lee, 2020), stabilize inner city markets (Berglund, 2020; Schwarz, 2012), promote urban sustainability (Hwang and Lee, 2020; UN-Habitat, 2018), contribute to food security, re-stitch the urban fabric (Rahmann and Jonas, 2011; Schwarz, 2012), activate urban regeneration (Berglund, 2020; Montgomery, 2015), and reverse open space deprivation of the under privileged (Wolch et al., 2014; Kremer et al., 2013). Studies recognize that as space for increasing populations within cities shrinks, the value of left-over spaces is that repurposing existing buildings, infrastructure, and urban resources is more economically feasible and environmentally responsible (Hwang and Lee, 2020) Landscape urbanism can be used as an instrument to unify various discrete elements in an urban void (Wu and Liu, 2023).

2.5 RESEARCH HYPOTHESIS

Urban voids are lost opportunities to improve an area and establish a more sustainable community structure. Reclaiming these dead spaces through design can overcome the spaces interpretation and therefore create more healthier shared urban spaces. These left over and disused areas have unrealized

potential and can be used as public urban spaces, plazas, pocket parks and event areas, for meandering, gathering and spaces for high volume interaction that enrich the public realm of the inner city.

2.6 THE IMPORTANCE OF THE RESEARCH

Landscape has always been related to urban voids, considered left-over space, under-utilized or developable land (Hashem, Wahba, and Nasr-Eldin, 2022; Trancik, 1986). However, green spaces are under threat from programming into more imminent land-uses ((Rahmann and Jonas, 2011)). Transit has long been considered the connector of cities (Beavon, 2001; Graham and Marvin, 2002; McFarlane, 2018), communities, and civilisations, however the other under looked element is social spaces (Jonas and Rahmann, 2013; Hashem et al., 2022). The disadvantage of transit infrastructure as connectors or creator of urban continuity is that it creates regional, district and even suburban scale differentiation ecologically, socially, and economically. Lynch (1964: 29) further argues that rail infrastructure segregates the urban form. This research argues that large-scale social spaces should be explored as elements to clarify the structure of the urban form. The intention is to contribute to

the research that is growing on urban green spaces as an element to improve the quality of the urban structure (Hashem et al., 2022; Jonas and Rahmann, 2013; Rahmann and Jonas, 2011; Kaw et al., 2020). Therefore were geological voids, naturally formed barriers exist in the urban form, urban open spaces can be established to support the social re-connections within our cities, to correct ecological differentiation but to reduce financial segregation. There are numerous challenges that cities face, and one of them is internal migration from rural areas into the city (UN-Habitat, 2015; UN-Habitat, 2013; Rahmann and Jonas, 2011; Kaw et al., 2020). Therefore it is important to consider urban infrastructure and how their purpose can be modified to public spaces, providing function to the urban voids that exist within the city. Development and regeneration should be focused towards understanding and taking advantage of opportunities of changing voids to urban commons needed by city inhabitants to interact within and to use thereby creating sustainable urban environments (Hashem et al., 2022).

2.7 RESEARCH METHODOLOGY

To identify and explore the range of factors that inhibit urban continuity and social cohesion, a desktop study method was used. The context of the site within an African city means that a framework to link the use of space and connectivity should consider factors such as socio-spatial challenges, safety, economic mobility, and sustainability. As this is an urban design research, various methodologies will be used to gather the information to understand the site. Therefore the approach is non-numeric as defined by Philip, (1997) and will involve onsite observations, evaluation of existing datasets, the use of case studies and various visual media to develop a theory for the design proposal (Philip, 1997). The research explores concepts of “urban public open space,” public space,” and “anti-space / urban voids.” The research starts by exploring the theoretical foundations of urban voids or anti-space. Secondly, the site characteristics of the urban environment is studied with the intention of identifying the users’ needs and the sites relationship to the urban form. Urban challenges, related to public open spaces are investigated including the challenges that current spaces experience. Lastly, the research explores whether “open space” or “landscape” to revitalise urban voids, create social cohesion and restore the urban fabric is valid as an urban design spatial tool.

The methodology used focuses on how landscape can be used as an element for urban and social cohesion. Therefore a combination of framework is used to develop a roadmap of the approach. Urban design theories are used to develop the foundation on solids and voids. Following which the principles discussed in Landman, (2016) transformation of public space in South Africa is used to contextualize the framework. Refer to [Figure 11](#).

2.7.1 Evaluation of existing datasets and case studies

Existing publicly available documents used for this research by design include existing policy documents, archival material and published literature. As this is research by design and therefore a pragmatic approach is used, starting with a discussion on how the urban void was created and the history of the space that the railway occupies. Various concepts and understanding on infrastructure are debated before a literature review of the theories around urban voids are presented. Eight successful case studies have been selected whereby urban voids are reused as public spaces, adding human activities, green infrastructure, and an open area within the city. The case studies will

be examined critically to establish principles that created spatial cohesion of urban voids, addressed circulation and edge treatments. The intention is to understand how urban voids were reused differently to improve the users' experiences and not just an investment perspective improving land value.

2.7.2 Visual media and observation

Photography and visual media have a significant role in anthropological or social research for urban design (**Marshall and Gretchen, 2006**). In qualitative research the researchers' perceptions, experiences and expectations are important to develop a design of the environment (Philip, 1997). Therefore observation and photography are used for organizing, interpreting, and validating this inquiry (**Marshall and Gretchen, 2006**).

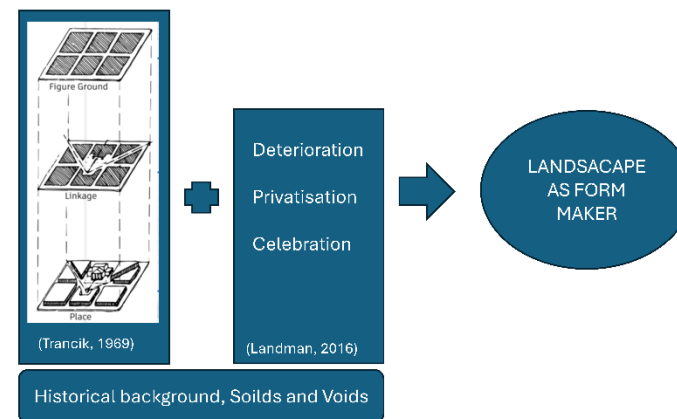


Figure 11: Conceptual framework (Author, 2025; Trancik, 1986; Landman, 2016)

2.7.3 Reducing subjectivity

As the investigation under discussion is based on Urban voids, Trancik's, (1986) book is used as source for the research. The urban fabric of Johannesburg was evaluated according to the urban design theories of his seminal work on 'Lost space'. The urban design theories offer an approach to synthesize the social, material, and spatial information and to determine potential strategies for integrated development (K. Lynch, 1964; Trancik, 1986). Subjectivity is the primary criticism of qualitative research and therefore to improve objectivity during the site analysis, the criteria used is adapted from Kevin Lynch's typology for evaluating cities and the urban environment (Mayerhofer, 2005; Lynch, 1960). The criteria used is the pattern of the city, maps of the building development over time, topography, existing land-use and proposed land-uses as per policy documents and the surrounding character and building heights.

2.7.4 Data Analysis

An ethnographic approach will be used to synthesize and interpret all the information gathered will be used to discover themes and issues to be addressed by the design (Creswell and Creswell, 2018).

The methodology used was introduced by Satori called concept research. It is divided into three stages anatomy, reconstruction, and concept formation (de Vos, 2000). To determine land coverage and the spatial discontinuity, a desktop analysis using the **figure-ground** is used to map the existing urban void (Trancik, 1986). Site visits of existing public parks, onsite

observation and photographic recording was used to determine the found condition on the site under investigation. Concepts from **Peterson and Littenberg, (2020)** and **Trancik, (1986)** in conjunction with a desktop photographic evaluation and review of archival information is used to determine the *anatomy* of the urban void. *Reconstruction* is done using an in-depth study of secondary literature to contextualize the problem, is used to refine the research question, to understand the complexities and boundaries of the proposed area of investigation (de Vos, 2000; White, 2005). Literature on anti-space, lost space, public open space was collected from articles in professional journals, research report, dissertations, presentations from conferences and social media records from the internet, magazines, and newspapers. A critical review of completed design projects of repurposed urban voids, in the fields of architecture, landscape architecture and urban design has been selected and are analysed according to urban design to determine norms and shared principles. Using **linkage theory** a spatial datum is determined by overlaying literature and existing design projects to determine how to order the spatial elements and organize spatial relationships (Trancik 1986: 108). Urban design intrinsically is temporal and therefore *concept formulation* will come after using **place theory** to understand the urban form from a humanistic perspective. (de Vos, 2000; Trancik, 1986). To comprehend the character of the space and the characters that will use the space, **Gehls', (2010)** *Cities for People* will be used. It provides a practical method of evaluating the urban landscape.

The intention of the design is to respond to the cultural and human characteristics of the physical space and to produce a design that reconciles the community and the urban form.

CHAPTER 3: LITERATURE REVIEW



Figure 12: *Terrain Vague [II]* (english *Wasteland [II]*) - Constant Nieuwenhuys, 1973 oil on canvas collection Kunstmuseum Den Haag, photograph Tom Haartsen; shows the urban in the background and the nothingness of urban voids in the forefront, the use of yellows and greens reflect hope, potential, possibility.

Source: www.stitchingconstant.nl accessed 28 November 2023

CHAPTER SUMMARY

The second chapter provides detailed literature on the concept of urban voids and highlights the challenges and opportunities that urban voids provide. Six case studies are used to determine principles and concepts used to resolve urban voids globally with the intention to establish principles that would be applicable in the Global South.

Source: Contour map adapted from CoJ Spatial Dataset
<https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

3.1 SOLIDS AND VOIDS | Figure Ground

To establish the pattern of the urban form, the figure ground is used, as spatial tools to determine solids and voids (Trancik, 1986; Hashem et al., 2022). Trancik, (1986: 98) defines this as the relationship between 'solid mass', created by built form versus 'voids', which are created by open ground. Although many scholars define solids as built form, landmarks that provide visual interest and aid navigation, voids negatively refer to left over spaces caused by development and abandoned infrastructure (Trancik, 1986; Hashem et al., 2022; Jonas and Rahmann, 2013). The positive definition of 'soft space' is greenways, recreational spaces and linear spaces that provide an escape from the built environment (Hashem et al., 2022; Trancik, 1986: 100). This assessment is used to identify problems with the urban form (Hashem et al., 2022; Jonas and Rahmann, 2013). It further creates an opportunity for designers to manipulate the compositional form of the urban environment, by adding or subtracting from the urban form (Jonas and Rahmann, 2013; Trancik, 1986).



Figure 13: Figure ground showing the pattern of solids and voids of urban form. It further indicates the grain of the built form and problems with the urban fabric (Author, 2024)

Source: Building footprint, CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024;

Recently researchers hold the view that voids can be used as remedy to improve the urban ecosystems, by focusing on adding and expanding existing urban public spaces (Hashem et al., 2022; Jonas and Rahmann, 2013). Soft spaces can be revitalised to make them useful for the users of cities, specifically in the Global South where there are limited prospects of green spaces for social interaction and recreation as built development is prioritised (Hashem et al., 2022).

3.2 URBAN VOIDS | Space vs Anti-space

Although much of the literature on urban voids is founded on the work of Roger Trancik, from his eponymous work *'Finding lost space'*, the first recognition of land left over after urban transformation appeared in the work by Northam, (1971). He categorises tracts of land that had not been subjected to urban use into five types according to their physical attributes, how the spaces were created and developmental value (Hwang and Lee, 2020; Northam, 1971). He states that urbanisation, caused the loss of space required to accommodate the growing numbers of people within city limits and that vacant urban land provides an opportunity to address additional urban spatial needs (Northam, 1971). Therefore he attempted to aggregate the amount of vacant land in American cities, to quantify the share that was “buildable” and to estimate its monetary value (Northam, 1971; Hwang and Lee, 2020). Northam, (1971) classification delineates unused or undeveloped areas into remnants, unbuildable, corporate reserves, speculative and institutional reserves (Northam 1971: 345-346). His work can be considered as the initial exploration into urban voids.

The urbanist Trancik, (1986), investigates unwanted urban areas that make no significant contribution to the surrounding areas, are poorly defined and do not have identifiable boundaries. Furthermore, he goes on to argue that these spaces fail to connect districts and areas together in a legible manner and therefore defined them as ‘lost space’(Trancik, 1986). Some of the lost spaces include abandoned railroad sites, relegated factory areas, deserted transportation or military facilities, parking lots, vacant buildings, and estates; unintended, undifferentiated residual spaces under, between and above infrastructure, commercial areas, and districts (Trancik 1986: 3). Peterson and Littenberg, (2020) build on Trancik, (1986) work in their book *Space and Anti-space: The Fabric of Place, City and Architecture*. The urbanist and architect define anti-space as “undifferentiated and ideally formless, continuous in principle, open and flowing. It is controlled, directed, or temporarily captured, but never composed.” (Peterson and Littenberg 2020: 52). In contrast Space is perceived with the tangible characteristics of size, perceived as a shape, irregular in principle, enclosed, and static (Peterson and Littenberg, 2020).

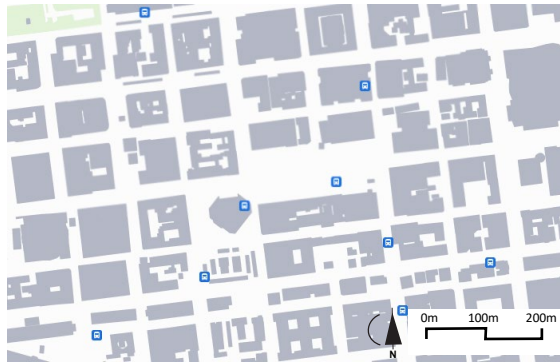


Figure 14: *Space, Mary Fitzgerald square, closed and static,* (author, 2024)

Source: Base map adapted from Google, <https://earth.google.com/> earth accessed 28 November 2023

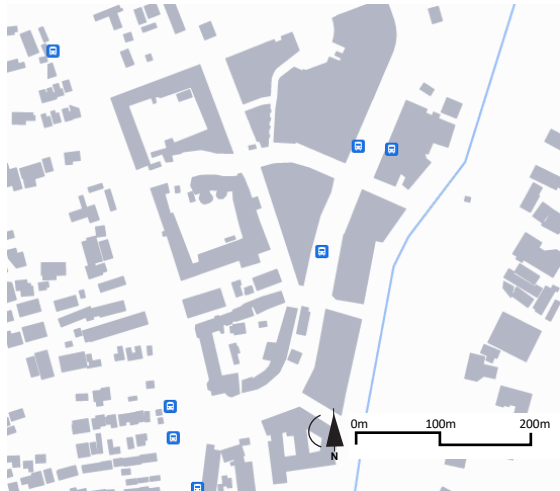


Figure 15: *Space, Melrose Arch, identifiable and differentiated volume* (author, 2024)

Source: Base map adapted from Google, <https://earth.google.com/> earth accessed 28 November 2023



Figure 16: *Anti-space, the train yard undifferentiated volume, continuous, formless and buildings floating in space lessness,* (author, 2024)

Source: Base map adapted from Google, <https://earth.google.com/> earth accessed 28 November 2023

The principles are illustrated below whereby Melrose Arch and Mary Fitzgerald Square are illustrated. The locations have defined boundaries, therefore are not discontinuous, differentiated volume and identifiable as a form or landmarks. The critique of Melrose Arch is that it would align with the principles of privatisation and is therefore exclusive and not socially sensitive (Landman, 2016, 2018; Ballard, Jones and Ngwenya, 2021). In comparison the space that the train yard occupies, the buildings seem to be floating in endlessness, there is no definite shape, and it is unidentifiable. The spaces have no identifiable edges, or they seem to have disappeared. They argue that modernism has contributed to the proliferation of anti-space philosophically because of the divorce of architectural built form from the place (Peterson and Littenberg, 2020; Trancik, 1986).

Trancik, (1986) identifies five catalysts to urban voids, which are echoed in **Landmans', (2016); Peterson and Littenbergs', (2020)** work:

1. The increased dependence on motorised transport resulted in the construction of large infrastructure structures to connect areas and people, and open space was downgraded to areas related to the service;
2. Modernism, which has elevated the importance of buildings and projects as objects resulting in undesigned spaces between buildings;
3. the failure of zoning policies and urban renewal projects to capture and respond to the symbolic and physical meaning of an area, for the community;
4. the monetisation of what was once public space, into sanitised representations of a marginal private interest groups values, excluding a majority;
5. the relocation of large industries and the exodus from city cores has caused wasted or under used spaces.

All these factors contributed to dividing cities, segregating communities, and the loss of place. Planning, design, and urban theory are inquisitive about these spaces, which are neither slums nor developed, open public spaces nor natural spaces. These spaces in

modern discourse are referred to as 'waste spaces', the 'valueless material left after an act of production or consumption' (Lynch, 1990), Terrain Vague, indecipherable in denoting the experience and perception of the city (de Sola-Morales Rubio, 1995), Terra incognito (Edwards, 2005), Vacant Urban Areas (VUA) (Bowman and Pagano, 2001), building on the work of Christopher Girot, Armstrong, (2006) develops on 'Landscape of contempt', spaces of uncertainty (Cupers and Miessen, 2018), anti-spaces (Peterson and Littenberg, 2020), and the periphery are defined as 'fortuitous urban voids'. (Groth and Corijn, 2005; Akkerman and Cornfeld, 2009). The multiplicity of terms to define the same occurrence is indicative of the difficulty in defining the phenomenon however the unifying characteristic it that it fragments, breaks-up and is an indeterminate area. All these concepts are used interchangeably to designate abandoned or undeveloped land in the public realm, and to understand the difference between the terms, it is important to understand the causes.



Figure 17: Terrain Vague (english Wasteland) – Constant Nieuwenhuys, 1973, oil on canvas collection Kunstmuseum Den Haag; shows, deterioration of the space, the valueless material that is dumped and encroachment by nature

Source: www.stitchingconstant.nl accessed 28 November 2023



Figure 18: Terrain Vague IV (english Wasteland [IV]) – Constant Nieuwenhuys, 1973, oil on canvas collection unknown; shows the lack of spatial definition in the urban and the potential of the terrain vague or wastelands

Source: www.stitchingconstant.nl accessed 28 November 2023

3.2.1 Planning voids

In cities experiencing deindustrialisation because of suburbanization resulting in a decrease in populations in the inner city, 'vacant land or spaces outside of time and place' is a phenomenon observed by several researchers (Accordino and Johnson, 2000; Groth and Corijn, 2005). The creation of these left-over spaces it is argued is the result of planning systems; ordering, zoning, and design procedures (Cupers and Miessen, 2018; Northam, 1971). Bowman and Pagano (2001) further expand on 'vacant land' by defining it as land containing building or structures that are unutilized or underutilized. Due to certain morphological factors, the value of inner-city land has increased substantially, and development has resulted in unconnected pieces of land of varying shape and size, among the highly valuable inner-city tracts. Scholars define these spaces as 'Temporarily Obsolete Abandoned Derelict Sites' (TOADS) (Greenberg et al., 1990; Greenberg et al., 2000) and 'space left over after planning' (SLOAP), the former refers to abandoned in-between parcels of land and the latter is irregular remnants of land from the planning of developments. Planning voids are therefore the result of migratory forces into or out of areas and the regulatory guidelines that attempt to govern.

Transport as a form of mobility has shaped the urban form of many cities (McFarlane, 2018; Graham and Marvin, 2002). The City of Johannesburg is not excepted from transit related growth (Beavon, 2001). These mega-structures are responsible for establishing linkages socially, economically, and spatially intercity and intra-city. However, due to several morphological activators' changes such as the abandonment and deterioration of infrastructure, including the author argues purchasing power movements over time, these structures become obstacles to connection and cause urban fractures. In some cases these cause a disconnection between neighbourhoods, a barrier to physical and economic mobility. These fractures become what Trancik, (1986), termed "lost space", which interrupts the continuity of the city's form and defined as urban voids.



Figure 19: Highway underpass, under Joe Slovo Drive in Berea is a)transit anti- space (Author, 2024)

In the case of South Africa, transport was not only used to define the city, but to divide the city along colour lines. Although the transit infrastructure eventually became more inclusive in 1990 (Beavon, 2001) the planning intention of the infrastructure remains dividing certain parts of the city spatially. The trainyard within central Johannesburg currently exists as one such space, reminiscent of city's racial and economic history, and divisive planning intervention (Greenberg et al., 2000; Simone, 2004). It provides

an opportunity for greening the city, and to function as a public space that enables spontaneous and unobstructed activities that involve diverse social groups (Hwang and Lee, 2020; Kremer, Hamstead and McPhearson, 2013; Schwarz, Bearland and Herrmann, 2018). It exists as a static, subgrade linear space that is evidence of financing moving to more lucrative nodes and is currently not significantly contributing to the urban form or to the surrounding users in comparison to previous years. Despite significant investment into the infrastructure in terms of labour, materials and construction, its massive scale, long lifespan, this planning void occupied by the railway track remains unoccupied by human activity. As it cuts through Johannesburg's city core, the mega-structure neglects the potential of what that space could be. The continuity of the neighbourhoods on both sides of the railway are interrupted and interaction at human scale with the space is discouraged.

3.2.2 Functional voids

The most common characteristic of space is its social, political, and cultural value (Mehaffy et al., 2019; UN-Habitat, 2018) Trancik, (1986) suggested that different urban functions could be serviced within public open space. He distinguishes between two types of functional space, 'soft and hard space', and encourages urban designers to consider the value of 'soft space', defined as parks, greenways and linear spaces providing an escape from the built environment and opportunities for recreation (Trancik, 1986; Hashem et al., 2022). The urbanist elaborates that the focus has been on 'hard space' that accommodates social activities for public gatherings (Trancik, 1986). Urban regeneration has produced exclusive large, landscaped open spaces near or within developments which become urban voids (Hwang and Lee, 2020; Cybriwsky, 1999). These spaces are referred to by Cybriwsky (1999: 229) as 'planned wastelands' or 'new urban deserts', as these public realms do not attract users.

Ford, (2000), in his work *The Spaces between buildings*, offers the view that gates, fences, sidewalks, driveways, alleys and parking lots not only influence how buildings relate to the spaces around them but contributes to a sense of community, place, belonging, history,

involvement and participation. He further argues that a good public realm is characterised by three organisational principles, the enclosers of space (architectural form), the shapers of space (lawns, gardens, and other vegetation) and the shapers of access (streets, alleys, and parking spaces) (Ford, 2000). Therefore spaces that are ill-defined, physically diffused, and undifferentiated in their function become functional voids within the urban fabric (Trancik, 1986; Peterson and Littenberg, 2020).

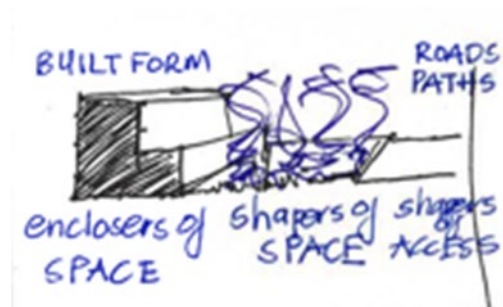


Figure 20: Space reduced from Ford, (2000) (Author, 2023)

3.2.3 Geographical voids

In Northams' (1971) report he defines as undevelopable, a type of vacant urban parcel of land restricted by natural features such as steep slopes and flood hazards. Where the other two types of voids reflect human exploitation and environmental negligence, geographical voids are natural forms that man has been unable to develop due to slope barriers, geological limits, natural assets, or weather restrictions. An example of geographical voids is the ridge that runs in an east west direction delineating residential from business districts, affluent suburbs from previously non-white areas.

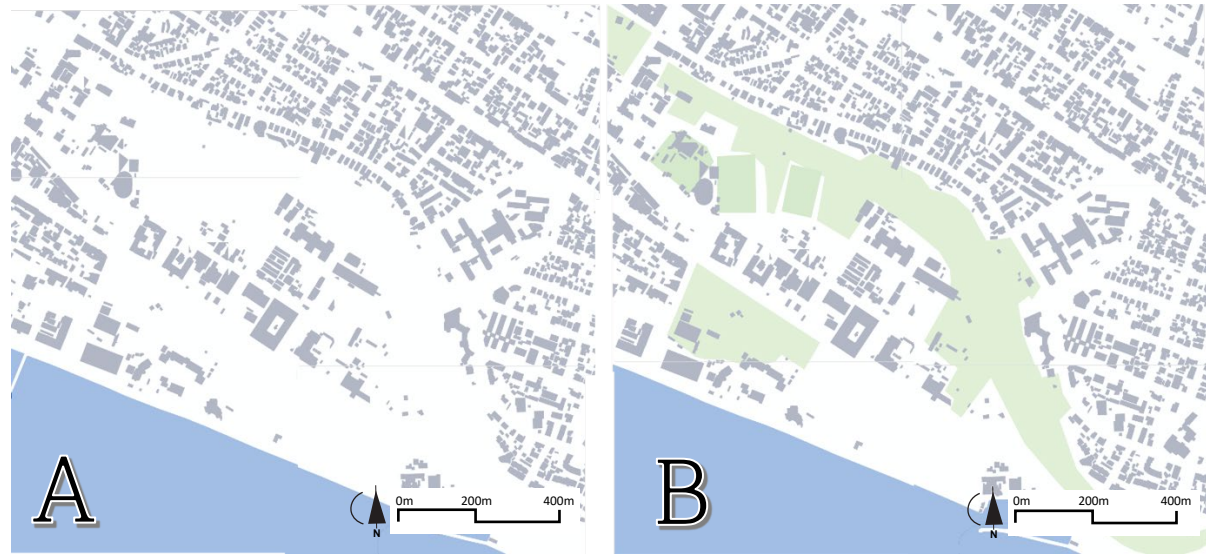


Figure 21: Geographical void picture A, ridge picture B, Central C, Maputo, Mozambique adapted from Google (Author, 2024)

Source: Base map adapted from Google, <https://earth.google.com/> earth accessed 28 January 2024

CHAPTER 4:

CONTEXTUALISATION

Decline, decay and wasting are a necessary part of life and growth; we must learn to value them and to do them well. – Kevin Lynch, *Wasting Away*, 1984

CHAPTER SUMMARY

This chapter provides a detailed analysis of the site and highlights key considerations. The site is analysed according to general urban design concepts however the structure of the analysis is guided by the Urban Design Compendium and the concepts by Jan Gehl in his work, *Cities for people* with the intention to understand fundamental design issues to inform the final product. As Madanipour relates in his seminal work on the ambiguities of urban design, urban design is about the tension between the product of urban design and the process involved in attaining that product (Carmona and Tiesdell, 2007).

Source: Contour map adapted from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

Landscape architecture as a profession focuses on creating outdoor spaces, which consider the social, economic, and primarily environmental and ecological quality of the space (Beardsley, 2000; Steiner, 2008). It is about bridging the relationship between people and the environment. The field itself has moved from the picturesque to a sophisticated combination of environmental design, biological ecology, and cultural expression (Beardsley, 2000; Ellison, 2014).



Figure 22: *View from Mount Holyoke, Northampton, Massachusetts, after a Thunderstorm—The Oxbow (1836)*, by Thomas Cole. Oil on canvas, Collection of the Metropolitan Museum of Art. This painting includes classical element left (twisted trees, a thunderstorm) and a vision of the cultivated picturesque on the right.

Source: www.metmuseum.org accessed, 23 October 2023

The prominent landscape architect Ian McHarg's, approach to landscape analysis

institutionalized ecology as an organizing framework to read and create environments in tune with the landscape systems and processes (Steiner, 2008). According to another theorist the landscaper presented the field as about creating outdoor spaces congruent with natural processes, “natural artifacts”. This implies that the field creates objects that consider the natural processes on the site but excludes its integration into the urban fabric. This aligns with the fields’ incorporation into architecture, which according to modern theory is concerned with creating sculptural objects (Peterson and Littenberg 2020, pg 46). In speaking on the work of the architect Mies van der Rohe on S.R Crown Hall, IIT Architecture School Building, *the whole space is an abstraction of geometry, space, and by-passing pieces. It does not even establish a fixed relationship to the site* (Peterson and Littenberg 2020, pg 37). This is evident in modern landscapes and architecture whereby work is introduced into the site.



Figure 23: *Crown Hall IIT Architecture School building, 1956*. Mies van der Rohe (Atherton, n. d.)

Source: www.archdaily.com accessed, 07 November 2024)



Figure 24: *Farnsworth House, Fox River, Illinois, 1950*. Mies van der Rohe (source www.archdaily.com accessed, 07 November 2024)



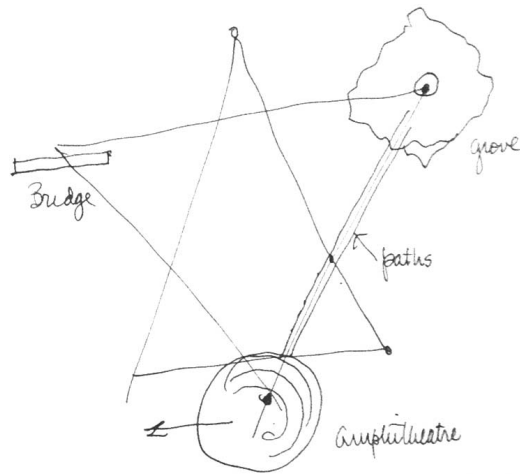


Figure 25: Concept sketch from Halprin's notebooks, 1975

Source: Architectural Archives of the University of Pennsylvania, www.design.upenn.edu accessed 23 October 2023



Figure 26: Babi Yar Park (Source: Collins, 2016)

Source: Architectural Archives of the University of Pennsylvania, www.design.upenn.edu accessed 23 October 2023

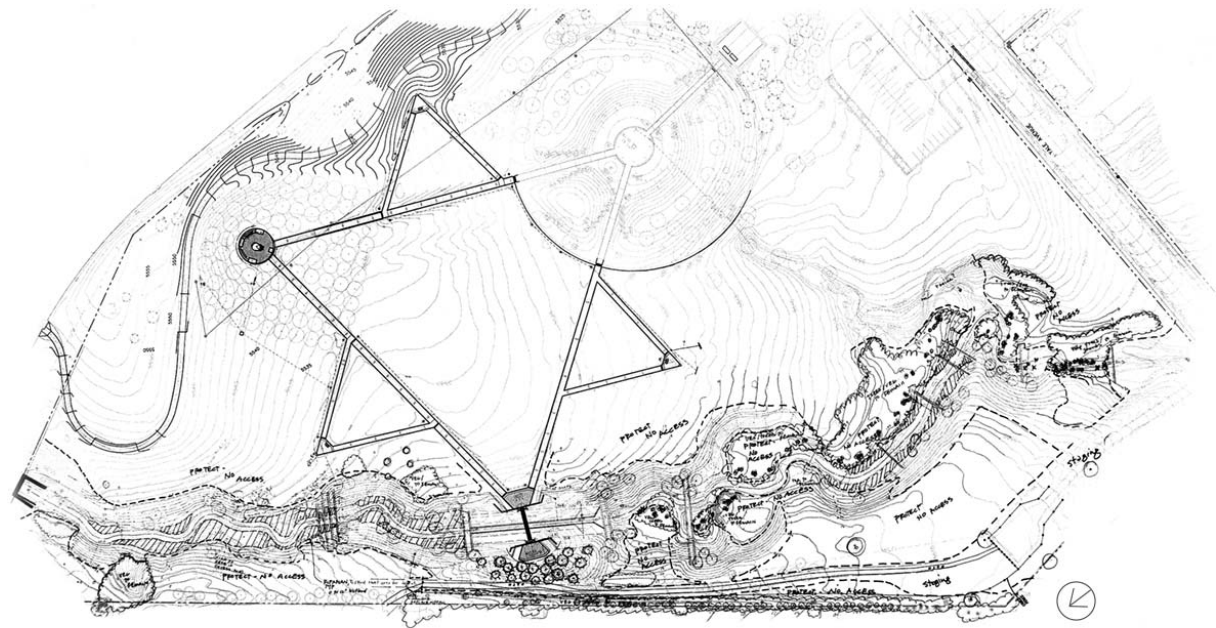


Figure 27: Babi Yar Park Site plan, 1982, Denver

Source: Architectural Archives of the University of Pennsylvania, www.design.upenn.edu accessed 23 October 2023

The weakness of the landscape architectural profession is its relationship to architecture and therefore landscapes relate to specific site conditions but rarely considers the spatial and functional relationship to the urban fabric. In contrast urban design attempts to overcome the weakness by removing the rigid separation and classification of spaces according to their use and designing for multiplicity, flexibility, and adaptability. Carmona and Tiesdell, (2007) argue that urban design is the second order design activity of 'cohesiveness'. The profession merges fragmented built environment experts by producing actionable guidelines for development professionals, combines fragmented development processes and heals fragmented development environments (Carmona and Tiesdell, 2007; Loukaitou-Sideris, 1996). It is considered second order because it articulates the configuration of the urban environment but does not consider the detailed designs of urban components (Carmona and Tiesdell, 2007).

4.1 CONTEXT



Figure 28: Local context and landmarks adapted from various internet sources (Author, 2023)

Source: Aerial map adapted from Google earth accessed 28 January 2024, <https://earth.google.com/>

Source: Land parcels from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 23 November 2023; 1. www.wits.ac.za; 2. www.theheritageportal.co.za; 4. www.newtownjunction.co.za; 5. www.markettheatre.co.za; 6. www.joburg.org.za; 7. Author, 2023; 8. Author, 2023; 9. www.theheritageportal.co.za; 10. Mninele, 2020 www.istockphoto.com; 11. Author, 2023; 12. www.maps.prodafrika.com; 13. www.qz.com; accessed 12 November 2024

The location of the train yard is advantageous because of its proximity to the education hubs within Braamfontein, with the University of Witwatersrand's as the most prominent. A few heritage buildings are within a 5minute walking shed to the site. The site is well appointed with motorised transit options such as Park Station, Wanderers, MTN taxi and Gautrain station. The closest park in the vicinity of the site is Joubert Park, which is located adjacent to the cultural node of the Johannesburg Art Gallery (JAG). The Enoch Sontonga Memorial Cemetery is another cultural landmark which is located within a ten-minute walk from the site.



Figure 29: Johannesburg skyline in the background, this is the potential view from the site in a south-easterly direction (Author, 2023)

Source: 1. www.Amethyst.co.za; 2. Diagonal Street, www.estateintel.com accessed 13 November 2023



Figure 30: Johannesburg skyline in the background, this is the potential view from the site in a south-westerly direction (Author, 2023)

Source: Image 11 Diagonal Street, www.estateintel.com accessed 13 November 2023

From the contextual analysis the setting of the area highlights the importance of connecting to the surrounding natural and man-made character of the site. The site has a unique location with exclusive positioning. The context highlights the potential users and gives clues to the varied mix of potential participants. The proposal should harness the unique resources of the site's location and current use.

4.2 CONTOURS

Contour maps illustrate the gradient of site, however, to understand the impact a model was built **Figure 30: Contour model (Author, 2024)**. The site is very flat along the train lines however there are extensive verticals ranging between six meters and eight meters on the eastern side of the site. This cliff edge posed a challenge regarding east west access due to the extensive height difference. Therefore an amphitheatre suited the topography and allowed the rest of the development to follow the gentle slope of the tracks. The amphitheatre on the western end serves the function of a noise absorber from the sound of the trains on the ground level for functions and elevation onto the site thereby providing visibility onto the site.



Figure 31: Contour model (Author, 2024)

Source: Contour map adapted from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

4.3 LAND USES

There area consists, of residential, commercial, office and mixed use buildings, see **Figure 30**. There are low densitites and segregated uses in some locations south of the site and the southern border has varying heights. The northern border has more consistent 4 storey heights. The residential buildings and some refurbishments are modern.

Due to the varied land uses around the site, there will be activity during the day and night and therefore the proposal is for well lit places, with particular focal points. Low lux lighting to prevent air pollution and to ensure minimal electricity needs solar lighting will be introduced as far as possible.

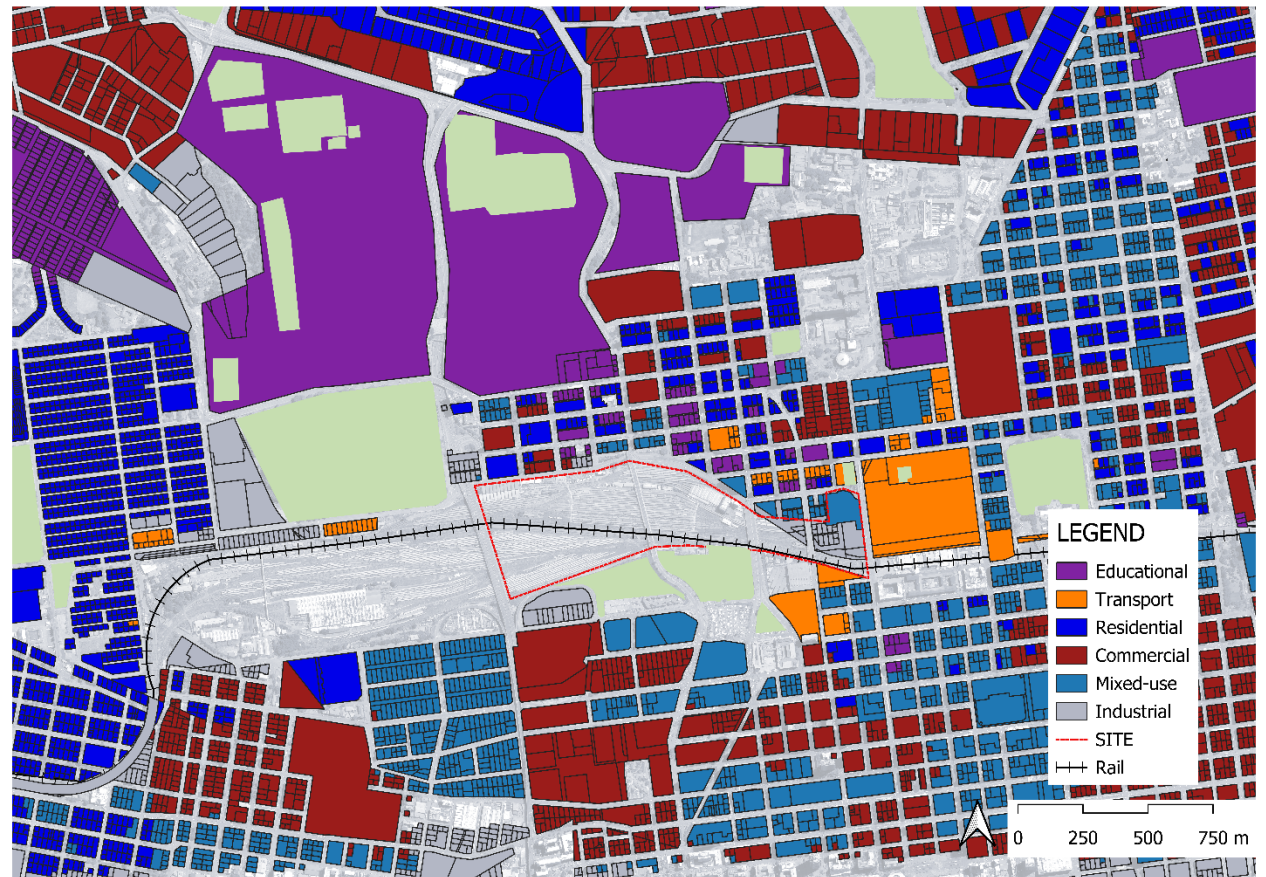


Figure 32: Land uses around the site (Author, 2023)

Source: Aerial from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024;

Source: Land use adapted from GCRO and site assessment

4.4 ZONINGS

The difference between land use and zonings is that land uses are the uses of buildings on the ground whereby zonings are the planning intention of the parcel of land. The map **Figure 31** shows a significant difference between what the buildings may be used for and what they are actively used for. However, Business 1 allows for residential and retail uses.

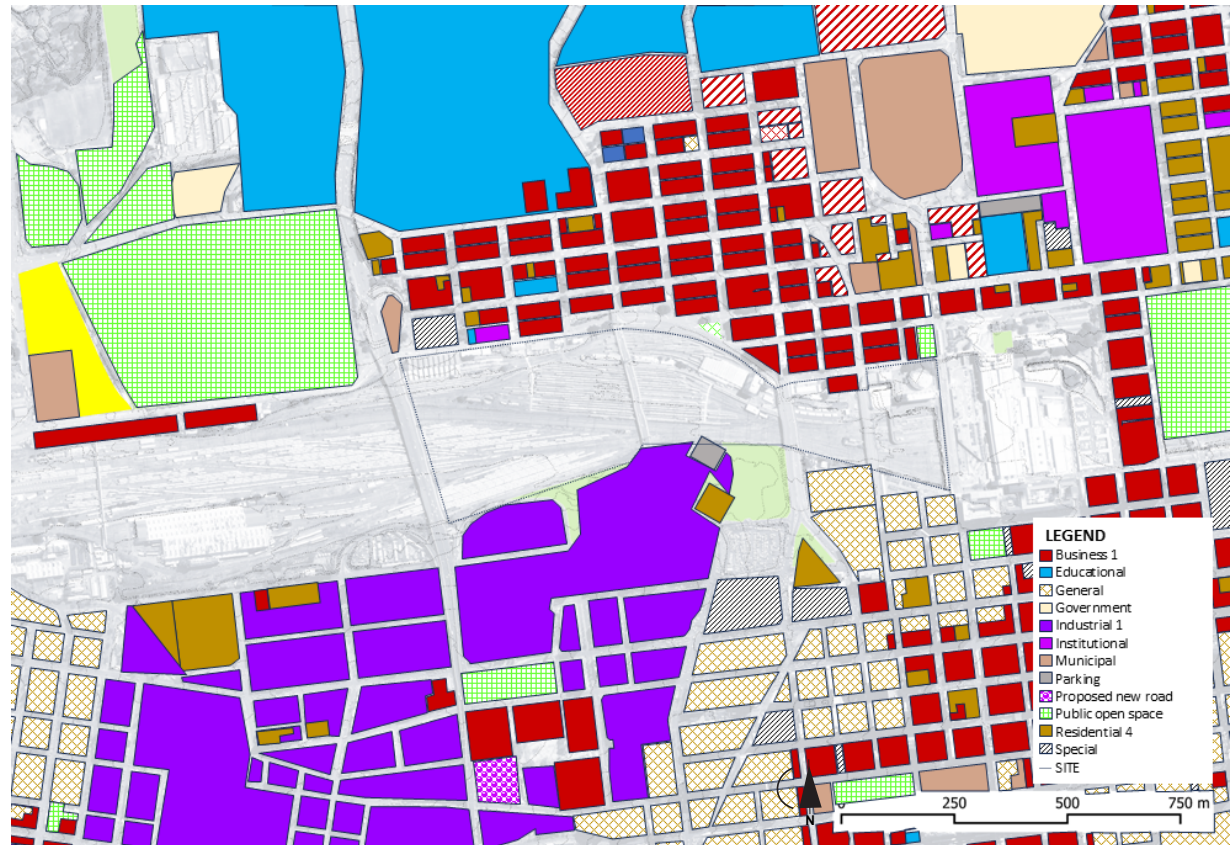


Figure 33: Zoning

Source: Aerial and zonings from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024;

4.5 TRANSIT

Lynch (1964, pg 29) characterizes the urban railroad as having become a physical obstruction that segregates the different zones of a city. It is a mechanism that one uses to memorise the city as they are elements that users move through the city. They are also used to define where one area ends and another begins, highlighting the distinctions between residential neighbourhoods, commercial centres, industrial zones and perhaps more importantly, the perception of access and overall desirability of place. Therefore, they form boundaries or edges that fragment the city.

An analysis of circulation and transit is represented in **Figure 32** to understand the different choices that the users of the proposal will have within the neighborhood and to get to the site from the surrounding neighbourhoods (Llewelyn-Davies, 2007). What has been identified is the narrowness of the kerbs, noise from the traffic congestion and that there is no segregation between vehicular and pedestrian movement, reduces the safety and quality of the walking experience (Llewelyn-Davies, 2007). Furthermore the sidewalk width interrupts pedestrian flow when users stop to engage in other social activities such as talking, purchasing, enjoying the view or orientating.

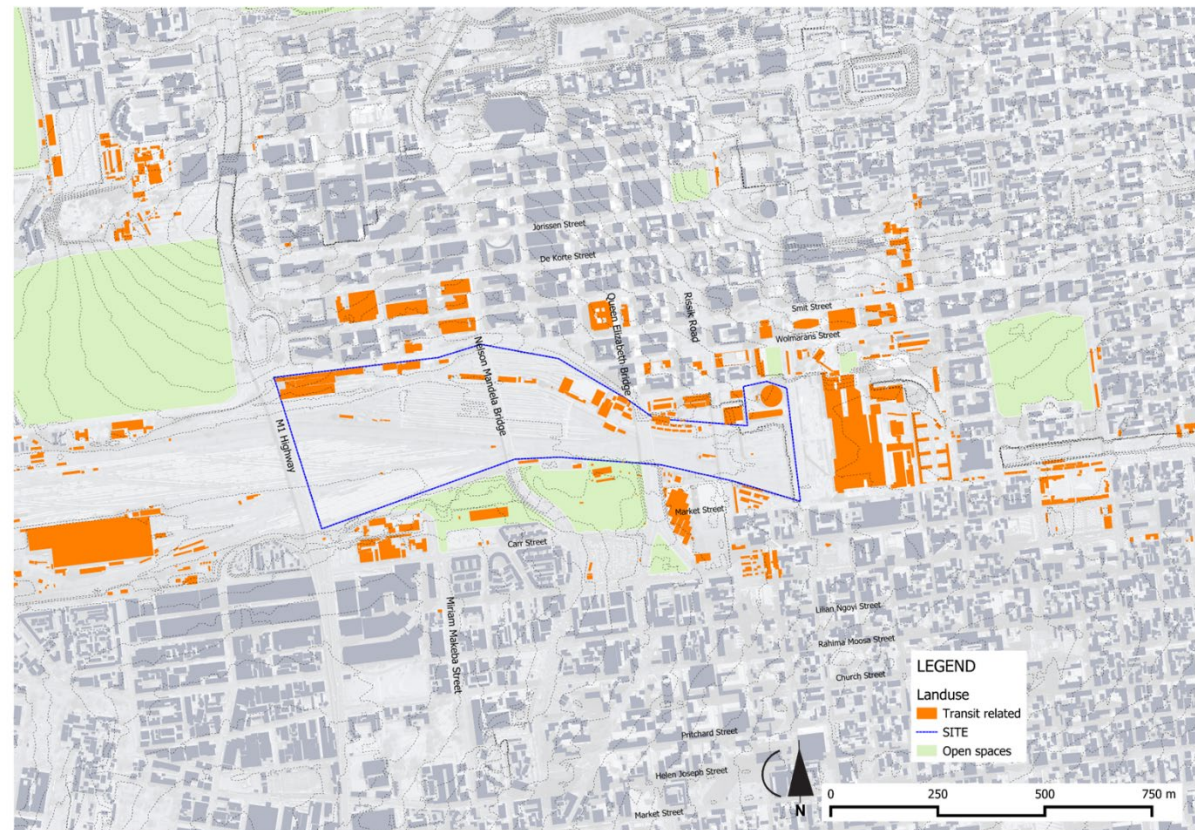


Figure 34: Transit facilities (Author, 2023)

Source: Aerial and building footprint from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024;

The site is well appointed with local, interprovincial and cross border transit options from buses, trains, car rental and taxis. Therefore for the long distance trips only small to medium storage options are located at Park Station. However, with cross-border conveying of large items such as fridges, lounge suites and bedsets, there is limited storage within the area. The pedestrian crossings and better use of the urban voids created with the under passes of the existing road infrastructure will be considered.

4.6 CIRCULATION

Studying the circulation of the area in **Figure 33** indicates that the area is accessible from a wide radius. The area experiences an extensive amount of transient traffic and pressure during peak periods thereby certain intersections become congested. There is off-street parking however what is require is activities that will slow down traffic going through the area.



Figure 35: *Narrow pedestrian footpaths, inhibiting the pedestrian* (Author, 2023)

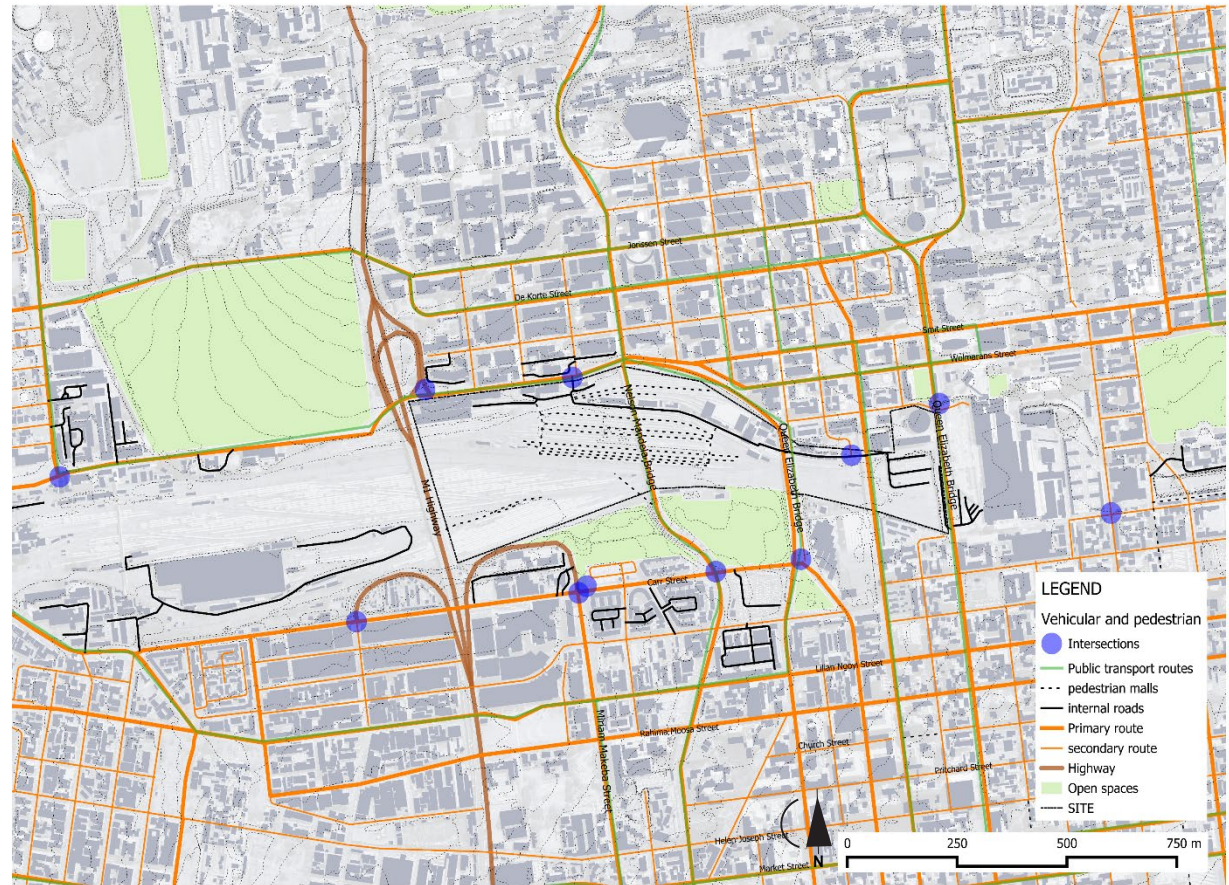


Figure 36: *Circulation routes around the site* (Author, 2023;

Source: Aerial and building footprint, CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

The proposal is to diffuse the edges by connecting to the existing circulation networks and to improve the existing pedestrian options. A variety of open spaces will be provided and designated with the intention for multiplicity as the open space will focus on supporting, pedestrianisation, recreational use and visual amenity. Furthermore parking options will be located for convenience.

Due to the size of the sidewalks there is increased focused noise and any leisurely activity such as stopping or pausing to orientate oneself results in interruption in walking pedestrian flow, see **Figure 34**. The sidewalks do not have the dimensions to allow for any other activity such as informal trade or cycling.

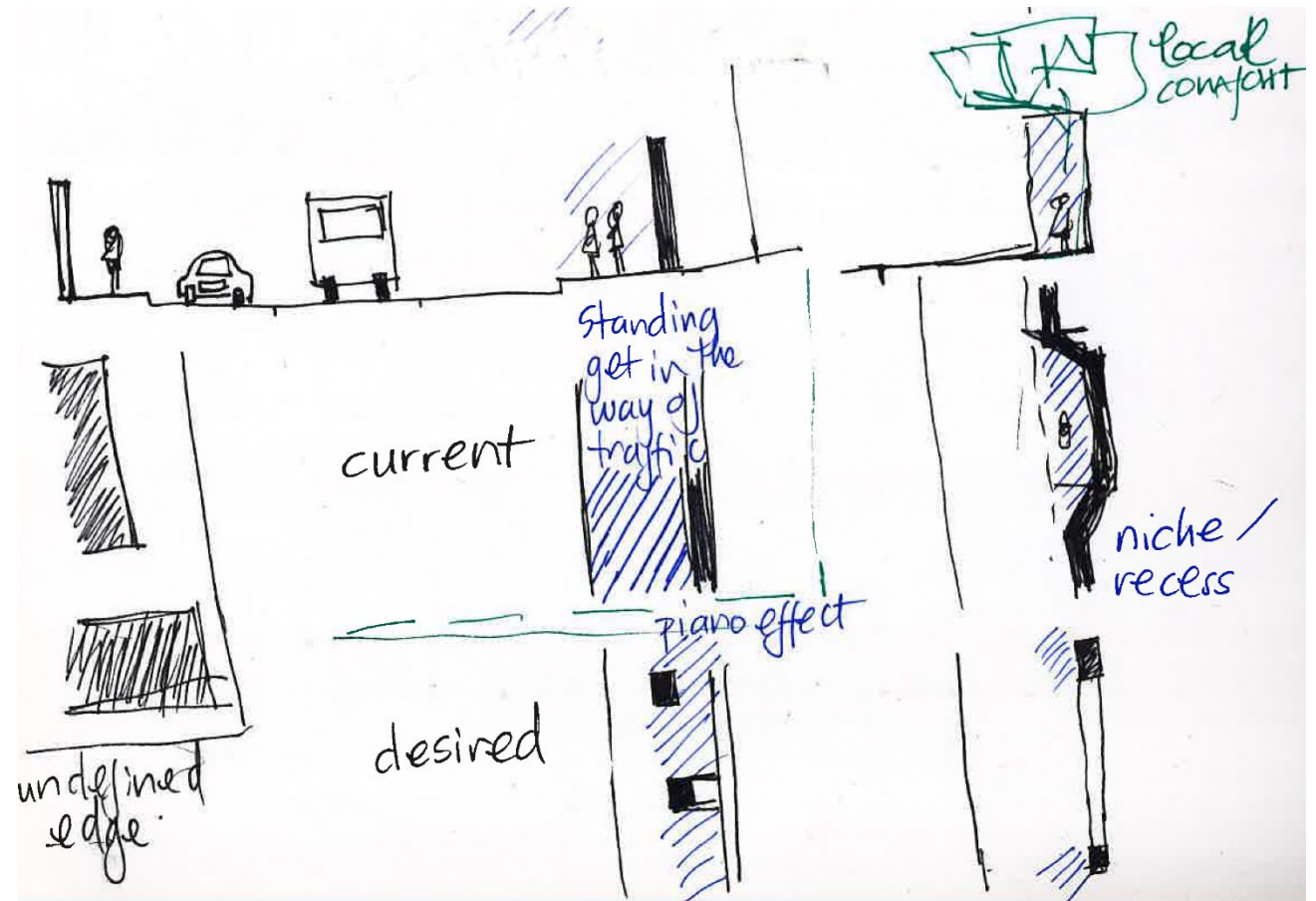


Figure 37: Evaluation of edges of site using Jan Gehl's principle. (author, 2023)

The figure ground has always been used in order to establish urban voids (Trancik, 1986; Hashem et al., 2022; Giovanni, 2018; Rahmann and Jonas, 2011) however the urban grid of the urban structure was considered in order to determine the linkages with street frontages to support a fine grain pedestrian experience and active frontages along the edge of the development (Llewelyn-Davies, 2007). The varied mix of plot sizes, see **Figure 36** creates visual interest for the pedestrian however some of the parcels read as continuous horizontal rhythms creating hard edges with limited visual interest (Gehl, 2010). The author has termed this 'dismissive facades' as they dismiss the pedestrians need for engagement with the edge and therefore is a negative experience of the urban form, see **Figure 35**.

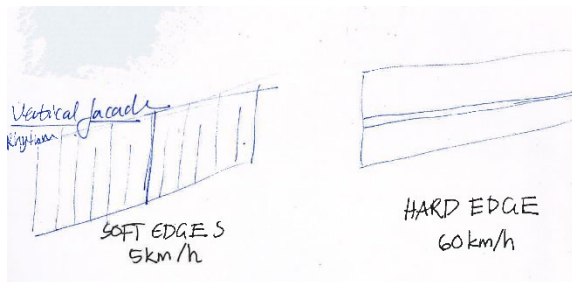


Figure 38: *Soft and hard edges, adapted from Jan Gehl's Cities for People (author, 2023)*



Figure 39: *Varied mix of plot sizes (Author, 2023)*

Source: Land parcels from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024

In terms of the microclimate the shape and continuous length of the site and the lack of building form protection on the edges means that the site experiences drastic variances in weather with wind funnel effect and has no vegetation to cool the solar aspect. Therefore the proposal must include buffers for the wind and sun intensity.

4.7 LOCAL CHARACTER

The areas surrounding the site are characterised by a combination of industrial buildings conversions of red brick and new builds. PRASA are in the process of installing a 4m concrete wall which will be a continuous impermeable border creating terminating views onto the site. Buildings are built on the erf border with no setbacks and therefore movements are constrained along narrow sidewalks. There are now limited openings along the edge and the openings are primarily driveways onto the site, as illustrated in Figure 37.



Figure 40: Local character of surrounding neighbourhoods showing South African red brick architecture (author, 2023)

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 13 February 2024

4.8 EDGES

The quality of the edge is an important consideration because it determines permeability, legibility, richness and human centredness of the space (Bentley, Alcock, Murrain, McGlynn, Smith, 2011; Silavi, Hakimpour, Claramunt, Nourian, 2015). The majority of the facades on the southern side of the site are horizontally articulated and are passive facades that discourage interaction and prompt users and passersby to move through the space quickly.



Figure 41: Southern border of site, horizontally articulated (Author, 2023)



Figure 42: Southern border of site horizontally articulated (Author, 2023)

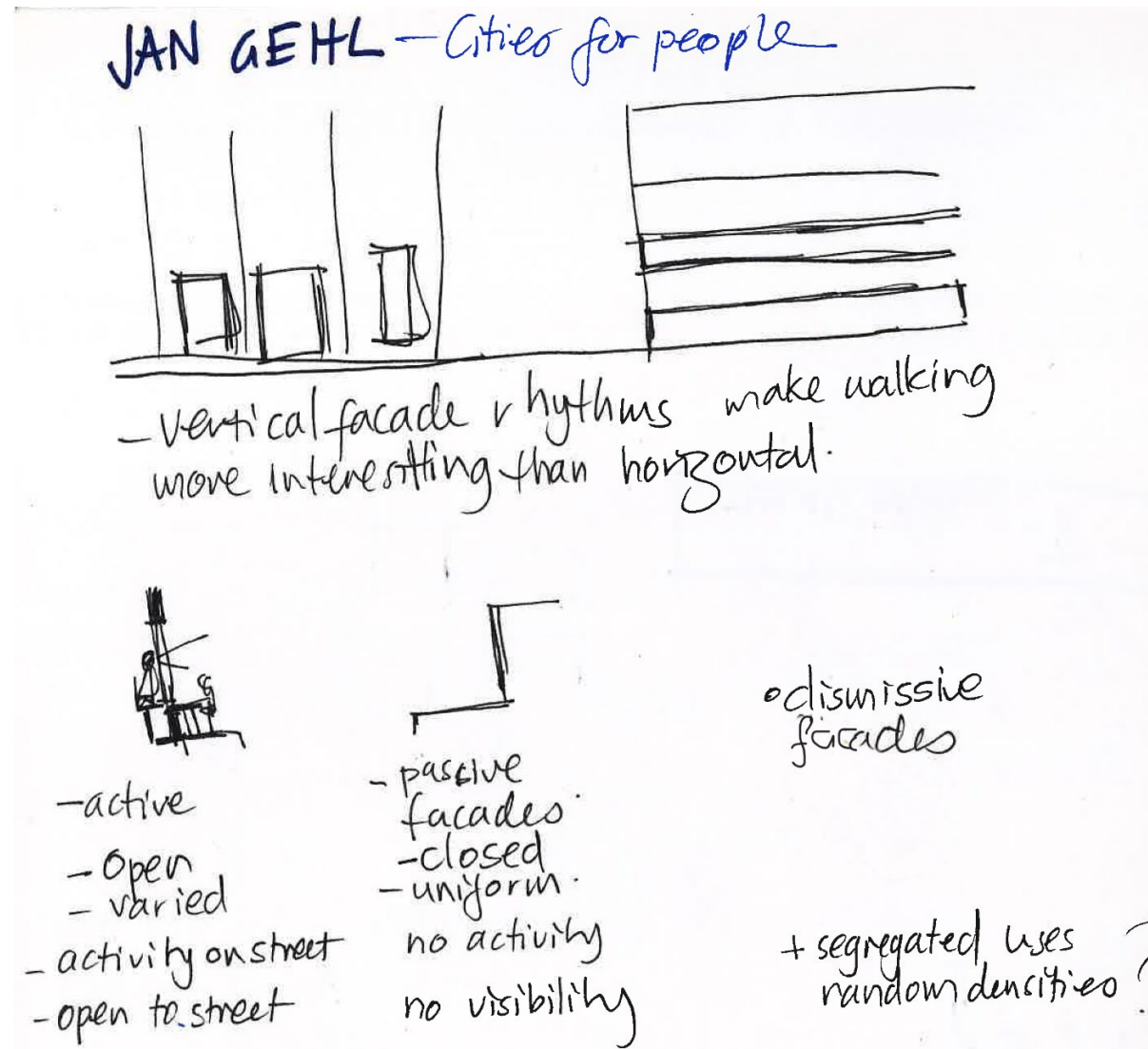


Figure 43: Diagram of facades on southern border of site on the side of Newtown. Adapted from Cities for People – Jan Gehl (Author, 2023)



Figure 44: Most concerning addition to the site is the 4m wall on the edge of the tracks which further isolates the site from its surrounds (Author, 2023)

The proposal intention is to introduce interest within the social field of vision. Any future development along the edge of the site should align to the following principles, appealing to the senses, introduce texture and vertical articulation.

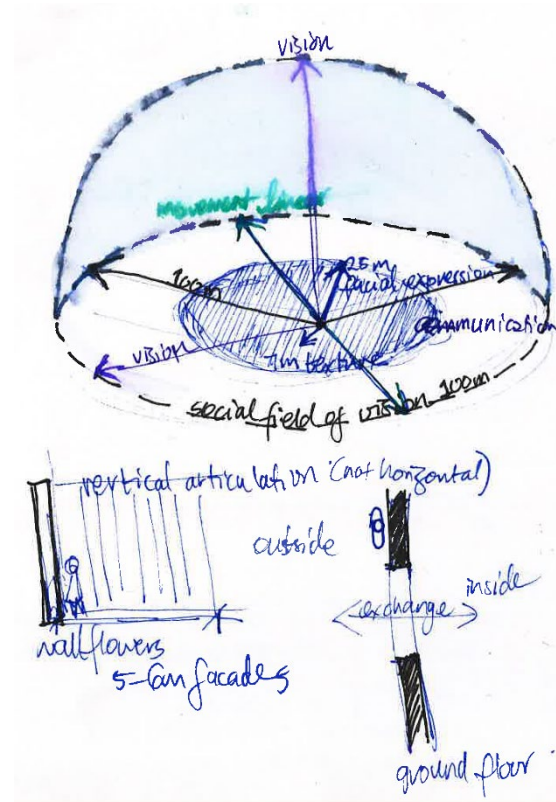


Figure 45: Social zone according to Jan Gehl, (Author, 2023)

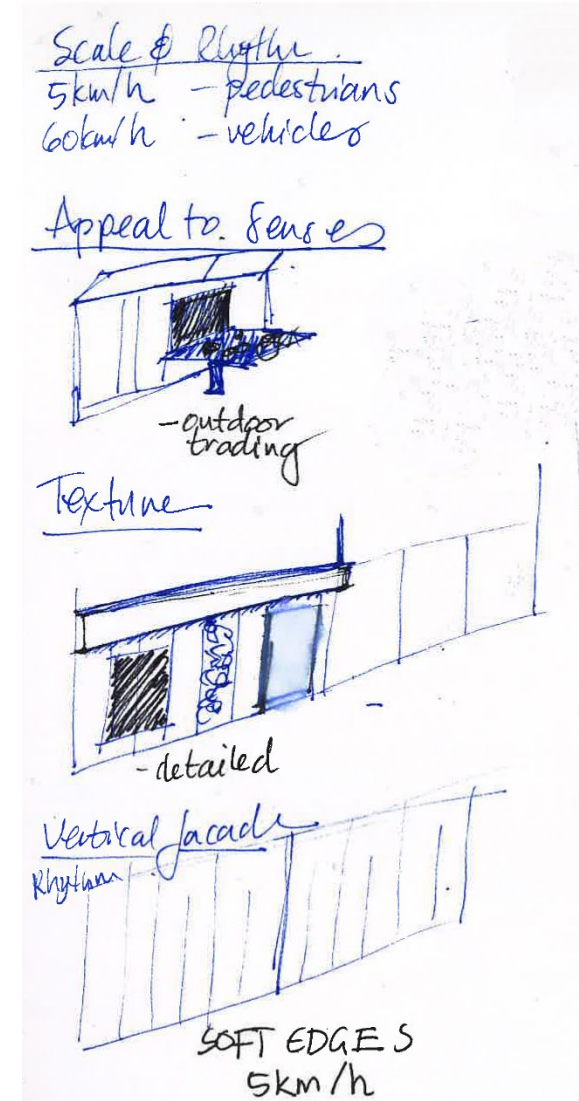


Figure 46: Gehl's principles, *Cities for People* (Author, 2023)

4.9 BUILDING TYPOLOGIES

The northern border consists of low density residential and office spaces that are 1 - 5 storeys. The southern edge consists of a few buildings that are substantially taller than the adjacent buildings, however most of the buildings are 2 - 4 storeys. Low densities and in some locations south of the site segregated uses. The northern border buildings are of a more consistent height of 4 storeys and the southern border has varying heights.

The new buildings are out of character of the local character and existing buildings. The residential buildings and some refurbishments are in a modern style see **Figure 44**.

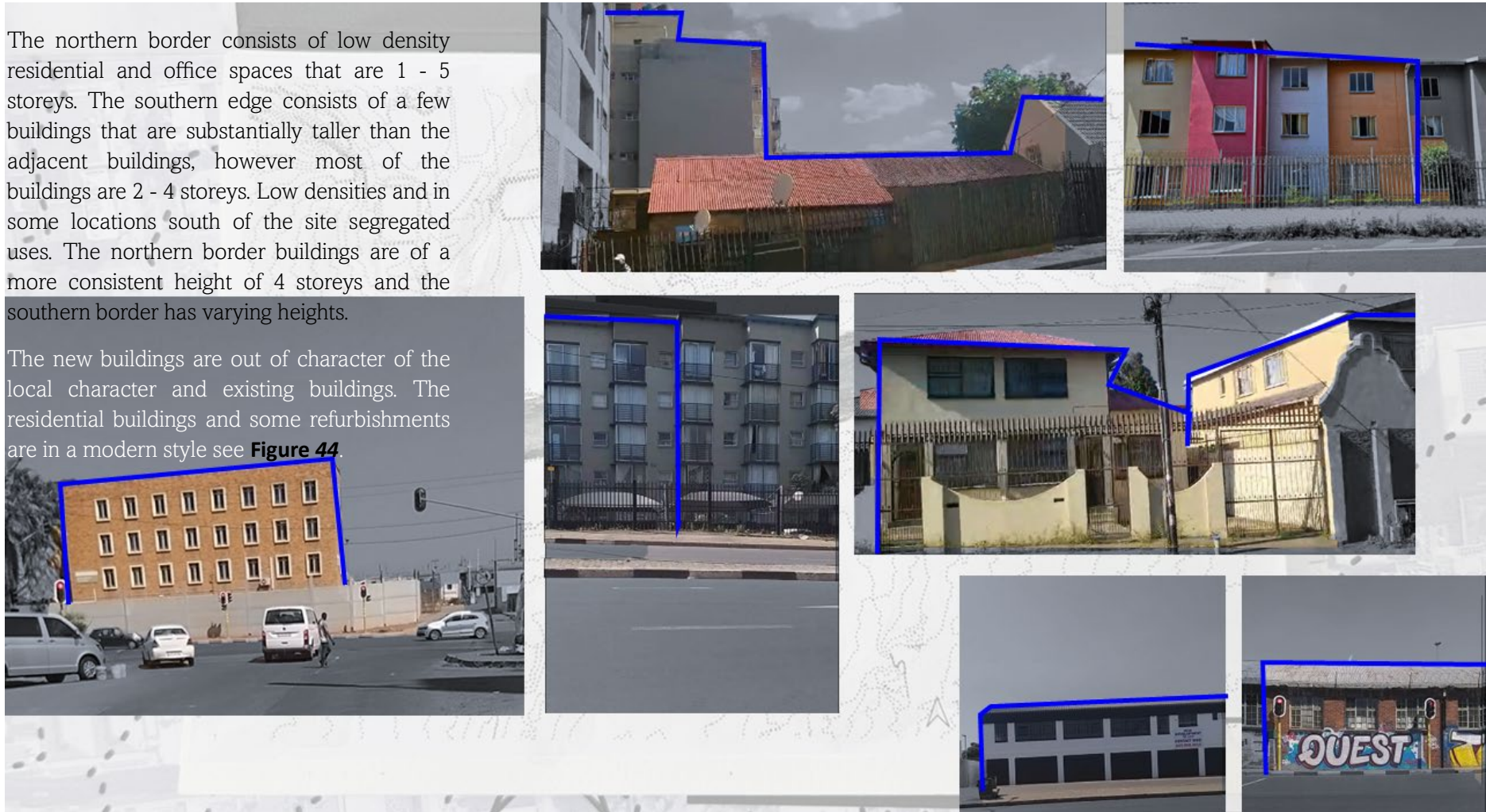


Figure 47: Building typologies within local context of site (Author, 2023)



Figure 48: Landmarks and recognisable vistas' onsite photos and various internet sources (Author, 2023)

Source: Land parcels from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 23 November 2023; 1. www.wits.ac.za; 2. www.newtownjunction.co.za; 3. www.markettheatre.co.za; 4. www.joburg.org.za; 5. www.gautengfilm.org.za; 6. Mninele, 2020, www.istockphot.com; 7. www.maps.prodafrica.com; 8. www.qz.com; 9. www.theheritageportal.co.za; accessed 12 November 2023

The site has an impressive number of landmarks and at the right elevation has a recognisable skyline. The proposal should include opportunities to engage with these vistas and focal points.

4.10 APPLICABLE POLICIES

Spatial Planning and Land Use Management Act (SPLUMA) overarching framework for planning and land use management legislation. It directs SDFs and provides principles for improvements, norms and standards for municipal and district level development. As per the The Johannesburg Spatial Development Framework 2040, the site is located within the Transformation zone of Region F. It identifies the inner city as an area earmarked for mixed intensive densification in terms of jobs, inhabitant and amenities ranging between 15 000 to 60 000 people/km². It is envisaged that as these will be the highest densities within the city it will make the city more more productive. The site is located outside the Urban Development Zone and is zoned industrial, in contrast the surrounding areas are zoned Business 1, with additional zonings ranging from Industrial allowing for the following uses, business, shops, residential, buildings, place of instruction, social halls, restaurant, car sales lot, motor showrooms, showrooms, offices, public or private parking area, institutions, religious purposes, dwelling units, warehouses. The surrounds have a varied mix of land-uses and therefore attracts a broad mix of users daily or living in the surrounding areas.

There is a focus on sustainable modes of transit for the city however the policy is silent on how this will integrate the site. The Climate Action Plan 2021 provides guidance on promoting non-motorised transportation options to meet net-zero emissions targets. Climate resilience goals target reducing climate variance vulnerability, air quality improvement, mitigating the effects of the urban heat island effect and food security. The site falls within the high impact zone for heat wave and heat island effects. See below **Figure 46** overlay of policies applicable to the site.

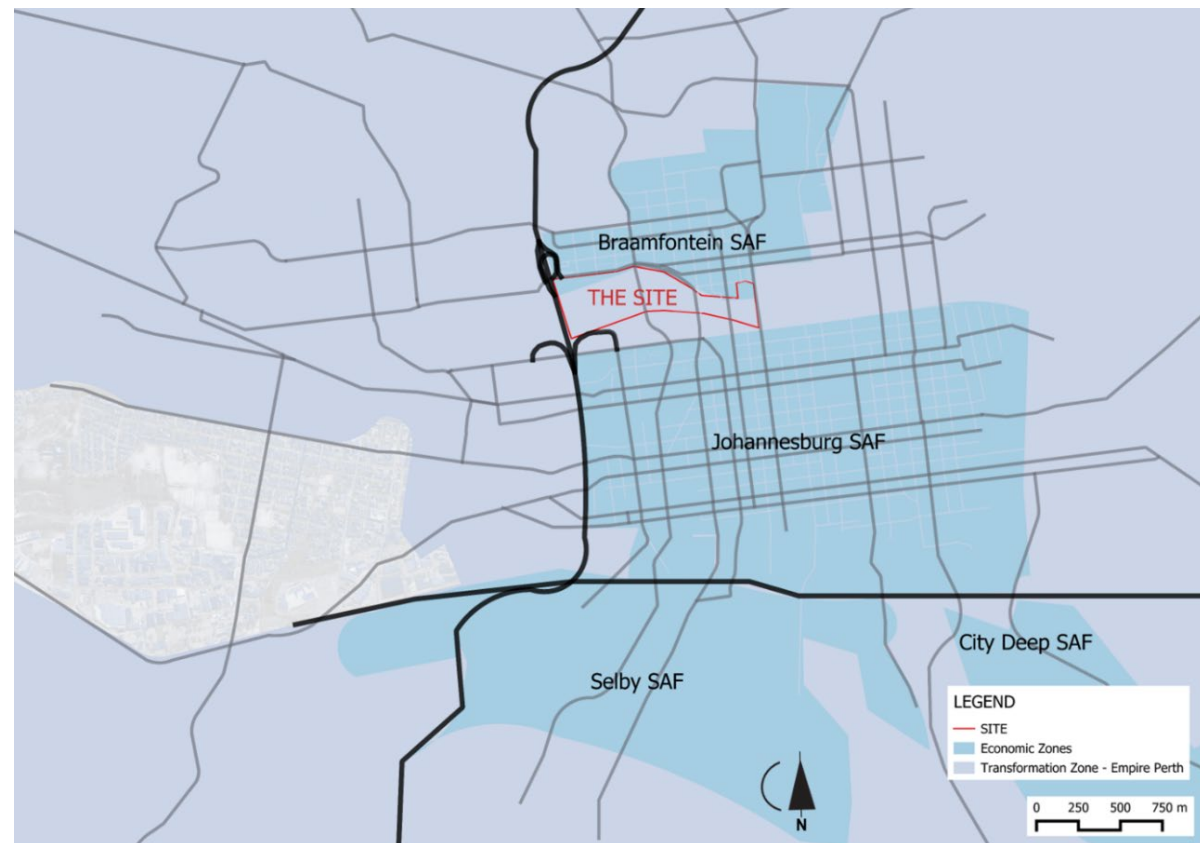


Figure 49: Applicable policies (Author, 2023)

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 13 February 2024

4.11 POLICY CONSIDERATIONS

4.11.1 Movement

Road classifications to compliment adjoining land uses in terms of accessibility and mobility to accommodate all road users. An emphasis on a non-motorised transport network and a street network that promotes pedestrian accessibility.

4.11.2 Spatial

Integration of existing industrial areas to the transport network. Mixed-use development in locations in proximity to transit facilities.

4.11.3 Social Clusters

Due to the limited available land for new social infrastructure, identifying areas whereby social facilities can be intensified and optimised based on the logic of transit routes.

4.11.4 Densification

Consolidation and redevelopment through demolition and integration of existing infrastructure. Higher and infill densification on vacant and underutilised land.

4.11.5 Sustainability

The site will support the cities climate change mitigation themes of Flood and Drought Management, Resilient infrastructure and Healthy communities. The site should target to have an alternative water source or storage capability to reduce the water demands required. It should form part of expanding green spaces through a recreational facility. The vegetation added should be a collaborator to improving resilience to rising temperatures for the surrounding inhabitants, improving air quality related to alleviating particulates and allergens, reducing the negative health impacts of urban heat island effect and associated health risks. Lastly, the site should contribute to food security through introducing urban agriculture to support local farming. As a transitional zone the scale of the site is an opportunity to encourage a pedestrian connection for the city, Newtown and Braamfontein.

4.12 ACTIVITY

Studying the intensity and type of street activities in the area in order to determine the potential users of the park. The type and intensity of activities is an indication of places of contributors to congestion and indicates possible land uses required. Considering the built-up surrounds the biggest open space in the area is the Enoch Sontonga cemetery and therefore the area lacks large scale public recreational and sporting spaces.

The overlay of activities and landuses reveal an interesting mix of potential participants with the urban park, see **Figure 47**. The proposal intends to build versatility in the walking paths and the open space areas to encourage visibility, places for a variety of users including the unsheltered.

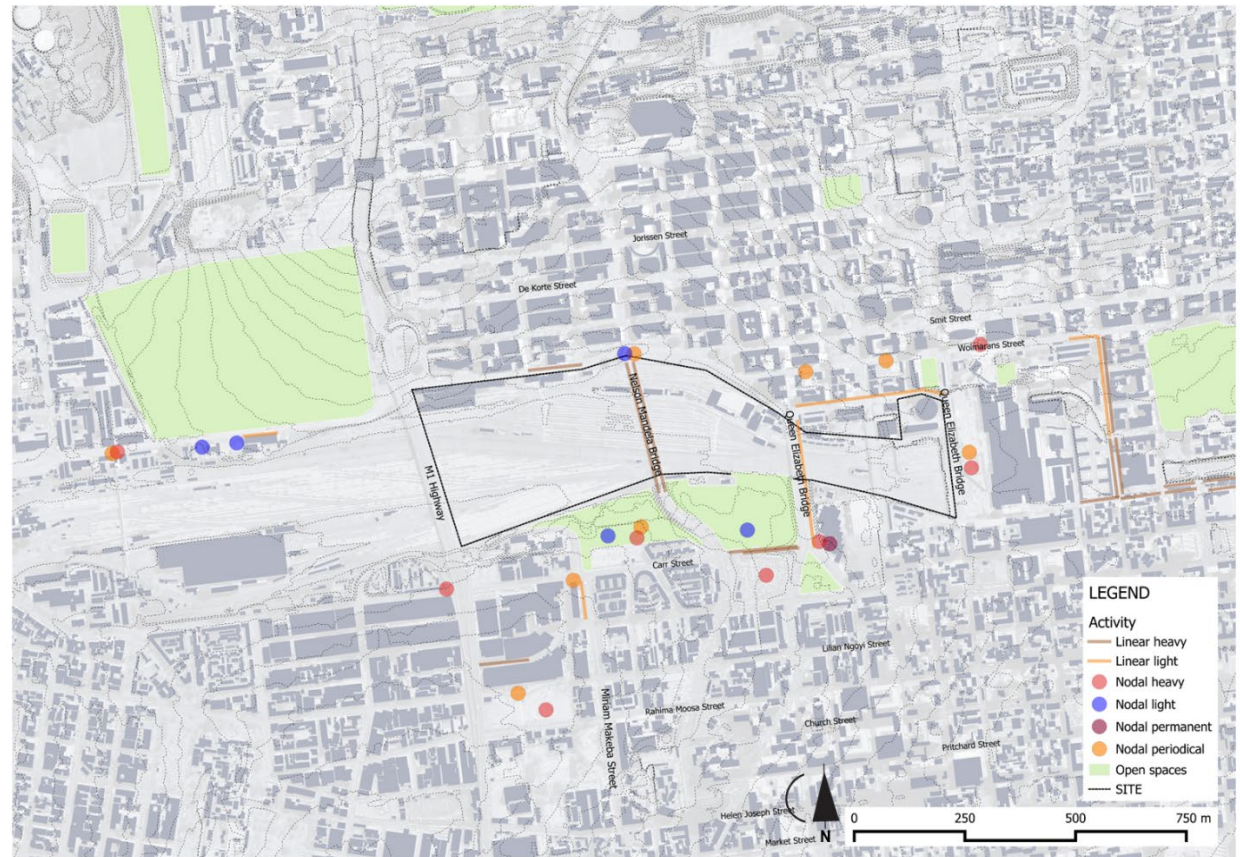


Figure 50: Activity nodes and routes around the site (Author, 2023)

Source: Land parcels from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024;

4.13 URBAN CHALLENGES | Effects of lack of urban cohesion

Although there is a lot of literature on the negative impact of urban voids to a cities fabric (Lynch, 1990; Hwang and Lee, 2020; Northam, 1971; Peterson and Littenberg, 2020; Ford, 2000; Landman, 2018; Madanipour, 2010), there is literature that investigates the opportunities that urban voids provide, (de Sola-Morales Rubio, 1995; Armstrong, 2006; Trancik, 1986; Northam, 1971; Cupers and Miessen, 2018) and more examples of urban voids are revitalised (Greenstein and Sungu-Eryilmaz, 2004; Islam and Kabir, 2015; Groth and Corijn, 2005). The opportunities for the re-purposing of voids, includes infill development, recreational spaces and social amenities (Trancik, 1986; Hwang and Lee, 2020; Bowman and Pagano, 2001; Northam, 1971). For expanding cities, Northam, (1971) called for the use of urban voids for the re-densification of cities, by infill development to mitigate the pressures of urban sprawl. Urban voids provide a chance for alternate developable land, thereby attracting residents back into the city and increasing inner city tax revenues (Hwang and Lee, 2020; Bowman and Pagano, 2001). By reducing surplus vacant land and buildings

through development, residential markets can be stabilised (Schwarz, 2012; Berglund, 2020). Urban public spaces shape and give structure to the urban form because the activities and the connection of people direct how the built form develops (UN-Habitat, 2015; Legeby, 2010; Madanipour, 2006). Public spaces include the spatial forms such as space between buildings streets, which are sidewalks, streets, sidewalks and connecting footpaths, recreational play spaces and outdoor marketplaces (Trancik, 1986; UN-Habitat, 2018). What is agreed about these spaces is that they are the backdrop of social and cultural activities. These activities include trade, movement, cultural celebrations, support community life and the economic mobility of the urban poor (Madanipour, 1996; Legeby, 2010; UN-Habitat, 2018; UN-Habitat, 2013). This contrasts with the literature on spatial fragmentation, which highlights how the subdividing of spaces for the purposes of buying, subjects, practises and discourse results in geographies of fragmented urban spaces (McFarlane, 2018; Legeby, 2010). This could be equated to the politics of urban planning and policies that structure the activities that occur in the urban environment. In the case of the train yard, the land use is a physical geography of practise because of the direct participation in the activities associated with transit. Furthermore, bits and pieces of discarded commodities, or remnants of previous activities are termed material fragments or splinters because they maintain their status as products of capitalism (McFarlane, 2018; Graham and Marvin, 2002). The researcher McFarlane, (2018) argues that in Mumbai fragmentation in land, additionally contributes to increased urban poverty.

Graham and Marvin, (2001) and later further explore this concept of infrastructure networks that were initially designed to connect cities and how they cause reduced urban cohesion within the urban form by creating separate landscapes. This infrastructure is now isolating separate groups of people and fragmenting places creating poor quality urban spaces. Furthermore, dividing infrastructure leads to clustering of social groups into enclaves, reinforcing spatial segregation and limiting meaningful exchange (Abdelmonem and McWhinney, 2015).

Researchers are now exploring how transport networks have translated into elements that exacerbate social inequalities by restricting accessibility (Graham and Marvin, 2002; Oviedo Hernandez and Dávila, 2016). Spatial accessibility is defined as the significant geographical restriction impacting opportunity, spatial interaction, spatial separation, and utility-based segregation (Garnica-Monroy and Alvanides,

2019). Scholars are going further to say that the origination of the infrastructure was problematic because the services were created to reproduce social and physical dis-unity (Zérah, 2008; Simone, 2022) as is the case with the train-yard. This is evident in cities such as Kilamba, Angola and El Sheikh Zayed, Egypt designed around transit infrastructure (Keeton and Nijhuis, 2019). In order to understand the spatial benefits of urban parks it was important to understand the spatial challenges caused by the lack of urban cohesion viewed at the trainyards.

It is accepted within literature that the morphological factors that result in urban voids are changes in politics, economies, and social structures, (Peterson and Littenberg, 2020; Trancik, 1986; Bowman and Pagano, 2001; Newman et al., 2018). However, De Sola-Morales Rubio, (1995) proposes that vacant urban spaces are essential to the potential of the city because of their intrinsic relationship to memory and the emotive connection to space. Armstrong, (2006) supports this assertion by suggesting that vacancy creates freedom of expectation and therefore latent spaces become spaces of possibility. However, scholars argue that the most effective cure for the urban abandoned spaces is through

incremental intervention (de Sola-Morales Rubio, 1995; Trancik, 1986), to allow nature to take over (Armstrong, 2006) and to let the those on the fringes of society to appropriate the spaces (Lynch, 1990; Kremer et al., 2013). This highlights an urban voids potential to heal communities when used for environmental justice (Schwarz et al., 2018; Wolch et al., 2014). However, a recent a theory has emerged that seeks to reclaim the post-industrial areas by integrating landscape as a system with urbanism (Young, 2012; Armstrong, 2006; Charles Waldheim, 2006; Locke et al., 2019).

4.14 SOCIASPIATIAL CHALLENGE | Displaced individuals

The profile of the social and physical value of public open spaces for community, health, and wellbeing (Cohen, Han, Deroose, Williamson, Marsh, Raaen and McKenzie, 2016; Uriona, n.d.), more so after the pandemic. The mandate for the sustainable development goals is equitable access to space, inclusive of people of all ages, races, social identities, and incomes (Neild and Rose, 2018; UN-Habitat, 2013, 2018; Mashava, Kriel and Vally, 2018). However, if there is no income, and a stigma associated with reduced safety created by the unsheltered then how do we as urban designers continue to create places that are safe, comfortable, and welcoming of all demographics and social classes?



Figure 51: *Unsheltered in Pieter Roos Park (Author, 2024)* **Figure 52:** *Unsheltered in Berea Park (Author, 2024)*

Housing insecurity is a social and political challenge, and the author would argue an urban issue. This is because the unsheltered use available public resources in urban areas to survive, and the phenomenon is usually experienced in urban areas (Bergamaschi, Castrignanò and De Rubertis, 2014; Mashava, et al., 2018). There are various terms used in literature and recent terms to attempt to express the reality and human centred lived experience of housing insecurity, these are displaced individuals, unsheltered or unhoused (Department of Housing and Urban Development HUD, 2019; Neild and Rose, 2018). This denotes a person deprived of the most basic human right to shelter, refuge and protection. Access without discrimination is enshrined in the Constitution of South Africa, however globally the unhoused cannot occupy public open space for extended periods of time due to the criminalization of their occupation (Darrah-Okike, Soakai, Nakaoka, Dunson-Strane and Umemoto, 2018; Detweiler, 2017; Hill-Lewis, 2023). Literature approaches displaced individuals from the perspective of social justice or the law (Darrah-Okike et al., 2018; Detweiler, 2017; Mashava et al., 2018). Within the Johannesburg parks these urban migrants inhabit the edges of the parks, possibly due to a need for privacy or to signify their considered inhumanness, see photos **Figure 50**, **Figure 52** and **Figure 53**.



Figure 53: *Unhoused on the edge of Pieter Roos Park (Author, 2024)*



Figure 54: *Unhoused on the boundary of Berea Park* (Author, 2024)

Designers of urban spaces have contributed to this exclusiveness through mechanisms that discourage use by the unhoused, such as sitting, lying, sleeping, and storing property (Bergamaschi et al., 2014; Darrah-Okike, Soakai, Nakaoka, Dunson-Strane and Umemoto, 2018; Landman, 2016). The photographic work of Arnaud Elfort and Guillaume Schaller is an inventory of these measures (Bergamaschi et al., 2014), which have found their way into the Global South in the design of urban furniture and the privatisation of public spaces (Landman, 2016; Ballard et al, 2021; Benjumea Mejia, Chilton, Rutherford, 2024).



Figure 55: *New protective mechanism at door of an old entrance way, 2009* (photograph by Arnaud Elfort and Guillaume Schaller of Survival Group. Project “Anti-sites”)



Figure 56: *Design choices that deter occupation/use by the unhoused* (photograph by Arnaud Elfort and Guillaume Schaller of Survival Group). Project Anti-sites) “Anti-sites”, is focused on street and public area details that are created to avoid any kind of sitting, resting, or sleeping possibilities.



The 'unhoused' or 'unsheltered' are articulated in public open spaces because of several institutional and social failures. The worldwide increase in the unsheltered is predominantly driven by market forces, such as decreased access to affordable housing options, insufficient housing availability in cities, falling or stagnant incomes and the widening income gap (Patel, 1988; Barile, Pruitt and Parker, 2018; HUD, 2019; Mullenbach, Pitas and Hickerson, 2023). Other causes to the growing unhoused are drug use and the groups that are most vulnerable include underrepresented, marginalised communities and those experiencing disabilities (HUD, 2019; Hill-Lewis, 2023). Public parks are the first to absorb this phenomenon, but public parks are the departments that are usually the least funded and least equipped to address this socio-urban issues (Mullenbach et al., 2023; Pitas et al., 2017; Colman and Barrett, 2019; Neild and Rose, 2018).

The consumption of public open spaces usually involves the unhoused through allowing access to amenities such as ablutions, providing a connection to other social services (Mullenbach et al., 2023; Colman and Barrett, 2019). Other studies have found that public parks are supportive to the unhoused in that

they provide a degree of security through finding resources such as money and food, a place to keep belongings and to have a community through forming social connections with other unhoused (Mullenbach et al., 2023; Safe Routes to School National Partnership, n.d.; Mashava et al., 2018)

With the rise in privatisation access to public open space has been restricted. Therefore public parks are becoming sterile and sanitized environments that are disassociated from society or its challenges (Bergamaschi et al., 2014; Abel, 2019). The text below best describes this phenomenon.

Public space is being occupied in new ways. Previously uncluttered, sanitized urban parks and open spaces are now dotted with braziers and campfires, and used for storing goods overnight or conducting commercial transactions; pavements have become crowded with hawkers, tailors and hairdressers; streets are congested with taxis. People jostle anarchically for turf; white capital flees ever northwards in an attempt to preserve the illusion that money is clean and safe. The space it vacates, whether commercial, retail, or residential are boarded or bricked up, 'mothballed' against occupation by the poor, the destitute or the organized homeless for whom sparse and inappropriate shelter is better than exposure on the street. (2018) Issue Papperized homeless for whom sparse and inappropriate shelter is better than exposure on the street. - Davids 2007: 57

Research suggests that to mitigate the challenge of the unhoused, collaborative teams are required to build and support a local community (Colman and Barrett, 2019; Abel, 2019). Considering that urban design is a field about multiplicity, it is uniquely suited to address the unsheltered within urban renewal proposals (Hill-Lewis, 2023; Carmona and Tiesdell, 2007; Llewelyn-Davies, 2007). Research by various scholars has revealed that programming is the key to the perceived threat posed by displaced individuals and the subsequent barriers to use of public parks. Although the studies focused on the youth in low-income areas the same principles can be applied which is an emphasis on supervised or team activities (Cohen et al., 2016; Marquet et al., 2019; Benjumea Mejia et al., 2024). Therefore the author would like to argue that parks should support the human dignity of the unhoused and not be unused sanitised spaces and limited access.

4.15 DISTRICT CHALLENGE | Existing public open space

The importance of public spaces as socioecological systems in South Africa is reflective of a worldwide urban phenomenon of a change in the sentiment of attitudes towards recreational opportunities (Madanipour, 2010; Landman, 2018; Guo et al., 2024). To determine the recreational opportunities, support sustainable urban development, and the experience of the surrounding residents, literature suggests that it is important to examine the availability (Guo et al., 2024; Rad and Alimohammadi, 2024)2024; Rad and Alimohammadi, 2024). This provides a more complete picture of the spatial equity of available recreational services. Spatial equity refers to the equitable geospatial distribution of recreational opportunities, irrespective of socio-economic background or status (Guo et al., 2024; Rad and Alimohammadi, 2024). Research by various authors introduce a few trends related to the transformation of public spaces, however, Landmans', (2016) various work reduces the trends into deterioration, privatisation, and celebration. These three concepts are observed within the inner-city district that the site is part of.

4.15.1 Deterioration

UN-Habitat, (2013) identifies a common trend related to the over dependence on vehicular transport. This reliance on motorised forms of transport has resulted in a neglect of public open space (Madanipour, 2010). Other contributors to the decline of public open space are poor maintenance as cities grapple with financial challenges of providing and maintaining socioecological infrastructure (Landman, 2016; Rahmann and Jonas, 2011; Bačlija, 2013). The author argues that a misalignment between the availability of open space and volume of users, is also a contributing factor to the deterioration of public open spaces. This form of deterioration is apparent in Pieter Roos Park, which is located near the high-density Hillbrow (Dawson Middelmann, 2022; Middelmann, 2021). The park has fallen into disrepair and certain functions within the space are appropriated by prominent users that occupy *en-masse* (Sibanda, 2022). In 2000, there was a complaint that the Park was over-run by the local soccer teams (Dawson Middelmann, 2022), at present its religious groups on Sundays and the displaced individuals. In contrast, in the cities battle to moderate the effects of the volumes of daily visitors and users of the space, Joubert Park has a seven-day maintenance schedule, is fenced, and closed off in the evening (De Vries and Kotze, 2016). Its proximity to Noord Taxi-rank and the southern border of the railway line means that it is frequently overrun by litter. As research has indicated that cities are subjected to continuous urban transformation (Landman, 2018; UN-Habitat, 2018; Madanipour, 2010), therefore a city space that does not adapt to accommodate the changing social needs results in unused or underutilised public open spaces, which further exacerbates deterioration (Rahmann and Jonas, 2011; Landman, 2016). Pieter Roos Park is often referenced in relation to the challenge of children access to the space (Middelmann, 2021; Dawson Middelmann, 2022; Mark Heywood, 2024AD), however another perspective the author would like to argue is that the social value and community needs of the park have changed over time, but the Park has not adapted. Landman, (2016) argues that in the global south, the way, space is consumed and the specific needs of the users, is more flexible and informal therefore this variability should be incorporated into the design and functioning of public spaces. As a result deterioration occurs due to a lack of adaptability of space to the changing needs to the new South African inner-city user (Landman, 2016). Furthermore, the Park is bordered by high traffic roads, which without some thoughtful integration with the surrounding suburbs, is not conducive for children to access the Park. Therefore, the park structurally is exclusive and contradictions of children and young men selling marijuana, people sleeping and religious groups conducting ceremonies has become part of the vibrancy of the park. See photos below.



Figure 57: Pieter Roos Park, Mature trees, children's play area, deteriorated ball court, no fencing and Sunday crowds (Author, 2024)



Figure 58: Joubert Park, historical tree, children's play area, maintenance, and Johannesburg Art Gallery (JAGs) (Author, 2024)



Figure 59: Deterioration and litter, Berea Point Park (Author, 2024)



Figure 60: Major Road Empire Road, bordering Pieter Roos Park (author, 2024)

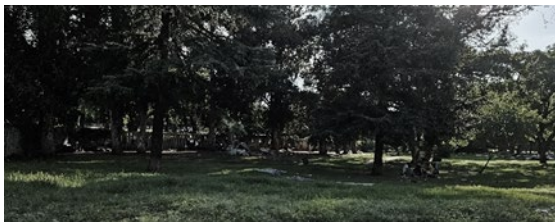


Figure 61: Unhoused in Pieter Roos Park at edge of park (author, 2024)

4.15.2 Privatisation

Privatisation is not isolated from deterioration but rather initiated by an avoidance or an attempt to control it (Landman, 2016; Madanipour, 2010). Carmona, (2010) contends privatization is both a cause of the decline of public space, and a consequence because of the desire to control private space, limiting access to the public realm. For. This isolation is often triggered by the under management of public spaces creating neglected or lost spaces, which are uncared for or underutilisation (Carmona, 2010; Trancik, 1986). Privatisation is comprised of corporate and institutional privatisation (Landman, 2016). An example of corporate privatisation is the Liberty Park north of Amieshoff Street in Braamfontein. The public open space is raised from the ground and separated from the street through a high wall, fencing, guarded entrances, and blocked street level access. The park, located at the foot of the Liberty offices has a water feature, indigenous planting, and public ablution facilities. The park is accessible during the day however not at night. Whereas Joubert Park which is similarly characterised by an exclusive design element of a fence, is accessible during the day and at night through a few broken panels along the fence is appropriated by a different public, the unhoused. It is an example of state privatisation and is characterised by a formal combination of exotic and indigenous trees, boasts a greenhouse, creche and clinic. Historically, the park did not discriminate in its accommodating of the unhoused whether white or black therefore it was a unifying space (Marais, 2013). The intention of privatisation is twofold, to mitigate the stigma associated with the public realm, which is it crime infested, dangerous, dirty, (CJMM, 2019; De Vries and Kotze, 2016; Landman, 2016, 2018)otze, 2016; Landman, 2016, 2018). Therefore through this form of exclusivity, the public realm becomes spaces that can once again be used and consumed by the public.



Figure 62: Liberty Park is walled, and access can only be obtained from the security desk, after clearance at the moment. As of 27 Feb it was still not open to the public. (author, 2024)



Figure 63: *Unsheltered in Joubert Park at edge of park* (author, 2024)



Figure 64: *Fencing at Joubert Park* (author, 2024)

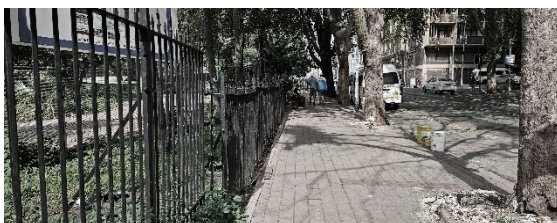


Figure 65: *Broken fencing panes Joubert Park* (author, 2024)



Figure 66: *Fencing at Berea Park* (author, 2024)

4.15.3 Celebration

Celebration refers to the symbolic and physical expression of meaning that is conferred on a public space (Landman, 2018; Trancik, 1986). Madanipour, (2010) argues that public spaces reflect the social complexities of the urban environment, which has transformed from historically enabling community entrenchment, to supporting individual disassociation as it is an element of the urban social fabric. The importance of parks to improving a city and the latent benefit to the surrounding communities is established (De Vries and Kotze, 2016; Landman and Nel, 2022). In the article by De Vries and Kotze, (2016), aptly titled *The revitalisation of parks and open spaces in downtown Johannesburg* is a record of all the financial investments made to revitalise the city's Parks (De Vries and Kotze, 2016). These urban regeneration projects have produced, spaces such as the End Street Park and the revamping of Tudhope Park, Berea in 2016. The End Street parks were initiated as part of the 2010 FIFA World Cup projects (De Vries and Kotze, 2016) and therefore signify a landmark of this social and historical event for the city. As a result its design is indicative of the time of its creation as it has spaces for children to play and active sports facilities. The urban regeneration of public parks is a demonstration of the positive attributes associated with public open space, such as promoting community and moderating social conflict (Ramos-Vidal and de la Ossa, 2023), contributions to urban resilience and mental wellbeing (Van Karnenbeek, 2021; Landman and Nel, 2022) and place making qualities that are aligned to the cultural value of the public realm (Sepe and Pitt, 2014; De Vries and Kotze, 2016). As the oldest park in the city and is therefore historically significant and culturally valuable (Marais, 2013; De Vries and Kotze, 2016). Once a display of the social, cultural, and moral values of the upper- and middle-class Johannesburg society, the Park was once an Edwardian promenade with horticultural displays, water fountains, a conservatory and lawned areas (Marais, 2013; Cane, 2019). However more recently its transformation has been influenced by the more imminent needs of the surrounding users, for safety, social programmes and enhancing the ecological value to the city (Blueprint and KH Landscape Architects, 2018). The Park now includes a substance abuse rehabilitation centre, a tea garden at the conservatory and an update of the children's play area.

Public space is designed to separate therefore what we find is that there is a pressure of spaces that historically are left for use by the unhoused.



Figure 67: *Left-over fence from recent upgrade of Tudhope Park, Berea (author, 2024)*



Figure 68: *Children using Wi-Fi at Rehabilitation centre at Joubert Park, (author, 2024)*



Figure 69: *Conservatory in Joubert Park is horticultural heritage (author, 2024)*



Figure 70: *Play area at Joubert Park (author, 2024)*

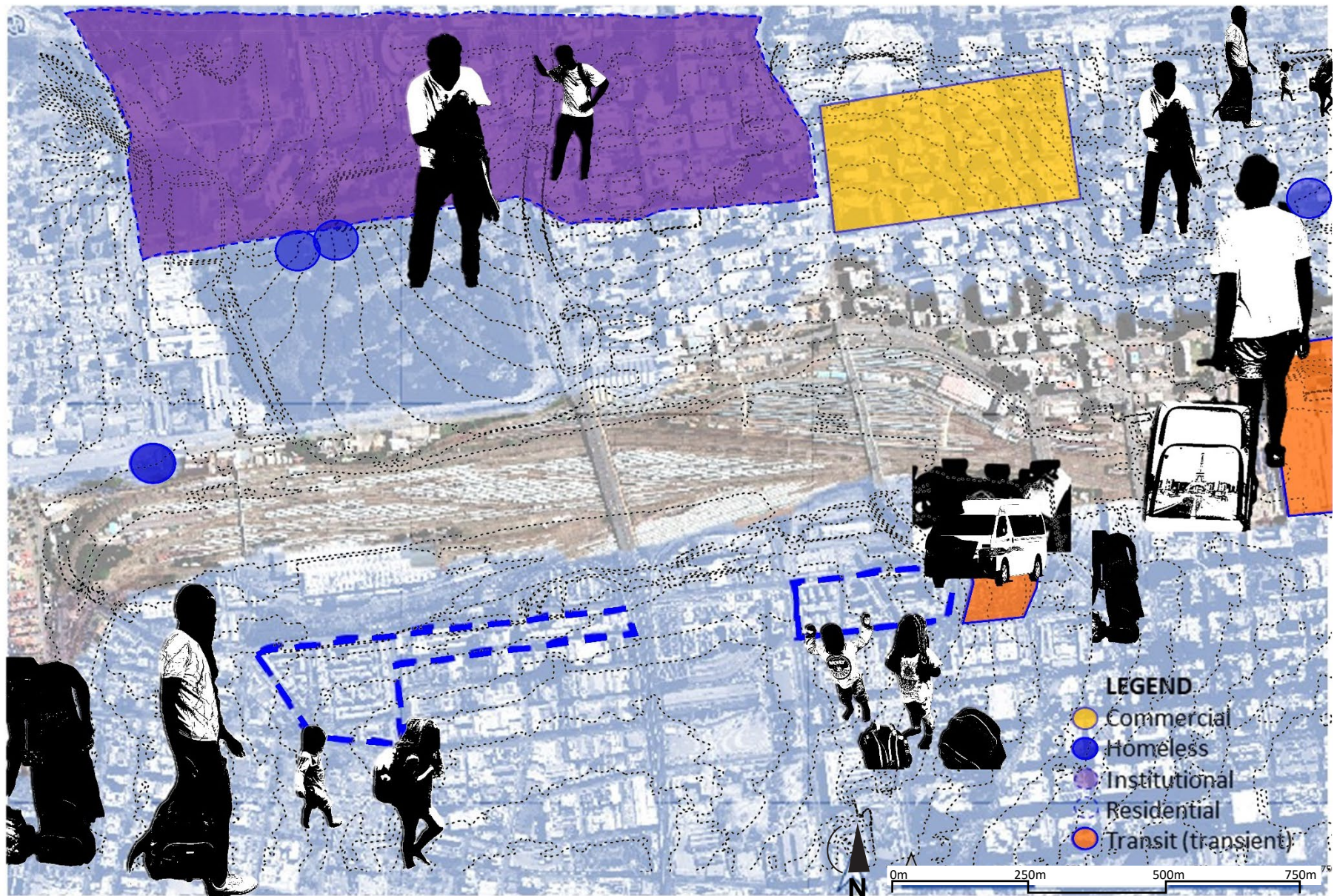


Figure 71: *The map above shows the local actors whose needs influenced the design decisions (author, 2024)*

Source: Aerial map adapted from Google earth accessed 28 January 2024, <https://earth.google.com/>

4.16 SITE ACTORS

The following users have been identified:

Students – Insta moment, jogging, cycling, chill, braai, toilets, group activities, sports.

Families – children's play area, group activities, braai, cycling, walking, toilets sports.

Office workers – sit, walk, rest, toilets, commercial, retail spaces.

Commuters – storage, eat, rest, toilets, souvenirs.

Displaced individuals – storage, sleeping, toilets.

Transient user – short term storage, rest, ablution facilities, retail.

4.17 LANDSCAPE URBANISM

Landscape Urbanism describes a disciplinary realignment currently underway in which landscape replaces architecture as the basic building block of contemporary urbanism. - Charles Waldheim, (2019)

Landscape urbanism is concerned with ecological integration as a cultural and social remedy to the urban environment (Charles Waldheim, 2006). Trancik, (1986) laments how urban voids have caused a decline in "meaningful" and "liveable" public realm. Therefore landscape urbanists aim to use landscape interventions to restore vigour to post-industrial cities (Armstrong, 2006). What has emerged is tangible projects, organisations and activists that employ and document different tactics to encourage new ideas for the re-use of these urban wastelands. These include, the experimental '*Shrinking Cities Projects*', (Careri, 2017; Stalker Collective, 1995), '*Posit-It City*', (La Varra, 2001), the '*Project Shrinking Cities*' from 2002 – 2006, Philipp Oswalt and Klaus Overmeyer (Armstrong, 2006). Therefore public spaces are used to strengthen social cohesion, build urban

resilience, support the local economy and livelihoods, trigger urban regeneration of the local area, entrepreneurship within the local community and attract investment into the urban neighbourhoods (Kaw, Lee and Wahba, 2020). Therefore when urban segregation exists, it negatively impacts the daily lives of people because it inhibits access to other social groups and amenities and how movement flows (Legeby, 2010).

As an additive the aesthetic appeal of greening strategies applied to urban voids, creates markets for urban regeneration (Montgomery, 2015; Berglund, 2020). Yet other researchers highlight the environmental injustice of unequal access to green amenities for urban users of different classes and races (Schwarz et al., 2018; Wolch et al., 2014). **Kremer, Hamstead and McPhearson, (2013)** claim that the reappropriation of urban voids as green spaces is the right mechanism for communities that are underserved of recreational space. **Rahmann and Jonas, (2011)** and **Schwarz, (2012)** argue that cities experiencing densification pressures, urban voids can be reprogrammed to reconnect the urban fabric, specifically using green spaces that allow for different levels of consumption. Furthermore, in shrinking cities repurposing urban voids through green strategies supports urban sustainability, through urban farming and parks which assists with rainwater retention and improving the ecology of cities (**Hwang and Lee, 2020; UN-Habitat, 2018**). In the projects *Re-Imagining a More Sustainable Cleveland* and *Philadelphia Green*, an abundance of urban voids was re-programmed as interconnected green spaces supporting urban agriculture and ultimately increased the values of adjacent land (Schwartz, 2008; Schwarz, 2012).

To explore how to resolve the spatial segregation that the trainyard causes, I turn to literature relating to spatial equity. Spatial equity is defined as the contribution of proximity and communities, to regional, community and urban parks (**Guo et al., 2024; Rad and Alimohammadi, 2024**). The advantage of urban parks is their ability to provide a transitional space for communities to interact, thereby reducing spatial separation (**Abdelmonem and McWhinney, 2015**). As transitional spaces urban park facilitates the expression of different cultural heritages, in a quality, accessible and safe environment. It is accepted that presence is related to improved safety due to the element of patrol (CJMM, 2019; JCPZ (Johannesburg City Parks and Zoo), 2019). The intention is to use an urban park as a democratic space (**Li et al., 2023; Moghimi, 2017**) that accommodates differences because it will be free from district

claims (Guo et al., 2024; Kramer, 2017), due to its location between Braamfontein and Newtown. The structure will integrate existing built form and social spaces and be accessible to both communities and the larger Johannesburg. Through trade and recreation the park will improve economic activity by giving market access to communities that were previously separated (Rad and Alimohammadi, 2024; Guo et al., 2024) It will be a stage for reconciliation that will activate public acceptance of the spatial structure in a pluralist city (Abdelmonem and McWhinney, 2015; Draus et al., 2021). For the surrounding residence, the urban park will introduce a recreational opportunity that has various social benefits such as stress relief, augmenting mental wellbeing, physical health and promoting social cohesion (Guo et al., 2024; Houlden et al., 2019). Attaining spatial equity is a crucial factor in sustainable urban development (Rad and Alimohammadi, 2024; UN-Habitat, 2012).

The critique of Landscape Urbanism is that it fails to contextualise the contemporary landscapes of necessity and survival (Bruno de Meulder and Shannon, 2010). Therefore a discussion on the displaced and public open space is imperative. Below is an excerpt of what could be termed our understanding of the

relationship between displacement and public spaces.

4.17.1 SWOT

A SWOT analysis was conducted to determine the strengths and opportunities that the proposal can use to build on to anticipate future threats and implement mitigatory actions to reduce the impact. Strengths and Weakness are associated with the inherent to the internal site environment and Opportunities and Constraints are refer to the district and regional level effects.

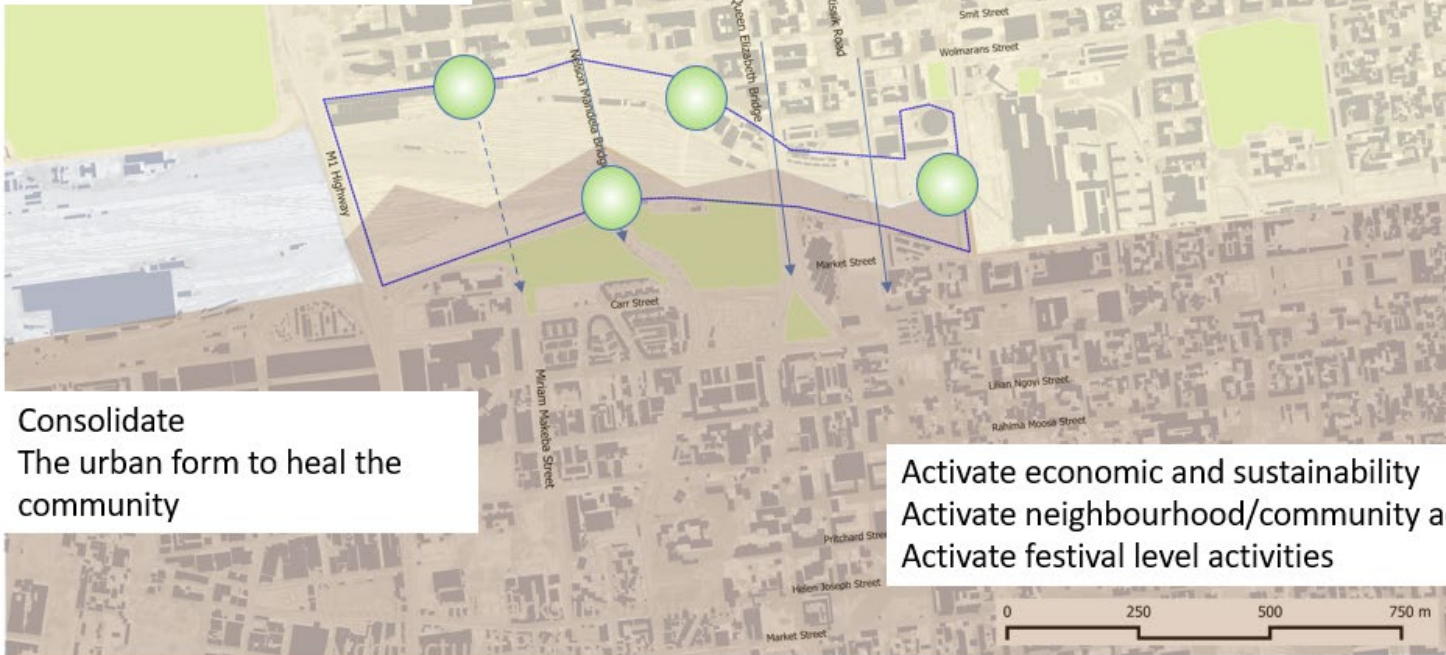
STRENGTHS No specific planning restrictions related to the site apart from its ownership by the Transnet authority. Proximity to Johannesburg's CBD. Scale of the site for an impactful response. Due to the grid layout of the surrounding neighbourhoods the site has innate lines to break up the site. Accessibility through numerous transit options. Well located at the door to the city through busses taxis and trains from within the city's and province. The heritage buildings are a valuable part of Newtown's urban character and must celebrated and respected as a built form language. These buildings further provide access to storytelling on the history of the early settlement of the city. Therefore we can create memorable places for users of the site by combining the rich architectural and cultural history of the site for a unique, attractive environment to enhance the residents and users' quality of life.	OPPORTUNITIES Location in the city of gold and proximity to major landmarks such as Nelson Mandela bridge. Goals of the COJ, Climate Action Plan 2021 for expanding green spaces, green modes of transport, introducing urban agriculture and obtaining alternative mode of water (CoJ, 2021). Pedestrian orientated surrounding street edges and building frontages can create a vibrant public realm which serves the adjacent residential areas and attracts visitors. UN-Habitat highlights that the densification of cities has resulted to unequal access to green spaces and therefore a large public open space could cater to different scales of activities (UN-Habitat, 2018). Opportunity to enliven street corners and frontages to enhance the pedestrian experience. Create memorable places for people
WEAKNESSES Limited access to the site only two entrances. The site has now been fenced off from public access therefore further reducing permeability at human-scale. Site splits up physically and visually two suburbs' linearly, in an east-west direction when circulation and flow moves in a north-south direction. Urban form split into different sections because of the roads. Abandoned and deteriorating buildings on the edge of the site. Width of the pedestrian routes along major roads such as Queen Elizabeth and Rissik traversing the site, discourage a safe and vibrant public realm.	CONSTRAINTS Very little vegetation for blocks in either direction to ameliorate ambient temperatures and reduce the prevalence of airbourne respiratory irritants caused by the heavy congestion in the area. There is no shade or shelter in the pedestrian environment. The site restrains accessibility with limited cross-streets. This creates bottleneck and congestion at intersections shared by pedestrians, reducing safety and mobility.

CONCEPT

Connect – access and mobility

Pedestrian, vehicular
circulation and accessibility or
edge became important
precedent consideration

Therefore, my presents
focused on circulation,
treatment of urban voids and
edge treatments that
connected/consolidated the
urban form, green roofs



Consolidate
The urban form to heal the
community

Activate economic and sustainability
Activate neighbourhood/community activities
Activate festival level activities

4.18 SYNTHESIS

Contemporary urban design is. It is primarily concerned with the quality of the public realm – both physical and socio-cultural – and the making (and managing) of meaningful ‘places’ for people to enjoy and use (Carmona and Tiesdell, 2007; Llewelyn-Davies, 2007). More recently the quest for more sustainable urban form has become a more explicit component (Loukaitou-Sideris, 1996; Bruno de Meulder and Shannon, 2010; Groth and Corijn, 2005; Charles Waldheim, 2006).

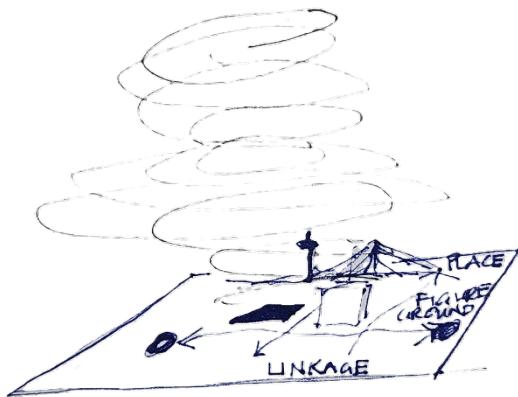


Figure 72: Synthesis processes using Trancik's theory
(Author, 2024)

4.18.1 Place Making

Urban design is about the creation of place, the theory articulates that place is created by using the cultural and human qualities of the space.

The proposal is to achieve integration and cohesiveness with the surrounding landscape and built environment.

It should demonstrate economic viability in its use and ongoing maintenance.

Creating a place that is identifiable and simultaneously strengthens the local character.

Therefore the proposal will not only celebrate context externally but will celebrate the site unique characteristic as an industrial infrastructure.

4.18.2 Form

4.18.3 Connections

Segregation between pedestrian and vehicle must be more pleasant.

Segregation between those on foot and cycling for safety.

Proposal must link to the existing routes.

The circulation and size of routes must encourage activities along the routes and support visual legibility.

The development must be cohesive in its relationship to the surrounding street grid, building blocks, open spaces, and buildings.

4.18.4 Sustainability

Solar aspect must be considered because the location is flat and there is no building shadow onto the site. Therefore urban heat island effect should be considered.

Wind should be considered for comfort of the participants in the space.

4.18.5 Edge treatments

The boundaries of the site need better definition and to be activated.

4.19 PRECEDENT STUDIES | Re-structure-ing Urban Voids

If space is social construct created by politics, then lost space is political statement (Lefebvre, 1976). To investigate what the statement says it is imperative to study examples of voids as they appear within the Urban Fabric. Projects were drawn from the fields of from urban design, architecture, and landscape architecture based on the projects contribution to re-structuring the urban fabric and redefining previous voids. The success of the regeneration of underutilized, brownfields to remarkable public parks is evident in projects such as the High Line in lower Manhattan (**B de Meulder and Shannon, 2010**). Lessor known examples of urban stitching include the Promenade Plantée, Paris which is the original Highline, the GA Ball Park in Cincinnati. An architectural example that reinterprets voids into an emotional construct is the World Trade Centre Memorial Park by Peter Walker. Below is a brief review of these a few post-industrial recovery projects in rapidly urbanizing areas. The intention is to determine principles to use open space as a physical framework to reintegrate the northern part of the inner-city to the south, linking neighbourhoods previously disconnected by railway lines.

4.19.1 GA Ballpark, Cincinnati

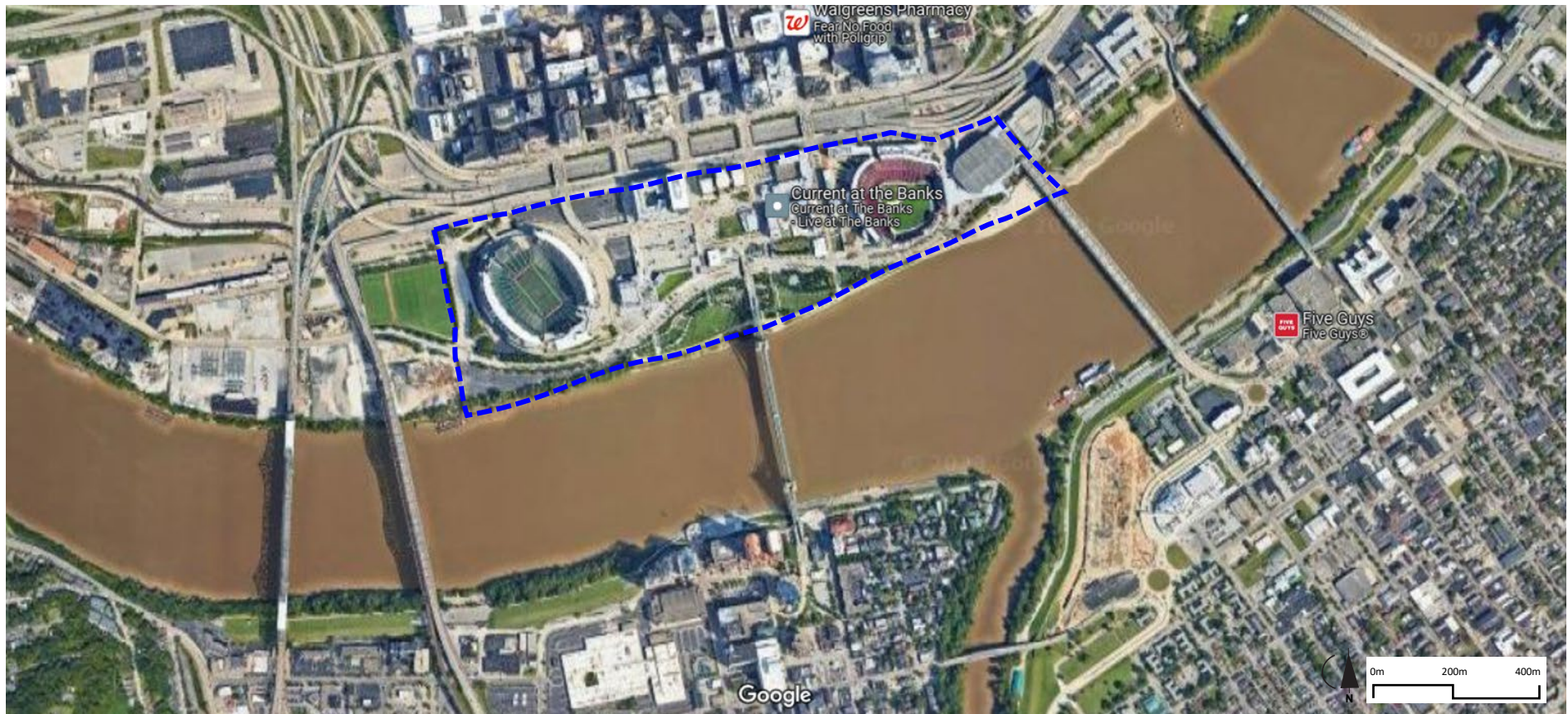


Figure 73: Google map, GA Ballpark site boundary

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 28 January 2024

Great American Ball Park masterplan intended to upgrade and transform an underutilized waterfront into mixed-use district with the stadium integrated into the CBD of Cincinnati. Furthermore, the development intended to activate and contribute to the downtown economy. The location of the site along the Ohio River which was once a geographical, linear barrier between the free northern states and the southern slave trading states. The site is a former freight rail centre for the western Americas, which ended up as an underutilized space, and therefore this is part of its identity.



Figure 74: Aerial rendering of Riverfront Master Plan (Urban Design Associate, 2025)

Source: <https://www.cnu.org/publicsquare/2024/04/16/how-cincinnati%E2%80%99s-riverfront-was-transformed> accessed 28 January 2024

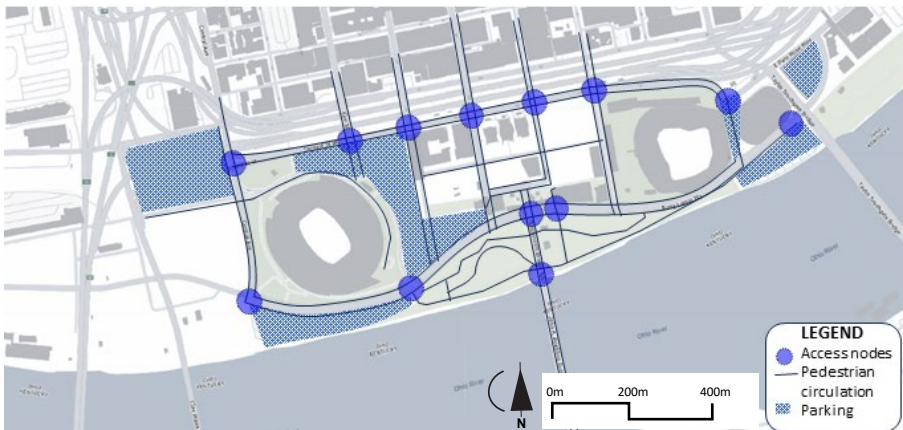


Figure 75: Pedestrian circulation, access nodes and parking (Author, 2023)

Source: Base map adapted from Google, <https://earth.google.com/> earth accessed 28 January 2024

Connectivity

Re-established the city grid to the river. Vehicular circulation within the development consists of a circular route comprised of one-ways overlaid with a grid of second order routes. Generously proportioned sidewalks cross the site. Therefore the development enables walkability.

Edge Treatments

Used vegetation to reduce the severity of the 4-lane road that disconnects the site from downtown. They took some lanes of the highway and used it for developable land. Circulation was reconfigured reducing the distance walked to get to the development and therefore improved pedestrian access.

Programming

The site has been re-programmed from a large parking structure to mixed-use development of residential, office, retail but the majority of the site was left as open space. Parking is limited to the edges of the two stadiums as well as beneath the flyovers and shuttle and light rail is used to transit within the project. The development has multiple vehicular and pedestrian access points along its perimeter giving the users options to access the site.

Neighbourhood compatibility

The designers used the Ball Parks and soccer stadium as attractions to foster legibility and memorability.



Figure 76: View from across the river onto the park (MSA, n.d.)

Source: <https://www.msaarch.com/projects/great-american-ball-park> accessed 28 January 2024

Location: Cincinnati, Ohio
Type: landscape
 Infrastructure
Size: 111 500sqm
Completion: 2003

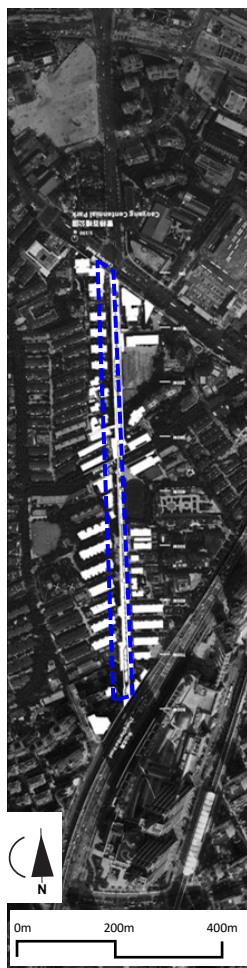


Figure 77: The Site, Caoyang Centennial Park (Author, 2024)

Source: Aerial adapted from Google earth <https://earth.google.com/> accessed 7 February 2024,

4.19.2 Caoyang Centennial, Shanghai

Once the branch line of Zhenru freight rail and later Caoyang Farmers' Market, the 1-kilometer-long and 10- to 15-meter-wide planning and linear void has been re-programmed as a multilevel, mixed-use, community centred, walkable park.

Edge Treatment

The site is physically separated from the areas connecting it by differently textured walls chosen by the adjacent eleven residential buildings inhabitants. The wall is broken up with private gates to give access for the adjacent users increasing security for the activities. Human level visibility is achieved with permeable steel fencing.

Connectivity

There is a visual connection to the project but limited physical connectivity to the site, however it improves safety for the park. Vegetation is used to limit the impact of wind movement due to elevation.

Legibility

The routes are not a singular path but are made interesting because it is not a straight pedestrian path. Changes from one-section to the next is evident by obvious structures or elements that assist with directionality.



Figure 78: Pedestrian and Access

Source: Base map adapted from Google earth <https://earth.google.com/> accessed 7 February 2024



Figure 79: Vehicular circulation

Source: Base map adapted from Google earth accessed, <https://earth.google.com/> 7 February 2024

Pedestrian circulation and access

The development is a multilevel pedestrian network of spaces and destinations that unfortunately do not connect to the surrounding neighbourhoods, apart from at the entrances. The site has no vehicular access and three pedestrian access points. The north access terminates onto a second order vehicular road and the southern entrance is the primary vehicular route connecting the Xincun district to the Shanghai CBD. Therefore with only private access users must walk out of the development and around the block to access any commercial or residential areas. Improvements could be made by providing direct access through perforations to the boundary wall of the development. There is no parking designated for this development and therefore any users can only be local or within walking distance from the medium density residential blocks.

Neighbourhood compatibility

The site enables the users to access nature and to walk several blocks without the need to negotiate traffic.

Location: 875 Caoyang Road, Caoyang Xincun Sub-district, Putuo District, Shanghai

Type: Landscape Infrastructure

Site Area: 10165 sqm

Built: 2021



All Photography: Runzi, Z and Junhao, L. (2022)

Source: Images www.ArchDaily.com accessed 7 February 2024

4.19.3 High Line, New York

The first train line in New York, once ran on this train track when it was called the West Side Elevated line carrying produce and other foods, the 1.5km long and with a width ranging from 9m to 15m (Friends of the Highline, 2000). the planning, linear void has been re-envisioned. The site has been re-programmed as an elevated garden that introduced over 100 000 plants improving the ecology of the area.

Location: New York

Type: Landscape Infrastructure

Former Use: Railway Line

Site Area: 1.5km

Completion: 2009 (first segment)

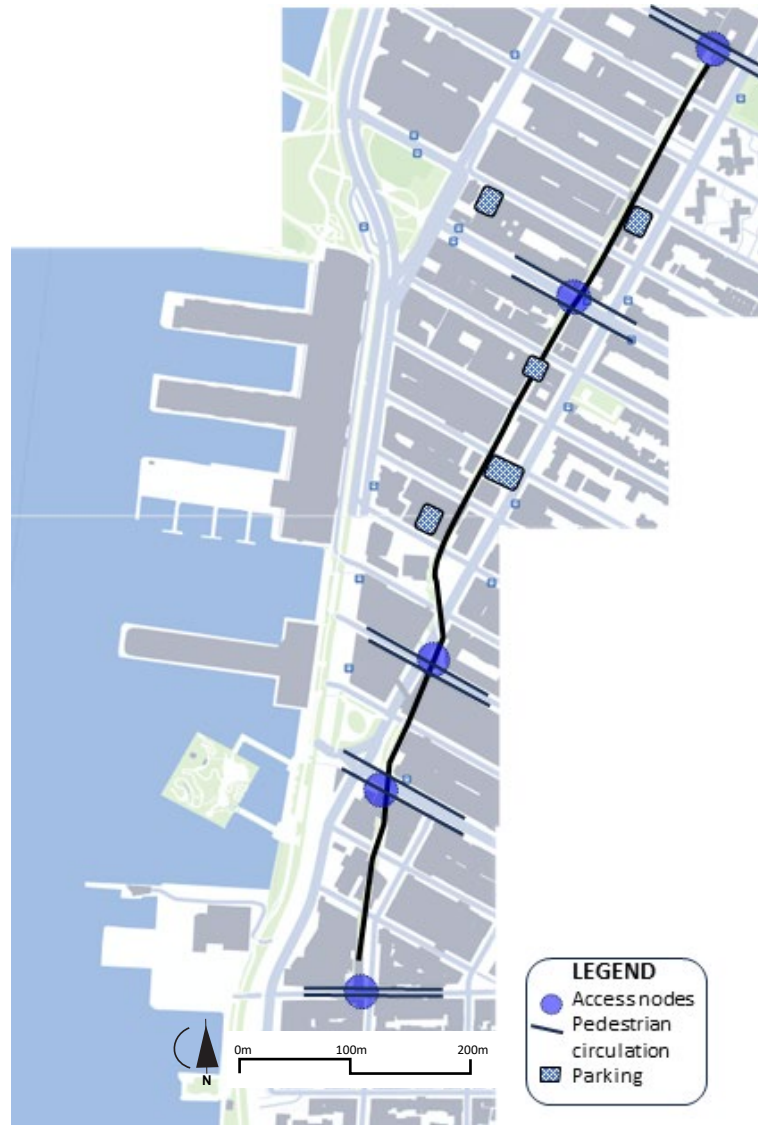
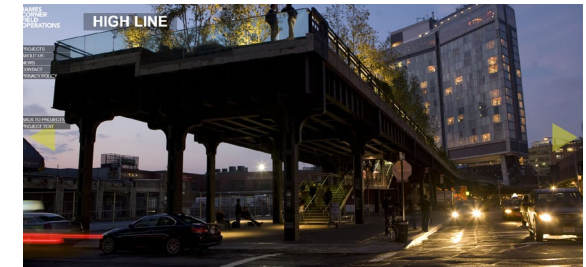


Figure 80: Highline, pedestrian circulation, access and parking (Author, 2023)

Source: Map adapted from, <https://earth.google.com/> accessed 13 November 2023

Circulation

The project has an elevated pedestrian network that connects to the street system and allow for walking into the surrounding residential and commercial areas. The site is not accessible by vehicles because it is elevated above the city's streets. A series of small parking lots are located within walking distance from the development those that are not in the vicinity encourage park and ride.



All photography: Friends of the Highline, (2000)

Source: www.thehighline.org accessed 08 February 2024



Figure 81: Building windows and facades orientated towards Highline

Source: www.thehighline.org accessed 08 February 2024

Connectivity and access

The development has five access points from street level. Three of them are elevators which allows for universal access and the other access points are stairs. Due to the nature of the project the access points create links to transit stations.

Legibility

Due to the elevated nature of the project there is constant eyes onto the park. The elevated walkway provides the option to walk between blocks with reduced exposure to on street traffic congestion. The site makes it easy to navigate from one part of the district to the other and is an opportunity for users to access nature.



Figure 82: Highline, Vehicular circulation (Author, 2023)

Source: Map adapted from, <https://earth.google.com/> accessed 13 November 2023

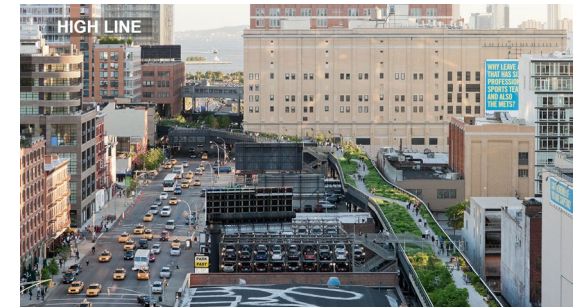


Figure 83: Paid parking structure adjacent to Highline for easy access

Source: www.thehighline.org accessed 08 February 2024



Figure 84: Highline, windows punctuate the continuous wall providing opportunities to observe street below

Source: www.thehighline.org accessed 08 February 2024

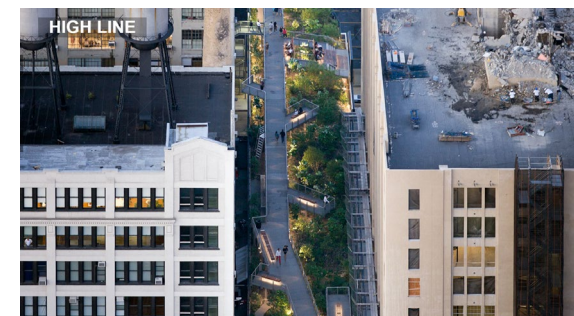


Figure 85: Project is continuous however not uniform because of the viewing platforms

Source: www.thehighline.org accessed 08 February 2024

4.19.4 World Trade Centre Liberty Park, New York

What was once the seat of global economic trade, became an urban scar of cultural significance. The footprint of the void of the two towers is spatialised as two pools at Liberty memorial park. The project aimed to give form to absence. In contrast where public infrastructure is abandoned and voids are formed, here, voids give form to loss and a representation of recovery, even at night.



Figure 86: Twin light towers

Source: All images

<https://www.officialworldtradecenter.com/en/local/learn-about-wtc/liberty-park.html> accessed 09 February 2023

Location: New York

Type: Landscape Infrastructure

Former Use: Abandoned former site of tragedy

Site Area: 32374.9sqm

Completion: 2015

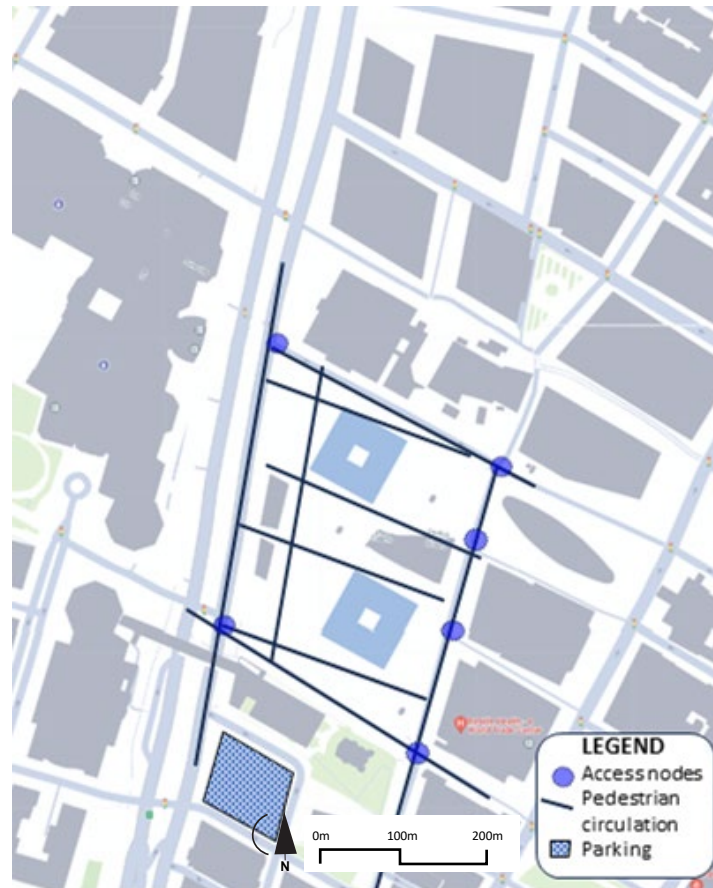


Figure 87: Pedestrian circulation

Source: Map adapted from, <https://earth.google.com/> accessed 15 November 2023

Edge Treatments

The development is pedestrian orientated and the site has implied edges and therefore can be accessed from the commercial and financial areas next to the site. The perimeter is permeable visually and physically. The adjacent buildings are connected to the site through crossways at intersections.

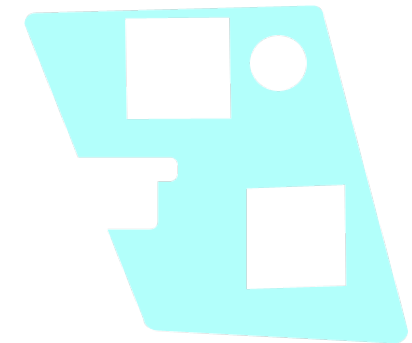


Figure 88: Figure ground of Liberty park



Figure 89: Footprint of buildings converted into pools
(Brown, n.d.)

Source: All images

<https://www.officialworldtradecenter.com/en/local/learn-about-wtc/liberty-park.html> accessed 09 February 2023



Figure 90: Spring and autumn colour change creates visual interest

Source: All images
<https://www.officialworldtradecenter.com/en/local/learn-about-wtc/liberty-park.html> accessed 09 February 2023



Figure 91: Pedestrian dominant development

Source: All images
<https://www.officialworldtradecenter.com/en/local/learn-about-wtc/liberty-park.html> accessed 09 February 2023



Figure 92: Vehicular circulation

Source: Map adapted from, <https://earth.google.com/> accessed 15 November 2023

Circulation

Vehicular circulation is limited to the perimeter of the site apart for designated vehicles that can access the site such as emergency, delivery and official vehicles. There is vehicular access to multiple arterial routes surrounding the site and direct access to the adjacent buildings. There is no direct parking on site or adjacent to the site however the closest parking is easily accessible by sidewalks or park and ride. The park around the memorail voids allow for a pedestrian dominant site.

Connectivity

There is no hierarchy of access however higher order route connectivity is possible from the western border of the site.

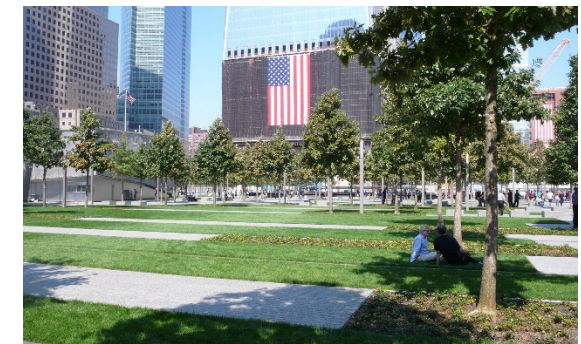


Figure 93: Boundaries permeable and site non-exclusive

Source: All images
<https://www.officialworldtradecenter.com/en/local/learn-about-wtc/liberty-park.html> accessed 09 February 2023

4.19.5 The Cultural Park for Children, Cairo

The Cultural Park for Children is in what was once a poor and derelict but culturally significant medieval suburb, Sayyida Zeinab in Cairo (Aga Khan Trust for Culture, 1992). Built on a former garden and preserved as such, it connects to other functions adjacent to the site such as libraries, studios, rooms, and opportunities to observe performing art.

Edge Treatments

The park's perimeter consists of low walls, penetrated by arched openings. The walls are used for seating and the boundary borders a main thoroughfare impermeable physically but visually is accessible.

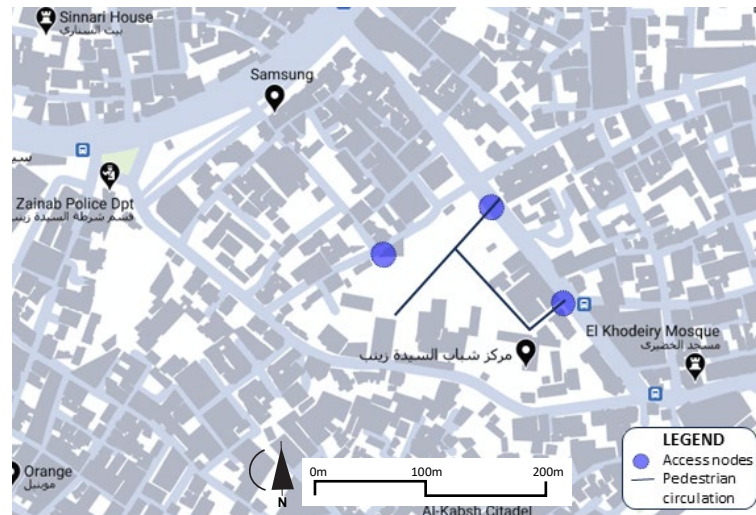


Figure 94: Pedestrian circulation and access (Author, 2023)

Source: Map adapted from, <https://earth.google.com/> accessed 07 February 2024



Figure 95: Vehicular circulation (Author, 2023)

Source: Map adapted from, <https://earth.google.com/> accessed 07 February 2024

Circulation

The main pedestrian thoroughfare intersects a secondary arterial lined with facilities built along the park wall such as studios and other small retailers. The main entrance connects to a primary vehicular connector to the city.

Neighbourhood compatibility

The project provides relief to the congested urban fabric and therefore renewed the community sense of ownership.

Type: Mixed-use infrastructure, with landscape predominant

Former Use: Public open space

Site Area: 12 500sqm

Completion: 1990



Figure 96: Impenetrable development boundary, Archnet (1990)

Source: <https://www.archnet.org/sites/775> accessed 09 February 2024

4.19.6 La Mexicana Park, Santa Fe

The development was an urban site excavated for fifty years as an open-air quarry and; a void approximately seventy meters deep, is the impact on the site. The site is important not only for its historical context but also for the edge city of Santa Fe, which has limited public space. The site was reprogrammed as 70% public open space and 30% as residential units. The green space is densely forested and provides sporting activities, and an amphitheatre is integrated into the topography.

Location: Santa Fe, Mexico

Type: Mixed-use infrastructure

Former Use: Open air quarry and waste area

Site Area: 400 000sqm

Completion: 2017

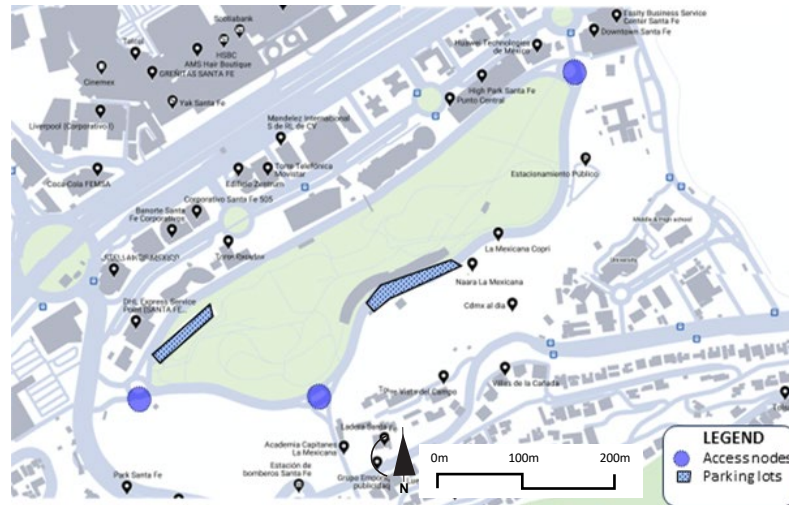


Figure 97: Access nodes and parking lots (Author, 2023)

Source: Map adapted from, <https://earth.google.com/> accessed 07 February 2024

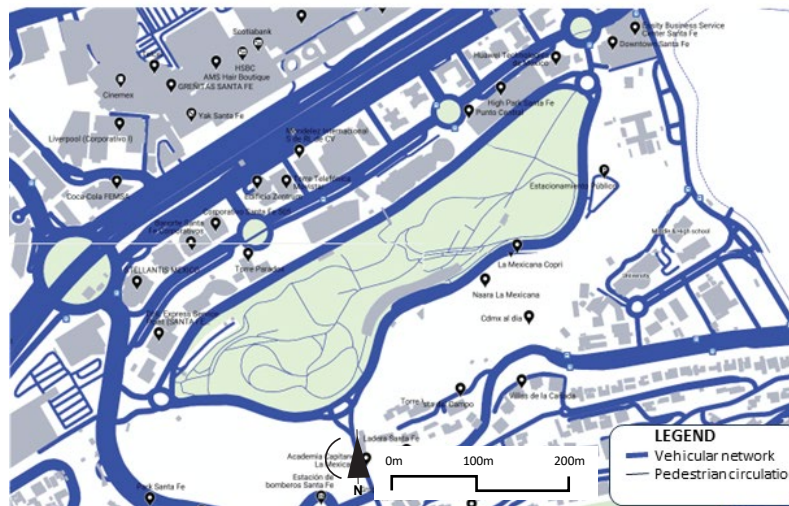


Figure 98: Vehicular and pedestrian circulation (Author, 2023)

Source: Map adapted from, <https://earth.google.com/> accessed 07 February 2024

Access and parking

The site has three access points. Due to the slope created by excavation on the northern border there is no access to the surrounding commercial and residential buildings. Parking is limited to the perimeter allowing for a pedestrian dominant development.

Vehicular and Pedestrian circulation

Circulation is limited to a ring road on the perimeter and a secondary circulation route. The pedestrian routes traverse the site and connect the users to the adjacent functions from the two entrances only.

Programming

The site has been programmed to childrens' playground, garden, a skatepark, and off-leash dog park, a gourmet terrace, 24m³ storm water storage lakes and taking advantage of the forms created by mining, an amphitheatre. 2500 trees, 70,000m² of grassland are introduced to repair the sites soil.



Figure 99: Aerial view of park at sunset showing

Source: <https://parquelamexicana.mx/en/la-mexicana/> accessed 07 February 2024

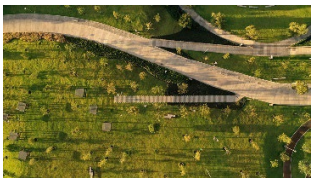


Figure 100: Quarry walls used to define different spaces and for function

Source: <https://parquelamexicana.mx/en/la-mexicana/> accessed 07 February 2024



Figure 101: Primary circulation route through the development

Source: <https://parquelamexicana.mx/en/la-mexicana/> accessed 07 February 2024



Figure 102: Park not limited to daylight hours usage by surrounding neighbourhoods

Source: <https://parquelamexicana.mx/en/la-mexicana/> accessed 07 February 2024



Figure 103: Secondary circulation within development and pathways wide enough to accommodate pedestrians and cyclists

Source: <https://parquelamexicana.mx/en/la-mexicana/> accessed 07 February 2024



Figure 104: Scale of the adjacent residential and mixed-use buildings relative to the.

Source: <https://parquelamexicana.mx/en/la-mexicana/> accessed 07 February 2024

4.19.7 Jellicoe harbour Silo Park and North Wharf Promenade, Auckland

Located on an old cement factory, Jellicoe Harbour was an architectural urban void.

Programming

It is now an engaging space with a diversity of uses. North Wharf Promenade is now a pedestrian and cycle promenade from which to witness and experience the coexisting waterfront industries. Silo Park links North Wharf promenade with marine industries to its west, however it used to be an in-between space between the wharf and the silos.

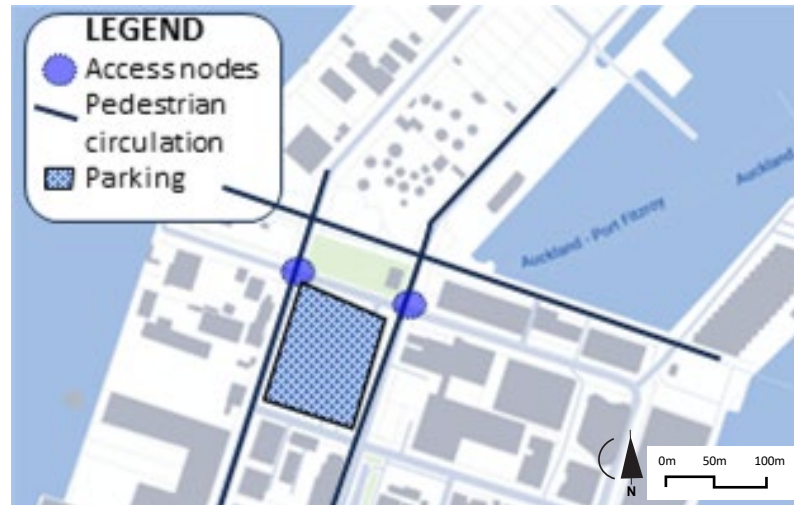


Figure 105: Pedestrian circulation, access nodes and parking

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 28 January 2024



Figure 106: Vehicular circulation

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 28 January 2024



Figure 107: Multi-programmed site. Historical significance celebrated

Source: <https://landezine.com/north-wharf-promenade-by-taylor-cullity-lethlean> accessed 07 February 2024



Figure 108: Pedestrian dominant development, Devitt, S (n. d.)

Source: <https://landezine.com/north-wharf-promenade-by-taylor-cullity-lethlean> accessed 07 February 2024

Location: Auckland, Australia

Type: Mixed-use infrastructure

Former Use: Cement factory and wharf

Site Area: 37000sqm

Completion: 2017

Circulation

The park is a pedestrian boulevard with bicycle lanes to encourage human scale mobility.

Neighbourhood compatibility

Indigenous planting and sub-tropical planting with crate and concrete block seating references the history of the wharf. The edges of the site are tilted corners to resemble the bunds that used to prevent industrial spillage from the silos. This gives the site historical and cultural significance. The silo which was earmarked to be removed has now become a landmark.

Edge treatment

The declaimed fill which formed the edge of the wharf has now been removed.



Figure 109: Aerial view of the development

Source: <https://landezine.com/north-wharf-promenade-by-taylor-cullity-lethlean> accessed 07 February 2024

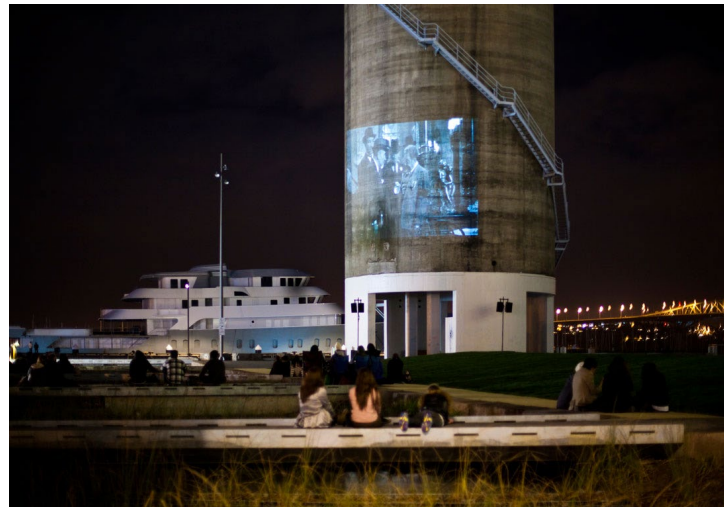


Figure 110: Silo reused as screen

Source: <https://landezine.com/north-wharf-promenade-by-taylor-cullity-lethlean> accessed 07 February 2024

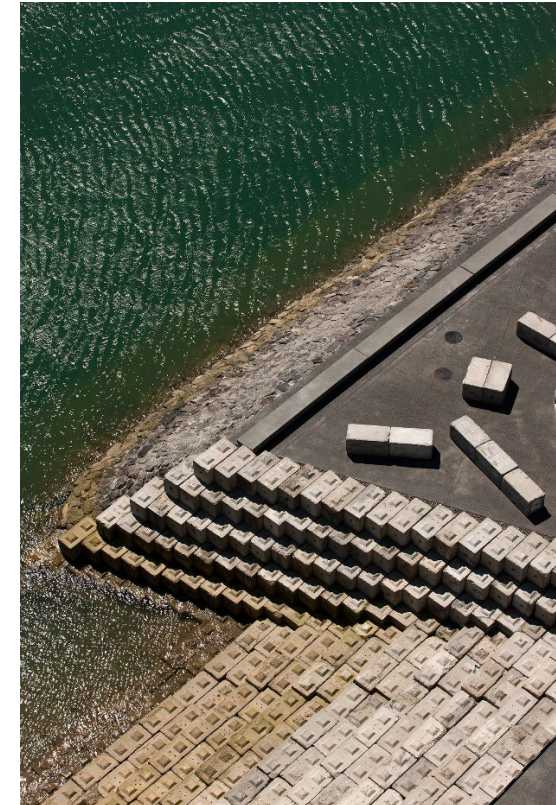


Figure 111: Rain stairs to channel storm water to the wharf. All images: Devitt, S (n.d.)

Source: <https://landezine.com/north-wharf-promenade-by-taylor-cullity-lethlean> accessed 07 February 2024

Green transport

The road was narrowed to introduce a tram system to prioritise pedestrian movement.

4.19.8 Freedom Park, Tshwane

Tshwane is synonymous with three quartzite escarpments in an east west direction. The location of the development was chosen because of its elevation however it also formed part of a geographical and political void within the landscape. It is located adjacent to a former rail workers compound. The site has geological and horticultural heritage because of the unique environment created by its elevation. The design is one of the few landscapes that integrates African landscape tradition. The development is best experienced on foot as it consists of a pedestrian walkway meandering up the slope to three foyes.

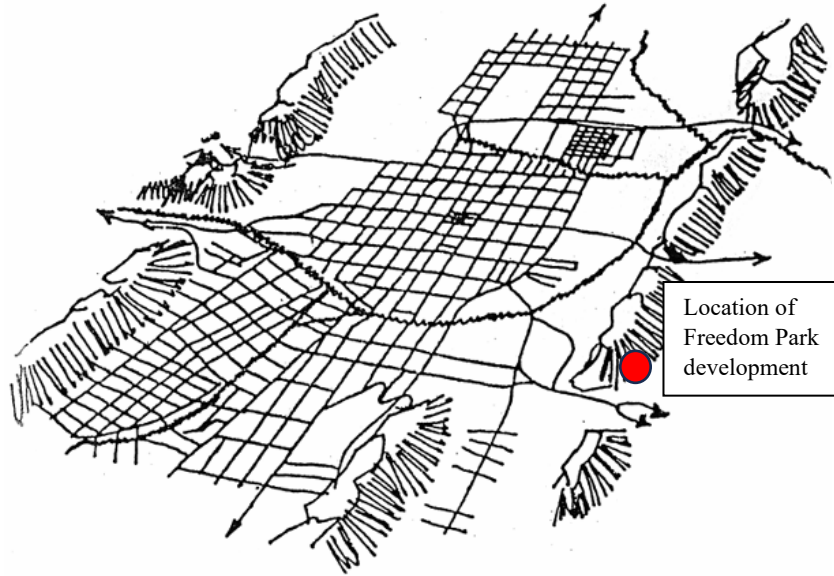


Figure 112: Aerial diagram of quartzite escarpments bisecting Pretoria
Source: Labuschagne, P, 2010

Connectivity

The site has no relationship with the existing urban grid and is bordered by a high wall and there is no connection to local context and the scale of the buildings is incongruent to the neighbourhood. Access is only available through one gate on the northern border and the southern point leads directly to another historically significant monument.

Circulation

The parking is limited to a hub and the development can be experienced through a circular vehicular route. The project is however pedestrian dominant. The project materials and vegetation were considered in cooperation with local traditional healers. The community's perspective is lacking from the project and therefore the project is viewed as separate from its surrounds.

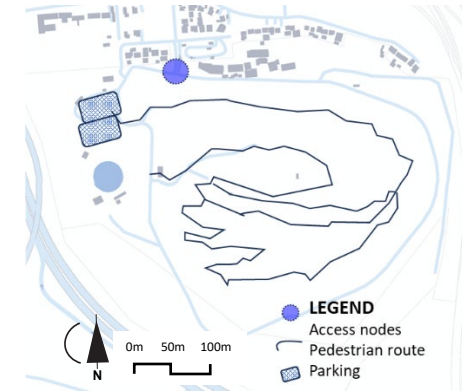


Figure 113: Access, pedestrian route and parking

Source: Aerial map adapted from Google earth,
<https://earth.google.com/> accessed 28 January 2024

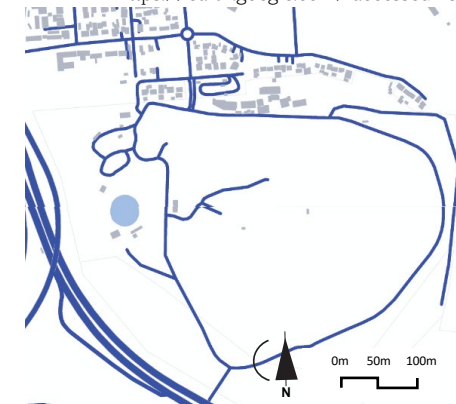


Figure 114: Vehicular circulation limited to periphery

Source: Aerial map adapted from Google earth,
<https://earth.google.com/> accessed 28 January 2024

Location: Pretoria, South Africa
Type: Landscape and Museum
Former Use: Quartzite hill
Site Area: 520000sqm
Completion: 2007

4.20 PRECEDENT STUDIES | Previous projects on site

The Johannesburg Development Agency (JDA) recognized the need for a large scale urban open space to contribute to a sustainable urban environment and to cater to the urban population. Eight proposals were submitted for the railway park however the researcher could only find three. They are evaluated below for strengths and weaknesses.

4.20.1 Inner Park, Railway Tracks | Cohen and Garson Architects

The proposal from Cohen-Garson called for the repurposing of the land that the railway occupies.

Strengths

The strength of the proposal lies in the defined edge which is space for development of built-form.

The proposal called for large scale open spaces with varying textures of vegetation.

Weaknesses

Seemingly no pedestrian link between existing roads that cross the site and the proposal.

The proposal required the removal of existing lines and the rehabilitation and not celebration of site conditions.

Heritage and architectural buildings on the north east of site, such as the rotunda are proposed to be demolished.

The site does not seem to have any space for intimate engagements and small groups.

Missed opportunity to connect the Inner City Park to the Enoch Sontong cemetery.



Figure 115: *Proposal Railway Park, Garson and Cohen (2010), MMA*

Source: www.mmastudio.co.za accessed 02 November 2024)

4.20.2 Johannesburg Inner City Public Park | Co-Arc International

The proposal by Co-Arc sought to resolve the spatial containment experienced by the city caused by high order roads, which separates the city into neighbourhoods and districts. The site in this proposal is park 3.

Strengths

The proposal called for interconnecting the existing public parks including the sporting facilities and brownfields south of the city. This would have increased legibility and established human centredness to the urban realm.

Each section of the park was well articulated introducing legibility to the urban fabric and addressing the issue of limited urban open space for urban population.

The edges are well defined with developable land introduced as a boundary to frame the park.

Inclusion of the sporting facilities would make the stadium more than a match day fixture but landmarks for the city.

The proposal introduced incremental development of future urban parks which the others didn't.

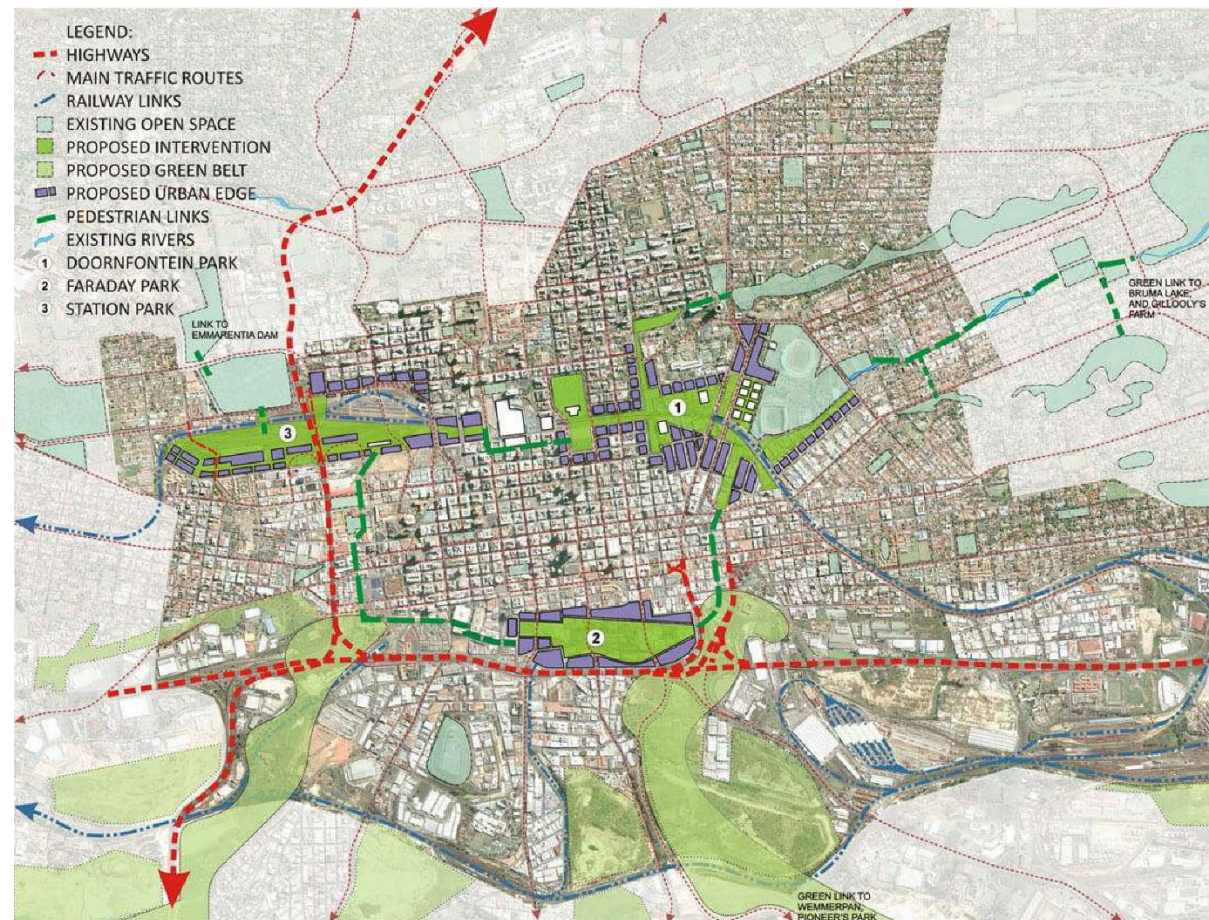


Figure 116: Co-Arc International Proposal, Co-Arc International, (2010)

Source: www.co-arc.com accessed 02 November 2024

Weaknesses

Open space was compromised for built-form when there are already a large number of utilised buildings within the city but not any large scale public parks except Joubert Park and the Art Museum.

Considering the scale of the railway the only access that was introduced was where there are existing roads which is not enough considering the volume of pedestrian that walk from inner city and the transit hubs to Braamfontein and the University.

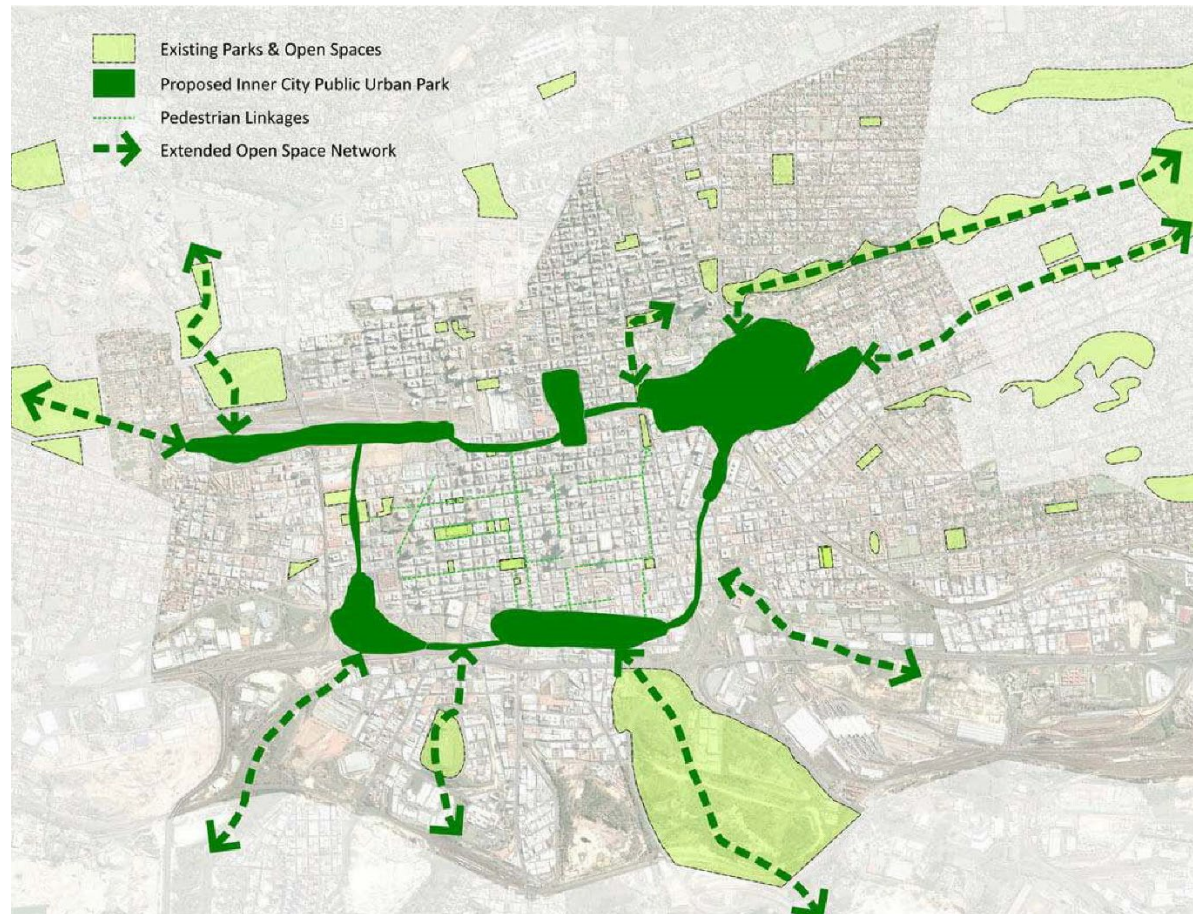


Figure 117: Interconnected open space network, Co-Arc International, (2010)

Source: www.co-arc.com accessed 02 November 2024

4.20.3 Johannesburg Inner City Park | Newtown Landscape Architects

This proposal was the most interesting in that it didn't introduce a single layer of public open space but introduced a series of pedestrian orientated parklets crossing over the railway. Which gave space for the continued operation of the train yard.

Strengths

The parklets offer comfortable open space alternatives for pedestrians to use to traverse the site.

The operation of the rail yard is left uninterrupted.

Defined boundaries to the pedestrian connection which would improve usage of some existing and due to the elevated nature the site offer more legibility as they separate traffic from pedestrian.

Weakness

Not enough built form proposed which seems to leave more dead spaces along the railway. This was a missed opportunity.

Enoch Sontonga railway not incorporated into the sequence, which is another missed opportunity.

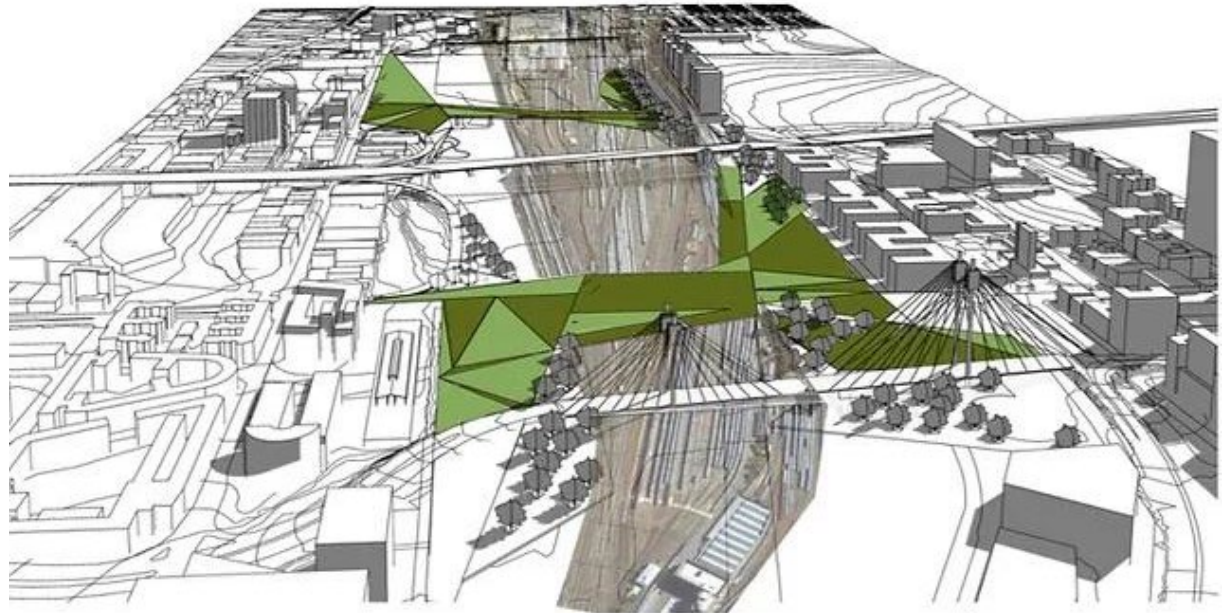


Figure 118: *Newtown Landscape Architects Proposed Connecting Parklets, NLA, (2010)*

Source: www.newla.co.za accessed 02 November 2024

4.21 PRECEDENT STUDIES | Large Scale urban Parks

4.21.1 Klyde Warren Park, Dallas Texas, USA - The Office of James Burnett

The park is a 0.2km² suspended Urban Park, over the 8-lane Woodall Rodgers highway, which has been a barrier between the city and the downtown Dallas suburbs and the densely populated northern residential areas. The 0.2 km², 67m x 366m wide park has allowed the highway to remain operational and created social, physical connectivity and ecological permeability with limited prohibitive edges. The structure is made from post-tensioned concrete box beams that span 30.2meters. The beams are deep enough to support the root balls and the weight of the medium sized trees.

Environmental strategy

Storm water is captured for re-use through an underground storage and plants are irrigated by drip-irrigation. Furthermore, the trees introduced will assist with carbon sequestration of 8,000kg of carbon dioxide. Local economic activity was introduced through roadside and mobile restaurants and various spaces for large scale events.



Figure 119: Reclamation of the space above 8-lane highway, Burnett, J (2013).

Source: <https://thebotanicaltexan.com/2021/04/klyde-warren-park-parks-of-texas.html> accessed 21 October 2024

Accessibility

The park elevation is at the same level as the adjacent trees to ensure accessibility and the park has been voted highly inclusive by various users with different mobility challenges.

4.21.2 Central Park, Manhattan, New York, USA Frederick Olmstead

Is one of the most well-known urban parks occupies 3.4km² is bordered by 50 streets along the longitudinal length.

Circulation

The park has a hierarchy of entrances and pedestrian networks to aid in legibility. It increases safety by separating motorised mobility from the pedestrian. Originally the three levels of movement were designed for the pedestrian, the carriage and a bridle path.

Neighbourhood compatibility

The park was developed as a response to the increasing urban and diverse population who were creating private, gated open spaces. The plan by the designers was to resolve the tear in the social fabric by designing a public space available to everyone. The park became a place for different cultural groups to honour their heroes or characters of significance.

Edge treatment

The site has a defined edge through built form which clearly delineates the boundary. The park itself is bordered by a wrought iron steel fence providing permeability with a few gates providing access to the site.



Figure 120: Central Park, Extell (2022)

Source: <https://robbreport.com/shelter/homes-for-sale/central-park-tower-penthouse-closes-115-million-1235661595/> accessed 14 October 2024

Environmental strategy

The Park was also designed to originally secure the water supply to the city. Now the reservoirs are used as water features and a running track circles the former water storage facilities. The park with its full coverage of mature trees provides a welcome contrast to the hard and rigid city grid.

4.21.3 OCT OH BAY Retail park, Shenzhen, China Laguarda. Low Architects

Consists of multiple pebble-shaped, three-story 0,5km² park arranged organically along an elaborate waterfront, facing south.

Connectivity

These organic forms harmonize with nature on one side while multiple penetrations along the north side address the urban context. The porous nature of the project naturally draws visitors from the waterfront into the open-air retail environment, integrating shopping, food, and beverage venues. The collection of mixed uses is sequenced into zones connected via generously proportioned pedestrian paths. The undulating pedestrian system connects all the volumes of the site together and nature to urban life. The project provides access to the subway station on the north-east corner of the site to the waterfront and several major urban roads in the central area of Bao' An.

Edge treatment

The edge of the park is bordered by 11-storey terraced office blocks to create a definite edge. This is linked to the site by 3-storey retail spaces.



Figure 121: *Undulating pedestrian and building form of the retail park resulting in a seamless transition between landscape and built form*

Source: www.archdaily.com accessed 14 October 2024

Environmental Strategy

Due to the 3-storey retail buildings that support the park structure, three levels of pedestrian networks cross and overhang each other to provide respite from the summer heat and the green roofs funnel breezes providing shade and simultaneously cooling the site. Different vegetation environments are catered for and used as points of attraction.

4.21.4 Principles synthesized

All the projects resulted in socio-economic activation of the surrounding sites. They also highlight how large urban parks are integral to address the severe lack of public open spaces in urban environments to cater to the rapid and increasing number of urban dwellers (Young, 2012; Landman, 2018). They also highlight how large public parks are a strategic solution for sustainable development to make cities more liveable (Young, 2012; Bruno de Meulder and Shannon, 2010; Locke et al., 2019). Furthermore, apart from providing much needed amenity, parks add to the attractiveness of the city.

Principle 1: Neighbourhood Compatibility

Neighbourhood compatibility is achieved through built-form and vegetation. Built-forms activities encourage suburban level economic and social activities. Furthermore, built structures were used as a building language for urban form cohesion. Vegetation is used to create and support indigenous plant ecology and to mitigate the effects of local climatic conditions.

Principle 2: Pedestrian Friendly Design

Raised pedestrian networks, provide an opportunity to navigate the urban environment while avoiding traffic and congestion. They are used in previous projects to decouple mobility from cars and mass transit and to aid more sustainable movement patterns. They provide a walkable public realm, which provides places for relaxation, leisure and play. They further provide an opportunity to connect with nature, to promote wellbeing and social cohesion, with the added benefit of remarkable views of the city.

Principle 3: Connectivity

Spatial connection is attained through creating physical and visual links. Human-centric design is also used to enable seamless movement between different activities and functions on the sites. Designed spaces, forms and amenities were designed to be simple, flexible and accessible to encourage local use and attract district wide users.

Principle 4: Legibility

Legibility is about creating neighbourhoods and districts that are easy to navigate and are practical. This is achieved through a clear hierarchy of streets, spaces, use and scale. Spaces for intimate uses are smaller than high volume spaces. Entrances are in accordance with the type of urban function and area they connect to.

The street design and layout must be familiar and meet the needs of the surrounding community. Due to the elevation of some project's wayfinding and orientation due to the ease of identifying landmarks is understandable.

Principle 5: Edge activation

Precedent studies revealed that the definition of edges is important to prevent further lack of spatial definition. Edges can be defined by built form and to protect the encroachment of development onto

park spaces. Due to the height difference different solutions should be used to reduce the visual impact of the suspended structure. Soft and hard edges in the form of retaining walls and built form can be used. Furthermore to reduce the wind effects because of the suspended platform, vegetation can be used to diffuse the speed. Therefore the park should be formed into building structures which provide active street frontage along the surrounding streets and acts as support for the suspended structure.

CHAPTER 5: URBAN DESIGN FRAMEWORK

The time may soon come when planners, designers, developers, and others will recognize and act on the simple notion that the spaces between buildings are as important to the life of the urban man as the buildings themselves –
Serge Chermayeff and Christopher Alexander

CHAPTER SUMMARY

Chapter five concludes with the design proposal, and detailed sections and suggestions on the urban management of the site after development.

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 28 January 2024.

The word 'design' from Middle English means to *outline, indicate, mean* and from there *designer* means to *designate* in Anglo-French (Mirriam Webster, 2024). Therefore design is to assign meaning to and designers' indicate, show or appoint meaning to space.

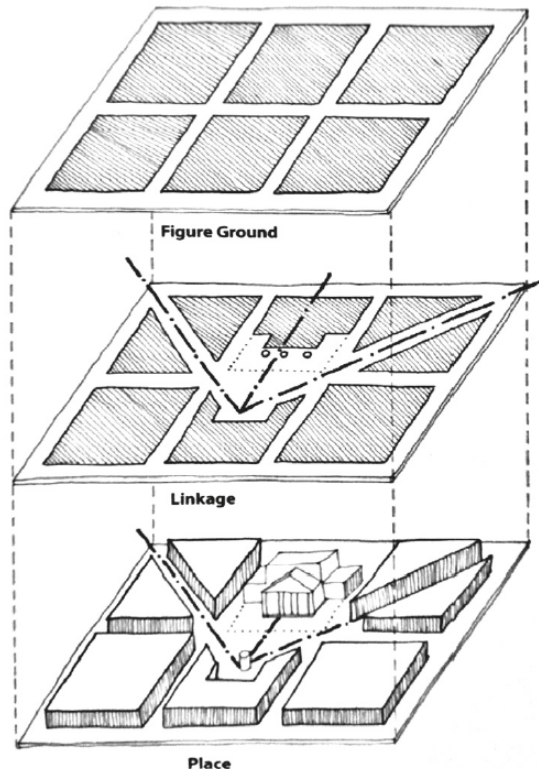


Figure 122: *Diagram of urban design theories*
Source: Trancik, 1986: 98

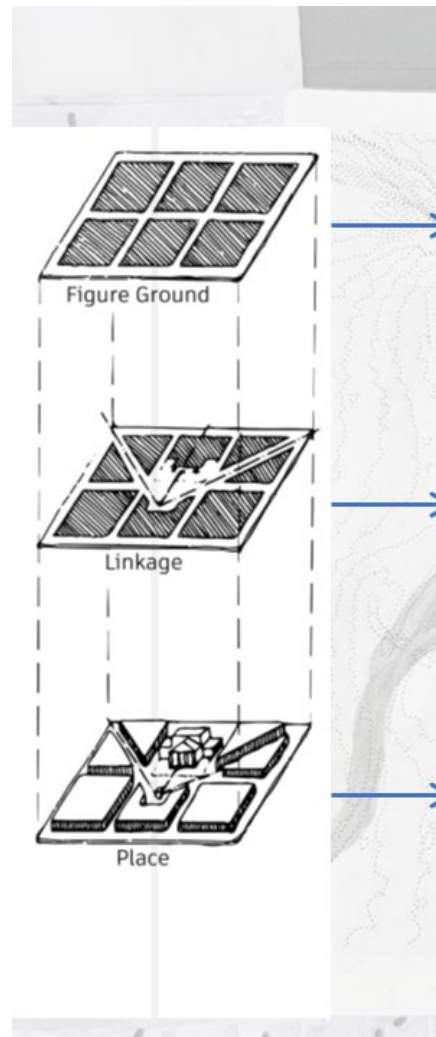
The proposal is for the use of decaying public infrastructure into multi-functional green infrastructure. The recycling or re-use of space into an urban green void that reconciles space. The reclamation of a semi-functional brownfield site into functional public space. Design uses public realm experience around the 'found' conditions. The site is now used to experience the train yard and to reclaim decaying portions of it as part of a multilevel functional public park and residential and commercial park.

Kevin Lynch, author of "The Image of the City", describes cities as a conglomeration of overlapping individual images held by citizens (Lynch, 1964). These images can be ordered according to five ordering elements, paths, edges districts, nodes, and landmarks. He further defines "edges" as linear elements that the observer differentiates from "paths", because they are viewed as borders or boundaries (Lynch, 1964). They indicate a change between one district and another, a "seam" along which one district and another are linked or joined or a break in continuity of the urban fabric (Lynch, 1964). Similarly, Trancik, describes linear vacant spaces as urban voids, that bisect districts, create edges, and connect places (Trancik, 1986). He further relates these linear spatial organisers with natural features that become formal or informal greenways slicing the city.

Why: Address the spatial fissure caused by the railway line. Secondly, for the volume of people in the city there is a shortage of public open space due to securitisation of space. (privatisation + safety concerns). Failure of public management, reduced investment into public open space or lower social value of public open space.

Layering is used to synthesize the information gathered thus far. Therefore the design is expanded into three layers, massing, lines and meaning. These would be aligned to Tranciks', (1986) spatial theories of solids and voids from the figure ground, linkage theory from the linear that connects and place theory, which is the specific context that gives identity as seen in Figure 117: Diagram of urban design theories

The urban design theories of urban design have been used to synthesize and develop a UDF and conceptual layout, circulation route and the form of the suspended park.



Methodology

FORM

(urban fabric, pattern, spatial structure)

CONNECTIONS

(linkages between destinations and points, Visual structure)

MEANING

(Historical, cultural and social value)

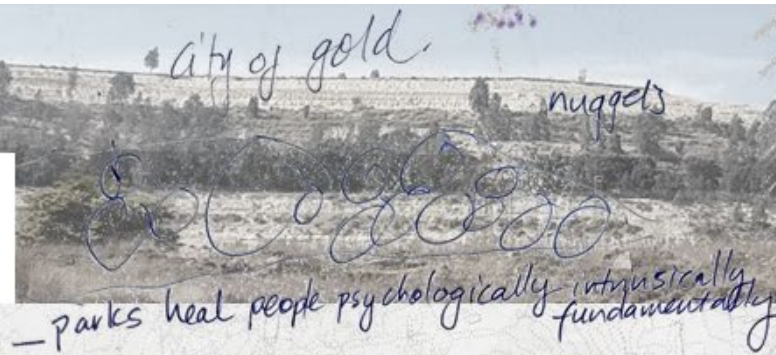
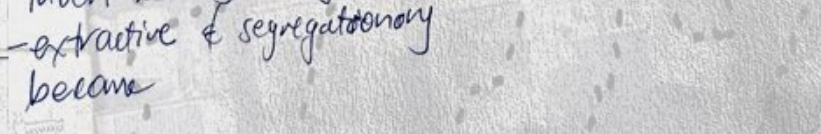
Figure 123: *Diagram of urban design theories*

Source: Trancik, 1986: 98

Concept: Form

5.1 MASSING

Trancik, (1986) initially proposes five types of voids based on the figure ground, however voids created by linear infrastructure such as roads and train routes are not independently defined. However voids propelled by planning laws and defined by edge distinguishing non-repetitive buildings that slice through districts, contrasting with urban block forms are termed linear voids. The site with its organic shape references linear voids related to natural features such as rivers and waterfronts (Trancik, 1986). To recreate the form and restructure the void, the sites history was used as a source.

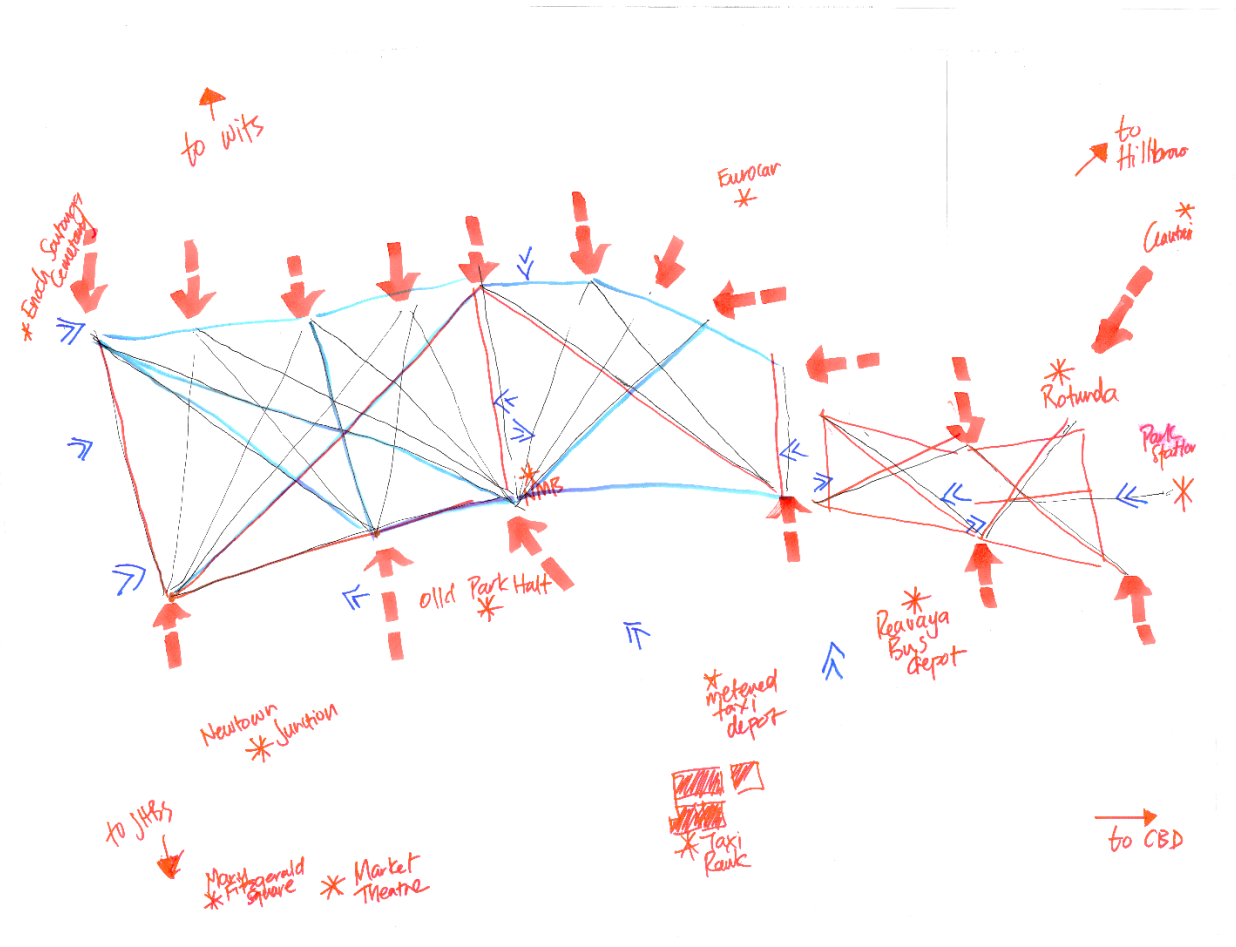


tendrils to grow from gold
invert mining tailings
extractive & segregationary
become

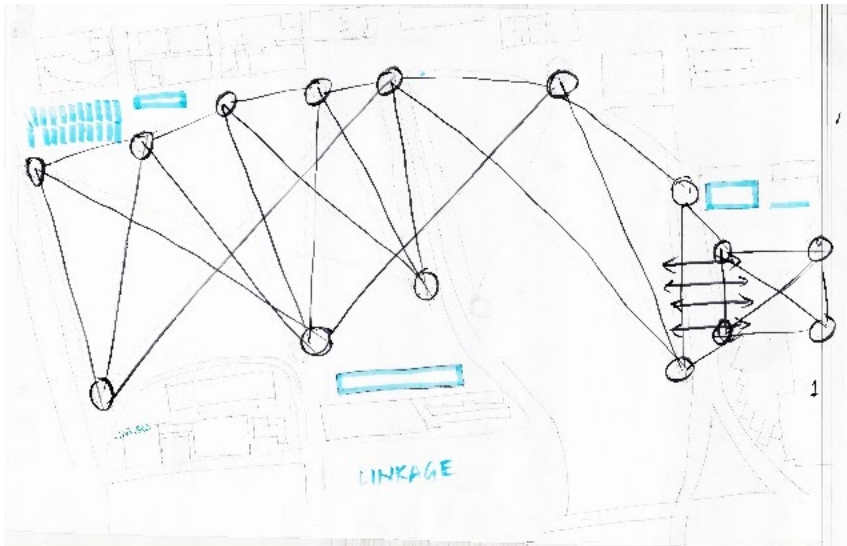
5.2 LINES

Linkage theory has always been synonymous with urban form because it coincides with circulation and connections. In the proposal the theory is used to articulate circulation within the design and to make connections between different parts of the neighbouring districts. It provided a backdrop to structure the different social and recreational spaces, thereby giving the proposal form.

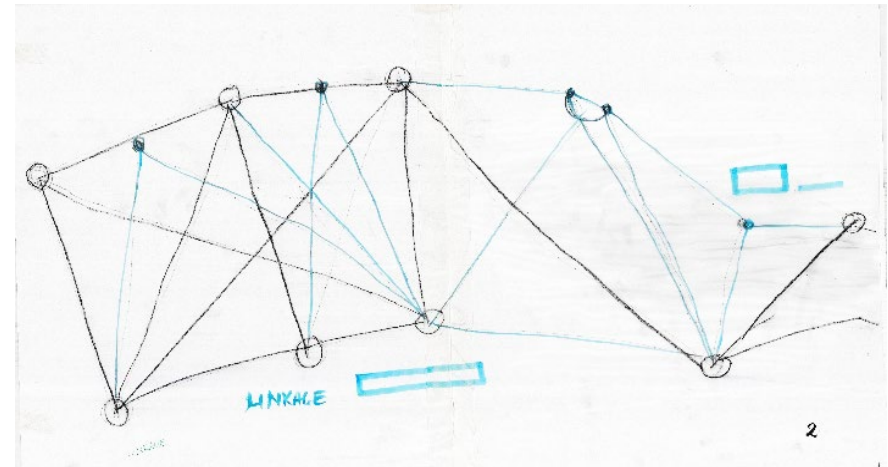
Based on creating the connections to the surrounding neighbourhoods, route hierarchys were determined based on built-form and important landmarks such as transit hubs, landmarks and primary pedestrian feeders to the site. The intensity of activities at the edges of the site and the concentration of people at certain nodes was also considered. Red and subsequently Black routes are higher order and connect high densities support residential, retail and multiple uses and users. Therefore, high intensity activities. Blue routes connect residential areas and support medium intensity activities. Grey routes are walkthroughs to connect to the other side and support low intensity activities.



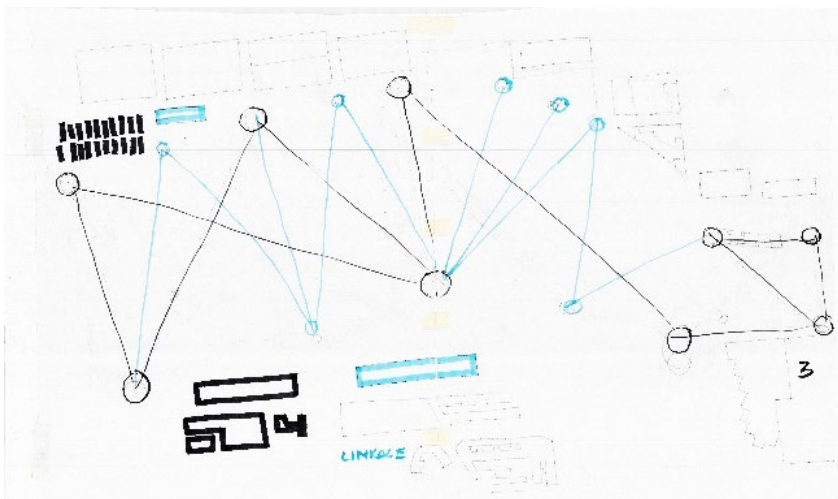
Exploration of connection between two areas (author, 2024)



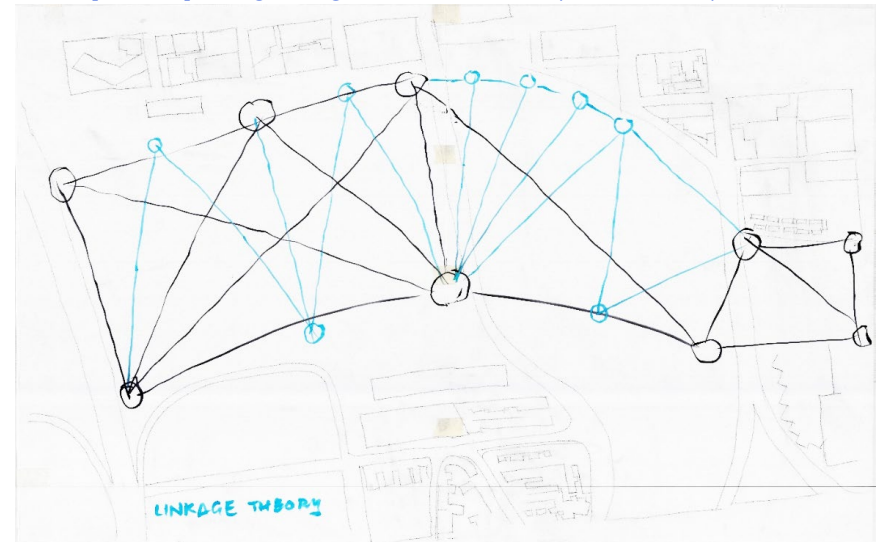
Concept 1: exploring linkages between areas (author, 2024)



Concept II: exploring linkages between areas (author, 2024)



Concept III: exploring linkages between areas (author, 2024)



Concept IV: exploring linkages between areas (author, 2024)

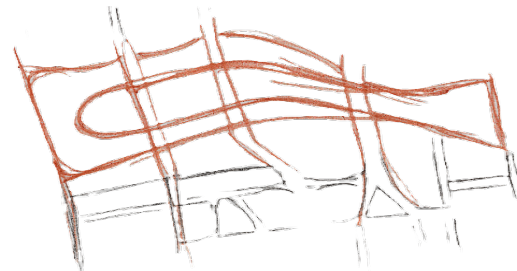
The process revealed potential primary, secondary and tertiary entrance nodes to the site. It further revealed spaces for linear connector spaces and assisted with creating spatial legibility.



Concept 1: exploring circulation (author, 2024).



Concept 1: exploring circulation (author, 2024).



Concept III: exploring circulation (author, 2024).



Concept final: (author, 2024)

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 28 January 2024

After the circulation was defined connecting to the adjacent neighbourhoods, the site was broken up into too many pieces that would not support large volume crowds. After a few revisions, to rationalize the routes and to reduce the number of routes traversing the site.

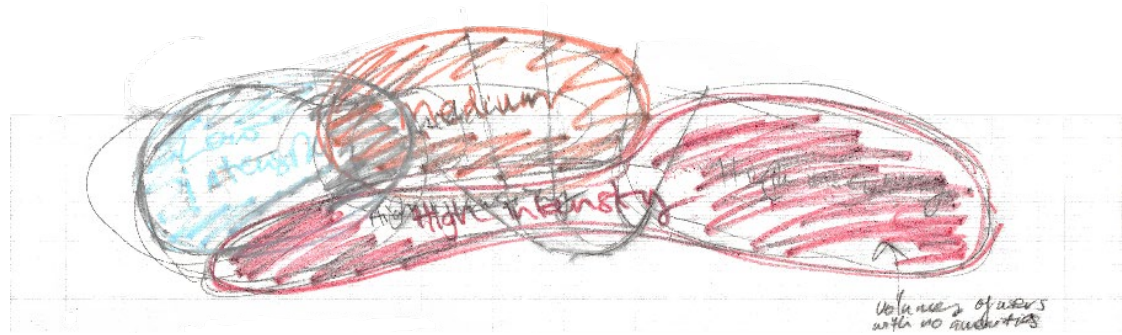
A secondary suspended route was explored to facilitate more active usage of the site but was later discarded due to the challenge of supporting a suspended walkway over a suspended platform. This is represented on the following page.

5.3 MEANING

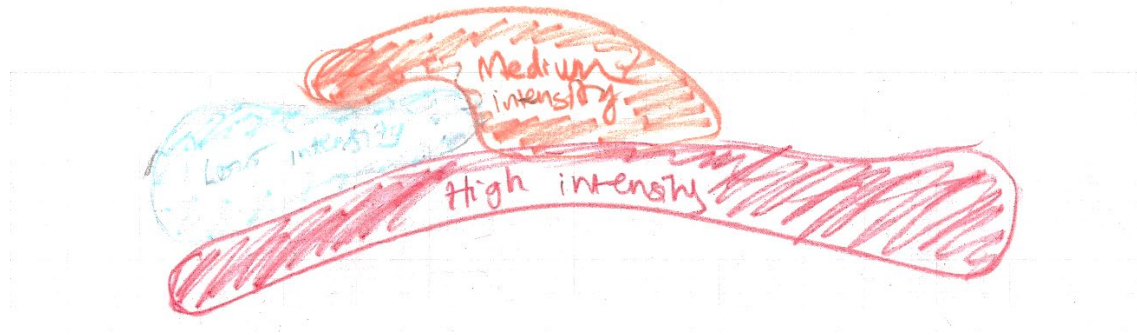
The value of a good scheme is in the meaning it develops from the various users of the site. The challenge was to determine a program that could best serve the surrounding community. Based on the surrounding built-form and volume of users different densities were investigated for the internal environments. A high intensity social zone is arranged closest to high activity residential and commercial zones. Medium density uses and built-form determined the medium activity recreational zones on the site. Low intensity outdoor activities border low pedestrian and economic areas.

Activities and social spaces are designed around the understanding of the cultural significance and historical context of the site and determining potential social goals of the site.

The proposal aims to activate economic activity, and a vibrant public realm, with separate uses accommodated at different scales. Cultural facilities and local level activities are introduced. Further activities are aimed to contribute to food security, reducing the effects of poor air quality.



Concept I: exploring density configuration (author, 2024)



Concept II: exploring density configuration (author, 2024)



Concept III: exploring density configuration (author, 2024)

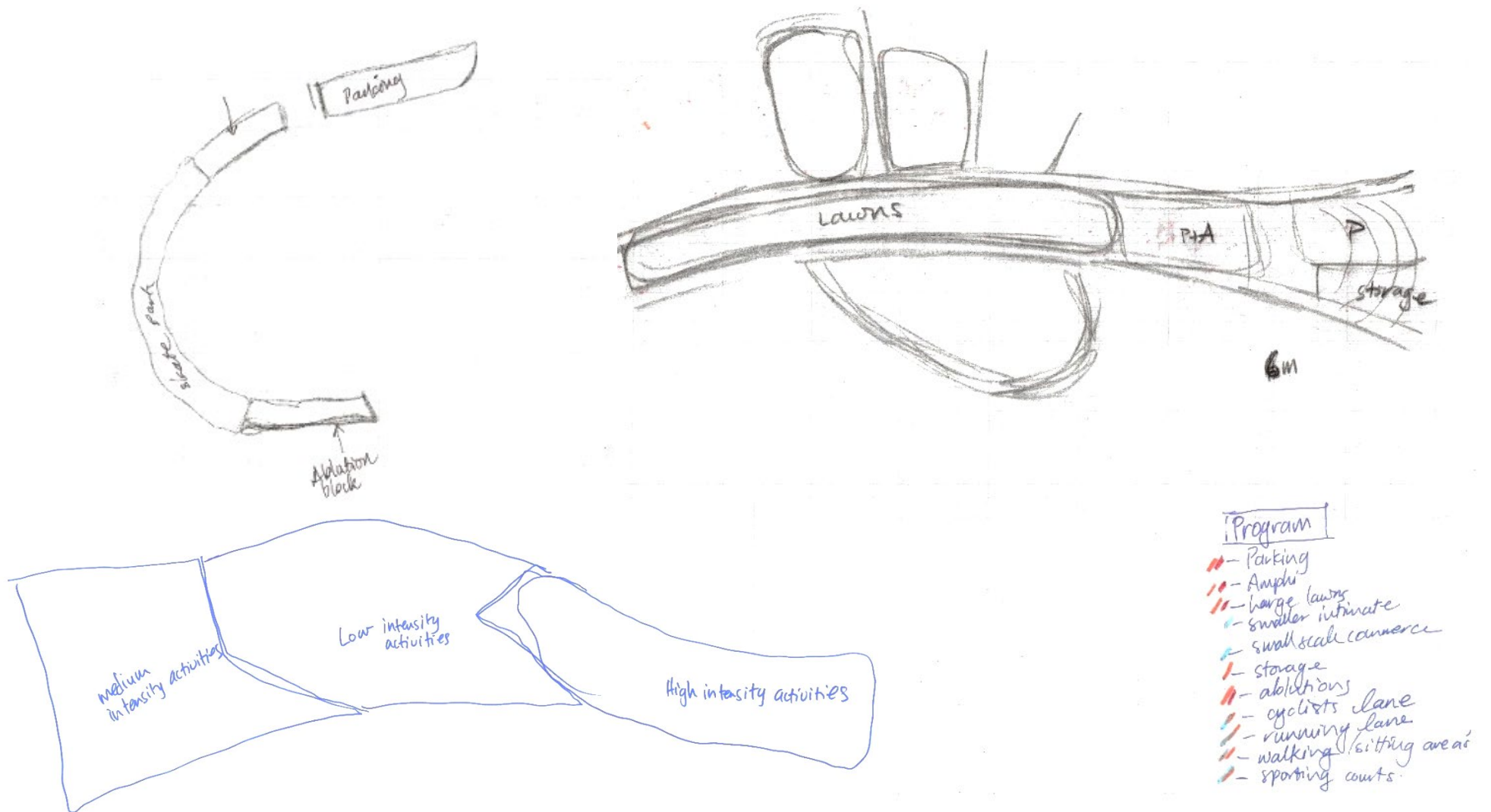


Diagram concept II indicating explorations into layout of activities (author, 2024)

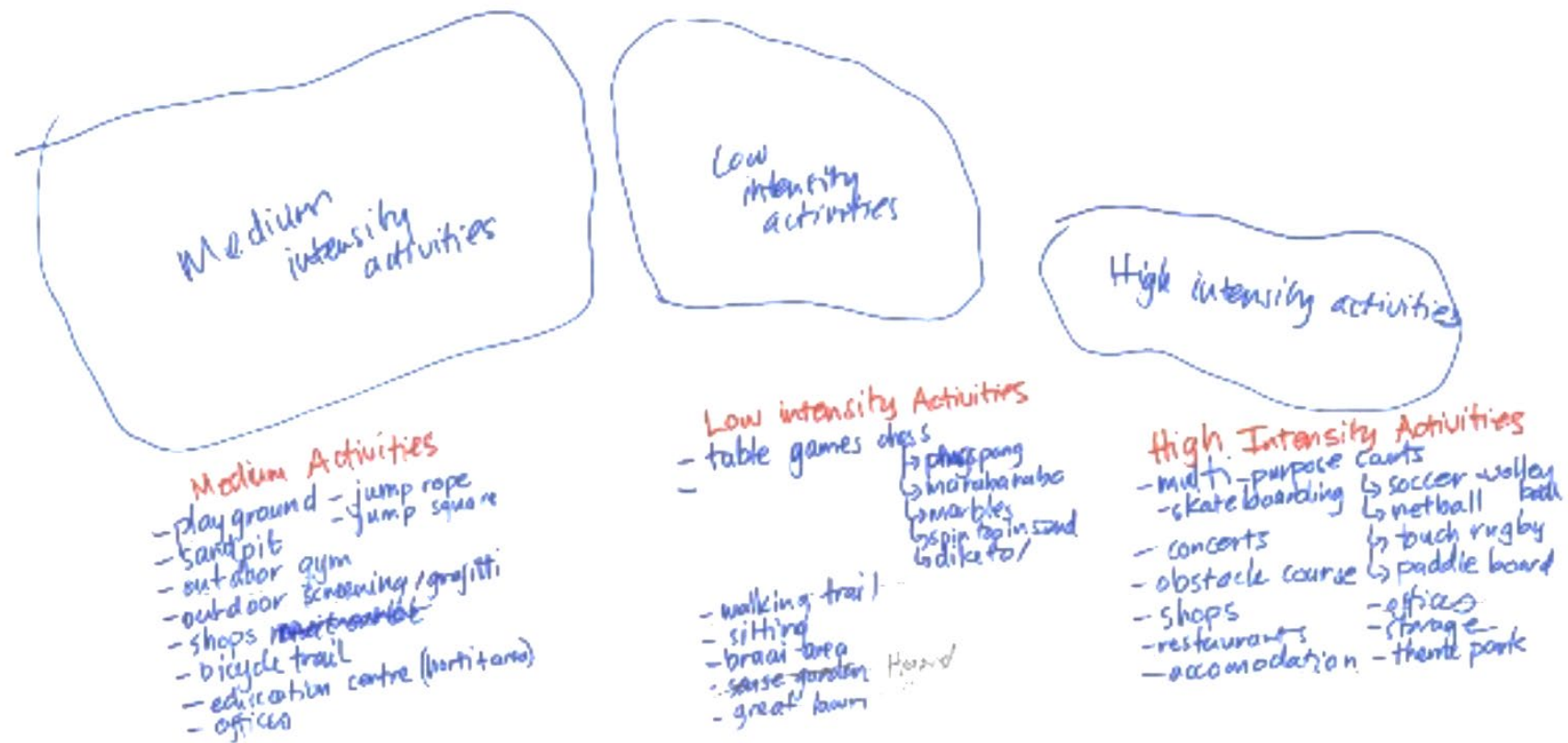
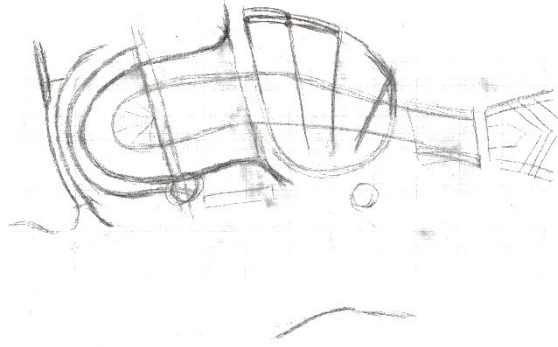
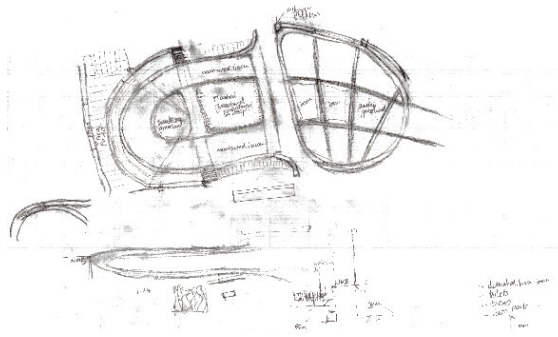
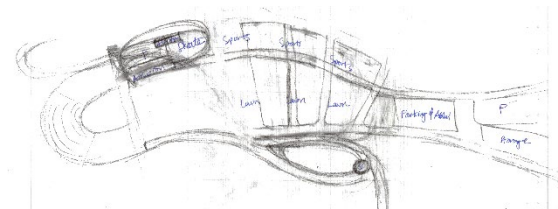
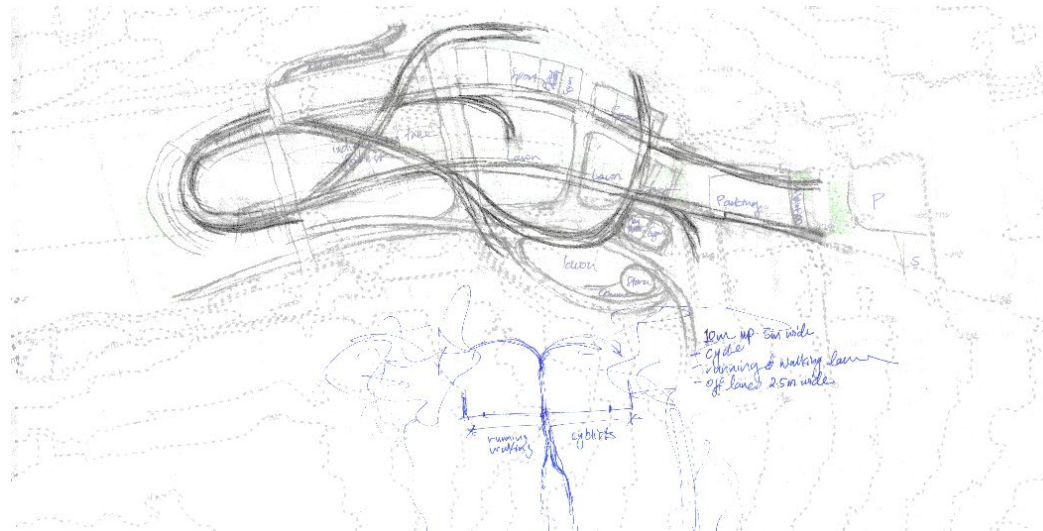
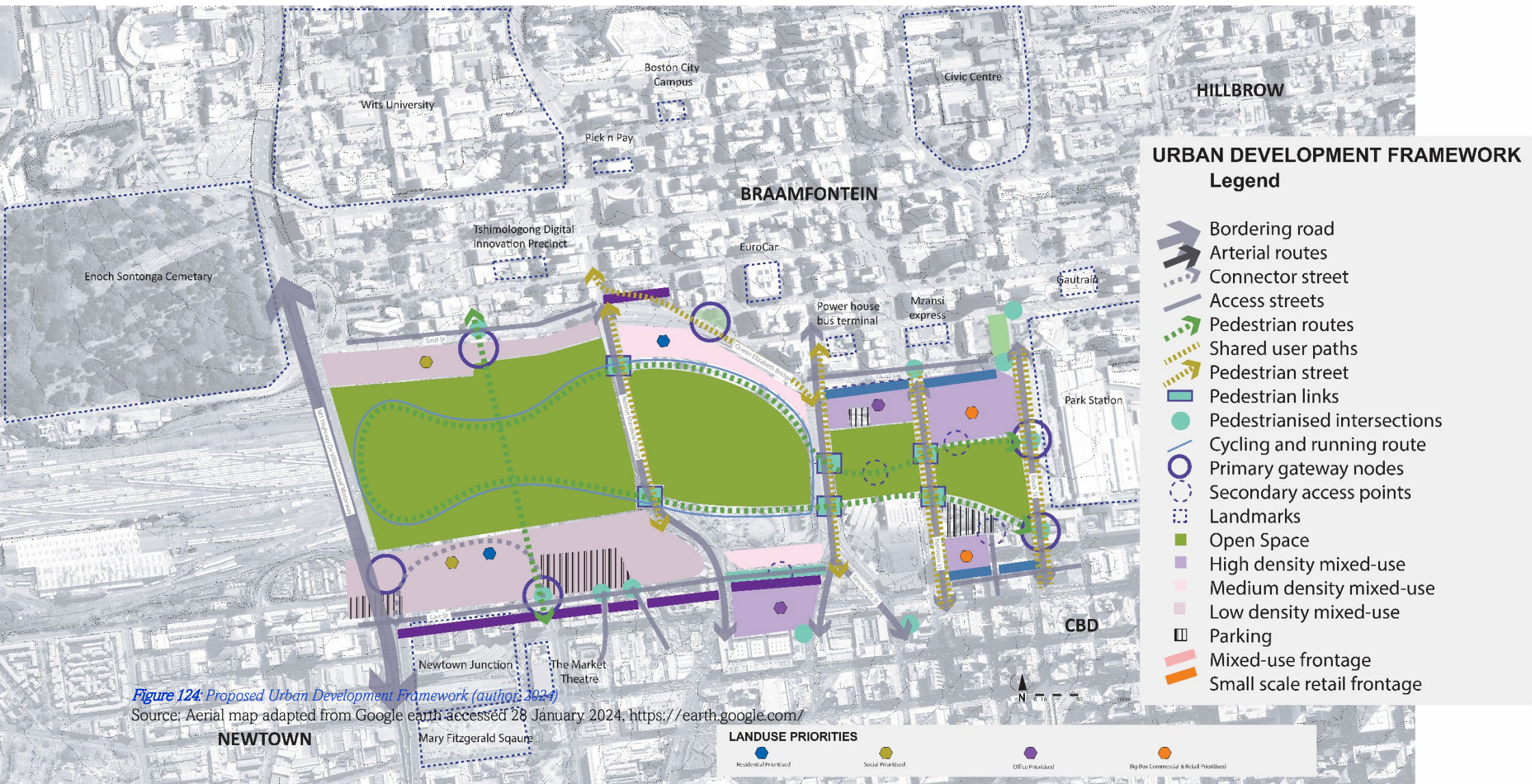


Diagram concept II indicating explorations into layout of activities (author, 2024)



5.4 URBAN DEVELOPMENT FRAMEWORK (UDF)



The suggested urban design framework will guarantee a balance and integration between different parts of the space and at the same time creates a bond between the space and its surrounding urban texture regarding physical, functional and visual elements. This makes the space unique and improves its quality to a high level at a local and district scales.

Simultaneously, it is attempted to meet the needs and expectations of the different spaces users and also adjust the design to the landscape of the current environments, functionality, practicality and economic aspects. The overall functional and activity pattern in the suggested framework is in a way for pedestrians, divided into four sequential spaces with two points in each sequence to improve legibility with a pause in the space for both the pedestrian and the vehicular. Additional transition points to offer discontinuity to extensive congested roads are envisaged to extend beyond the scheme to adjourning street intersections.

The elevated nature of the structure aligns to legibility principles because it offers a vantage point, will be easily identifiable, will help orientate pedestrians using the site and passerbys. Through its uniqueness, the site will become a landmark that leaves a memorable image in the cities inhabitants.

Built-form will be used to give a defined edge to the space and to support the future expansion of the development. Parking is proposed at the primary entrance nodes and where commercial building uses are proposed.

5.5 PROPOSAL

The intention of the Nelson Mandela bridge was to connect the two sides and through the use of the first democratic president of the country's name to in some ways heal the divide. However, because of its function what was created was a transition space with a limiting pedestrian functionality. A walk-through space further re-inforced by the security guards that patrol the bridge. The proposal intends to heal the disconnection between the two suburbs and to provide a memorable introduction to the city through a unique place with multiple functionalities see, **Figure 121**. Place is created through accommodating the main needs of the potential users of the spaces, which would be a space to congregate, talk, walk, jog, cycle, braai, exercise, store items and exercise cultural traditions. The objective is that the space will not be exclusionary but incorporate the desires of urban dwellers whose needs are not usually considered in urban renewal projects. As Trancik, (1986: 98) proposed by using a horizontal building mass that integrates with the surrounding building a positive void is created. Therefore a suspended public space would give symbolic meaning to the space, by providing places for social interaction, connecting paths and a transition between public and private spaces (Trancik, 1986; Hashem et al., 2022; Giovanni, 2018; Rahmann and Jonas, 2011).

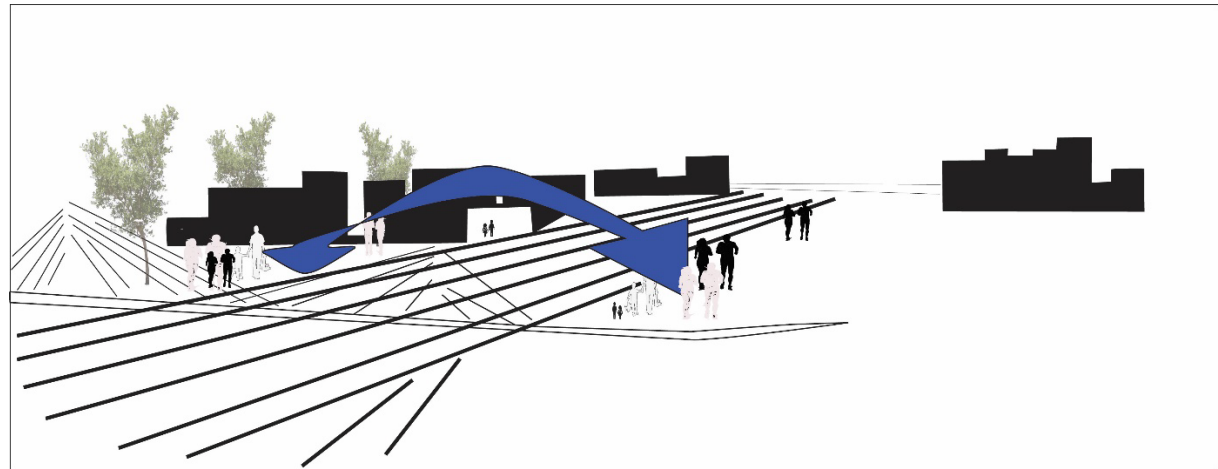


Figure 125: *Connect to heal*-(Author, 2023)

Positive void representational compositions and give meaning by providing gathering spaces, corridors, and areas to interact. The vegetation is chosen in order to co-operate with nature to ensure that it supports climate change mitigations. The dominant plant choice is focused on highveld weather plants so that they can survive the unique microclimate presented by Johannesburg south of the ridge. Furthermore the plants will contribute to ameliorating urban heat island effects and to sequester particulate irritants. The existing land on the edges is allocated to development for a varied mix of multi-use buildings that are predominantly residential and supporting services with an active retail ground floor. The plant list is separated into plants to support the structure of the site, guide views and signal transitions. Functional plants include plants for medicinal use, attract birds and insects.

Public realm space for different scales and different functions. The Parks activities will include a combination of group and solitary activities such as multi-purpose courts, children's play facilities, outdoor gym facilities, braai and sitting areas. The large scale middle zone is the centre of the park, has voids puncturing the concrete slab with the dual purpose of reducing the volume of the suspended park and providing light for the tracks beneath. As conceived of the new character of the site, a critical relationship is established between the visible and invisible components: above ground and underground, park and infrastructure. Park facilities within this zone encourage more passive activities such as sitting, viewing of trains.



Figure 126: Illustrates the spatial relationship between the city and the suspended park. (Author, 2025; Mzimela, 2025)

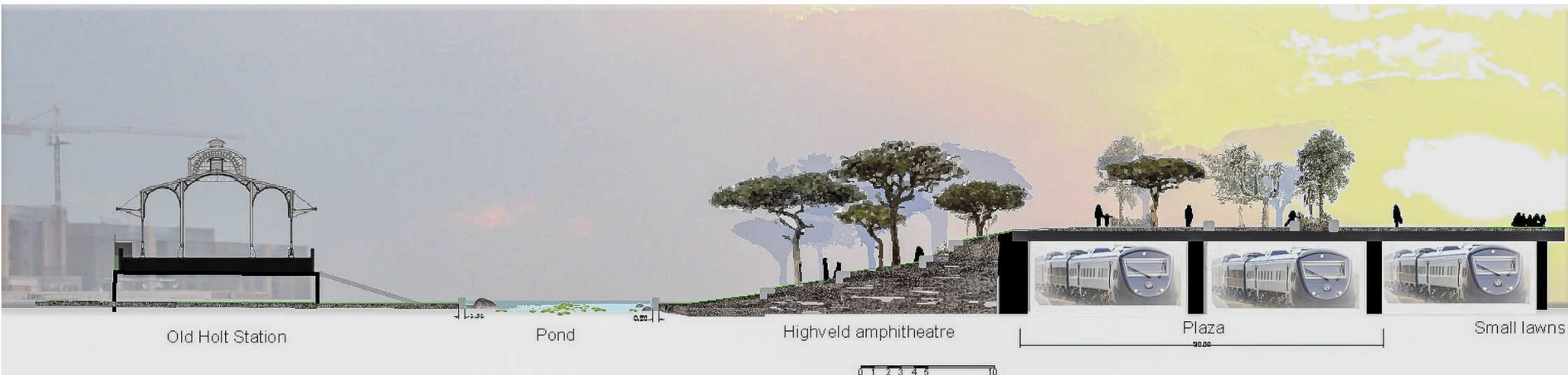
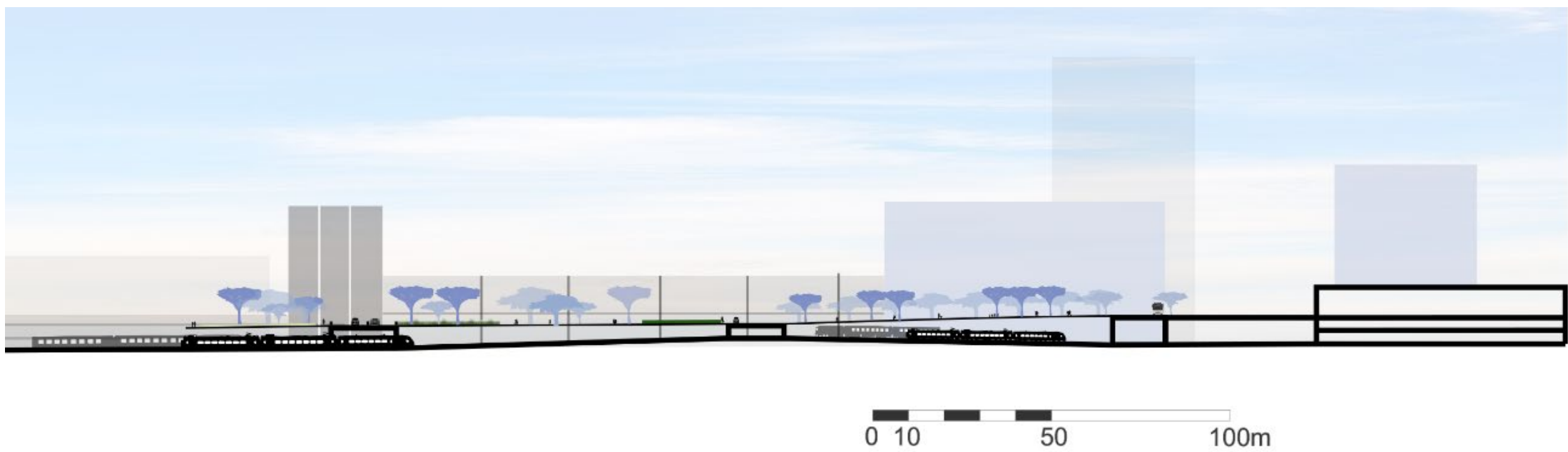
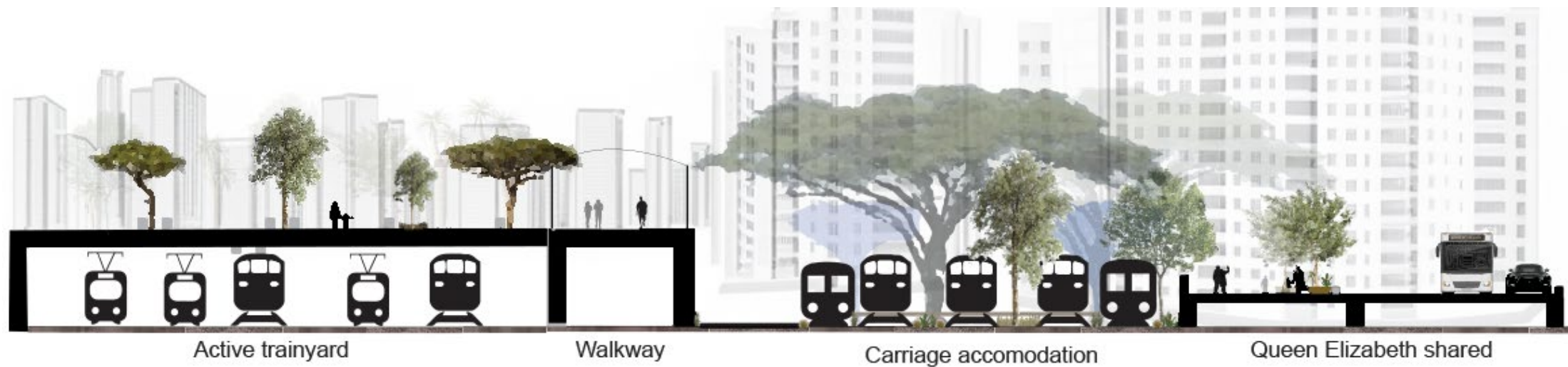


Figure 127: SECTION B – B, is a cross-section of the Old Holt Station transition onto the park (Author, 2025; Mzimela, 2025)



Active trainyard

Walkway

Carriage accomodation

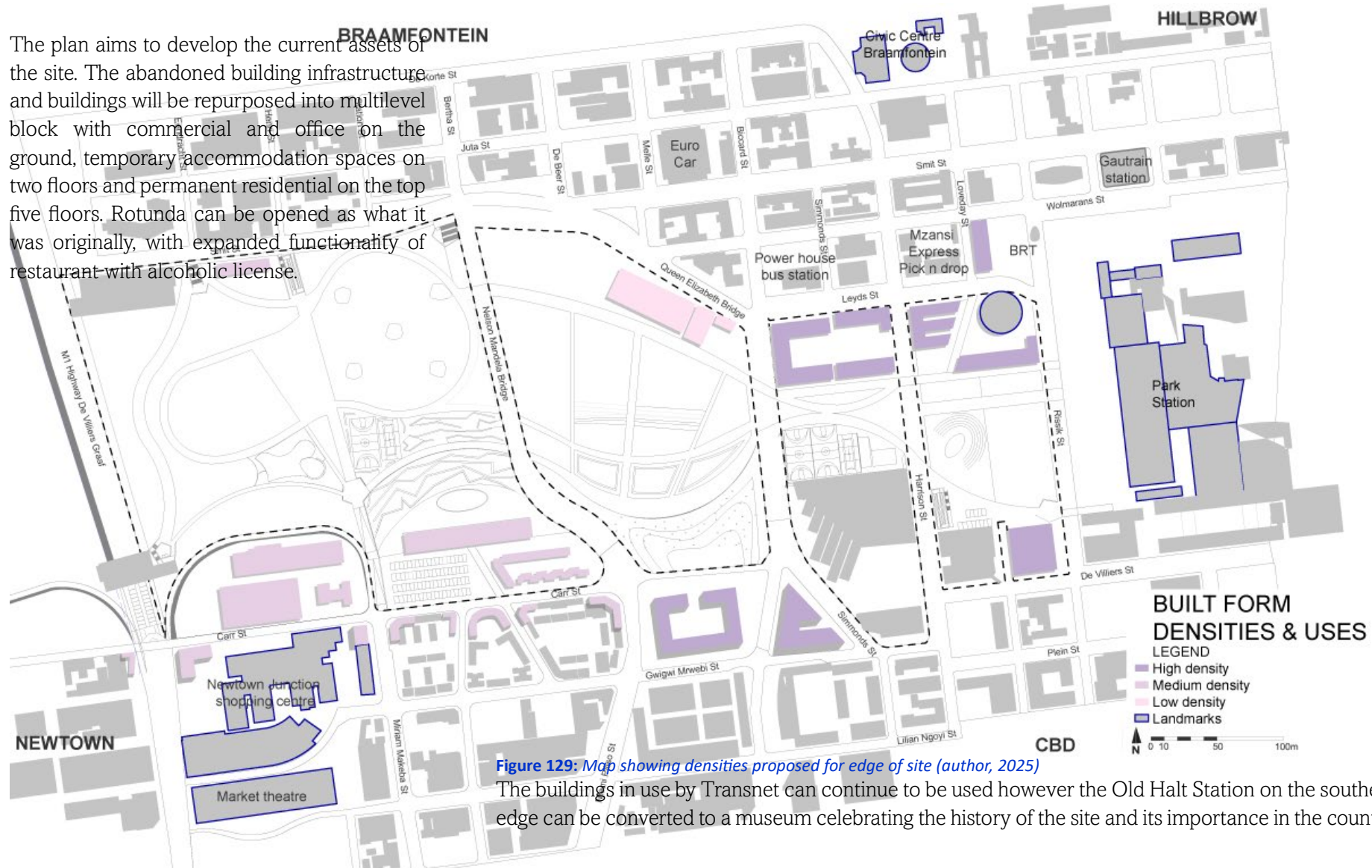
Queen Elizabeth shared

Figure 128: SECTION C – C illustrates the relationship between the suspended park and surrounding elements, the trains underground, repurposed and Queen Elizabeth St. which becomes a shared road (Author, 2025; Mzimela, 2025)

0 1 2 3 4 5 10

5.6 LAND USE AND DENSITY

The plan aims to develop the current assets of the site. The abandoned building infrastructure and buildings will be repurposed into multilevel block with commercial and office on the ground, temporary accommodation spaces on two floors and permanent residential on the top five floors. Rotunda can be opened as what it was originally, with expanded functionality of restaurant with alcoholic license.



The buildings in use by Transnet can continue to be used however the Old Halt Station on the southern edge can be converted to a museum celebrating the history of the site and its importance in the country.

5.7 HIGH INTENSITY and DENSITY ZONE

The areas of densification are aligned to the Johannesburg Spatial Development Framework, 2040 which specifies that the inner city is earmarked for intensification. They are generally within walking distance of, key transit nodes, the suburbs north east of the site and city. The densification zone will focus on buildings with primary functions of commercial and retail and secondary functions of residential. The interface of these high-rise buildings and the street will be carefully designed to ensure that human scale is maintained with set-backs, covered side-walks and setback corners. This area is proposed South of Smit Street, between Queen Elizabeth and Rissik. These locations will be supported by the pedestrian orientation of Strategic streets such as Rissik Street and pedestrianisation of 2 x lanes along Queen Elizabeth bridge. Large scale pedestrian crossing on Leyds, Wolmarans and Rissik Street connect the Urban park to the urban area. The activities in the park at that point support high volume activities such as multi-purpose courts, amphitheatre, splash pad, a large scale vegetated promenade with supporting activities, ablution and parking facilities at the entrance. Refer to D3 and D4.

5.8 MEDIUM INTENSITY and DENSITY ZONE

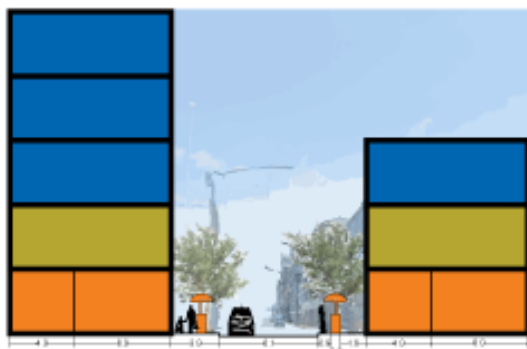
These areas are identified on the western side of the park and along Carr Street whereby local character will be prioritised. It includes the activation of the edges to improve amenity and return the value of the street into a social space supported by community and social services. The proposed repurposing of the existing Old Holt Station into a train museum and educational facility to honour the cultural heritage of the site.

The proposed building configuration will focus on a ground floor of small-scale retails, café activities and corner stores, social services on the second floor and three to four floors of mixed residential and social housing blocks. The areas can support some densification by aligning the planning controls (Height and Floor Space Ratio) of the surrounding buildings. Refer to D3 and D4 of density sections. The design of the buildings must align to the local character of the existing buildings in order to encourage further consolidation of the urban form and the area. The Parks activities will include a combination of group and solitary activities such as multi-purpose courts, children's play facilities, outdoor gym facilities, braai and sitting areas.

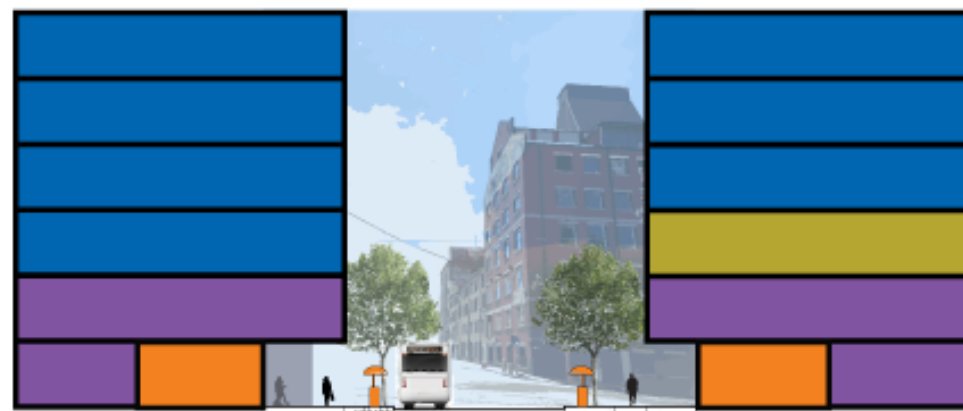
5.9 LOW INTENSITY and DENSITY ZONE

Park facilities within this zone encourage more passive activities such as sitting, viewing of trains. The large-scale middle zone is the centre of the park, has voids puncturing the concrete slab with the dual purpose of reducing the volume of the suspended park and providing light for the tracks beneath. A forest-like inclined dense forest space is an enclave of urban nature for rest and recreation is located on the southern edge adjacent to Queen Elizabeth Bridge. The dense forest is accessible from Carr Street and the southern portion of Nelson Mandela Bridge. The residents and users will find peace and community in this area. Therefore the existing land will be allocated to development for low density residential buildings with an active retail ground floor. Refer to D1 and D2 of the density sections.

It is also proposed to establish a new pedestrian and cycling connection extending from Henri Street in Braamfontein and connecting to Miriam Makheba Street in Newtown. It will also promote and increase the level of public accessibility and connectivity, to the adjacent urban areas.



D- 1: View East along Smit Street

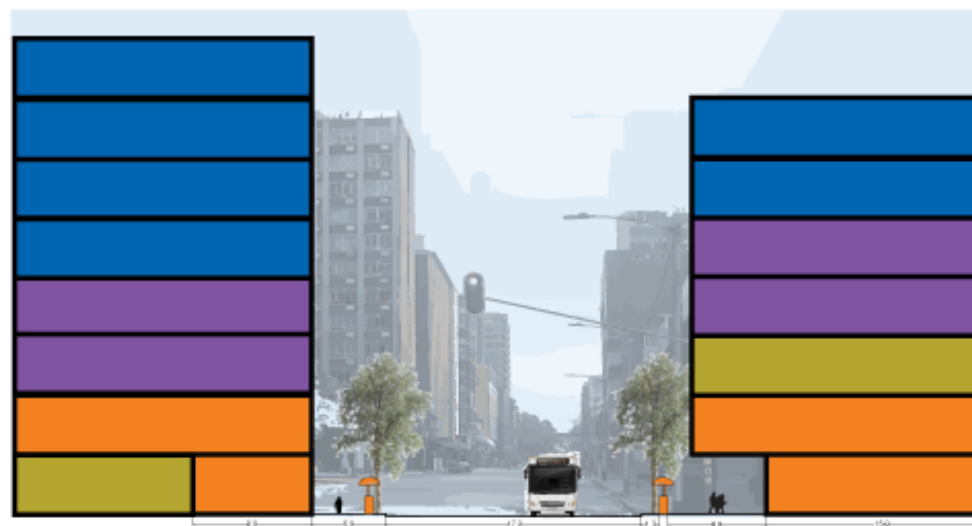


D- 3: View East along Carr Street

Transport hub routes north along Harrison Str



D- 2: View East along Carr Street



D-4: View North along Leyds Street

Transport hub routes east along De Villiers and Gwigwi Mrwebi Str

Figure 130: *Densification sections D1, D2, D3 and D4 (author, 2024)*

5.10 TREE CANOPY



Figure 131: Canopy cover introduced to contrast with the urban landscape with very few trees coverage (Author, 2025)

The designer aimed to develop a new "climate" on the site as evidenced by the canopy cover introduced, see . While invisible to the eyes, to introduce an experiential quality to the site was central. The designer wanted to create a space that felt, comfortable, lively, and ever accommodating to the needs of its users. This is achieved by introducing a variety of indigenous and non-indigenous vegetation. Close to one thousand trees of small and medium height are proposed arranged according to different climatic zones. A forest-like inclined dense forest space is an enclave of urban nature for rest and recreation will be located on the southern edge adjacent to Queen Elizabeth Bridge. The dense forest is accessible from Carr Street and the southern portion of Nelson Mandela Bridge. The residents and users will find peace and community in this area.

5.11 SOFT LANDSCAPING

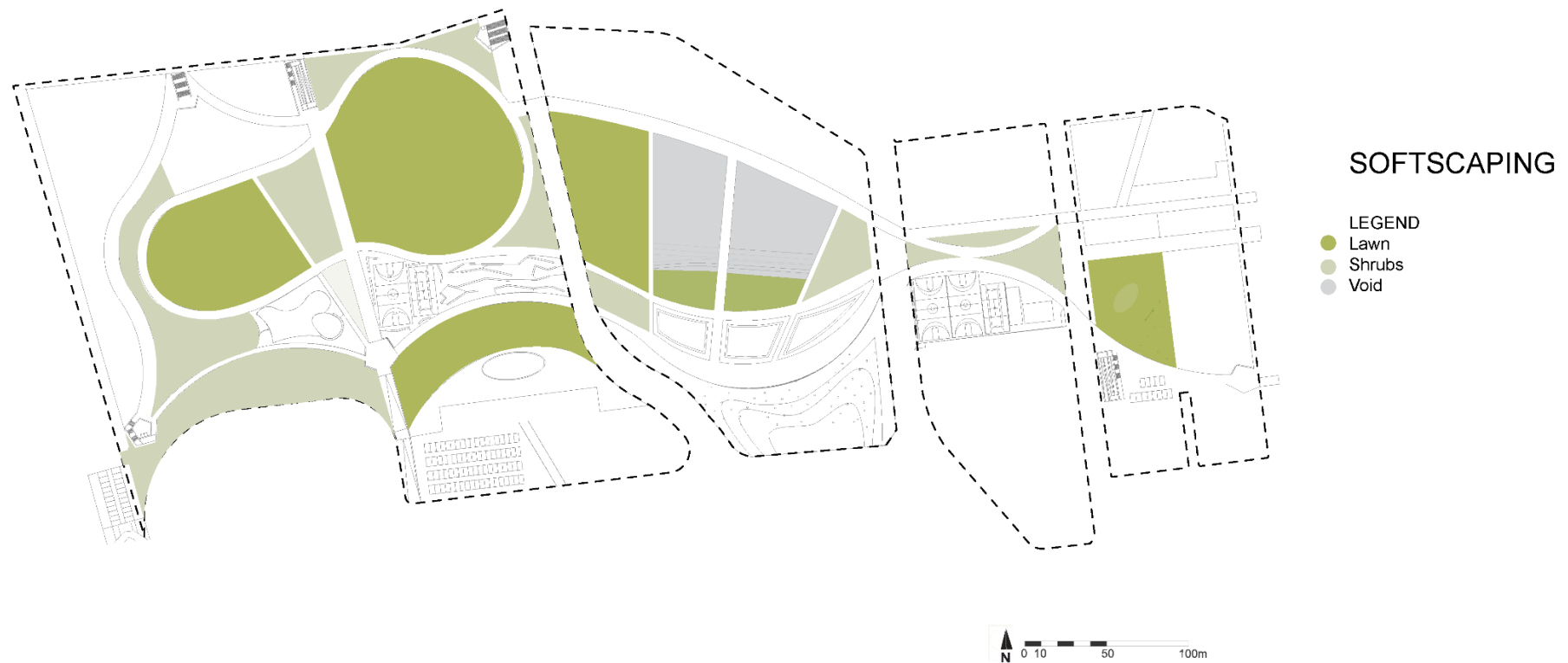


Figure 132: *Vegetation zones introduced to educate community about climate appropriate plants within the city (Author, 2025)*

As indicated the plants chosen are higveld plants however, subtropical plants introduced around the space where water will be collected. The vegetation will contrast with the inhospitable, immense and stark landscape of the current site. The purpose of the plants is to mitigate increasing summer temperatures and provide a respite from heat island effect. Food garden and a nursery which will grow to sell the plants found in the scheme and create training and employment opportunities for the displaced. Furthermore, the plants will be used as an educational tool to illustrate and supply climate appropriate plants for the city.



Highveld Garden

Aloe mellifera
 Cussonia paniculata
 Buddleja salvifolia
 Mundulea sericea
 Aloe greatheadii var. davyana
 Cassinopsis ilicifolia
 Delosperma herbeum
 Cotyledon orbiculata
 Ehrharta erecta
 Hyparrhenia hirta
 Stapelia
 Thunbergia alata

Perennial Garden

Harpephyllum caffrum
 Euclea crispa
 Clerodendrum glabrum
 Felicia filifolia
 Plectranthus
 Gaura lindheimeri
 Bulbine frutescens
 Gladiolus species
 Eucomis autumnalis
 Gazania krebsiana
 Clematis brachiata

Scented Garden

Gardenia volkensii
 Dombeya rotundifolia
 Buddleja saligna
 Heteropyxis natalensis
 Tarchonanthus camphoratus
 Eragrostia racemosa
 Ehretia rigida
 Littonia modesta

Water Garden

Combretum erythrophyllum
 Turra floribunda
 Croton gratissimus
 Rhus prinoides
 Strelitzia nicolae
 Strelitzia reginae
 Cyperus alternifolius nana
 Nymphaea nouchali
 Schoenoplectus corymbosus
 Pennisetum macrourum

Figure 133: the figures above show the plants used for each micro-climate (author, 2025)

5.12 CONNECTIVITY

The City of Johannesburg is a polycentric city that is dependant on various modes of transport to connect it locally, regionally and cross-border (CJMM, 2020; Beavon, 2001). Although the inner city role is changing, (Oviedo Hernandez and Dávila, 2016; Luoma et al., 2010). The transportation nodes are the primary point of entry into the city and house transportation hubs for most of the cities commuters (Beavon, 2001). Johannesburg is growing at an unprecedented rate and is estimated to become a MegaCity by 2030 (Sattler and Brandes, 2015; Business tech, 2015). In order to remain globally and locally competitive, sustainable transport modes will need to be prioritised. Therefore the city is dependent on the creation and connection of transportation nodes through walkable, safe public environments. However, the prioritisation of different forms of vehicular transit options has left the street subservient to cars and some have lost the fundamental quality of a linear social interaction. Secondly certain streets such as Wolmarans street are predominately throughfare routes, affecting the mental, social and physical health of users. However, with such a varied mix of transit options, the area has the opportunity to be re-defined as non-motorised.

Walking is a form of mobility which also enhances the economy of the edge along the routes. From the below its clear that the transit roads of Biccard, Harrison, Biccard, Smit, Wolmarans, and de Villiers become important contributors of pedestrians due to their proximity to transport hubs. However the vertical streets were used encourage pedesntrian to walk south toward the development because there is a height difference from Biccard along to Queen Elizabeth str.

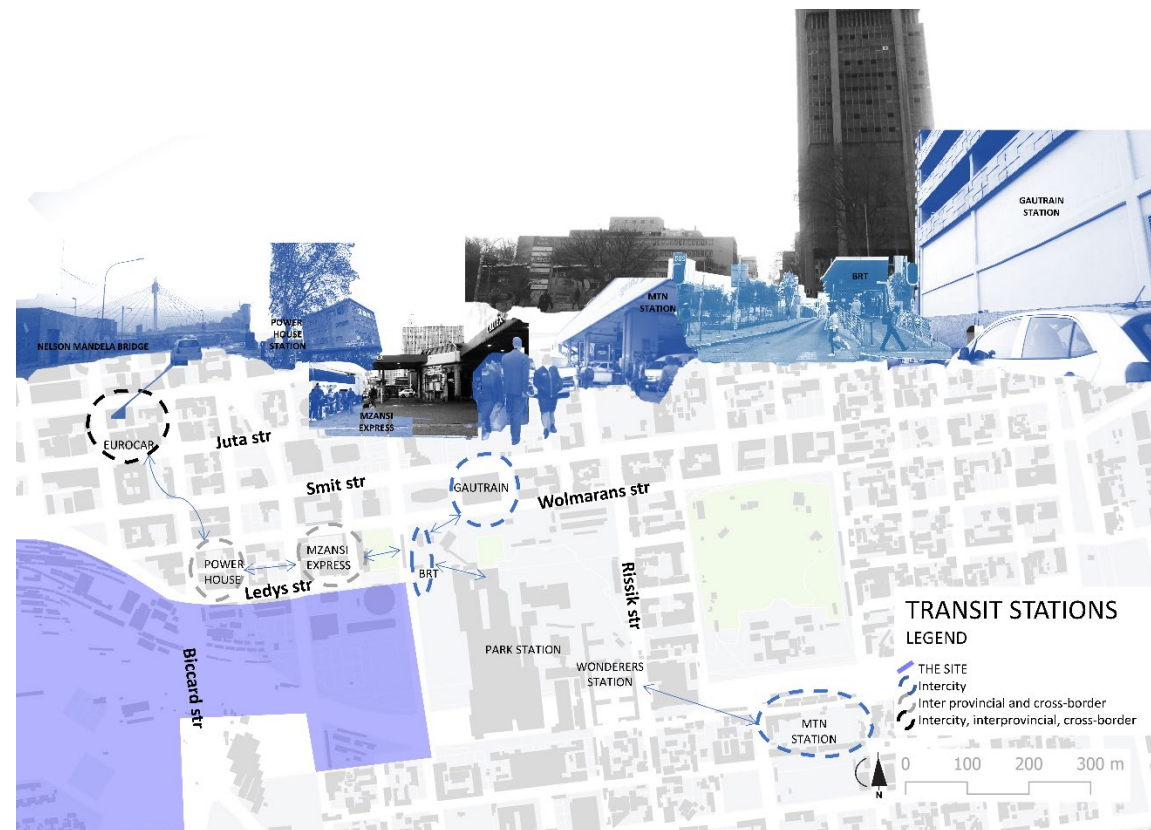
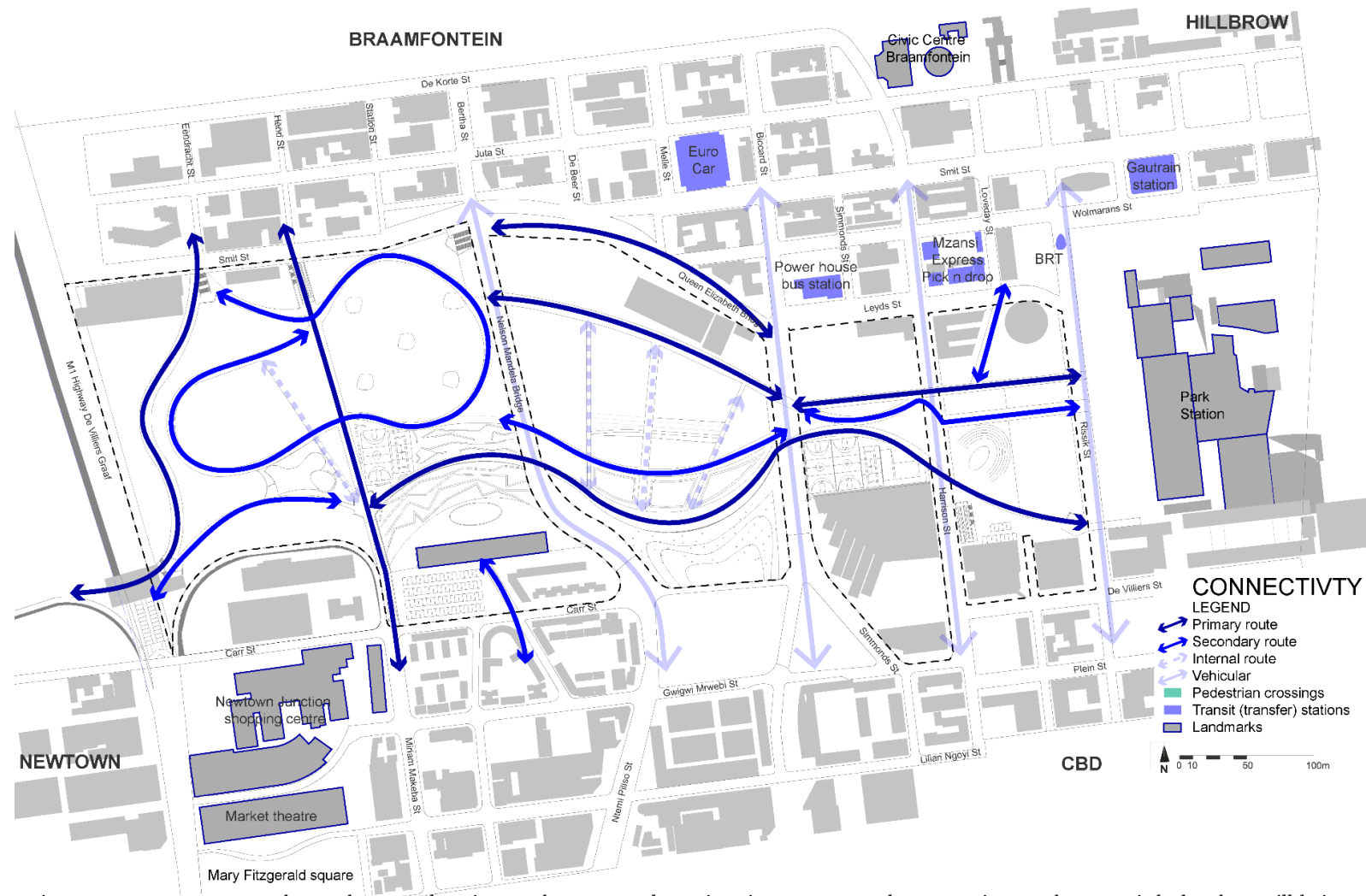
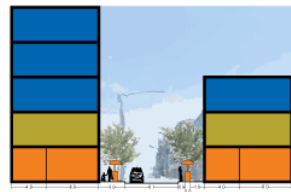


Figure 134: The figure shows the multiplicity of transport modes, adapted from CoJ Spatial Data (Author, 2024)

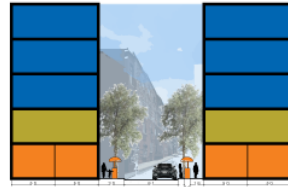
Source: Land parcels from CoJ Spatial Dataset <https://ags.joburg.org.za/Cgismobi/> accessed 28 January 2024;



The focus is on movement networks such as pedestrian pathways, cycle or jogging routes and connecting to the transit hubs that will bring users to the site. The intention is to create different options for people to access the site and to accommodate different levels of mobility, as per the precedent studies and general urban design principles. Therefore there are three sizes of pedestrian routes to have different grains of movement through the site and different types of access for increased mobility options such as stairs, ramps and lifts. The pedestrian is prioritised through the proposed upgrades of key crossings that provide connectivity to the surrounding areas. Furthermore, existing connectivity transversing the railways are improved to make the Park a physically significant feature as one drives along the routes, linking to the surrounding neighbourhoods, Braamfontein to Newtown. The main entrances are corner Carr and Miriam Makeba Street, De Villiers and Rissik str, Rissik and Ledys str, Harrison, Smit and Henri. They are provided with ablution facilities and storage facilities on the north only because of the abundance of long distance transportation hubs.



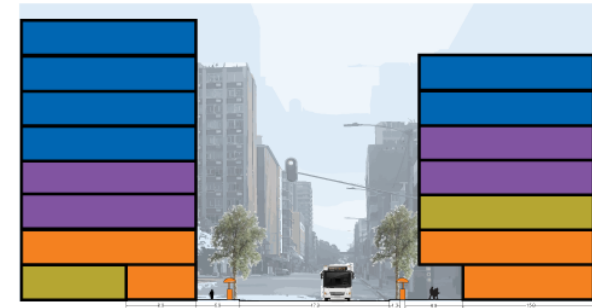
D- 1: View East along Smit Street



D- 2: View East along Carr Street



D- 3: View East along Carr Street
Transport hub routes north along Harrison Str



D-4: View North along Leyds Street
Transport hub routes east along De Villiers and Gwigwi Mrwebi Str

The main pedestrian feeders to the park are Harrison street which supply foot traffic from Mzanzi express and Power house. Gwigwi Mrwebi, and Carr Street as primary vehicular connectors and De Villiers which will supply pedestrains from the major tansit hubs of Wonderers and MTN have been upgraded. Due to the limited size of the sidewalks the following amendments are recommended for future re-development, introducing overhangs and setbacks. This will also extend the sidewalks to accommodate informal trade as alternative means of commerce, and the buildings will house short term and long term accomodation and bussiness use. This is to ensure that the environment remains human scaled and will ensure that the overhangs facilitate a comfrotable and permeable pedestrian public space.

A ramp is introduced as the main pedestrian route connectinhg Henri street in Braamfontein to Miriam Makeba Street. The corner of Carr and Miriam Makeba stree then becomes and importatnt node and transition space between Newtown Junction and Braamfontein.

The main entrances are sculptural reminiscent and continuing the form of mine tailing to give the park access and connections identity

Built structure entrances.



Figure 135: Primary entrance structures with ablution and storage facilities (author, 2024)

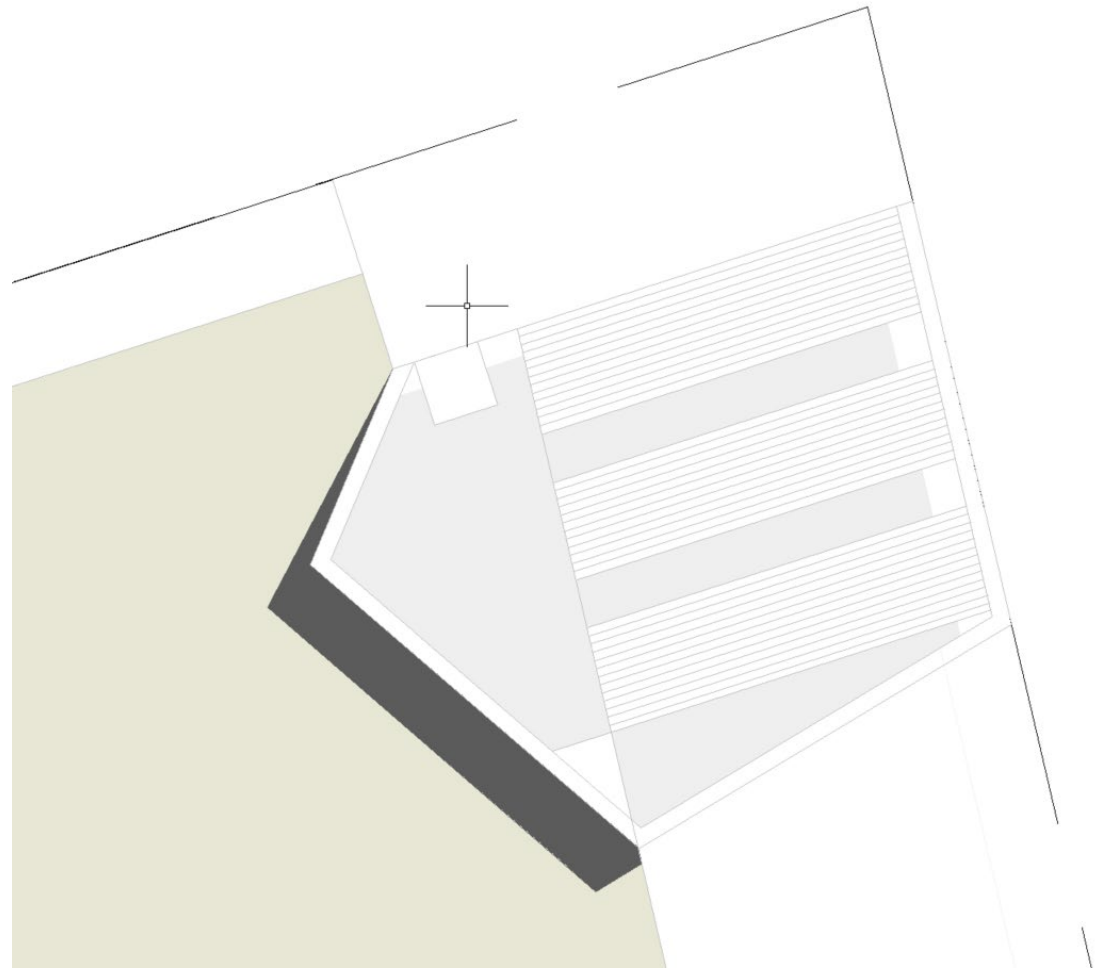


Figure 136: Primary entrance combination stairs and outdoor lifts (author, 2024)

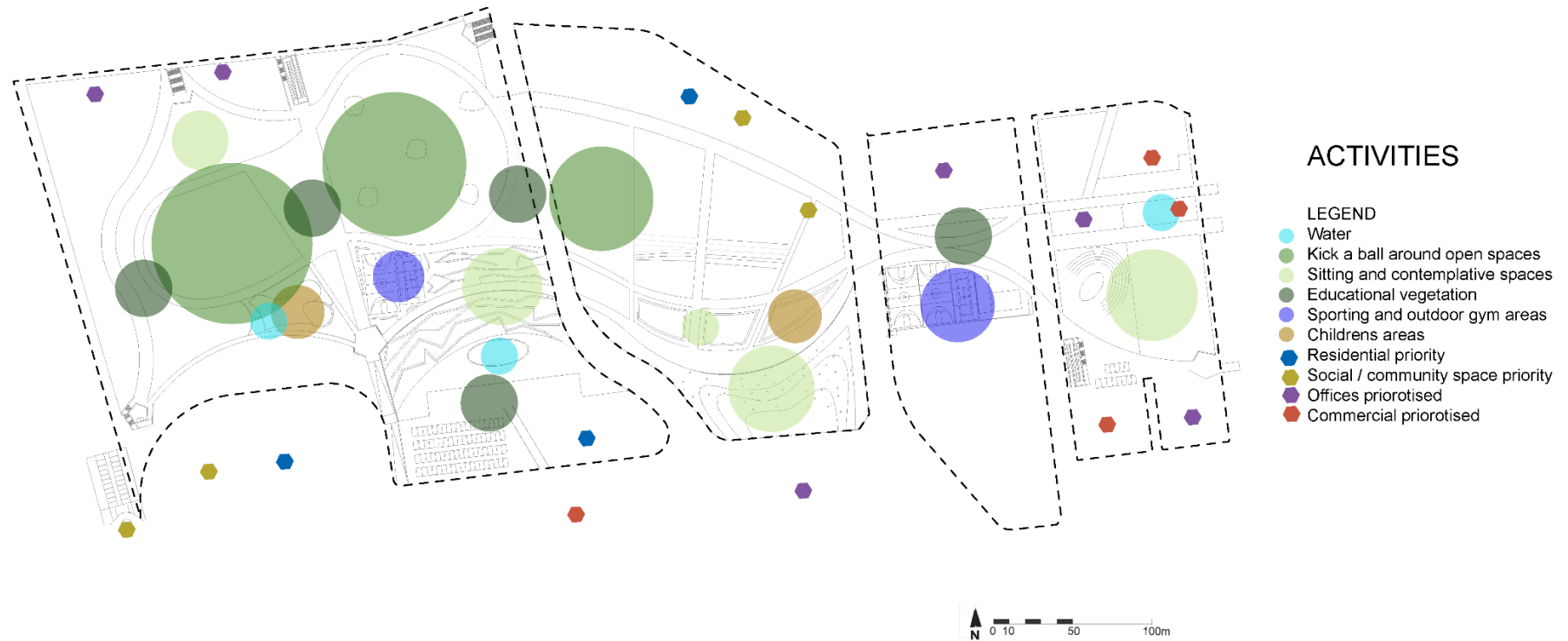
5.13 REGIONAL CONNECTIVITY | How transport supports access to urban parks

There is research into how transport is important in facilitating public access to urban parks in the Global South where there is a shortage of public open spaces to facilitate social interaction, recreation and mental well-being (Gomez and Rodriguez, 2019; Kariuki and Mwaura, 2020; Samson et al., 2021; Das and Honiball, 2016). This increases the use of the park and affects how often it is used (Liang and Zhang, 2018; Das and Honiball, 2016). The surrounding transport networks specifically, the different modes of transport around the site

include busses, trains and taxis, would promote more frequent use of an urban park and encourages public health (Kariuki and Mwaura, 2020). Several scholars argue that insufficient transport systems can constrain a parks usage, thereby limiting equitable access to green spaces, reducing inclusivity, the liveability of cities, the opportunities for physical activities, social cohesion (Gomez and Rodriguez, 2019; Samson et al., 2021).

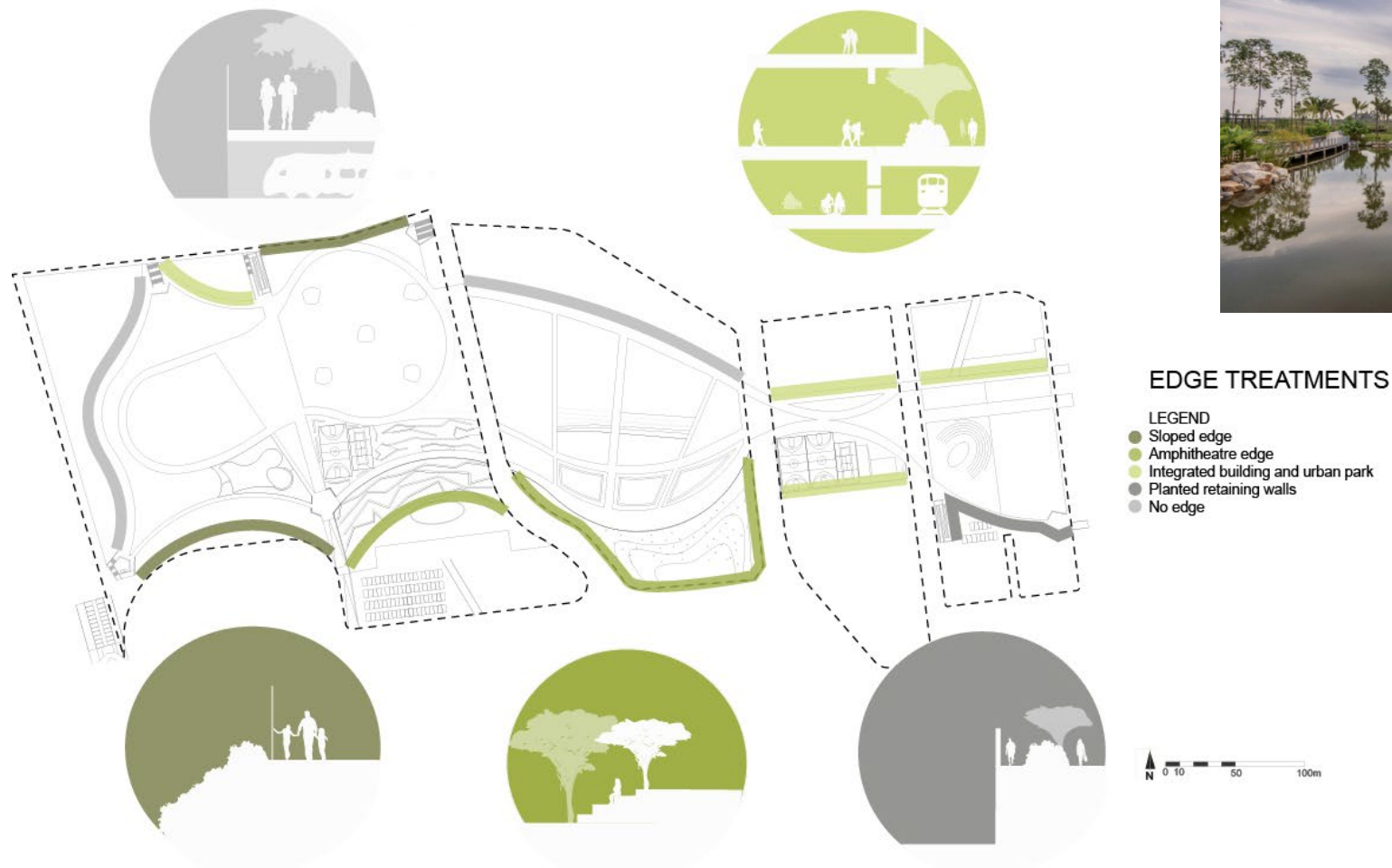
In places such as Nairobi and Mumbai transport is used to foster inclusivity and influences the usage of urban parks in the rapidly urbanising Global South cities (Kariuki and Mwaura, 2020; Gomez and Rodriguez, 2019). The minibuss system connects local and regional Kenyan users to the Uhuru Park as it is an important social interaction space (Kamau, 2019; Mutisya, 2021). Similarly, the Sanjay Gandhi National Park is an important connection to the urban park facility in the densely populous Mumbai, India (Goenka and Monga, 2021; Zerah and Landy, 2013).

5.14 ACTIVITIES



The two amphitheatres provide event and function space for hire, thereby ensuring an income stream for to support the ongoing maintenance of the site and the existing Transnet parking will be repurposed for parking for evening events. The sitting and contemplative spaces will be provided with WiFi to allow for outdoor connectivity and attract stay at home users from the surrounding buildings to work in nature. Similar benches to the solar powered benches at WITS were proposed to provide further opportunities for working outside.

5.15 EDGE TREATMENTS



Images above of The Arc at Bandar Rimbayu, by the Garis Architects illustrating the floating weight and what the permeable edges will display. Source: www.archdaily.com accessed 05 November 2024.

The edge treatments were determined through evaluation of precedent studies to continue the legibility, permeability and connectivity of the site to the urban fabric. Different solutions were obtained to reduce the visible weight of the proposed park. Integrating buildings to the park structure will serve dual purpose of supporting the load distribution for the slab and pull users onto the site.

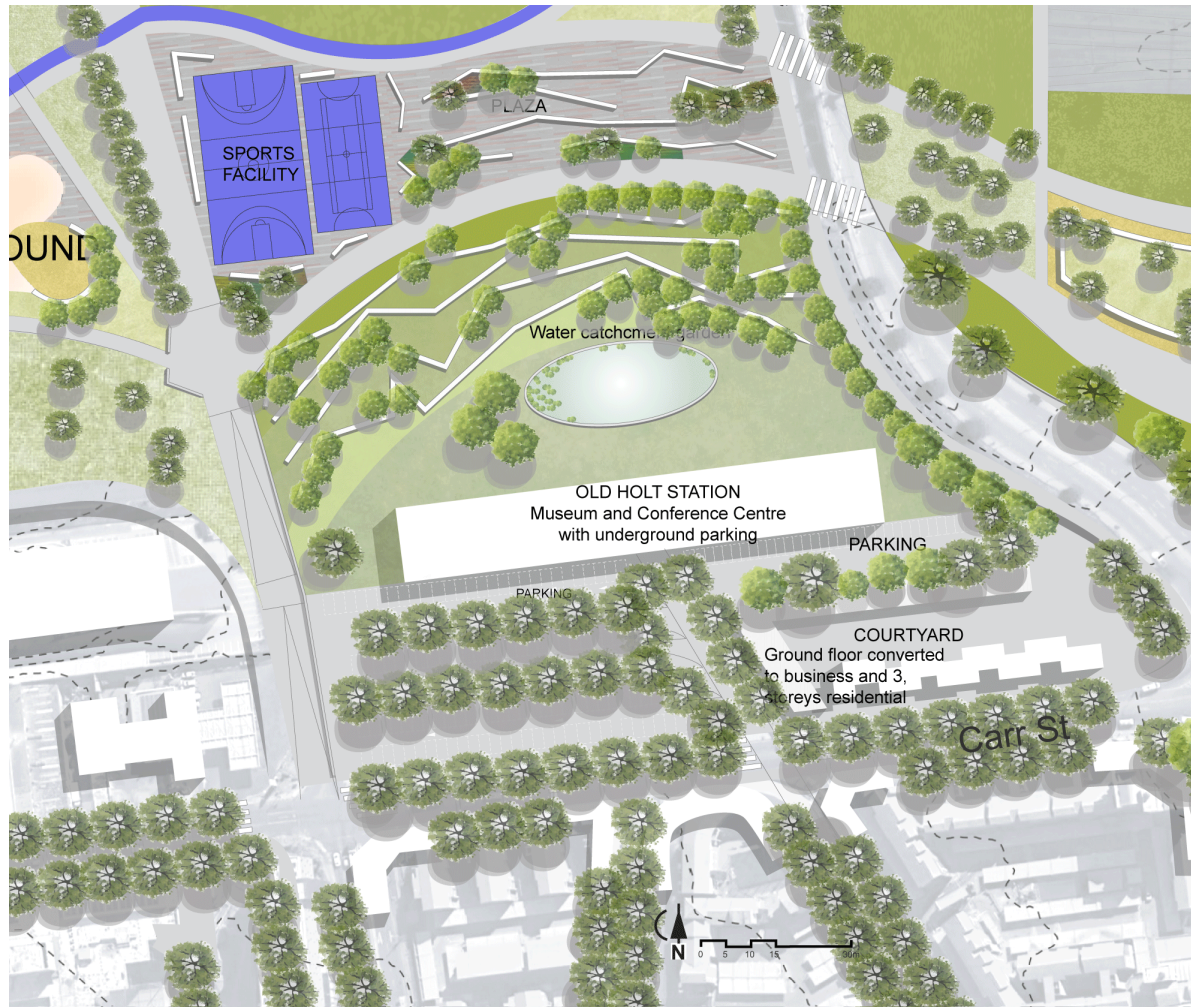


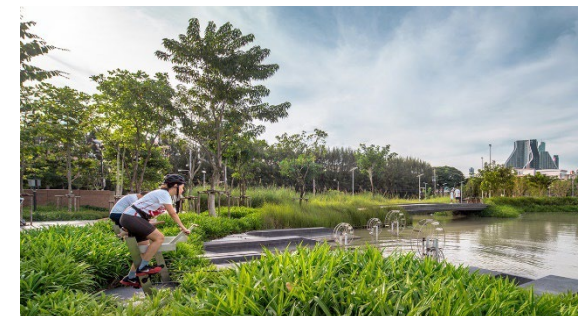
Figure 137: Detailed plan of water garden and amphitheatre (Author, 2025)



Source: www.land8.com accessed 13 February 2025



Source: www.edu.cn accessed 13 February 2025



Source: www.worldlandsapearchitect.com accessed 14 February 2025

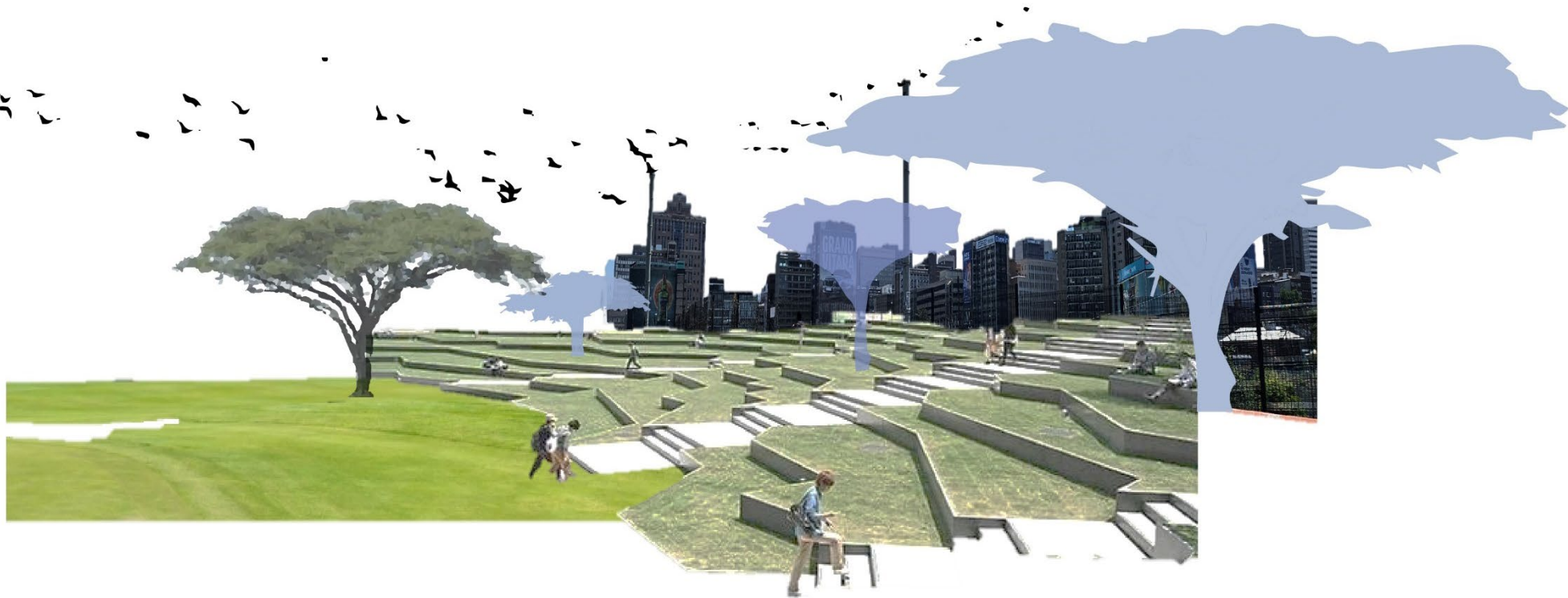


Figure 138: *View outside heritage museum, amphitheatre (Author, 2025; Design Network Associates, 2012; Ruzicka, A 2022)*

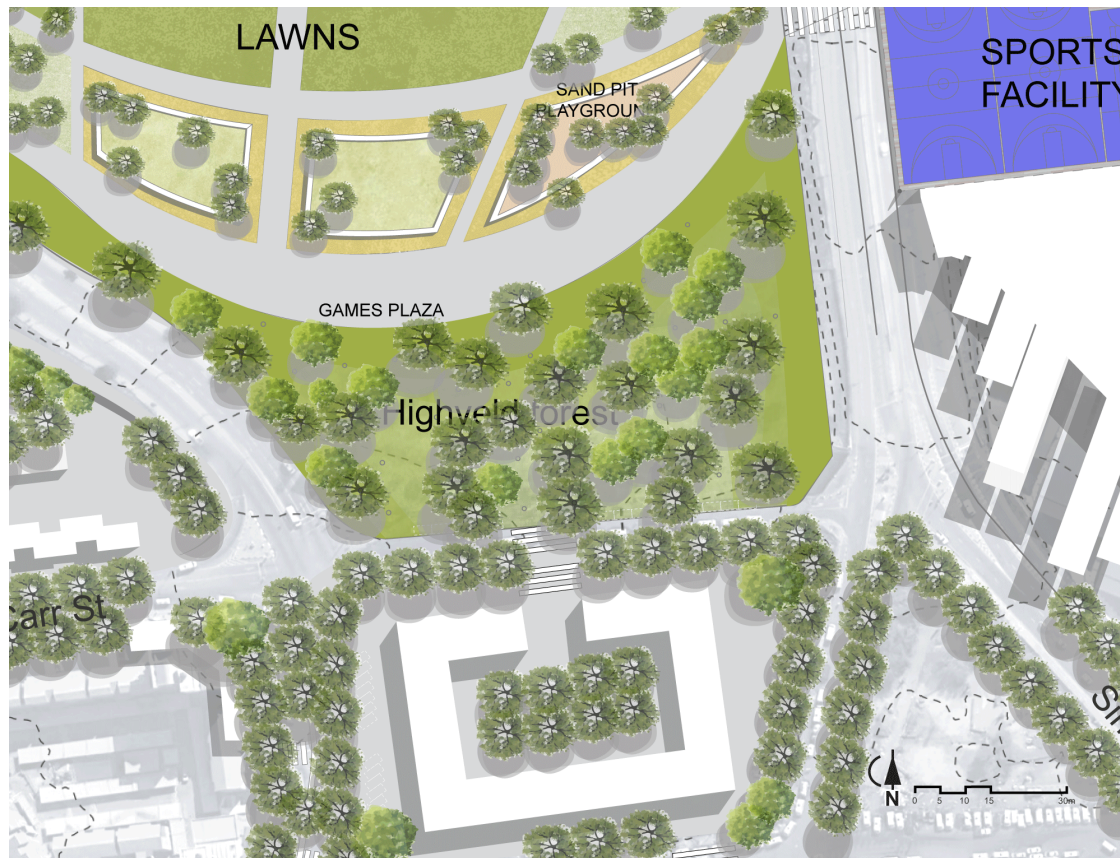
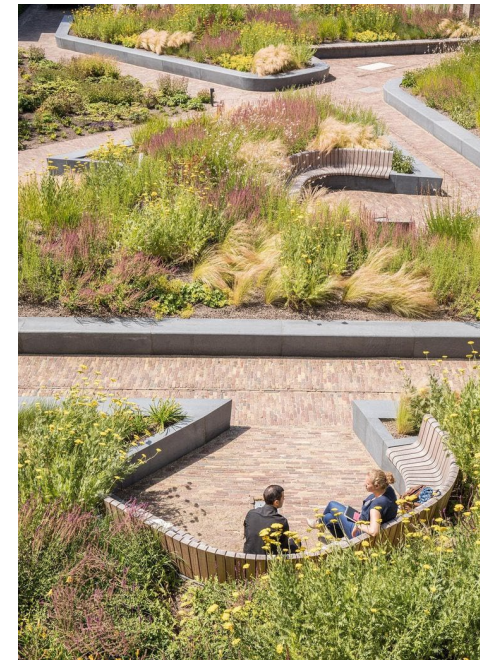


Figure 139: Plan of highveld forest and games plaza (Author, 2025)



Source: www.site-design.com accessed 13 February 2025



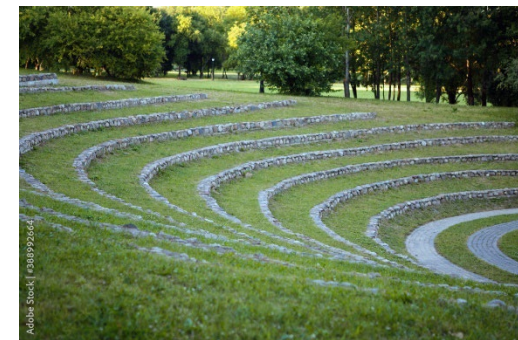
Source: www.resilience-blog.com accessed 13 February 2025



Figure 140: Plan of plaza adjacent to Park Station (Author, 2025)



Source: Jau, 2012 www.klydewarrenpark.org



Source: www.stockadobe.com



Figure 141: *Perspective of the void* (Author, 2025; Ngu and Lim, 2014)



Figure 142: *View of great lawn towards Nelson Mandela Bridge (Author, 2025; Lenzen, 2015; Puyvelde, n. d.)*

CHAPTER 6: CONCLUSION

CHAPTER SUMMARY

This chapter concludes with a summary of the challenges that urban voids create, addresses how the park could be funded, discusses ongoing maintenance and why an urban park was used as the primary means of facilitating social cohesion and physical integration.

Source: Aerial map adapted from Google earth, <https://earth.google.com/> accessed 28 January 2024

Urban voids or anti-space is created by modernising societies, which manufacture spaces that lose their interpretation and original purpose, exacerbated by negligence, conflict in planning organisations and sociocultural transformation. However urban voids are sometimes created due to neglect or the underuse of space or perceived threats which discourage use (Landman, 2018; Trancik, 1986; Peterson and Littenberg, 2020; Benjumea Mejia et al., 2024). The context that the development finds itself is one whereby urbanization has occurred at a rate faster than the spaces created for users (Patel, 1988; Simone, 2004). As a result the management and maintenance of this urban area is under pressure as it is ill fitted for the modern urban areas (Bubba and Lamba, 1991). This has caused many issues such as unaccommodated demands on urban social and physical infrastructure resulting in overuse of existing spaces, issues with capacity within the governance and management structures and limited resources for the management of urban environments as local government rely on central authorities for funding and shifting decision making causes uncertainty and therefore erodes long-term planning (Patel, 1988; Peltenburg, de Wit, and Davidson, 2000; Bubba and Lamba, 1991). This results in

deterioration of the urban spaces (Patel, 1988; Landman, 2016).

Urbanization within the global south has been referred to as 'dependent urbanisation' because it was reliant on exploitation (Patel, 1988). Post democracy Global South the situation has not improved the author would like to argue, because a finite revenue base is spread amongst a restricted few and more urgent service delivery mandate excluding the maintenance and management of the urban spaces (Patel, 1988; Bubba and Lamba, 1991; Bačlija, 2013). Due to reducing central government cash flow, the urban environment is now dependent on public investment and third parties (NGOs, funders, volunteers) (Patel, 1988; Bubba and Lamba, 1991) to subsidize its maintenance as the current limited resources are now shared with more than a constrained few.

Urban management requires reconceptualization because capacity and skill for development have devolved from national level to the local municipalities and therefore municipal governance is more autonomous and urban management must adapt (Bubba and Lamba, 1991; Bačlija, 2013). To ensure that the development is well maintained thereby increasing its attractiveness and to support ongoing visibility the space would require an urban management proposal to target marketing, maintenance, cleanliness, security, and strategic stakeholder engagement. The strategy will mitigate the capacity constraints at city management- and maintenance level and adverse institutional funding environment of the city, (Peltenburg et al., 2000). The development also proposes the use of locally and available and generic materials to ensure cultural integration and to support maintenance capacity. To ensure that the maintenance of the development is not cannibalized, and its potential contribution to the city is not undermined the following is proposed:

6.1 ONGOING MAINTENANCE

The author proposes that the maintenance and management of the development be awarded to a tendered service provider. The strategic intent for the service provider will be the profitability and

strategic placement of the development as a primary place. The second mandate would be to ensure that the functioning of the space supports its profitability to refute the need for management and maintenance budget from the city. The development must be self-sufficient and therefore entry cost and the entrepreneurs must be encouraged but kept to a minimum to ensure that the site is not exclusive. The labour for maintenance must be limited to surrounding inhabitants to eliminate transport costs from the living expenses. Ongoing maintenance and replacements must be limited to locally available and generic materials. Vendors are encouraged on the site to be provided with structures that will be billed. Vendors that bring their own structures can be charged a nominal fee for the leasing of space. Although the type of merchants will not be restricted the urban management company must encourage resellers that support the functioning of the park. Therefore a provide a kiosk to sell items required for leisure such as umbrellas, camps chairs, cooler boxes.

The project would be funded through donors and organizations interested in progressing sustainability and liveable cities at a large scale such as the Kresge Foundation. The draw would be access to high traffic and high-volume

facility in the city and an important door to the city.

6.2 WHY AN URBAN PARK?

The project is focused on public open space because there are a lot of empty, derelict, and abandoned buildings in the surrounds. This has contributed to urban decay and has introduced an element of criminality, and social challenges because they are being high jacked, creating unsafe pedestrian environments (Ballard et al., 2021; De Vries and Kotze, 2016). Therefore the intention of the project is to attract users to revitalize the social environment and improve safety in the area. Additionally, the project aims to recharge the economic environment by attracting more users and therefore broadening the market for the business in the area. Furthermore, creating an equal access to outdoor space for the building users from single to family orientated, locally and regionally. Lastly, the project aims to add a strong and large pedestrian element, softens the extensive built environment that makes up the urban form, of the city, making it more liveable (Charles Waldheim, 2006; Locke et al., 2019; Bruno de Meulder and Shannon, 2010).

The scale of the urban city requires a combination of incremental and large-scale interventions. However for a large once-off impact large scale projects would be effective to support the increasing urban population (Gomez and Rodriguez, 2019; Samson et al., 2021; Goenka and Monga, 2021). Furthermore a large-scale development contributes more strategic value to sustainable city development creating a liveable city (Charles Waldheim, 2006; Locke et al., 2019).

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CONCEPTUAL WORK

Therefore the design was undertaken in three levels, first level is the highest point of the void, which would be park station.

The parking proposed will serve as the main parking for visitors to the development and for large scale events. The park has storage facilities for larger scale items for travellers and for short term lockers for the unhoused. The development has a five-meter vertical clearance from the top of a train at its lowest point and eight meters at its highest. The minimum vertical clearance allowance from SANRAL is four point two but requires special permits however four point five and more does not require any permissions from the transit authorities. The vertical clearance for the Nelson Mandela bridge, Queen Elizabeth bridges has an eight-meter vertical clearance and John Rissik Street has a six-meter clearance. The anomaly is Harrison Street which has a low clearance of four point five meters above the electrified trains.

The program of the design based on potential user analysis is:

1. Netball, basketball, tennis courts
2. Lawns
3. Braai area
4. Skate park
5. Commercial and ablution
6. Elevated jogging, cycling, and walking route with segregation for the cyclists and walked.









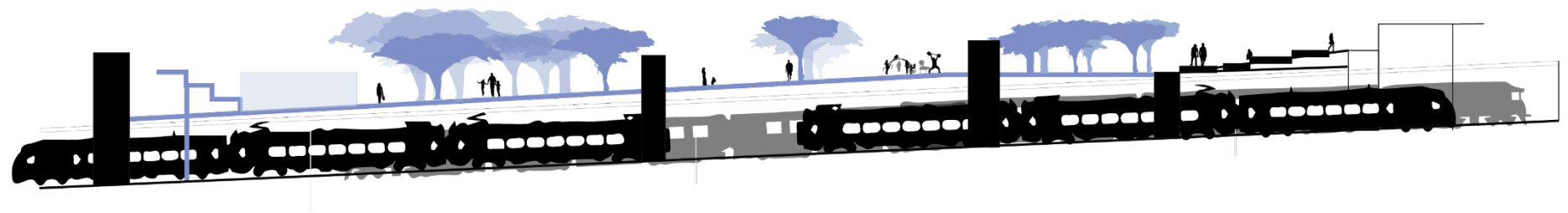




Figure 143: *Model of proposal level I* (Author, 2024)



Figure 144: *Level II elevated walkway* (Author, 2024)

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Attempt 2

Submitted on 28 Feb 2024 23:59

NEXT UP: Review Feedback

Attempt 2 Score: N/A

Add comment

0 Points Possible

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