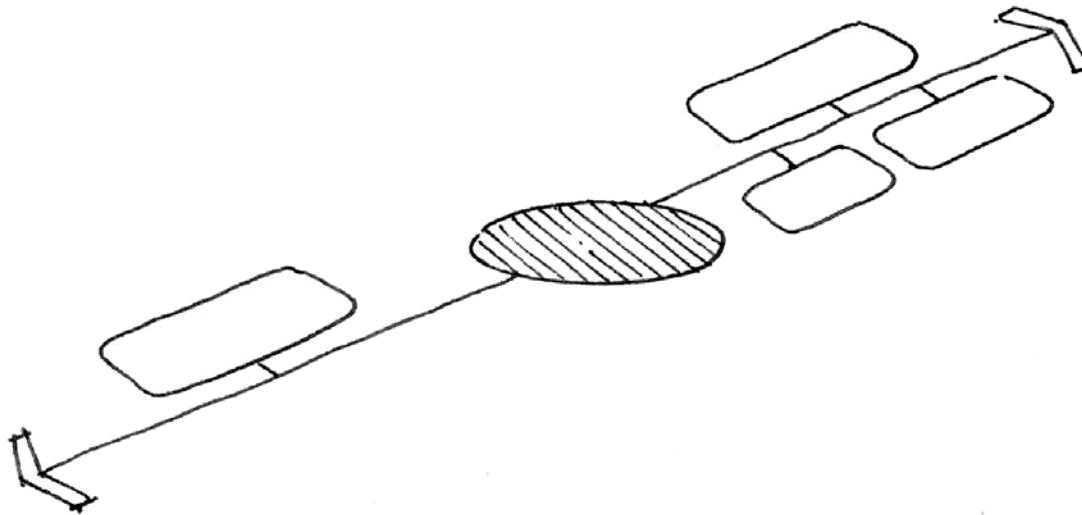


SERVANT CORE IN SUPPORT OF MULTI-FUNCTIONAL SERVICE FACILITIES



[designing for change]
architecture as cognitive process



“Noka e tlatswa ke dinokana” – “a river swells from little streams”

(Sesotho Proverb)



ABSTRACT

Architecture is never complete.

The theoretical discourse of the thesis explored the need of a building to change. This change is unpredictable, though expected. The project proposal within the informal context of Phumolong, Mamelodi, aimed to address this unavoidable nature of architecture.

The focus of the project was to provide improved services within an informal settlement, whilst generating social upliftment. The thesis investigated the current and future requirements of the informal dweller. It explored the possibility of generating public space through the establishment of a catalyst. The connection of services and public amenities has been exploited to generate an environment where the building acts as generator and it supports social interaction. Inevitably the servant core provides implicit reasoning as renewed stimulus to public gathering.

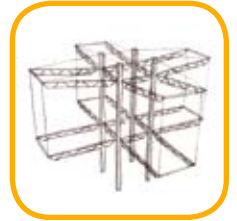
The project proposal addressed the integration of the informal user with a building system through the architectural process. This is achieved through phased development, investigating assembly and use of civic programmes.

A quantitative approach towards the research was initially undertaken. However, the fluid nature of the informal settlement enthused a more qualitative approach. The need and right of the informal dweller to be served, and have access to public services and amenities justified the design proposal.

The changing fabric, user, programme and needs of the community contribute to the rate of change of a building. The changing context of Phumolong required a flexible and adaptable design intervention allowing for future interpretation. These variables influenced architecture as a cognitive process.

The design as a product within the realm of architecture represents the process of learning from the past, reacting to the present and preparing for the future.

Ultimately the design intervention exists as an ongoing process of progressive change.



With thanks to:

My beautiful Wilna for her love, understanding and support,
The FIRM,
The studio crowd,
Jaco

Jacques Laubscher for his commitment and effort, Gary White for his support and Gus Gernecke for his mentorship

Mom

Dad and Mali

[“...faith is the substance of things hoped for, the evidence of things not seen” Hebrews 11:1]

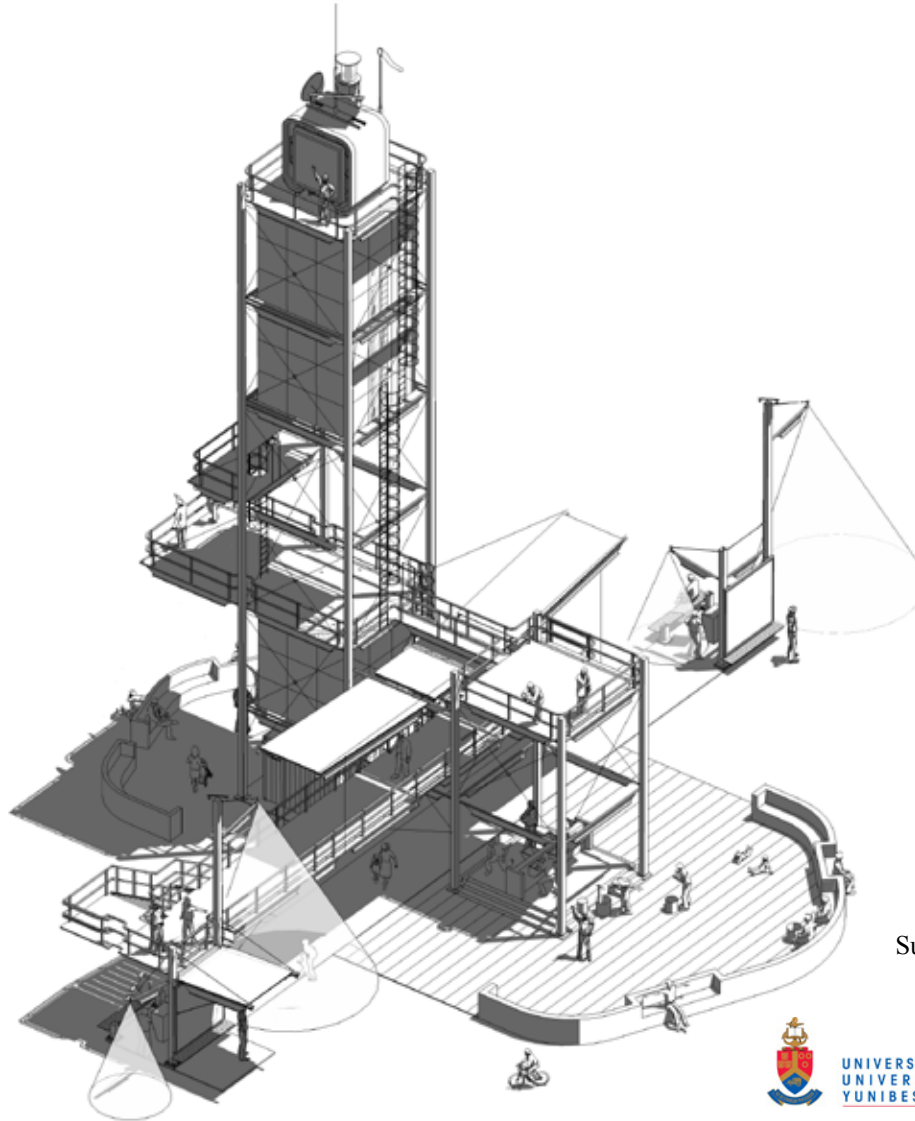
Finally I would like to dedicate this book to my grandparents Wolfgang and Judy Gottsmann

With Jesus all things are possible



SERVANT CORE IN SUPPORT OF MULTI-FUNCTIONAL SERVICE FACILITIES

PROPOSED NEW PUBLIC SERVANT CATALYST FOR THE INFORMAL SETTLEMENT OF PHUMOLONG, MAMELODI, TSHWANE, SOUTH AFRICA



Research field: Applied Technology

Donovan Gottsmann

Course Coordinator – Jacques Laubscher

Study leader – Jacques Laubscher

Mentor – Gus Gernecke

Partially funded by the University of Pretoria and the NRF

Submitted as part of the requirements for the degree of Magister in Architecture (Professional),
in the Faculty of Engineering, Built Environment and Information Technology,

University of Pretoria.

November 2009



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

CONTENTS

ABSTRACT		3
CHANGE AS PROCESS		9
Problem Statement	10	
Architecture as Process	10	
Change	10	
An Alternative Option	11	
Energy, Synergy and Autonomy	12	
Dissipative Systems	13	
Conclusion	13	
INFORMAL SETTLEMENTS – ENVIRONMENTS OF FLUX		15
Defining Characteristics	16	
The Need for Remedy	16	
The South African Informal Settlement	17	
Human Rights	19	
The 6 S's	20	
Programme	20	
SITE + CONTEXT ANALYSIS		23
Mamelodi Informal Sector	24	
The Informal Context	27	
Phumolong Informal Settlement	29	
Needs Identified by Residents	31	
Assets	31	
First Person Experience	34	
BRIEF DEVELOPMENT		37
Project Brief	38	
Problem Statement	38	
Research Aims and Objectives	38	
Project Aims and Objectives	38	
Design Proposal	38	
User	38	
Client[s]	39	
SERVICES		41
Servant Core	42	



Fig. 5 Model



PRECEDENT STUDIES

Ecoboulevard Vallecas, Ecosistema Urbano, Madrid, Spain, 2005	47
Sainsbury Centre for Visual Arts, Norman Foster, Norwich, UK, 1977	49

BUILDING TECHNOLOGIES

The Block or Brickwork House	53
The Shack	53
Criteria	55
for Material Choice	55
Materials	55

DESIGN DEVELOPMENT

Journey to the (Servant) Core	60
Public Services and Amenities Building	60
Design Process	62

TECHNICAL

Potential Energy Sources and Water Conservation Strategies	76
Structural Configuration	78
Drawings	84
building typology	106

Addendum	112
Calculations	112
Sustainable Building Assessment Tool	113
List of Figures	114
List of References	116

45

51

59

75

112