



Harry Gwala Informal Settlement

A Way Forward Through In Situ Upgrading

Introduction and Process

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For partner/client: Harry Gwala Community

It is our responsibility to break down barriers of division and create a country where there will be neither whites or blacks, just South Africans. Free and united In diversity. - OR Tambo

Oliver Tambo's grave site, which lies in the Tamboville Cemetery adjacent to Harry Gwala informal settlement, was declared a National Heritage Site on 27 October 2012. It is also the location of the new Oliver Tambo Cultural Precinct, comprising a museum dedicated to his life and an environmental centre. As the precinct borders directly on Harry Gwala, it seems particularly appropriate that Tambo's principles, which emblazon the site: unity, respect, empowerment, giving, engagement, caring, selflessness and vision, become the signposts for the upgrading of Harry Gwala's *in situ* upgrade. This project has the potential to break down socioeconomic barriers by uplifting the lives and living conditions of some 5000 local residents, another fitting legacy to Oliver Tambo.

Both the precinct and the settlement are located at the edge of the Leeurpan, an environmentally sensitive pan and natural lake which are valuable wildlife habitat particularly to the African Flamingo. At the local level, the precinct's environmental centre is putting Watville on the map for its use of environmentally friendly construction technologies; the upgrading of Harry Gwala poses a unique opportunity to engage with informal settlement upgrading in the same vein. At the municipal level, it also complies with Ekurhuleni Metropolitan Municipality's Upgrading for Growth initiative, which states a commitment to *in situ* upgrading as a first priority.

Legal/Policy Basis for the Project

A local authority is bound by the provisions of Part 3 of the Housing Code, published in terms of section 4(6) of the National Housing Act No 107 of 1997. Part 3.9 C of the Housing Code ("Relocations") provides, *inter alia*, as follows:

2.1 "A municipality must identify an upgrading project having due regard for the principle that relocation should be limited as far as possible and only be considered as a last resort.

2.2 Where relocation is unavoidable, it should be based on the principle of minimal disruption to the affected persons and to relocate the persons to a site as close as possible to the existing settlement.

2.3 A relocation strategy should be developed in collaboration with the community."

If no good reasons exist as to why the upgrading *in situ* of an informal settlement is not possible and why, therefore, "relocation is unavoidable", an informal settlement must be upgraded *in situ*.

Project Goals

- To provide dignified living conditions.
- To empower the residents.
- To recognize land rights.
- To improve social services.
- The provide basic services.
- To maintain the community's social networks.
- All occupiers will be treated equally under the terms of the Housing Code.

What is In Situ Upgrading?

In situ upgrading is a process that incrementally improves living conditions to meet residents' social, health, safety and sustainability needs. This includes:

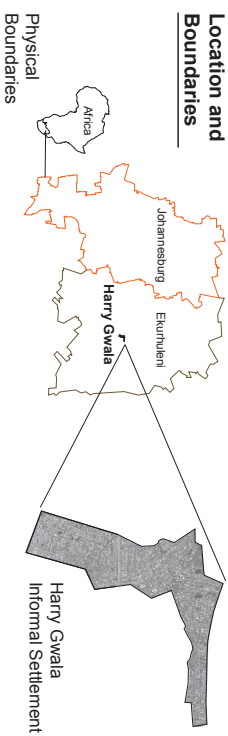


Why at Harry Gwala Informal Settlement?

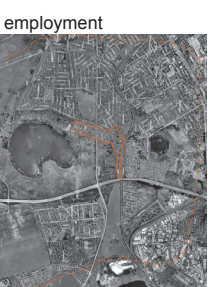
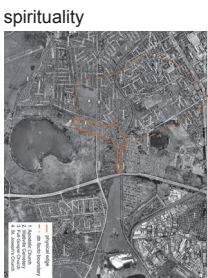
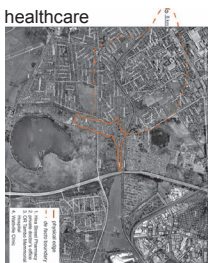
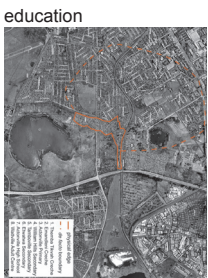
- A viable existing layout with low density.
- Easy access to adjacent city electricity, sewer and water.
- Well located, municipally owned land with the potential for further land release from HDA.
- A positive, organized civic committee.
- The enthusiastic buy-in of the residents.
- A history of community engagement.



Location and Boundaries



Social Boundaries



Private Boundaries



Community Engagement, Residents' Buy In and Input



internet cable

electricity

creche

library

solid waste pickup

playground

flushing toilets

football pitch

improved healthcare access

adult education

satellite police station

park

space for religious practices

gardening spaces

high mast lighting

ambulance access

areas to do business

trees

taps at every stand

primary school

improved transport to schools

bank machine

community center

culvert the storm water channel

market stalls

input from residents of all ages

Meeting with the Harry Gwala Civic Committee

Mass meetings at Harry Gwala and at a local school

Documenting existing conditions with the Civic Committee

Harry Gwala Informal Settlement Existing Conditions and Circulation

South quadrant (1/4)

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Existing Areas of Interest

- commercial facilities
- open space
- drainage problems
- low density
- high density
- Rand Water pipeline

Existing Circulation Routes

- roads
- footpaths
- barriers

HOUSING CONDITION The standard of housing in this quadrant is moderate to poor. The majority of houses are built from corrugated metal or various recycled materials.

STAND DEMARCATION AND SIZE The stands in this quadrant are relatively consistent and large.

WATER SUPPLY There are two taps in this quadrant.

SANITATION Until 2009, residents dug out a chemical toilet program providing one toilet per ten families. In this quadrant residents rely mainly on their latrines or have returned to a bucket system, emptying the bucket in the chemical toilet. Interviews reflected that this is due to problems of cleanliness and safety.

ELECTRICITY A small percentage of residents along the western edge rely on informal electrical connections.

GARBAGE There is no garbage collection, and as a result most of the garbage is left by the Dube Street entrances or thrown in the storm water channel (photo 3) and is washed down into the pan (photo 7).

ROAD AND FOOTPATH NETWORK The roads in this quadrant are laid out in a regular pattern and are used consistently, particularly the north/south access. All surfaces are dirt and the east/west roads peter out into footpaths as they go down into the area of the pan.

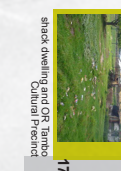
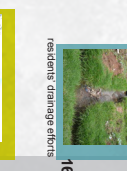
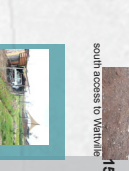
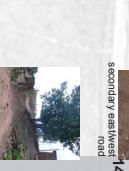
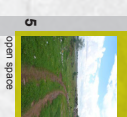
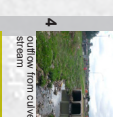
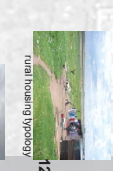
DRAINAGE The storm water channel urgently needs to be addressed as it poses serious safety concerns. Except for the small area in the south east corner of the quadrant, there are no drainage problems.

SOCIAL FACILITIES There are no social facilities in this quadrant.

COMMERCIAL FACILITIES There are three shebeens and two tuck shops in the quadrant.



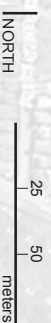
existing conditions



key fact

The R140-million **Oliver Tambo Cultural Precinct** opened in 2012. It includes the OR Tambo Narrative Centre, multi-purpose arts and crafts workshops for artisans to produce, exhibit and sell their crafts, an outdoor amphitheatre, and an R8.4-million solar power plant. Its electrical capacity is 200kW from 860 photovoltaic panels, this energy is enough to power about 133 low-cost houses (Special Report, Mail&Guardian, 13/11/2012 accessed on line: www.mg.co.za/article/2012-11-13-celebrating-tambos-legacy).

walking path to Tamboville
and Tamboville Secondary School



Harry Gwala Informal Settlement Existing Conditions and Circulation (2/4)

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Existing Areas of Interest

- commercial facilities
- open space
- drainage problems
- low density
- high density
- Rand Water pipeline
- culverted stream underground

Existing Circulation Routes

- roads
- footpaths
- barriers



HOUSING CONDITION

The standard of housing in this quadrant is moderate. The majority of houses are built from corrugated metal or various recycled materials.

STAND DEMARCATION AND SIZE

The stands in this quadrant are relatively consistent and moderate size.

WATER SUPPLY

There are no city taps in this quadrant, but residents have piped their own informal hookups with taps.

SANITATION

The lack of privacy and therefore dignity was repeatedly mentioned when residents were asked about the chemical toilet programme of one toilet for every ten families: 'if there is someone nearby I will not use it'; 'I don't like these toilets, there is no privacy'; 'There is no dignity, the plastic walls are very thin'. The interview data reflects that this is a gender issue, women in particular avoid the toilets on the street.

ELECTRICITY

A small percentage of residents along the western (Matville) edge rely on informal electrical connections.

GARBAGE

There is no garbage collection. As a result, most of the garbage is left by the Dube Street entrances or thrown in the open space (photos 4 and 5).

ROAD AND FOOTPATH NETWORK

The roads in this quadrant are more limited, and much of the access is by footpath only. In some cases, these footpaths are wide enough that roads could be put in with minimal disruption.

DRAINAGE

Surface moisture is a concern in this quadrant. It presents itself both as surface water, which residents channel with varying success (photo 5), and through the presence of plant species typical to wet soil conditions (photo 6).

SOCIAL FACILITIES

There are no social facilities in this quadrant.

COMMERCIAL FACILITIES

There are three tuck shops and one shebeen in the quadrant.



key fact

This map is taken from Annexure 1 of the proposed subdivision for Harry Gwala submitted by IzweSishe Town Planners, which was then commented on (at the request of Webber Wentzel) by SRK Consulting Engineers and Scientists. This quadrant of the settlement falls into zone F of the map. Similar to the existing conditions documented in this drawing, there are concerns with surface moisture, which will have to be addressed during the upgrading process. SRK states: 'Zone F was classed as a wetland in the geotechnical report, based on information from the report on wetland demarcation by Index (Pty) Ltd. The conclusion was 'no development permitted'. However, except for the area immediately adjacent to and along the stream crossing the north-west part of the site, [which is outlined on the aerial photo and which has since been piped underground, see photos 1-3] the 100 year flood line is close to the pan and does not encroach on to the proposed development, being to the south-east of the area. Unless other environmental factors constrain development in Zone F, [none were stated in the Environmental Impact Report] consideration could be given to draining the zone to reduce water levels' (personal communication SRK Consulting, 27 October 2010). We agree with SRK that a hydrology study be carried out to ascertain the best plan of action to address this concern as well as others that have been highlighted.



NORTH
25 50
meters

existing conditions



CLIENT: Harry Gwala Community, drawing 3/10

existing conditions

Harry Gwala Informal Settlement
Existing Conditions
and Circulation
North-central quadrant (3/4)

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O.R. TAMBO
1917 - 1993
HE IS OUR HERO
O.R. TAMBO
1917 - 1993
HE IS OUR HERO

Existing Areas of Interest

- commercial facilities
- social facilities
- open space
- drainage problems
- low density
- high density
- dwellings on non-demarcated stands
- Rand Water pipeline
- culverted stream underground

Harry Gwala design quadrants

Existing Circulation Routes

- roads
- footpaths
- barriers

HOUSING CONDITION The standard of housing in this quadrant is the most consolidated, while the majority of houses are built from corrugated metal others are brick and plaster.

STAND DEMARCATION AND SIZE The stands are relatively consistent and of moderate size.

WATER SUPPLY This quadrant has one city tap, however some residents have piped their own informal hookups.

SANITATION Residents' comments on the current chemical toilet program: 'We need a toilet that is flushing, that toilet is not flushing'. 'We don't use it. There are six or seven families using it and they don't keep it clean. I clean it and then they don't clean it, it smells'. 'I hate this toilet. I want a toilet that uses water, a flushing toilet'.

ELECTRICITY A moderate percentage of residents along the west and north (Wattville) edges rely on informal electrical connections, the remaining residents have no electricity.

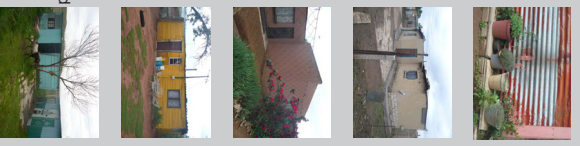
GARBAGE There is no garbage collection, and as a result most of the garbage is left by the Dube Street entrances or thrown in the public open space (photo 4).

ROAD AND FOOTPATH NETWORK The roads in this quadrant are quite extensive, with only limited areas accessed by footpath.

DRAINAGE Plant species typical to wet soil conditions are evident in a limited area in the southeast edge of the settlement.

SOCIAL FACILITIES There is a community hall.

COMMERCIAL FACILITIES There are five tuck shops, one shebeen and one restaurant in this quadrant.



key facts

This centralized quadrant offers opportunities for the development of **SOCIAL AMENITIES** in the existing open spaces. First, with the community's existing gathering space, shown in the photo 3; and second, the long strip of open space which was created when the stream was put underground in culverts.

The community voted and has asked that no road be put through this quadrant connecting Kumalo Street in Wattville to Dube Street. It was decided that the subsequent increased traffic from outside the neighborhood would change the character of the community and endanger the children.

1 Harry Gwala's restaurant

2 open space created by the culverted stream

3 public gathering space

4 open space created by the culverted stream

5 primary road and evidence of heavy storm water runoff

6 residents' efforts to divert storm water

7 community hall

8 primary road

9 open space at the confluence of a primary road and culverted stream

10 tuck shop

11 plant life showing evidence of wet ground

12 open space and secondary road meeting Dube Street

13 open space and secondary road meeting Dube Street

14 open space and secondary road meeting Dube Street



O.R. TAMBO
1917 - 1993

Harry Gwala Informal Settlement

Existing Conditions and Circulation

Northeast quadrant (4/4)

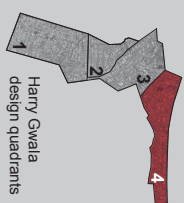
Prepared by the team of:
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Marie Hutzsremeyer, PhD
Peter Rooft, PE
Thobile Siphehu

Existing Areas of Interest

- commercial facilities
- social facilities
- open space
- drainage problems
- low density
- high density
- dwellings on non-demarcated stands
- Rand Water pipeline
- ESKOM hv transmission lines

Existing Circulation Routes

- roads
- footpaths
- barriers



Harry Gwala design quadrants

HOUSING CONDITION The standard of housing in this quadrant is the most diverse, ranging from very basic dwellings on non-demarcated stands to a limited number of brick structures. The majority are corrugated metal construction.

STAND DEMARCATION AND SIZE There is a large variation in stands, a confined area of non-demarcated yards and low density areas due to drainage problems on the southern edge.

WATER SUPPLY There are three city taps in this quadrant.

SANITATION Hygiene stood out in the interview data as a problem with the communal toilets. This is not only a health issue, but also a social one. Relations between neighbours in some areas are beginning to fray because of misunderstandings about who is responsible for cleaning the toilets, and also there is concern that the general public uses and misuses them, frequently they are pushed over.

ELECTRICITY A small percentage of residents along the west (Matville) edge rely on informal electrical connections; the remaining residents have no electricity.

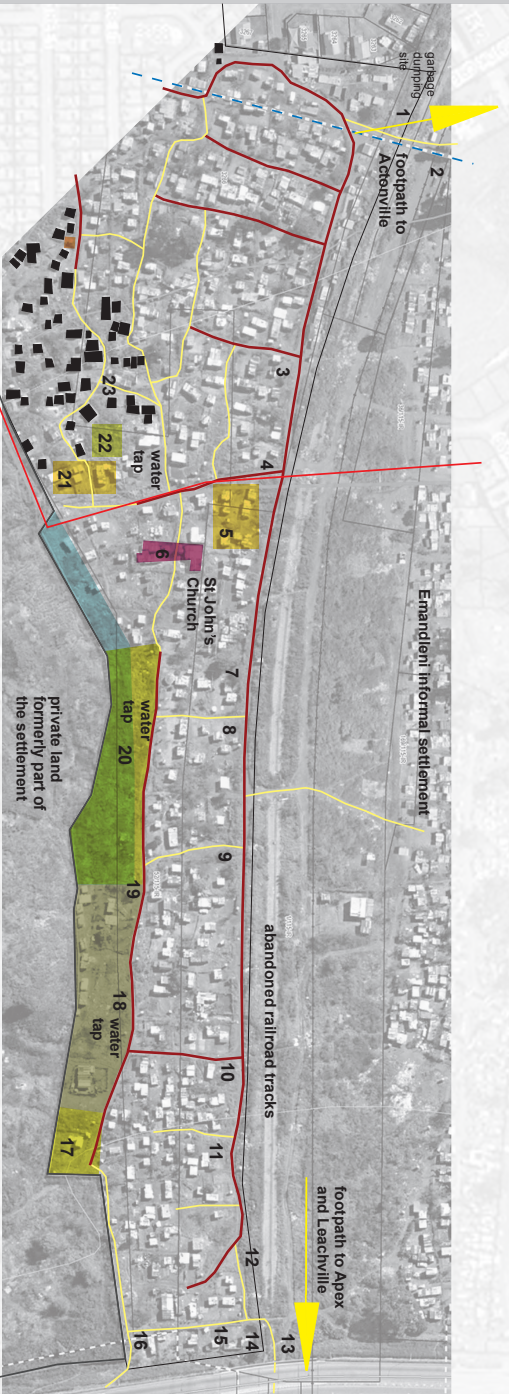
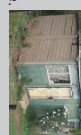
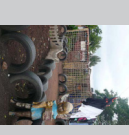
GARBAGE There is no garbage collection, as a result most of the garbage is left on the abandoned rail line (photo 1).

ROAD AND FOOTPATH NETWORK The roads in this quadrant provide moderate access, many of the dwelling are reached by footpath only.

DRAINAGE Plant life shows evidence of wet ground along the southern perimeter of the quadrant.

SOCIAL FACILITIES There are no social facilities.

COMMERCIAL FACILITIES There is one tuck shop.



Key facts

Low density areas have larger stands with a single dwelling and no tenants.

High density areas have stands with dense tenant situations. The Harry Gwala Civic Committee has a policy of 2 tenants per stand, but in some cases this isn't followed.

Non-demarcated stands exist in two clusters in Harry Gwala. One is evident in the southwest corner of this quadrant, the second is in the northeast corner of the adjacent quadrant. One option for these is to attempt to establish perimeter edges to the stands, another is to establishing joint freehold title for those groups of residents (each cluster sharing one large stand and title).

existing conditions



garbage dumping site



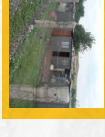
tuck shop



primary road



road through line poles



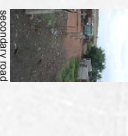
high density tenant housing



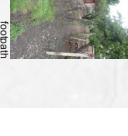
St. John's Church



footpath



secondary road



footpath



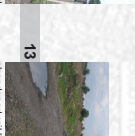
secondary road



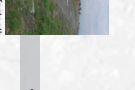
footpath



secondary road



abandoned rail lines/footpath to open



footpath



residents' efforts to divert storm water



footpath



open space



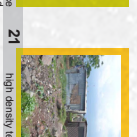
low density housing area



secondary road



plant life showing evidence of wet ground



high density tenant housing



muddy open space



standing storm water

CLIENT: Harry Gwala Community, drawing 5/10

Harry Gwala Informal Settlement Design, Infrastructure and Circulation South quadrant (1/4)

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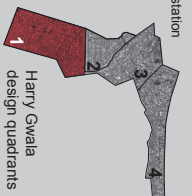
Social Amenities

- commercial facilities
- social facilities
- open space
- street trees
- community gardens



Areas of Development Intervention

- drainage problems
- proposed stands
- low density
- high density



Proposed and Existing Utility Infrastructure

- existing Rand Water pipeline
- proposed Rand Water pipeline
(the complete map of utility infrastructure is shown on drawing 10/10)

Existing and Proposed Circulation Routes

- secondary roads
- footpaths
- tertiary roads
- barriers

Proposed Changes

A. There will be an addition of 38 stands to this quadrant. In their evaluation of the Environmental Impact Report, SRK Consulting states that this area lies outside the 100 year flood line. However, respecting the concerns of drainage problems in the pan, we have not sited any stands lower than the buildings at the OR Tambo Cultural Precinct. The drainage issues at the southern edge, as documented in the existing conditions, will be addressed with appropriate drains at the time of the road upgrades.

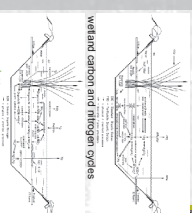
B. The layout shows the establishment of a park edge along the southeastern boundary of the community. The purpose of this is twofold: to provide public space with amenities for the residents and to discourage further settlement encroaching into Leupan Open Space. The intent is to continue the design aesthetic from the OR Tambo Cultural Precinct, thus making a point of physical integration (2, 3).

C. The culvert upgrade is twofold: to put the storm water channel below ground as it poses a major safety concern (photo 1a), and to install constructed wetlands at the two culvert outlets on the site. These wetland will mitigate pollutants leaching into Leupan lake and assist in the restoration of wildlife habitat. Wetlands can be particularly effective in areas of previous mining activity, as is the case with this site.

D. Employment was a much voiced concern in the community and is crucial to the success of any project here. Therefore, we are submitting a plan to develop a **community hall** that focuses on work needs. This would provide a space for: job training, adult education, employment services, and small business development. Ideally partnerships would be made with businesses in the area, which would benefit both the employees and employers. Shown in image 2 is one of the outbuilding from the cultural precinct as a design suggestion.

E. Again following the design language of OR Tambo Cultural Precinct, we propose a multi-purpose public gathering space, which can be used for religious services (3).

primary upgrading interventions



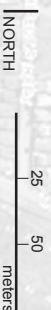
key concept

The design theory for this layout is based on academic fieldwork, which documented residents' actions in an effort to more deeply understand the character and functionality of informal settlement and its role in South Africa's rapidly urbanizing population. The layout's guiding principles are premised on those findings, and discussed and approved by the residents. They are threefold: first, that the residents engage with the built form of the surrounding city for their livelihood, spiritual, healthcare and educational needs, as was shown on drawing 1. Second, that the settlement's edge is in fact a dynamic zone, rather than a static line, and it is a space of reciprocated integration between formal and informal urban citizenry and economies. Third, that the community's social core is crucial to the wellbeing of the residents. The bonds of neighbourhood and community provide residents with social capital in the form of: sense of family, home and identity; dignity; financial and nutrition support when needed; assistance with child care responsibilities; and so on. All of this project's upgrading interventions are aimed at strengthening these principles, which will in time will allow the residents to more successfully navigate their urban lives.

walking path to Tamboville and Tamboville Secondary School



*For graphic legibility, the street trees are being shown on new stands only.



primary upgrading interventions

Harry Gwala Informal Settlement Design, Infrastructure and Circulation Central quadrant (2/4)

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Thobile Siphehu



Social Amenities

- commercial facilities
- social facilities
- open space
- street trees
- youth centre/internet cafe

Areas of Development Intervention

- drainage problems
- proposed stands
- low density
- high density

Proposed and Existing Utility Infrastructure

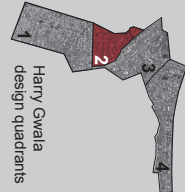
- existing Rand Water pipeline
- proposed Rand Water pipeline
- (the complete map of utility infrastructure is shown on drawing 10/10)

Existing and Proposed Circulation Routes

- primary roads
- secondary roads
- tertiary roads
- 15m cul-de-sac
- footpaths
- barriers

Proposed Changes

- A. This quadrant has a small centrally located open space with a small old building where the youth often meet. We propose that there should be a **youth centre** and **internet cafe** here. Unemployment among the youth is higher than the 40% overall unemployment rate in informal settlements (NUSP). Access to the internet, computers and computer training could empower Harry Gwala's youth in their efforts to find work. Harry Gwala has an active youth brigade, which meets twice a week and organises community projects with the assistance of the municipal office. The youth centre can be built incrementally (image 1), built initially as a solar-powered computer lab, it can later be incorporated into a larger structure designed to maximize solar gain (1).**
- B. The east/central area of this quadrant has **drainage** problems as is documented in the existing conditions. All necessary drains will be put in place at the time of road and footpath upgrades. All wetland concerns have been eliminated with the culverting of the stream (2).**
- C. High mast lighting** was repeatedly brought to our attention during the meetings with community residents. We propose that all roads and footpaths have high mast lighting as these spaces pose a security concern for the residents, particularly the women and children. The lights can be powered by the power poles that will follow the circulation routes, or as we have shown here, they can be solar. The suggestions to use solar power use for the computer lab and street lighting reflect the efforts of Watville and the OR Tambo Cultural Precinct's laudable efforts to use green construction. All footpaths will also be paved to improve access and will serve to collect and discharge storm water via catch basins that are piped to sewer or watervay (2, 3).



key concept

Establishing **tenure security** is a crucial element to this development plan. This is an issue that will have to be workshopped with the community residents so that they can make an educated decision between the tenure options of: individual or joint family freehold; individual or joint family leasehold; or joint community freehold or leasehold.

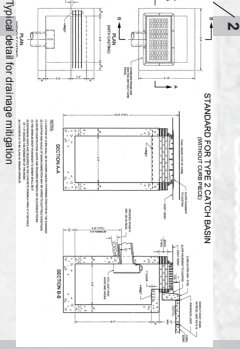
The layout of the **stands** is based on existing conditions and circulation. The residents have agreed that: not all stands will be of equal size and that when possible they will be kept as existing, some stands will have footpath access only, stands will be relocated only as a last resort and to the closest possible location; and not all areas will be the same. Stand sizes may have to be adjusted to allow for the infrastructure improvements. Stand owners will be able to continue having up to two tenants, as per the Harry Gwala Civic Committee mandate. Current tenants may choose to remain where they are, or to be allocated a stand in another area of Harry Gwala.



ZubaBox - Solar Internet Hub
Computer Aid International
Working to:
- provide high rich and poor have ICT access;
- reduce poverty through ICT solutions;
- empower poor communities.
Computer Aid produces solar powered, completely self contained labs with refurbished computers through corporate sponsorship. They are currently being shipped to African communities.
www.computeraid.org



*or graphic legibility, the proposed street trees are being shown along one road/footpath only.





O.R. TAMBO
1917 - 1993

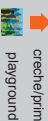
Harry Gwala Informal Settlement Design, Infrastructure and Circulation

North-central quadrant (3/4)

Prepared by the team of:
Krisen Komienko, M.A. PhD candidate
Moray Hahnon, LLB
Marie Hutzemeyer, PhD
Peter Klotz, PE
Mobile Spehru

Social Amenities

- commercial facilities
- social facilities
- open space
- street trees
- community gardens



Areas of Development Intervention

- drainage problems
- proposed stands
- low density
- high density



Proposed and Existing Utility Infrastructure

- existing Rand Water pipeline
- proposed Rand Water pipeline (the complete map of utility infrastructure is shown on drawing 10/10)

Existing and Proposed Circulation Routes

- primary roads
- secondary roads
- tertiary roads
- 15m cul-de-sac
- footpaths
- barriers

Proposed Changes

- This space is currently used for public gathering and as a source of coal for fuel by the most vulnerable of the settlement residents. The intention of the design intervention here is a flexible space that continues to allow these functions but that can also be a place for weekly visits from the mobile library and mobile clinic.
- The existing community centre is underserved due to lack of water and electricity. However, it is well located in the central core of the community. We propose a women's resource centre to combat informal settlement infant mortality rates which are ten times higher than the national average (NUSP). It would provide such services as: pre-natal care, early childhood education and nutrition; family planning; support for single mothers; and food bank (2).
- Unemployment rates in informal settlements range at 40% (NUSP). Well-located market/business stalls on Kumalo St at the northwest edge and Dube St at the southeast edge would assist in residents' entrepreneurial efforts. This could also be an opportunity for partnership with the OR Tambo Cultural Precinct (3).
- The existing stream has been culverted underground, creating an open space. Permanent structures cannot be built in this area, so housing is not an option. However, this provides a unique opportunity in the dense community to implement social amenities. Installing transportable buildings designed from shipping containers would make it possible to incrementally implement first a CRECHE, and then a PRIMARY SCHOOL. In conjunction with this, children's play areas will be developed and extensive community gardens established. The gardens will provide vegetables for the school children and improve their nutrition habits (4).

primary upgrading interventions

key concept

Through several weeks of community engagement in October 2012, the residents' enthusiasm at having their voices heard in developing the layout became clear and was exciting to see. We were there, respecting their role as both client and partner in this process. Part of this enthusiasm resulted from their realization that we were going to address every member of the community's need for housing, including existing tenants. Every current resident wanting a permanent home in Harry Gwala would be accommodated. However, the existing density of the community necessitates additional adjacent or nearby land for OVERFLOW to ensure this. A 2012 aerial enumeration estimated 1250 households currently living in Harry Gwala. Our November 2012 enumeration indicates 836 existing stands, with approximately 414 households living as informal backyard/tenants. The layout design in this project has added an additional 103 stands, therefore requiring an approximate 311 stands in a nearby overflow area. The map on drawing 10/10 identifies a close by lot. In accordance with Part 3.9C, 2.3 of the Housing Code, the design of the overflow layout would entail further workshops and consultations with the community.

*for graphic legibility, the street trees are being shown on new stands only

O.R. TAMBO
1917 - 1993
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Harry Gwala Informal Settlement Design, Infrastructure and Circulation Northeast quadrant (4/4)

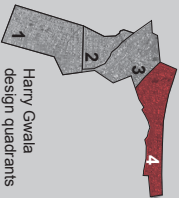
Prepared by the team of:
Kristen Komomo, M.A., PhD candidate
Moxyi Hahom, LL.B
Marie Hutzemeyer, PhD
Peter Rooft, PE
Thobela Siphehu

Social Amenities

- commercial facilities
- social facilities
- open space
- playground
- street trees

Areas of Development Intervention

- drainage problems
- proposed stands
- dwellings on non-demarcated stands
- dwellings to be moved due to infrastructure improvements
- low density
- high density



Proposed and Existing Utility Infrastructure

- existing Rand Water pipeline
- proposed Rand Water pipeline
- existing ESKOM hv transmission lines

(the complete map of utility infrastructure is shown on drawing 10/10)

Existing and Proposed Circulation Routes

- primary roads
- secondary roads
- tertiary roads
- 15m cul-de-sac
- footpaths
- barriers

Proposed Changes

- The addition of small localized playground areas for children (1, 4).
- The Rand Water pipeline will be moved in line with the ESKOM hv transmission lines to create an utility corridor that minimally impacts the community. This space will be a wide footpath with integrated seating for public gathering. Three dwellings will have to be moved and stand perimeter lines shifted in order to accommodate the 3m distance required between the subterranean water pipeline and the transmission lines (2).
- 27 additional stands will be added along the southern perimeter of this quadrant. This space was previously left open because of problems with poor drainage, therefore appropriate land rehabilitation (drainage and leveling) will need to be made as part of the upgrade to make it habitable (3).

- The existing road along the north edge of the settlement will be moved up to the wide rail reserve originally intended for a station, but the plan was abandoned by Transnet. Monty Harsoo from the National Upgrading Support Programme verified that HDA will be able to release this state land for the use of low income housing in the case of *in situ* upgrading. This allows for an additional 35 stands and increases access from Harry Gwala, Emamdleni, Leachville and Waitville to Actonville and Apex. This also serves to activate Harry Gwala's northern edge for potential increases in commercial activities (5).

- Additional footpaths have been added to facilitate utility infrastructure. Cul-de-sacs have been placed at the ends of a dead end streets to allow for improved access for emergency vehicles and to maximize vehicle circulation. At the west end of the settlement a connector road will be added as this will cause less impact on existing structures and allow vehicles to circulate in that area of the settlement.



key concept

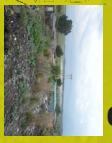
Greening Harry Gwala will be a three part programme comprised of community gardens, street trees and the park along the settlement's southern edge. In an effort to maintain social bonds, community gardens will be installed providing an alternative public gathering space. Research in Harry Gwala identified the communal taps as the primary public meeting space for women. This has been shown in many other communities as well. During the upgrading this space will be lost, as everyone will receive a private tap. A recent study by Prof. van Aveldeke in Pretoria's informal settlements has shown significant positive impact on residents' (particularly women's) well-being when involved in community gardening and that it contributes to improved nutrition. He went so far as to suggest that it be included in urban planning efforts for the poor. In Harry Gwala, 100% of interviewees' with vegetable gardens and 71% with medicinal gardens were women. Women in the community were excited by this idea. Another initiative will be to plant a street tree (native or fruit) at every stand as the water hookups are put in place. Residents will be responsible for tending these trees.

*for graphic legibility, the street trees are being shown on new stands only

primary upgrading interventions



park design submitted by Harry Gwala Resident



An example of improved footpath with integrated seating upgrading in Brazil



proposed paved footpath with ESKOM hv transmission line
seating and subterranean utility pipelines



An example of improved footpath with water mitigation from an in situ upgrading in Tanzania



proposed playground



proposed road or the abandoned rail line that will improve access for the settlement

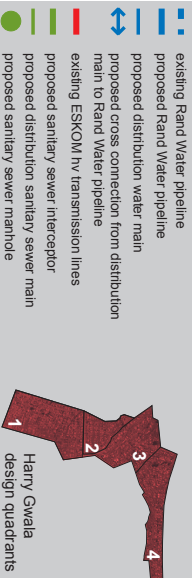


Harry Gwala Informal Settlement Water + Sewer Map and Overflow Housing Map

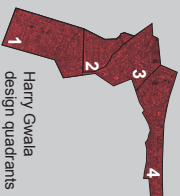
Prepared by the team of:
Kristen Komienko, M.A. PhD candidate
Moray Hathorn, LLB
Marie Huchzemeyer, PhD
Peter Roloff, PE
Thobile Siphethu



Proposed and Existing Utility Infrastructure



Proposed and Existing boundaries of Harry Gwala



The Project Team

Kristen Komienko first came to South Africa in 2005 while working on the final project of her Master's Degree in Landscape Architecture, the provision of sanitation in the context of informal settlements. She returned in 2007 as a Fulbright Fellow and began her PhD at the University of the Witwatersrand in 2008. She has been the primary designer and proprietor at the design firm, urban green, LLC since 2006. Kristen began her work with Harry Gwala in 2007 and prepared evidence for their Johannesburg High Court and Constitutional Court cases in 2008/2009. She has been the lead person for the consultations, community participation, participatory design and layout on this project. The community has honoured her with the name Nombulelo to acknowledge her work there.

Moray Hathorn has been the head of Webber Wentzel's Pro Bono Unit since 2003. The unit deals with land, housing and human rights issues. Previously he was an attorney at the Legal Resources Centre for 15 years. He has been working with Harry Gwala since 2004 and has represented them in housing cases at the Johannesburg High Court and the Constitutional Court of South Africa.

Marie Huchzemeyer is a widely published researcher, analyst and teacher in the field of informal settlement upgrading and housing. Over the past 11 years, she has led a Masters programme in housing at the School of Architecture and Planning at the University of the Witwatersrand and provided policy advice to both the government and informal communities. She has been associated with Harry Gwala since 2004.

Peter Roloff has been Civil Engineer working on municipal engineering projects in Boston and New York City for 16 years. He has comprehensive project experience in design engineering, including hydraulic design of storm and sanitary sewers, drinking water systems, sediment and erosion control, site layouts, grading schemes, hydrogeological investigation and soil analysis. Peter currently manages one of The Honorable Mayor Michael Bloomberg's Legacy Projects, a 24 million dollar trunk water main project in Manhattan, which he is overseeing in the Mayor's final term in office.

Thobile Siphethu is a land, housing and women's rights activist and holds a National Diploma in Law, Para-legal Studies. She has brought invaluable and extensive practical knowledge to this project. She was previously the provincial organiser of the Landless People's Movement in Gauteng. Additionally, her experience as a paralegal with Tshwaranang Advocacy Centre for Women's Rights has given insight into the unique challenges faced by women in the informal settlements. She was a resident and community leader in Harry Gwala from 2000-09.



construction details

