A Housing Support Centre (HSC) can serve as catalyst in the regeneration and restructuring strategy of the environment, assist people with information, training, technical support, skills transfer on community level, and be a fundamental catalyst to achieve community development. On academic and research level, an HSC could be linked to the University by implementing a formal academic housing discourse and research. Keeping in mind the current academic discourse and development in the field of human settlements and sustainable housing, a tertiary institution such as the University of Pretoria, Mamelodi campus, could be in the forefront of housing research and education.

Social rental units should be developed in accordance to the Social Housing Policy Framework. Units can be leased on a rent to buy basis and could only be owned by the tenant after a period of 15 years. An ideal social housing development should consist of a mixture of units. The suggested framework, according to SHIFT framework, should consist of 10% one-roomed units of minimum 30m²; 35% one-bedroom units of 37m²; 45% two-bedroom units of 45m² and 10% three-bedroom units of 52m².

2.   Contextual Research

2.1   Macro Scale

Total population in Tshwane in 2003 2 100 000

Growth rate of total population as percentage 50 000 people 2,4%

Growth rate of urban population as percentage 50 000 people 2,65%

Density of overall population per hectare 9,5 people per hectare not available

Informal settlements within the boundaries of the CTMM constitute 35% of all households.

Table 2.1 City of Tshwane, Statistics, 2003, illustrating population and population growth statistics.

Mamelodi is a historically black, densely populated township in Pretoria situated 30 km from the Pretoria CBD, planned by authorities on the periphery of Pretoria CBD. Mamelodi still has mono-functional residential areas isolated from the CBD with poor quality housing and a large component of informal housing settlements. The area is characterised by predominantly low-income formal to informal housing. The UP Mamelodi campus is situated on Hans Strjidom Avenue, in the eastern part of Mamelodi. The campus is surrounded by a range of housing environments ranging from better quality houses, houses bonded through bank loans, to typical RDP housing, RDP being the term given to give-away housing under the Housing Subsidy Scheme (HSS) and informal settlements to the east of the campus.

2.2 Micro Scale

Figure 2.1 Residential environment surrounding the campus

Figure 2.2 Image collage by author, 2008, Western view of site

The site of choice is located on Hans Strjidom Avenue, on the eastern side of the campus. The area is characterised by predominantly low-income informal and formal housing. Hans Strjidom Avenue offers informal trading opportunities. Several vendors and temporary built structures are on the site.

2.2.1 The Existing Site – Visual Urban Fabric

Figure 2.4 Image Collage by author 2008, – illustrating trading and built structures on the Mamelodi site. Most structures are built from corrugated roof sheeting and timber.

Figure 2.5 Trading structures on Hans Strjidom Road

Figure 2.3 and 2.4 Image Collage by author 2008, – illustrating trading and built structures on the Mamelodi site. Most structures are built from corrugated roof sheeting and timber.

Figure 2.6 Taxi holding area on Hinterland Road

Figure 2.7 Retail edge on Hinterland Road

2.2.2 Local Building Practices, Skills and Materials

Figure 2.8 Extended room with corrugated roof sheeting illustrating typical township extension principles.

Figure 2.9 Shack components being sold on Tsamaya Road, Mamelodi

Informal dwellings in Mamelodi are built form timber, corrugated metal sheets, fibre cement or a combination of the three.

Corrugated sheets seem to be popular due to its lightweight, durability and availability.

2.2.3 Prevailing Socio-Economic Systems

Figure 2.12 and 2.13. Image collage by author, 2008. Mamelodi
Illustrating formal and informal trading on Hans Strjidom and Hinterland Road

Fig 2.10 and 2.11 Image collage by author, 2008. Commercial activities on the site. Building material sales and informal trading structures.

Unemployment in Mamelodi is almost 63.6%, (City of Tshwane, 2003). Most residents in the area are self-employed and have to rely on formal and informal trading. Informal trading is an existing activity on the proposed site and should be incorporated in design proposals for the site. The concentration of trading is very high in

the area close to the taxi ranking area on Hinterland. Commuters wait for transport. Informal trading on the edge of Hans Strjidom and Hinterland Road provides an income to numerous people and counter unemployment.

	ATTERIDGEVILLE	SOSHANGUVE	MAMELODI	CENTURION
<800	48.0	72.2	74.5	75.4
R801 to 1500	39.2	22.1	20.3	16.8
R1505 to 2500	11.3	4.8	4.4	6.4

Table 2.2 Employment statistics comparing Mamelodi with other areas, City of Tshwane, 2003.

	ATTERIDGEVILLE	SOSHANGUVE	MAMELODI	CENTURION
% EMPLOYED	39.2	48.4	36.4	52.5
%UNEMPLYED	60.7	51.6	63.6	47.5

Table 2.3 Monthly income per household, comparing Mamelodi with other areas in City of Tshwane, 2003.

2.2.4   Infrastructure Analysis

Figure 2.14 Image by author, 2008, Mamelodi

Hans Strjidom not only serves as a main entrance to the eastern suburbs of Mamelodi, but also functions as the main activity and transportation corridor/spine running through the entire eastern Mamelodi.   The **Hans Strjidom Avenue** interface serves as important catalysts and could be explored in terms of regenerating the urban fabric. Pedestrian dominant circulation, with linkages between public spaces, the campus and residential urban environment, could contribute to the urban fabric of a university village. During peak hours, taxis park on the open site on Hinterland Road, creating an informal taxi-ranking and holding site.
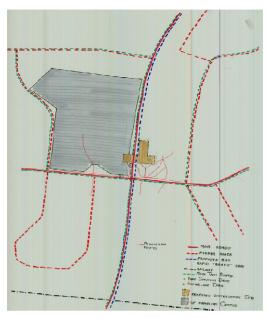
Figure 2.15,sketch by author, 2008. Indicating the proposed BRT route on Hans Strjidom Road.

The City of Tshwane plans to develop a Bus Rapid Transport (BRT) system of 92 km, to be operational in time for the 2010 soccer World Cup. The BRT public transport system will be the first phase of a four-phase initiative to develop public transport in the city. The completed system will eventually comprise 472 km of infrastructure.

The first-phase BRT system will run from Mapobane, past the Wonderpark shopping centre on the Mapobane freeway, the inner city, the Brooklyn shopping centre, Menlyn, Faerie Glen, and on to Mamelodi.

The BRT buses will make use of dedicated median lanes (as opposed to kerbside lanes) to be developed on current road alignments, thereby minimising costs. The BRT lanes will be separated from the normal traffic lanes by a semi rigid structure, thereby allowing exclusive bus use. The buses will stop at dedicated stations, placed at 750-m intervals along the route. The BRT station will feature pedestrian access, bicycle parking, park-and-ride facilities - although not at all stations - and railroad interfaces where applicable.

The BRT will run along Hans Strjidom Drive with a stop at Hinterland Drive (City of Tshwane, 2008).

2.3 Climatic Context

Climatic conditions in Mamelodi are characterized by a hot/dry climate. Humidity is low with higher temperatures during the summer afternoons. Summer rains can reach an average of 741mm per year with precipitation in the form of thunderstorm activity. Prevailing winds blow mainly from the northeast in the morning to northwest in the afternoon. During wintertime, cold winds could blow from the south. Thunderstorms are accompanied by turbulent wind patterns (Kunz, B. 2007)

	Jan	March	May	July	Sept	Nov	Average
Maximum average monthly temperature							
Minimum average monthly temperature	17.4	16	7.8	4.5	11.7	15.7	12.13
Average monthly amplitude	11.2	11	14.1	15.1	13.8	11.4	12.68
Average monthly relative humidity (%)	58.0	60.0	55	50.0	45.0	54	53.83
Average monthly rainfall (mm)	136	82	13	3	22	98	56.17

Table 2.4 Climatic studies, City of Tshwane Statistics, 2003