

# 03



Fig. 27 Land parcels and grid network, Phumolong, Mamelodi, South Africa

Fig. 28 Next page: The soccer field, Phumolong

# SITE + CONTEXT ANALYSIS

The system should be designed to be used as an approach in various contexts. Although a-contextual to a certain extent, once rooted in an environment the design intervention should react to site conditions. The catalytic qualities of the system are capable of responding to the relevant. These 'forces' could inform the growth pattern of the system, resulting in a site specific outcome through the implementation of a generic system.





AFRICA	SOUTH AFRICA	GAUTENG	TSHWANE	MAMELODI
Sub-Saharan Africa's slum population is estimated to increase from a recorded 100,973,000 in 1990 and 166,126,000 in 2001 to 249,885,000 in 2010 and 393,104,000 in 2020, an average of 9 737 700 new inhabitants per year (UN-Habitat, [sa]: Table 4)	There is an estimated 1176 informal settlements in South Africa with a combined population of 3,560,383 (Statistics South Africa, 2004).	In 1996 there were 468,364 households living in informal dwellings in the Gauteng Province increasing to 634,160 households in 2001. There was an average increase of 33 159 households per year (Statistics South Africa, 2004).	In 2005, 124,154 informal structures were registered with the City of Tshwane Municipality. 86% of the households are single headed households with dependents, 96% fall in the income group R0-1000 per month (Gauteng Department of Housing, 2005).	The population of Mamelodi increased from 154,845 in 1991 to 256,118 in 2001. Immigration into the township almost doubled while a slow emigration occurred out of the Pretoria City where its population decreased from 525,583 in 1991 to 525,118 in 2001 (Statistics South Africa, 2004).

# study area

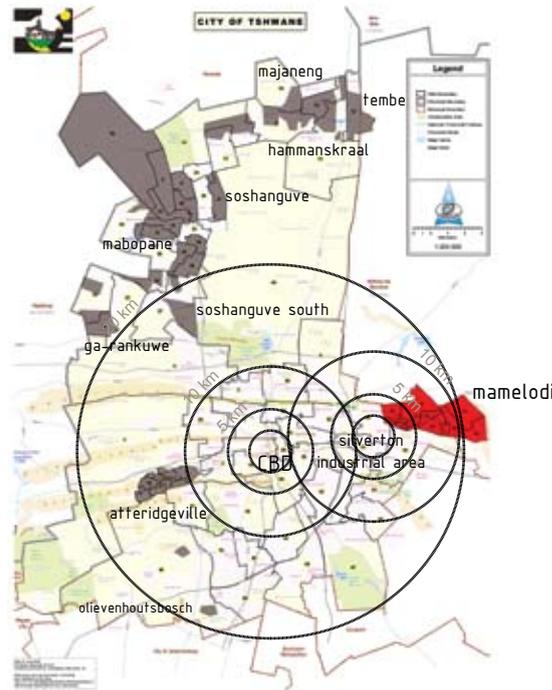


Fig. 30 Main townships hosting informal settlements in Tshwane

## MAMELODI INFORMAL SECTOR

Mamelodi represents an ever expanding 'urban' fabric capable of absorbing informal settlements. This perpetuating cycle continues to give rise to new informal offspring. Unfortunately like many other South African informal settlements limited infrastructure is offered and there is a lack of public amenities to improve social and health conditions.

Mamelodi is a residential suburb approximately 25 km<sup>2</sup> in area. It was originally established in the 1940's as a township for black workers near the train station at Eerste Fabrieken. In time Mamelodi expanded to the East

beyond the Pienaars River, locally known as the Moretela River. A cycle exists where informal residents located on the erratic edges would move into formal housing whilst newer immigrants would occupy the shifting outskirts of the township. Settlement patterns have been predominantly to the East (see fig 20-22). These informal settlements have been continuously uprooted and displaced by the expanding formal fabric of the township. The informal settlements in the extreme East and South-East of Mamelodi (informally known as Lusaka and Phumolong) were identified as areas in urgent need of basic services. In addition, high fire risks and poor sanitary conditions are prevalent in these two settlements.

The mapping of public services within the context of Mamelodi highlighted the need of a fire station. The 2008 report by the City of Tshwane Disaster Management Services listed Mamelodi Township as one incurring some of the highest shack fire incidents. During an interview with the Chief Fire Warden of Pretoria, Mr J. Pieterse, the need for a fire station was emphasised once again (personal communication, May 25, 2009). A central location would offer greatest access to fires within Mamelodi whilst also serving the surrounding areas of Nellmapius, Eersterust, Waltloo and the area of the Willows. From the investigation it is evident that a new fire station should be centrally located within Mamelodi. However, inadequate vehicular access together with the absence of fire hydrants complicates any fire fighting strategies. As an alternative, a water reservoir is investigated. This reservoir could perform the dual function of providing potable water for the informal residents, whilst it could serve as a 'fire filling station'. The main aim of such a station will be to operate as a fire hydrant in times of fire. This idea gave rise to the concept of a servant core with its primary activities based around the provision of water.

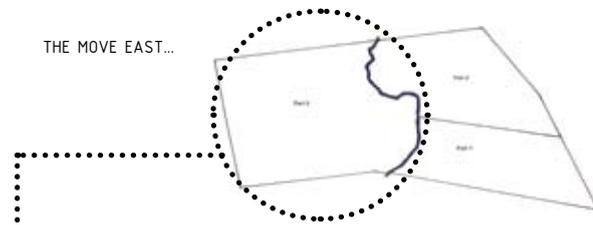


Fig. 31 Subdivision of the Farm Vlakfontein 329 JR during the 1870's



Fig. 32 Vlakfontein Native Location: 1947

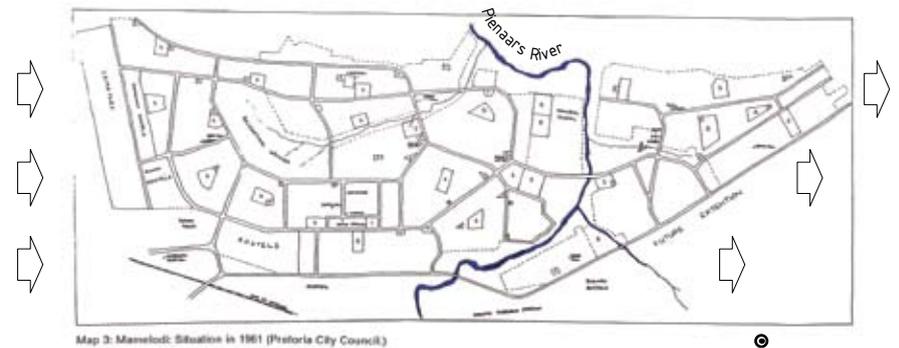


Fig. 33 Mamelodi: 1961

While expansion continues to the South East, its limit can be seen in the West where its boundaries have remained relatively fixed throughout its growth. A high amount of infill development occurs in this area.

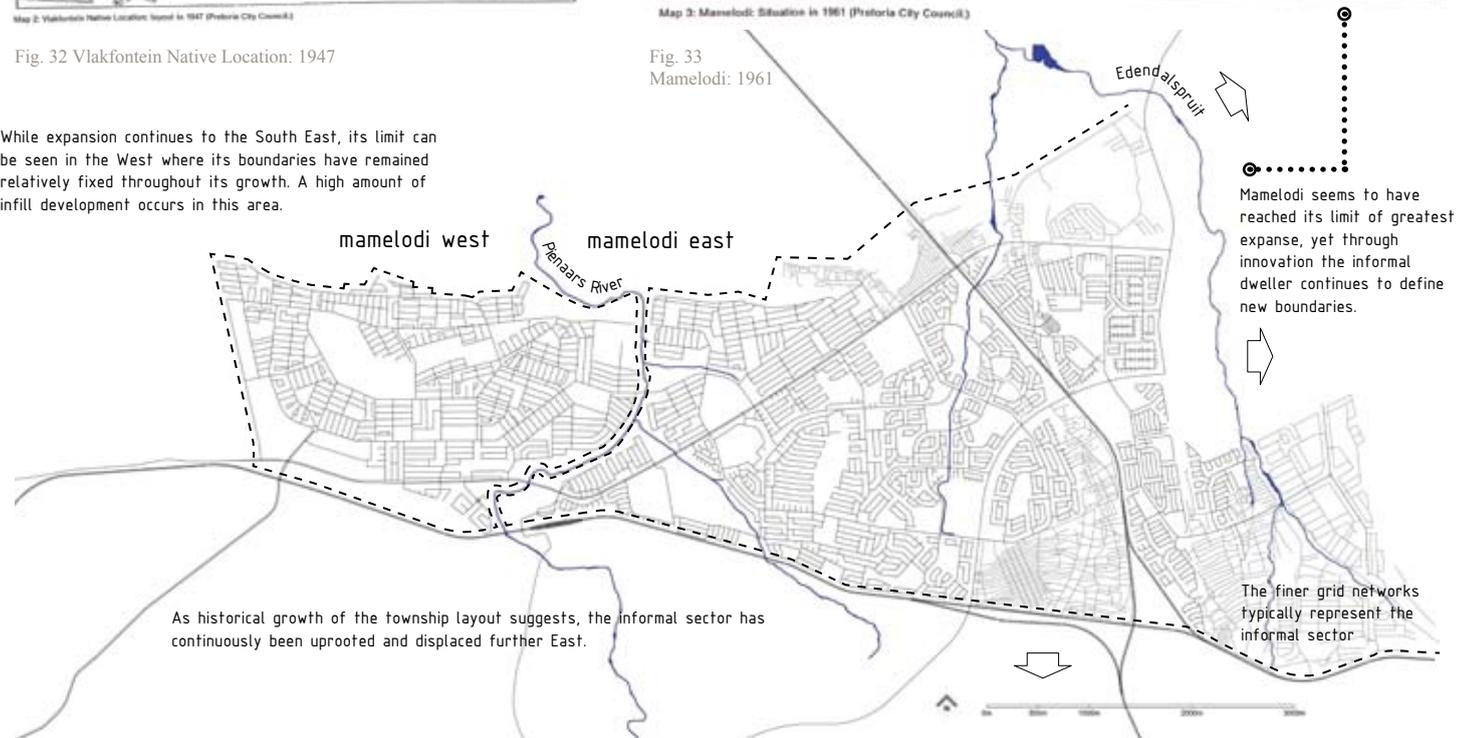


Fig. 34 Present day Mamelodi

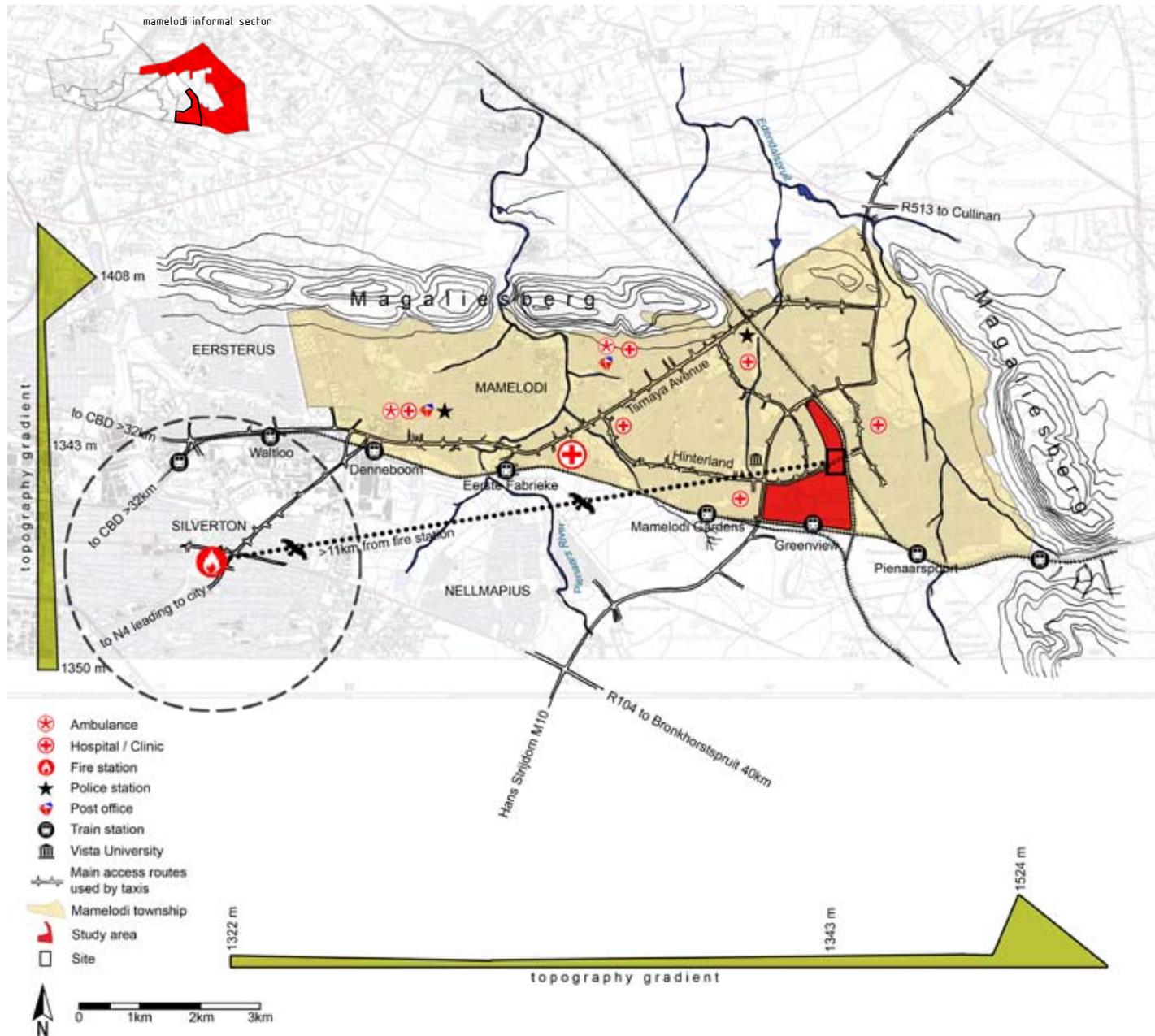


Fig. 35 Public amenities in the township of Mamelodi

Mamelodi is divided into two sectors by the Pienaars River, Mamelodi West and Mamelodi East. Mamelodi West shares a distinct border with the established township of Eersterust to the West and the industrialised area of Silverton to the South-West. The Magaliesberg mountain range defines the northern perimeter of the greater Mamelodi. Mamelodi East is bordered by the North-South lying escarpment of the Magaliesberg mountains and new commercial and residential development to the South in the Willows. Mamelodi East contains a great number of informal dwellings, particularly in the extreme East where there is significantly less formal housing and limited infrastructure. These informal dwellings encroach upon the Magaliesberg on the eastern front. The threat of shack fires exists due to the high combustion rate of the building material used, together with the internal contents. The high densities of informal dwellings further propagate the spread of fire.

Mamelodi bears traces of its numerous growth patterns, both from its pre-apartheid and post-apartheid era's. It displays evidence of the diverse urban planning typologies practised during the changing years of government and the fusion of incongruent road grids.



Fig. 36 Respecting public space



Fig. 37 Phumolong

Furthermore, Mamelodi bears testimony to the various contrasting forms of housing typologies implemented within the township. Unconstrained growth of informal housing result in the smaller informal grid patterns.

### THE INFORMAL CONTEXT

The informal sector located in the East of Mamelodi predominantly consist of wards 10, 16 and 17. Collectively these wards comprise more than one third of the area of Mamelodi. Sanitation is of concern with poor health circumstances as result. Much of the material used to construct the shacks is obtained from the surrounding industries, some originating from the Ford manufacturing plant in Silverton.

A large part of the current formalised township of Mamelodi East represents consolidated informal settlements. This is the result of land that had been previously subdivided without approval

that was sold or leased to the informal residents. Over time it was recognised as part of the township. Improved infrastructural networks were provided and these informal settlements were merged within the recognised township. In contrast, squatters have been relocated and the land was developed for new Reconstruction Development and Plan (RDP) houses. A constant shift takes place when the informal dweller is removed to the location of a new subsidised house, albeit within the same area. The South African Government aims to provide formalised housing and services to informal communities. However, priority is usually given to the informal settlements “of the most vulnerable and disadvantaged groups” (UN-Habitat, 2003: 129). In addition those established during the apartheid regime receive precedence (Metroplan, 2006), thus excluding the specific site under investigation due to its establishment, since 2003.



Fig. 38 Shack fires

RISK OF FIRE:  
According to the Disaster Risk Atlas of Tshwane by the City of Tshwane Disaster Management Services, the predominant disaster risk in the wards situated in Mamelodi is fire, in the form of informal settlement fires, urban fires and veld fires.

		Priority Disaster Risks:									
Wards		6	10	15	16	17	18	23	28	38	67
Priority	A	Veld fires	Informal settlement fires	Urban fires	Informal settlement fires	Informal settlement fires	Urban fires	Informal settlement fires	Urban fires	Veld fires	Urban fires
	B	Floods	Public health concerns	Informal settlement fires	Veld fires	Veld fires	Floods	Floods	Severe weather events	Floods	Special events
	C	Severe weather conditions	Floods	Floods	Floods	Floods	Severe climate events	Severe weather events	Floods	Severe weather events	Floods
	D		Veld fires	Severe weather events	Severe weather events	Extreme weather conditions	Extreme weather conditions				Severe weather events

Fig. 39 Disaster risks in Mamelodi

**DEAR ALL PEOPLE RESIDING AT PHUMULONG**

WE CALL A MEETING TO DISCUSS ISSUES CONCERNING OUR RESIDENCE. WE HAVE BEEN LIVING IN THIS AREA BUT NOTHING AT ALL SEEMS TO BE PROMISING SUCH AS AREA DEVELOPMENT AND INFRASTRUCTURE IMPROVEMENT.

IT 'S ON OUR BEST INTEREST TO APPEAL WITH THIS MATTER TO BE ADDRESSED THROUGH SHARING IDEAS ,WE BELIVE THAT A BETTER LIFE FOR ALL WILL BE CREATED.

THE MEETING ORGANISERS ARE BUCANEER AND MUHULU.  
VENUE TO BE HELD AT: THE GROUND  
TIME & DATE : 9:00 ON SUNDAY

**MEETING AGENDA:**

- ❖ VICTIMS
- ❖ OFFENDERS
- ❖ RESOLUTION

KIND REGARDS .....

Fig. 40 Phumolong's call for services. Notice found in Phumolong

# the site

## PHUMOLONG INFORMAL SETTLEMENT

### Location:

Phumolong, Ward 16, Extension 6,  
Mamelodi, Tshwane, South Africa.  
25° 44'00" S 28° 25'00" E

The informal settlement of Phumolong, is found in extension 6 of Mamelodi and located in ward 16 of Tshwane, South Africa. It is almost completely surrounded by the township of Mamelodi except to its south where the municipal boundaries of the City of Tshwane and Metsweding meet (both situated in the Province of Gauteng).

‘Phumolong’, Sotho for ‘resting place’ is the local name for the area occupied entirely by informal settlers and shacks with almost no municipal services. The area of Phumolong is located along the curved main road of Hans Strijdom (M10) defining both its Northern and Western boundary while two converging railway tracks demarcate its Eastern and Southern limits. This area is locally referred to as ‘bridge to bridge’ and is managed by a community elected ward leader and committee. The older neighbouring community to the North-West, known as

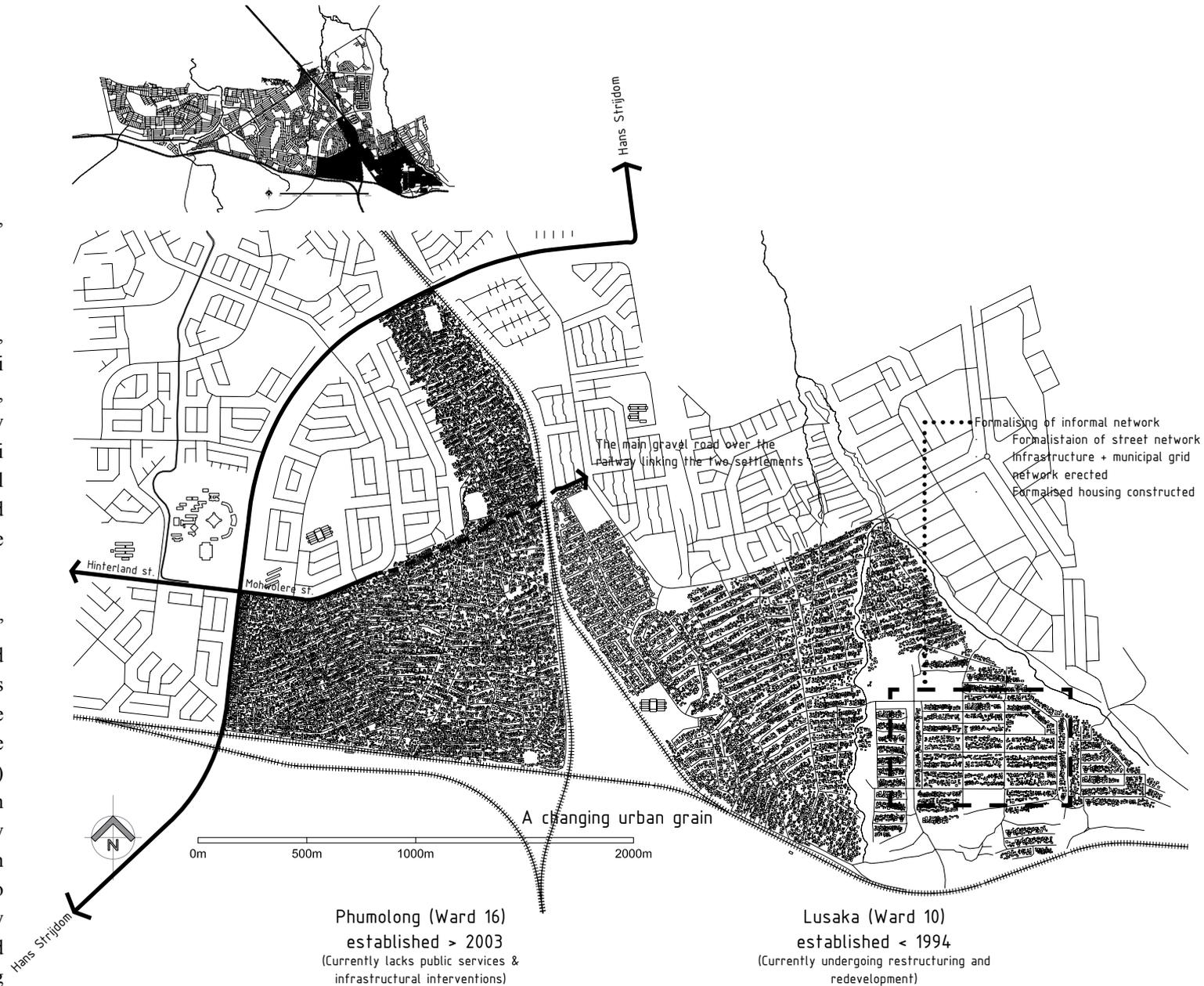


Fig. 41 Comparison between two neighbouring informal settlements within Mamelodi depicting their different stages of change in fabric



Fig. 42 Figure-ground study



Fig. 43 Major pedestrian thoroughfare



Fig. 44 Road network surrounding the site

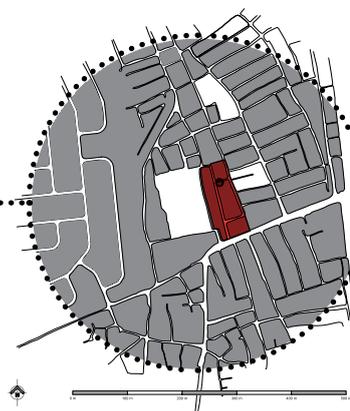


Fig. 45 Informal blocks

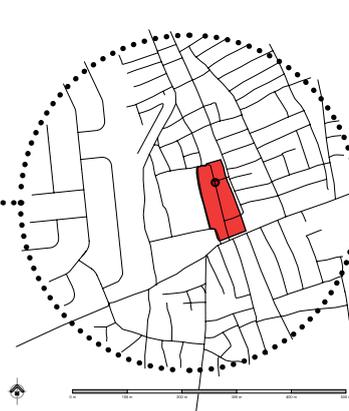


Fig. 46 Figure-ground

Marabastad by the locals, also resorts under Mamelodi extension 6 and boasts RDP housing together with the necessary infrastructure. The limited services in Phumolong are circulated from its neighbours by means of illegal 'izinyoga' (Sotho for 'snake') connections. Hose pipes are connected to garden taps within the neighbouring Marabastad and transverse the dividing asphalt roads. This practice is largely overlooked by the municipality. Upon entering Phumolong the visitor is confronted with hose pipes that meander down the gravel roads. Electrical connections on the outskirts (closest to Marabastad) occurs in a similar manner.

Mr Baloye, one of three committee leaders for Phumolong, recalls that the first squatters (of which he was one) settled and erected shacks on a vacant piece of land within ward 16 on the 29th October 2003 (personal communication, June 15, 2009). Squatters laid claim to small lots erecting their make-shift structures. A committee was elected by the community where after the community members were required to report to the committee their shack location. After this they were issued a statement of tenure, representing a right to occupy the land. Mr Baloye remembers that towards the end of 2005 the Mamelodi Council prohibited

any new inhabitants from erecting their own shacks. Existing shack dwellers were given a 'green number' which can be found painted on the structures. This acknowledges these residents as listed on the governments list of people eligible for subsidised housing (Baloye, personal communication, June 15, 2009). This has not prevented shacks from being erected by new owner occupiers, or rented out to urban migrating tenants. The current informal settlement of Phumolong now exhibits a sea of shacks.

The committee manages any incidents within the community belonging to the 'bridge to bridge' region. The ward leader acts as spokesperson for the greater community (Baloye, personal communication, June 15, 2009). The committee ultimately serves as community mediator, administrator and representative. It plays an integral role in maintaining a social balance resulting in a content community. This system ensures a relatively secure environment by means of visual observation and cooperative spirit.

### NEEDS IDENTIFIED BY RESIDENTS

According to section 2.1 of *The Top 20 Priority Township Programme* (Metroplan, 2006), certain needs were identified by the residents of Ward 16 (to which Phumolong belongs):

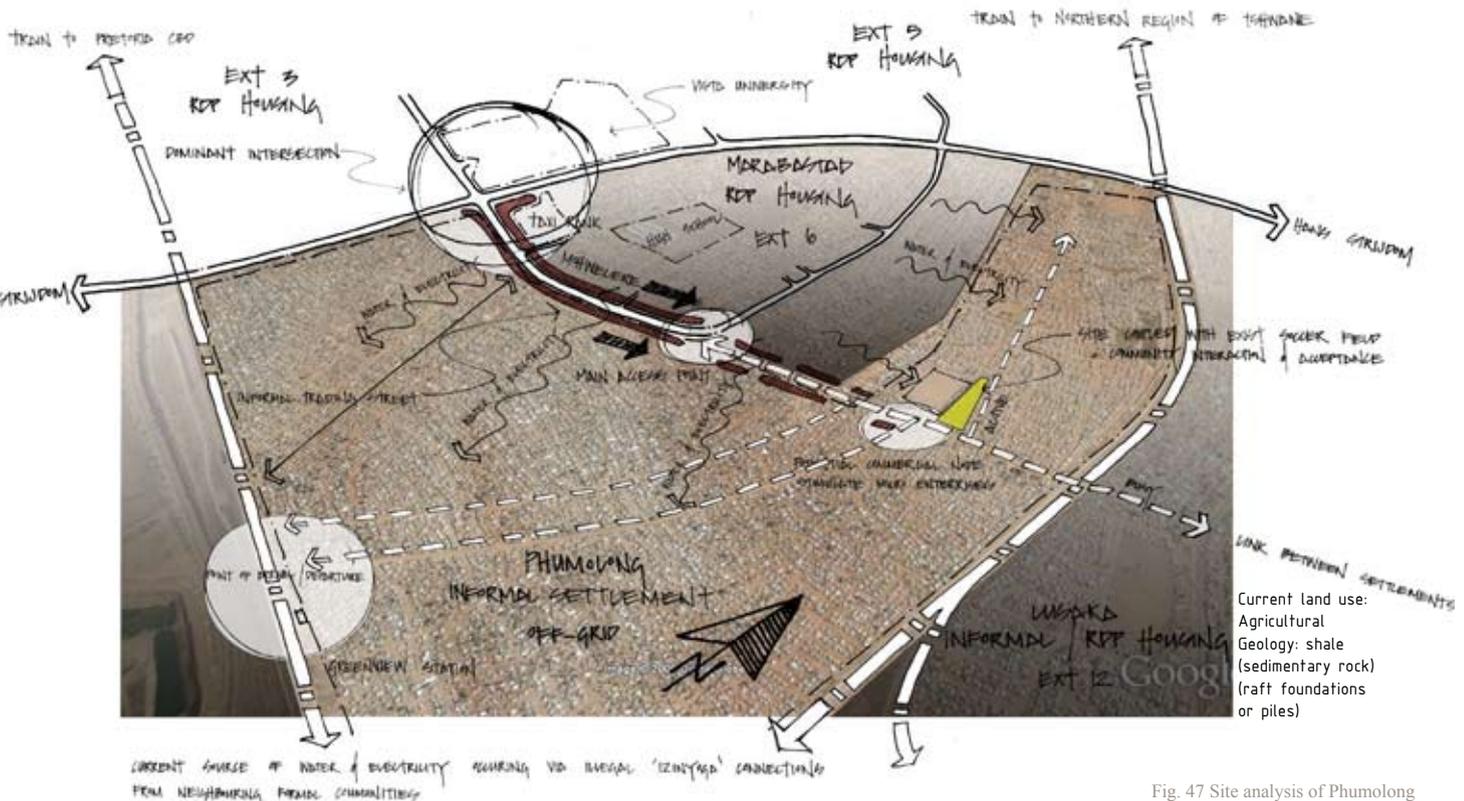


Fig. 47 Site analysis of Phumolong

- Infrastructure for informal settlements
- Housing
- Street lights
- Facilities at sports grounds

- Fire hydrants
- Crèche
- Communal play area
- Tree planting
- Opportunity for and stimulation of micro-enterprises

- the only alternative to the main roads of Hans Strijdom and Tsmaya Avenue crossing the railroad).
- Close proximity to the Greenview train station allows for easy access to public transport.
- Self-established and regulated community authority resulting in a relatively harmonious neighbourhood.
- The potential exists to use local labour.

Supplementary needs identified during research and site investigation:

- Infrastructure:
  - Potable water
  - Sanitation (ablution facilities)
  - Lighting

### ASSETS

- Highly traversed vehicular and pedestrian access route through the settlement. This presents a possible commercial route (this route offers

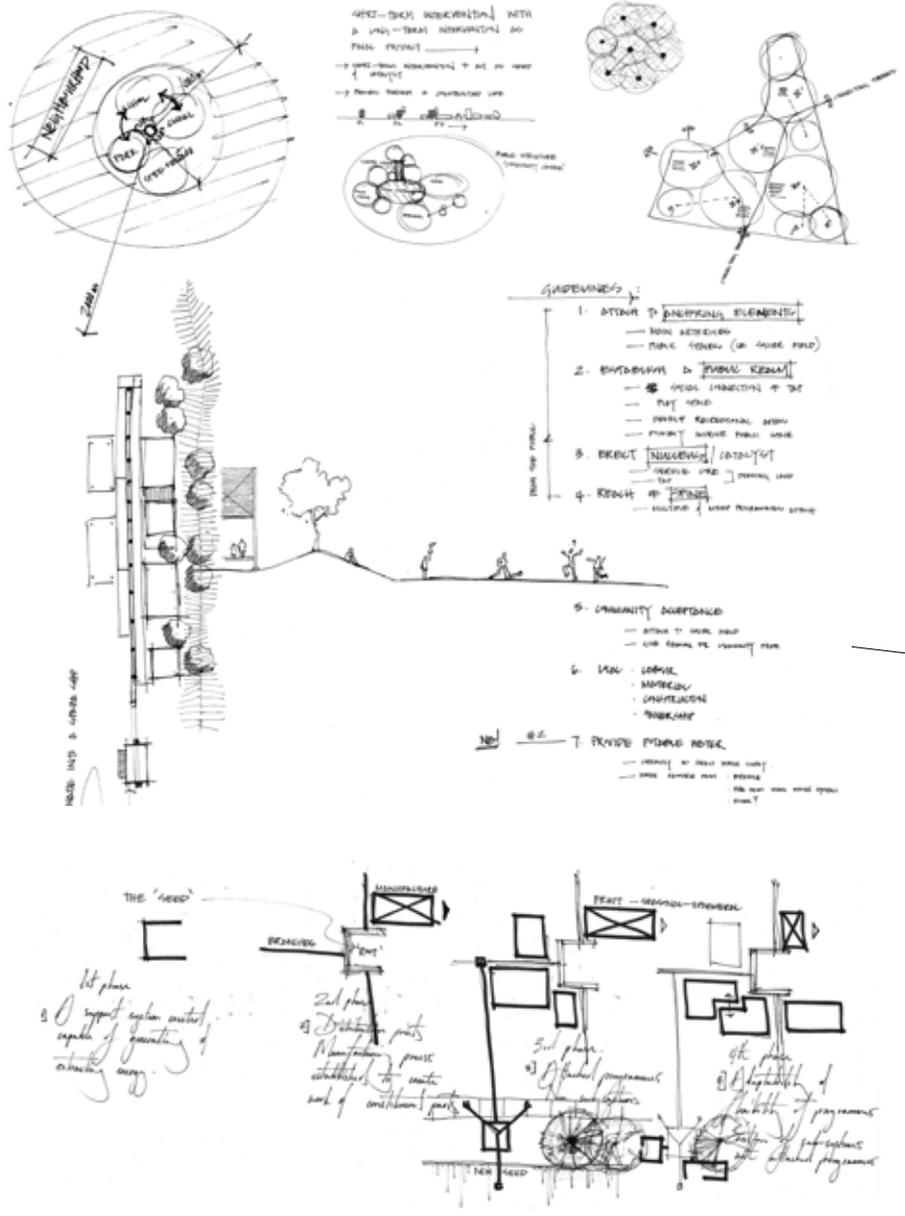


Fig. 48 Rural intervention strategies

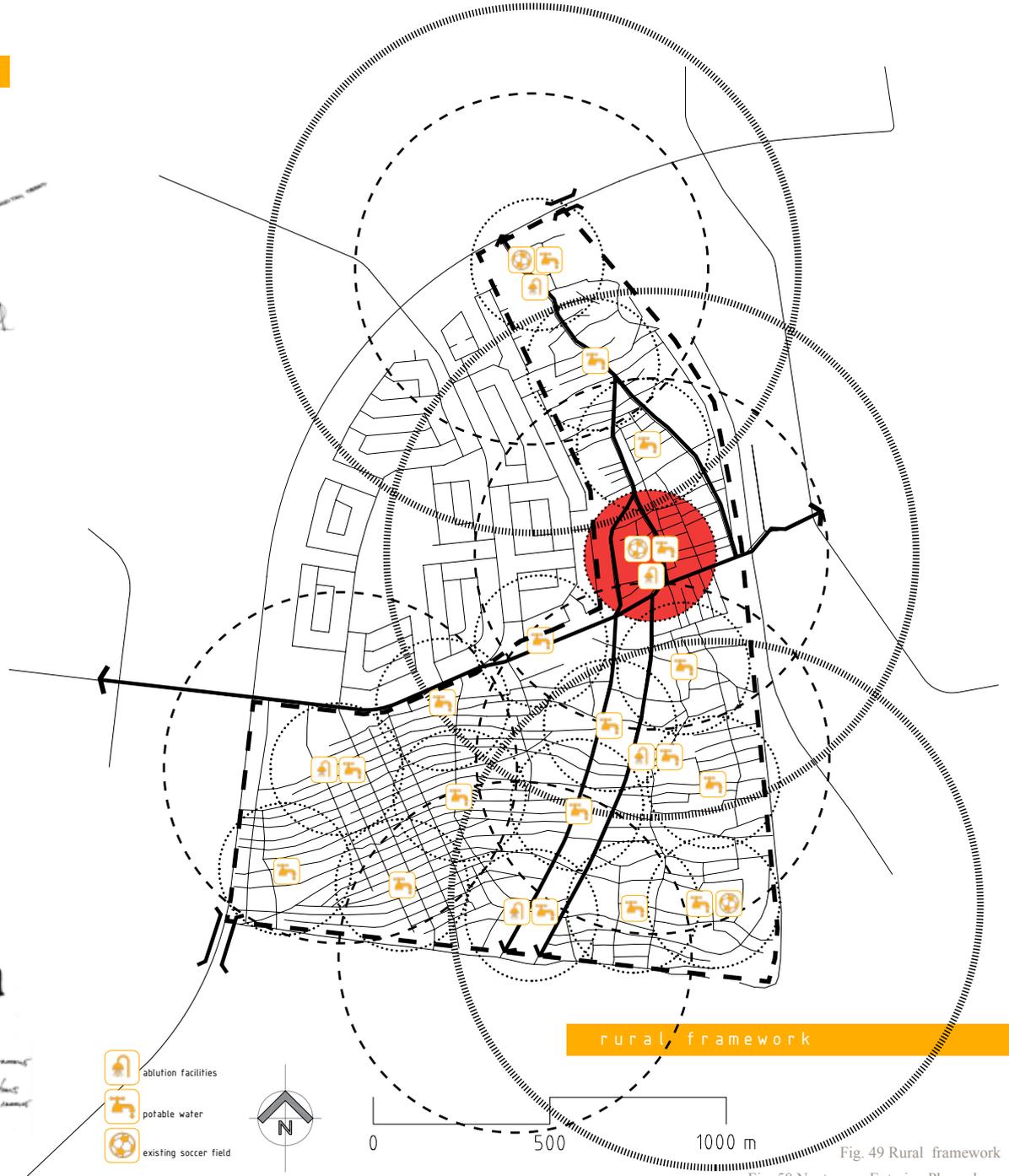


Fig. 49 Rural framework

Fig. 50 Next page: Entering Phumolong

phumlong



# the visit

## FIRST PERSON EXPERIENCE

“It’s about half past one and I’m in Mamelodi crossing the busy intersection of Hans Strijdom and Mohwelere Avenue. There are no robots, it makes for a scary experience in itself. I want to enter the squatter camp of Phumolong. It’s busy; people are arriving and departing in the various taxis. Coal, oranges, tyres, battery repairs and cooked food amongst others are being sold along the tarred road of Mohmelere Avenue. It’s too busy to take real cognisance of my environment. Time passes, it’s awkward. I need a friend. I buy a loose orange for R1, I don’t intend to eat it, it’s my ally, I need it with me so I don’t look alien...

Everything seems chaotic, maybe it’s because I’m not from here. I’ve been here before, but never to the actual site alongside the soccer field. I can’t find the route I used last time, or the lady who instructed a young girl to take me into the settlement to the comity leaders. I ask three men sitting outside a radio repair shop where the soccer field is. I’m directed. Looking for the first sign of a major access route into the



settlement; all I see is a range of small narrow foot paths. I forgot the aerial photo in studio. I continue walking down the road alongside a network of small informal businesses. A Taxi hoots while driving up the road. The driver looks at me, I shift my focus to my orange.

A while has passed and I’m still searching for the entrance. The endless barrier of coloured and rusted steel on either side of the street restricts my vision to the numerous household shop fronts. I hear loud music in the distance.

It seems further than on the aerial map.

School must have just finished. There is loud screams and laughing behind and along side me. The homogeneously dressed children walk past. Some greet me verbally, some with a smile, some just stare at me. They know I’m not from here. I start juggling with my orange. It brings me some comfort. The asphalt changes to gravel. A bend in the road with a larger cluster of informal trading stands suggests I have entered the informal settlement. The road becomes narrower and more uneven. It is quieter now. The attempt at paving the street is reduced to pavers scattered approximately 1m from each other.



Fig. 51 - 56 The visit in and around Phumolong

I stop and ask a man selling sweets where the soccer field is. I'm directed straight. It's much denser than I imagined. Again, I hear loud music in the distance. The small shops and trading stands have almost disappeared. Vegetable gardens, fruit trees and discarded cars are dotted around the shacks on small irregularly shaped lots. Surprisingly I walk past a driving school, there's just uneven gravel roads...

...I'm deeper in than I expected, but I have my orange. I haven't seen any light masts or stand pipes, only shacks and pit latrines.

This area is in need of infrastructure.

Informal trading stands start appearing once again. Someone is selling a few sweets and self-packaged maize chips from a table. The people seem both innovative and resourceful.

I continue walking to the ever elusive soccer field with my trusted orange. The narrow road abruptly opens onto a gravel road, approximately 8 - 10 m wide. I recognise part of the Magaliesberg mountain range. Shacks hosting the neighbouring community of Lusaka creep half-way to the mountains' ridge. It seems far. The



wider gravel road carries more vehicular and pedestrian traffic. I recognise this part on the aerial map; the site should be to my left. I try bending both space and time to see beyond the dense sea of shacks. I can't. I take a left road and pass a spaza shop, in anticipation. Suddenly the wind swept soccer field with the dirt pitch reveals itself. The wind moves a flag emblazoned with the Mamelodi

Sundowns Football Club logo in the distance.

I have arrived.

It is beautiful.

It is nothing like I imagined it to be.

I eat my orange."

Fig. 57 - 60 The visit in and around Phumolong