Chapter 4: Hatfield as the context for this research project

1. Introduction

The research was undertaken in the Hatfield neighbourhood. It is one of the first neighbourhoods established in Pretoria and is part of the Tshwane municipality. Being one of the oldest neighbourhoods in Pretoria (DHK 2019), it has undergone dramatic changes in recent years. As Tshwane is one of the three major metropolitans in the Gauteng city-region (Mubiwa & Annegarn 2013), Hatfield must also be considered within the larger context of the Johannesburg, Tshwane, and Ekurhuleni conurbation (Figure 11).

This brief chapter gives a short description of the context within which the study was undertaken. It starts by discussing the Gauteng city-region and the relationship between Tshwane and Johannesburg. Subsequently, it gives a succinct description of Tshwane. Finally, Hatfield in its current condition is discussed. This chapter is not exhaustive in any way, but rather sets out to give a short description of the larger context and the built environment within which the study was undertaken.

2. Johannesburg and Tshwane within the Gauteng province

Gauteng is the smallest province in South Africa in terms of land area coverage, only covering 1,4% of the country (Gotz et al. 2014), yet it is considered as the most urbanised region in South Africa. This province houses 23.7% of the national population and contributes 35.2% to the gross value added (GVA) production (Harrison et al. 2014). The initial rapid economic development in this region is mainly attributed to the discovery of gold in the Witwatersrand region, but the economy diversified since its inception and can be considered one of the leading economic hubs on the African continent (Mubiwa & Annegarn 2013).

Figure 11: Gauteng province and its various metropolitans (Source: Harrison et al. 2014: Plate1.).

The economic success, and a series of developmental policies, have led the various city centres in this province grow into a single conurbation known as the Gauteng city-region (GCR) (Figure 11). Johannesburg, Tshwane, and Ekurhuleni are the three major metropolitans in the GCR (Mubiwa & Annegarn 2013), but it is important to note that many define the extent of the GCR region beyond the Gauteng provincial borders to include cities such as Rustenburg in the North West province, and Witbank and Middelburg in Mpumalanga (Figure 12). Apartheid city planning policies and modern planning ideals are largely responsible for these conditions. These policies and acts endeavoured to limit the access for non-white South Africans to urban centres, and as a result promulgated the allocation of several outlying dormitory settlements to retain labour for the various industries in the urban centres, but limited any investment in these dormitory settlements (Chipkin 1998; Mubiwa &

Annegarn 2013). Resultantly, the GCR covers an extensive area and represents highly interdependent and connected cities within the region. It is also important to note that these cities are sprawling in nature with many distant isolated regions housing low population densities and which present limited economic development opportunities. As a result, this region also experiences a high level of pendulum migration on a daily basis.

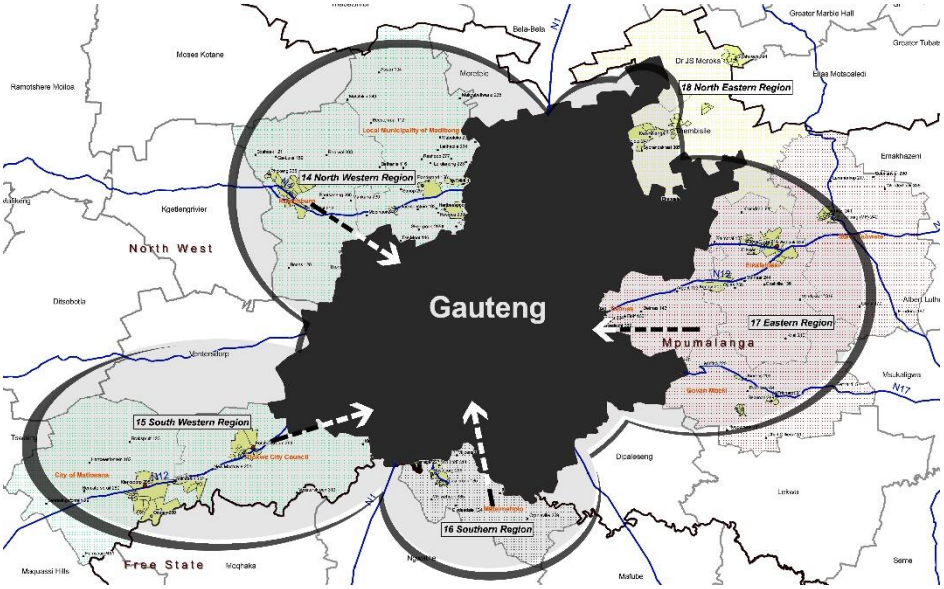

Figure 12: The functional extent of the Gauteng City-region (Source: Adapted from GCRO 2009).

The historic developmental drivers of Johannesburg and Pretoria[1] have been very different, initially resulting in contrasting urban forms (Holm 1998). While the cities still perform differently in economic terms, their close proximity enables some similarities. The construction technologies and spatial responses to the urban context converged since the implementation of Modern architecture principles and material use. Consequently, various older neighbourhoods share many material and spatial properties. This can be attributed to both cities functioning in the same macro-economic context, and sharing architectural and construction practices resulting from individuals and companies working in both cities.

Climatically, both cities are remarkably similar. The Johannesburg climate is defined as warm temperate conditions with dry winters and warm summers (Köppen-Geiger: Cwb) (StepSA 2020). Tshwane is located in a transitional zone, and includes three climatic zones shifting from warm temperate (Köppen-Geiger: Cwb) in the south, temperate with dry winters and hot summers (Köppen-Geiger: Cwa) in the centre, to much dryer arid conditions in the northern zones (Bsh) (StepSA 2020). Importantly, the sites considered in this study were located in

[1] Pretoria was originally founded in 1855, but in the post-apartheid era the decision was taken to merge multiple municipalities in and around Pretoria under a new centralised municipality entitled Tshwane. The original city region of Pretoria is still at times considered by its original name, but the larger metropole is referred to as Tshwane.

Johannesburg and Tshwane, and experience temperate climatic conditions with warm to hot summers. Finally, both cities, similar to the other cities making up the GCR, are closely integrated with the local transportation networks, and as a result recent urban developments followed these routes resulting in typical urban corridor land-use patterns (Mubiwa & Annegarn 2013). Within the macro context, the cities in the GCR share similar resource supply chains and are often subjected to similar macroscale risks (SA Government 2019a). As a result, the various cities that make up the GCR are functionally and spatially interconnected.

3. Tshwane as main context of the study

In 1855, Pretoria developed as a rendezvous point for farmers in the region to participate in the quarterly communion, known as the “nachtmaal” (Chipkin 1998; Holm 1998). While the urban form was founded on mainly pragmatic principles, its development also presented a specific Calvinistic paradigm considering the farmer as custodian to the land tasked with transforming the wilderness into a managed and ordered place (Holm 1998). It developed as a small town around a central church and square, with a strict Cartesian grid planned along the main cardinal points within which the first houses developed (Holm 1998). The original city blocks were extensive in scale, being 140x240m, which allowed for local subsistence farming (DHK 2019; Holm 1998). Nestled between the Apies river on the east and the Steenhoven Spruit on the west, as well as centrally located in the valley with low mountain ranges on both the north and southern sides, the early Pretoria city layout represented a compact, low density, self-sufficient city lined with street trees and open water channels (Figure 13) (Holm 1998).

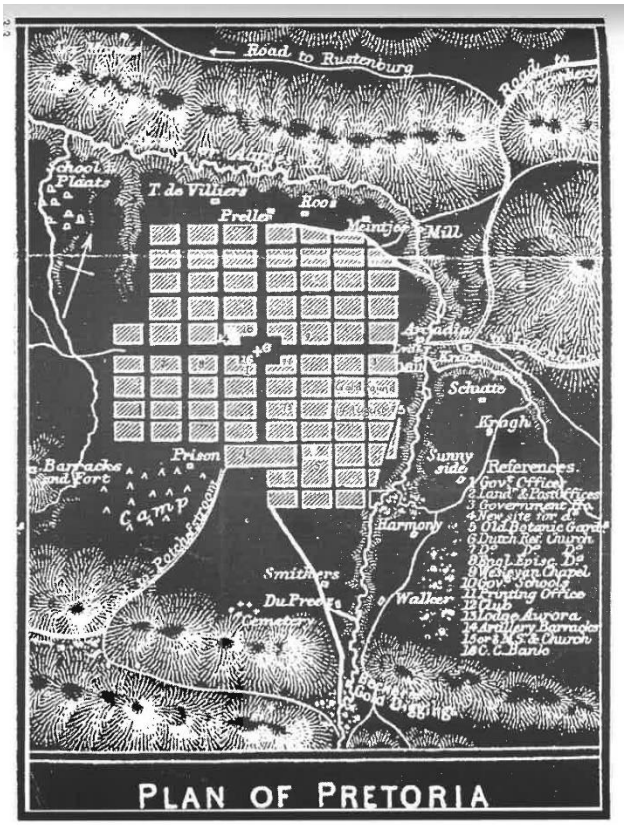

Figure 13: Early layout of Pretoria in 1887 (Source: Holm 1998: 73).

The discovery of gold triggered the development of the Witwatersrand and resulted in the founding of Johannesburg in 1886 (Mubiwa & Annegarn 2013), yet Pretoria was not isolated from the impacts of the new-found resources. After the Anglo-Boer war, the extraction of resources reached industrial scale, and the Union government, as well as the later Apartheid government, promulgated many discriminatory acts that both limited access to land for black Africans and also prevented them from legally residing in urban centres that were deemed only suitable for Europeans (white citizens) (Chipkin 1998). This resulted in urban policies and relocation programmes that established dormitory towns outside the city borders, forcing the respective communities to travel extensive distances to work in these cities (Figure 14) (Mubiwa & Annegarn 2013). This resulted in highly isolated towns with limited service delivery, whilst also affecting the overall urban structure leading to polycentric cities with high population densities located on the urban peripheries (Chobokoane & Horn 2015; Gotz et al. 2014).

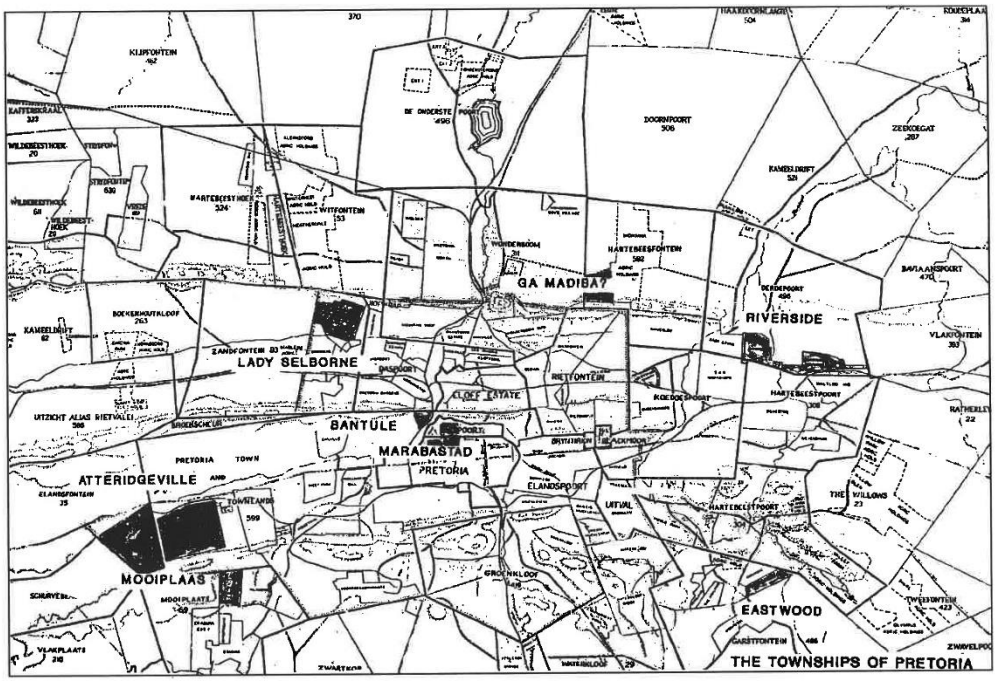

Figure 14: A 1910 map of Pretoria with black townships indicated in black. These were added in 1950 (Source: Chipkin 1998: 169).

.

The resultant polycentric and sprawling urban structure of many South African cities have affected many citizens and continue to do so. Schoonraad (2000) argues that even though the Reconstruction and Development Programme (RDP) set out to address the spatial and structural inequalities of the Apartheid-era, limited successful transformation has been achieved. Schoonraad (2000) cites multiple cultural, economic and institutional barriers to developing dense sustainable cities in South Africa, specifically in Tshwane. As a result Tshwane, like other cities in the GCR, has continued to sprawl beyond its urban boundaries. These new urban spaces range from informal to formalised neighbourhoods, resulting in highly diverse urban conditions (Pieterse 2019).

While these developmental drivers affect neighbourhoods on the outskirts of many South African cities, numerous existing neighbourhoods have also experienced some level of densification and transformation (Mabin 2014). These developments are often privately funded and developer-driven with limited guidance or adherence to larger urban frameworks. Hatfield, the context of this study, represents one such neighbourhood within a sprawling city (Figure 15).

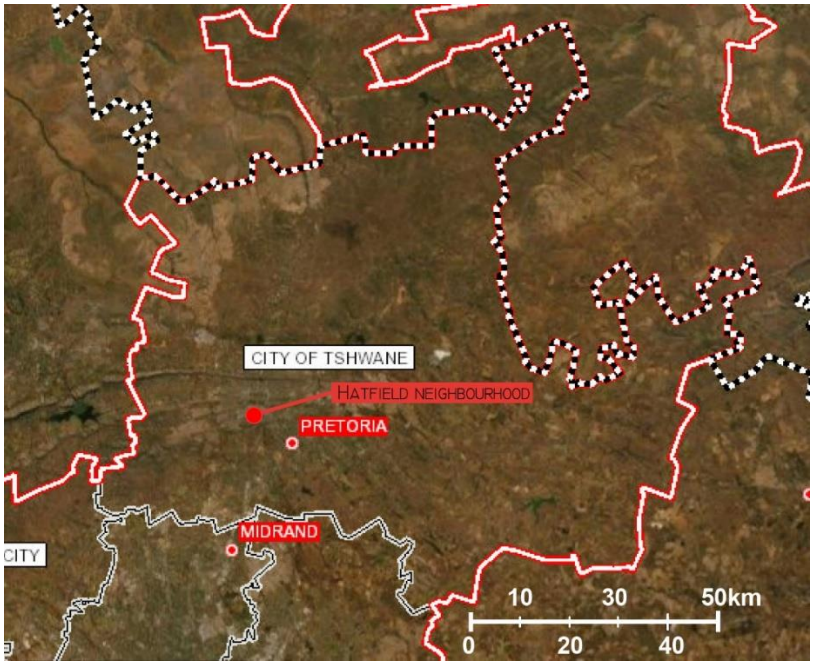

Figure 15: The municipal boundaries of Tshwane indicating the location of Pretoria and the Hatfield neighbourhood within (Source: Adapted from GCRO 2020).

4. Hatfield as a growing and changing neighbourhood

Hatfield developed in 1903 as one of the first suburbs in Pretoria (du Plessis 2003). It originally developed as a residential neighbourhood, and the University of Pretoria (UP), originally named the Transvaal Universiteitskollege, was established on the Hatfield Campus in 1908 (Figure 16) (UP 2020). Over the years Hatfield has experienced numerous changes in land-use functions (Figure 17). In the 1940s the first small commercial enterprises were established, with a commercial core developing around the 1970s. Since the early 2000s the existing low-density residential properties surrounding the commercial core started densifying with the local population doubling between 1996 and 2011, from 7,714 to 14,948 respectively (UP 2016). Along with these changes, an intercity high-speed railway line and station, the Gautrain, was constructed in Hatfield in 2010 increasing the connectivity of the neighbourhood. The promulgation of the Spatial Planning and Land Use Management act (SPLUMA) in 2013 allows for significant densification around transport nodes. As a result similar densification has taken place in Hatfield (DHK 2019).

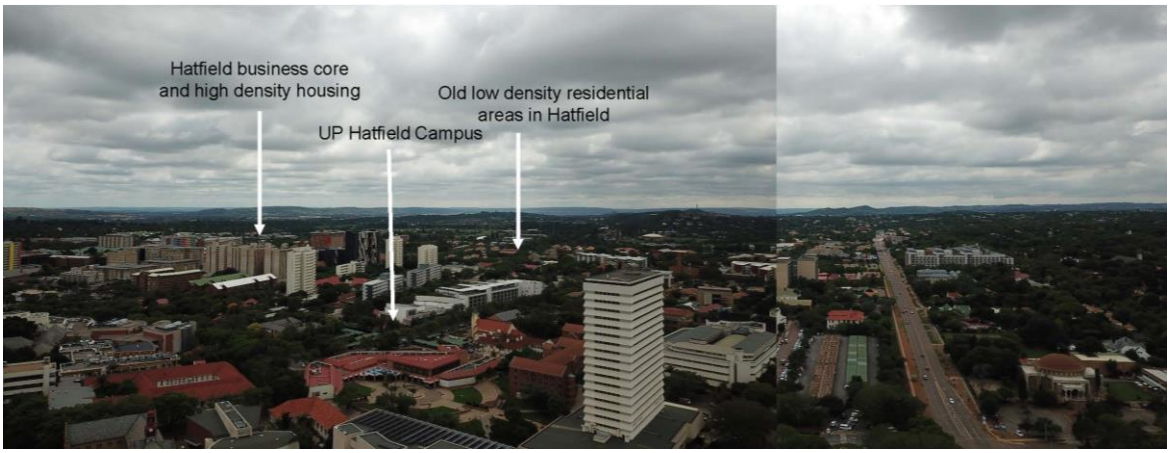

Figure 16: Bird's-eye view of Hatfield and the UP Hatfield Campus.

The change in demographics and the built fabric in Hatfield has not always been positive. An important report by UP notes a general economic downturn and urban decay in the neighbourhood (UP 2016). This resulted in the establishment of a local city improvement district (CID) and the development of an urban framework to guide future development.

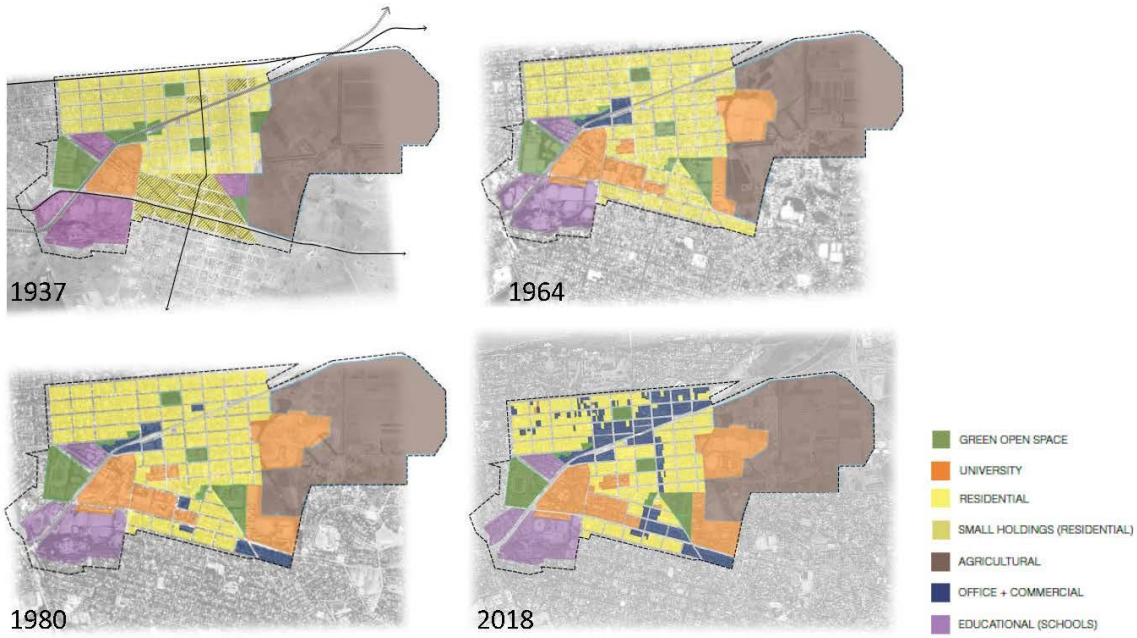

Figure 17:Changes in land-use types in Hatfield since 1937 (Source: DHK 2019: 45-46).

Currently, Hatfield accommodates a residential community living in both dense student accommodation and freestanding homes with significantly lower densities. This results in highly contrasting densities in the neighbourhood. It also has a commercial centre and several office buildings surrounding the centrally located Gautrain station (Figures 18 & 19). The UP Hatfield campus is located on the south-western boundary of Hatfield, while the Hillcrest campus is positioned on the eastern boundary (Figures 18 & 19). As a result, the scale and grain of the built environment in Hatfield differs significantly (Figure 11).

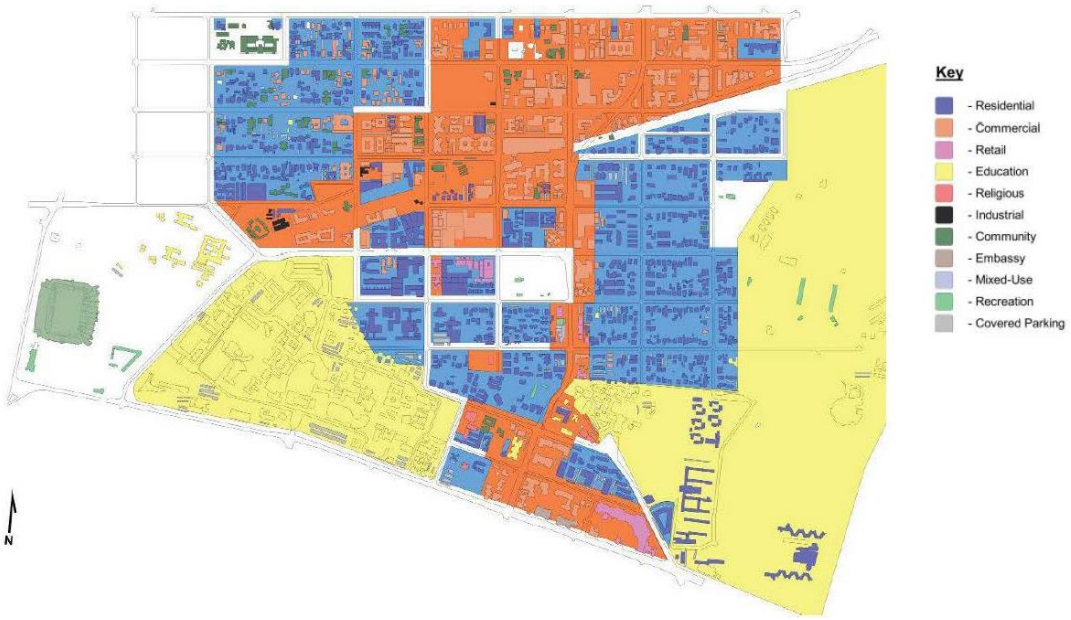

Figure 18: Land-use found in the Hatfield neighbourhood (Source: Hatfield Urban studio 2018).

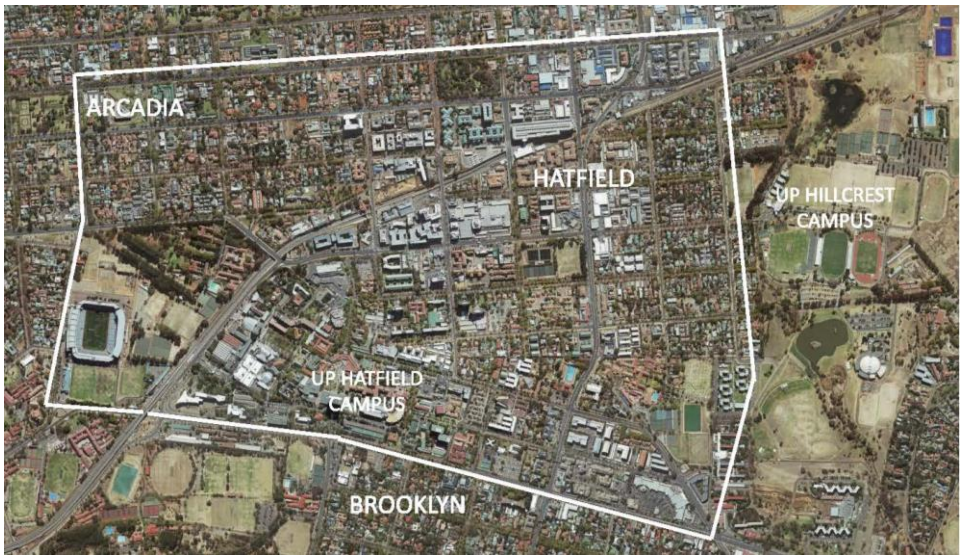

Figure 19: Aerial photograph indicating study area and surrounding neighbourhoods.

Figure 20: Map of the different building heights in Hatfield (Source: Hatfield Urban Studio, 2017).

Both campuses are isolated from the neighbourhood and have open spatial qualities with large green spaces between the various faculty buildings. On the other hand, the rest of Hatfield has undergone multiple anti-urban response measures to manage safety in the area (Figure 21). The Hatfield core has also experienced significant changes in scale and accommodates many high density student residences (Figures 20 & 22), this is in stark contrast to the historic residential character of the neighbourhood (Figure 22). Concurrently, the residential population has also moved out and as a result many of these existing homes have been converted into offices. While Hatfield has developed and densified significantly, the provision of public space, in particular public parks, has unfortunately been neglected (Figure 23).

In terms of transportation, UP has experienced a significant increase in student enrolment over the years. Many students use private vehicles for transportation, resulting in major parking problems (UP 2016). One of the response measures has been the provision of large parking areas and allowing informal parking on the street curbs and sidewalks.

Figure 21: Response measures to improve security by houses in the Hatfield neighbourhood.

Figure 22: Different building scales in the Hatfield neighbourhood.

.

Figure 23: Mapping of Green public space in Hatfield, note large portions of these spaces are inaccessible (Source: Hatfield Urban Studio 2018).

5. Conclusion

This chapter is a brief description of the urban spatial context where the study is undertaken. Tshwane is a decentralised, sprawling city with both informal and formal urban conditions. As noted in the literature review, existing formal urban neighbourhoods also require consideration in terms of climate change adaptation (CCA) strategies as these spaces are vulnerable in themselves and affect the vulnerability of neighbourhoods beyond their own boundaries (Seto & Shepherd 2009). While the bulk of the study considers the Hatfield context, the fieldwork was also conducted in Johannesburg. The proximity and similarities in climatic and urban conditions allowed the study to collect and analyse data from both contexts during the final research objective.

With the establishment of the research context, the report continues by discussing the research objectives and findings. The next chapter unpacks the first research objective which analysed the spatial and material characteristics of the unused and underutilised spaces in the Hatfield neighbourhood. The findings allowed one to consider the ingrained climate change adaptation potential of the Hatfield neighbourhood and the potential to implement building-integrated agriculture in the given context.