The design project aims to provide an evolving solution to both the urgent and imminent real-life problems experienced within informal settlements. The design system bares the potential to generate a greater framework and improved urban planning through its systems' growth. The system will move from an acontextual approach towards a site specific outcome.
Journey to the (Servant) Core
Public Services and Amenities Building

The author originally formed part of the urban design framework UDoA, Urban Dictionary of Africa, in the North West quadrant of Pretoria city. However, it was argued that an informal settlement presented a more relevant problem.

Urban Design Dictionary of Africa (UDoA)

Aim: Regenerating urban existence and reactivating urban activity through improved infrastructure and public amenities.

Programme: Public Services Building

Aim: Improved service delivery

Problem: Public amenities exist, yet it is ill-maintained.

2 options emerge: change programme or change site.

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change in site

Mamelodi

chosen as final site. A large informal sector present within the boundaries of Mamelodi. Few existing services and infrastructure exist. The high risk of shack fires (especially in winter months) is aggravated by the lack of fire hydrants.

Lusaka

undergoing new housing and infrastructure development.

Phumolong

chosen as final site. A large informal sector present within the boundaries of Mamelodi. Few existing services and infrastructure exist. The high risk of shack fires (especially in winter months) is aggravated by the lack of fire hydrants.

access to water...

A pressing need is access to fire hydrants within the informal settlements.
The design system should act as a catalyst for growth. The level of growth is determined by various factors; the environment, the community and the individual. The design system could be described as a generator, for social relationships, living conditions as well as the urban/rural development.

It is important that first phase operation takes place independently from the municipal grid. The system should display the ability to accommodate new technologies when necessary.

The service core should function on its own or within a larger collection. The proposed service core is established as an immediate response to the urgent need for water in Phumolong. The water reservoir would supply potable water to residents and could be used as a water store to fill the tanks of fire fighting vehicles in instances of fire.

The design could be implemented in phases, as a continuous process. Experience and need should determine the direction of growth.

During the planning phase a host environment or site is identified. The first phase oversees the assembly of the core structure using off-site material. Local labour is used and skills may be transferred.

The initial service core is a direct response to community needs. It is to act as the servant, wherein the main services are contained and from which they are distributed through extendible spines to future programmes. These infrastructural spines both distribute matter and energy as well as receive and remove waste. Ultimately they may be seen as extendible, plug-in transportation mediums by which auxiliary programmes are sustained.
During the second phase various programmes are attached to the system along the spine. The programme could be public services carrying a degree of civic importance. Examples include clinic, police station or fire station. These programmes could be coupled with a public or recreational space. The second phase witnesses the implementation of local technologies in conjunction with available materials. This system should employ strategies of urban planning to determine hierarchy and generate public space.

During the third phase additional programmes may be attached to the spine. These programmes could be detached when their life span has been reached. Secondary service spines may be erected to allow for growth in an alternative direction and manipulation of the space. The servant spine bears the potential to carry infrastructure. These could act as a connector of the urban fabric and could typically include street lights, ablution facilities, bus stop, etc. The third phase caters for increased flexibility and extendibility.

Throughout occupation the transformation of programmes may occur. This could result in the manipulation of form and layout. Secondary systems should provide for micro-enterprises (such as street vendors). At a later stage, isolated service cores may be erected some distance away, supplementing the original system to expand on its capabilities (i.e. a secondary borehole).

Should the informal residents be relocated, the lightweight steel nut and bolt assembly may be disassembled and re-erected on an appropriate site. Alternatively, it may be absorbed into the expanding urban fabric.
concept...

expanding on services

service delivery

ordering the programmes around public space

the public realm
synthesis...

of services and the public
combining the parts into a whole
structure
Fig. 126 Concept models
vertical distribution of services

column as independent part

column as collective whole

vertical distribution of services
core and spine development
Servant Core

Service delivery intervention responding to urgent need
- Erect service core utilising on-site resources (borehole water)
- Provide potable water
- Lightweight steel structure and standardised water tank panels allow for easy transport via 'bakkie' and erection by local labour within short time span

Servant Spine

Service distribution
- Lightweight steel tensile structure fixed with nut & bolt assembly allows for erection by local labour and easy handling (no cranes or machines needed)
- These limbs may be seen as extendible, plug-in transportation mediums by which auxiliary programmes are sustained

Auxiliary Programmes

[Attaching civic programmes]
- Secondary services and amenities provided
  - eg. ablution facilities, telecommunications, clinic, police station
  - Civic structure attached to service spine
  - Building additions to make use of local technology using lightweight steel structures clad with corrugated sheeting (reminiscent of the ubiquitous shack) as well as dry stacking HYDRAFoRm blocks
  - 'Mechano' like assembly allows for disassembly if needed

Private Programmes

[Informal additions]
- Privately run micro-enterprises (informal traders) may attach to activity spine.
- Public space activated by community intervention.
- Gathering spaces and recluse spaces shaped by growth of the building system
Fig. 130 Birds eye view of preliminary design intervention
Fig. 131 Perspective of preliminary design intervention
Fig. 132 Perspective portraying the social connection of the tap