



A NEW VERNACULAR ARCHITECTURAL LANGUAGE INFORMED BY THE USE OF
SPACE IN INFORMAL SETTLEMENTS: SELECTED CASE STUDIES IN THE
ETHEKWINI MUNICIPALITY, SOUTH AFRICA.

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FIGURE 0-1 HOME IN QUARRY ROAD WEST

ABSTRACT

Informal settlements are home to over 60% of urban poor in developing nations. They present a unique character in urban areas, making them easily identifiable. Nevertheless, they are often conceptualised in negative terms emphasising the illegality and non-conformity to building standards, arguably due to the limited understanding of the spaces created and meaning to the residents. The negative connotation of informality often directly or indirectly influences the upgrading interventions.

This study sets out to gain an understanding of the use of space in informal dwelling environments, which could inform appropriate response and interventions to informal settlement upgrading programs, towards creating self-reliant and sustainable communities. It also intends to conceptualise a new vernacular architecture that incorporates the evolving character of dwelling spaces in the informal settlements.

This research seeks to reconsider the informal dwellings in an objective light through the lenses of the residents. It reinterprets the self-built dwellings in relation to vernacular architecture. To do this, the key research questions raised are - What are the nature and characteristics of dwelling spaces in informal settlements that could inform appropriate response and interventions to upgrading programs? How can this be theorized into a “new vernacular architectural language?” The research applies a qualitative research methodology in three case studies in eThekweni municipality.

The findings show that the settlements, as a whole, are an integral part of the dwelling experience and is affected by prevailing context, which includes accessibility to land (serviced or un-serviced) and accessibility to recycled materials for building purposes. This is also related to social ties often emanating from original homes, and leadership structures that are unrecognised by local authorities. A multi-layered dwelling pattern has been identified and categorised as simple, complex and multi-dwellings. These patterns show similarities to the vernacular language, particularly in the extensive use of outdoor spaces.

The research concludes that the informal dwellings provide residents with experimental, existential, and aspirational meanings, as residents navigate their way into the city, and that the 21st century vernacular language is therefore trans-positional across rural-urban context.

DECLARATIONS

IJudith Tinuke Ojo-Aromokudu.....declare that

- (i) The research reported in this thesis, except where otherwise indicated, was my original work.
- (ii) This thesis has not been submitted for any degree or examination at any other university.
- (iii) This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
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November 2018

DEDICATION

To my parents the late Mr. Eugene Abimbola Ricketts and Mrs Doreen Ann Ricketts and my parents by marriage the late Mr. Samuel Babatunde Ojo-Aromokudu and Mrs Felicia Bamidele Ojo-Aromokudu.

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TABLE OF CONTENTS

ABSTRACT.....	II
DECLARATIONS	III
DEDICATION	IV
ACKNOWLEDGEMENTS	V
TABLE OF CONTENTS	VII
LIST OF FIGURES.....	XI
LIST OF TABLES	XIII
LIST OF MAPS	XIII
LIST OF ACRONYMS.....	XV
CHAPTER 1: INTRODUCTION	1
1.1 BACKGROUND TO THE STUDY	1
1.2 MOTIVATION AND JUSTIFICATION OF THE STUDY	6
1.3 RESEARCH PROBLEM	7
1.4 AIMS AND OBJECTIVES OF THE STUDY	9
1.5 RESEARCH QUESTIONS.....	10
1.6 SETTING THE SCENE, RESEARCH ASSUMPTIONS, SCOPE AND LIMITATIONS..	13
1.6.1 SCOPE OF THE STUDY	14
1.6.2 LIMITATIONS OF THE STUDY	14
1.6.3 HYPOTHESIS	15
1.7 DEFINITION OF KEY TERMS	15
1.8 STRUCTURE OF THE THESIS	17
CHAPTER 2 RESEARCH METHODOLOGY	20
2.1 INTRODUCTION	20
2.2 RESEARCH DESIGN.....	20
2.2.1 PHENOMENOLOGY AS A RESEARCH PARADIGM.....	22
2.3 PRIMARY DATA SOURCES	25
2.3.1 QUALITATIVE APPROACH	25
2.3.2 SELECTION OF CASE STUDIES	25
2.3.3 SAMPLING METHOD.....	27
2.4 PRIMARY DATA COLLECTION METHODS AND TOOLS	27
2.4.1 INTERVIEWS WITH THE INFORMAL DWELLERS	28

2.4.1.1	LIFE-HISTORY METHOD	29
2.4.1.2	INTERVIEW WITH SOCIAL ARCHITECTS.....	29
2.4.2	OBSERVATIONS	30
2.5	SECONDARY DATA COLLECTION.....	31
2.6	DATA ANALYSIS.....	31
2.7	ETHICAL CONSIDERATIONS AND LIMITATIONS TO THE STUDY	32
CHAPTER 3 THEORETICAL FRAMEWORK		34
3.1	INTRODUCTION	34
3.2	STRUCTURALISM.....	35
3.3	THEORY OF SPACE AND MEANING CREATED	36
3.3.1	SPATIAL PATTERNS.....	41
3.3.2	ANTHROPOMETRY AND THE SENSE OF SPACE.....	43
3.4	GENIUS LOCI – SPIRIT OF PLACE.....	45
3.4.1	PLACE MAKING	46
3.5	PHENOMENOLOGY	46
3.5.1	SEMIOTICS	48
3.6	CONCLUSION:.....	49
CHAPTER 4 VERNACULAR ARCHITECTURE AS A BUILT ENVIRONMENT LANGUAGE		50
4.1	INTRODUCTION.....	50
4.2	EVOLUTION OF THE VERNACULAR DISCOURSE.....	50
4.3	THE BUILT ENVIRONMENT LANGUAGE.....	52
4.3.1	BUILT ENVIRONMENT AS THE RECORD OF HISTORY	62
4.3.2	THE CHANGE IN VERNACULAR LANGUAGE.....	63
4.3.3	DUE TO MIGRATION.....	64
4.3.4	DUE TO MODERNISATION.....	64
4.3.5	DUE TO IMPOSITION OF POWER	68
4.4	PATTERN LANGUAGE – THE TRADITIONAL HUT OF THE NGUNI PEOPLE	68
4.5	VERNACULAR ARCHITECTURAL LANGUAGE.....	69
4.6	CONCLUSION	71
CHAPTER 5 CONCEPTUAL FRAMEWORK- INFORMALITY, DWELLING, MIGRATION		72
5.1	INTRODUCTION	72
5.2	SOCIETIES, POWER AND DWELLING SPACE	72
5.2.1	STATUTORY NORMS AND STANDARDS.....	75

5.2.2 AGENCY VS SELF-HELP	78
5.3 MIGRATION OF INDIGENOUS KNOWLEDGE.....	79
5.3.1 URBAN MIGRATION AND SOCIO-CULTURAL IMAGING	80
5.4 INFORMALITY	82
5.4.1 CONCEPTUALIZING INFORMAL SETTLEMENTS IN AN OBJECTIVE LIGHT	87
5.5 CONCLUSION	89
CHAPTER 6 CASE STUDIES	91
6.0 INTRODUCTION	91
6.1 INFORMAL SETTLEMENTS IN ETHEKWINI MUNICIPALITY	91
6.2 INFORMAL SETTLEMENT- NEIGHBOURHOOD CONTEXT	99
6.2.1 HAVELOCK.....	101
6.2.2 NORTH COAST ROAD INFORMAL SETTLEMENT	105
6.2.3 QUARRY ROAD WEST	109
6.3 BLACK WHITE IMAGE OF SETTLEMENTS	113
6.4 CONCLUSION	114
CHAPTER 7 DATA PRESENTATION	115
7.1 INTRODUCTION.....	115
7.2 SUMMARY OF METHODS	116
7.3 BACKGROUND OF HOUSEHOLDS.....	117
7.3.1 PREVIOUS PLACES OF RESIDENCE	117
7.3.2 MIGRATION PATTERNS	120
7.3.3 ORIGINAL HOME AND LAYOUT IMAGERY	123
7.3.4 FREQUENCY OF VISITS HOME AND PREVIOUS BUILDING EXPERIENCES.....	125
7.3.4.1 HOUSEHOLD SIZE.....	126
7.4 THE PHYSICAL DWELLING SPACE.....	127
7.5 BUILDING MATERIALS	128
7.5.1 SELF-HELP EXPERIENCES	129
7.5.2 LENGTH OF STAY IN THE SETTLEMENT.....	131
7.5.3 PERCEPTIONS OF THE ENVIRONMENT	132
7.6 MAPPING DAILY ACTIVITIES	134
7.6.1 ACTIVITIES DONE WITHIN THE DWELLING	138
7.6.2 ACTIVITIES CARRIED OUT OUTSIDE OF THE DWELLING.....	139
7.6.3 ACTIVITIES THAT CANNOT BE CARRIED OUT IN THE SETTLEMENT (ASPIRATIONS)	140
7.7 INTERNAL SPATIAL PATTERNS.....	141

7.8	EXTERIOR SPATIAL PATTERNS	147
7.8.1	BLACK WHITE IMAGE OF SETTLEMENTS	147
7.9	CONCLUSION	149
CHAPTER 8 INFORMAL DWELLINGS AS AN URBAN VERNACULAR ARCHITECTURE		
	LANGUAGE (UVAL).....	150
8.1	INTRODUCTION	150
8.2	URBAN VERNACULAR ARCHITECTURE	150
8.3	INFORMAL SETTLEMENTS A NEW VERNACULAR?	153
8.4	COMPARING THE RURAL AND URBAN VERNACULAR LANGUAGE.....	154
8.4.1	FIRMNESS	154
8.4.2	COMMODITY	157
8.4.3	DELIGHT	162
8.5	CONCLUSION	165
CHAPTER 9 CONCLUSIONS AND RECOMMENDATIONS - CONCEPTUALIZING INFORMAL		
SETTLEMENTS AS THE 21ST CENTURY VERNACULAR ARCHITECTURE		
9.1	STUDY AIMS REVISITED	166
9.2	SPATIAL MEANINGS CREATED IN INFORMAL SETTLEMENTS	167
9.3	PATTERNS CREATED.....	169
9.3.1	URBAN VERNACULAR ARCHITECTURAL LANGUAGE (UVAL) DRIVERS	171
9.4	DEVELOPING THE VERNACULAR ARCHITECTURAL THEORY	173
9.5	IMPLICATIONS FOR UPGRADE PROGRAMS	178
9.6	RESEARCH LIMITATIONS AND POSSIBLE FURTHER STUDIES	179
9.7	CONCLUSION	180
10	BIBLIOGRAPHY	182
11	APPENDICES.....	196
11.2	INTERVIEW SCHEDULE- RESIDENTS	196
11.3	INTERVIEW SCHEDULE ARCHITECTS.....	209
11.4	BUILDING STANDARDS	212
11.5	DWELLING NAMES FROM RESPONDENTS	215
11.6	TYPICAL SETTLEMENT TYPOLOGY	217
11.7	PHOTO VOICE.....	218
11.8	TRADITIONAL VS INFORMAL DWELLINGS	232
11.9	VERNACULAR ARCHITECTURE DEFINITIONS	234

11.10 KWAMATHAMBO.....	237
11.11 HAVELOCK.....	238
11.12 QUARRY ROAD WEST	240
11.13 LIST OF PUBLICATIONS	241

LIST OF FIGURES

Figure 0-1 Home in Quarry Road West.....	i
Figure 1-1 Conceptual Framing	12
Figure 2-1 Research Design.....	24
Figure 3-1 Theoretical Framing of the Thesis	34
Figure 3-2 Morphic Language	38
Figure 3.3 Syntax composition for the entrance without porch	39
Figure 3.4 Syntax composition of entrance with a porch.....	39
Figure 3.5 Transition Zone	40
Figure 3-6: Descriptive Components	41
Figure 3-7 Illustration of the geometric composition of space	43
Figure 3-8 Sense of place.....	44
Figure 3-9 Circles of Influence	45
Figure 4-1 Evolution of vernacular architecture discourse	52
Figure 4-2 Traditional hut with low entrance	55
Figure 4-3 The Zulu Umuzi	55
Figure 4-4 Symbolic Dimensions of Zulu <i>umuzi</i>	57
Figure 4-5 Zulu <i>umuzi</i> layout.....	57
Figure 4-6 Interior of a Modern <i>umuzi</i>	60
Figure 4-7 Exterior of the Dwelling.....	60
Figure 4-8 Sketch of Traditional Layout in Qadi Reserve.....	61

Figure 4-9 Categories of Architecture	65
Figure 4-10 Process of defining patterns	69
Figure 5-1 Categories of Minimum Standards.....	76
Figure 5-2 National Regulatory standards	77
Figure 5-3 Evolving terms for informal settlements	85
Figure 5-4 Defining informal settlements	87
Figure 6-1 Previous place of residence	106
Figure 6-2 Settlements in grey scale reflection.....	114
Figure 7-1 Previous residence before moving to informal settlement	117
Figure 7-2 Urban types	118
Figure 7-3 Number of residents born in the rural and dense rural areas	119
Figure 7-4 Migration pattern.....	121
Figure 7-5 Migration patterns from original homes.....	122
Figure 7-6 Original home.....	124
Figure 7-7 Frequency of visits 'home'	125
Figure 7-8 dwelling construction process	126
Figure 7-9 Spatial language of the tuck shop.....	127
Figure 7-10 Low-rise dwellings	128
Figure 7-11 Ownership vs rental.....	131
Figure 7-12 Spatial patterns	141
Figure 7-13 example of a simple typology from kwamathambo	142
Figure 7-14 Complex typology	143
Figure 7-15 Multi dwelling	144
Figure 7-16 Floor plan prepared by resident.....	144
Figure 7-17 Interior view of a dwelling	146
Figure 7-18 External patterns.....	148

Figure 8-1 multi-layered use of dwelling space.....	158
Figure 8-2 Daily Activities	158
Figure 9-1 relationship between actors	176
Figure 9-2 Urban vernacular architectural language (UVAL) drivers.....	177

LIST OF TABLES

Table 1-1 Synthesis of the research	11
Table 2-1 Categories of settlements.....	21
Table 6-1 informal typologies in eThekweni municipality	99
Table 6-2 employment in study area compared to provincial and national records.....	101
Table 6-3 summary of case studies	112
Table 7-1 Summary of methods used	116
Table 7-2 Reasons for moving to the informal settlement.....	118
Table 7-3 Household size.....	126
Table 7-4 Building materials commonly used	129
Table 7-5 Length of stay in the settlement.....	131
Table 7-6 Summary of activities.....	140
Table 7-7 Basic Furniture	145
Table 8-1 Comparing urban and rural vernacular	164
Table 11-1 Minimum standard.....	212
Table 11-2 Dwellings names	215
Table 11-3 Vernacular Architecture Definitions.....	234

LIST OF MAPS

Map 6-1 Location of eThekweni municipality	93
Map 6-2 Map of informal settlements in eThekweni	94

Map 6-3 Settlement types	95
Map 6-4 Population spread and national routes and Highways	96
Map 6-5 Case studies in ward 23 and ward 34	97
MAP 6-6 Havelock (greenwood Park) informal settlement	103
Map 6-7 Havelock (greenwood park)	104
MAP 6-8 Kwamathambo informal settlement	107
Map 6.9 Quarry Road West	110
Map 6-10 Quarry Road West	111
Map 11 Mapping of activities on the drone imagery from Havelock	135
Map 12 Mapping of activities on the drone imagery from KwaMathambo.....	136
Map 13 Mapping of actives on the drone imagery from Quarry Road West.....	137

LIST OF ACRONYMS

ACM	Activity Contour Maps
ASA	Agrément South Africa
CBD	Central Business District
CDA	Critical Discourse analysis
CORC	Community Organisation Research Centre
CR	Community Research
DMOSS	Durban Metropolitan Open Space System
KIC	Knowledge Interchange and Collaboration
KZN	KawZulu Natal
NGO	Non-Governmental Organisation
NRF	National Research Foundation
RDP	Reconstruction and Development program
SABS	South African Bureau of Standards
SANS	South African National Standards
SDI	Slum Dwellers International
UN	United Nations
UNSDG	United Nations Sustainable Development Goal

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Vernacular architecture is often related to rural housing solutions, having little connection with the urban areas, distant from modernisation and development (Yun, 2014: 108). However, this research argued that traces of the vernacular can be found in many urban cities manifesting as self-help housing in the form of ‘informal settlements’.

Informal settlements are arguably an important part of the building sector due to their wide spread existence and complexity in formation (Loggia et al., 2015). From a modernist perspective, informal settlements are not appropriately recognised, but are merely considered ‘failed’ spaces in need of redevelopment and specialised intervention (Sutherland et al., 2016). The UN-Habitat (2015), reports that a quarter of the world’s population lives in slums and informal settlements with higher figures in Asia and the global south. On the African continent, over half (61.7%) of the urban population lives in slums (UN-Habitat, 2015). Despite the global experience of the informal settlement phenomenon, the UN acknowledges that the phenomenon is not adequately addressed (UN-Habitat, 2013). Scholars also note that the formation and perpetuation is also poorly understood (Huchzermeyer, 2008).

Over the years, informal settlements have been studied from the perspective of social, economic and environmental justice (Huchzermeyer & Karam, 2006; Sutherland et al., 2016). Other studies depict informal settlements as spaces where the city is created (Agier, 1999), or within which the urban poor have control and where individuality is expressed and personal ideals are projected (Levitan, 2007). Holston & Appadurai (1996) describe these settlements as spaces where ‘invention of citizenship’ occurs. Few studies have considered the socio-spatial perspective of informal dwellings. Such include the work of White (1975) on the Tintown settlement on Umgeni River, Aspinall (1998) on Motala Heights and Peters (1997). A more recent work by Lueder (2016) looked at how urban villages and informal settlements were resilient to urban development. Other studies of rural informal dwellings include James Walton’s (1965) study on Homesteads and Villages of South Africa.

The informal settlement challenge has been linked largely to rapid urban migration and population growth in general (Menshaw, et al. 2011), which leads not only to escalating

poverty and inadequate institutional capacities to deal with land invasions and provision of basic services (Majale, 2008), but also, arguably, creativity in the creation of dwelling spaces. An increase in the rural-urban migration can be expected as a result of the focus on urban development (United Nations, 2017)).

The urban poor, often migrants from outlying areas, make spontaneous self-help housing decisions regarding shelter in the limited spaces they find in the urban areas. Usually, they must deal with the limited resources available in the immediate environments and create unconventional dwelling spaces. In a bid to avoid formal transactions with regard to shelter relationship, which according to Turner (1969) could be one of tenancy, proprietorship or oppression, the urban poor opt for autonomy in the self-help option, making ‘urban survival decisions’ regarding shelter.

Informal dwellings are often described as inadequate temporary shelters. However, many such shelters, even though characterised by inadequacy of space, poor structure, lack of sanitation, etc., can serve as medium to long-term dwellings for the urban poor and carry embedded socio-cultural imprints of the inhabitants. At an urban scale, Majale (2008: 270) notes that “In the face of rapid population growth, escalating poverty and inadequate institutional capacity, cities and towns of the developing world are unable to provide the necessary infrastructure, housing and employment opportunities”. As a result, the emergence of sub-standard dwellings continues to grow in the urban areas. Rapid urbanization in the last two decades has triggered the change in the urban landscape globally and particularly in the Global South (Chadchan & Shankar, 2009; Alqurashi & Kumar, 2017). Globally, informal settlements remain a major concern in city management, which has brought about various initiatives to address the challenge of slums. This includes the UN mandate captured in the Millennium Development Goal 7 (Target 11) (UNDP, 2017) for cities without slums. It is however noted that in some cases the mandate has been misappropriated to mean eradication and removal, as in the case of South Africa’s Grootboom evictions (Huchzermeyer, 2011). It is also noted that the housing challenge is a result of intended and also unintended policies (Li, 2007:1).

It is obvious that the efforts of informal settlement dwellers have brought about a distinct settlement pattern in many cities. Informal settlements, sometimes referred to as ‘slums, back yard shacks, *favelas*, *umjondolos*’, are made up of individual cell-like units with unplanned

movement patterns and present to outsiders as chaotic and undesirable (Lueder, 2014), demonstrating the poor understanding of the informal dwellings by outsiders, including planning and development authorities. The focus of this research on socio-spatial dimensions of informal dwellings then becomes critical for planning and development.

The following questions then arise:

- What social order exists?
- What spatial patterns can be used to better understand the dwellings beyond the broad description of informal?

The act of designing and producing living space is carried out based on some assumptions made to provide an appropriate response to the expected behaviour and the desired need. In fact, when architects design for occupation by others, it is necessary to first understand the needs of the end-user in terms of social, functional and psychological aspects. This is not always as successful as desired, for various reasons. For example, in Egypt after a failed attempt to upgrade the Old Gournā vernacular village, the state appointed architect Hassan Fathi to design a new settlement for relocation of the inhabitants. Despite research, consultation with end-users about ways of life and inspiration from local and historical architecture, the project is reported to have failed due to political interference and financial complications (Mahmoud, 2016: 201).

In the South African context, in a study focused on the upgrading of the African Township of KwaMashu, Stewart (1991) records that the state's decisions on cost efficiency, affordability, investment potential for self-fulfilment and commodity benefits took precedence over basic criteria of lived patterns and the end-users' desired needs. Where the designer (the architect) is guided by the patron (the state) it can raise conflicts between the act of visioning and the commodification of space by the imposition of standards. It gives the architect the presumptuous power of not only predicting human behaviour (Lipman, 1969), but also modifying behaviour.

Architecture, according to Lawrence and Low, (1990:454) "is typically defined to encompass the built form, often monumental, characteristic of civilisations and self-consciously designed and built by specialists". According to Roth (2007: 3), Architecture can be defined as "... like written history and literature – a record of the people who produce it –and it can be read in a

comparable way”, and “building is a conscious act that embodies countless reflective and evaluative choices.”

Successful architecture is arguable one that satisfies the Vitruvian¹ triad of *firmitas*, *utilitas*, *venustas* (Nesbit, 1996). Where *firmitas* (firmness) refers to durability i.e. technical stability; *utilitas* (commodity) refers to function, fitness for purpose and suitability to the site i.e. the product of social engineering and *venustas* (delight) refers to pleasure, consistency of proportions, scale and details, perceptions of which are subjective. The Vitruvian triad calls for technological, psychological and artistic values that meet certain needs and aspirations. Can all the Vitruvian principles occur in situations of poverty and lack? If no, does it then imply that where there is poverty, there is no architecture? Or can it be argued that once certain aspects of the Vitruvian qualities are achieved there is a certain level of architectural value?

Heidegger (1971) notes that architectural efforts of the ‘modern movement’ failed to acknowledge man’s existence; thus producing mass housing that did not meet socio-psychological needs of patrons. Whereas, when the architect and patron are absent, the end-user is concerned about meeting primary needs of shelter and learns from himself in a trial and error process, learning from each experience and passing the lesson down. These lessons are learnt often over a lifetime as the issue of firmness is not well attended to and requires a regular process of correcting errors. For instance, (Glassie, 1990:11) notes that shacks are built with locally available material, known to leak, with poor assembling details, often requiring propping up or continuous rebuilding, thus requiring regular processes of maintenance. Architectural theorists have acknowledged this procedure of continuous rebuilding as a process that leads to the development of vernacular architecture (Glassie, 1990; Osasona, 2006).

Centuries of vernacular architectural practice has provided homes for many generations of indigenous populations. These dwellings express a unique indigenous socio-cultural behaviour and context. As such, it can be argued that they possess peculiar levels of firmness, commodity and delight. With the rapid pace of urbanisation, rural practices find a way into the urban environments forming what Lueder (2016:1) termed *urban villages*. However, once in the urban environment, the vernacular dwellings are depicted as informal as they do not align with the

¹ The Vitruvian triad refers to *firmitas*, *utilitas* and *venustas* whereby firmness which refers to durability, commodity i.e. the functionality, and delight i.e. aesthetics respectively.

defined standards of the urban patrons. Informal dwellings may not possess the full array of firmness, commodity or delight; however, I argue that there is some character, especially in terms of commodity, which can be interpreted as an architectural language and so deserves attention. It can further be argued that the adequate ‘standardized’ building regulations in urban areas are silent on inherent socio-cultural considerations of the vernacular practices and dictate social behaviour and norms by imposing predetermined spatial ideologies.

The imposition of standardized norms can be viewed as a power imposition as theorized by Foucault (2003), which brings about a ‘counter-conduct’ as described by Massey (2014). It is a way to control and regulate development. Gabardi (2000) referred to this as ‘governmentality’ whereby the superior authority (like the state) applies tactics to control the behaviour of another. The colonial expression brought about shifts from communal living to a more individualistic ideology. For example, the evolution of the building types in the Yoruba traditional settlements, where court buildings replaced the palace square open spaces for hearing of disputes. The existence of governmentality, dictates the use of space within and around the dwelling, describing one settlement as formal and of acceptable standard and another as informal and unacceptable. These foreign trends usually negate local realities of collectivism, whereby communities live together and rely on each other. Apart from the use of locally accessible materials, literature on the sustainable value of the form is limited and more so the layout of dwellings.

The description of what constitutes informal dwellings or desired adequate housing, which refers to the architectural determinant of firmness and commodity, is often debated. Various debates have engaged the undesirable nature of informal settlements and the location of adequate housing. For instance, Khan, 2003 (228) argued that adequate housing should be built on well-located accessible land, which allows for employment and survival strategies, access to decision-making processes and socio-cultural and ‘structures of feeling’ that the poor utilise in making sense of the oppressive landscapes. Others, such as Hanson (2003), include functions like cooking and eating, entertaining, bathing, sleeping, storage and the like. On the other hand,

an informal dwelling includes a wide array of informal indicators, ranging from legality and nature of structure (firmness), to the socio-economic character of the dwelling².

Against this background, this research focuses on filling the socio-spatial knowledge gap on the study of informal settlements by drawing links between rural and urban informal settlements. In so doing the research seeks to conceptualise informal settlements as a new vernacular architectural language.

1.2 MOTIVATION AND JUSTIFICATION OF THE STUDY

Firstly, the research is motivated by the persistence of informal settlements in urban and peri-urban areas in the Global South and the negative ideological interpretation. Lombard (2014) argues that the discursive marginalisation of urban informal settlements results in negative outcomes for residents such as displacements, eviction and the withholding of investments. Thus, the negative ideology informs directly or indirectly the intervention responses, which invariably sees the informal settlements as a ‘problem’ that needs to be eradicated.

Other definitions by various authors construe these negative connotations differently. For instance, in Egypt the *Aswaeyat* was considered “a place of illegality, problems and crimes” (Mahmoud, 2016:1). In South Africa, Stopforth (1978 cited in Haarhoff, 1984) argues that informal settlements are perceived as illegal and are seen as “a kind of cancer; something which should be overcome, eradicated or punished” (Haarhoff, 1984:6).

The time of ignoring or wishing the informal settlements away should have long been over, as they are not temporary features, but form a substantial part of the city landscape. The United Nations (UN) recognises that extreme poverty is often concentrated in urban spaces creating challenges for both national and city governments and thus informal dwellings become a reality on the urban landscape. Informal settlements are said to be home to one in eight persons in the world today and 80% can be found in developing countries (UN-Habitat, 2015). It is with this

² The 2009 National Housing Code’s Informal Settlement Upgrading Programme (proposed by the Department of Human Settlements) adopts a very broad and inclusive definition for informal settlements. It characterises informal settlements as settlements demonstrating one or more of the following characteristics:

- Illegality and informality;
- Inappropriate locations;
- Restricted public and private sector investment;
- Poverty and vulnerability; and
- Social stress.

concern that the United Nations Sustainable Development Goal (UNSDG) goal 11 seeks to address sustainable cities and communities.

Secondly, I argue that architectural theory could be applied as a lens to reinterpret informal settlements and analyse the small dwelling spaces, living conditions and practices. Due to limited research from an architectural perspective and the lack of appropriate architectural theory, responses to informal settlements have often not led to the actual eradication, but rather research has shown that the poor returned to informal settlements for various reasons, which include social networks and an access to economic activities. It was observed, during a trip to an informal settlement in Lagos, that the settlements were peculiar to the context in Lagos. In fact, the residents lived off the existing environment erecting structures similar to the traditional practices. It can be argued that another key factor is the inadequacy of space in the formal setting.

Lastly, the emerging situation in state housing, whereby households' efforts to consolidation, if not monitored could lead to a slummed environment. This concern is born out of ongoing informal consolidation practices occurring in various state funded housing settlements that sometimes lack the vibrancies and character and social bonds of the informal settlements which tend to be 'alive' and self-restoring. According to Alexander "places that are alive possess patterns that are alive and are supported by other patterns in a sustainable way" (Alexander, 1979:130).

1.3 RESEARCH PROBLEM

The research problem, therefore, is to address the limited understanding of the use of space in informal dwellings. It addresses the gap in literature on the value of informal settlements in the urban areas. In this way the authorities, professionals and researchers can start accepting them as integral parts of the city and work with them (not against them) for better urban development. It is a critical theory approach as it questions the current understanding of the concept of living spaces in informal settlements.

Kellett & Napier (1995 :7) argue that individual dwellings in informal settlements can be understood from vernacular environments "which allow for descriptions of sufficient complexity to handle the great variety of cases found within the definition of vernacular". This

allows for spontaneous settlements to be viewed outside of the negative social and visual contexts. Informal dwellings are characterised by a lack of basic services, unconventional building materials and shoddy assembly methods, often on illegally accessed, hazardous land. Though void of finesse and characterised by ‘lack’, the settlement provides a “place to call home” for many deprived urban dwellers and “a place in the city of arrival for deprived immigrants” (UN-Habitat 2003). The UN report recognises that one of the positives of informal settlements is “the vibrant mixing of different cultures frequently resulting in new forms of artistic expressions”. (UN-Habitat, 2015)

In the 1960s, the Turner school of thought saw informal settlements not as a problem but as a solution (Turner, 1976). The Turner school of thought acknowledges housing as a process that is related to intra and intercity migration. In this theoretical framing housing is not an end product but refers to a complex process involving many actors and multiple layers of decision making.

Other theorists such as Rudofsky (1965) argued for what can be termed ‘non-pedigreed architecture’ such as the spontaneous settlements of the primitive era and coined the expression “Architecture without Architects”. Such settlements occupy natural elements of the environment, such as the interior of the huge Baobab tree trunk, or the carving of shelter out of hillsides to create living spaces in the natural environment. Other traditional settlements make use of materials found in the environment to create living spaces.

The discourse about space has evolved since the 1970s, when the focus was on the meanings created in space. Hanson (2003) traces the space discourse from the lawfulness of space in the 1980s, significance of space in the early 1990s, to spatial measure and integration of space in the late 1990s. Hanson (2003), who takes the debate to issues of configuration of space, argues that the differences noted from architectural records about spatial configuration, are due to the differences in historical periods and cultures. He argues that dwelling spaces are “a pattern of spaces governed by intricate conventions about what spaces they are, how they are separated out, how the interior is decorated, and even what kinds of household objects should be displayed in different parts of the home” (Hanson, 2003: 2). He further illustrates the complexity of human habitation by exploring vernacular and cross-cultural dwellings and suggests ways that

dwellings can carry cultural information in their material form as space configuration, and the disposition of household artefacts within the dwelling.

The present study focuses on understanding and theorizing the meaning created in limited space of informal dwellings and their surroundings, which are neither traditional nor modern, nor accepted as rural or urban. The research seeks to gain an understanding of the socio-cultural beliefs that inform the configuration and meaning in informal dwelling spaces. The study also intends to map the transition from vernacular architecture to urban informal dwellings, looking at a new conceptualisation of these spontaneous settlements as manifestation of a new vernacular architecture.

1.4 AIMS AND OBJECTIVES OF THE STUDY

The overarching aims of the study, therefore, are:

- to gain an understanding of the use of space in informal dwelling environments, which could inform appropriate responses and interventions to informal settlement upgrading programmes, towards creating self-reliant and sustainable communities; and
- to theorize a ‘new vernacular architecture’ that encapsulates the evolving character of dwelling spaces in the informal settlements.

The specific objectives of this study are as follows:

- 1 To understand what space is used for conducting daily activities.
- 2 To evaluate the extent to which culture and indigenous knowledge systems inform the use of space in informal dwellings.
- 3 To document spatial configurations and spatial patterns in informal dwellings.
- 4 To map the transition from vernacular architecture to urban informal dwellings.
- 5 To evaluate the extent to which the use of space may guide upgrading programmes.
- 6 To develop an architectural theory from the use of space in informal dwellings.

1.5 RESEARCH QUESTIONS

The main research questions that have driven this study are the following:

- What are the nature and characteristics of dwelling space in informal settlements that could inform an appropriate response and interventions to informal settlement upgrading programmes, towards creating self-reliant and sustainable communities? How can this be theorized into a “new vernacular architectural language”?
- Sub questions are as follows:
 - 1 What spaces are used for conducting daily activities in informal dwellings?
 - 2 To what extent does culture and indigenous knowledge inform meaning in the use of space?
 - 3 What spatial use patterns can be noted in informal settlements?
 - 4 What differences can be noted between identified patterns and documented vernacular patterns?
 - 5 How can the use of space in informal settlements be used to guide upgrade programmes?
 - 6 What architectural theories can be developed from the use of space in informal settlements?

The Table 1-1 Synthesis of the research summarises the research questions and illustrates the conceptual framework applied, and Figure 1-1 presents the conceptual framing.

TABLE 1-1 SYNTHESIS OF THE RESEARCH

Theme	Research question	Theories	Thinkers	Methodological approach
Meaning-Activities	What spaces are used for conducting daily activities in informal dwellings?	Normality Modernity	Foucault	semi-structured interview survey; open ended questions; focus group discussions
Meaning-drivers	To what extent does culture and indigenous knowledge inform meaning in the use of space?	Phenomenology; Normality; Structuralism paradigm	Lefebvre; Heidegger;	Interview survey; open ended questions; semi structured interviews ; focus group discussions
Spatial Patterns	What spatial use of patterns can be noted in informal settlements?	Individualism; cellular spaces	Hiller and Hanson	Observations; GIS, sketches,
Spatial Patterns	What differences can be noted between identified patterns and documented vernacular patterns?	Place theory; critical regionalism; genius loci; evolutionary process	Hiller and Hanson	Secondary survey of readings on vernacular architecture comparative analysis of rural and urban; observations; GIS, sketches, Flip charts
Informal settlement upgrade	How can the use of space in informal settlements be used to guide upgrade programmes?	Positivism ; epistemological anxiety; contextualised knowledge	UN-Habitat	semi-structured Interviews; collaborative methods
Architectural theories	What architectural theories can be developed from the use of space in informal settlements?			Secondary research; conceptual analysis

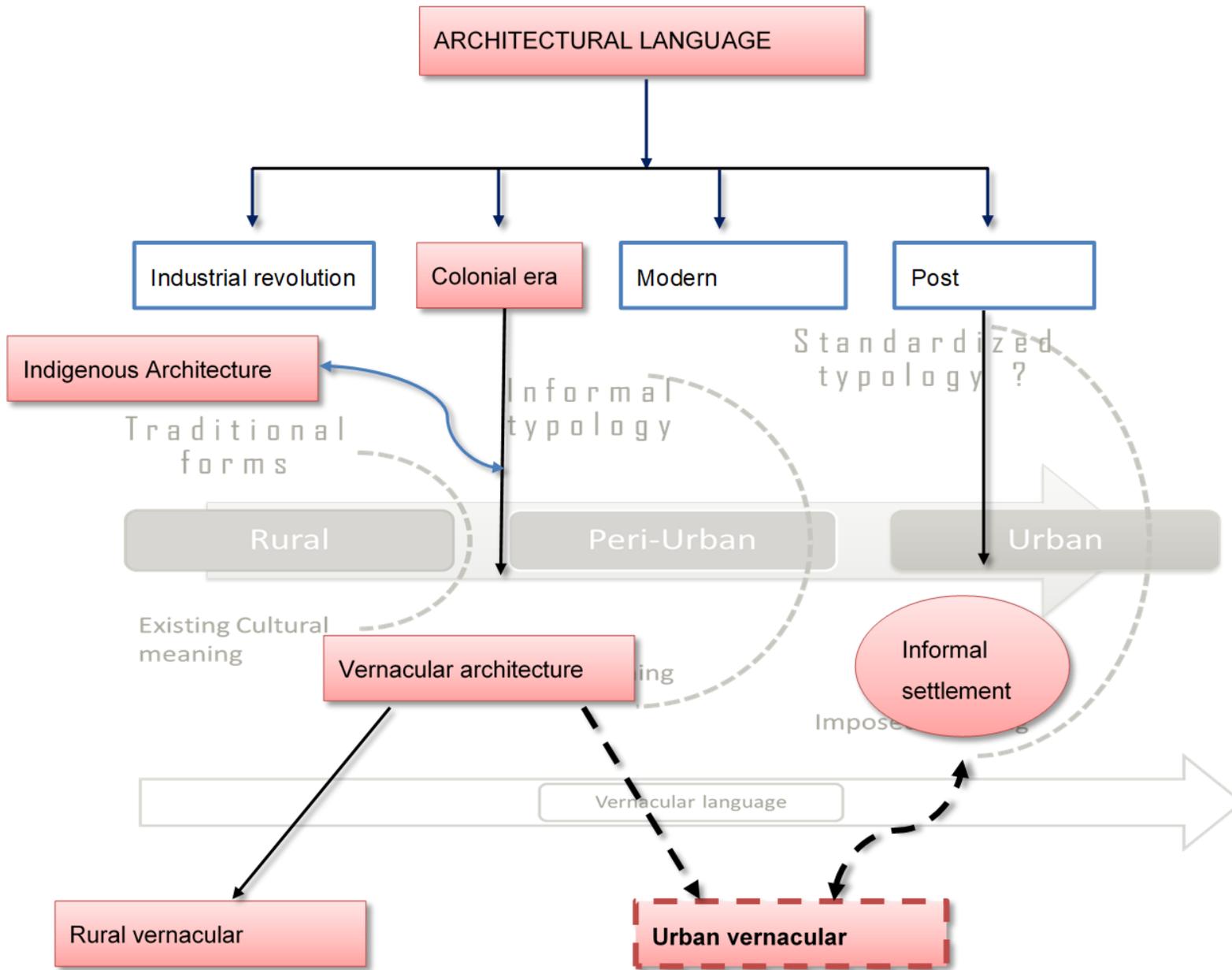


FIGURE 1-1 CONCEPTUAL FRAMING

1.6 SETTING THE SCENE, RESEARCH ASSUMPTIONS, SCOPE AND LIMITATIONS

The eThekweni municipality has experienced rapid urbanization in the last three decades, even before the end of the apartheid years in 1994. The first shack settlements began to be constructed in Durban following the destruction of the Zulu Kingdom and the simultaneous movement into the city of Indian workers who had completed their indenture on sugar plantations. (Fanon, 1967:114))

According to White (1975) squatter settlements emerged as a housing problem for blacks and Indians in the late 1950s during the apartheid years in South Africa. Following the abolition of apartheid laws, the city saw an influx of African people into the city centre. It also saw an increase of informal settlements composed of urban workers who preferred to stay in the city close to their places of work, but unable to afford rental accommodation in the city. This action confirms Turner's theory whereby immigrants first settled in the inner-city shelters and then moved out to peripheral areas. Such areas can be found in the fast growing urban eThekweni municipality, in the province of KwaZulu-Natal (KZN). Settlements such as the Quarry Road West, which is located close to the freeway and to industrial siting; Havelock in Greenwood Park, also in close proximity to industrial and domestic work opportunities; and the KwaMathambo informal settlement which is located in ward 22 in Avoca Hills, eThekweni. These three settlements present the case studies for this research and the findings will be contextualised and hypothesis tested in other contexts.

This study is a further development of knowledge based on contributions by researchers working in the field of urban informal settlements in South Africa. Such work includes Haarhoff's research thesis on the spatial analysis of African urbanisation and informal settlements (1984) and Stewart's work on siting of low income housing in Durban and what became eThekweni municipality (1989). It makes reference to Turner's work on self-help housing and Christopher Alexander's work which focused on the analysis of architecture in terms of structured patterns as a language, emphasising the use of elements and the quality of interactions (1979).

1.6.1 SCOPE OF THE STUDY

This study sought to understand configurations and meanings in spaces created within informal dwellings. This was, however, with the understanding that the dwelling spaces did not start or end within the dwelling, but instead extended to surrounding spaces.

The present research does not give credit to the form or structure of the dwellings, and as such did not seek to study assembling methods of the units. It was, however, noted that some methods were unique, but it was not the focus of the study to analyse assembling methods in the informal settlement. For these reasons a qualitative research approach was utilized to meet the objectives of understanding configuration and meaning in the dwellings spaces, by means of interviews, observations and action research. It is, however, noted that due to any unforeseen circumstances that may have occurred an ethnographic survey whereby the researcher lives in the settlements for a predetermined period of time was not used. Instead a photo-voice and life-history approach was adopted. These are explained further in the following chapter.

Three research case studies located within the KZN province of South Africa, were selected. KZN is a post-apartheid province that emerged as a result of the integration of what was known as the KwaZulu Bantustan and the Natal province of the apartheid era. The province shares international borders with Mozambique, Swaziland, Lesotho and domestic borders with Mpumalanga, Free State and Eastern Cape. This makes it easily accessible to in- and out-migration with these areas. Covering an area of 92,100 km² the province includes a metropolitan municipality called eThekweni (Durban) and ten district municipalities. eThekweni municipality is the largest city in the province and the third largest in the country, with a population of over 3.4 million people and an unemployment rate of over 50% as per the 2011 census (eThekweni Municipality 2017).

1.6.2 LIMITATIONS OF THE STUDY

Firstly, the research data was collected from one geographical region of South Africa, with a peculiar socio-cultural character. While the findings were specific, the principles and theories developed would be applicable, in a generic manner, to other regions with different socio-cultural practices, but similar socio-economic standing i.e. the urban poor. Secondly, the reliance on recorded evidence from the photo-voice exercise (even though still primary data),

as opposed to conducting a full on ethnographic survey, necessitated careful transcription and interpretation of the data collected. Care was taken by keeping an audio record as well as written record of interviews and discussions where permitted by the participants.

1.6.3 HYPOTHESIS

The research hypothesis was that the emergence of distinctive prototype housing in the urban area was closely linked to the vernacular architectural language of the surrounding rural areas. The evolving vernacular architecture was a transformation of socio-cultural behaviours from the traditional areas during the process of migration and was evident in the spaces that were created in the dwellings through self-help processes.

The research therefore argued that the use of space in urban informal dwellings showed meaningful spatial patterns for the inhabitants. This was informed by socio-cultural and indigenous contexts inherent in the settlement and is critical for the success of upgrading programmes. These patterns are relevant in the development of dedicated urban architectural theory.

1.7 DEFINITION OF KEY TERMS

Informal settlements- The UN-Habitat III conference defined informal settlements as residential areas where housing may not comply with current planning and building regulations and usually lacks basic services and infrastructure, secure tenure vis-a-vis the land or dwellings they inhabit (UN-Habitat, 2015).

Haarhoff (1984) recognises three types³ of informal settlements; the modernising informal settlement in which less than 25% of the dwellings consist of traditional kraals; the incipient urban informal settlement, with modernised kraals, and informal structures making up over 50% of the dwellings; and lastly, the urban informal settlements where 75% of dwellings are informal structures.

³ Two rural typologies are also identified by Haarhoff, 1984: 118

Informal settlements are residential areas, illegally occupying land, usually green sites or unoccupied land (Haarhoff, 1984), which do not comply with local authority requirements (Chikoto, 2009) and are characterised by irregular tenure structure.

For this research, informal settlement refers to a dense group of unconventional dwellings usually low rise that occupy land either legally or illegally.

Informal dwelling is a dwelling such as a shack, usually of insufficient living space and built out of available materials, requiring continuous reworking.

Indigenous knowledge relates to unrecorded common tribal knowledge, past systems of understanding and undertaking which generates a skill.

Home-lands refer to rural areas reserved for specific ethnic groups.

Reserves racially segregated residential areas of the apartheid era in South Africa.

Township: a segregated residential area.

Apartheid hostels: residential accommodation provided for migrant workers during the apartheid era in South Africa. These were gender specific and non-family units. Apartheid hostels were housing arrangements provided by the apartheid government in accordance with migratory labour policy in which workers were recruited from rural areas for contract employment in urban areas. (Haarhoff, 2011).

Informal settlements vs slum settlements: Some authors have made the distinction between slums and squatter settlements by relating the former to conditions of the settlement and the latter to its legal status (Srinivas, 1991). According to the Encyclopaedia Britannica (1997) slums are residential areas with physical and social deterioration, in with poor living conditions. Usually they are residential areas which were once liveable and have deteriorated to slum conditions. On the other hand, squatter settlements are settlements where the inhabitants illegally occupy land and build shelters to meet housing needs. Informal settlement has become a more acceptable term in describing squatter settlements.

Nguni: The Nguni peoples of South Africa are made up of different tribes – Zulu, Basotho, Xhosa, Bapedi, Venda Tswana, Tsonga.

1.8 STRUCTURE OF THE THESIS

Chapter 1 provide and introduction to the research thesis. It outlined the background to the study, motivation and the research problem, aims and objectives. The chapter outline the focus of the study as the socio-spatial knowledge gap on the study of informal settlements. The scope and limitations of the study were also outlined.

Chapter two presents the research design and outlines the research methodology. The research used a phenomenological research paradigm which argues that ideas are in things, and are captured through a multi-layer of experiences. These include the sensual experience, perception, memory and imagination (Heidegger, 1971).

This research made use of qualitative research methods to gather both secondary and primary data from three selected informal settlements in the eThekweni municipality of KZN province of South Africa. The settlements were selected based on their accessibility which was not only about proximity, but also permissibility, (this is discussed further in chapter 2) Three layers of data were captured from the respondents with regards to the social structure of the dwellings, the daily activities, and the spatial patterns created. The data was collected using a structured interview schedule as well as the life history method to get more in-depth details of specific cases. Social architects were also interviewed to get a ‘professional’ perspective from practicing architects. The research also made use of observations to capture the life-style patterns as reflected in the use of space within and around the dwellings. Secondary data was collected from documented material on the case studies and literature on vernacular architecture. The study also explored the meaning created in the dwellings in terms of security, aspirations etc. Documented aerial photographs were used in interrogating the dwelling patterns from places of respondents’ origins.

The last part of chapter 2 outlines the data analysis process which made use of the NVivo software package, syntax sketches and drone photography. Finally, ethical considerations and limitations of the study are discussed.

Chapter three: Theoretical framing

The chapter presents the triangulated theoretical framing for the study. It is necessary at this stage to present the theoretical lenses for the study so as to remain focused on the key questions.

Using a logical pragmatic perspective of structuralism, the chapter begins by setting the framework for construction meaning. It then considers the theory of space giving particular attention to order in spatial patterns and the interpreting thereof in terms of context, systems of forces and configurations. Genius loci (the spirit of place) are then considered as a determining factor in place-making. Lastly phenomenology, which argues that the meanings of things are in the things themselves, was presented. The conceptual framework was presented in new two chapters

Chapter four: Conceptual frame work: Vernacular architecture

In this chapter the concept of vernacular architecture is examined. It traces the origins of vernacular discourse and examines literature which shows that the built environment is depicted from a linguistic perspective communicating meaning to its users and also as a record of history. The chapter goes further to describe the vernacular as an evolving built environment language affected by migration, modernisation and power. As a precedent the pattern language of the Nguni people is presented to show how vernacular patterns may be conceptualised.

Chapter five: Conceptual frame work: Informality

The chapter examines the concept of informality and what brings it about. Using Gramsci's theory on social groupings (1986), hegemony is considered to be a result of the presence of 'intellectuals' within the society, which influences the creation and use of space. The chapter considers traditional and statutory building norms, as well as agency self-help approaches to building practices. It also examined the influence of migration on the built environment language, exploring how indigenous knowledge is transposed to urban areas. The chapter concludes by arguing that a common built environment language is acquired by groups of people with common experiences.

Chapter six: Case studies

This chapter introduces the three case studies in eThekweni municipality. Firstly, it gives an introduction of informal settlements in the metro, and then places of origins of the informal settlement dwellers. The records show that the majority are migrants from within the Province. The chapter goes further to describe each settlement in context, providing background information from the existing Slum Dwellers International (SDI) data base.

Chapter seven: Data presentation

This chapter presents the data from the interviews with the residents of the three settlements. It presents the background of the households and their original traditional homes. Using pictures and tables the chapter presents more detailed data on the physical dwelling space as recorded from the observations and photographs. It presents a systematic description of materials used across the settlements showing self-help experiences of the households, and the perception of the environments. Lastly the mapping of daily activities is presented showing both the activities currently being carried out in the dwellings (and settlement at large) and those households that were unable to carry out daily activities in their dwellings as they stood.

Chapter eight: Discussions Informal dwellings as an urban vernacular language

The chapter starts out by theorizing an urban vernacular architecture, tracing the evolution of vernacular architectural language from the colonial period. The chapter presents urban vernacular architectural language as one that is responsive to contexts, expressing the socio-cultural, socio-economic, socio political, environmental and climatic conditions. The chapter goes on to compare rural and urban vernacular architectural language using the Vitruvian principles as a basis. The chapter concludes by discussing socio-spatial drivers.

Chapter nine: Conclusions and recommendations

The chapter starts out by revisiting the research aims and objectives. It draws on the empirical data collected to make conclusions. Deductions of spatial meanings created in the dwellings are made. It then discusses the spatial patterns created, drawing links with vernacular patterns and presents a model for theorizing on urban vernacular architecture outlining the actors, context, problems and the patterns. The chapter also outlines the implications of the findings for upgrading programmes and ends by outlining the limitations of the study giving suggestions of future studies.

CHAPTER 2 RESEARCH METHODOLOGY

2.1 INTRODUCTION

This chapter discusses the research design, data collection strategies, and selection of case studies, sampling methods, and the data analysis. It also presents the study organisation, and ethical considerations.

Architecture primarily refers to visual styles providing an unassuming backdrop for daily activities (Roth, 2007: 1), but goes beyond the visual to the very nature of space, technology, and even questions the functionality i.e. the lawfulness of space created by human societies (Hillier & Hanson, 1984), providing a physical record of human activity and aspirations (Roth, 2007: 1). However, the impact of inhabitants on space is often considered from a morphic perspective, lacking architectural conceptualisation. Taking the view point that space is an outcome of necessity (Dana, 2014), it becomes important to understand the spatial necessity of human kind, to understand the configuration of patterns created in space. This research takes on a qualitative methodological approach in collecting data and a constructivist- interpretivist perspective in analysing gathered data.

2.2 RESEARCH DESIGN

The research makes a qualitative inquiry into the meaning and the configuration of space in informal settlements. It is well known that the self-help initiatives of informal dwellers are often not of acceptable standards. In fact, self-help housing efforts could be considered hazardous in terms of materials used, construction methods and environmental impact. Others have argued that this settlement type is underpinned with negativity (Lombard, 2014: 3). Lombard further argues that this negativity is the basis of marginalization and problematic assumptions. It can, however, be argued that the relationships between and within spaces created may be worthy of credit, with lessons for upgrading approaches in creating sustainable human settlements.

In their study carried out in Chile, Pino & Hormazabal, (2016) showed that informal settlements are characterised by a complex social reality embedding meaning, representation and social imaginaries associated with rural life. Haarhoff (1984) had earlier identified varying forms of

informal settlements described in terms of the relationship with indigenous and modern forms of building types.

The present study is conducted eThekweni municipality in the KwaZulu-Natal Province and has links with areas. It assumes that many of the informal settlement dwellers keep ties with the traditional home-lands and are in-fact cyclic migrants returning regularly to the rural areas, seeking better opportunity in the urban areas.

According to Green et al (2008), settlement types in eThekweni can be classified into three distinct categories – rural, dense rural, and urban areas Table2-1. This classification is based on population density requiring service delivery.

TABLE2-1 CATEGORIES OF SETTLEMENTS

Settlement category	Description
Urban	More than 6 people per hectare and contiguous with the CBD core
Dense rural	More than 6 people per hectare but disjointed from the CBD core
Rural	Less than 6 people per hectare but disjointed from the city

Source: Green et al (2008)

Other means of classifying relate to the intended intervention, be it, in-situ upgrade or relocation. However, the national policy sets out that priority be given to the immediate intervention of interim water and sanitation services (eThekweni Municipality, 2016).

Informal settlements in eThekweni, which may be located on publicly owned land, privately owned land or on land in contestation⁴, vary in size, length of existence, environmental and geographical conditions, location, and level of socio-economic wellbeing; many are predominantly occupied by the previously restricted black African population, from the surrounding homelands.

⁴ According to eThekweni municipality records (eThekweni Municipality, 2016), 45% of informal settlements are located on land owned by the state, Parastatals, council or tribal land. 34% are located on privately owned land and another 21% are located on unregistered land.

The selection of informal settlements has been from one geographical area. Records show that informal settlements are located in the north, south and western parts of the metro. The largest being located in close proximity to the apartheid hostels.

This study is divided into three parts; the first part seeks to theorize (codify) ‘meaning’ and the drivers that bring meaning about. This is done through a review of literature on vernacular architecture and tracks the progressive discourse through important periods in the built environment. The second part looks at the spatial patterns created of settlements and how these can be linked to documented indigenous patterns. The third part then analysis both primary and secondary data to thematically conceptualize the vernacular architecture.

As stated in the previous chapter, the study uses a qualitative methodology and a constructivist-interpretivist paradigm. This paradigm sees the world from the construct and experiences of the people as they interact with each other and with the broader systems (Ulin,1992). According to Ulin et al. (2005), the qualitative research process entails direct and indirect probing methods. It engages ‘the art and science of asking, observing, listening, reflecting and probing with the purpose of engaging people with meaningful dialogue’ (Ulin et al., 2005:8). The data gathered is then used to create a ‘theoretical idea’ (Davies, 2007).

2.2.1 PHENOMENOLOGY AS A RESEARCH PARADIGM

Phenomenology is a broad philosophical field of study, which covers the structure of various types of experiences of a place (Heidegger, 1971). From the phenomenological perspective, architecture serves the purpose of giving space an existential purpose. That is, uncovering the meanings potentially present in the environment (Norberg-Schulz, 1996: 412). It engages with the metaphysical dimension which Perez-Gomez argued “reveals the presence of being, the presence of the invisible within the worlds of the everyday”. He argues that “the invisible must be signified, and that symbolic architecture is one that represents, one that can be recognised as part of the collective dream, as a place of full inhabitation” (cited in Norberg-Schulz 1980: 30). This paradigm hinges on Husserl’s insistence that the relationship between perception and its object was not passive, but that human consciousness could actively constitute the objects of experience (Holstein & Gubrium, 1994: 263). In this wise, Norberg-Schulz 1970 cited in (Holstein & Gubrium, 1994: 262) argues that “there is a common-sense knowledge in

objectifying social forms, noting that individuals approach reality with a stock of knowledge composed of common-sense constructs and categories that are social in origin”. This research paradigm requires “a deliberate attention to how things are made” (Nesbit, 1996: 29). In the context of this research the ‘thing’ of contention is the informal dwellings. This research paradigm offers the opportunity to examine meaning embedded in informal dwellings and their designers and to bring about reasonable meanings among concepts or sets of concepts.

In the construction of theory (Dickoff, et al, 1968) identified four critical stages. It entails the:

Stage 1, Descriptive –This stage entails identifying the phenomena and actors, which will include agents and recipients

Stage 2, Explanatory – entails outlining the factors that relate to the phenomena and explaining context and procedures of engagement.

Stage 3, Predictive – entails predicting dynamics

Stage 4, Prescriptive – overall theoretical outcome identifying patterns and solutions

The research design process is summarized below. It shows the three parts of the research i.e. theorizing meaning, analysing space and conceptualizing a vernacular theory. It makes use of the linguistic theoretical paradigm of structuralism, semiotics and vernacular language theory for each respective part. Meaning is theorized using the phenomenological research methods, collecting data from the case studies. A thematic analysis is the applied on the data collected.

In the second part, participatory action research method was used and data collected by listening to the life history of residents as they respond to questions around their previous dwelling experiences. The third part, which focusses of the conceptualisation of a vernacular architecture, interrogates vernacular architecture literature and applies a discourse analysis on secondary data collected.

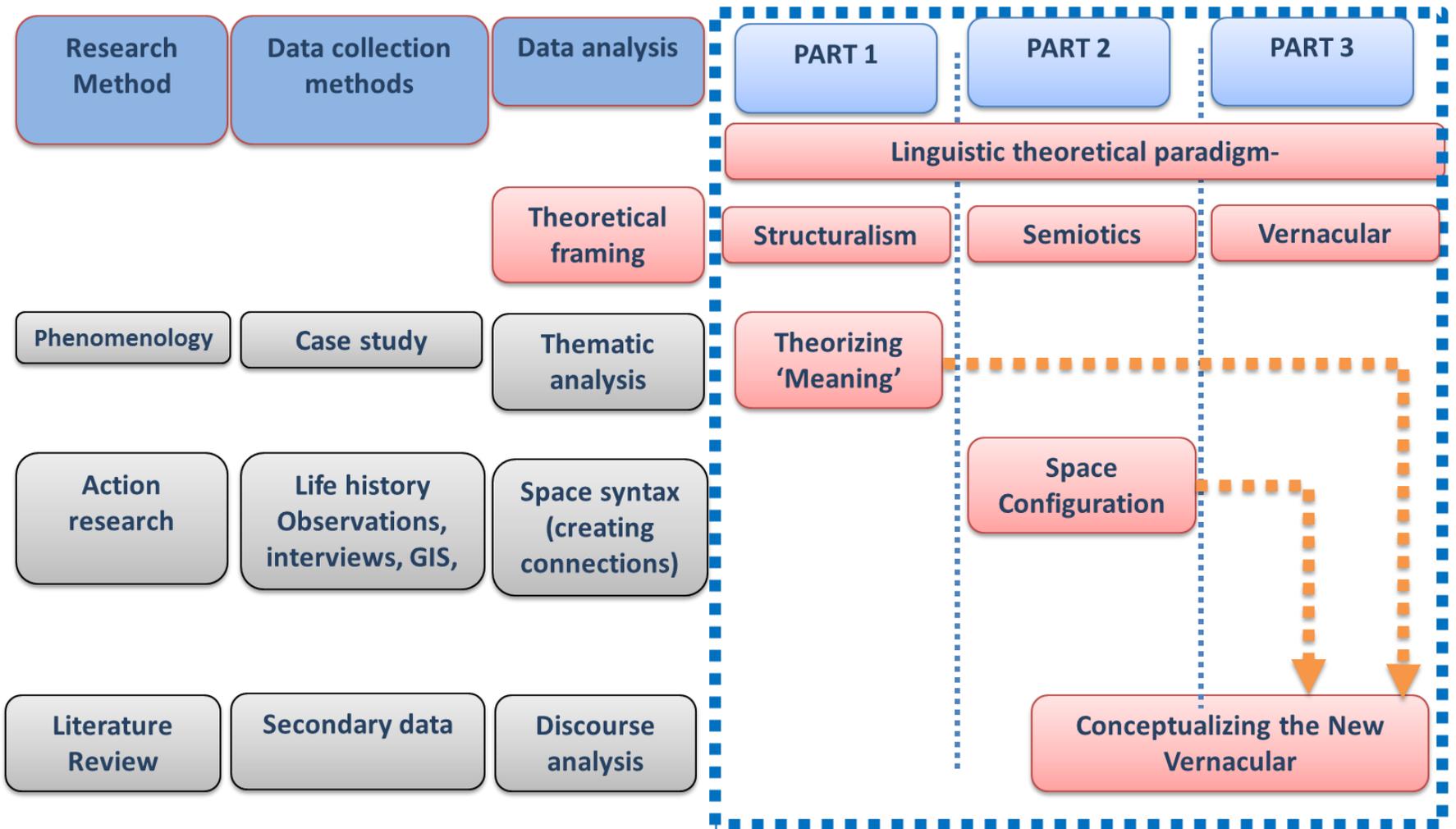


FIGURE 2-1 RESEARCH DESIGN

2.3 PRIMARY DATA SOURCES

Two sets of primary data sources were used in this research. The first was from communities of informal settlements in the eThekweni metropolitan area and secondly from professionals who have worked within informal settlements

2.3.1 QUALITATIVE APPROACH

The research is qualitative and gathers data from three informal settlements in eThekweni. Yin describes a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context especially when boundaries between phenomenon and context are not clearly evident” (Yin, 2009: 18). According to Yin (2009: 9), the case study responds to the how and why question and it provides the ground for a more qualitative analysis. However, Yin warns that the challenge with the case study method is the limitation in generalizing the findings in a scientific way. Yin argues that this can be done through theoretical propositions, which flow from an analytic generalization. As such, a theoretical proposition in terms of meaning in the informal settlements and the vernacular language will be the outcome of the study

The key to carrying out the case studies is to establish leadership structures within the communities. This was done by engaging settlements that are part of recognised structures such as the South African Slum Dwellers International network (SASDI). By so doing the leadership structure approached was that recognised by the SASDI. According to Davies (2007) it is also key to find out other ‘informal’ leadership structures, which may influence actions within the group. During the selection, care was taken to identify such structures.

2.3.2 SELECTION OF CASE STUDIES

Selecting the most appropriate case studies was a critical task of the research. Two critical factors were taken into consideration i.e. accessibility and leadership structures. The study area had to be an area where the researcher could have access to engage with the community for ease of data collection.

As alluded to in the introductory chapter, informal settlements are present in most large cities of the Global South. Having lived in two large cities of Africa, the researcher had two choices for the selection of case studies, Lagos her birth city and Durban her current home city. For reasons of proximity and ease of repeat visits, case studies from Durban were selected.

The other issue was to choose an area where there are existing formal leadership structures which allow for initiated reception and engagement with the communities. Such recognised leadership include non-governmental structures and community-based organisations. The formal structures provide a more reliable way for accessing the community which is based on trust built over a number of years of working in the community. It was also acknowledged that apart from recognised formal leadership structures, active informal leadership structures also exist. Engaging first with the formal structures gave direction on important contact persons (both formal and informal) thus allowing the researcher to get access and insight, making the appropriate contacts in the settlement, providing a level of safety and trust, and thereby fostering a cordial environment for data collection.

Within the eThekweni municipality, three case studies were selected so as to get a robust data base, while keeping climate, governance, geophysical and socio-economic variables constant. The case study selection was finally done with the assistance of the SASDI and took into cognisance the settlement status quo (including size, environmental impact and social cohesion), and the future plan for the settlement⁵. Havelock in Greenwood Park, KwaMathambo (Chris Hani former North Coast Road) and Quarry Road West West informal settlements. Even though Quarry Road West is not part of the SASDI, for accessibility reasons and the presence of recognised community-based organisations and existing research work with the university, it was decided to include the settlement. All three selected settlements are recognised by the municipality for planned interventions, which include the provision of interim services, in-situ upgrading and relocation.

⁵ In the eThekweni municipality area, the practice is to upgrade, in-situ if possible, and relocate only if necessary. Interim services are provided once the settlement has been profiled (eThekweni Municipality, 2016). Profiling is the process of gathering accurate information on inhabitants useful in decision making. This process is often coordinated by the SASDI and its alliances.

2.3.3 SAMPLING METHOD

According to (Hoijer, 2011) social representation is about processes of collective meaning-making resulting in common cognitions and ideological struggles, which change the collective thinking in society. In the field of media studies, Hoijer argues that social representations specify a number of communicative mechanisms and explain how ideas are communicated and transformed into what is perceived as common sense. This methodology is relevant to the field of architectural study for precisely the same reasons. It is also necessary to deconstruct society for better recognition of diversity, context and history (Giddens, 1986). The historical relevance being important as it has been recognised that some informal settlements grow incrementally thereby building the settlement history each day (Stake, 1995).

In this research, four categories of respondents were identified: those from rural areas, those from dense rural areas, those from formal urban areas and those from informal dwellings. This targeted stratified sampling method is useful in gathering information from the participants who are considered to hold the knowledge and experience required. The approach allows for a collection of an inclusive range of data to reveal spatial patterns and practices in the community. The dwelling location within the settlement was also taken into consideration. This was done by first dividing the settlement into regions for, of example, high and low-lying land.

The sample size was dictated by the phenomenological research paradigm. According to Patton (2002) care must be taken not to exceed the saturation point. He argues that 'saturation' occurs when adding more participants to the study does not result in additional perspectives or information'. For a phenomenological study Creswell (1998) recommends a sample size of 5 to 25. In each case study a sample size of 25 was targeted.

2.4 PRIMARY DATA COLLECTION METHODS AND TOOLS

According to Stake (1995:49) the data collection process begins long before the actual formal research commences. This information comes in the form of early interactions with the study areas and impressions conceived at the stage of getting acquainted with case studies. For this reason, researchers may choose to pay attention to, but also have the obligation to make the conclusions meaningful and reliable (Stake,1995). Due to potential language challenges in communication, primary data was collected with the assistance of community researchers

(CRs). The CRs were expected to have a minimum of a matric certificate and be able to communicate in both isiZulu and English. This was done so as a means of having better access to participants, as the CRs are knowledgeable of the settlement and residents. It was also noted that respondents may be intimidated by the CRs if they were in close association with community leaders and were able to give feedback to such leaders about responses given. This was mitigated by selecting CRs, with the assistance of SASDI that were not in leadership and did not have close relationships with leadership structures. Each CR was paired up with a masters student who was engaged as a research assistant.

2.4.1 INTERVIEWS WITH THE INFORMAL DWELLERS

Semi-structured interviews were carried out with residents of the informal settlements, agents such as the SASDI NGO and professional architects who work in the informal settlements. Once the sample was selected, a pilot study was first conducted at the Slovos informal settlement in Mfolozi municipality, northern KwaZulu-Natal, to test the data collection instruments which were prepared both in English and isiZulu. This helped in checking the translated questions and also in determining the most appropriate time for interviews, so as to meet the household bread winners who may only be available at particular times of the day, or week. Meetings were set up ahead of time for the interviews. The interviews were conducted mostly within the dwelling space of the respondents. The semi-structured interview entailed preparing a guideline for the interview questions, which assisted in obtaining specific information from the respondent but also giving room for flexibility in responding the interview questions. Each interview took approximately 20 minutes.

The interview was conducted in isiZulu language thereby giving the respondents the free will for expression. As the researcher is not fluent in isiZulu it was necessary to engage Zulu speaking research assistants. However, White & McBurney (2013) note that a problem with using research assistants is that they may want to speedily complete the interviews and so rush through to finish quickly, thereby missing important information from the participant. To guard against this, each research assistant was given a limited number of interviews to conduct in the day and was provided with refreshments to keep him/ her going during the fieldwork. The interview was conducted in either isiZulu or English as deemed fit but notes were mostly taken in English. The audio recording provided a means for checking the original responses and the

jotted-down English response. Care was taken to make the participant relaxed by using icebreakers, such as a joke about the English language, before starting of the interview.

2.4.1.1 LIFE-HISTORY METHOD

Life-history is a qualitative method that provides open-ended questions that allow the participant to narrate the journey to the informal settlement. Open-ended questions were used, allowing the respondent to give a narrative of his/ her journey. In this way, an understanding of past experiences, especially of the marginalized, and how life is seen can be captured (Dhunpath, 2000:550). Dhunpath however warns of the contentions on a narrative especially between researcher and respondent and any oppressive tendencies of the researcher, such as presenting the narrative in a defamatory manner. This caution is of high importance as much of the nature and character of the dwelling and dwellers is informal. Further to this (Dovey, 2015:7) notes that “informal settlements embody informal practices of social and economic production...”, which arguably are also illegal and as such may bring about contentions. Three key informants were selected from each settlement for the life-history exercise. These were the person longest in the settlement, the community leader, and a large sized household.⁶

2.4.1.2 INTERVIEW WITH SOCIAL ARCHITECTS

An interview schedule for architects was used. Specifically practicing architects who can be classified as social architects as opposed to commercial or co-operate architects, were targeted. The working definition of ‘Social Architect’ being the architect who will consider the activities of the informal settlements as positive efforts. The term is however easily entangled with the theory of social change (Patterson, 2018). In this context it refers to mastery of craft and social intelligence, and more importantly the willingness to engage with the less privileged. In this way an architect given to voluntarism and engaging with communities in the development of their neighbourhoods. This was determined by the type of work each architect took part in, especially work for the poor and vulnerable. Interviews were conducted at a location which suited the interviewee, such as their office, or a coffee shop. They were advised of the planned duration of the interview and care was taken to keep timing, and not digress. All interviews

⁶ The statistics SA records average household size in 2016 to be 3.3 (Statistics South Africa, 2016)

were recorded. The selection of participants was initially based on the researcher's knowledge of their work, thereafter a snow balling method was used to identify other social architects, interested or working in community-based projects or in the informal settlements. The snow balling method is described by Ulin et al (2005: 58) as a technique for locating participants by asking others to identify individuals or groups with the special understanding of the phenomenon. A total of 6 professional architects were interviewed. Please see the attached interview schedule in appendix 11.3.

2.4.2 OBSERVATIONS

According to Davies (2007:30) careful observations of naturally occurring behaviour might suggest many fruitful hypotheses for research. The process of observing, however, needs to be done in such a way that the one being observed is free to continue as if s/he were not being observed. This required the researcher to create a non-judgemental environment in which the participant could feel at ease. Preliminary observation was done during the interviews whereby activities and objects around the settlement and dwelling were noted e.g. furniture, equipment. A sketch was made of the dwelling and photos were also taken.

The major challenge of this method was the limited time during the interview to fully observe the environment. As noted by White and McBurney (2013:200) limited access into the community is a challenge. More so for security reasons it was not advisable to remain in the settlement after hours. The photo-voice methodology was also used as a means of observation. The photo-voice methodology is a method used in qualitative research. It provides a means of understanding people's way of life, what they value, their beliefs and experiences. Unlike the interview, which may be met with contentions, the photo-voice methodology allows participants to capture for themselves, practices within their communities for discussion at a later stage in focus groups with the participants.

Photo-voice provides insight into the dwelling at all times of the day and night. The day is classified into relevant times during which domestic activities occur. Aerial photos taken were used to trace movement patterns around the dwellings, particularly as regards orientation relative to elements of nature, and other dwelling in the settlements. The positioning of any communal spaces and hierarchy in configuration were also noted. Three cameras were given to the 3 CRs to capture community activities after hours, in and around the dwellings and a drone

was used to take aerial photos. The drone images gave a close-up aerial view of the settlements and dwellings, showing the spaces in between the dwellings.

2.5 SECONDARY DATA COLLECTION

Secondary data was collected from past studies on traditional architecture of the *Bantu* and, particularly, the Zulu homestead of KwaZulu-Natal. Literature on vernacular architecture were selected and a Critical Discourse Analysis (CDA) method was applied. Fairclough (2004: 3) argues that “discourses are diverse representations of social life”. For instance, the representation of the built environments through different socio-cultural groupings.

Secondary data sourced information from documented reports on predominant vernacular architecture and influences of cyclic migration of traditional practices. In order to get an insight into vernacular architecture, and theory of space, the works of Paul Oliver, Christopher Alexander, and Henri Lefebvre were included in the literature survey.

Beukes (2015) argues that when the community collects data about itself this data is more reliable than when collected by government agents, or otherwise. For this reason, data collected by the community in conjunction with SASDI. During community profiling, was accessed. This was used to get an overview of the occupants within the settlement, and also assisted in identifying respondents.

2.6 DATA ANALYSIS

In analysing the data, a triangulation system of data analysis was used. This method according to Davies (2007: 205), allows for a multi-method or triangulated data analysis, which aids in ensuring reliability of the data collected. The three key sources were information from the literature review, interviews with the informal settlement dwellers and social architects, and observations from photo-voice and those made during the interviews.

A descriptive method of analysis of space which provides a logical way of gathering essential data, is used. To do this, elements and configurations of space were used to describe the dwelling. Radford (1987) used the geographical (not chronological) method in tracing the origins of the veranda house. The descriptions used are closely linked to spatial functions born out of climatic and occupation of the inhabitants. Both primary and secondary data collected

during the interview and focus group sessions, were transcribed and thematically analysed. A thematic analysis of identified literature that relates to the use of dwelling spaces were carried out in such a way that key themes can be identified to give rise to an analytic generalization and theory. An interpretivist approach is used in the analysis. This is done with the aid of NVivo software to organise data from the interviews.

Space syntax theory, symbolism and pattern language were used to analyse the sketches from the observations. It postulates that it is primarily through spatial configurations that social relations and processes express themselves in space.

According to Hanson (2003:39) the syntax of space can be considered in its axial i.e. one dimensional; convex two dimensional; or isovists i.e. its visual fields. Other approaches to analysing space is that of Glassier (1990:52), who argues that there are two different approaches to composing relationships between interior and exterior. Firstly, by using a geometric figure to provide the base for a unified envelope, and secondly the exterior is the consequence of the life inside. The space syntax method is used in this research.

2.7 ETHICAL CONSIDERATIONS AND LIMITATIONS TO THE STUDY

The research involves the study of shelters of informal residents. It therefore has the tendency to pry into the private life of the individuals and their loved ones. For instance, during the pilot study, a young man came out of the dwelling to meet the researcher. During the interview process being carried out by the research assistant, I asked permission to enter the adjoining inner room. I was surprised to meet another young man sitting on the bed in a compromising posture. In another instance during the observation process in another dwelling a pistol was noticed on the table. These observations are considered private and confidential. To preserve the privacy of the respondents, no names were used in reporting on the findings.

Participants were fully informed about the objective of the study and were assured that personal data will not be shared without their consent. Responses were treated in a confidential manner and all respondents were required to sign the informed consent letter. Access to existing data

from the SASDI was obtained with the consent of the community leaders on behalf of the community⁷.

The findings will be published in the form of journal articles which will be available to the general public. Copies were made available to the community in a pictorial format that is readable and useful to the community. To ensure validity of the data collected, preliminary data was presented to the community for checking and validation.

Care was taken to ensure the reliability of research findings through the triangulated methods adopted. The research is conducted keeping variables of climate and ethnicity constant. During the interviews, responses were captured as close as possible to actual words used. This was however compromised as most interviews were conducted in isiZulu but captured in English. Care is also taken to avoid any political alignment during the fieldwork.

⁷ It was agreed that the profiling data will be released once a small contribution had been made to each community's savings account.

CHAPTER 3 THEORETICAL FRAMEWORK

3.1 INTRODUCTION

Theory is a system of thought, a set of rules or principles for the study of a subject. It is a statement of ideas held to explain an existing phenomenon to predict future occurrences or consequences (Agbola & Kassim, 2007: 16). In this thesis, structuralism, space syntax, phenomenology and genius loci are used to frame the arguments for a new vernacular architecture. Figure 3-1 shows the theoretical framing of the thesis



FIGURE 3-1 THEORETICAL FRAMING OF THE THESIS

The theoretical linguistic paradigm which considers architecture as a means of communication between (and within) the built environment (form/space) and people (socio/culture) (Wang & Heath, 2011: 399) is applied in framing the theoretical discussions. The debates of place and space go beyond the physical and include the sacred dimension as described by Heidegger (1971). This was further theorised by Norberg-Schulz (1996:423), as the genius loci (the spirit of place), whereby dwelling interprets as being at peace in a protected place.

What does it mean to dwell? Heidegger (1971: 3), who was concerned with the ‘modern man’s inability to reflect on being (or existence), argues that to build does not mean to dwell and that dwelling entails more than just taking shelter. In fact, he argues that “We do not dwell because we have built but we build because we have to dwell”, stipulating that dwelling comes before building and involves that consummation of the ‘fourfold of the earth, sky, mortals and divinities’. Dwelling according to Heidegger is the successful interrelation of the ‘fourfold’ and that this is only possible if the ‘fourfold’ is firstly acknowledged. As such, bringing about a harmonic interrelationship between the ‘fourfold’ Nesbit (1996: 29) argued that the dwelling and building have distinct meanings. Further developments have led to the thought that dwelling has to do with “existential orientation, cultural identity and a connection with history” (Perez-Gomez cited in Nesbit, 1996). It refers to the creation of place as opposed to space.

The chapter begins by introducing structuralism, which argues that there are rules in constructing meaning, even though these rules may be unarticulated. The idea of space and place making is then examined, using the theory on spatial patterns and space syntax theory. It goes on to describe genius loci and place making. Finally, phenomenology and semiotics, the theory of signs and symbols is discussed. This theoretical framework is used in the chapters that follow to examine the drivers for meaning and patterns in informal settlements, which are relevant in describing the new vernacular architectural language.

3.2 STRUCTURALISM

Vernacular architectural language takes its origins from a linguistics paradigm, where the ‘vernacular’ refers to a colloquial form. Language as a scientific term can be understood as a systematic means of communicating ideas or feelings which makes use of conventional signs, sounds, gestures or marks to convey a message. This implies a number of things. Firstly, that the built environment ‘speaks’ in that it conveys messages; secondly, that there are visible signs within the built environment which carry meanings; thirdly that the interpretation of the signs is perceived differently and fourthly that the meanings are subjective. In discovering a language, Alexander (1979: 305) argues that it is necessary to understand how to discover individual patterns which are alive, “then a structure of language can be created by the network of connections among individual patterns”, it is like putting the building blocks together to create a new pattern.

Structural linguists such as Ferdinand De Saussure (1959)⁸ explained the language phenomenon using his known taxonomy of language. Language he argued is “...many sided and heterogeneous; straddling several areas simultaneously, physical, physiological, and psychological, it belongs both to individual and to society...” (De Saussure, 1915 cited in Wang & Heath, 2011: 401).

Even though the beginnings of the theory are recognised mainly through spoken and written language, he later argued that linguistics “...comprises all manifestation of human speech, arguing that the linguist must consider not only the correct speech and flowery language, but all other forms of expression as well”. De Saussure named this overarching theory semiology with linguistics as a part of the science of semiology alongside signified and signifiers of the symbolic world (De Saussure, 1915 cited in (Wang & Heath, 2011). This thought was further developed by the anthropologist Claude Levi-Strauss, who applied the linguistic theory in analysing non-linguistic data, drawing links between language and culture (Wang & Heath, 2011:402). It was the work of the French philosopher Pierre Bourdieu that questioned the ability for various readings to have the same common understanding concurrently, which he argued could only be possible if there was a set of rules (Maton, 2008 cited in Wang & Heath, 2011: 403).

Considering the conception of dwelling spaces, the structuralist theory implies that every dwelling has embedded in it a set of rules. For instance, the rules that govern formal housing developments are reflected in the South African National Building Regulations, whereas it can be argued that the rules of the informal settlements are also present but unarticulated.

As an analytical model, structuralism assumes universality of human thought processes in an effort to explain the deep structure or the underlying meanings existing in cultural phenomenology. It presents a set of principles for studying the mental super-structure. For example, descriptive binaries such as small - large, bright - dark, open - closed, male - female, communal - individual etc. can be used to articulate the rules.

3.3 THEORY OF SPACE AND MEANING CREATED

⁸ De Saussure was a Swiss linguist and semiologist.

Space is a “latent dimension waiting to be given purpose and character by the intentions and activities and will differ in meaning between the ages, experiences, and intentions of the users” (Heywood, 2011: 218). On the other hand, “places are both the physical stages where we enact our daily activities, and also generate grounds for the structures which give form to our values and activities” (Norberg-Schulz, 1996: 414). From an architectural perspective, Unwin argues that place is recognised by the basic and modifying elements of architecture and as such provides the connection between architecture and life (Unwin, 2009:31). A place is established by a configuration of architectural elements that seems (to the mind informed by its senses) to accommodate, or offer the possibility of accommodation to a person, an object, an activity, a mood, a spirit, a god (Unwin, 2009: 33). Various authors have distinguished ways of analysing space in its spatial configuration, and as a social expression of society (Alexander, 1979; Hillier & Hanson, 1984; Lefebvre 2011; Unwin 2009). It therefore embodies not only physical but also social and spiritual dimensions, a ‘genius loci’.

Hillier and Hanson (1984) have written extensively on the analysing of space based on configuration. Using the space syntax method, they show how spaces are configured and thus how patterns can be identified. In fact, Rapoport (1980:223) recognises that “the built environment in the broadest sense can be seen as the organisation of space, time, meaning and communication, and as various organising relationships of people to people, people to things and things to things.” In other words how the built environment can be read in context.

In conceptualising the lawfulness of space, Hanson (2003: 2) argues that the house serves the same basic needs all over the world, i.e. the need for sleeping, cooking, eating, entertaining, and storage, but the configuration is varied across historical periods and cultures. He goes further to explain that the house “is a pattern of spaces governed by intricate conventions about what spaces they are, how they are connected together and sequenced, which activities go together and which are separated out, how the interior is decorated, and even what kinds of household objects should be displayed in the different parts of the home”.

Furthermore, Wang and Heath (2011) argue that architectural units such as doors, windows, columns, etc. represent words, while syntax refers to the physical geometrical logic in construction, and semantics refers to the feel of various architectural styles. Using an analogy between language and architecture, Unwin (2009) argues that architecture uses elements, such as doors and walls in place of words. For instance, the use of a doorway and a small open space

in front of the door would signify an entrance into a building. In this way, it is possible to identify words, the syntax of composition and the meaning as the door and porch and the arrangement and the identification of place as entrance respectively; thus, creating a descriptive relationship between elements. In fact, Hanson and Hillier (1984: 48) argue that a “morphic”⁹ language relies on the irretrievability of descriptions”.

Words	(syntax of composition)	= Semantics Meaning
Door + mat + small open space	(space in front of door)	= Entrance

FIGURE 3-2 MORPHIC LANGUAGE

Source: Unwin (2009: 34)

For example, Hillier and Hanson (1984) recognise that there must be relationships (interfaces) between the identified cell and the carrier which create a pattern, syntax. For instance, in Figure 3-2door, mat and small open space represent the words, while syntax of composition is captured as the space in front of the door and the semantic meaning is the entrance. The ‘word’ forms the elements of analysis which when ordered, form the syntax of composition which gives meaning to the place.

Using the example of the state funded house, residents were provided with a basic four roomed house with one entrance door, brick walls, aluminium framed windows and a long span aluminium roof covering with minimal roof overhang. The entrance is defined by the pathway leading to the door. This could have a security lock, a light source (usually above the door) and a patch of concrete floor in front of the door. These features form the elements of analysis, while the surroundings give the context and the resultant semantic meaning is the entrance to the dwelling. While this syntax composition indicates the entrance, it meets the very basic needs of providing a transition between the exterior and the interior. A more complex entrance could also include a purposefully built porch to provide a transitional space between the interior and the exterior. The context entails zones of activity such as the public, private and transition zones.

⁹ A morphic language refers to any set of entities that are ordered into different arrangements by a syntax so as to constitute social knowables.

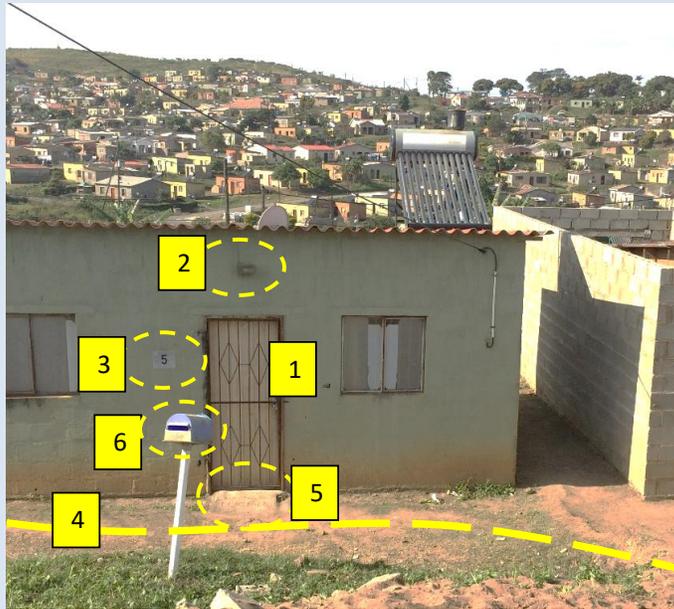


FIGURE 3.3 SYNTAX COMPOSITION FOR THE ENTRANCE WITHOUT PORCH

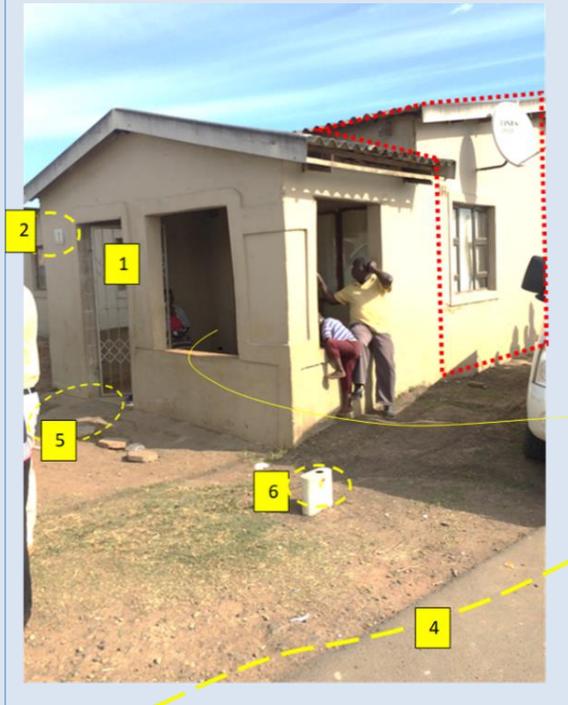


FIGURE 3.4 SYNTAX COMPOSITION OF ENTRANCE WITH A PORCH

Figures 3.3 and 3.4 show two state funded Reconstruction and Development Programme (RDP) dwellings, one without the add-on entrance porch and the other with the porch. i.e. entrance door (1), light above door (2), house number (3), pathway in front of door (4) + patch in front of door (5) + post box (6). The first example lacks the transition zone but has what one might consider to be a transition point i.e. the door way. The second example has the physical transition zone i.e. the porch. In both instances, the interface between the interior and exterior is captured in the transition from exterior to interior This is schematically explained in Figure 3.5.

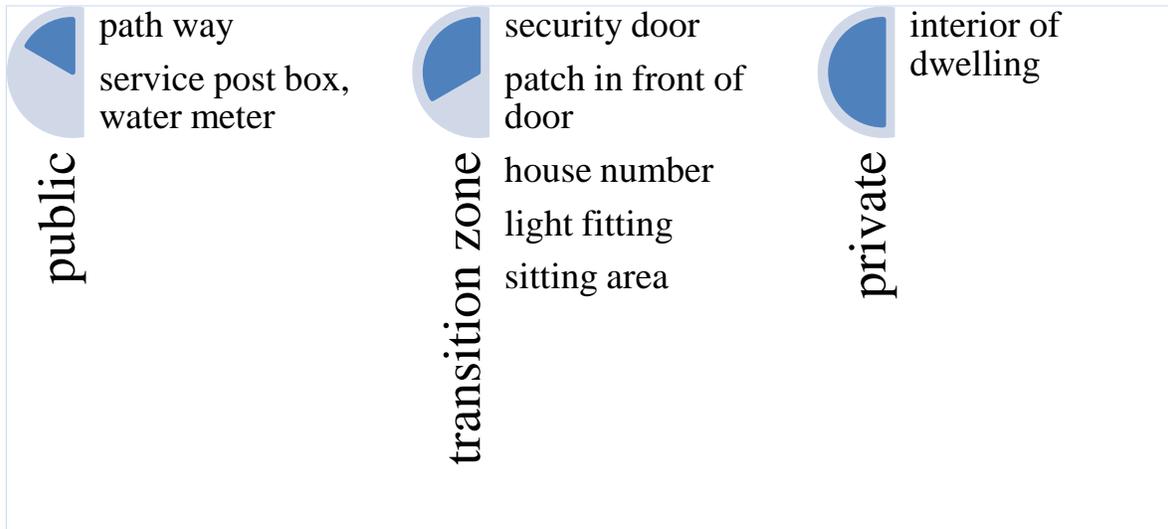


Figure 3.5 Transition Zone

In the syntax theory, there is a relationship between the generators of spaces and social forces (Hillier and Hanson, 1984). This creates a sequence of patterns that is both a summary of the language and an index of the pattern, such as descriptions of activities and spaces.

In understanding an inherent pattern, a method is a reviewing characteristic of a place that if taken away disqualifies it from being called that name. So, in the example above if the access pathway is removed, this settling would not signify the main entrance but probably a side or rear entrance. To further illustrate this, the example of the Zulu hut can also be used. Many traditional Zulu families have taken the Zulu hut to the city, in an attempt to recreate the homestead within the city. While the buildings (and by deduction the patterns and building materials) are the same the language will differ from that experienced in the traditional area. Indeed the language is lost in the process. Why is this happening?

Alexander (1979) shows how buildings may be the same but as the genius loci, i.e. the character of the traditional space is lost as the context changes and the 'problem' being responded to changes. He argues therefore that the pattern is captured in the context and in cognisance of the problem being solved for the person concerned (Alexander, 1979: 182). In defining patterns, he attests that it is important to identify three things - the context, the systems of forces, and the configuration.

For instance, in identifying the language of a porch, ten descriptive components are identified by Alexander as illustrated in Figure 3-6.

Context	System of forces	Configuration
<ul style="list-style-type: none"> • ground floor level • paths • sunny place • balcony 	<ul style="list-style-type: none"> • position of columns • furniture • raised floor 	<ul style="list-style-type: none"> • outdoor • ceiling height • Private terrace along street

FIGURE 3-6: DESCRIPTIVE COMPONENTS

Source: Alexander (1979)

3.3.1 SPATIAL PATTERNS

Patterns are created by people who live in them, and the patterns are closely related to the physical space in which they occur (Alexander, 1979). He stresses that in defining place, it is important to understand that every place is given its character by certain patterns of events that keep on happening there: events such as sitting, pausing, passing etc.

Alexander further argues that defining space cannot be done in isolation of the bigger picture, i.e. the context. For example, a house cannot be analysed in isolation from the immediate surroundings and the neighbourhood at large. He argues that the analysis needs to start from the larger context and filter down to the specifics and concludes that quality of place is in fact ‘objective’ (Alexander, 1979). That is, it has a logical sequence.

For the above-mentioned reasons, it can be argued that rural and urban environments present different contexts. At the city level, for instance, the urban poor are known to engage in solving their housing problems (Turner, 1969). They do this by migrating to places where they can have better access to opportunities of making a living and accessing services. It could be argued that this is a process of appropriating space in the urban areas, in order to create a ‘mirror of self’. Friedman (2007) describes the mirror-of-self as a way migrants create places that meet the immediate need for shelter, giving meaning to the space created.

Various scholars agree that the urban poor are found in the inner-city, and peripheral areas (Turner, 1969; Janssen, 1979). However, they differ in terms of the sequence and reason for movement between the rural and urban areas and within the urban areas. Turner argues that the poor locate themselves in the inner-city slums as they seek work and are able to afford rental accommodation in a decayed tenant dwelling in the inner-city. Once they find their footing, they make their way to the peripheral areas where they occupy vacant land, erect their shelters and avoid the burden of paying for any services or rent. This proposition implied that the inner city was occupied by poor immigrants, who do not remain in the inner city but soon find their way to the vacant land where they can create their own dwelling spaces.

However, in a study in Bogota, Janssen (1979) found that the inner-city slums were not predominantly occupied by immigrants, but were instead home to generations of inner city dwellers who had no means to move out. Instead, their homes were subdivided to create rental accommodation. Such accommodation has restricted living space and puts a strain on existing services and infrastructure. Despite the resultant overcrowding, many were secure in not only the socio-economic but also the socio-cultural bonds that existed, and thus continued to stay there. Janssen (1979) noted that the urban poor were often forcefully removed from decaying buildings in the inner city with the process of urban-regeneration and had no choice but to re-locate themselves on vacant land in the urban peripheries, away from institutional harassment for their inability to maintain unattainable minimum building standards.

Another perspective of accessing the urban areas is that described by Haarhoff (2011). In the South African context, Haarhoff (2011: 204) demonstrated that the first point of settling of rural urban migrants was in what he called a 'frontier zone' which does not necessarily refer to a peripheral zone, but to a region that is "administered independently from the larger urban area of which they are an integral part". It is within this frontier zone that a number of apartheid hostels were located. Apartheid hostels were housing arrangements provided by the apartheid government in accordance with the migratory labour policy in which workers were recruited from rural areas for contract employment in urban areas (Haarhoff, 2011). The frontier zone allowed for migrants to settle in the urban areas with minimal interaction with formal structures by squatting on un-administered land or occupying land with consent from 'landlords' - such

as the hostel dwellers¹⁰. It is therefore arguable that the context in which the urban poor dwell, is one in which they are free to express themselves, using their limited resources with minimal disturbances from the powers that be. The patterns created are discussed further in chapter 4.

3.3.2 ANTHROPOMETRY AND THE SENSE OF SPACE

Further to Glassie's idea for the analysis of space (Glassie1990:32), whereby by the geometric figure provides the base for a unified envelope, Unwin (2009), argues that space responds geometrically to six dimensions of the human form, bringing into reference a front, a back, two sides, a top and a bottom. Within these physical confines, expressions can be made creating different spatial meaning within the same geometric space. Such as the positioning of furniture (a bed will indicate sleeping area) or the hanging up of a picture indicating present or future aspirations.

The geometric composition of space (see Figure 3-7 below), influences the comfort level within the space and affecting over all human comfort. It extends beyond the physical body dimensions requiring space for both movements and breathing and an overall circle of influence.

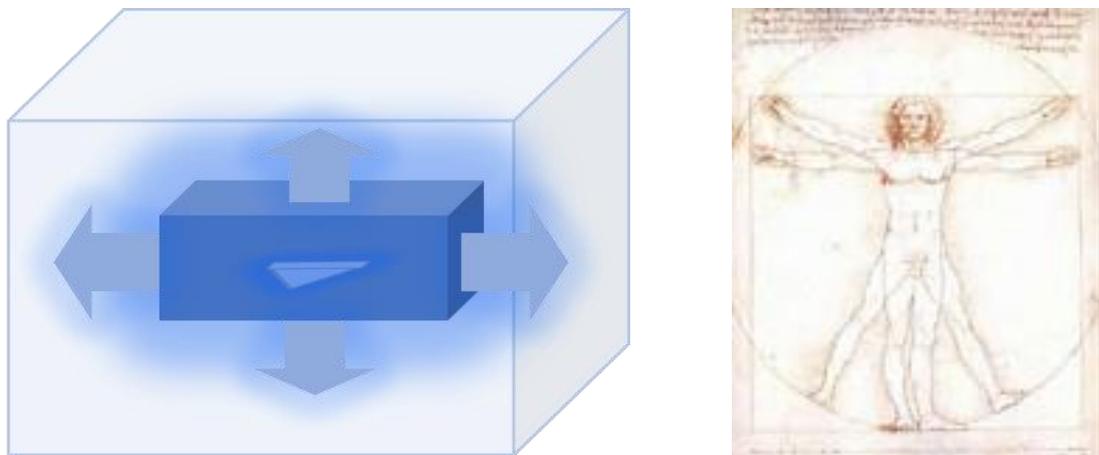


FIGURE 3-7 ILLUSTRATION OF THE GEOMETRIC COMPOSITION OF SPACE

However, space may not be limited to physical boundaries, but permeate into the perceived space. Perception goes beyond touch, to include the audio, visual, smell and taste. For instance, in the perception of a bakery, one first smells the bread, sees the bakery, hears some familiar sounds, touches the bread and then tastes it. As such the actual reach varies based on the context.

¹⁰ For instance, in Durban the largest informal settlement is located near one of the apartheid hostels

The space between objects is determined not only by the physical distance but also by the perceived distances, i.e. the axial, convex and the isovist (Hanson 2003:39), which represent the perception of the one dimensional, two dimensional and visual dimension respectively and thus the overall circle of influence.

According to Ivanovic, these dimensions determine the kind of space created, which could be the intimate distance, personal distance, social distance, and public distance (see Figure 3-8), emphasising that “these distances are a sense of space rather than a clear boundary” Ivanovic, 2014:37). Ivanovic argues that built space and activity, permeate each other constantly and by using a method of Activity Contour Maps he shows how place-activity relationships can be measured representatively without physical boundaries, as illustrated. This method entails, firstly, identifying a phenomenon (such as smell) and then creating a visual representation of the phenomenon so it can consequently be perceived. The degree of distances refers to active verbs of touch, hear, smell, and see, as illustrated in Figure 3-9.

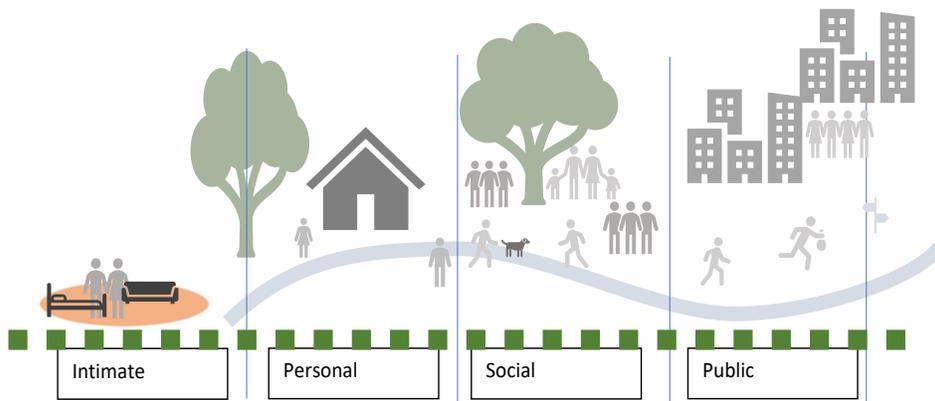


FIGURE 3-8 SENSE OF PLACE

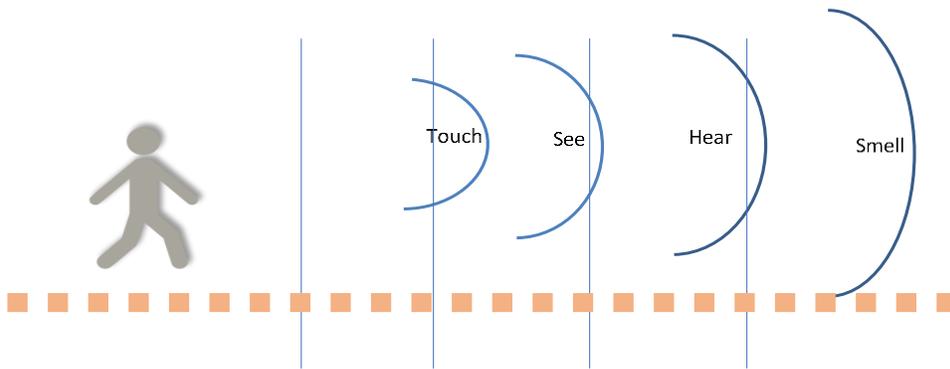


FIGURE 3-9 CIRCLES OF INFLUENCE

This translates further out beyond the dwelling space to social and public spaces extending into neighbourhood and broader public realms as illustrated in Figure 3-8

3.4 GENIUS LOCI – SPIRIT OF PLACE

Apart from the tangible space described in the previous section, the social and mental space can also be contextualised. For instance, Hillier & Hanson (1984) and Lefebvre, (2011) recognise space as an ‘external projection’ of ‘social and mental processes’. According to Levi-Strauss, it is possible to study “social and mental processes, through the objective and crystallised external projections” cited in Hillier & Hanson, 1984:5. Levi-Strauss notes, however, that this relationship is not a clear cut prediction and would vary from one society to another. This is because societies vary from one another in terms of physical configuration, and the degree of spatial order related to culture. For instance, some cultures are more expressive in decorative attributes to their building using colours and patterns as a means of hierarchical identification within the society. Heywood (2011: 218) idea that space is of a latent dimension brings in the dynamic of change in meaning over time and as such, an evolution in the architectural language expressed in space over time, giving urban areas identity of the era. This is in line with Gregotti’s (1996:340) argument, that the built environment is the physical spirit of history, – implying that it carries with it the imprints of past occurrences – “simply put the environment is composed of the traces of its own history”

3.4.1 PLACE MAKING

‘Making place’ happens around activities of necessity, which may not necessarily be defined by physical structures, but by things such as a tool for the activity. For example, in primitive cultures, the fire place is noted to be the first place of life as it provides warmth (Unwin, 2009: 88; Hanson, 2003: 3). It also allows for the creation of place – a warm place to be, a place to cook and a place around which to socialise. Likewise, the bed is defined by the activity it brings to bear, and not just a piece of furniture. It is a place to sleep, for intercourse, for resting (Unwin, 2009: 89). It is true that people and objects are essential to the creation of place, in the sense that they bring into space the geometry of place. So, we talk about inside, beside, under, on top etc. relative to the object. This Unwin describes as creating a ‘circle of presence’, which is created around the object. The circle of presence exists even without enclosures or physical boundaries. It extends in what one might consider as layers of experiences – touch being the shortest distance and others experienced as smell, vision and sound. This Unwin groups into three categories as the “extensive circle of visibility, the intimate circle of touch-ability, and the intermediate circle of place.” Unwin (2009: 131)

The topography and the surroundings of a place influence the circle of presence. For example, the presence of a lamp will be felt differently if it is placed on the floor in a corner of the room or hung from the ceiling at the centre of the room. Perceptions of place, consciousness, impression and the sensory experiences help the perceiver make meaning of place. These meanings are subjective to the perceiver. Norberg-Schulz (1996) emphasises that the basic elements experienced as horizons, boundary, and frame for nature, form the architectural boundary. Other theorists like Unwin have argued that “place links architecture with life” (Unwin, 2009: 81).

3.5 PHENOMENOLOGY

The philosophical thinking of phenomenology was first theorized by Edmund Husserl (1859-1938). He defined phenomenology as “a systematic investigation of consciousness and its objects”. According to Husserl (cited in Hardy 1999: 4) it was important to understand the experiences of the world and not just understand the physical properties of things. For instance, he argues, one minute in time would seem longer if spending it in danger than if spending it with loved ones. As such, he calls for the understanding of things in a phenomenological

attitude, beyond their natural qualities. Husserl argued that not giving thought to the phenomenological experiences of things brings about a crisis where only the natural (physical) values of things are considered. In the context of informal dwellings, often the naturally perceived quality of the dwelling is given more consideration without taking into cognisance the phenomenological value of the dwelling to the inhabitants.

Martin Heidegger's interpretation of phenomenology explored the existential idea. Heidegger (1971) argued that language is often misused, in that it dictates meaning to man instead of being a tool to him. By this, he argued that instead of language allowing man to figure out for himself the meaning of things, the language relieves him of that responsibility by enforcing predetermined meanings. Frampton concurs citing the conceptualization of architecture as being monumental even when it simply demands the act of building (Frampton, 1996). Likewise, the meaning embedded in the term 'informal settlements' triggers an imagery of substandard shelter, ignoring deeper phenomenological meaning.

Heidegger argued further that if the two activities of building and dwelling are separated, it ignores the essential relationship of dwelling and building. In unpacking the meaning of 'dwelling', Heidegger concludes that dwelling means far more than mere building and that building and dwelling represent a means to the end. Heidegger, (1971). In the real world, the building is determined by power, authority, social, and economic realities, which bring about the reality of dwelling. The building is therefore not then necessary for dwelling.

So even though we build to dwell, dwelling entails daily activities other than just occupying the building. According to Heidegger "We do not merely dwell - that would be virtual inactivity - we practice a profession, we do business, we travel and lodge on the way..." (Heidegger, 1971: 145). We exist, exercising our consciousness and intuition by perceiving, making meaning and gathering experiences of being. In articulating 'being' Heidegger argued that being has a strong affinity with 'unity' of subjective experiences in an objective world. Perceptual truth therefore is subjective to the perceiver.

In revitalising the language of architecture, Pallasmaa (1996) argued that dwelling needs to be beyond the physical and entails a more mental and metaphysical interpretation. He argues that the experience of the built form is more important than the form created. As such, in analysing buildings, he argues that it is more important to understand what the building symbolises, and

the embedded meaning of the symbol (Pallasmaa, 1996). He further argues that “phenomenology of architecture is looking at architecture from within the consciousness experiencing it, through the architectural feeling, in contrast to analysis of the physical proportions and properties of building or a stylistic frame of reference” (Pallasmaa, 1996: 450). Phenomenology, therefore, has to do with reflecting on the consciousness of experiences of birth, life and death; living experiences of migrating and settling and mirroring life in a new context as with many of the urban poor moving from rural to urban environments.

Further to this, Norberg-Schulz’s (1996) work on the phenomenology of place recognised the importance of (the consciousness of) basic architectural elements. He argued that architecture clarified the ‘location of human existence’. Following Heidegger’s thought, Norberg-Schulz stressed the need to be conscious of the experience of things, arguing that place is an integral part of existence. He further argued that place is “a totality, made up of concrete things having material substance, texture, and colour... which together determine and environmental character”, i.e. the spirit of the place (Norberg-Schulz, 1996: 414). In fact, he argues that created place has both a structural quality and a spiritual quality, making the connection between the physical place and the sacred in line with Heidegger’s thoughts of connections with the ‘fourfold’ including earth, sky, mortals and the divinities. It can therefore be argued that if this connection is absent and dwelling has not really occurred.

3.5.1 SEMIOTICS

Architecture is described as a conceptual matter of shaping memory into plans, and plans into things that can be sensed by people (Glassie, 1990). According to Agrest & Gandelsons (1996: 112), semiotics is concerned with the science of different linguistic signs i.e. the nature of signs and the rules that direct their behaviour in a particular setting. It is involved with the signification, interpretation and the production of meaning, accomplished through two components of sign language i.e. the signifier such as the word and the signified i.e. the object denoted. In this way creating meaning to the perceiver. Architecture encapsulates varying fields of meanings consisting of metaphoric, complexities and rhetorical nuances (Braid, 1969). Following on this, Jencks (1991) attributes the subjectivity of perceiving meaning to varying contexts and conventions.

Hiller and Hanson (1984: 26) argued further for the understanding of relationships between space and social life, stating that “architecture pervades our everyday experience far more than a preoccupation with its visual properties would suggest, implying that the built form gives shape and form to the material world”. As such, the built form has a direct relationship to social life and not just of symbolic significance. In essence the built form reflects the socio-economic and cultural character of society, especially when it is a self-help without any agents. In a sense, theory begins the moment architecture begins, that is when spatial and formal configuration in buildings, and their experiential and functional implications, are no longer given through a tradition of social knowledge, transmitted through the act of building itself”. (Hiller, 2007: 39).

3.6 CONCLUSION:

This chapter has presented the theoretical framing of the thesis. It outlined how from a structuralism paradigm like the linguistic syntax, spatial syntax can be recognised. It requires firstly the identification of basic elements, then the syntax of composition (i.e. context in which they are arranged) which gives rise to meaning. The chapter has argued that dwelling space is not limited to the physical but also includes the physiological and psychological. Beyond the physical, space is a lived or experienced space composed of what Heidegger refers to as the ‘fourfold’ comprising earth, sky, mortals and divinities. This makes dwelling a harmonious existence between the perceived and the perceiver.

The chapter has also examined rural urban migrant ‘place make’ around activities of necessity. It shows how the physical dimension of space can be interpreted based on the circles of influence, extending to dimensions beyond the physical reach. It argues that the latent dimension of space, within which activities of necessity occur, relates to objects which are experienced as symbols. The phenomenological perspective implies that these objects of activities first have to be recognised and experienced, thus place making becomes subject to the perceiver.

The chapter has reflected on how space is given meaning and shows how factors of semiology, genius loci and phenomenology are key to finding meaning. The next chapter examines the body of literature on vernacular architecture and the built environment.

CHAPTER 4 VERNACULAR ARCHITECTURE AS A BUILT ENVIRONMENT LANGUAGE

4.1 INTRODUCTION

In understanding how people live, authors have long ago recognised that it is important to make connections with ongoing events of time (Addey, 1898: xiv). It is thus possible to trace the changing architectural styles in terms of events, ways of life, the uses of space and materials. Lifestyle changes were noticed in the mid-1850s, from the dynasty periods to a time of the industrial revolution and colonialization and were reflected in the built environment. An example is the transformation noted in the climatic and socio-culturally sensitive Chinese courtyard house of the late imperial dynasty (1911) to the modified version of the 1980s in the Peoples Republic of China (Liu & Awotona, 2014).

The vernacular was considered to be an architectural form that was non-monumental, non-classical and non-medieval (Upton, 1993: 10). It can be argued that it lacks any of the Vitruvian qualities of firmness, commodity or delight. Yet it responds to a physical, economic, social and cultural context (Baker, Cape vernacular architecture , 2012), and offers some level of value to the users.

This chapter examines literature on the built environment and how this language is developed. It then goes on to discuss the need for acknowledging patterns, and what conditions bring them about by exploring factors that affect the evolution of vernacular architectural language. The vernacular language of the traditional Zulu '*indlu*' is used as a precedent.

4.2 EVOLUTION OF THE VERNACULAR DISCOURSE

The discourse of vernacular architecture can be traced back to the mid nineteenth century when it was first introduced in Europe and America during a period of social transitions, brought about by industrialisation and colonialization and the emergence of capitalist societies (Frescura, 1985). This period saw the identification of 'the other', which was described as non-conforming to the built environment and considered rudimentary and sub-standard.

The second phase of vernacular architecture is noted during the period of the modernist movement that started in the 20th century. The initial period of decolonisation was followed by

the modernist movement during which time the discourse of vernacular architecture was downplayed. By the 1950s the architectural nature of vernacular architecture was ‘romanticised’ (Rudofsky, 1965). The discourse raised a number of questions due to the unstructured nature of reading the built environment. During this period, vernacular architecture was considered of no ‘architectural’ value and was subdued by the modernist thought¹¹. The works of Fitch & Branch (1960), Rudofsky (1965), Rapoport (1969), Oliver (1978) documented and expanded on buildings built without architects

By the late 20th century, with globalisation, vernacular architecture was celebrated for having an identifiable prototype, competence and an acceptable configuration (Radford, 1987). For instance, in a study on the origins of the South African veranda house, Radford (1987) traces the vernacular form back to the Caribbean in the first half of the eighteenth century, showing the evolution in the language. He raises three key concepts – prototype, competence and configuration: where competency refers a set of rules that give rise to perceivable things, as described by Glassie (1990). In fact, following this period, to date vernacular architecture is considered of noble value (Vellinga, 2013) encapsulating examples regarding sustainability in the era of climate change (Foruzanmher & Vellinga, 2011). The current era has also been one characterised by high levels of urbanisation resulting in non-conforming settlements in the urban areas, as the rural urban migrant seeks to make a home away from home. The evolution is illustrated in Figure 4-1.

Authors like Vellinga (2013), question the extent to which the specific nature of vernacular architecture and the isolation of the discourse inform the manner in which it is portrayed. One idea is that vernacular architecture is inadequately defined and used more as a generic term referring to local or regional traditions that are self-built and have developed in response to local climatic conditions and using available resources over long periods of trial and error (Vellinga, 2013).

¹¹ For instance, in South Africa, Haarhoff (2011) argued that the modernist thought was used as a basis to drive political agendas in the mid-20th century by justifying dubious aims and agendas such as mass housing projects and racial segregation.

Vellinga notes that the current focus on environmental sustainability of vernacular architecture leaves out important aspects of social, political and economic sustainability in the discourse. He notes that there are no differential categories which bring about a loss of complexity, plurality and dynamics of vernacular architecture and sustainability. As such, the whole debate on ‘human agency’, which refers to the capacity for human beings to make choices and impose those choices on the world, is ignored (Vellinga, 2013). In the current era of self-help efforts, the issue of human agency calls on independent and free choices as it pertains to housing.

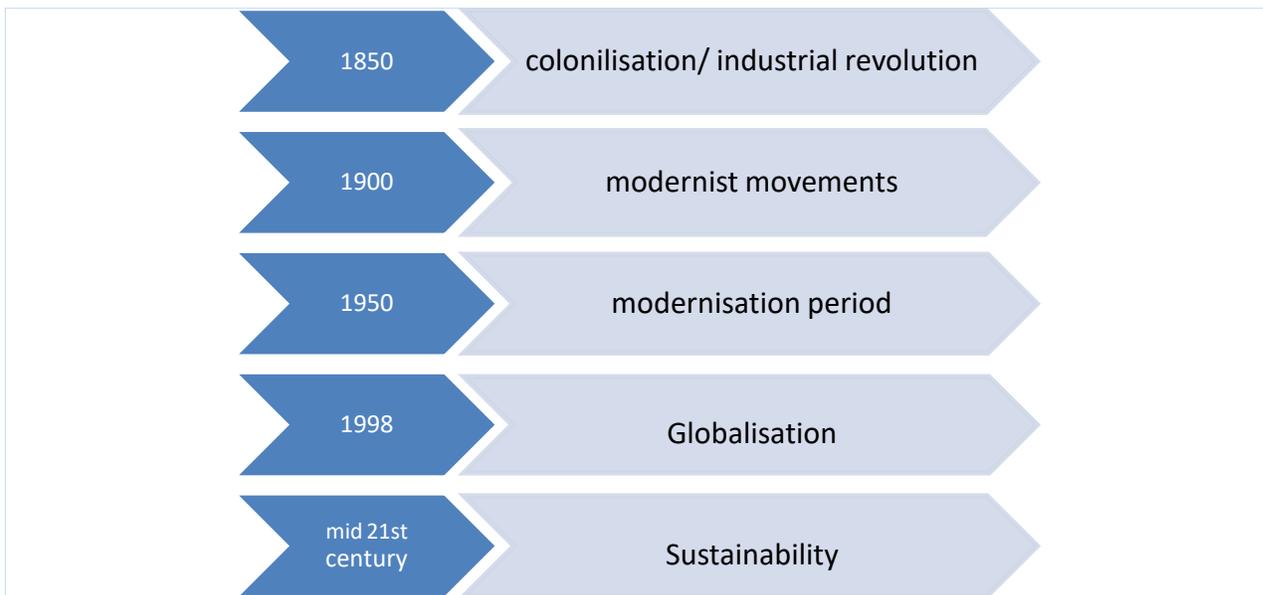


FIGURE 4-1 EVOLUTION OF VERNACULAR ARCHITECTURE DISCOURSE

4.3 THE BUILT ENVIRONMENT LANGUAGE

The Cambridge dictionary (Cambridge Univeristy, 2013) defines ‘Language’ as a system of communication consisting of sounds, words, and grammar, or a system of communication used by a particular group of people in a country or type of work. While an architectural language may lack sound quality, architecture need not be cogent to communicate. It has been argued that the language may be ‘heard’ as visual signs, it thereby conveys meanings (Johnson, 1994: 422; Wang & Heath, 2011). Glassie describes architecture as a conceptual matter of shaping memory into plans, plans into things that can be sensed by people, describing it as “the embodiment of cultural norms that pre-exist individual buildings” (Glassie, 1990: 9)

Various authors have attempted to analyse the language of architecture over time. For instance, stemming from a structuralism and structural linguistics, Jencks and also Broadbent aimed to define a structured grammar for pluralisation of architecture (Wang & Heath, 2011). While Broadbent looked for the materiality of architecture in functions, Jencks considered the visual narrative of the built environment. According to Broadbent, a building could be viewed from its functionality as a container for human activities, or as a modifier of the given climate, or as a cultural symbol, or as a consumer of resources (Broadbent, 1974: 145-146). Broadbent argued that it is in this way that architectural forms are generated.

On the other hand, in his work, 'The Language of Post-modern Architecture', Jencks (1991) introduced the linguistic concepts of metaphor, words, syntax and semantics, to architectural analysis. In describing the post-modern building, Jencks uses such narrative as '*a speaking building*', '*reading of metaphors*', referring to buildings as '*carriers of messages*' (Jencks, 1991). According to Jencks, the metaphor referred to a relative context dimension "...people invariably see one building in terms of another or in terms of a similar object..." Therefore, using the analogy of binaries, it is possible to describe a building as formal or informal, small or large, interior or exterior, shade or light, etc. In the analysis of the West African Kassena dwellings in Ghana, Bourdier & Minh-ha (2011) considered spatial relationships between the interior and exterior and how connections are made with windows and doors. The openings offered an important source of light with quality enhanced by their orientation and the size. For instance, the doorways of the Batammariba tribe is orientated to face west allowing in energy and good health. This is similar to the Vastu tribe of India. The movement from the exterior to the interior was a passage from the public to private zone and also a transition from the physical into the spiritual world. On entering the space, a stranger is disorientated for a few seconds while the eyes adjust, thus, humbling the stranger.

The experience is further enhanced by the low height of the doorways which forces the stranger to stoop on entering the dwelling (Frescura, 1985: 50). Bourdier & Minh-ha (2011) describe how the relationship entails a functional, mystical and social meaning which is both individual and collective. The doorway therefore signified an important part of the dwelling and even when left open provided a control point and security for the inhabitants. While the practice of leaving doors open is fast disappearing, the doorway still represents the zone of transition, and discourages unwelcomed entrances. Passers-by are able to read that there is restricted entrance.

Examples of this can only be found in deep rural areas, and often show-cased in cultural villages as part of culture tourism, for instance, in South Africa. Figure 4-2 below shows the hut depicted in the Lesedi Cultural Village in Gauteng, South Africa. The picture shows the low doorway entrance.



FIGURE 4-2 TRADITIONAL HUT WITH LOW ENTRANCE

Source: Photo taken by author during a visit to Lesedi Cultural Village, Gauteng in 2017



FIGURE 4-3 THE ZULU UMUZI

A- Aerial view; Source: http://www.zulu-culture.co.za/zulu_kraal_layout.php#...

B- Exterior; Photo with author taken during a visit to Lesedi Cultural Village, Gauteng 2017

C Interior; (<https://i.pinimg.com/originals/57/1e/a1/571ea101bb46502725960b02665ba108.jpg>)

In traditional settlements the occupants are known to one another as clusters of family clans, with hierarchy in the placement and allocation of dwellings (Frescura, 1980). The collective identity (the tradition) of the dwellings is ensured as the female passes down tradition to the next generation (Bourdier & Minh-ha, 2011: 22). Collective identity is captured in the size, placement of the dwelling in relation to site, aesthetic quality, construction technique, and order of construction. It can be argued that imbedded in this collective identity is the ordering and preserving of space in the binaries of small-large, near-far, north–south, interior–exterior, and past-future thereby communicating a feeling of familiarity, both symbolically and functionally, embodying community unity. This can be seen from the aerial view of the *umuzi* Figure 4-3a.

While the settlement character can be ‘read’ using the binaries and symbolic character, individual dwellings may also be read using the architectural character captured in the Vitruvian qualities of firmness, commodity and delight. Firstly, how does the building stand up? What is its structural integrity? The structural integrity (i.e. the Vitruvian quality of firmness) of the *indlu* is achieved by first erecting the frame and then covering with the thatch found from the natural environment (Figure 4-3). This produces an interior space with varying head room space as shown in Figure 4-3b with the highest point at the center where the structural post is erected. In terms of the Vitruvian quality of commodity which refers to functionality, the individual dwelling provided basic living space for the domestic function. The dwelling is orientated in such a way that it captures a hierarchy of social organisation. Each *indlu* does not function in isolation of the others providing space for specific functions such as sleeping, and cooking.

The patriarchal, extended family in the traditional Zulu settlement (*umuzi*) maintains its multi-hut settlement pattern, a hierarchical pattern in which each wife is housed in individual huts (*amaqhugwana*) spread around the cattle byre within the homestead (*uthango*). As the male child comes of age an additional hut is built, thereby extending the dwelling. Polygamy is commonly practiced and was an acceptable way of practicing social responsibility for especially widows and orphans (Frescura, 1980). Frescura traces the positioning of individual huts based on how they relate to the great hut occupied by the first wife in the homestead. However, very little is said about the use of interior spaces and daily living activities.

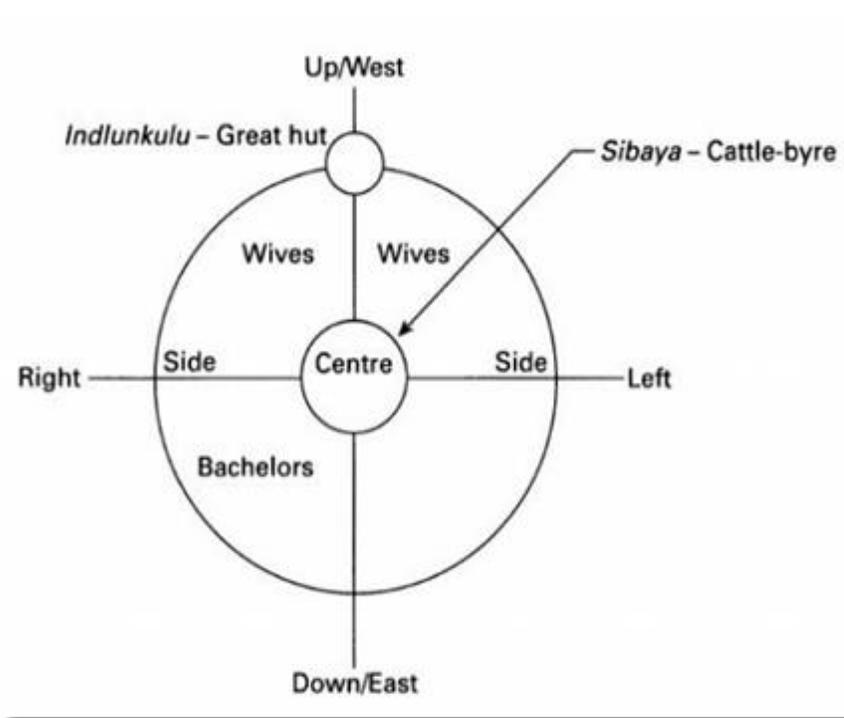


Figure 4-4 Symbolic Dimensions of Zulu *umuzi*

Source: Magubane (1998)

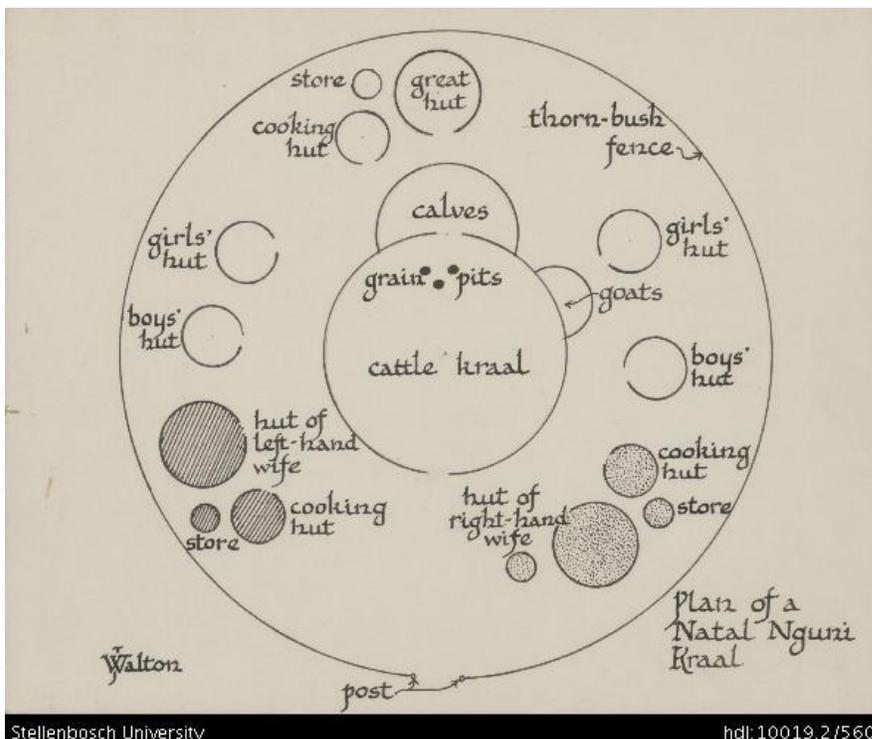


FIGURE 4-5 ZULU *UMUZI* LAYOUT

As shown in Figure 4-4, the orientation of the entrance to the *umuzi* is east facing, where possible, with the chief's wife housed in the great hut located at the top of the *umuzi*, directly opposite the entrance. The walls of the huts are smoothed with cow dung and floors of dried mud (Ndandani, 2015). The creation of one dwelling space does not happen in isolation of the 'other' space. However, with modernisation, layout considerations have shifted from family structures to more economic and political considerations.

The *umuzi* is said to embody the 'essence of social order' expressed in terms of *ukuhlonipha* (respect) and *ubuntu* (togetherness). Great reference is given to the centre space (as in other African traditional settings) where the cattle *kraal* is located indicating the importance of culture and the tribe's conception of wealth. In fact Magubane (1998) stresses that the Zulu *umuzi* was regulated in terms of social discipline and strict etiquette.

The act of dwelling thus entailed not only the interior of the hut but also spaces between and around the huts. In the construction of the dwelling Ndandani notes that in the past rural hut owners simply gathered materials from the surroundings to build huts (Ndandani, 2015: 23) and that there was a division of labour in the construction process. The division of labour has been widely documented showing how men, women and children of the community were assigned various tasks in the construction of the dwelling. Ndandani notes that some rural practices have been imported into the urban areas post-apartheid era (Ndandani, 2015: 51). However, in the urban areas, due to the absence of the natural materials, rural dwellers are in a dilemma regarding where to source building materials (particularly) roofing sheets, given the high cost from the building stores (i.e. the entrepreneurial capitalists).

The organic character of a dwelling built of natural material found in the environment makes it subject to deterioration. In terms of the third Vitruvian quality of delight, one might argue that it is a subjective quality. However, it can still be qualified in terms of visual perception, proportion, scale, rhythm, texture, light, colour, ugliness and ornamentation (Roth, 2007: 55), capturing the symbolic, cultural essence, cosmogonies, myths, religions, and daily rites.

The interior layout of the dwelling provides a place to sleep, storage and sacred spaces. Directly opposite the door is the sacred spot reserved for artefacts relating to the ancestors. The floor finish is made of earth materials which is said to allow better communications with the ancestors.

In the contemporary modification, the dwellings are connected with electricity in some areas and residents have access to satellite TV. Figure 4-6 shows the interior layout of the dwelling, with the mat on the floor and a raised platform for ancestral rituals. The floors are screed and the walls are plastered and painted while on the wall hangs a piece of decorative cloth, beads and other ornaments. A cupboard for storage of clothes and a couch was found in the room. Daily activities, such as cooking and bathing, spill out into the surrounding areas.

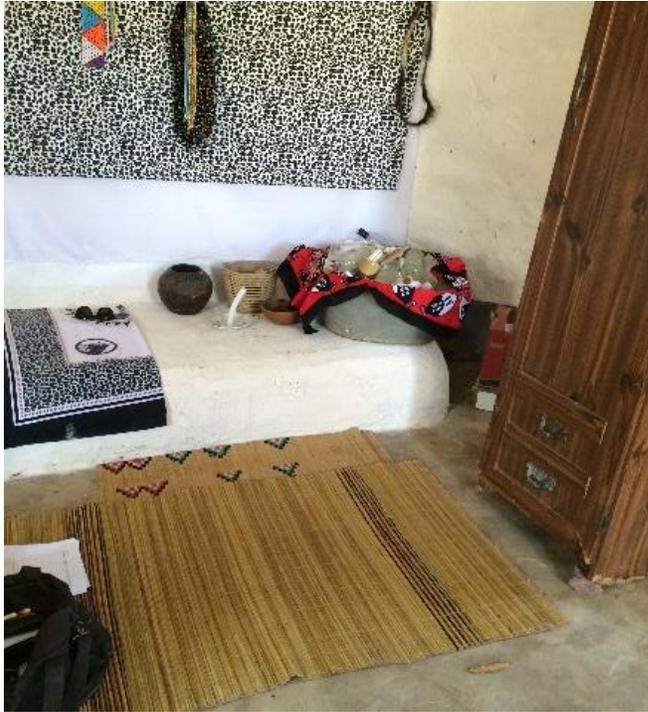


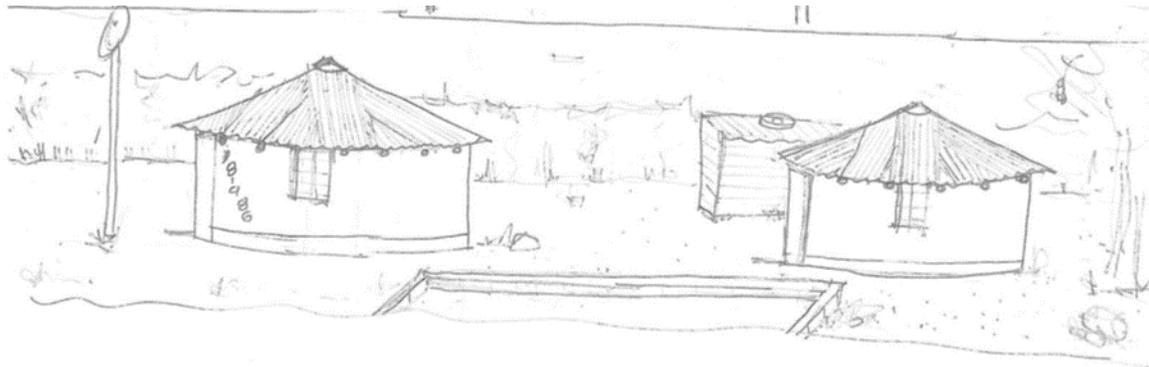
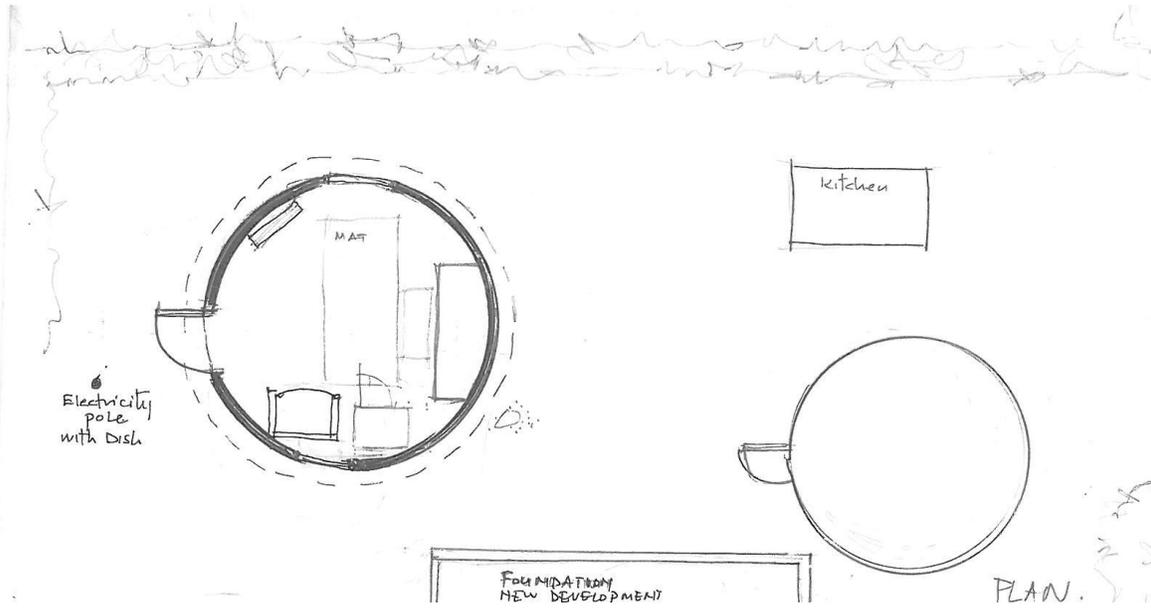
FIGURE 4-6 INTERIOR OF A MODERN *UMUZI*

SOURCE: PHOTO TAKEN BY AUTHOR ON A SITE VISIT TO THE QADI RESERVE 2016.



FIGURE 4-7 EXTERIOR OF THE DWELLING

SOURCE: PHOTO TAKEN BY AUTHOR ON A SITE VISIT TO THE QADI RESERVE 2016.



SOURCE: AUTHOR'S INTERPRETATION

FIGURE 4-8 SKETCH OF TRADITIONAL LAYOUT IN QADI RESERVE

4.3.1 BUILT ENVIRONMENT AS THE RECORD OF HISTORY

The built environment has recorded history of man over many centuries (Lawrence & Low, 1990; Wang & Heath, 2011), and as such embodies socio-cultural meaning of time. Anthropologists and historians have often looked to ruins of the built environment for centuries to uncover the lifestyle of ages past (Whelan, 2011). In fact, anthropology and architecture are known to have a connection, which, even though not fully understood, links culture and society to the environment. Demissie (2004) argues that in the study of the environment it is necessary to carry out a comprehensive analysis of all aspects of the environment and culture that gives rise to the final form. Scholars such as Lawrence & Low (1990), Prussin (1995), Elleh (1997) and Whelan (2011) have argued that archaeological evidence hides loads of historical meaning. By studying the evidence, the built environment proves to be responsive to various problems it faces (physical, social and cultural). For example, Radford (1987) traced the movement of the veranda house across Anglo-Saxon colonies, which responded to the problems of living in the tropics, and argues that the veranda house has remained over time and space keeping its form reflecting the way of life of its early ‘designers’, despite changes in the climate. This he attributed to the inherent culture (i.e. the plantation culture) that moved with the people; in this way keeping a record of life style.

The built environment also captures socio-cultural responses to family structure, gender and family size. In the Zulu *umuzi*, it is possible to identify the head wife, by the positioning of the dwelling within the homestead. Other social norms and expectations are also reflected in dwelling spaces. For instance, an honourable man should not be found indoors during the day, but must be at work, and if not working should be attending to community matters under the *palaver tree*.

The built environment also captures economic and physical conditions (environmental, natural and climatic) by the choice of materials employed (reflecting delight). Source and choice of building materials gives the collective character depicted in terms of material, form and technique. Take, for example, traditional settlements of West Africa, each settlement type has its own unique vernacular architectural language different from that of other cultures. Yet within the settlement each home possesses the same character, yet no home is the same. The dwelling therefore acts as a social regulator giving the community its identity in terms of delight (ie size, placement, relation to the site, aesthetic quality, technique, order of

construction), yet cultural and linguistic diversity due to migration allowed for the basis of creativity of individuality.

Prussin's work traced the origins of tent structures of African nomads moving from biogeographical zones over undulating topography. This was done by unravelling the interplay of knowledge from different disciplines including anthropology, ethnography, and history to produce a convincing architectural history (Turan, 1996). Prussin's work identified the aesthetics of armature tents, predominantly created by nomadic women making use of natural materials found in the immediate environment. She argues that the process of building involves rituals, which endows the built environment with meaning. These rituals are captured in the process as arts and artefacts reflecting the poetic and moral judgments provided by the belief system. Prussin concludes that African nomadic settlement architecture is responsive, transformable and mobile as a result of 'collective ritual' whereby the arts merge with transport technology, thus capturing the importance of rituals in communicating meaning. Prussin's work shows how women organised space both within the dwelling and how these spaces and methods of construction fitted into the overall transport network available at the time.

A similar study was carried out by Whelan (2011) on the Msinga people in KZN. She notes that the changes in built form had been in response to the environment and resources available and extends to "the pragmatic reality of protection from political strife".

4.3.2 THE CHANGE IN VERNACULAR LANGUAGE

Massey (1991) argues that place is not static but involves social relations and interactions. Oliver (2006) acknowledges that despite changes in most self-help building traditions, over time some distinct building know-how is handed down from one generation to another. In this way the sources of material, methods of construction, the use of space and meaning remain intact. However, he argues that the significance of certain features is affected by physical, cultural and perceptual factors; for instance, in post-disaster re-housing (Oliver, 2006: 24), or as in the state assisted top-down delivery efforts, many of the communal building know-how is lost.

The collective knowledge (indigenous knowledge) of the built environment, however changes when the language is no longer commonly shared. This could be due to various reasons

including migration, modernisation or imposition of power. These three factors are discussed below.

Factors bringing about the evolution include climate change, changing social values, deterioration of cultural values and economic conditions (Yildirim & Korkmaz, 2012). The authors attribute this to a larger concept of globalisation.

4.3.3 DUE TO MIGRATION

As people migrate the need to respond to climatic and geographic conditions brings about a change in the built form. For instance, the 19th century Bantu trek migration traces how the arts and crafts changed with the migration from West Africa through Central Africa to southern Africa with challenges along the way on life style, occupation, available food, impact on building methods, and the use of space. This is evident in the similarities that can be noted between the indigenous dwellings of the Bantus of western and southern Africa.

From another perspective Radford (1987) traces the origin of the Shotgun house to the Caribbean, showing various modifications in style between the Caribbean style and the Cape vernacular. This he argued was due to changes in life style in response to climatic conditions. It can be argued that there is a link between the Caribbean style and that found in West Africa, and that this linkage was brought about by the slave trade of the 18th century¹².

4.3.4 DUE TO MODERNISATION

In tracing the historic development of rural house types of southern Africa, Frescura noted that changes in dwelling patterns are attributed to subtle changes in environmental, social, economic and technological pressures. He, however, stressed that the evolution in building technology is of more importance, especially as it struggles to keep up with increased space demand and the increasing sophistication (Frescura, 1980: 21). The transformation in the form from the primitive beehive dome to more permanent and solid structures is also attributed to the rural settlers becoming sedentary as opposed to their previous rural life style, raising debates of temporality and permanence.

¹² However, this line of thought is beyond the scope of this research.

The very nature of the life style (occupation, religious practices, family structure and hierarchy) thus affects not only the form but also the space requirements of the dwelling and the level of permanence of the settlement. Hanson (2003), however, warns that dwellings cannot be a superficial analysis of basic human needs and as such must give due attention to routine within the dwelling. Advancement in modernisation therefore refers to the changing times – way of life, pre-occupation, life style, and aspirations. The expression of modernism can be argued to fit into one of the four categories identified by (Winer, 2001) i.e. architecture of coping, identity, affluence and fear Figure 4-9. It raises the question as to what category the informal settlements fall under. Probably Architecture of resistance or aspiration?

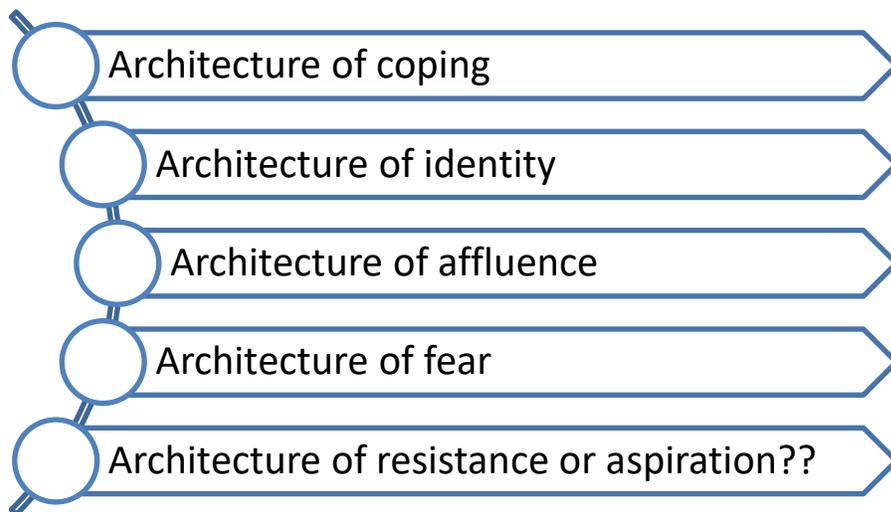


Figure 4-9 Categories of Architecture

Source: Adapted from Winer (2001)

Winer (2001) argued that the architecture of coping involves a sense of impermanence whereby building materials used are temporary. This is followed by the architecture of identity, which entails more permanence expressed by extending or replacing an existing dwelling activity to include commercial activities. The architecture of identity entails a greater level of permanence than the architecture of coping. The architecture of affluence is one whereby imported material and skills are used in the construction of the dwelling. The fourth stage is the architecture of fear whereby it becomes necessary to protect accumulated wealth from expected threats. This manifests in form of high walls, security gates, etc.

Yun (2014) identifies different types of vernacular architecture in the *Hanoks* of South Korea brought about by unexpected development of new building activities, making the *Hanoks* more convenient and comfortable. Slate was used instead of thatch or tiles for the roof. It can be argued that the acceptability of the different types of *Hanoks* was due to the fact that they involved self-build with limited state intervention. In fact, Yun reports that the government provided the building materials. The case of the *Hanoks* is quite unique as the transformation is carried out by the home owners. In the rural areas the government provided building materials for the building of roads and construction of wells and provided farmers with new agricultural skills and financial aid (Yun 2014: 111). This can be referred to as Winer's architecture of affluence. In the South African context state involvement in traditional architecture is limited. More noticeable involvement has been in the provision of water and sanitation services in both the rural and urban areas. However, in urban areas, households aspire to better quality of life and their efforts could be categorized not as resistance but as *architecture of aspiration*.



Figure 4-12 Architecture of Affluence South Korea

Source: Yun, 2014

According to Elleh (1997) African Modernism, should find its roots in indigenous, traditional and vernacular architecture. He questions the inclusion of spatial imprints of the economically and politically underprivileged in the urban cities especially in Africa, in the discourse of modern and contemporary architectural practices. He concludes that, based on their economic status, the buildings produced by the poor meet experiences of modernity with which we can evaluate modernist architectural productions. He asserts that the urban spatial products of the poor should be considered in the discourse of modern architecture for the simple reason that they meet expectations of modernity. These expectations of modernity according to Elleh relate to those that emanate from colonialism, capitalism and political and social injustice. Elleh argues that the discourse on modern architecture should include Architecture of Africa's urban poor, which he argues is tied to capitalist modes of production. According to Elleh, three assumptions underlie the modernity thought. Firstly, that it is responsive to function, secondly that 'honest' aesthetic is achieved through visceral bareness of structure and materials and thirdly that architecture was a tool for spiritual and aesthetic guidance of people. Johnson (1944) argues that Modernism failed to accomplish the hope of simplifying complex social constructions of the indigenous, traditional and vernacular, using inventive building techniques of the colonial capitalist.

This is similar to Bourdier & Minh-ha's idea of interpreting the vernacular architecture of traditional dwellings. They argue that key to getting the understanding is to consider the stature of the house which is of an architecture sensitive to the spiritual and productive relationships between dweller and the dwelling and "accommodates sociability and implies continuous existence of the group" (Bourdier & Minh-ha, 2011: 15). This sensitive relationship is what underpins the contemporary drive for vernacular architecture from an environmentally sustainable perspective. Traditional dwellings embody society's collective perceptions of the spiritual and productive relationships, sociological, physical and spiritual. They argue that the "...traditional dwelling is built according to the model of the human body to shelter, protect, receive, revive, and survive to give aesthetic pleasure, to dream, in place, to create social terrain, to facilitate communication with the ancestors and gods but also to comply with the forces of nature" (Bourdier & Minh-ha, 2011: 15). Yet the dwelling also maintains individuality as each owner creates his unique place in space within the collective identity.

4.3.5 DUE TO IMPOSITION OF POWER

On the other hand, in China, the transition of the language of the Chinese courtyard house was significantly altered following the collapse of the last imperial dynasty (Liu & Awotona, 2014). Inappropriate policies of the new Republic regime ignored cultural values of the traditional courtyard house, imposing multi-storey housing, thus disrupting the built environment language.

African scholars Osasona (2006) and Noel & Amole (2014) have identified the vernacular as a modification of the traditional due to external influences particularly colonialization. In the words of Rapoport, the vernacular “is more closely related to the culture of the majority, and life as it is really lived, than [it] is [to] the grand design tradition” (Rapoport, 1969: 2). Further to these, others have linked vernacular architecture to the instinctive command of particular materials (Hitchcock, 1963).

4.4 PATTERN LANGUAGE – THE TRADITIONAL HUT OF THE NGUNI PEOPLE

Christopher Alexander (1979) argued that in traditional culture, there exist unarticulated patterns, which are commonly known and practiced by the collective. There is no need to articulate the rules as they are of traditional collective meaning. He argues that a pattern language can be identified by making the pattern explicit, as the pattern has always been there but not identified. Patterns express a relationship between a certain context, a problem and a solution.

In understanding an inherent pattern, one method is by individually reviewing the characteristics of a place that if taken away disqualifies it from being called by that name. For instance, many traditional Zulu families have built the Zulu hut in the city, in an attempt to recreate the homestead within the city. While the buildings (and by deduction the pattern) are the same, the language will differ from that experienced in the traditional area. Indeed, the language is lost in the transition process as the socio-cultural and environmental context changes. Why is this so? Alexander shows how buildings may be the same, but the character of the traditional space is lost as the context changes, and as the ‘problem’ being responded to changes. He argues, therefore, that the pattern is captured in the context and in cognisance of

the problem being solved for the person concerned (Alexander, 1979: 182). In defining patterns, he asserts that it is important to identify three things – the context, the systems of forces, and the configuration – and these are described further as follows:

Firstly, identify actors and the physical features of the place. What makes the place come alive? What makes it unique? Then define the problem, or field of forces which this pattern brings into balance, and finally define the range of contexts where this system of forces exists and where this pattern of physical relationships will indeed actually bring it into balance. This is illustrated in Figure 4-10.

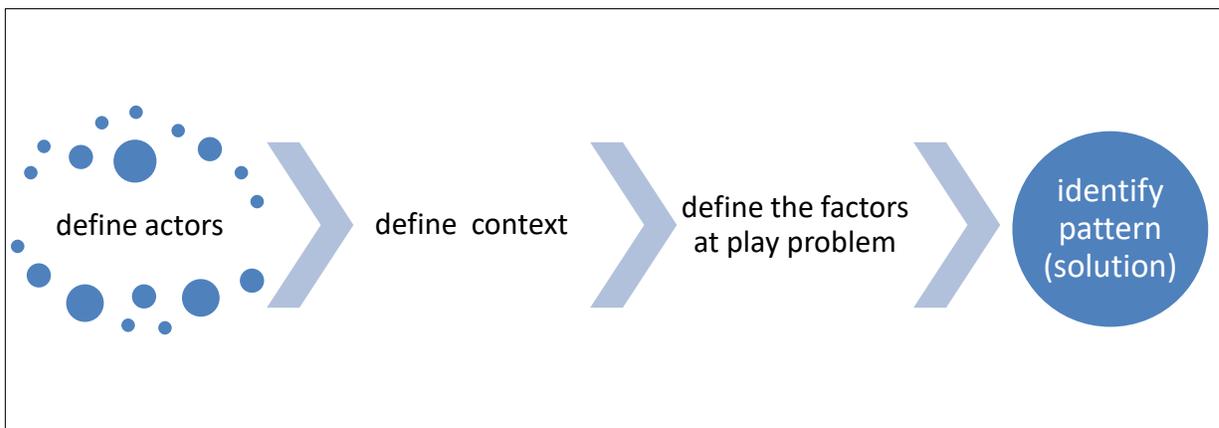


FIGURE 4-10 PROCESS OF DEFINING PATTERNS

Source: Alexander, 1979

The field of forces include the “diverse environments, economies, technologies, inherent skills, social and family structures, belief systems and symbolism” which are amongst factors that determine the built form (Oliver, 2006: 22).

4.5 VERNACULAR ARCHITECTURAL LANGUAGE

Siwalatri, et al. (2014) argued that vernacular architecture is formed through several considerations such as the kinship system, geographical conditions and social belief systems. Further to this, Glassie (1990) argues that the process of making the vernacular continuously teaches the “occupants about their position in the universe and surrounds then with a sense of their capabilities”. According to Glassie (1990) vernacular politics are egalitarian, i.e. they are free of rigidity, even though actors are neither equal nor the same. Instead he argues that their diversity interlocks and their individuality and needs combine for mutual benefits. In this way

there is communal benefit from mutual talents, resources and skills. He argues that this is encouraged by the egalitarian ethic, which accepts specialization and a range of skills to exist, thus encouraging change to occur. This, however, must remain at an 'equilibrium limit' for there to be 'political order' and brings in to question the functional size of a settlement and the dwellings within them.

The term vernacular has to do with the unselfconsciousness or non-mastery of architecture (Johnson, 1994: 266). It is often used interchangeably with traditional, indigenous, popular, folk or historical analysis (Glassie, 1975). According to Oliver (1997), the vernacular refers to self-help efforts within a particular environmental context, and utilizes traditional technologies, built to meet specific needs. He argues that it reflects the values, economies and ways of living of the cultures that produce them. Osasona, (2006) contends that the vernacular is post-traditional, that is beyond the traditional, it is also more individualistic, unlike the traditional which is of community effort. The vernacular can also be viewed as a process of replication at one extreme and interpretation at another extreme (Rapoport 1978). He argues it should ideally be an attenuating approach whereby the vernacular is a mediator between the two extremes. For instance, Japanese architecture maintains the historic form even though the materials have been improved over the years giving rise to a more contemporary form (Kurokawa, 2003).

In his writings, Frescura makes a definite connection of the vernacular to the rural comparing it with the 'consumer society' arguing that in rural society the dwelling is self-built without the involvement of an architect. Vernacular architecture is thus referred to as a grand tradition, "an architecture that is able to be practised by most if not all members of the group" (Frescura, 1980: 10). There is common knowledge of the design and construction process; thus the creation of dwellings is a common characteristic. Frescura further identifies three forms of prehistoric shelters i.e. crude shelters, cave shelters and the Stone and Iron Age settlements, and then the corbelled stone hut and the biobial dwelling. Some of the corbelled huts were described as very small having an internal diameter of from five to seven feet (1,500 to 2,100 cm), and an internal height of four feet (1,200cm). Even though these huts served as dwellings it was unbelievable to the many European visitors. The larger sized huts did not exceed 2,700cm in diameter and 1,800cm in internal height. The limit in height was set by the building technology and not the preference of the dwellers (Walton cited in Frescura, 1980: 24).

4.6 CONCLUSION

The chapter has traced the evolution of vernacular architectural discourse from the pre-colonial period. It presented the existing literature on vernacular architecture. The historical trends have been discussed using the Zulu homestead and other examples of traditional architecture transformation over time. It argued that the built environment keeps a record of the history of man, arguing that the built environment captures socio-cultural, economic, and physical records. As such, the dwellings give a community its identity.

The chapter has argued that the transformation of a vernacular language is brought about by three main factors i.e. the change in context due to migration, modernisation as affected by the nature of the life style and how this is reflected by occupation, religious practices, and family structure. The chapter went on to argue that by defining the relationship between context, problem and the solution, the vernacular architectural language can be identified. These relationships make reference to “diverse environments, economies, technologies, inherent skills, social and family structures, belief systems and symbolism” (Oliver, 2006: 22).

Lastly the chapter examined literature that demonstrated how vernacular architecture refers to the self-help processes arguing that it emerges after several attempts influenced by kinship system, geographical conditions and social belief systems.

The next chapter conceptualises informal settlements as a dwelling space and its socio-spatial attributes.

CHAPTER 5 CONCEPTUAL FRAMEWORK- INFORMALITY, DWELLING, MIGRATION

5.1 INTRODUCTION

The chapter starts out by critically examining Gramsci's theory of social groups arguing hegemony and the presence of intellectuals who determine norms and standards. It entails conceptualizing space in terms of its physical, social and cultural character which creates a unique place (Gramsci, 1986).

It then considers traditional and statutory building norms. What are the driving forces that bring about such norms and how have they evolved? The idea of dwelling is then discussed, giving perspectives from the macro, meso and micro scale i.e. the regulatory scale, to the community scale and the household, dwelling scale respectively. In this chapter I consider factors that influence the production of informal dwellings. Lastly, the chapter attempts to conceptualise informal settlements from a positive perspective.

5.2 SOCIETIES, POWER AND DWELLING SPACE

In understanding societies Gramsci (1986: 5) argued that:

“each social group, coming into existence on the original terrain of an essential function in the world of economic production, creates together with itself, organically, one or more strata of intellectuals which give it homogeneity and an awareness of its own function, not only in the economic but also in the social and political fields”.

This school of thought dispels the idea of a distinct social group separate from a broader collective. Gramsci argues that the capitalist entrepreneur creates alongside itself strategic support structures. For instance, this industrial philosophical idea can be experienced at all scales of not only economic but also spatial formations. For instance, in the debates on urban decay, or neighbourhood patterns or even household spatial patterns, Gramsci's intellectual strata can be identified.

Gramsci makes a distinction between intellectuals of the urban and rural environments. According to him “the urban intellectuals have grown up along with the industry and are linked to its fortunes. Whereas the rural intellectuals are traditional, that is they are linked to the social

mass of country people and the town petite bourgeoisie, not as yet elaborated and set in motion by the capitalist system” (Gramsci, 1986: 14)

Within the rural type, Gramsci recognises social structure, which places the administrative strata above the masses, whereby the masses look to the administrators for inspiration. This higher social group will include those that provide social services such as priests, lawyers, notaries, teachers etc. In reality, social structure operates on a level of trust that the society intellectuals will act in the best interest of the collective. This is, however, not always the case as will be illustrated.

In Southern Africa, the arrival of the British in the 19th century disturbed the ordering of space due to the imposition of administrative practices. For instance, the imposition of hut tax on indigenous dwellers is documented as being a major cause of migration of the men from rural areas to mining towns in search of a waged income to pay taxes (Massey 1978). It could be argued that this hut tax could have been instrumental in the change in the building form.

According to Baker (1975) an amount of 6 shillings per hut was imposed, on the assumption that 3 people lived in a hut (i.e. 2 shillings per person). This taxation was a heavy burden for many who could not pay. The options were to look beyond the village for waged income from the mines or consolidate two or three huts into one. By consolidating the huts, the household would pay 6 shillings per annum for only one ‘hut’, instead of paying 18 shillings for the three huts. The consolidation of the huts is arguably the beginning of the four corner house in the rural environments. Its intention by the powers was “to create a civil service and develop the country ...” which required funds (Baker, 1975).¹³ This, however, had implications on the cultural use of space in the rural settings.

The traditional layout of the rural settlement as described in the previous chapter embodies cultural values. According to Rapoport (1980), culture may be viewed in three ways. Firstly, as a way of life common to the group; secondly as a system of symbols and meanings and cognitive schemata transmitted through symbolic codes; and lastly as a set of adaptive strategies of survival related to ecology and resources. Bocock’s (1992) discourse analysis later showed that historically, the term culture connotes various meanings transiting from traditional social formations to modernity. In modernity terms culture is referred to “as social practice rather than

¹³ See (Abraham, 1972) for further readings on the Hut Tax.

a thing (the arts) or a state of being (civilization)” (Bocock, 1992: 232). It is meaning shared by a group of people or a society. “Society, which arises through relationships between individuals, and would be impossible without the capacity to communicate - to exchange meaning and thus build a shared culture” (Bocock, 1992: 233).

Gramsci argued that “man cannot be conceived of, except as historically determined man, that is man who has developed, and who lives, in certain conditions, in a particular complex or totality of social realities...”, thereby taking into consideration the evolution of culture and how it is communicated in the built environment. Such was the case with the change from the traditional single room hut systems to a multi-roomed building. Not only was the social ordering affected but also the sourcing of building materials and construction methods and processes; the ideas of capital and capitalism thus “influence practical matters relating to space” (Lefebvre, 2011: 11).

Tenure arrangements in the urban areas differ from the rural areas. In the rural areas, a traditional tenure system is upheld by the community. This traditional system (which required no documentation) was taken into consideration in the establishment of the apartheid reserves whereby “the natives were given ‘reserves’ in which they could continue to lead their tribal life” (Connell et al., 1939: 20). The despicable results of this ill-conceived interpretation of traditional administration are evident in the apartheid era hostel accommodation where social unrest persists to this day.

In the urban environments, the tenure system is more legalised requiring documentation of registered ownership logged with relevant local authorities (for access to services) and documented tenement arrangements. The administrative regulations also stipulate minimum standards within the urban environment, many being imposed by external assumptions and culture. Turner (1969) argued that the imposition of minimum standards contained in building codes have not improved housing conditions. He found that building codes are based on three assumptions:

“[Firstly] that high structural and equipment standards take precedence over high space standards. Secondly that households can and should move when their socio-economic status has changed....and lastly that the function of the house is, above all, to provide a hygienic and comfortable shelter....”

He argued that these assumptions are not valid in developing countries. These assumptions take only the physical considerations of space into consideration ignoring other socio-economic and socio-cultural dimensions of space.

It can be argued that assumptions of building codes allude to an assumed lifestyle which informs the allocation of spaces in the dwelling, whereby living spaces are named after their allocated functionality. For example, the bedroom, the TV room. However, the urban poor's living space is often limited to one room in which all activities occur. For this reason, Patrick Geddes (1918 cited in Meller, 2005: 183), argued that "the essential need of a house and family is room" and that "the essential improvement of a house and family is more room". This, he noted, is particularly the case of newly urbanised households as they settle and consolidate in the urban areas.

5.2.1 STATUTORY NORMS AND STANDARDS

Buildings standards set out the minimum building requirements aimed at healthy and safe communities. They are necessary for two reasons, firstly to create adequate living environments, and secondly to provide a yard stick for monitoring and evaluation. The guidelines are set out in the South African National Building Regulations and Building Standards (Act 103 of 1977) (also referred to as SANS10400).

Basic building standards for the working class in the United Kingdom in the seminal work of Bauer (1934) have been influential in setting basic housing standards. It covers five major areas – decency, health, amenity, comfort and convenience, safety. (See appendix 11.4). It can be argued that some of these standards are objective while others are subjective. Objective being that it makes logical sense to keep minimum standards, and as such include basic health and safety considerations. Subjective minimum standards can be argued to vary from one user to the next.

Subjective considerations refer to internal comfort levels (i.e. thermal, spatial) and the psycho-spatial character which reflects the social character of the household. This can be viewed in terms of the Vitruvian principles of commodity, firmness and delight, as described in Chapter 4.3, whereby objective considerations refer to the firmness and commodity and subjective considerations refer to the delight.

The built environment should meet the needs of the occupants in such a way this does not endanger other users. In this way it serves to meet the primary objective of the occupants and subjective perception of the general public. For instance, in addressing objective requirements of safety in terms of the spread of fire, the SANS10400 stipulates the use of building materials that have at least a 30 minute fire resistance. This regulation refers to not only the occupants but also the surrounding built environment. Very simply, objective requirements can be said to be those that guard against health and safety hazards, while the subjective ones are those that depend on the perceiver, be it the end user, or the other users of the environment. These two categories are illustrated in Figure 5-1.

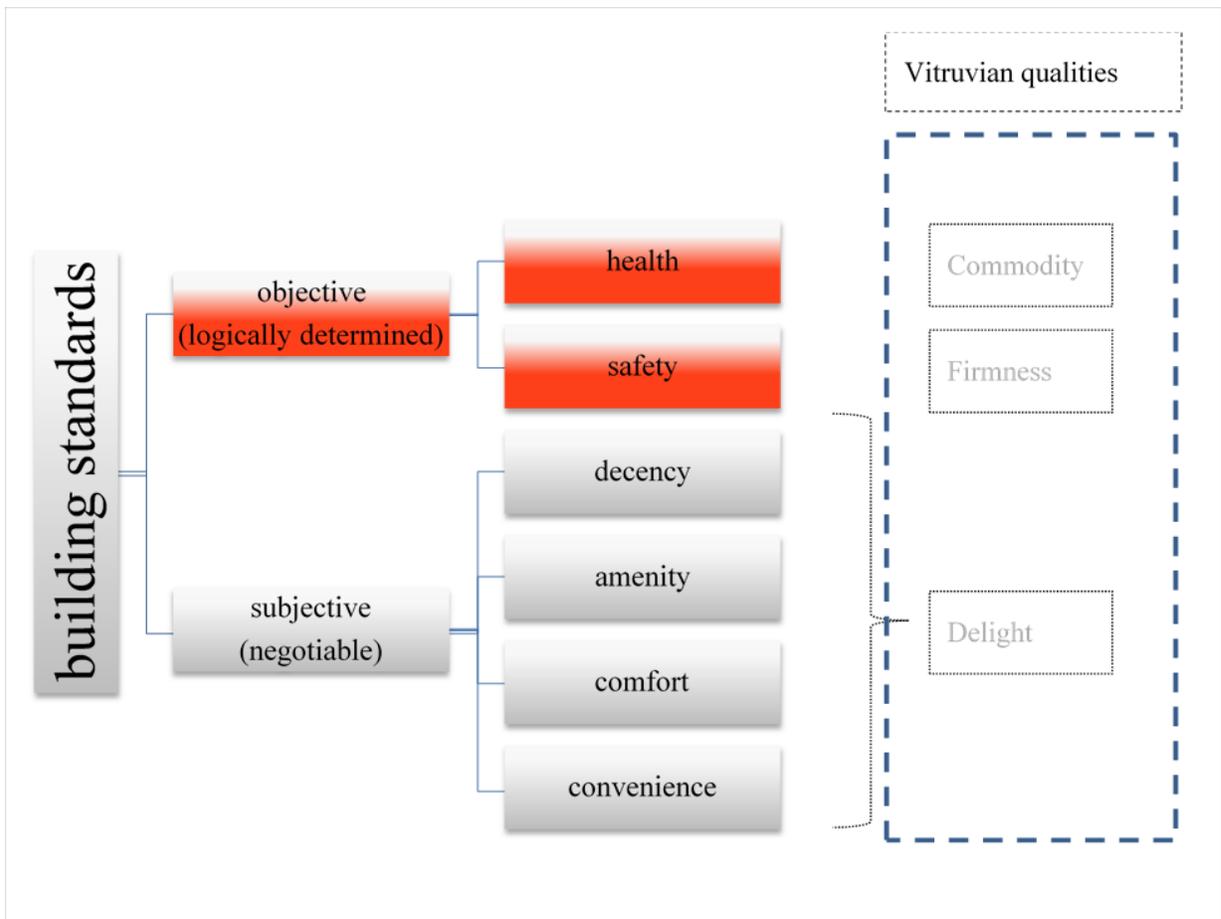


FIGURE 5-1 CATEGORIES OF MINIMUM STANDARDS

Source: Author's interpretation (adapted from Bauer, 1934)

The five basic standards are closely related to the architectural characteristics of firmness, commodity and delight as demonstrated in the Figure 5-1, the first two being objective and the

others subjective. Logically the provision of adequate housing in line with section 26 of the South African Constitution should meet the minimum objective of health and safety, while other subjective minimum standards will vary based on context, from one user to another. The National Building Regulations and Building Standard Act, 197 (Act 103 of 1977) outlines the building codes which capture the functional regulations for the built environment. It provides three avenues for meeting the regulations: through ‘rational design’, the ‘deemed-to-satisfy’ rules, and the ‘agrément certificates’. Where the ‘rational design’ is to be done by a competent person who takes responsibility for the design and the ‘deemed-to-satisfy’ requirement is a “non-mandatory requirement, the compliance with which ensures compliance with a functional regulation” (SABS, 2010: 46). The agrément certificate makes provision for the certification of innovative non-standardised products, material or component, confirming fitness-for-propose or the acceptability of the related non-standardized design and the conditions pertaining thereto (or both) issued by the Board of Agrément, South Africa (ASA). Figure 5-2 illustrates the schematic relationship between the three

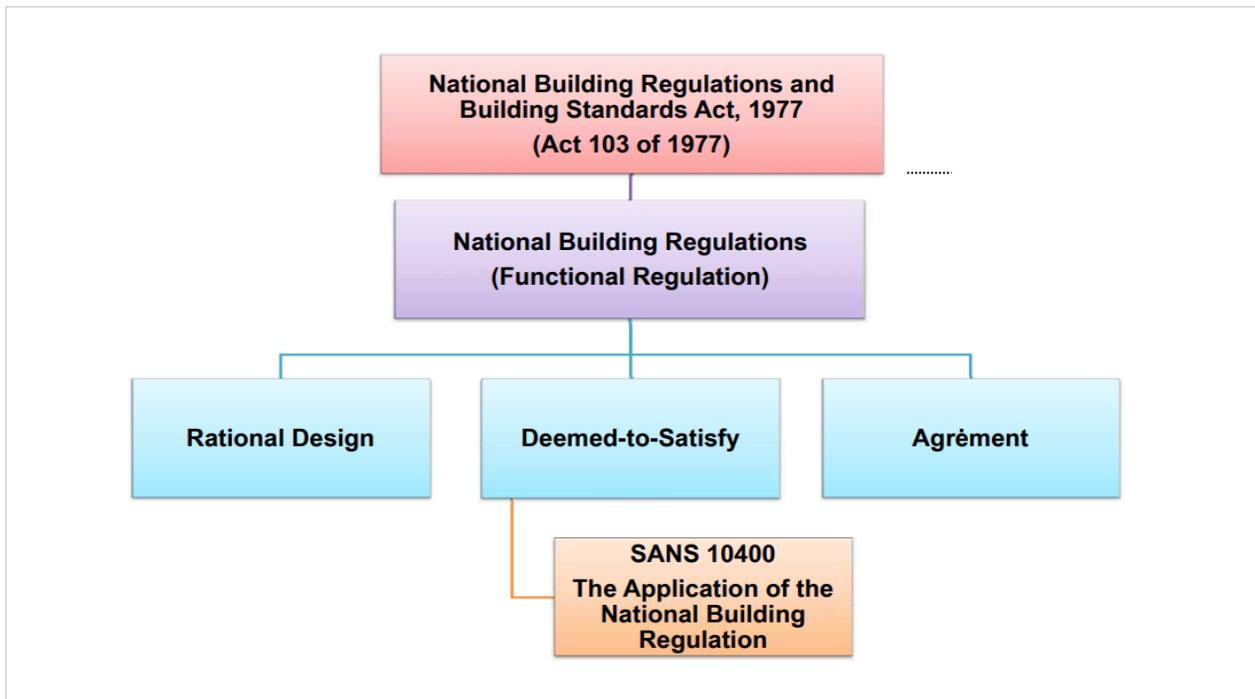


Figure 5-2 National Regulatory standards

Source: Schefferlie (2012)

5.2.2 AGENCY VS SELF-HELP

The architect is known as the custodian of the architectural practice. As a profession, it is described as an occupation that declares a skill and expertise being offered to and involves the affairs of others (Johnson, 1994: 155). This description encapsulates the Latin word *profiteri*, which means to declare publicly. The word expertise is linked to the Latin word *experiri* (to try), which comes from many attempts of trial and error in the development of expertise; Johnson argues that expertise develops only after many opportunities to practice. In light of the rural traditional practices, the peculiar vernacular architectural language is mastered by the society and practiced, giving identity to the settlement. However, with societal changes comes the idea of modernity.

This is particularly true when social changes occur following separation from the collective due to migration, to give rise to something new, which from a sociological perspective was termed modernity. According to Haferkamp and Smelser (1992: 38) modernity refers to “a world constructed anew through the active and conscious intervention of actors and the new sense of self that such active intervention and responsibility entailed”. They further point out that “alienation from the traditional community and its forms of identity and control meant that the alienated individual was open to new influences... [which] made possible the formation of new social networks and political identities, for example, the rise of ‘voluntary associations’ (which stood in contrast to those traditional associations into which one was born and that one took largely for granted)”. Resembling those Gramsci refers to as intellectuals i.e. the custodians of knowledge.

Responsibility of agency requires that the affairs of others remain the key concern. This, however, has not been the case over many years of architectural practice and the evolution of modernity. For instance, in South Africa the autonomy of agency was used in the implementation of the apartheid laws of segregation and exclusion. It has also been used in the commodified mass housing projects, evident in what Johnson (1994) referred to as the high rise ‘human filing cabinets’ in the sky, and the ongoing repeated dwelling units that abound in pockets in South Africa. These influences bring about varying typologies of an existing form and architecture.

The conflict of agency and power, questions the very essence of professionalism. It brings into question motives and aspirations of the 'others' (referring to the client i.e. the funder or the end user) on whose instruction the architect acts, and the influence of both political and economic bias and/or interference (Johnson, 1994: 156). Agency therefore calls for continuous awareness of not only objectives, but also motives, identity, relevant knowledge and context.

5.3 MIGRATION OF INDIGENOUS KNOWLEDGE

With the underlying right to the city, many rural dwellers attracted to the city often face an unexpected socio-economic and socio-spatial reality and are forced to adapt. Lefebvre's seminal work (1968) claimed that every individual has a right to the city, in order to take advantage of all the city has to offer. He further argued that industrialization and generalisation of products in the bid for modernity led to city degradation and destruction globally. This could be linked to the aspect of agency and the lack of a common knowledge and also an autocratic interpretation of development needs and direction. He later asserted that, in fact, space is a social product (Lefebvre, 2011) and relates to everyday routine, resources, context, and social relations of the society; by making use of symbols and non-verbal signs diversity in the spaces is produced.

Lefebvre (2011) attests that space should be analysed through three axes: the perceived space, the conceived space and the lived space. The perceived space refers to everyday life in 'common-sensical mode' i.e. it is a sphere of popular networking of public and private spaces. The conceived refers to the professional and theoretical space. It can be referred to as representational spaces as imposed by the 'intellectuals' having power and knowledge. (Gramsci (1986: 131) uses the term 'intellectuals' to include those acting under agency such as the architect and the planner). The 'lived-space' is the dwelling space reality and, according to Mahmoud & Elrahman (2014: 6), could be "the social product that is created by societies under marginalisation or oppression in informal societies seeking a chance of living in a city that rejects them". They argue that these spaces are often described using binaries such as good/bad, safe/unsafe, and planned/unplanned. Whereas, architectural competence refers to a "set of rules that might have been used to generate a perceivable thing. These rules are the structure that binds distinct elements into a synchronic system" (Glassie, 1975: 20).

Vernacular architecture is a process that continuously evolves. It implies that what is a crude attempt at providing shelter perhaps develops into a competent and recognisable vernacular language. Making reference to immigration Baker (2012: 1) conceptualises the vernacular architectural language transitioning with influences from new people arriving, changes in function and technology. According to Frescura the final house form is influenced by variables associated with culture, local tradition, language, availability of material, materialism, modern influences, aspirations, finance, social groupings, building methods, site and aspect (Frescura, 1980: 9). He argues that there are a set of denominators to work with which are the house form, the structure and construction. He thus identifies the themes of 'change' and 'adaptation' as key to the development of the vernacular.

Frescura's study focused on the house form and construction materials, arguing that material used is usually found in the natural environment. In the rural context the natural environment provides sticks, stones, and earth, whereas the urban areas provide waste from the industries and consumer society. This was the case recorded by Frescura (1980:10) in Crossroads, Cape Town, where the people turned to the consumer society around them for building materials such as off-cuts, corrugated sheets, empty cans, milk trays, and printing waste (Frescura, 1980: 10). More recent observations at the Slovo informal settlement carried out during the pilot study show how the dwellings are built of rejected timber from the nearby saw mill. Frescura argues that the vernacular has the ability to blend with its environment simply because it uses what is in the environment, be it rural or urban, to create the dwelling.

5.3.1 URBAN MIGRATION AND SOCIO-CULTURAL IMAGING

Archaeological evidence using cultural and life-style practices traces the movement of the Bantu tribe from east to southern Africa. By tracing the use of early Iron Age artefacts evidence shows that there existed semi-permanent settlements of pole and dagga structures, storage pits and grinding stones (Huffman, 1982). Two kinds of migrants were noted, these were the nomadic pastoralists and the farmers. The former, who were semi-permanent settlers, settled in open pastoral grounds while the latter more permanent settlers, located themselves around good agricultural soil and had larger storage vessels which were difficult to move. Movement patterns can also be traced by other continuity in culture. Kuper (1980, cited in Huffman, 1982) showed that in the southern African region there existed a common cultural system. The culture

continuum is evident in the hierarchical layout of the settlement, which encapsulates interconnected attitudes about gender and spiritual roles linked to the ancestors, together with the importance of cattle. This continuum was expressed in the settlement pattern and has been well documented over the years. (Frescura, 1980; Claude, 1999; Whelan, 2011).

Different circumstances bring about the need for individuals, households, or entire communities to move from rural to urban areas. According to Turner (1976) migrants move into the city in search of better jobs and for this reason first look for shelter in the inner city close to opportunities. In this way the informal settlements are not necessarily the first stop for immigrants, but they offer a possibility of home ownership opportunities once immigrants have understood the urban area from the inner city rental accommodation. From this perspective, the attraction of the informal settlement is linked to the possibility of entrenching their rights to the city. By first dwelling in an environment with less monitoring of building regulations allows the rural urban immigrant the opportunity to settle with a substandard structure and little interference from the authorities.

Turner's view can be linked to the 'rational choice theory' whereby households make decisions based on micro-macro links. As such the decision to live in an informal settlement is dependent on the social networks at micro, meso and macro levels (Haug, 2008: 590). That is, the decision-making pattern is assisted by social networks from place of origin. Haug argues that where networks exist with others from the original traditional home migrants are better able to navigate themselves in the new urban areas.

Apart from this neo-classical economic perspective explained by the Harris-Todaro model of the 1970s, whereby migration is a conscious choice – a decision based on economic reasons – other factors leading to migration will be involuntary displacements of communities due to climate change, insecurity, wars and social unrest. Migration is thus not only an individual economic decision but a household strategy to minimize risk and meet household needs (De Jong et al, 1985; Massey et al 1998 cited in (Mafukidze, 2006).

The level of skills possessed determines how far migrants are able to venture and who is migrating (either male or female). Mafukidze argues that where skills are limited, rural-rural or rural-urban migration is more common than national or international migration. In the South African context, it can be argued that informal dwellers are economic migrants who make

rational decisions to move and arrive at an informal settlement as an avenue for accessing economic opportunities in the urban areas. In migrating to urban areas, households give up some rural realities. These include the use of natural resources like burning of cow dung for cooking, keeping of farm animals in large open spaces, or telling stories in the unpolluted air, under the moonlight (Ndandani, 2015: 52). As such, indigenous wisdom can provide the bedrock of all architectural development (Heath, 2009). It is knowledge passed on from one generation to another, which is held by local and particularly indigenous people.

5.4 INFORMALITY

The notion of informality¹⁴ is derived from two legal perspectives – legality and structure. It refers to situations that are not recognised and not acceptable from both authority and the neighbouring community. The dwellings are built, often with skills imported with the migrants, often with no involvement of formal pattern systems or knowledge of the law, particularly building standards and regulations. As such the efforts are termed ‘informal’ as they are not formally recognised i.e. in line with the law.

The informal community includes informal markets (and informal tenure by implication), informal employment, and informal housing which all make up an informal economy.

As implied, the concept of informal settlements firstly refers to dwellings and settlements as a whole that are in contravention of the law, either in terms of the right to occupy or in deviation from legislated building standards. If occupying land illegally, or the structure does not meet basic standards, or the infrastructure is lacking or inadequate, such dwellings are considered informal. On the other hand, informal settlements may be described as those settlements that mushroom as spontaneous settlements on vacant land, within and around places of opportunities. They might not necessarily be slums but illegally occupied land, disrespectful of building-by-laws or of substandard construction methods (Khalifa, 2011: 43)

The term informal is a combination of two words- ‘in’ and ‘formal’. The dictionary meaning of ‘formal’ is “done in accordance with rules of convention or etiquette; having a conventionally recognised structure or set of rules” (Oxford University Press, 2011: 457). By adding the prefix

¹⁴ Informality was first put forward by Keith Hart in the late 1960s during a study in Accra, Ghana. It referred to both legitimate and illegitimate income generating activities of those considered ‘unemployed’ and ‘under-employed’ (Hart, 1973). Hart argued that they were economic activities of the unregulated sector of the economy

‘in’, the meaning of ‘formal’ is negated, and changes to not in accordance with rules of convention. With this understanding the question is now ‘what is the usual requirement?’ (Ojo-Aromokudu & Loggia, 2016)

Many authors from the environmental, geography and planning professions have used the expression ‘informal settlements’ to refer to marginalised settlements that lack basic services, not complying with current planning and building regulations, situated in geographically or environmentally hazardous areas and lacking basic infrastructure (UN-Habitat, 2015) (Muchadenyika, 2015; Khalifa, 2011). The term slum is closely related to the environment. Slums suggest the worst form of settlements, of secure or insecure tenure. Physical evidence of the deplorable conditions include a lack of (or inadequate) water and sanitation services, leaking roofs, unstable structures, missing windows and doors, etc. Other forms of slums refer to dense settlements with unconventional structures, where residents live in squalor and abject poverty, lacking sanitation, potable water, drainage systems and access to social amenities like schools, health care and recreational facilities (Bodadoye & Fakere, 2013: 45). In this instance slum refers to indecent and miserable living conditions alongside informality (UN Habitat, 2003)

Slums can be viewed as existing dilapidated buildings in inner cities that gradually deteriorate into slum conditions, due to over-crowding and over-stretching of physical structure, facilities and services particularly sanitation and waste management, without the necessary maintenance and management. This definition assumes that the building regulations are universal and that when not complied with, the problem is with the occupants and not the regulation, which often leads to the slumming of a building and the eventual decay of the urban inner-city.

Turner (1969 cited in Janssen, 1979: 69) notes that:

“...migrants within the city generally move from the centre to the periphery, i.e. from urban slums to informal settlements on the periphery of the city, fulfilling different kinds of basic needs: proximity to work opportunities, security of possessions,[and] modern standard of amenities”.

He explains that:

“...rural migrants first settle down in rental housing in the inner-city slums and once integrated in the urban economy, they begin to give more importance to security of tenure and move to the periphery of the city, where they build their own shelter in spontaneous informal

settlements. These areas often have very relaxed planning regulations and building control systems. The peripheral areas also offer neglected pockets of urban space on which migrants build their shelters”.

Turner goes on to describe the urban migrant in terms of their housing property relationships as sub-tenants, possessors or proprietors. He argues that the autonomous spontaneous building approaches bring about user appropriate dwellings that could achieve high use value and close fit between dweller and dwelling, offering a personal and warm dwelling. A distinction can thus be drawn between the slum dwellings that exist in rundown formal structures of the inner cities, and the autonomous spontaneous informal settlements that are often on vacant sites in the urban and peri-urban areas.

Furthermore, (Sugrue, 2005) describes how buildings in the Detroit inner-city declined due to uncontrolled urbanisation and consequential economic decline, as a result of the rich upper class leaving the inner city. Sugrue argues that the urban decay in Detroit was due to the convergence of ‘disparate forces of de-industrialization, racial transformation, and politico-ideological conformity’. Portions of the city deteriorated to slums, experiencing overcrowding and deterioration in housing conditions and racial segregation.

The slumming of the Detroit housing was commonly attributed to ‘individual moral deficiencies’, and not to a deficiency in the regulatory systems. Overcrowding in buildings is a major health concern, as it leads to poor air quality, generation of excessive sewerage and solid waste, which could lead to infestation and the spread of diseases if care is not taken, especially by the occupants. However, if the occupants are not enabled due to economic constraints that go with unemployment, to address these issues and the rich look away this allows a slum to develop. For this reason, it can be argued that formality has a direct relationship with household income, whereby as household income improves legality and formality of the dwelling will improve also.

The example of Detroit slums shows conventional buildings with secure tenure, experience urban decay and deteriorate into slums. Such sub-standard shelters with legal tenure constitute slums but are not necessarily informal settlements.

Other definitions relate to legality of occupancy that is the type of tenure held by occupants. Morakinyo, et al., (2012: 1) argue that informal settlements are dense settlements comprising

communities housed in self-constructed shelters, living under conditions of unconventional or traditional land tenure, like innovative self-build structures on land that lacks secure tenure such as traditional tenure. In this definition, informal dwelling refers to dwellings that are not held in accordance with the norm or conventional tenure system. This could imply that a dwelling could be self-built but meets the required norms in terms of building standards, yet with irregular tenure. From this definition it would be classified as ‘informal’.

Authors like Khalifa (2011: 40) have described slums as inclusive of all informal settlements, shanty towns and decaying inner city tenements. Yet still others make no distinction between the two especially in terms of definitions from country to country (Mpe & Ogra, 2014: 592). The definitions refer to defiance of usual requirements either in terms of health, safety or legality. From this premise, a distinction can be made between living conditions that meet basic health and safety requirements and those that do not, thus deviating from the required norm.

The array of informal dwellings has long included any of the above definitions that show a basic contravention of the required norm, and include the conventional-illegal dwelling, the unconventional-illegal dwelling and the legal-unconventional dwelling. The conventional-illegal dwelling refers to a dwelling of minimum building standards but on an illegal site, and the legal-unconventional dwelling refers to a dwelling that is of ‘substandard’ character but with secure tenure. Of course, other instances will be the unconventional-illegal dwellings.

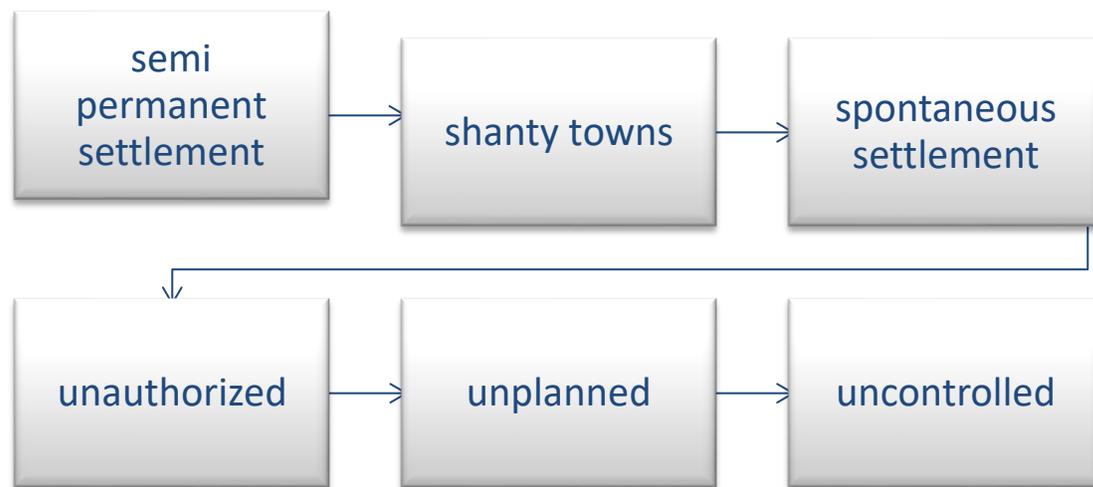


FIGURE 5-3 EVOLVING TERMS FOR INFORMAL SETTLEMENTS

With these all-inclusive definitions, it is no wonder that one third of the world's population is said to live in informal settlements. In South Africa the figure is 1:4 and is projected to increase to 1:3 by the year 2050 (UN Habitat, 2003) The UN Habitat (2015) records that in the world today 1:8 people live in slums and over 80% of these are in developing countries. The problem with this is that it affects planning and budgetary exercises. For instance, in estimating the number of slums in India, the UN Habitat reported a figure of 155 million, whereas for the same period the Indian authorities estimated 54 million slums, thus there is a need to make some distinction in the discussion of slums and informal settlements. If, however, the statistic is to include only those that overlap as shown in Figure 5-4 that number will be greatly reduced.

Whatever the definition or historic backgrounds, slums and informal settlements result in exposure to conflicts with authorities, diseases and hazards which make them a developmental concern to stakeholders such as land owners, government, neighbours and NGOs, health care authorities, child protection services and other environmental and human rights 'watch dogs'. It also remains a concern to the informal settlement dwellers, who live daily in inhumane conditions without basic services and infrastructure, and call for reactions which could be initiated by external forces to the settlement or community themselves. Similar to other settlement patterns, Smit (2016) argued that informal settlements are composed of complex physical forms closely aligned to social networks and livelihood activities. Others have noted "the inside of homes provides a microcosm of the hopes and dreams we would exercise outside its walls" (Levitan, 2007). It is about making a place to call home.

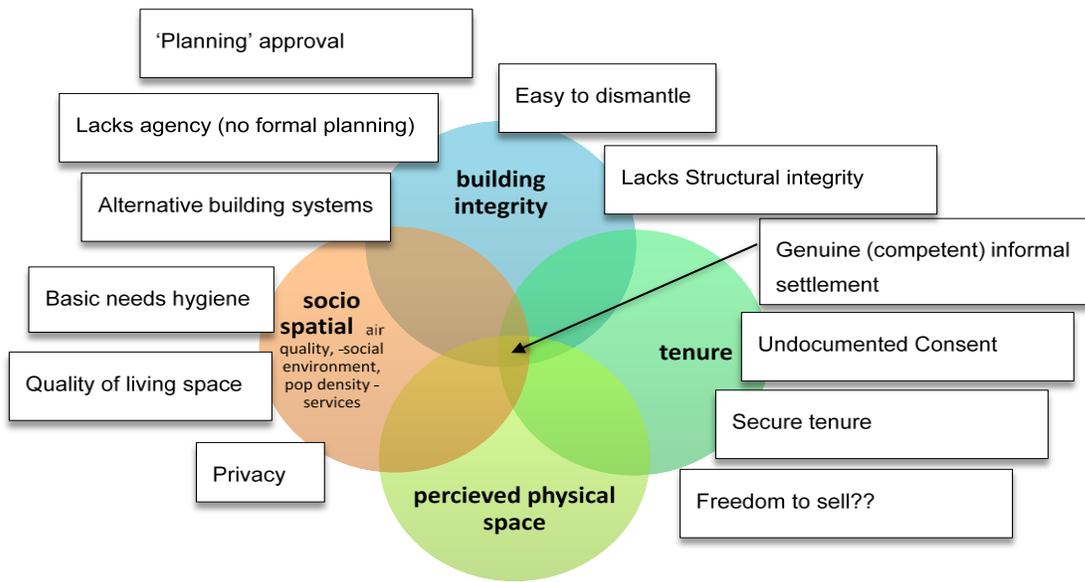


FIGURE 5-4 DEFINING INFORMAL SETTLEMENTS

SOURCE: AUTHOR

5.4.1 CONCEPTUALIZING INFORMAL SETTLEMENTS IN AN OBJECTIVE LIGHT

The presence of informal settlements in large cities is a common 21st century phenomenon. For example, it is not uncommon for slum settlements to develop in major cities or in close proximity to affluent areas. Examples of large slums are the case of Shimo La Tewa settlement in Mililani, Kenya (Khalifa, 2011); Ezzbet Abd El Moniem Riyadh in Alexandria Egypt (Menshawy, et al., 2011); Khayelitsha Capetown, South Africa (Mpe & Ogra, 2014); Mbare, Hatcliff in Harare, Zimbabwe, (Muchadenyika, 2015). In Durban, Patel (2013) carried out a study on the Zwelisha informal settlement.

To date, there are over 500 informal settlements in and around Durban. The common factor is access to livelihood, whereby the poor access employment (often informal and temporary) or engage in commercial activities either formal or informal, for economic survival. Despite the poor living conditions, many informal settlement dwellers have been able to survive and make the informal settlement a dwelling place.

The continued presence of informal dwellings in urban areas is blamed on the inability of households to access better housing options. For instance, Srinivas (2015) describes how low-income households are forced to squat on vacant land either by engaging with 'slum lords' in identifying a piece of land, or settle as a 'group of core squatters'.

Some blame this situation on failed policies (Menshawy, et al., 2011). El-Batran and Arandel, (1998) and others attribute the spread to the inability of governments to adequately deal with the issues of rapid urbanisation, population growth, ever-increasing poverty, and the inability at institutional level to deal with the population demand for housing (Majale, 2008: 273). According to the World Bank, informal housing is synonymous with bad governance, corruption, inappropriate regulation, dysfunctional land markets, unresponsive financial systems, and a fundamental lack of political will. Informal settlements provide dwelling places for the majority of the urban poor (Lombard, 2014).

However, the phenomenon of informal settlements is one that offers freedom from regulations which are often foreign to the rural urban migrant. Others have argued that informal settlements do have some positive characteristics. The UN Population Fund, for instance, suggests that despite the poor living conditions informal dwellings are positive both environmentally and socially. They also argue that informal settlement dwellers appear to have better opportunities for getting jobs, starting small businesses and climbing out of poverty than those in the rural areas. Against all odds, they develop economically, and rationally, building innovative shelter solutions for themselves. This view is supported by Harvey (2008), who argues that informal settlement dwellers have a right to the city, and that in fact they are the dynamic in bringing forth the untapped informal economy and local economy strategy, thus having the ability to create jobs and sustain households.

When viewed from the perspective of the informal settlement dweller, it has been argued that the informal is in fact 'normal' (Ojo-Aromokudu & Loggia, 2016). Furthermore, informal settlements provide a place at an affordable rate to immigrants as they navigate their way into the urban environment (UN-Habitat, 2003). The informal settlement dwellers could also be seen as real estate speculators in the urban areas for both the rich and the poor (UN-Habitat 2016). Despite spontaneity and lack of planning others have argued that urban informal housing is usually well integrated with the terrain (Stewart, 1991). Lombard (2014) rightfully argues that

due to the gaps in an understanding of informal settlements the discursive constructs are usually outside of the normal.

Despite being described as dwelling places of the urban poor with inhumane living conditions, some researchers are beginning to conceptualise such places in a positive light. For example, Winkler (2014: 487) describes Hillbrow in Johannesburg as a port of entry for many who desire to engage in the perceived economic opportunities of the city. The informal settlements have been recognised also as “a terrain of habitation, livelihood and politics” (Roy, 2011: 224).

5.5 CONCLUSION

This chapter has outlined the influence of power and social dynamics in society on the built form expressions. Gramsci’s theory of social groupings demonstrates how building norms and standards are imposed on a society. It shows how migration of indigenous knowledge is transferred and transformed due to various experienced realities. It has been argued that the factors influencing the production of space in informal settlements are complex, ranging from factors at micro, meso, and macro scales, and include individual aspirations. In delivery of professional services, the role of the architect has been examined highlighting issues of conflict of agency and power, arguing that the affairs of the society must remain the key concern. It is argued that each society has a ‘particular universal’ which refers to a pattern of communication or expression, and that can be articulated

The chapter has shown how the definition of informal settlements has been loosely used in terms of any one of three criteria – building integrity, socio-spatial quality of space, tenure arrangements, instead of a combination of all. In this way informal settlements as a challenge is loosely conceptualised and thus the responses are often inappropriate. Further to this the chapter has attempted to make a distinction between slums and informal settlements.

In the next chapter, the three case studies are discussed. The eThekweni metropolitan area is located in the province of KZN. It is highly built-up with many industries and rural areas on the periphery (Green, et al., 2008). Green also identifies dense rural areas outlying cities and offering a range of social services to the neighbouring communities. The municipality, like all urban centres in South Africa, is serviced by a good road network that links the municipality to the greater provincial and national areas. However, road networks to the lower density rural

areas are often unplanned or informal and, if present, are of lower engineering quality. There is ease of movement along the national and provincial routes, but more difficult movement to and within the rural areas.

CHAPTER 6 CASE STUDIES

6.0 INTRODUCTION

This study is about conceptualising a new vernacular architecture by examining the spaces generated in and around the dwellings of informal settlement dwellers. This study argues that informal settlements do not conform to the building standards expected in the urban areas, but instead have traces of experiential practices in the use of space, informed by the traditional life styles of the rural areas. The chapter introduces the study area and case studies, which are located in the eThekweni metropolitan area.

Reviewing the background of the case studies, allows for a better understanding of the opportunities and challenges of each settlement. The chapter is structured by using three spatial levels of city, neighbourhood and lastly, dwelling (interior and exterior), which is the focus of the study.

6.1 INFORMAL SETTLEMENTS IN ETHEKWINI MUNICIPALITY

The eThekweni municipality is located in KZN on the east coast of South Africa, with a population of approximately 3.4 million. KZN is one of the nine provinces of South Africa. It is estimated that a quarter of its total population lives in informal settlements (eThekweni Municipality, 2015: 252). In terms of spatial development, 45% of the municipal area in South Africa is considered rural, 30% peri-urban and 25% urban.

The rural areas are characterised as hilly and rugged terrain with widely dispersed settlement patterns. Dwellings are arranged in clusters on land held by a traditional land ownership system which recognises extended family structures. It is a close personal system, commonly found in the rural (tribal) areas and some African townships¹⁵. The terrain and dispersed layout of dwellings poses a challenge in the delivery of services, leaving many settlements deprived of basic water and sanitation, and long distances to essential social services such as schools and clinics.

In research carried out by Green et al. (2008), three settlement typologies were identified based on population densities. These were urban, dense rural, and rural (see Table 6-1). From a service

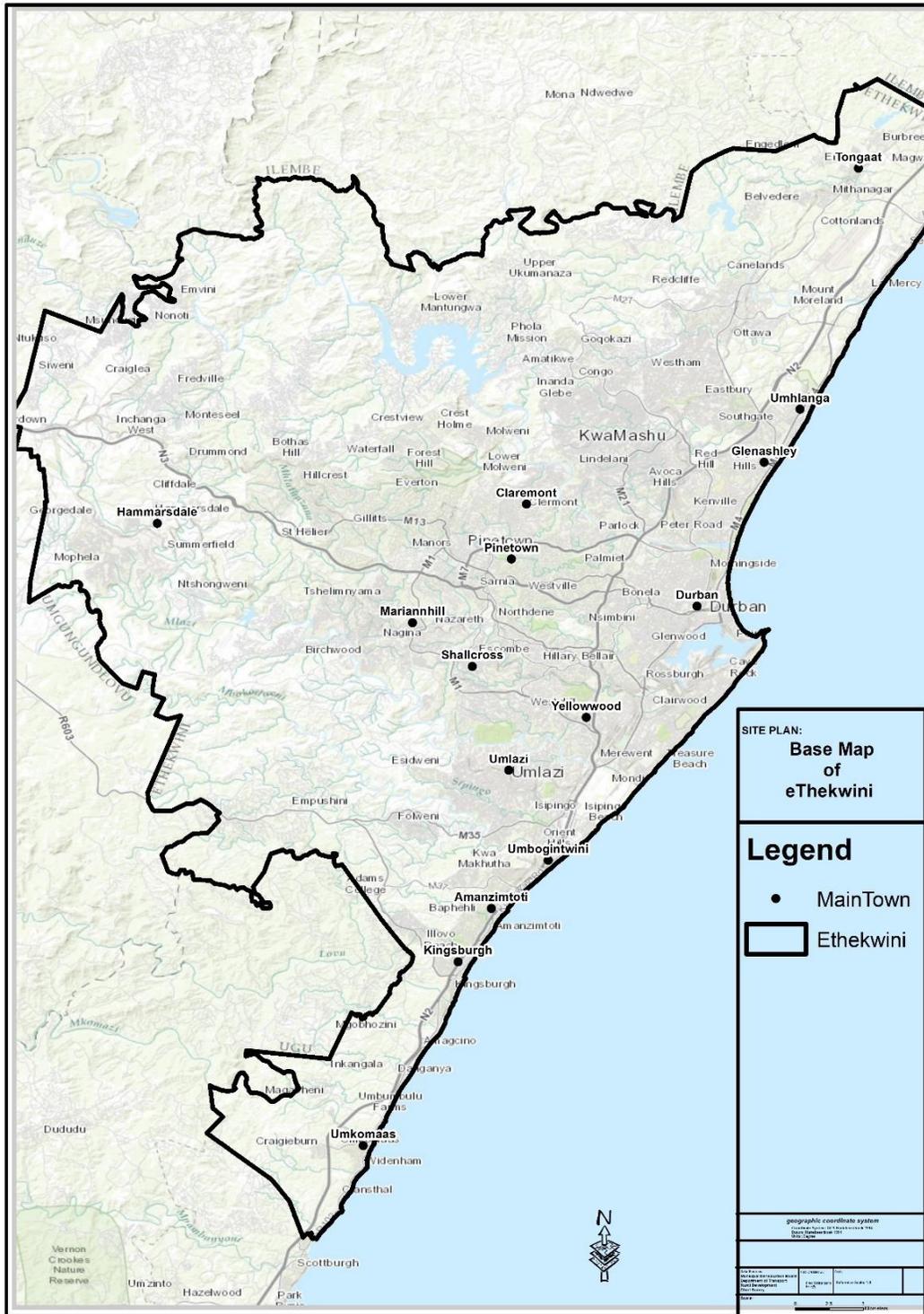
¹⁵ Townships are racially discriminated residential areas reserved for black people, under the apartheid bantu administration.

delivery point of view this categorisation becomes appropriate as it allows for the clustering of services for effective delivery. The survey showed that 50% of the municipal land could be considered rural and about 10% higher density rural. A number of the dense rural settlements is to be found in the urban peripheral areas surrounded by traditional subsistence agriculture and scattered traditional dwellings. The rural is described as peripheral to cities, with large areas where the population is below six people per hectare, and the dense rural as areas having more than six people per hectare, but disjointed from major urban areas (Green et al., 2008: 10). These areas are poorly serviced and experience a high level of migration to the better serviced urban areas. The dense rural settlement typology is arguably outlying developing cities, surrounded by less developed traditional settlements. Such outlying centres include Dududu, KwaDukuza (formerly Stanger), Ndwedwe, and Ulundi located along the national route north of Durban, and Umtata in the Eastern Cape (see Map 6-1).

TABLE 6.1 SETTLEMENT TYPOLOGY

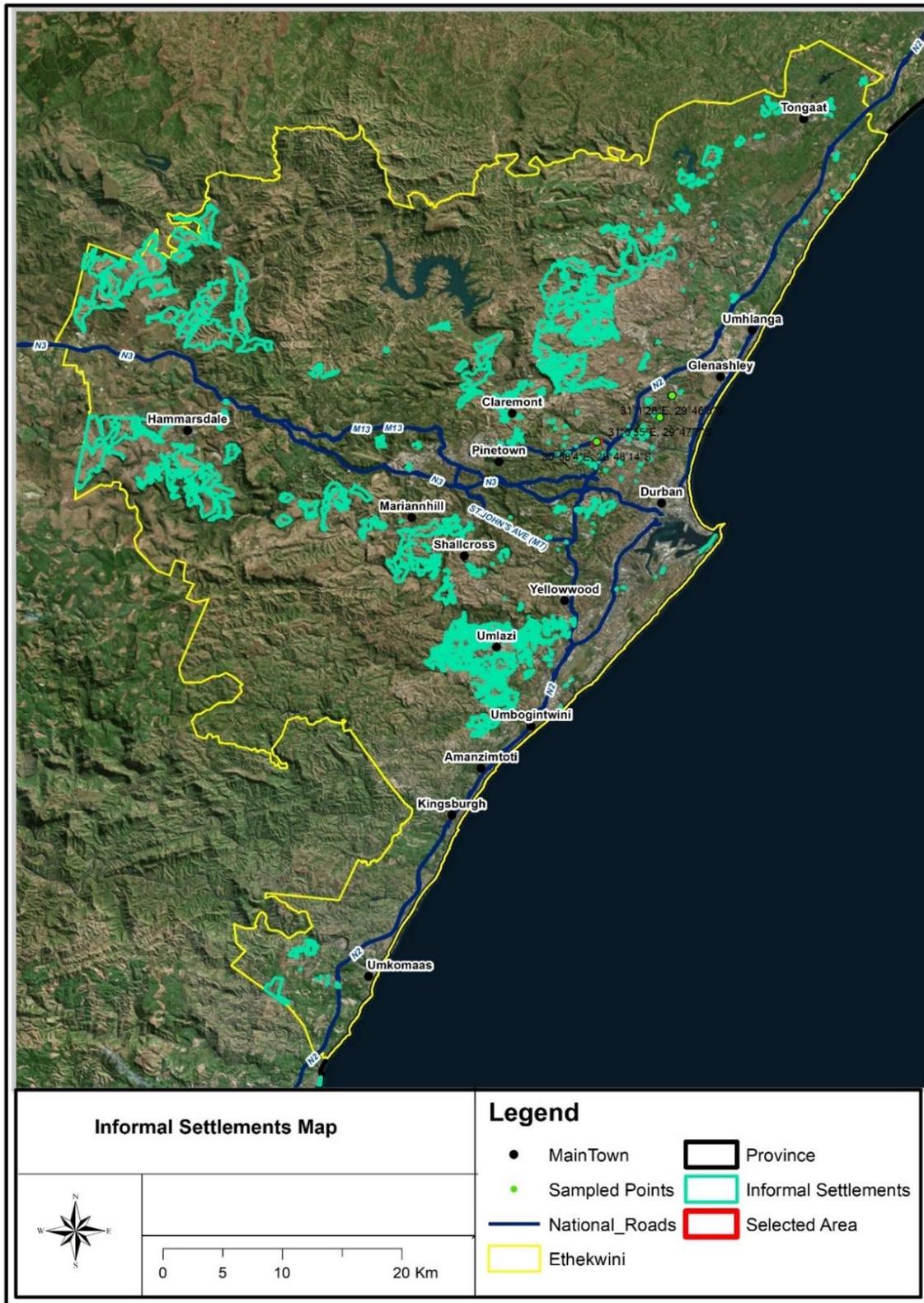
	Description	Density
Rural	Outlying cities	Less than six people per hectare
Dense rural	Outlying cities offering a range of social services to the neighbouring communities. But disjointed from major urban areas	More than six people per hectare
Urban	Major cities. More densely developed and have better services and economic activities.	

Source: (Green et al: 2008)



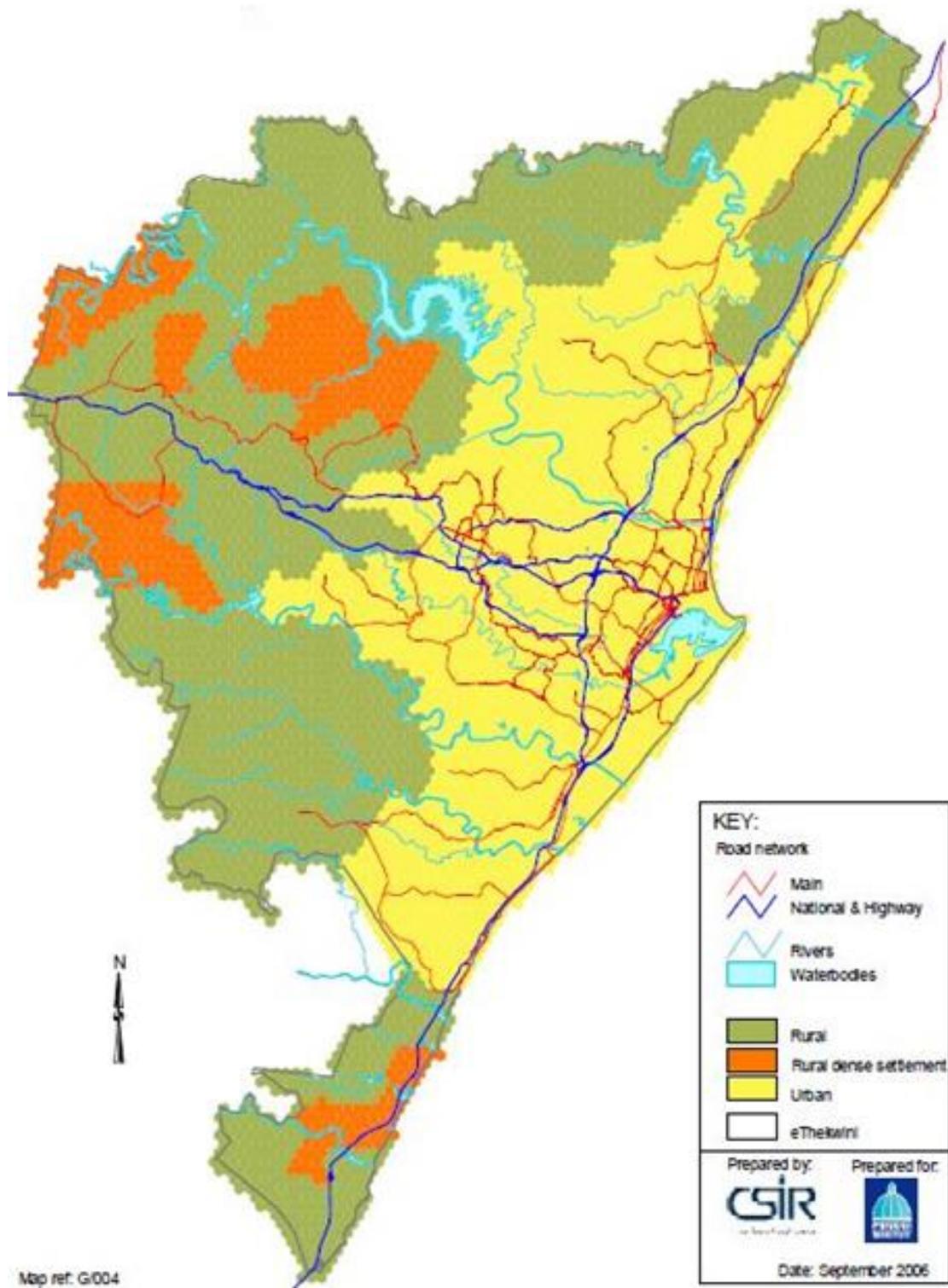
MAP 6-1 LOCATION OF eTHEKWINI MUNICIPALITY

SOURCE GIS 2018



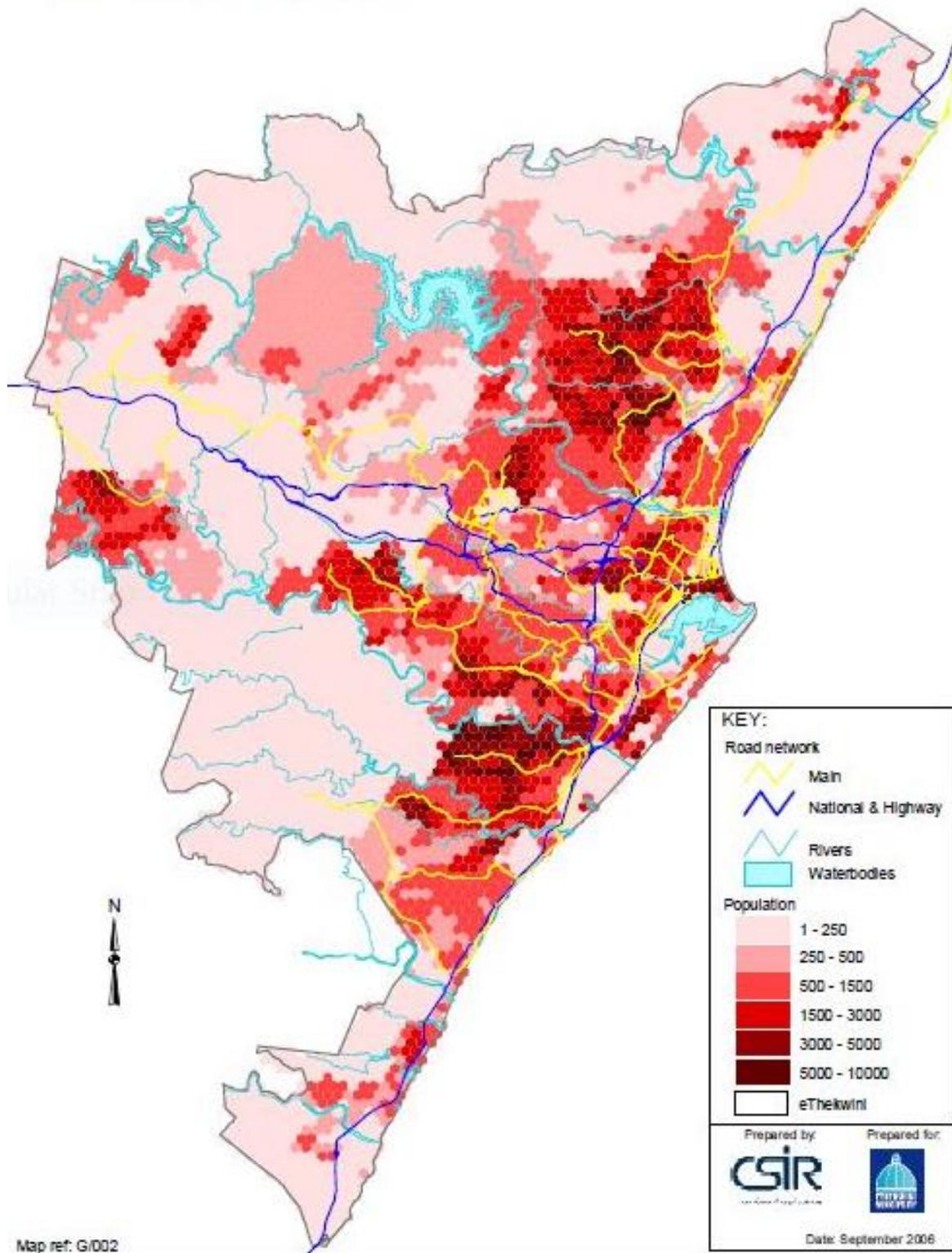
MAP 6-2 MAP OF INFORMAL SETTLEMENTS IN eTHEKWINI

SOURCE GIS



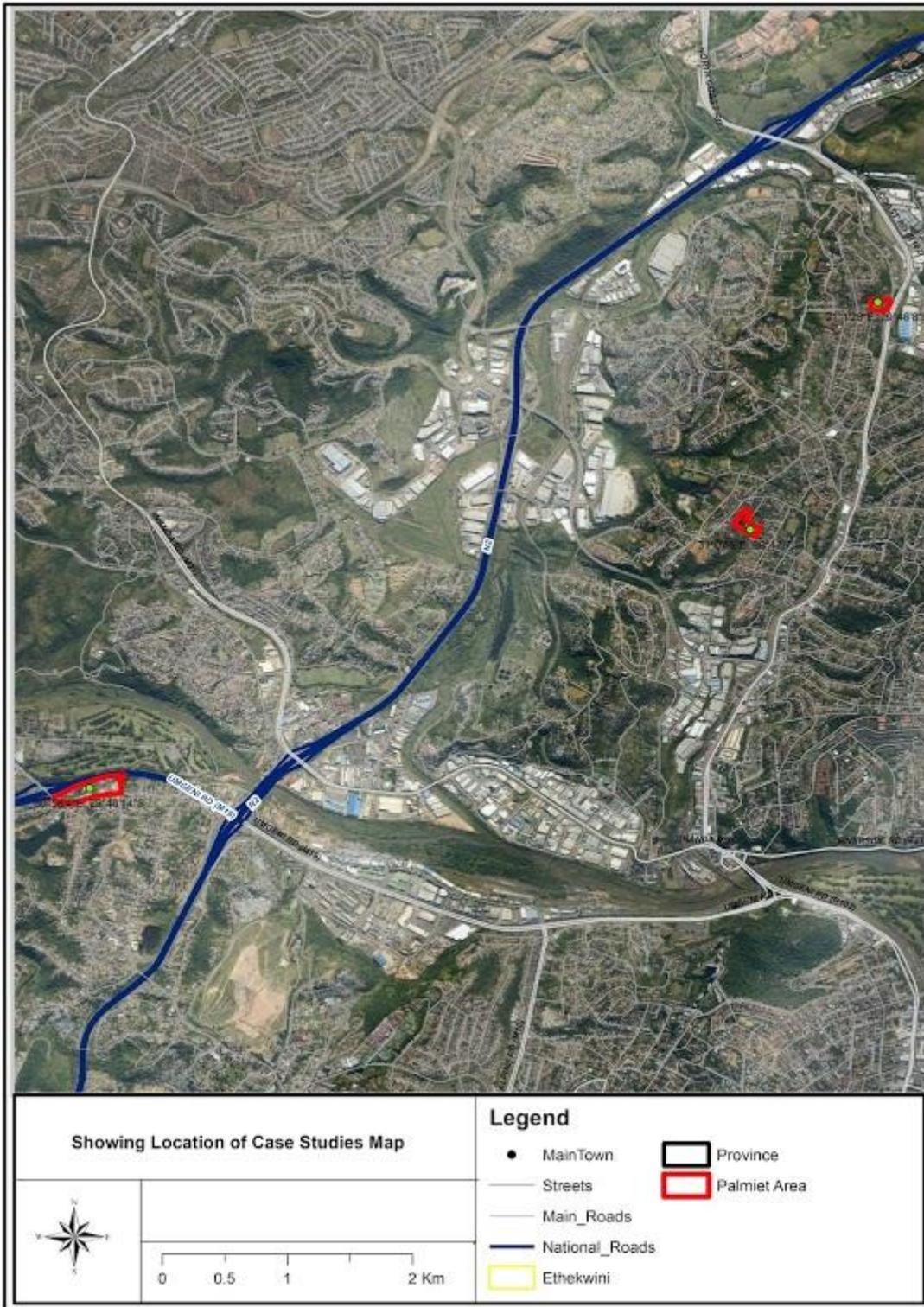
MAP 6-3 SETTLEMENT TYPES

SOURCE: CITED IN GREEN ET AL (2008)



MAP 6-4 POPULATION SPREAD AND NATIONAL ROUTES AND HIGHWAYS

SOURCE: CITED IN GREEN ET AL (2008)



MAP 6-5 CASE STUDIES IN WARD 23 AND WARD 34

SOURCE: GIS

The traditional way of life in the rural areas involves a number of social and agricultural related activities, such as subsistence farming and rearing of livestock. Generally, the rural areas lack economically viable prospects and have limited services to offer the community.

The municipality is serviced by good road and rail networks (see Map 6-4), which link the municipality to the greater provincial and national areas, allowing ease of movement along the national and provincial routes. The relatively good road networks allow for ease of movement along the national and provincial routes. However, road networks to the inadequately serviced, lower density rural areas are often of a lower engineering quality grade, sometimes unplanned and informal, resulting in more difficult movement within the rural areas.

Bearing in mind the racial segregation during the apartheid years, movement has not always been free. Over the past 20 plus years, migration into the urban areas has increased at an alarming rate, such that the urban areas have not been able to cope with the resulting housing demand.

Migration is recognised as one of the major factors contributing to population growth, in urban areas. Migrants seek the benefit of being located closer to transport and social services, have better access to water and electricity (whether legal or not), and a better chance at economic opportunities. The South African Census, 2011, records that migrants to the municipality come mainly from KZN. In wards 23 and 34 where the case studies are located (see Map 6-), the majority of migrants are from KZN followed by Eastern Cape as shown in the table below. It is assumed that migrants opt for the informal settlements due to their inability to engage with the urban housing market.

The eThekweni municipality recognises three types of informal dwellings, i.e. single dwellings (shacks), backyard and the formal informal (i.e. formal dwellings with irregular title), see Table 6-1. The strategic response by the state, which was once an intensified effort to eradicate informal settlements, has shifted to in-situ upgrade and an incremental approach which starts off with installation of basic services in settlements. Clearly identified in this process is the need to provide interim services which include water and sanitation services, and waste removal. The clustering of the settlements proves advantageous in the process of providing such services, as a group of households can be reached with one installation (eThekweni Municipality, 2016: 251).

As at 2012 Statistics South Africa records that there were approximately 420 informal settlements within the municipality located on fallow land within the city and peripheral areas, often in flood plains or on steep land (eThekweni Municipality, 2016). The same report records that the number had increased to over 500 by 2016.

TABLE 6-1 INFORMAL TYPOLOGIES IN ETHEKWINI MUNICIPALITY

		Rural		Urban (Informal dwellings)	
1	Single dwelling (shack)	26,949	25.98%	265,542	83.61%
2	Cluster (“Umuzi”)	70,317	67.80%		
3	Back yard (informal dwellings in formal areas)			48,975	15.42%
4	Formal-informal (formal dwellings with no secure tenure)	6,449	6.22%	3,096	0.97%
		103,715		317,613	

Adapted from (eThekweni Municipality, 2016/2017, p. 73)

6.2 INFORMAL SETTLEMENT- NEIGHBOURHOOD CONTEXT

The selection of the case studies was based on a number of factors. The key factor was the need for case studies in an urban area as opposed to a peri-urban area where informal settlements also exist. The eThekweni municipality was selected for its proximity to the urban centre and presence of over 500 informal settlements scattered within the municipal area. Other factors included the accessibility to the settlement and the presence of leadership structure (formal or informal).

eThekwini is reported to rank “as the second largest economic centre in South Africa and is the second most significant industrial region in South Africa; it is a promising global competitor with a world-class manufacturing sector” (eThekwini Municipality, 2016:121). This is evident from the number of industries located in the area supported by the rail, road, sea and air transport centres. The presence of a manufacturing industry has a number of consequences in the area, such as environmental pollution, solid waste management, transport logistics challenges, etc. that not only constitute problems but also provide opportunities in the area for those unable to engage with the housing market.

The municipality has made many efforts to monitor the spread of informal settlements, initiating programmed interventions, especially to provide water and sanitation as interim services. More long-term interventions include in-situ upgrade and re-settlement in more appropriate locations. The proposed interventions are based on a pre-assessment taking into consideration the social, environmental and developmental conditions of the site. For example, the area may not be suitable for development as a human settlement due to flooding or it may be earmarked for other infrastructural developments such as roads, or set apart as urban green zones.

The settlements were identified with the assistance of the Slum Dwellers International (SDI), who has long standing relationships with informal settlements in major cities of the world, including the eThekwini municipality (Durban city). Two settlements were located in ward 34 and one in ward 23.

Records show there is a reasonably high concentration (50%) of people aged between 20 and 49 years, indicating a high employable population in ward 34. In terms of race almost 50% are black African, 38% Indian or Asian and 12% coloured. The white population is negligible. The predominant language spoken is English followed by IsiZulu and isiXhosa. Very few people also speak Afrikaans or isiNdebele. According to Statistics SA (2011) the ward 34 experiences a high level of migration, mostly (83%) from within the province, which is in line with the municipal migration pattern that also shows migration predominantly from the province. 7% of migrants to the ward are from the Eastern Cape and a few (4%) from outside South Africa. Migrants are also from the Gauteng and the Northern Cape. A very high percentage (over 81%) of residents is employed in the formal sector, while 9% are employed in private households as domestic workers and 7% in the informal sector. The figures show that the ward attracts

migrants due to the employment opportunities available in the area. The ward is serviced with social services such as a school and clinic.

Table 6.2 below shows the employment figures for the study area compared to provincial and national statistics.

TABLE 6-2EMPLOYMENT IN STUDY AREA COMPARED TO PROVINCIAL AND NATIONAL RECORDS

	eThekwini (Ward 34)	KwaZulu- Natal	South Africa
Formal sector	81.4%	75.9%	74%
Informal sector	7%	12.6%	12.2%
Private household	9.5%	8.8%	11.4%
Do not know	2.1%	2.7%	2.4%
	100%	100%	100%

SOURCE: STATISTICS SOUTH AFRICA

6.2.1 HAVELOCK

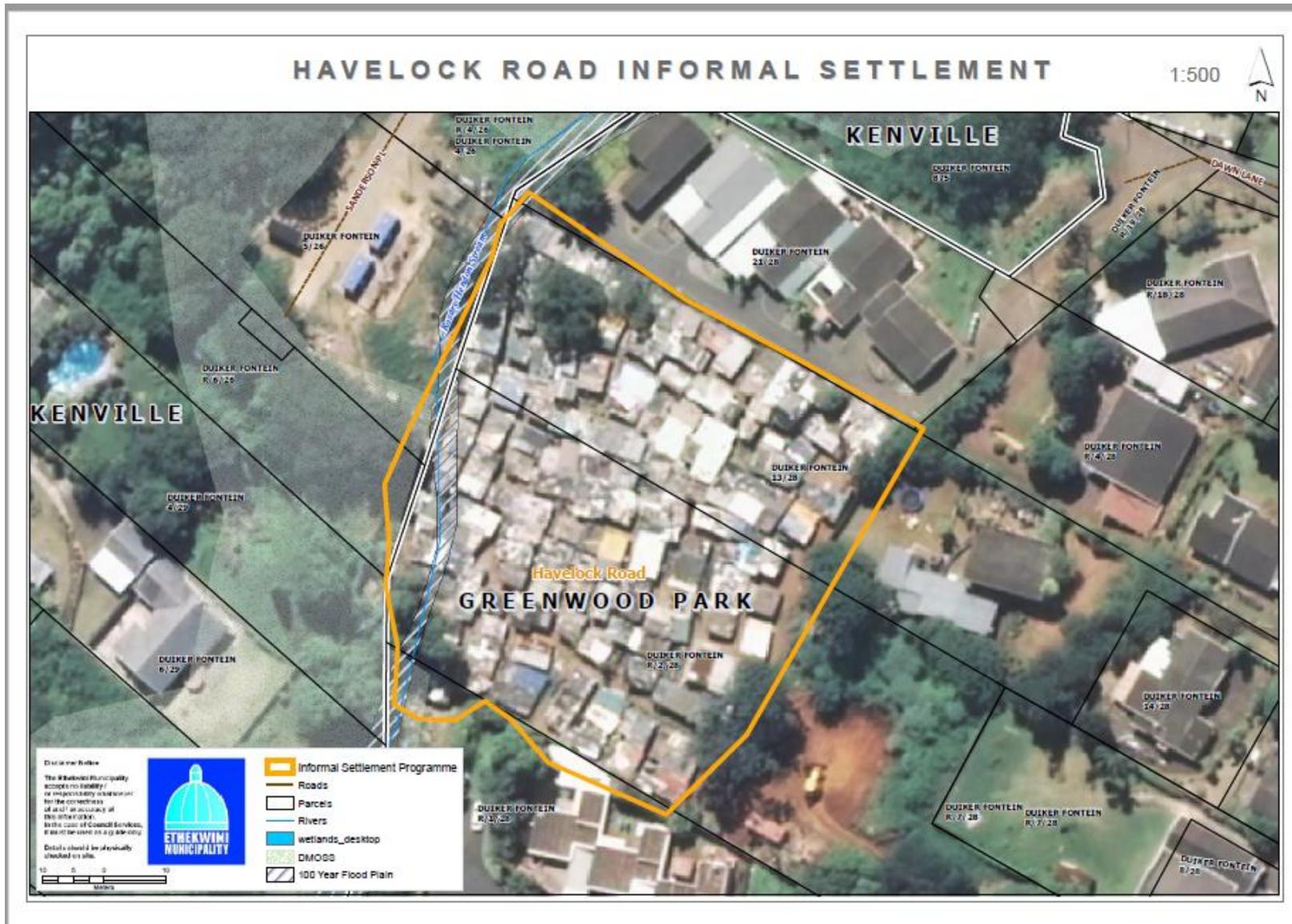
The Havelock informal settlement (referred to as Greenwood park informal settlement by the municipality) is located in Greenwood Park, North of Durban in ward 34. Greenwood Park is accessible through Sanderson Place, a tarred road on the north-west side. This road is shared by other private residential properties and opens up into the Durban Metropolitan Open Space System (DMOSS) area. A pan-handle access is from Havelock Road located on the south-east side. The site slopes steeply from Havelock Road towards an open storm water channel along Sanderson Place (see Map 6-7)

The settlement is located on two privately owned plots with pan-handle access through Havelock Road. It is zoned for residential development, bordering on the DMOSS. The settlement is tucked into the natural vegetation hidden away from the public. First impression of the low-rise and very dense settlement is one of a hamlet. Three narrow footpaths off the tarred road lead into the settlement and into a maze-like path to the dwellings. The majority of

the dwellings are single rooms; however some two and three room dwellings are also recorded. Apart from residential purposes, observations show some entrepreneurial activities. The dense settlement is built against a slight hill and is bordered by a stream (which is prone to flooding during heavy rains) on the east, a church on open ground by the road on the west and a built up row-housing scheme on the north and south. The land is privately owned, and the municipality proposes to upgrade the settlement in-situ.

Interim service interventions by the municipality provide basic water, sanitation and waste collection services for the residents. The ablution blocks supplied are serviced by members of the community and are locked at night for safety reasons.

Through the intervention of the SDI Community Organisation Resource Centre (CORC), the community was able to organise themselves to carry out an enumeration exercise in 2012 using a very detailed questionnaire. The report records that the first resident, a coloured man and his wife, built their shack with the consent of the landowner in 1986. This was during the apartheid years when the Group Areas Act restricted the presence of black people in the white suburbs after working hours. Over the years the settlement has grown organically and by May 2017 it was recorded to have 227 informal dwellings. Footpaths are narrow and dark due to the proximity of the dwellings to one another, many with obstructions from the protruding corners of roof coverings



MAP 6-6 Havelock (greenwood Park) informal settlement



MAP 6-7 HAVELOCK (GREENWOOD PARK)

Source: Google Maps access 28 July 2018

The settlement is literally ‘electrified’, with live electric cable connections from the neighbouring properties, supported by trees on the periphery of the settlement, and running in the footpaths to the dwellings. This poses a deadly hazard to community members (and their visitors), especially when it rains. It was noticed during the field work that people do not walk about without shoes in this settlement, due to the high risk of getting electrocuted.

The enumeration records carried out by SASDI a highest percentage of persons (67.9%) between the ages of 21 and 50. This is followed by children between the ages of 0 and 5 years (pre-school age) at 10.03%. Another 70% are under the age of 36 years. 55% are male and 45% female. The report notes that relationships with the household head vary some being spouses, children, or relatives. Others indicated no relationships and are likely to be tenants as recorded in the report.

The settlement experiences annual flooding in the low lying section of the settlement along Sanderson Place, with ongoing rising-damp problems. The settlement records two major fire outbreaks in 1999 and 2007, with another minor one in 2016. Residents report that the fire outbreaks are an annual occurrence.

Migration records of the settlement is in line with that of the ward; the majority of residents are from the KwaZulu-Natal province (85%) followed by the Eastern Cape (12.81%). According to the enumeration report, the majority reported their high hopes of employment as reasons for moving to the settlement, other reasons for moving in include affordable rentals.

6.2.2 NORTH COAST ROAD INFORMAL SETTLEMENT

KwaMathambo informal settlement (known as North Coast Road or Avoca Informal settlement by the municipality) is located in a residential area of Ward 34, 10km north of Durban, close to the industrial area of Avoca. Access is off the tarred Chris Hani (Old North Coast) road. The site is very steep, with three dilapidated buildings, which have been invaded. As with Havelock, the SDI Community Organisation Resource Centre (CORC), carried out a community enumeration in 2012, and reports as follows:

“The first settler was an Indian gardener, who invaded privately owned land, when he had to move out of his employers premises on the expiration of his contract in 1991. During the apartheid years, it was illegal for non-whites to own land or live in white suburbs. As at 2012 when the enumeration was conducted, the settlement extended over three privately owned properties with 565 people in 294 dwellings. The dense settlement is built on very steep terrain through self-help efforts. Interim services provided in two ablution blocks for male and female residents. Electricity is connected illegally by some residents.”

In 2013 the settlement experienced a fire outbreak and another one in 2015. A portion was also relocated to the new Cornubia mega housing project further north of Durban and others who are still to be relocated, were rehoused in emergency housing provided by the Local Authority. Almost 75% of the population is below the age of 36 years. Most are household heads and others are related in one way or another. The report records that renting out of shacks is happening. The enumeration data shows that the majority of residents are from within the province and others mainly from Eastern Cape.

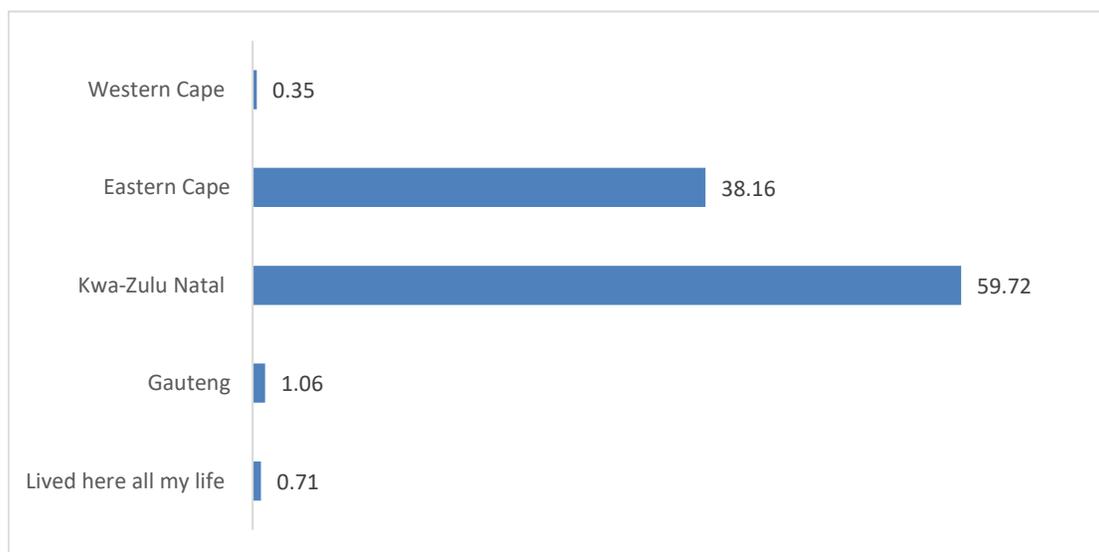


FIGURE 6-1 PREVIOUS PLACE OF RESIDENCE

SOURCE: SDI ENUMERATION REPORT 2012



MAP 6-8 KWAMATHAMBO INFORMAL SETTLEMENT

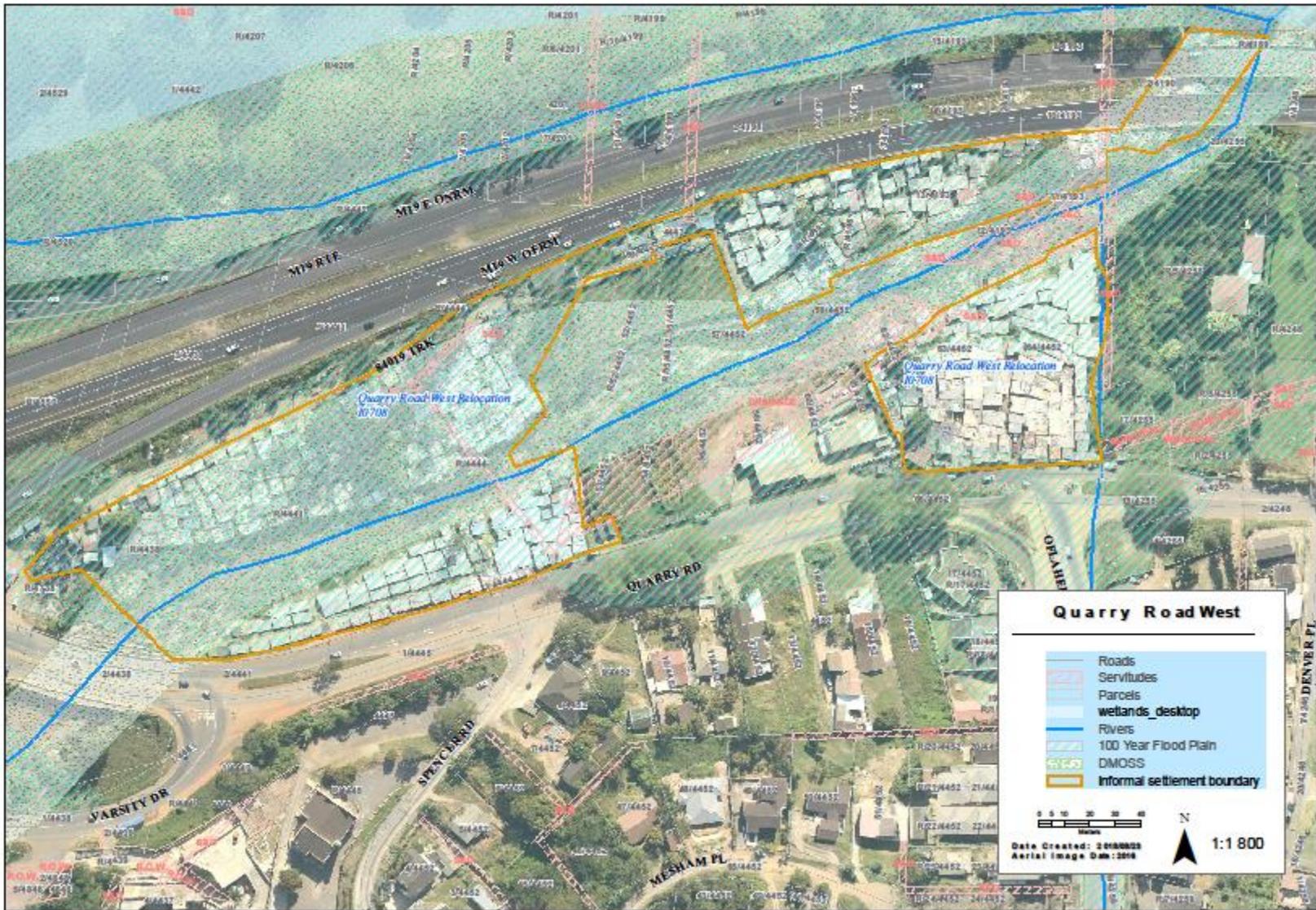


Source google Map access 28 July 2018

6.2.3 QUARRY ROAD WEST

The Quarry Road West informal settlement (also known as KwaMasuthu, or Mampondweni to the resident and referred to as Palmiet by the municipality) is located in a flood plain along the Palmiet River, in ward 23 north of Durban. Land ownership is both private and state owned, and a portion is unregistered. Bordered on three sides by hard street edges, the land is zoned residential and petrol filling station. The east side opens up into the Durban Municipality Open Space System (DMOSS). The dwellings sprawl from the junction of the M19 and Quarry Road West, on the narrow piece of land along the Palmiet River. Access to the site is along Quarry Road West, even though other sides are porous. Enumeration carried out by CORC in 2011 records the settlement having a population of 1650 in 550 households. The site is divided by an existing stream which floods is causing extensive erosion along the banks on which informal dwellings seats.

There are four municipal ablution blocks for use by the settlement, other municipal services include waste collection and monitoring of flood activities of the Palmiet River. Electricity is illegally connected from electrical poles along the street. In the southern portion, the municipality has provided emergency shelter in response to a fire outbreak that occurred in 2016. These units are supplied with electricity.



MAP 6.9 QUARRY ROAD WEST



MAP 6-10 QUARRY ROAD WEST

Source google Map access 28 July 2018

The Table 6-3 summaries the three settlements. The characteristics of the dwelling, which is the core concern of this research are discussed in the following chapter.

TABLE 6-3 SUMMARY OF CASE STUDIES

EThekwini ID	Havelock road	North Coast Road	Quarry Road West West
Name of settlement	Havelock	KwaMathambo	KwaMamSuthu
Alternative _ name	Sanderson Place	Old North Coast Road	Quarry West Road
Proposed intervention	In-situ Upgrade	Relocation	Relocation
Proposed intervention	In-situ Upgrade	Relocation	Relocation
Ward	34	34	23
Planning Unit	Greenwood Park	Avoca	Palmiet
Latitude	29° 47' 7.068" S	29° 46' 8.489" S	29° 48' 14.103" S
Longitude	31° 0' 55.629" E	31° 1' 28.115" E	30° 58' 4.962" E
Region	Northern	Northern	Northern
No of structures	227 (2012) 294 (2017)	162 (2012) 277 (2017)	1000 (2012) 550?? (2017)
Landowner	Private	Private / Unregistered	Private / State / Council / Unregistered
Zoning	Duplex 900	Special Residential 650 & Special shopping	Petrol Filling Station & Extended Residential 650
Zoning	Existing Residential/DMOSS	Existing Residential	Existing Residential/DMOSS
Time established	15 - 20 years	15 - 20 years	>20 years
First settler	1986	1991	1993?
Ablution blocks	yes	yes	yes

6.3 BLACK WHITE IMAGE OF SETTLEMENTS

The black and white imagery of the settlements is used to analyse the spatial arrangement of the settlement. The white areas represent buildings and the black areas are spaces between the buildings. Close inspection indicates the foot paths between the dwellings and some larger areas. These are further investigated, the findings are discussed in Chapter 7. It is noted that some obviously larger black areas within the settlement are large trees. The images show high densities in the case studies.

	Aerial view	Black white image
	 <p data-bbox="297 1094 423 1125">Havelock</p>	
	 <p data-bbox="297 1581 500 1612">KwaMathambo</p>	

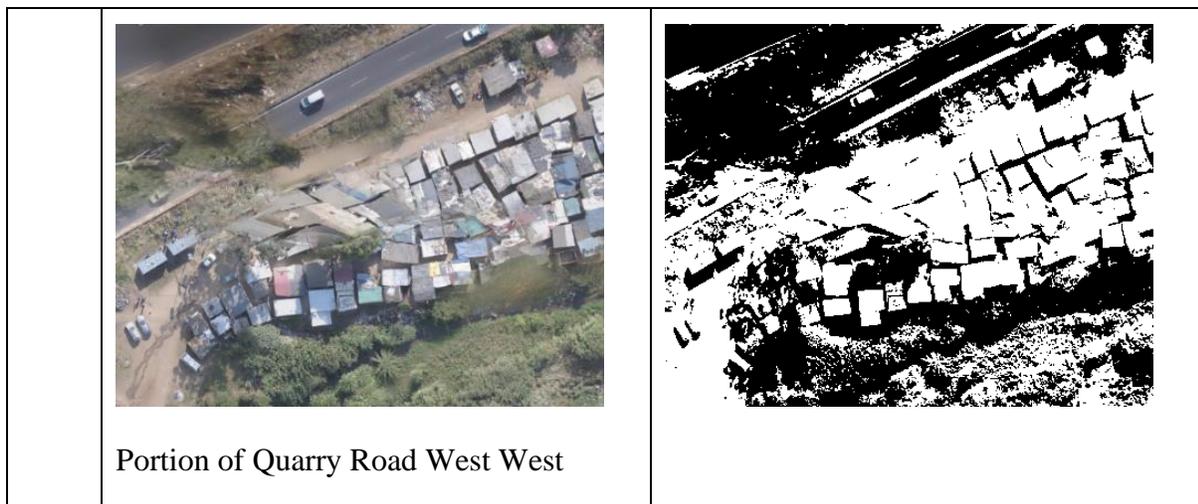


FIGURE 6-2 SETTLEMENTS IN GREY SCALE REFLECTION

6.4 CONCLUSION

The chapter has given an overview of the informal settlements in eThekweni municipality and the local and provincial context in which the case studies are found. A description of each case study is presented, describing the context and access to the settlement. The aerial view of each settlement is presented in the black and white imagery to show spatial patterns at settlement level. The analysis of the spaces is presented in Chapter 7.

The definitions of the three types of settlement patterns recognised by the municipality, i.e. rural, dense rural and urban areas. These are presented on various maps, along with the national routes and highways within the municipality. Further to this, the chapter discussed the four informal typology found in the municipality and makes a distinction between the *umuzi* settlements of the rural areas and those found in the urban area. The data shows that the single dwelling shacks are most common typology in the urban areas. Elements for illegality was noted in all the settlements. Apart from illegal land occupation, illegal electricity connections, extending from municipal electric poles, to trees within the settlement and running on the ground to individual dwellings, was a common occurrence. This created a very hazardous environment which was worsened by annual flooding in all the settlements. Residents were from rural settlements and easily accessed the urban areas via the national and provincial road networks. They displayed self-organising skills, often with the involvement of a structured organisation such as the CROC- SDI. The next chapter presents data collected during the field work.

CHAPTER 7 DATA PRESENTATION

7.1 INTRODUCTION

This chapter starts out by presenting an overview of the selected case studies and describing the narratives of the respondents. The data was divided into daily activities, spatial patterns, systems of forces and procedure. Extensive fieldwork was conducted from July 2014 to July 2018 in three case study areas located within eThekweni Municipality (Durban), and data was collected through semi-structured interviews, observations and photographs. A total of 72 residents from three different settlements were interviewed. Twenty-four respondents from each settlement were carefully selected using the targeted stratified sampling method as described in 2.3.3. Respondents were inclusive of the four representative groups i.e. those from rural areas, those from formal urban areas, those from dense rural areas and those from other informal dwellings. A life-history approach was also used as the second phase of interviews with selected key informants from the three settlements.

Data collection methods were employed to get first-hand information from the residents in their dwellings. The triangulated use of three methods of collecting data i.e. a semi-structured interview, observations, and photo-voice, were the means of validating the data collected. Ideally an ethnographic methodology would have given first hand insight to the happenings in the dwellings and settlements. Due to safety uncertainties and time constraints this method was not adopted. The photo-voice method allowed for a snapshot into happenings in the dwellings and settlements at night. It also allowed unobstructed observation of activities within the dwellings, as the occupants would be more familiar with the person taking the photographs than an outsider. In order to further validate the data a focus group was organised for each settlement and preliminary findings were presented to the community. This method provided a grounded approach for the development of an applicable theory.

This chapter provides a joint report on the findings from the three settlements, which could be generalised as characteristic of informal settlements in the eThekweni municipality. Limited comparisons were made between the three settlements; however major differences in terms of establishment history were noted.

7.2 SUMMARY OF METHODS

Below is a summary of the methods used. A detailed description is provided in Chapter 2.

TABLE 7-1 SUMMARY OF METHODS USED

Method	Havelock (HV)	KwaMathambo (KM)	Quarry Road West (QR)
Structured interviews assisted by community researchers and student researchers	26	23	23
Observations - done by photos taken during the interviewing process and guided walk about in the settlement	yes	yes	yes
Photo voice	yes	yes	Yes
Presentation of preliminary findings to the community	yes	yes	Yes
Secondary data	yes- existing community- led enumeration records	yes- existing community-led enumerations records	yes -published articles
Life history - in-depth interview	Yes	Yes	Yes
Drone photography	Yes	Yes	Yes

Source: Author 2017

7.3 BACKGROUND OF HOUSEHOLDS

The following section presents the data from the interviews with the residents. The interviews were divided into four sections which questioned demographics and background, attitudes about dwelling, dwelling activities and lastly aspirations. A copy of the interview schedule is attached as Appendix 11.1

7.3.1 PREVIOUS PLACES OF RESIDENCE

A high number of the respondents had moved into the settlement from rural areas, particularly Eastern Cape and KZN which is in line with the existing statistics. The data also showed that over 60% of respondents were from either the rural or dense rural areas of the Nguni-speaking Bantu people of South Africa (i.e. Xhosa and Zulu). See Figure 7-1

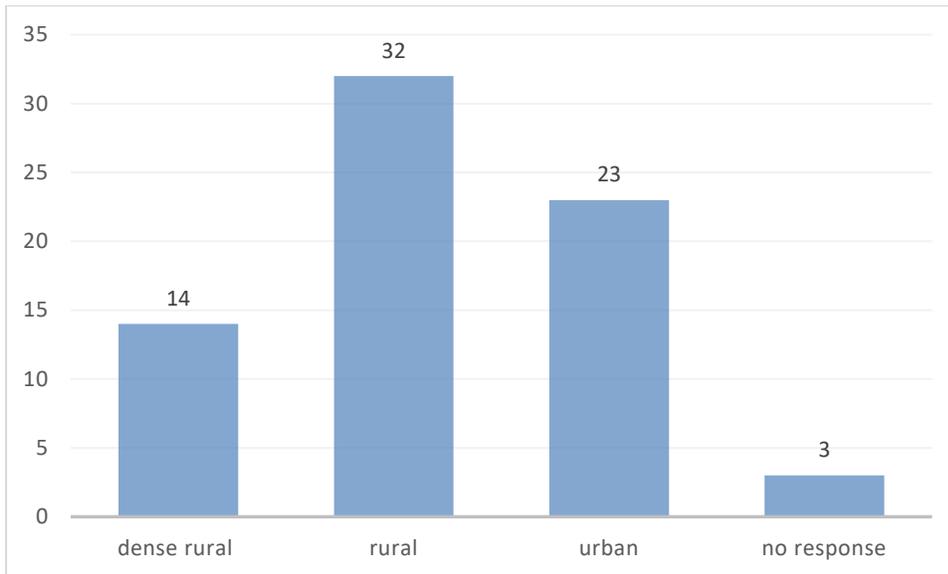


FIGURE 7-1 PREVIOUS RESIDENCE BEFORE MOVING TO INFORMAL SETTLEMENT

Urban residential was inclusive of all the types of accommodation within the suburban, urban areas and the inner city, such as hostels, informal settlements and reserves. Figure 7-2 shows that the majority of residents from the urban areas previously lived in informal settlements, reserves and suburban areas. This indicates a high level of inter-settlement migration. The high numbers moving from suburban areas can be explained by the loss of employment with live-in benefits. Respondents reported to have had no other choice but to move into the informal

settlements on losing jobs that came with accommodation benefits. Other reasons included unrest in previous places of residence, or the desire to be closer to schooling opportunities for their children.

Other responses included “I got retrenched and was forced to move out...”; “There was community unrest where I lived previously, and also for job opportunities”; “I had company accommodation, I was retrenched I was forced to move out”.

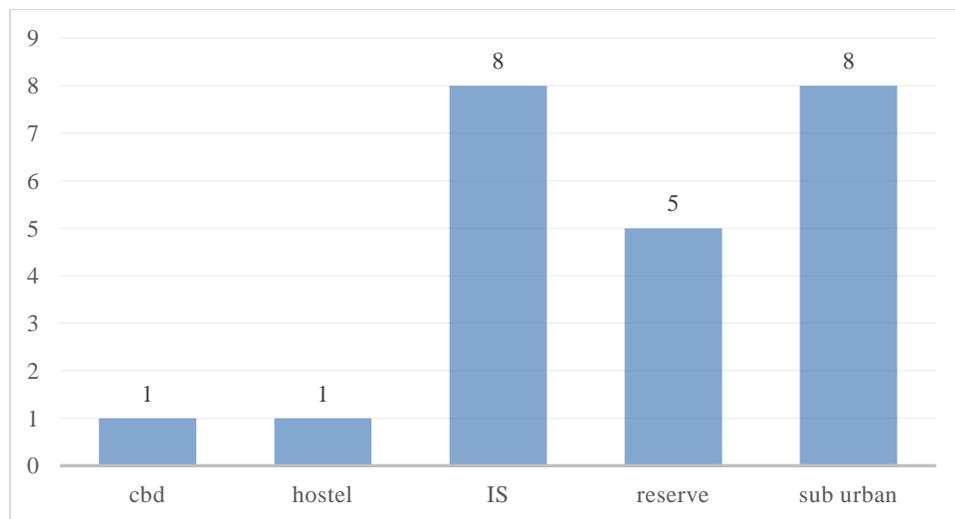


FIGURE 7-2 URBAN TYPES

The main reason for moving into the informal settlement was driven by the pull factors of being closer to job opportunities. However, data revealed a range of other reasons for coming to the informal settlement as presented in Table 7-2.

Table 7-2 Reasons for moving to the informal settlement

	Reasons given
	Community unrest in previous residence
	To be closer to place of education
	Retrenched – had to move out of previous residence
	Came to care for mother’s property

	House where I lived burnt down
	Came to join family member: sibling, parent
	Came to join spouse
	High rental in previous residence
	Ease of living
	Limited space in previous residence

The data presented in Figure 7-3, shows that a total of 92% of respondents were born in rural and dense rural areas which represented traditional areas. Less than 10% were actually born in the urban areas. This reflected the first-hand exposure of most of the residents to traditional building practices and dwelling systems and showed that a high percentage of residents had migrated from the rural areas.

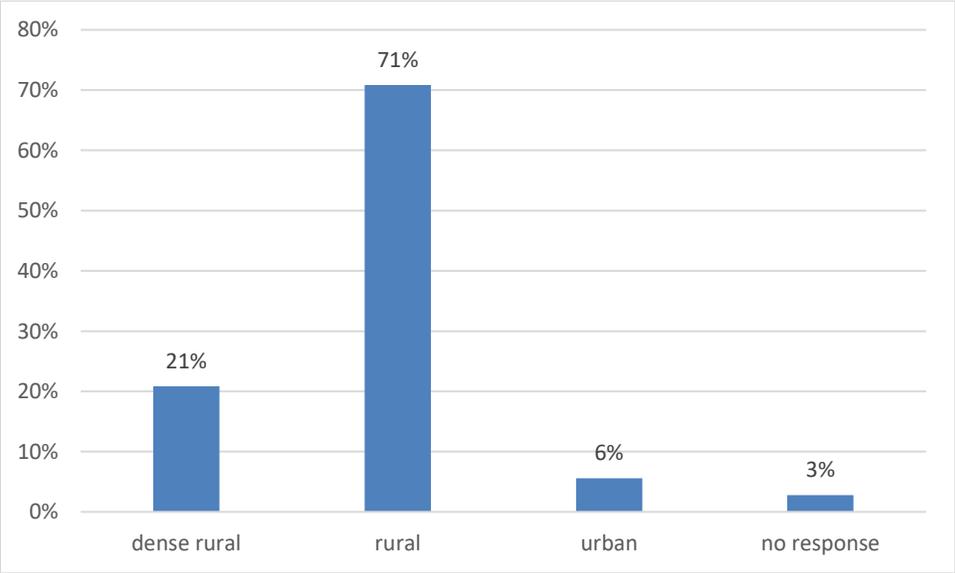


FIGURE 7-3 NUMBER OF RESIDENTS BORN IN THE RURAL AND DENSE RURAL AREAS

7.3.2 MIGRATION PATTERNS

With the assistance of NVivo software, the data was sorted and grouped into the following categories – Rural, Dense Rural and Urban, whereby outlying settlements were found in rural areas with a population density of less than six persons per hectare; dense rural areas were those with more than six persons per hectare, but disjointed from a major city, and the urban areas contained more than six people per hectare. With reference to Map 6.3, the settlement patterns were such that there were pockets of dense rural settlements within the rural areas that were outlying to the urban areas. In fact, it displayed a radial pattern with the urban areas as the centre, and dense rural settlements concentrated towards the west and south of the province, towards the Nguni land.

The data showed that over 50% of the residents migrated directly from the rural and dense rural areas (see Figure 7-4). The data also showed that there were both backward and forward migrations between the rural and dense rural areas before arriving in an informal settlement. Other patterns noted were movement from rural to dense rural (or vice versa) before arriving in an informal settlement. Using the following abbreviations, movement patterns of respondents on migration patterns and are listed below and presented in Figure 7-4

ddi -dense rural to dense rural to informal settlements

dri -dense rural to rural to informal settlement

rdi – rural to dense rural to informal settlement

rri – rural to rural to informal settlement

ruu – rural to urban to informal settlement

udi- urban to dense rural to informal settlement

uri -urban to rural to informal settlement

uuu urban to urban to informal settlement

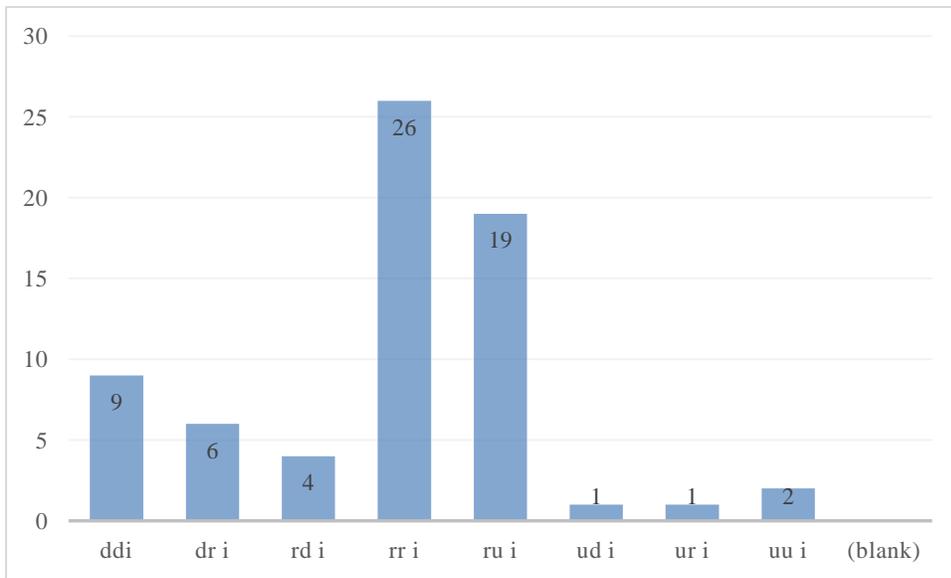


FIGURE 7-4 MIGRATION PATTERN

Interestingly, there was a migration pattern from urban areas into the informal settlements. Two cases were noted of respondents moving in from the furthest away urban areas to dense rural or rural before relocating into an informal settlement. This pattern confirms Turner's theory that it is usually the poor who move from the rural areas to settle in the urban areas and then move on. But instead of relocating in peripheral areas, the data shows that the urban poor moved to areas with more autonomy, thus allowing them to engage in the traditional building practices they were more familiar with.

It was also noted that with the far away origins there was an intermediary stop over before arriving in the settlement; for instance one respondent who came from Maputo, had stopped over at Redhill suburb as a live-in domestic worker, and when she lost her job she relocated into the informal settlement. She explained that this had been a better option than returning to the rural area, as it enabled her to look for other jobs in the urban area. Another respondent from Johannesburg had stopped over in Newcastle, before moving to eThekweni. While the research did not interrogate the length of stay in the transit places and any involvement in construction, the characteristics of the stop-over towns were also analysed and are reported in the next chapter. From the above it can be concluded that there are the original homes, the stop-over towns and the receiving homes. This is illustrated in the Figure 7-5. The furthest original home was Maputo which is beyond the borders of South Africa.

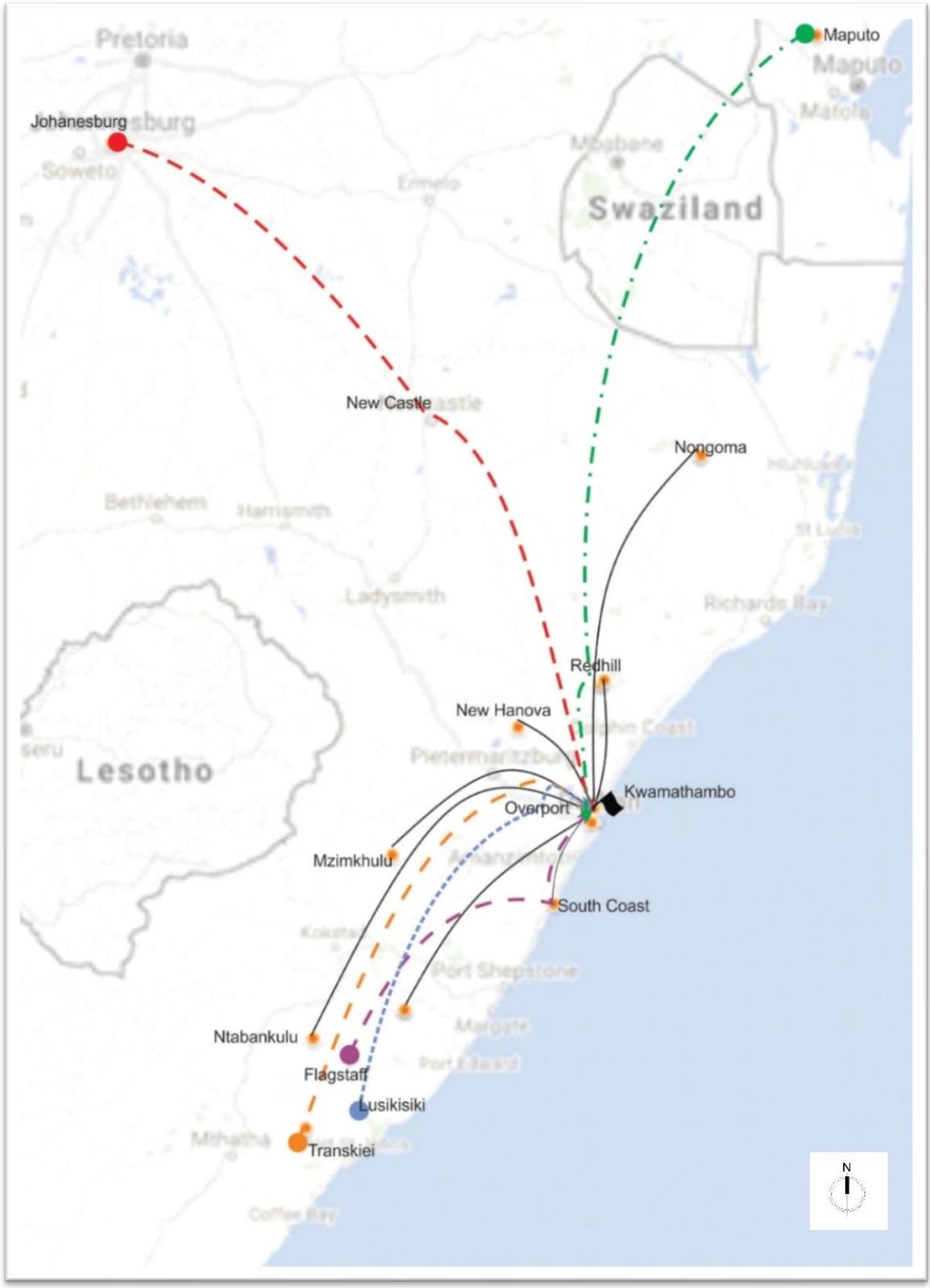


FIGURE 7-5 MIGRATION PATTERNS FROM ORIGINAL HOMES

7.3.3 ORIGINAL HOME AND LAYOUT IMAGERY

In this section the characteristics of the original homes are discussed. This was where the respondents lived before coming to the informal settlements. As discussed earlier, the rural areas have strong characteristics of vernacular language and self-help efforts whereby householders take charge of building responsibilities. The involvement of agents, such as architects, is limited or totally non-existent. This is evident from the kinds of dwellings that are erected. However, the ‘genius loci’ is immediately perceived once one enters the area. According to Claude Levi-Strauss (1958) as discussed in Chapter 3.2, this is due to “space being an external projection of social and mental processes”. Thus, the mental processes of culture and tradition dictate existing building practices as perceived in the environment. Building norms are commonly known amongst the residents, practised and passed down from one generation to another with minimal effort.

In order to read layout patterns, the aerial photos were reduced to black and white images revealing the built-up areas as white and the undeveloped areas a black . The black and white images of rural communities reflected a few small dwellings clustered together, while the urban areas presented larger buildings in a more rigid lay out. In the dense rural areas the dwellings were less densely laid out than in the urban areas (see Figure 7 6). Further observation of google satellite images showed similar layout patterns, indicating that this was common practice, and it can be argued that this layout knowhow is in fact passed down from one generation to another. It goes beyond Alexander’s idea of unarticulated patterns, as the layout of these rural areas is captured in the well-documented vernacular architecture of the Bantu people.

<p>Classification</p>	<p>Rural KwaZulu-Natal -Maphumulo</p>	<p>Dense rural Eastern Cape Lusikisiki</p>	<p>Urban KwaZulu-Natal Suburb-Redhill Durban</p>
<p>Aerial view (Google Maps)</p>			
<p>Black and white image</p>			
<p>Street view (Source Google Maps)</p>			

FIGURE 7-6 ORIGINAL HOME

Source: Google maps (accessed November 2017)

7.3.4 FREQUENCY OF VISITS HOME AND PREVIOUS BUILDING EXPERIENCES

The data shows that residents keep close ties with the traditional areas, i.e. their original homes. The majority visit 'home' at least once a year, others on a quarterly or monthly basis. This data revealed that the collective building know-how is kept alive in the minds and so it can be argued will continue to be an external projection in the built environment. There were, however, a few respondents who indicated they had cut ties with their original homes.

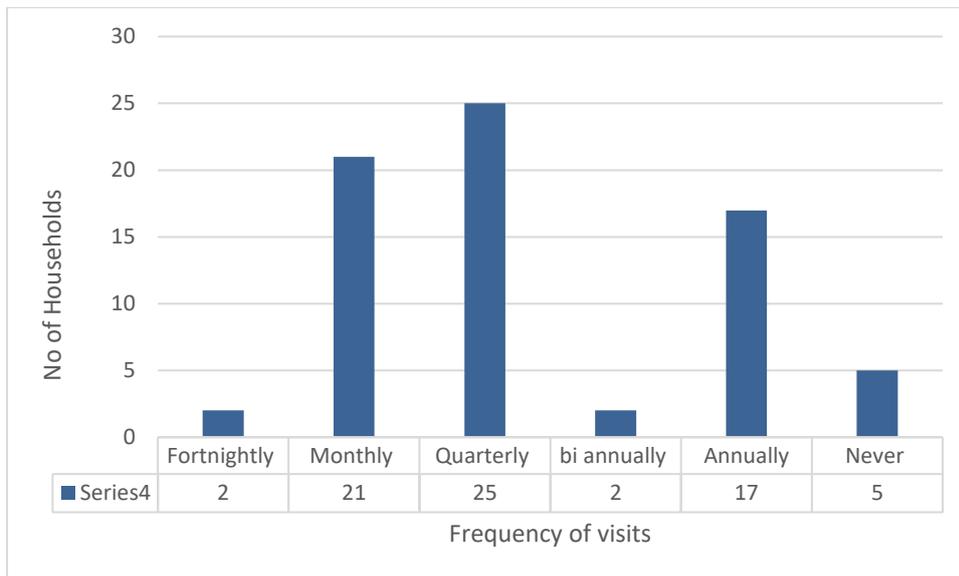


FIGURE 7-7 FREQUENCY OF VISITS 'HOME'

When asked about previous building experiences, respondents indicated they had been involved in the construction of their homes at one time or another. The nature of the involvement is grouped into gathering of building materials, digging, painting placing, and assembling. It is noted that the terminology used relates to the roles and processes involved in the erection of a traditional dwelling. Respondents did not only refer to buying of materials but rather used the terminology of collecting and assembling the dwelling. These findings are represented in Figure 7.8 which shows an interaction with informal alternative sources of materials in the urban areas.

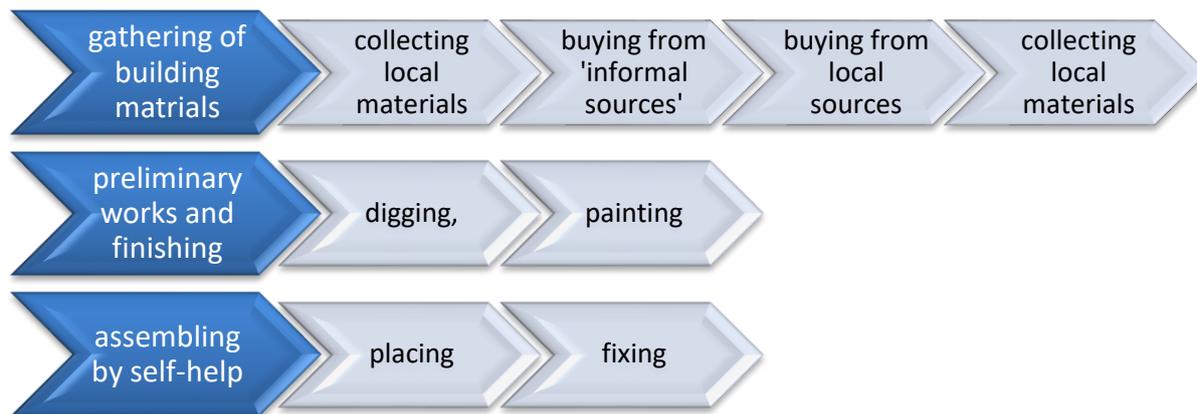


FIGURE 7-8 DWELLING CONSTRUCTION PROCESS

7.3.4.1 HOUSEHOLD SIZE

The typical household size consisted of two to four occupants as presented in Table 7-3. Several dwellings were occupied by one person while some households comprised in excess of four persons. There was usually at least one adult in the household. While this was the case in the settlements, it may not have been a true reflection of the ‘household’ when compared to traditional household definitions. As described in Chapter 4.3, the traditional household is accommodated in more than one *umuzi*, with a very clear hierarchy in the allocation of dwellings based on the position in the family. It was therefore not uncommon for an individual to occupy a single room and access associated facilities outside of the single-room dwelling. The single-room dwelling is closely linked to the traditional building methods and materials which limited the dwelling to a basic structural form, with one entrance and often no other openings.

TABLE 7-3 HOUSEHOLD SIZE

	1	2-4	above 4	No response
Havelock	10	11	3	2
KwaMathambo	3	16	4	0
Quarry Road West	4	13	3	3
	17	40	10	5

7.4 THE PHYSICAL DWELLING SPACE

The dwelling space was typically one multi-functional open space of not more than 24sqm. The dwelling was used for sleeping and other domestic activities such as cooking, bathing, washing, relaxing and praying. It was observed that the definition of space was usually determined by the placing of furniture such as the bed or stove. In a syntactical analogy the placing of furniture gives meaning to the space i.e. the identification of place. For instance, a shelf with sweets and other provisions easily accessible in a dwelling could indicate the commercial activity of a tuck shop this is illustrated in Figure 7-9.

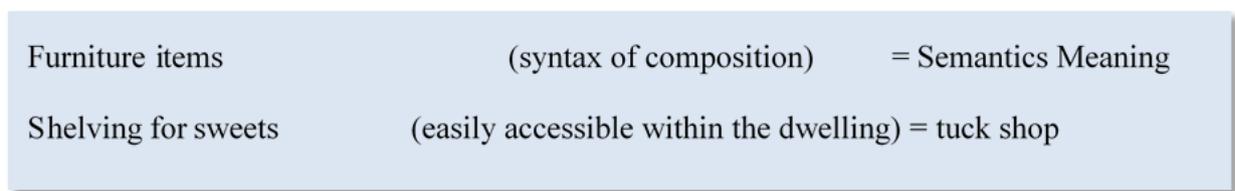


FIGURE 7-9 SPATIAL LANGUAGE OF THE TUCK SHOP

Other income generating economic activities conducted within the dwellings included service works such as dress-making and hair-dressing. The activities within the dwellings are discussed further in a later section.

The physical structure of the dwellings showed non-professional capabilities of the household that could be considered visceral in nature. Interior head room was sufficiently high enough for human occupation, but not necessarily for human comfort. The Figure 7-10 shows the low rise of the dwellings along the foot path and low head room within the dwelling.



FIGURE 7-10 LOW-RISE DWELLINGS

7.5 BUILDING MATERIALS

Building materials used were sourced locally predominantly from nearby factories. It was observed that a great deal of these were recycled material. Such as packaging, crates and water proofing materials. The basic structure could be described as a post and beam structure whereby there are the main supporting poles, providing the structural frame for the dwelling. The floors were observed to be unfinished. In some instances, water proof carpet, or cloth carpets were laid on the floor as a floor finish. This made it easier to clean and also gave the occupants a sense of ownership of the space.

Walls were made of various materials and served the function of defining space, and gave a level of privacy. Corrugated iron sheets were nailed onto the varying sizes of timber poles which provided a structural frame for the dwellings. In some instances, the timber slats were infilled with *dagga* which is the traditional method of constructing walls. In very few instances brick work was used for walls. It was observed that the windows, where present, were recycled window frames inserted in the wall. Window filling was either of timber or glass. The roofing materials used were mainly corrugated iron sheets, held down by a few nails and weights such as tyres placed on the roof. Cardboard and plastic were also used for roofs and walls. The building materials commonly used is summarized in Table 7-4

TABLE 7-4 BUILDING MATERIALS COMMONLY USED

	<i>Uplastiki/</i> Water proof	Timber	Glass	Corrugat ed sheets	Brick	Umhlabathi (earth)/ Stone	Miscellaneous
Wall	Y	Y	Y	Y		Y	
Window	Y	Y	Y				
Roof	Y			Y			Cardboard
Floor finish	Y				Y	Y	Carpet Concrete
Door		Y	Y				
Window frame		Y					

7.5.1 SELF-HELP EXPERIENCES

Respondents reported to have personally physically built their dwellings, clearing the site and erecting their structures. While some respondents inherited the dwelling from a family member, others were given emergency structures by the municipality. This was specifically the case in KwaMathambo where the municipality had intervened after a fire outbreak in 2016. Other respondents did not build but moved into an already existing dwelling to join a spouse or other family member.

The building process started by identifying the site on which the structure was to be erected. The majority of the respondents reported to have come to the settlement by invitation of a family member, co-worker or other acquaintance from their previous places of residence. For example, a female respondent reported that “*My sister used to stay here and invited me to live with her*”.

In other instances, the dwelling was inherited from an aging parent who had returned to the rural area. For instance, the respondent said: “*My mother owned the dwelling and when she retired back to the rural area, she asked me to stay there*” and yet another said “*My grandfather helped to locate the dwelling*”.

Other ways of identifying the site have been by individuals identifying the settlement individually either because they worked in the area, or were so directed. In one instance, the respondent indicated that he started out first by renting and then located a spot on which to build his own shelter.

Once the site was identified, building materials were collected or gathered for the different elements and components of the dwelling. In KwaMathambo, some respondents reported to have collected the materials from Briardene i.e. a nearby suburb. The site was then cleared, the corner posts erected, and roof erected the same day. Respondents reported to have built their dwellings themselves with assistance from neighbours, or other family members. While most respondents reported that building materials were scarce and they had resorted to gathering materials from the suburb of Briardene, few indicated that they bought planks from other members of the settlement. A male respondent said, “*I bought planks from the chair person (...)*”. This indicated that while collecting materials for their own buildings, residents had taken the initiative to continue gathering materials and selling to other would be builders. In fact the findings revealed that a number of units were rented out by residents of the settlement of the settlement.

Taking small loans from family members was also a way of getting funds towards the construction. For example, a male participant explained that “*My brother helped me with money to buy materials*”. This displays a reliant of social networks within the community.

Majority of the respondents reported to have had previous construction experience and had full participation in the construction of their dwellings. This related not only to the erection or assembling of the building but included gathering building materials. It was therefore not surprising that almost all respondents reported to having had a sense of ‘ownership’ of the dwelling even though they did not own the land. It must be noted that in KwaMathambo a number of respondents resided in an emergency shelter, which gave them a sense of security as being recognised by the state with the hope of accessing subsidised housing.

In comparing the settlements, the data showed that there was a higher dwelling ‘ownership’ level in Quarry Road West and the least in Havelock, probably due to the age of the settlement (see Table 6-3). Figure 7-11 show the number of dwellings owned and those being rented in each settlement.

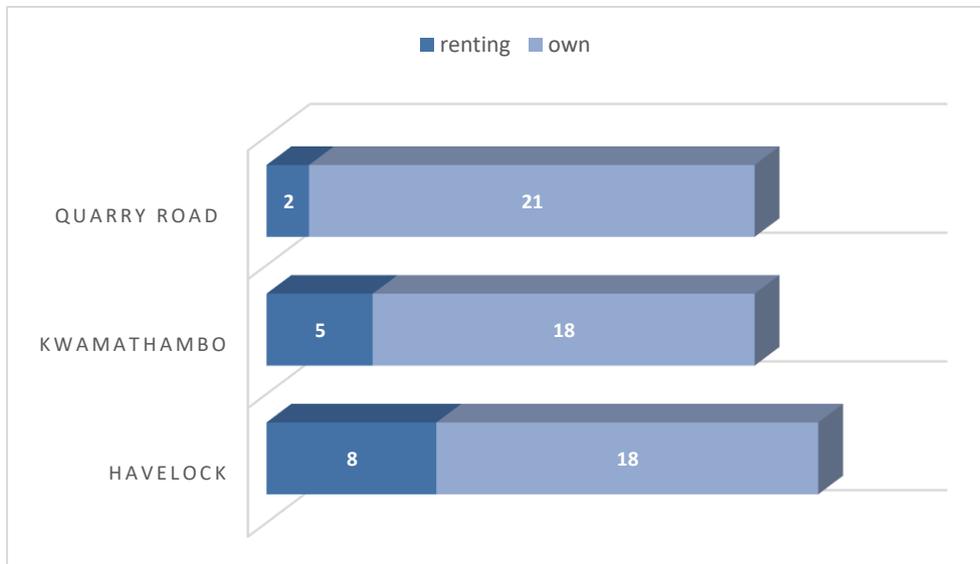


FIGURE 7-11 OWNERSHIP VS RENTAL

7.5.2 LENGTH OF STAY IN THE SETTLEMENT

There is continuous movement in and out of the settlements. The length of time spent living in the Havelock informal settlement is noted, where the first settler¹⁶ built his shack in 1986. In the period 1992-1998 more settlers were noted and by 1993-2003 the numbers picked-up. This will be discussed further in the individual life history section that follows. Not all respondents had built their dwellings. Table 7-5 shows the respondents’ length of stay in the settlements. Over 50% of respondents had lived in the settlement for over 12 years.

Table 7-5 Length of stay in the settlement

Settlement	over 25 years	18-24	13-17	8 to12	3 to 7	below 3 years	No response	
Havelock n=26	11.5	11.5	23.1	7.7	23.1	15.4	7.7	100.0

¹⁶ Unfortunately, this person could not be interviewed as he is no longer resident in the settlement

KwaMathambo n= 23	0.0	17.4	26.1	21.7	26.1	4.3	4.3	100.0
Quarry Road West n= 23	8.7	13.0	39.1	17.4	21.7	0.0	0.0	100.0
Total	20.2	42.0	88.3	46.8	70.9	19.7	12.0	

7.5.3 PERCEPTIONS OF THE ENVIRONMENT

Generally respondents' life history reports showed great aspirations and belief that things would improve for them and their households. This view was expressed in various ways during the interviews in the terminology used to describe their perceptions of the dwellings.

Some of the respondents indicated their hope for the place to be improved, and expressed their desire to remain in the settlement. Ms P (aged 20) who lives with her spouse in the Havelock settlement came directly from Lusiskisiki. She indicated that there was limited space for the family, and she hoped that the environment would be improved. As it was, she considered it a place to hide her head; - *"it is just a place of shelter"*.

Mr X (aged 29) also in the Havelock settlement considered the environment promising and looked forward to when it would be improved. He moved in over 15 years ago from Greytown, but was originally from rural KwaZulu-Natal (Emakhabathini). He lived alone after inheriting the dwelling from his parents. He said *"My shelter is a valuable form of shelter where I can keep my possessions. I can name it 'Phiweyinkosi' meaning given to me by God"*. This was the general consensus in Havelock settlement – people were hopeful and were looking forward to improvements in their living conditions.

Others, however, looked forward to being relocated. For instance, Ms H aged 34, came directly from the rural area of Flagstaff to live in the KwaMathambo settlement 17 years ago, after being invited by her sister to the settlement. She said *"it is not a suitable living space. I wish I could relocate to a better place."* However, she still considered the place of value as she did not have to pay any rent. She simply considered her dwelling *"an informal settlement"*.

Ms C aged 62, moved to the settlement from KwaMashu (urban area) and had not returned there. "I moved for security reasons and owning a place to stay. I am not

happy and wish I could get a bigger place where there would be better living and a place for the kids to play. As it is I can call it *Ekuphumeleni* – (place of rest)”. Ms C recalled that her home had once been burnt down and she had to rebuild it with the help of neighbours in the settlement.

Ms R aged 29, also considered her dwelling a place of rest, after moving in directly from Bizana (rural Eastern Cape) over 6 years ago and then building her own shelter two years later. She looked forward to a ‘formal house’ from the state. Discussion with Ms R indicated she had never been involved in the construction of her home even though she came directly from the rural areas. This could be due to her youthful age at the time of moving.

There was a consensus that the settlement did not provide suitable living conditions as it lacked ‘enough’ space, (for instance, for children to play and for placing of furniture) and of poor living conditions relating to cleanliness and hygiene. Despite this, respondents indicated that their dwellings were valuable because they were close to opportunities and they looked forward to the area being improved. This positive attitude was reflected in the choice of words used in naming their dwellings (see DWELLING NAMES FROM RESPONDENTS

Table 11-2 in the appendix).

In considering the names given, the data collected was grouped into four categories. The first category shows what respondents thought of their dwellings as, for example, progressive and an improvement on previous residential conditions. Respondents used descriptions such as “*a place of development and growth*”; a place from which they could “*wake up and build or search*”. One respondent noted that it represented “*dreams coming true*”; some others defined theirs as “*patience and hope*” and “*a mirror of the nation*”.

The second category related to the functionality of the dwelling. “*My dwelling is a place to hide my head*”, “*a place to stay*”, “*a place of rest*”.

The third category related to the size of the dwelling referring to the dwellings as, “*small shack*”, “*igumbi*” (room), “*kwavezu nyawo*” (sleep with legs sticking outdoors). Also reference was made to the building materials used, such as, “*a ‘mud house*”, “*ikopi*” (tin house). These descriptions inferred a small dwelling, in terms of scale and proportion to other dwellings within the urban area.

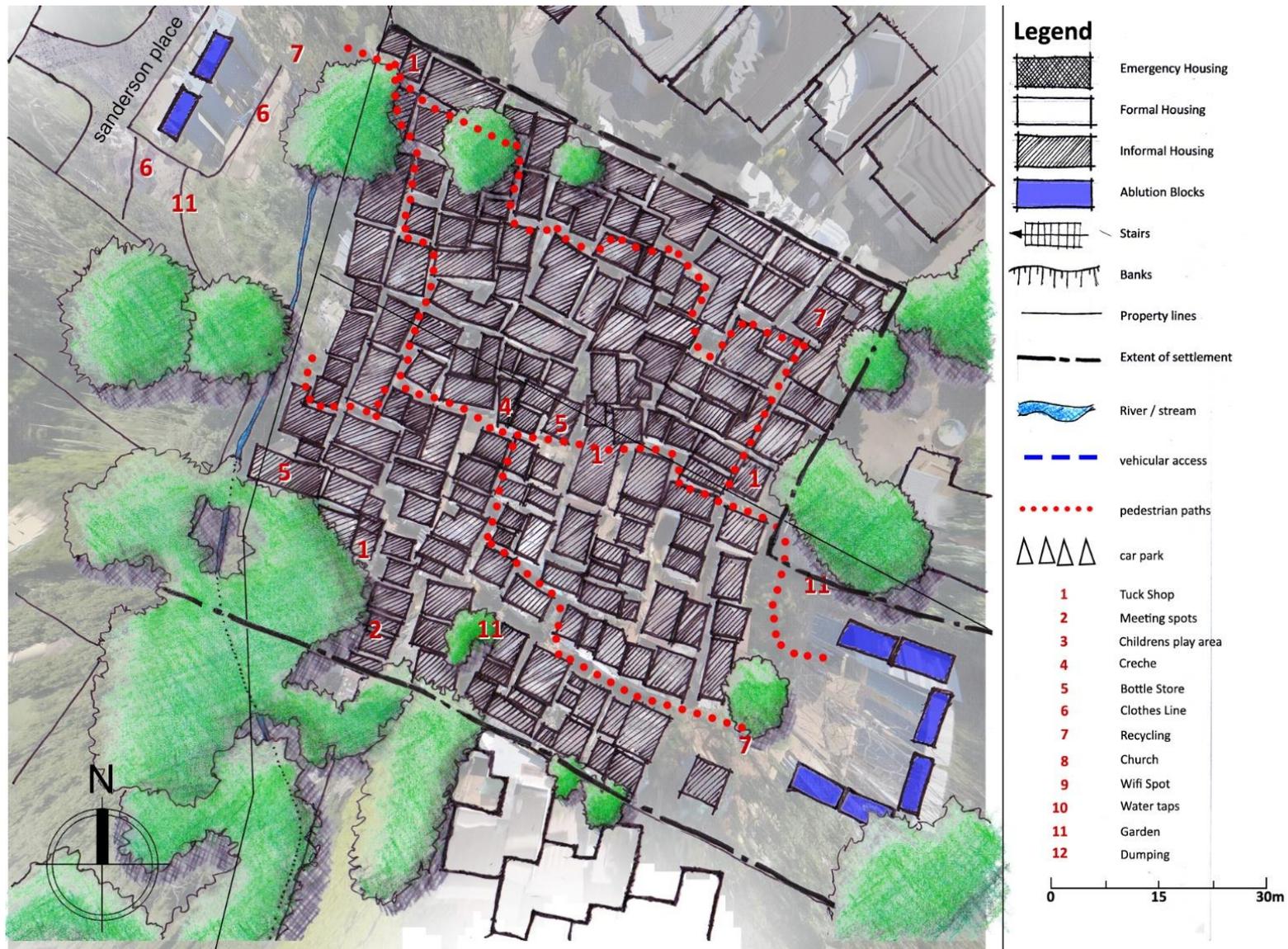
The fourth category related to the psychological value of the dwelling. “*My dwelling is a happy place*”, “*a beautiful place*”, “*a happy home*”, “*given by God*”, “*It is a safe haven*”, “*a place of rest*”, “*Ikasi lami*” (i.e. my hood, my township).

However, not all the responses showed such a positive attitude. Some participants defined their dwellings as: “*it is a noisy place*”, and worst of all as “*Behlale bezonda abafazi namadoda*” (i.e. always hating men and women).

Other referred to the dwelling in terms fo the family/ clan name of the occupant (*KwaMapi*-meanign place of Mapi), or naming the dwelling and neighbourhood after the head of the household. This gives meaning to the dwelling as a place of existence and having nothing to do with substandard dwelling structure as connoted in the name ‘informal settlement’.

7.6 MAPPING DAILY ACTIVITIES

The settlements were quite porous with easy access and movement within was freely done via narrow and steep paths. There were no security fences, or access gates. In Havelock there are four access points to the settlement. The major routes through the settlements area known to the residents and a stranger will need to be guided through. The ablution blocks are positioned on the exterior of the settlement. The following spaces were observed in the settlement. Crèche, gardening, tuck shop, ablution blocks, water points, alcohol store, gathering/ meeting spots, church, recreational games, recycling point, cloths drying, children’s play area, water run off/ stream. These are shown on the maps 10, 11 and 12 on the following pages.



MAP 11 MAPPING OF ACTIVITIES ON THE DRONE IMAGERY FROM HAVELOCK

Source: Image taken by Viloshin Govender 2018



MAP 12 MAPPING OF ACTIVITIES ON THE DRONE IMAGERY FROM KWAMATHAMBO

Source Image taken by Viloshin Govender 2018



MAP 13 MAPPING OF ACTIVES ON THE DRONE IMAGERY FROM QUARRY ROAD WEST

SOURCE: IMAGE TAKEN BY VILOSHIN GOVENDER 2018

Two broad categories of daily activities were noted. The first being those activities currently happening, and secondly, those which respondents wished they could do. The respondents were asked how they went about their daily activities. The findings showed that the activities started early in the morning and spread beyond the internal dwelling space. The dwellings presented a reference point for the residents.

The current activities could be grouped into two categories: those done within the dwelling and those carried out outside of the dwelling. A third category – activities that residents felt they could not carry out in the settlement, will also be discussed.

7.6.1 ACTIVITIES DONE WITHIN THE DWELLING

The key activities that occurred in the dwellings included both passive and active undertakings. These activities were primarily defined by the placing of furniture. For example, the bed either, single or double, was observed to be the common piece of furniture in the dwellings, along with a small table on top of which was the electric stove, and water storage containers. Evidence of multiple bed users were noted by the number of blankets and duvets stored on the bed. The majority of the respondents reported sleeping in a bed (alone or shared). Others slept on a couch or on a mattress on the floor.

Preparing for work or school entailed bathing within the dwelling instead of going to the showers in the ablution block. It was noted that apart from those who went to clean the ablution block in the mornings, respondents indicated that they used the shower during the day instead of in the morning. This could be because the ablution block was some distance away from the dwellings and in the cold weather respondents preferred to have a quick wash within the dwelling. The showers were locked at night. Water was stored in corners of the dwelling in plastic buckets stacked on one another. Residents washed by using a large plastic bowl which was commonly noticed around the settlements. When not in use the bowl was stored under the bed.

Cooking happened between 6am and 8am and between 3pm and 9pm. Contrary to the traditional practice where cooking was done in a separate shelter, the findings showed that most cooking was done within the dwelling using a table top double burner electric stove or a paraffin stove. This proved to be highly dangerous especially in terms of fire hazards. It would have been expected that

the space would be stuffy but due to the openings between pieces of wall materials, the dwellings were ventilated, even without windows.

Respondents reported to be cleaning their homes most times of the day, which included sweeping inside and around especially the frontage of the dwelling. It was observed that dishes, water storage containers and clothes bags were neatly stored in nooks and corners. The act of keeping the space tidy by sweeping the frontage was a way of defining dwelling boundaries, and as such claiming ownership of the space.

Other cleaning activities, including washing crockery and clothes, were carried out outside the dwellings at the ablution block or any other water source within the settlement. Clothes were dried in the designated area around the wash bays as in Havelock or wherever was convenient. At the Quarry Road West settlement clothes were dried on the railing of a nearby vehicular bridge in the vicinity, but in Havelock a designated drying area was provided near the ablution blocks.

Income generating activities that existed within the settlements included petty trading, selling sweets, cool drinks, bread and cigarettes. Others engaged in more long-term activities such as child-minding and dress-making. A peculiar case was noted in KwaMathambo where the dwelling owner runs a relatively large tuck shop from his dwelling. (See photos 11 in the appendix)

Respondents reported they relaxed outdoors if not watching TV. Relaxation also happened in a common space located close to the entrance to the settlement, which provided a gathering spot before entering the settlement. However other recreational spaces were observed in the settlements. For instance, in Quarry Road West a recreational hall was located within the settlement.

7.6.2 ACTIVITIES CARRIED OUT OUTSIDE OF THE DWELLING

Other activities outside of the dwellings include working and gym. Residents had creative ways of creating entertainment for themselves in the evenings. At Quarry Road West, apart from sitting outdoors chatting, a communal shelter had been created in the settlement which housed a snooker table. Within the settlements there were also clusters of dwellings arranged in such a way to create some communal private space for residents. The idea of the neighbourhood came into question. Residents' activity mapping shows that the outdoor activities create the idea of neighbourhoods within the settlement. The neighbourhoods are made up of residential clusters which share not only building elements, like roof sheeting, but also outdoor sitting areas, and drying lines.

7.6.3 ACTIVITIES THAT CANNOT BE CARRIED OUT IN THE SETTLEMENT (ASPIRATIONS)

Respondents reported that they could not socialise well within their dwellings, this included having family or friends visiting, playing ball, hosting parties, or holding marriage ceremonies. They also complained of the limited space that did not allow them to have much furniture or electronics, or even space to park a car. In terms of business, the space limited the size of items they could trade in within the dwelling. (i.e. *we cannot sell large items*). Other activities like farming or keeping live-stock were not possible. In terms of hygiene, respondents had to walk a distance to the toilets, washing bay and showers. Traditional practices were also a challenge such as communicating with the ancestors, and spirits (*amadlozi*). While some respondents were able to engage in income generating activities, others complained about the limitations in the range of activities possible due to space for instance a complaint of not being able to bake. One respondent complained about not being able to study due to the noise levels in the settlement.

There was a general complaint about the dirty environment and not being able to dispose of refuse easily. It was observed that in all three settlements some recycling initiatives were in place whereby respondents stored their refuse in a particular place for collection by the municipal waste management department. The challenge was that when refuse collection was delayed, refuse was scattered by passing dogs and additional refuse was dumped by passers-by.

TABLE 7-6 SUMMARY OF ACTIVITIES

Activities within and around the dwelling	Desired activities not possible in the dwelling and environs
Relaxing- watching TV, eating	
Socialising	Better socialising
Sleeping, resting	Larger space for storage of furniture bigger beds, fridge etc

Small scale economic actives such as petty trading, crèche, seamstress	Agrarian income generating activities such as farming and keeping of livestock
Domestic care	Better hygiene arrangements
Meditation, prayer	Traditional ancestral worship

7.7 INTERNAL SPATIAL PATTERNS

Spatial patterns that emerged can be grouped into three categories – the simple, complex and multiple dwelling patterns as shown in Figure 7-12.

SIMPLE PATTERN	COMPLEX PATTERN	MULTIPLE DWELLING
<p>A single one room structure with a single entrance. Movement is directly from the public to the private area, with no transition zone.</p>	<p>A single structure with more than one entrance door and a transition zone which could be a multi-functional area in which the household members relax, or carry out business actives. Usually more than one room deep.</p>	<p>Multiple structure occupied by a single household. There is no internal passage from one room to another. Entails a semi private zone.</p>

FIGURE 7-12 SPATIAL PATTERNS

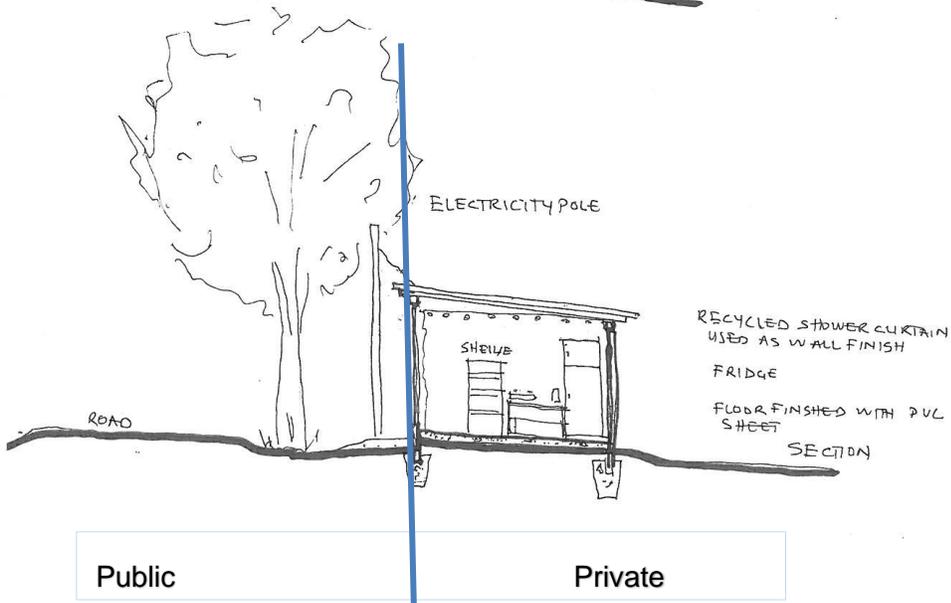
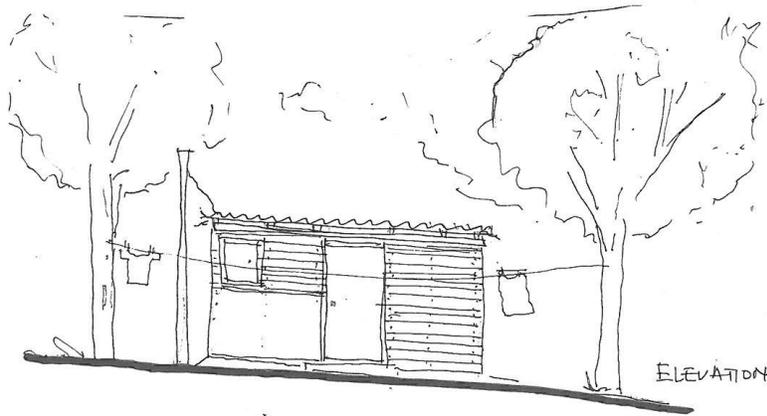
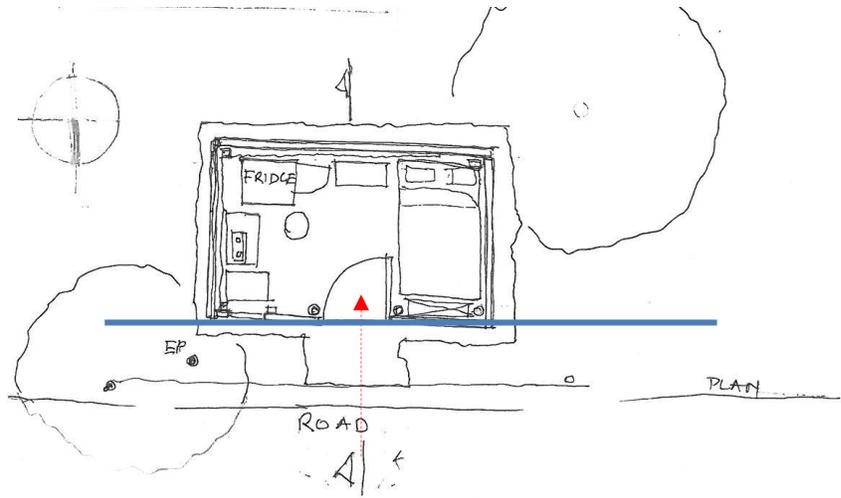


FIGURE 7-13 EXAMPLE OF A SIMPLE TYPOLOGY FROM KWAMATHAMBO

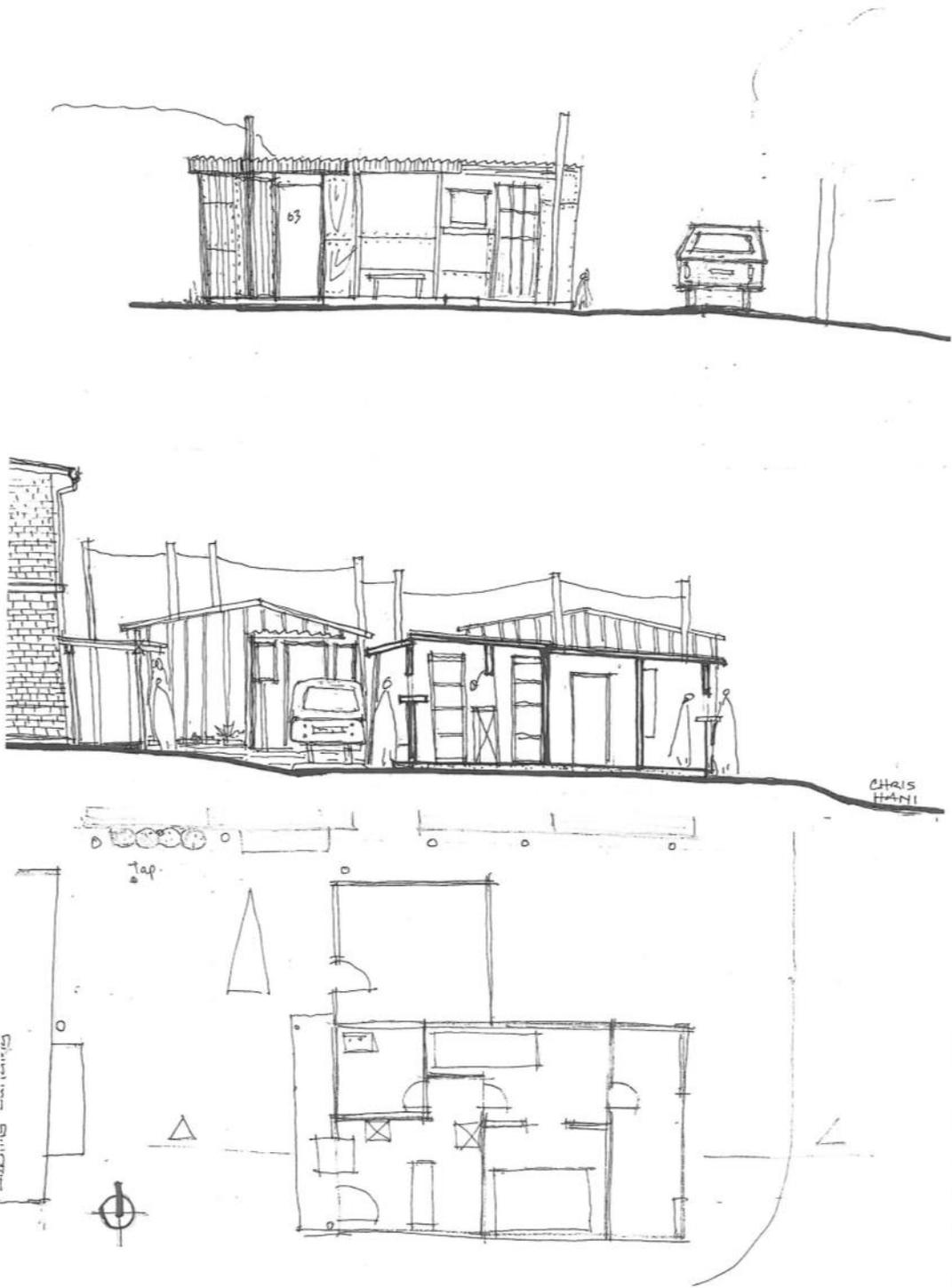


FIGURE 7-14 COMPLEX TYPOLOGY



FIGURE 7-15 MULTI DWELLING

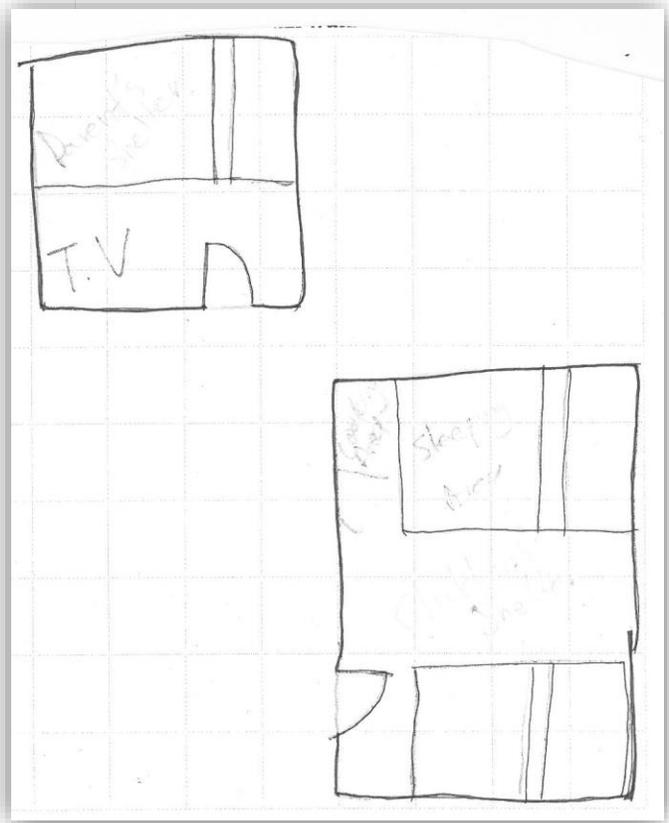


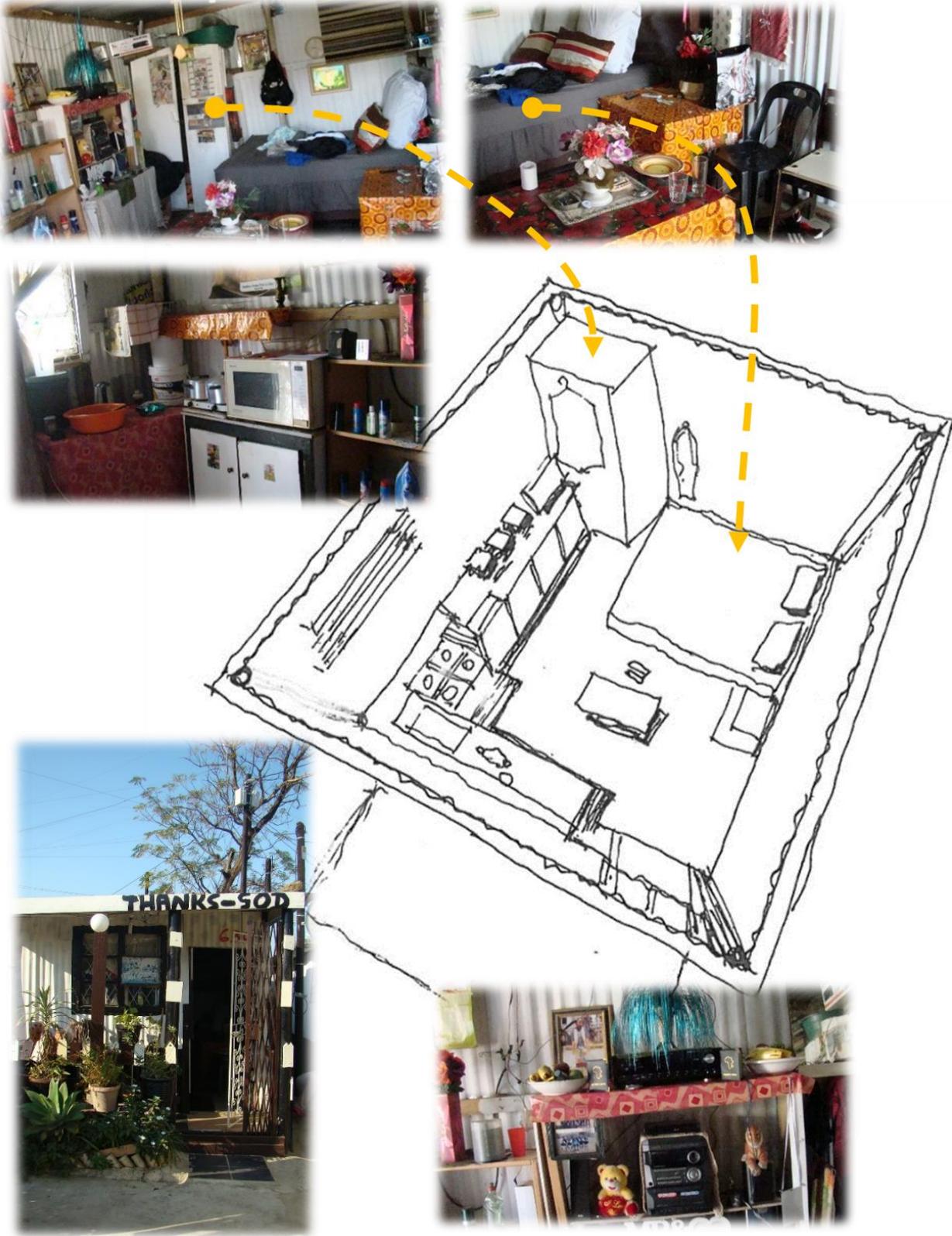
FIGURE 7-16 FLOOR PLAN PREPARED BY RESIDENT

It was found that the layout was determined by sleeping, cooking and storage activities. These were defined by the placing of furniture within the space. See Table 7-7 for basic furniture found in the dwellings. These furniture represent the tools for the activity as discussed in Chapter 3.4.1. This translated into space based on the furniture requirement for these active and passive activities. The dwellings had adequate ceiling heights for upright standing, but this was compromised where the lean-to roof connected to the wall. The bed was positioned against the wall restricting optimal use of the space around it but catered for the low head room in some instances. Considering that the dwelling provided mainly a functional value of shelter to the residents, basic items found in the dwelling could be grouped based on function as follows.

TABLE 7-7 BASIC FURNITURE

	Activity	Tools
	Rest	Bed, Couch
	Service	Bath basin, Stove, Microwave, Kettle
	Storage	Kitchen cupboards, Wardrobes, Shelving, Water storage
	Relaxation	Chair, Table, Television, Music system

FIGURE7-17 INTERIOR VIEW OF A DWELLING



7.8 EXTERIOR SPATIAL PATTERNS

Close study of the layout shows the formation of clusters of dwellings. This is observed in the three case studies.

7.8.1 BLACK WHITE IMAGE OF SETTLEMENTS

The black and white imagery of the settlements was analysed the spatial arrangement of the settlement Figure 6-2. The white areas represented buildings and the black areas were spaces between the buildings. Close inspection revealed the foot paths between the dwellings and some larger areas. While it was noted that some of the larger black areas were large trees, others were share external dwelling spaces.

Close examination revealed cluster spaces as illustrated in Figure 7-18 were spaces that do not permit thorough fare, but rather were accessible to only those who live off them. In this way they provide a sense of community for the group of residents, with other spin off benefits. For instance, it was observed on the drone photos that groups of dwellings share roof coverings, either over their communal spaces or over the actual dwellings. In the diagram in Figure 7-18, the yellow areas indicate the shared common space off which a group of dwellings have their entrances. This space provide a lobby area for the households, and formed an extension to the dwelling. Examples of these are found in Phots 11-9 in the appendix.

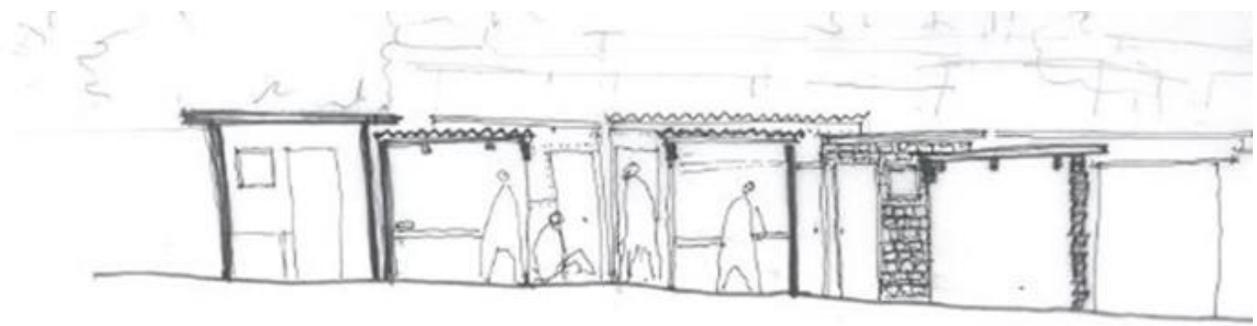


Figure 7-18 External patterns

7.9 CONCLUSION

The chapter has presented the data collected during the field work. The findings showed that over 60% of respondents moved directly from the rural and dense rural areas into the informal settlements. Interestingly the data revealed that over 25% had lived in the urban areas before coming into the informal settlements. Such urban areas included the sub-urban, hostels and other informal settlements. An equal number of respondents reported to have previously resided in another informal settlements and a sub-urban area before moving into the settlement. This indicated a migration pattern between informal settlements.

The chapter examined the physical dwelling space, taking into cognisance the size and proportions. The findings showed that the dwellings were earth hugging and of ecological quality due to materials used for building the basic elements. Residents reported how they had gathered building materials from the urban areas, much of which was industrial packaging from nearby factories. The findings also showed that the general perception of the environment was positive, with much anticipation for improvements to the quality of the dwellings and immediate surroundings. Rather than engaging agents, the findings revealed that respondents engaged in self-help efforts. The dwellings were often repaired and had to be rebuilt after a heavy storm or a fire. Lastly the chapter presented the mapping of activities within and around the settlements.

CHAPTER 8 INFORMAL DWELLINGS AS AN URBAN VERNACULAR ARCHITECTURE LANGUAGE (UVAL)

8.1 INTRODUCTION

This research set out to conceptualise a new vernacular architecture informed by the use of space in informal dwellings. It raises the question about the extent to which culture and indigenous knowledge informs meaning in the use of space in informal dwellings. To answer this question culture and indigenous knowledge was considered in relation to vernacular architecture. The literature review showed vernacular architecture as a built environment language which also records the history of the era. Vernacular architecture was first identified during the colonial and Industrial Revolution periods, when it was considered to be of some ‘other’, different from the prominent social group. By the 20th century the vernacular architectural language was more appreciated and defined in terms of its environmental sustainable qualities, placing less relevance on social and economic qualities. As discussed in Chapter 5.2, societies exhibit economic groupings and exercise social-political power, which influences built form expressions. This chapter discusses the data from the case studies and key informants from the field of architecture practicing in the eThekweni municipality, and more particularly working as social architects in the city. A thematic analysis of the findings from both the secondary and primary data sources is presented.

8.2 URBAN VERNACULAR ARCHITECTURE

The literature review revealed that during the Industrial Revolution vernacular architecture was considered to be the common, instinctive, expert practice of the day. In addition, it emerged that “the vernacular is based on the idea of constant expansion (van Heerden interview conducted 27th January 2017). He stated that “it emerges in a certain place at a certain time and needs time to evolve”. Whelan (interview held on the 20th of January 2017) explained that “from an architectural perspective, the informal dwellings presents the starting point for more stable spaces, representing a transition from a rural culture, to thinking of how one lives in more dense settings for the urban spaces”. Further to this, Whelan recognised other attributes such as social and ecological, of vernacular architecture, stating that “vernacular architecture is socially, ecologically and culturally responsive, responding also to the human scale. In this way, the built environment captures and

expresses the history of the era, which relates to the socio economic, socio political, socio cultural, environmental and climatic conditions.

In the informal settlements there is constant building, adapting and settlement growth due to the social and economic dynamics, as such there is constant experimenting in a place to create space. This may relate not only to the individual extension of dwellings but also to an increase in the number of dwellings, whereby new households join the settlement making it denser and more saturated. This saturation was expressed during the interview with residents who raised concerns about being trapped in and feared that they will not be able to move their things out due to narrowing of entrances and pathways. This probably indicates that the inhabitants were more permanent than imagined. It also emerged that in some dwellings, the occupants had changed over time. This finding indicated that while the residents may move out, the dwelling was transferred to someone else. For instance, one respondent indicated that “I did not build it, it was built by my late mother”. Other reasons that emerged for changing of occupancy was when the original occupant moved out on relocation to state provided housing, as in the case of KwaMathambo, and rented out the informal dwelling. Thus, making the informal dwelling an income generating property. In this way the dwellings are perpetuated, and the settlement does not reduce in size or disappear.

The findings show that vernacular architecture reflects the dominating voice of the era which could be oppressive and controlling or liberating and enabling. As discussed in Chapter 4.2, it was not until the 1980s during the post-modern period that vernacular architecture was considered to be of a grand tradition, having identifiable prototypes competence and configuration. It is noted that the definitions and descriptions of the vernacular settlements were put forward by outsiders (such as the teachers and the priests), who were considered to be the intellectual during the colonial era. However, over the centuries these definitions were shifted to reflect those of the inhabitants (i.e. definitions by the inhabitants themselves). For instance, during the 19th century, the influence of the British colonial authority made it more enticing to live in the four-corner hut instead of the circular hut on the bases of lowered taxes (see discussions in Chapter 5.2). While the four-corner hut emerged, the vernacular language of Zulu architecture has remained captured in the round hut. It raises the idea of acceptability, which Radford (1987) argued was necessary before a style can become a language (see Chapter 4.2).

The notion of acceptability raises the question of top-down or bottom-up language generators, which questions the adequacy of building standards. The imposition of standards as described by

Bauer (1934) was intended to protect, firstly, the broader neighbourhoods and secondly of a moral responsibility of the state towards the public. It however, represents a top-down intervention by the more organised of the society, often disregarding socio-economic and cultural concerns of the less privileged.

Acceptable building standards as discussed in Chapter 5, relates to six basic factors -health, safety, amenity, comfort and convenience, and decency. The discussions showed that these standards can be separated into two categories as objective and subjective. That is, objective being logically determined and subjective as negotiable by the users (see Figure 5-1).

During the interview with the architect from the eThekweni municipality, Hunt (interview 31 May 2017), it emerged that it was essential to understand the clients' needs and such needs must be taken into consideration during program design processes. She explained that such needs would include cultural and social, which is often not catered for in the building norms and standards. She further gave the example of the need to carry out traditional rituals within the dwelling, such as slaughtering live animals, but not having space to do such activities. Such cultural practices were not acceptable in the urban areas and thus not approvable by the local authorities. This created tensions between residents and the city. She goes further to attribute this tension to existing building regulations that do not take full cognisance of cultural needs of the residents. Further to this, van Heerden who argued that regulations are still being imported, essentially presenting a top down regulatory system (interview with van Heerden 20 January 2017). Another architect pointed out that a way to circumvent non-acceptable client requirements at the plan application phase, was to rename the space for building approval purposes. Once approved the space can be used as so desired as the use of space within private property, "... is not easily policed" (Hunt interview 31 May 2017). This created a disjuncture between the regulations and practice. While the resident may get their desired space and architectural language, it makes the norms and standards of lesser consequence.

The use of alternative materials was also a way of incorporating cultural requirements in architectural designs. Van Heerden noted that as the vernacular is synonymous with specific materials often in practice, the desired traditional value is achieved by using clay bricks, or thatch, for instance. However, what emerged as more important was the availability of building materials in the immediate environment for use in the construction of the dwelling. As such vernacular should be interpreted in the context of the immediate environment which supplies building materials. It

goes then to conclude that the informal settlements, which is produced from readily available urban waste (industrial waste) should be termed urban vernacular architecture.

8.3 INFORMAL SETTLEMENTS A NEW VERNACULAR?

Before answering this question, a recap of the definitions of informal settlements is necessary. In this thesis, it is argued that the informal dwelling starts off as a makeshift shelter and can evolve, through continued trial and error, into an urban vernacular architectural language. The 2011 South African census report refers to the informal settlement as “unplanned settlements on land which has not been surveyed or proclaimed as residential, consisting mainly of informal dwellings (shacks)” and defines the dwelling as “a make shift structure not erected according to approved architectural plans”. Moreover, discussions with professional architects during the interviews, revealed how the concept of informal settlements referred to dwellings ranging from semi-permanent to uncontrolled developments. Architect Naidoo practicing in Durban (interview held on 19 January 2017), described them in terms of effort and access to land: “... [the people] are housing themselves on land that does not belong to them”. This statement encapsulates the positive and negative energy of informal settlement dwellers, whereby the people want to and have some capability to house themselves but lack rightful access to land.

The art of occupying land illegally is one that requires quickly erecting shelter. It is contended that households had limited time to acknowledge and comply to minimum ‘objective standards’, but rather erected their shelters hurriedly making use of pre-acquired knowledge and skills learnt from past rural indigenous experiences and practices. It emerged however that in some instances residents actually obtained permission to occupy the land from the legally recognised owner, which may however be the undocumented unrecognised occupant. For instance, in the case of Havelock the first settler was given permission to occupy a portion of privately-owned land by the legal owner of the property. Once settled, the first occupant permitted others to join him in the settlement, without the consent of the registered owner. This gave a false sense of security and lead to the expansion of the settlement.

Other architects interviewed further described informal settlements from a number of self-help perspective. Words such as self-built, self-made, hand-made, improvised, instinctive, visceral, emergency, modest, humble, adapting were used by the architects. Architect Govender commented that informal settlements form very saturated residential areas, in other words they were not found

on their own, but often in large groups of dwellings. This point was echoed by Architect Cloete, who also described informal settlements as groups of individual dwellings which form a community. The records from eThekweni municipality showed that settlement sizes ranged from clusters of 5 to 10,000 dwellings and many were earmarked for in-situ upgrading. In addition, the analysis of the drone photos showed clusters of dwellings. It is also observed that within a cluster, dwellings utilised similar building materials such as ‘wattle and daub’ or timber for the construction of their walls were also often arranged in clusters as discussed in Chapter 7.8. contrary to perceived judgement by non-residents that they lack any form of planning. Further to this the dwellings were of similar size and at human scale (see section in Figure 7-18), such that it remained earth hugging. Table 11.6 presents the similarities and differences and it can be argued that the informal settlement characteristics are mostly similar to those of vernacular architectural language formation.

8.4 COMPARING THE RURAL AND URBAN VERNACULAR LANGUAGE

If the vernacular architecture is a grand tradition as the literature shows, i.e. commonly practiced by most members of a group, it can be argued that the informal settlements represent this grand tradition of the urban poor of the 21st century. An era characterised by low (or no) income, little technological advancement, lack of access to land, and yet large-scale urbanisation. The findings similarities and differences between the rural and the urban vernacular, are now discussed using the Vitruvian triad as a basis of comparison. It is, however, noted, as discussed in Chapter 3, that space has both the physical dimensions and also carries the social expression of society.

8.4.1 FIRMNESS

As discussed in Chapter 4.3, firmness refers to the structural stability of the dwelling and in the rural areas it pertained to first erecting the structural posts before covering up to create the enclosure. The attribute of firmness is now discussed in terms of structural integrity, scale and size of the dwelling.

8.4.1.1 Structural integrity

Self-help construction methods were often poorly carried out and do not have the technical skills and care displayed in the rural vernacular dwellings or as required of the urban standards. As a result, the interior spaces are quite porous with several gaps between the pieces of building materials

used for walls, roofs, windows and doors. In some instances, where the dwellings lack windows, the aggregate gaps between building elements are enough to keep the space sufficiently ventilated (see Photo 6). Further to this, poor construction methods imply that the dwellings can easily be dismantled, but also mean that they are susceptible to disintegration. Implying that the settlements are of high ecological quality. Despite challenging physical terrain in some areas, the findings showed that the rural urban migrant erect 'earth-hugging' shelters, which often required constant maintenance as alluded to by architect van Heerden. While it is noted that many of the dwellings have major structural defects due to poor workmanship, it was possible to build due to the manageable size of the dwellings.

Structural challenges were also due to the inability to access appropriate building materials. However, the choice of materials and process of selecting materials are key to the formation of the vernacular language, as was noted during the interviews with the architects. Data from the interviews with the residents indicated that the building materials are often waste materials from nearby factories. Such recycled materials include timber crates which were commonly used in the settlements for walls. Further to this, the method of assembling was also important in defining the vernacular language. In the informal settlements, architect van Heerden (interview held on 27 January 2017), commented that method of constructing in the informal settlements is basically semi-framed with cladding, like the methods used in erecting traditional dwellings in the rural areas. With the support of family and other community members, residents erected their dwellings in a day or two, once sufficient materials have been gathered. No reference was made to the role playing of male or female community members as with the traditional practices.

The dwelling was usually a rectangular floor plan with timber structural frame. Four posts were located at each corner of the dwelling, connected by a beam around the perimeter which provided support for the lean-to roof. The roof was usually pieces of corrugated iron sheeting loosely held down by a few nails and heavier objects such as old tyres and stones. The head room was minimal, usually the height of the door, giving the interior living space limited volume. Findings showed that the dwellings are often 'fixed in place' due to high densities and congestion, and with the narrow pathways through the settlements, furnishing is not easily removed.

It becomes obvious that the building materials used are those found in the vicinity of the dwelling, as in the rural vernacular. Despite this, respondents reported to have found it difficult to gather materials. A deeper understanding of what materials they were looking for was not investigated,

but it can be argued that they were either interested in the conventional building materials from hard ware shops, or building materials used in the construction of traditional buildings in the rural areas. The conventional materials would prove to be too expensive and the traditional building materials almost non-existent in the urban areas. It leaves them with no choice but to experiment with what was available i.e. reusable materials found or purchased at minimal costs (see Table 7-4). Materials, such as untreated timber (usually from industrial packaging crates) were however, not from the natural environment as with the traditional dwellings area and may be more flammable. As such they constitute safety hazards to all. It is however noted that a few dwellings were found to build using natural materials such as mud, found on the site. It was observed that some dwellings were built from small quantities of standardised construction materials. An example is the use of clay roof tiles in the construction of the wall (see photo 3). The figure also shows the timber slates usually used and the corrugated iron sheets used as roof covering. The emerging vernacular language of the dwellings can be attributed to the similarity in materials, which were locally sourced. Like the rural vernacular, materials used in the urban vernacular were those commonly found in the environment, making vernacular architectural language a representation of the local context. The dwellings therefore represent the beginnings of new things through the self-help efforts of the people. This was also captured by residents, who considered their dwellings in progressive way referring to them as ‘new beginnings’ (see DWELLING NAMES FROM RESPONDENTS Table 11-2).

8.4.1.2 Scale and size of the dwellings

The findings showed that the informal settlements were similar to the traditional dwellings in terms of scale. They both were experienced at the human scale and was alluded to by architects Whelan and Hunt during the interviews. They both noted that the vernacular responds directly to the human scale and proportions, as found in the literature. This was evident in the low-rise structures which gave a close connection between the dweller and the dwelling. This was interpreted both vertically and horizontally as illustrated in Figure 7-10.

As discussed in Chapter 3, geometric space is given various meanings based on the placement of objects. The findings showed that with the simple syntax pattern (i.e. one door to the dwelling) the dwelling width was closely related to the width of the bed with minimal circulation space at the

foot (and occasionally at the head of the bed). Unlike respondents' description of 'sleeping with the foot outside', no dwelling was found in such condition. Rather the phrase referred to a situation where there was limited space within the dwelling. This refers to the intimate space, illustrated in Figure 3-9 in Chapter 3.3.2.

In terms of dwelling size, literature showed that the rural homestead grows as the family size increases. This was done by erecting an additional dwelling structure and not necessarily the extension of the existing one(s). In the informal settlement, it was also noted that there are instances where the dwelling were extended by building an additional room as the family sizes increased, giving rise to the multi-dwelling unit described in Chapter 7.7. Extension was also done by adding onto an existing structure, with either an internal connection or a separate entrance.

8.4.2 COMMODITY

As earlier discussed in chapter 4.3, commodity refers to functionality, comfort and layout of the dwelling. The function of the dwelling extends beyond the interior space as in some cases, domestic activities are found to be spread out across the settlement.

8.4.2.1 FUNCTIONALITY

Various activities were identified within the dwellings as discussed in Chapter 7.6. However, instead of being spread out horizontally as in the traditional dwellings, the findings showed that activities took place in the same space at different times, in a multi-layered way. As such the dwelling space was condensed into smaller use areas in which activities changed throughout the day. This is illustrated in Figure 8-1.

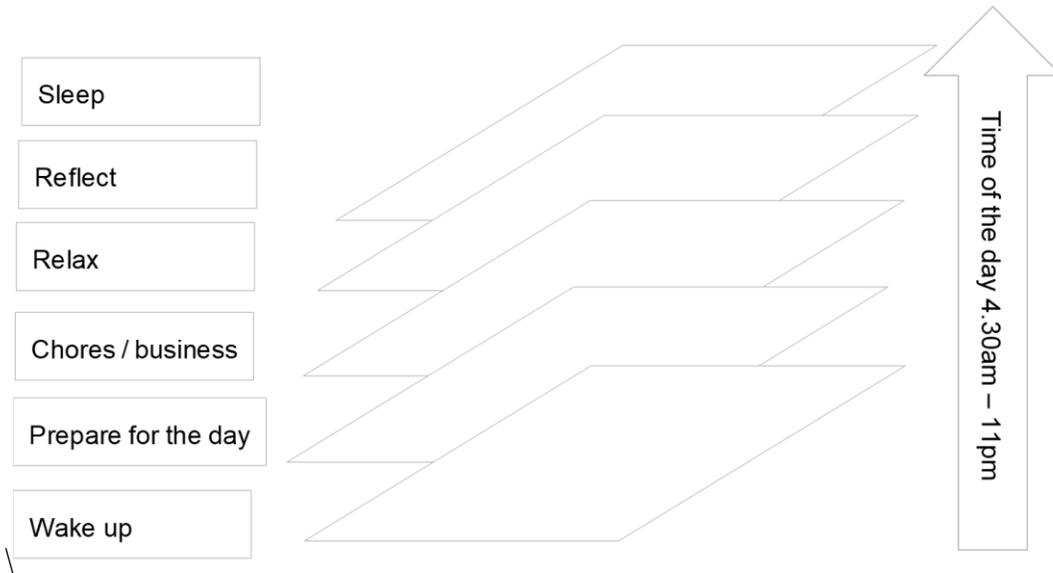


FIGURE 8-1 MULTI-LAYERED USE OF DWELLING SPACE

It is noted that multiple activities cannot take place at the same time within the dwelling. for instance, it is not possible to cook when all the folded up sleeping beds are spread out on the floors. This restricts activities to time periods and can be cumbersome as the household members are forced to stick to daily routine. In other instances, other residents may have to vacate the dwelling for activities that require privacy such as taking a wash in a large basin, within the dwelling. This is a common occurrence as residents reported long walking distances to the ablution blocks.

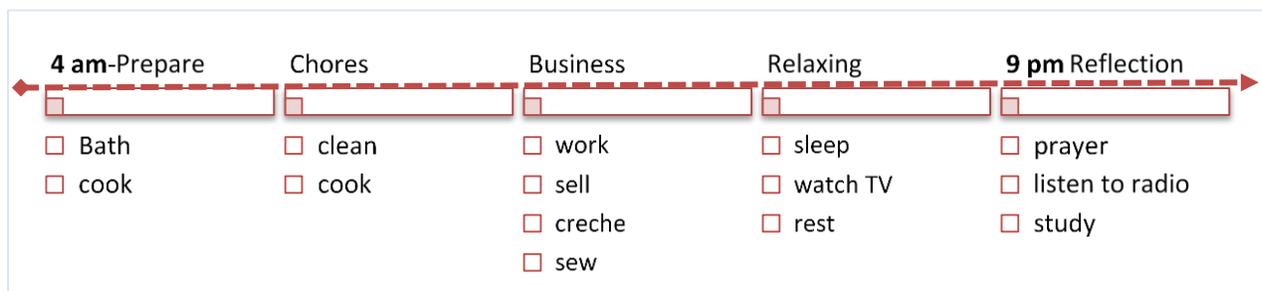


FIGURE 8-2 DAILY ACTIVITIES

Some respondents indicated that they used their dwellings for other commercial uses, providing them with income generating opportunities. In the traditional dwellings agricultural activities were noted which augment household income. Within the informal settlements residents took up urban employment opportunities when available and this may have been augmented by other

entrepreneurial activities such as the running of a crèche, selling of soft drinks and alcohol, and other essential household items. In instances where it was possible to extend the dwelling, an extra unit was built for other specific purposes such as entrepreneurial activities or added accommodation. Other uses of space observed were vegetable gardening and keeping of chickens as shown in photo 11-5 in the appendix .

Essential household items were driven not by traditional practices but by modernisation. This was made obvious by the choice of furniture and equipment residents made use of in the dwelling and was an indication of personal aspirations. It can be argued that if given the opportunity, households would be able to muster economic strength to participate in the land/housing markets considering choice of household items such as cable TV the required recurring contributions. It is also noted that materials stored in the dwellings take up much of the space often to the inconvenience of the residents and neighbours, and often get damaged when it rains, making them less useful to the residents. In fact, such items (such as recycled lounge suites) become more unusable waste within the settlement as it becomes difficult to dispose of the items.

Another key factor in the use of modern equipment, was the absence of electricity. The findings showed that residents made use of illegal electrical connections to power the gadgets. During the visits to the settlements for the interviews, a cool drink from the settlement (from a fridge powered by illegal electricity) was always appreciated on a hot sunny day. It also showed the entrepreneurial spirit emanating from the settlement making the dwelling function not just as shelter but also as an income generating tool. Other electrical gadgets observed include the cooking stove, television, fridge/ freezer, microwave, iron, kettle, fan, music systems.

8.4.2.2 LAYOUT

The rural vernacular dwellings possessed collective and individual character, and provide the basic functions of shelter for the residents. In the rural dwellings, each hut might have had a specific function (such as a hut for the first wife, or based on function such as a specific hut designated for cooking). The findings showed that the urban vernacular generally lack such specific functional use but rather as discussed earlier presented a multi-layered use of a single space. However, a function-specific hut was found in one multi-dwelling typology, even though the additional dwelling was also multi-functional as a sleeping area for children and as the kitchen.

In the rural areas, lived spaces were full of meaning known to the residents. These spaces constantly communicate with its users. For instance, as discussed in Chapter 4.2, the family hierarchy was captured in the layout of the dwellings, and more particularly the layout of the interior of the dwelling was full of meaning to its users, giving order and context to the users. However, in the urban vernacular no clear interior layout emerged. Within the dwellings it was observed that almost all households had similar furnishing items. The most obvious being the bed, usually located in one corner of the dwelling. Beneath the bed functioned as storage for clothing items in the absence of the wardrobe. Clothes could also be seen hanging off hangers from the structural frame (either walls or roof) of the dwelling. Items such as the bathing bowl, were also stored under the bed. Other furnishing items include the couch which doubles up as a bed at night. Some dwellings had a centre table associated with a couch on a wall adjacent to the bed. Along the other wall was a food cupboard on which the cooking stove and utensils could be found. In the corner of the bed and the cooking cabinet were the water storage containers, usually recycled paint buckets, neatly stacked on top of another. A piece of old carpet or water proof material was sometimes used to cover the floor area in front of the bed.

The traditional dwellings were laid out with gender specific huts and communal spaces, but in the urban vernacular this was not so common. It was however, observed that multiple dwelling households had a separate shack allocated to boys. The literature showed that in the rural dwelling spaces were spread out around the cattle enclosure into the surrounding open spaces. No symbolic similarities were noted such as positioning or orientation of the dwellings in the informal settlements. Other communal spaces were common in both the rural and the informal settlements. Such areas were located at the entrance to the community 'where the men sit to discuss community issues'. During the feedback sessions with the communities, these communal gathering areas were useful for presenting photos that assisted the residents in telling their stories. (See Photo 11-4 in the appendix).

The literature review revealed a lack of documentation on how sanitation was managed within the rural settlements. It was assumed the natural environment provided space for bathing and excreting. This became a major challenge in the urban areas due to the absence of sufficient natural environments. In all the case studies the local authority had provided male and female ablution facilities for use by the residents. It was also managed by residents. The ablution blocks were located on the periphery of the settlements and were fitted with toilets and showers. The location

proved to be a challenge to many of the residents as they had to walk a distance to make use of the facilities. It was revealed that bathing, which occurred in the dwelling, was a quick wash down especially for children. Adult residents had the opportunity to bath any time during the day when it was warmer, and showers were not so busy.

Lastly orientation of the dwelling was noted as a factor to consider in describing a vernacular language. Orientation from the literature references the sun, and hierarchical setting of the settlement. For instance, as discussed earlier orientation of huts within a Zulu homestead indicates position within the clan. Findings showed orientation in the informal settlements rather relate to the formation of clusters of dwellings within the settlement and had little to do with social hierarchy.

8.4.2.3 HUMAN COMFORT

Human comfort as discussed in Chapter 3, relates to social and physical comfort within the dwellings. It requires conditions for circulation, privacy and ventilation within the space. It entails social comfort amongst the gender divide, often dictating behaviour within the space. In the Zulu hut it was noted that the windows were small, allowing minimal lighting in; men were seated on the right (as they were said to be always right) and women on the left of the door. The interior was poorly lit through small windows on either side of the outward opening door. The interior thus provided a safe defensive space for the occupants.

In the urban vernacular, the interior lighting was similarly of poor quality, with natural light streaming through joints and openings between the walls and roof, in the absence of windows (see Photo 11-6 in the appendix). Where windows are present, very little light filtered through, due to the dense nature of the settlement. The illegal electrical supply connected a single light bulb within the dwelling. While the conditions may have been considered to be uncomfortable, they were similar to common practice in the indigenous dwellings where the passage from the exterior to the interior was a transition from the public to private space. The sudden change in perceptive ability due to poor lighting, disorientated any stranger on entering the dwelling, thus giving the occupants opportunity to welcome or refuse such a visit.

8.4.3 DELIGHT

Delight reflects the social and economic expression of the society and can be considered a snob value. Hunt during her interview, explained a snob value to be something that improves the dwelling which could be decorative features, or an additional space such as a veranda in front of the entrance. According to Hunt, the vernacular "...meets the fit for purpose requirements and may go further to add on a 'snob value'" Examination of the decorative features in each of the settlements, revealed that the older settlement had more decorative elements. This was related to the number of times the dwelling would have had to be rebuilt. For instance, in the Quarry Road West settlement due to the most fires incidents and being the oldest settlement studied, had more decorative expressions on the dwellings.

In the Quarry Road West settlement dwellings displayed a very strong personal expression with the use of colours especially around windows and doors (see photo 7). It was also noted that while the self-built dwelling displayed a level of beautification, the shelters built by the municipality as in KwaMathambo lacked any of such quality. On the interior decorative features included posters and other display objects on the walls. These forms of social (economic) expressions of society are discussed further.

8.4.3.1 SOCIO-CULTURAL TIES

A strong similarity between the rural and urban settlements was that the dwellings were all socially knitted together. The findings showed that groups of residents were from the same rural areas, either relatives or neighbours. Residents indicated that they were invited into the settlements, living in clusters once permission was granted by whoever could be considered to be the gate keeper or a social regulator. A similar practice occurred in the rural environments where the head or chief controlled access to the cluster. In this way, the dense settlements created social support systems for residents. This was an informal but highly respected cultural practice especially within the rural areas. These close social ties created were carried through from the rural to the urban areas. More importantly the indigenous building knowledge was also carried through, creating as far as possible familiar symbolic and functional elements. For example, in Quarry Road West, the use of colour in highlighting building elements was noted, giving the dwelling individuality.

8.4.3.2 RITUAL PRACTICES

In terms of keeping contact with the ancestors, residents generally indicated that they could not carry out family rituals in their dwellings. Whelan (2017 interview) noted that ancestral practices were only carried out from only the circular huts and not from square buildings. She explained that while it was not uncommon to have the rectangular huts, a household will keep a circular hut for the specific purpose of communicating with the ancestors. This practice was also observed in some low-cost housing visited during the research, whereby a circular hut was built for purposes of ancestral worship. This was however not found to be happening in the informal settlements.

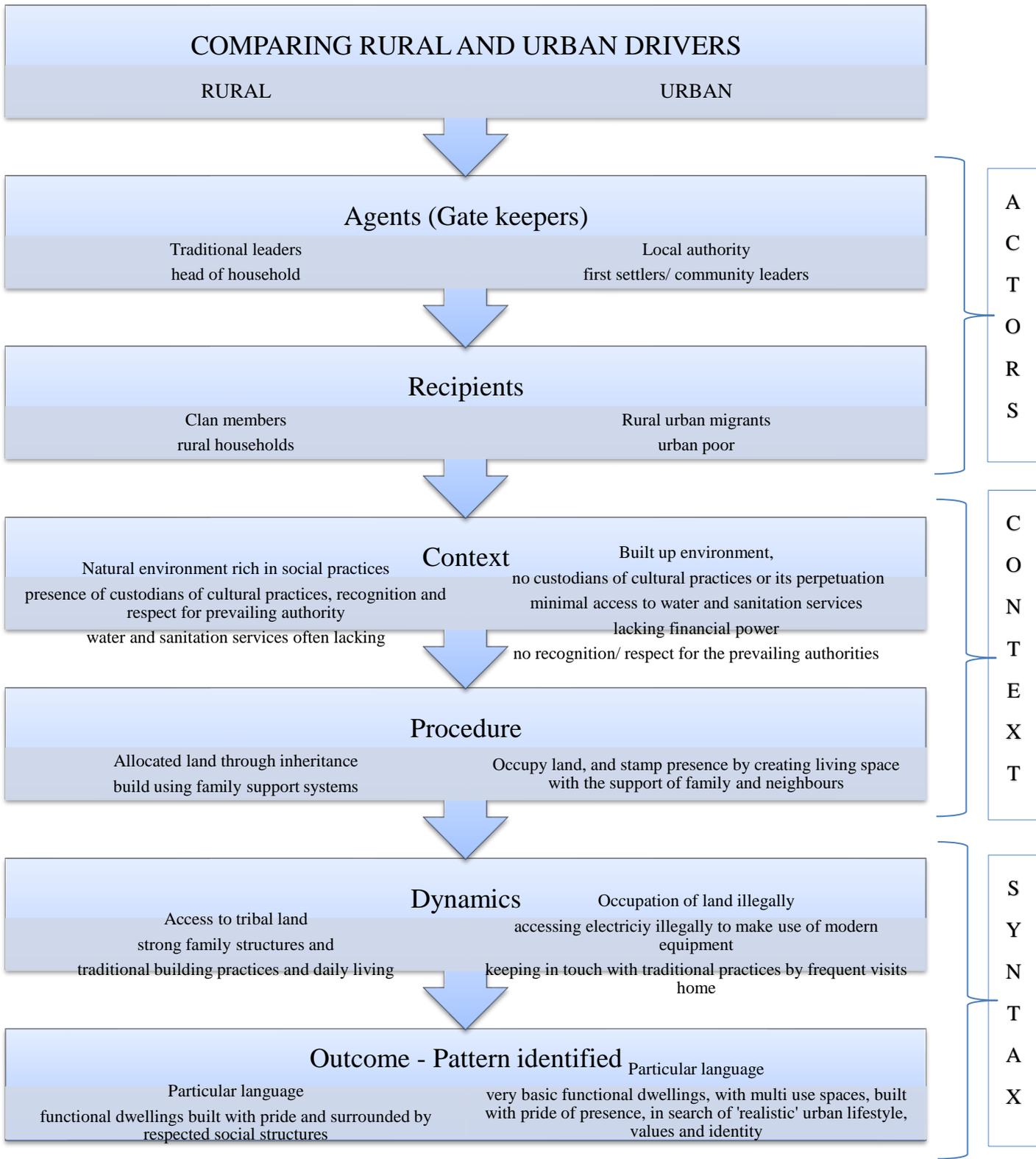
However, one of the residents interviewed was a woman who lived with her husband, a '*sangoma*', i.e. a spiritualist, in the KwaMathambo settlement. Around the dwelling it was observed that there were live chickens, which on enquiry it was found that the chickens were used by the *sangoma* in communicating with the spirit world. Other forms of spirituality were prayer groups that occurred in the evenings in the various settlements.

In the Table 8.1 which compares the rural and the urban vernacular language drivers, as informed by morphic language indicators (see figure 3.2), the actors were divided into the agents and the recipients; context and procedure; and lastly the configurational meaning (syntax). The 'agents' were identified as local authorities, community leaders and first settlers. These were those that have decision making powers about who could move into the settlement. While the recipients were the informal settlement residents, who were mainly the rural urban migrants and other urban poor.

The next section represents the context and procedures which govern the actors' interaction and the context in which the language is generated. This was the urban environment, with little acknowledgment of local authority but constituted self-regulatory mechanisms, evident by the invading of land and illegal use of existing services in the neighbourhood. The context also reflects weak financial power, and as such economic exclusion from existing housing markets. These actors and the context in which they interact plays out as one of illegality and mistrust.

The last section presents the configurational meaning generated and the spatial outcome which was a basic functional dwelling, built with pride of presence, of overcoming various obstacles representing realistic urban lifestyle, values and identity.

TABLE 8-1 COMPARING URBAN AND RURAL VERNACULAR



Source: Author

8.5 CONCLUSION

The chapter has discussed both primary and secondary data collected. It has compared the informal settlement with the rural vernacular using the Vitruvian principals. The similarities between the rural and urban dwellings could be summarized to be in terms of shelter and social security, while the differences, in terms of modernisation. The language identified was driven by the context, the systems of forces and the configuration. What made the dwelling adequate was the ability for the structure to solve the problem of shelter within the urban context. Apart from the physical context, the economic and socio-cultural forces gave broader drivers for the evolving language. It can therefore be concluded that bringing about socio economic inclusion requires a buy in from all actors, within and outside of the settlement. This includes the neighbourhood and local authority to provide adequate governance i.e. political will and appropriate use of power. Transition of indigenous knowledge was also noted in terms of adapting to the lack of basic services such as water and sanitation.

CHAPTER 9 CONCLUSIONS AND RECOMMENDATIONS - CONCEPTUALIZING INFORMAL SETTLEMENTS AS THE 21ST CENTURY VERNACULAR ARCHITECTURE

9.1 STUDY AIMS REVISITED

This study set out to gain an understanding of the use of space in informal dwelling environments, which could inform appropriate responses and interventions to informal settlement upgrading programmes, towards creating self-reliant and sustainable communities; it also intended to conceptualise a new vernacular architecture that encapsulates the evolving character of dwelling spaces in the informal settlements.

In the introduction, I argued that the discourse of vernacular architecture is often relegated to underdevelopment, and distant from modernisation, and is a rural discourse. It emerged that there is in fact a transposition of the vernacular language from the rural to the urban areas. I contend that informal settlements make up an important part of the urban environment, providing housing opportunities to many of the rural-urban migrants, the urban poor, who have migrated from the rural to the urban in search of better living conditions and opportunities. In this process, the vernacular language, particularly in the use of space, has been imported into the urban areas.

In the South African context, some authors (see Chapter 5.3.1) have argued that informal dwellers are economic migrants who make conscious decisions to move to the informal settlements as an avenue for accessing economic opportunities of the urban areas. In fact, the informal settlements represent the urban poor's first step in claiming a right to the city. They, however, tend to self-mirror in the urban areas, avoiding urban authoritative regulations.

The overarching aim of this study was to theorize a new vernacular architecture that encapsulated the peculiar characteristics of dwelling spaces in the informal settlements. This was done by mapping residents' daily activities in and around the dwellings. Using the residents' perspective, provided an objective narrative different from the negative narrative generally used. It is envisaged that by doing this, the knowledge gained can be useful in theorizing a new vernacular architecture, and should inform upgrading programmes, towards creating self-reliant and sustainable communities.

In this regard the following research questions were posed, relating to meaning, spatial patterns, upgrading programmes, and lastly referring to architectural theory.

1. What spaces are used for conducting daily activities in informal dwellings?
2. To what extent does culture and indigenous knowledge inform meaning in the use of space?
3. What spatial use patterns can be noted in informal settlements?
4. What differences can be noted between identified patterns in urban areas and documented vernacular patterns?
5. How can the use of space within and around informal dwellings be used to guide upgrade programmes?
6. What new architectural theories can be developed from the use of space in informal settlements?

The gap in knowledge addressed is about how to define an informal dwelling as an evolving urban vernacular architecture of the 21st century. Thereby viewing the informal settlements discourse from an architectural perspective. The primary concern of this dissertation was the daily lived reality of informal settlement residents in and around their dwellings. The implication of not knowing the residents daily lived realities, created a misconstrued perception of meanings embedded within the dwelling and the settlement as a whole. Related research considered the use of building materials, environmental challenges and choice of settlement location. The peculiar relevance of this study is to draw linkages between rural vernacular architecture and the informal dwelling spaces in the urban areas. It specifically considered the interior of the dwellings and related exterior spaces used for daily activities by residents, in respect of meaning generated in the dwelling and within the settlement that is understood by the collective, and often misunderstood by outsiders. It was argued from the onset that the use of the space was closely linked to indigenous dwelling activities of the inhabitants, and that the indigenous language had evolved as it transposed to the urban areas.

9.2 SPATIAL MEANINGS CREATED IN INFORMAL SETTLEMENTS

The spatial meanings created in the settlements went far beyond those perceived by outsiders i.e. local authorities and broader neighbourhoods. The research shows that residents ascribe existential, experimental and aspiration meanings to their dwellings.

9.2.1 EXISTENTIAL MEANING

With the strong need to establish themselves within the urban areas, the dwellings created had greater meaning to residents than informality as ascribed by outsiders. As such the initial dwelling which often responded to shelter needs, was the first step to laying claim to the city. Despite socio economic exclusion from the urban housing system, residents laid claim to the city by replicating, their rural social space to a certain extent, in the city. They also maintained social ties from the rural areas, by visiting regularly. The findings showed that residents invite family and neighbours from their rural home to the urban areas and attempt to mirror their rural home in the urban areas. However, social order and hierarchy was lost in the process and, arguably, the degrading of moral judgments in the urban interpretation of the rural vernacular.

9.2.2 EXPERIMENTAL MEANING

Experimental meaning is brought about as the residents engage in trial and error practices in their new urban environment. Residents carried out rural building experiences in the urban areas. Due to the change of environment these practices were experimental. Faced with the challenges of how and from where to access building materials, residents experiment with materials and assembling methods. Readily available waste material of the urban areas and particularly the industrial areas were most commonly used. Residents were forced to erect their dwellings much faster than in the rural areas, due to the tension of illegality. To do this they relied on support of other residents and the availability of materials needed for the core elements i.e. door, walls and roof.

Assembling methods were tested daily as shelters are exposed to degradation by natural elements, general wear and tear, and the ultimate test of fire. Once succumbing to any of these factors, the process of rebuilding a better shelter began. Each time residents build better dwellings learning from mistakes of the previous building experience. The new dwellings were found to have more personal expressions such as decorative colours than the previous (examples of these were found in Quarry Road West, see photo 7). However, despite improvements in the structure, it became worrisome that the efforts showed low technical skills and dwellings remained earth-hugging, with safety concerns. It showed a lack of know-how despite the willingness to get it right.

There was also a huge disconnect between regulations and actual efforts on the ground, manifested in the noncompliance to urban building regulations. The responsibility of governance to protect the interest of the citizenry was challenged. As such the state can be said to be in abeyance as to how

to manage the safety challenges of the dwellings. Further to this is the variance from the rural architectural language to the distorted urban language, that has become known as informal settlements, as the dwelling was converted from a horizontal spatial spread to a more compact-multiuse space.

Residents also experiment with respect of the articulation of space. While rural dwelling layouts were more horizontally spread out, space in the urban area was limited forcing residents to experiment in more compact private space and sharing of communal spaces. Of all shared spaces, the most critical was the shared ablution block, which required a level of privacy. The research revealed that in cases where residents were not able to get to the ablution block, due to the weather, which could be cold, or long queues at peak periods, the option was to have a wash down within the private space of their dwelling. Effectively the dwellings were consequently influenced by the available knowledge in terms of building skills, materials available and governance.

9.2.3 ASPIRATIONAL MEANINGS

Aspirational meanings were also noted. The dwellings presented an access to better life, modernisation and livelihoods. Residents could make use of modern electrical equipment such as fridges and electric stoves with their often illegally connected electricity. There were better chances to access social services such as health care and schools. More than the architecture of resistance discussed in Chapter 5.3, this form of persistence turned out to be an architecture of aspiration. Rather than resisting, the residents aspired to be part of progress, which seemed to be absent from the original homes in the rural areas.

These findings raised the questions ‘what is happening to rural development?’ ‘is there room for rural urban collaboration. It also questions the focus on the urban development at the expense of rural development and calls for a rural urban strategy in tackling human settlement challenges. It is therefore recommended that a forum for rural urban collaboration is introduced in the upgrading of informal settlements.

9.3 PATTERNS CREATED

As discussed in Chapter 3, patterns “express a relationship between a certain context, a problem and a solution.” (Alexander, 1979: 182). It is with this idea and phenomenological thinking that meanings are to be found in ‘the things’ themselves and is the basis for undertaking this study. The

patterns revealed were found to be an indication of the functional needs of the resident i.e. shelter. Other service needs were accessed outside of the dwelling as in rural vernacular architecture. It showed that the settlement as a whole played an integral part of the dwelling experience and was affected by the prevailing context. It can be concluded that the patterns created were highly influenced by contextual drivers within either the rural or urban settings. This theoretical thinking can be used to explain spaces created within and around the dwelling by taking into consideration the actors, context, factors at play and the resultant patterns.

The patterns that emerged from a space syntax analysis were simple, complex and multiple typology. The simple patterns comprised a dwelling with single entrance, usually with the key functional item within the dwelling i.e. the bed. The entrance was the symbolic transition from the public to the private zone. There were no inner rooms. The dwelling depth was to human scale with height and width of the dwelling of approximately similar dimensions (see photo 8). The presence of a single bed did not translate to a single person dwelling. In fact, as van Heerden explained during the interview, the bed was highly symbolic of the dwelling space and from a municipal perspective, the shelter with a bed cannot be demolished without providing alternative accommodation. The findings showed that even though the single bed dwelling was most common in the settlements, single person dwellings were relatively few.

The complex pattern was one where the dwelling had at least one additional door to the main entrance. In some instances, there may have been more than one entrance door to the dwelling as in the example provided in Figure 7.14. There were multiple rooms within the dwelling, giving rise to greater dwelling depth than with the simple typology. The inner room provided a sleeping area for the household head while others slept on the floor within the same space or in the outer room. During the day the outer room was put to multi-functional use. Levels of privacy were noted within this dwelling. In some instances, there was a clear transition zone between the public and the private areas, and also a semi private zone used as a shop or kitchen. There was a connection between the private and semi-private within the dwelling. The dwellings had more depth than the simple typology. It was observed that sometimes the outer room had a bed or a couch which provided a sleeping area.

In the multi pattern formation the household was spread out into more than one dwelling. The main dwelling provided sleeping quarters for the household head and services such as cooking and housed the electronic gadgets of the household. It however lacked the transition zone and spaces

were not connected within the dwelling as in the complex typology. The other dwelling was mainly for sleeping for adult male children of the household.

Dwelling activities were carried out in the same space at different times of the day. This, in fact, showed the effective use of space, whereby the limited spaces were always being used at every time of the day. There were limited tensions observed between the residents, as was assumed at the onset of the research. This can be attributed to the understanding of the built environment language by those who live in it. The spaces carried symbolic signs that residence understood. For instance, in the Havelock settlement, the entrance to the dwelling was identified by the presence of the door, the municipal service (i.e. a yellow refuse plastic bag), the defined porch (either a mat, swept area, or elevated threshold) in front of the door all located along a path way. Residents understood and respected the space of the other.

The way residents make use of space and particularly the formation of clusters within the settlement could be arguably considered an intentional occurrence, and key to defining the new urban vernacular architectural language. The spaces keenly occupied, and demarcated, not by physical boundaries but by presence (see Chapter 7.6.1). The spaces created offer not only a private outdoor space for use by the immediate dwellings, but also a social spaces and a sense of belonging, an existence. The clusters offer an opportunity to install ‘sub stations’ within the settlements for the delivery of water and possibly sanitation services closer to the dwellings. This could be supported by the Municipality through aided-self-help efforts.

9.3.1 URBAN VERNACULAR ARCHITECTURAL LANGUAGE (UVAL) DRIVERS

Migration of indigenous knowledge from the rural to urban areas emerged as a key driver to how space was used in the informal settlements. However, indigenous knowledge was somewhat distorted in the urban areas in various ways. At the dwelling level the primary concern of shelter was a key in determining how space is used. Traditional activities such as farming and storage of associated equipment and materials, was found to be different in the urban areas. Instead of using the interior spaces for storage as in the rural vernacular, residents used the dwelling mainly for shelter purposes, a place of relaxation, social support and psychological security. Activities in the dwelling which is often spread out beyond the interior space in the rural vernacular, is more compact in the urban vernacular. This showed a change from a horizontal spread to a vertical layering of

functional space. The limited access to land contributed to the complex layering of dwelling spaces. At a neighbourhood level path ways, terrain and existing features emerged as key drivers. These drivers give rise to the linear, and the clustered patterns. Within the larger settlement the findings showed that residents live in groupings, as in the rural vernacular.

The question of land and how it can be made accessible to those who need it is beyond the ambient of this research. But it is clear that the question of land availability needs institutional intervention especially in the urban areas if the poor are to have access. Where urban land lies fallow, the poor seize the opportunity to occupy illegally. These were often areas susceptible to flooding as in Havelock and Quarry Road West, or steep sites as in the case of KwaMathambo.

The findings showed that settlements develop not only on state owned land but also on privately owned land or property (as in the case of KwaMathambo) in contestation. By not monitoring or developing land, exposed private land to invasion by those with urgent need of it. Although it emerged that in some instances, private land owners opened up the land for settlements by granting initial permission for migrants to stay on the land. This could be attributed to emphatic reasons and the other symbiotic benefits often related to services. While this may have been done in good faith, the lack of development restrictions or development guidelines and monitoring led to the uncontrolled growth of the settlement.

It was noted that local authorities were focused on developing large housing layouts to benefit from the economies of scale, but through self-help efforts the urban poor were able to erect their dwellings on smaller parcels of land. As such even though the terrain may be considered unsuitable for large scale municipal driven development, it presents sizable land for development. Furthermore, it emerged that within the informal settlements some residents dwell in clusters sharing not only social but also building elements such as roof structure. This demonstrates a disjuncture between the urban housing problem and the states response.

It is therefore concluded that the state's role cannot be over looked. It is recommended that smaller parcels of land which the poor can legally accessed are made available. This will allow the urban poor to exercise more care in the construction of their dwellings, and dwell with dignity in the urban areas. Further research, preferably by the involvement of urban poor communities, will be needed to determine appropriate settlement size in terms of what can be termed 'urban vernacular communities' and clusters within, in the urban environments.

Another actor identified was the NGOs. Through the intervention of NGOs such as the Slum Dwellers International, self-organisation was being put to good use. For instance, it was with the intervention of the SDI that data collection from the settlements was possible. During the study, it was found that other participatory negotiations, for settlement improvement, were underway with the NGO as intermediary between the local authority and the self-organised settlements. Negotiations were mainly about improving living conditions and included interim service provision such as installation of ablution facilities and refuse collection services, and more long-term upgrading programmes. How to create space for such negotiations should be investigated further.

The next group of actors were the recipients. These were people who were affected by the settlement and included the rural urban migrant, the urban poor and neighbours. The research found that the rural urban migrant kept strong ties with the traditional values of the rural areas. They failed to recognise leadership structures (such as local authorities) in the urban areas. However, within the group a 'leader' existed acting as gate keeper to the settlement, at the onset this was the first settler who may have obtained permission from the owner of the land to erect his shelter as in the case of Havelock. Unfortunately, the impact of illegality go beyond the settlement and affect neighbours, also putting more strain on local municipal services. It is therefore not surprising that there were tensions between the residents and neighbours and the local authority. It is important to recognise these actors as they influence how the space is created and the emerging urban vernacular language. For one thing, the residents were not welcome in the area and so maintained temporary shelters, even though they may have remained for many years, as in the case studies.

In summary, the actors identified were those who were directly or indirectly connected to the settlements. This includes the agents and the recipients as described above. The agents refer to actors who took part in the formation of the settlements, and the recipients are those affected by the presence of the settlement. The relationships between these actors is key to the successful upgrading of the settlements. It is therefore recommended that efforts are targeted at ensuring communication between all concerned as upgrade programs are planned and implemented.

9.4 DEVELOPING THE VERNACULAR ARCHITECTURAL THEORY

Hillier's idea of 'a tradition of social knowledge' (see Chapter 3.5.1) which refers to basic norms and standard comes into question. The need for theory to support self-help activities proposed by the 'recipients' of the norms and standards. In this way provides better understanding and proposes

more responsive solutions to the changing contexts. The emerging urban vernacular language is thus defined by the actors, the context, the factors at play and the solution, which often results in a complex relationship. Having discussed the actors in the previous section, this section goes on to draw some conclusion and recommendations with regards to the developing urban vernacular theory.

The *genius loci*, as discussed in Chapter 3.4, referred to the spirit of the place and gave a context to the urban vernacular language, where the context referred to policies, standards, technologies, climate, politics, and prevailing economic situations. In terms of policies, it emerged that there were no policies or guidelines for self-help houses of the poor. Existing human settlement policies provided a framework for upgrading interventions. Whereas the building norms and standards referred to the build environment in general. It has been argued that building standards should not hinder living opportunities but should improve the quality of life of the urban dweller. As such self-help housing policies and guide lines could refer to, for instance the size and layout of a settlement, such that municipality interventions with regards to the supply of health and sanitation services are more effective.

In terms of the economic situations, it emerged from the findings that residents sourced building materials that were not only affordable but often free. Such materials were unwanted materials from factories, and industrial packaging materials as described in Chapter 7.5. Building materials were not permanent and could easily be dismantled or blown away and were highly combustible, exposing residents and neighbours to both health and safety risks.

The continued emergence of dwellings was an indicator of the consistent supply of building materials useful to the residents. This calls for an alternative building materials sector whereby innovative methods of assembly can be explored and monitored by the ASA in the issuing of Agrément certificates rather than the deem-to-satisfy, or rational design rules. As discussed in Chapter 5.2.1 the Agrément, South Africa makes provision for the certification of innovative and non-standardised products, material or components, confirming fitness-for-propose or the acceptability of the related non-standardized design and the conditions pertaining thereto. The certification is issued by the Board. It will be pertinent to have this on board as it is well constituted to take into consideration the needs and efforts of the urban poor, and not increase stringent building

requirements. In this way it caters for the continuous evolution building practices which Glassie argued is a characteristic of the vernacular architectural language, and teaches “occupants about their position in the universe and surrounds then with a sense of their capabilities”. (See chapter 4.6). The climatic conditions play a huge role in the context, more so as the findings showed that a number of activities spread beyond the interior of the dwelling. It is recommended that the ASA provides avenues for investigating innovative ideas that emanated from self-help efforts in the informal settlements.

Modernisation and changes in lived realities from rural to urban were reflected in the way residents made use of their dwellings. The high reliance on electricity was also noted especially for cooking and TV entertainment. It was observed in the dwellings that apart from the bed, most dwellings at least had an electric stove. Changes in occupation from agrarian to industrial and service-related saw residents spending much more time away from the dwelling resulting in less time spent in the settlement. As reported earlier residents indicated relaxation spots within the settlement, where they played such games as snooker or sat in groups and chatted in the evenings as in Quarry Road West.

Even though the national political environment was not a focus of this study, it affected how and when the settlements could be visited for data collection. This was because of the political situation of the country influenced the settlements, often tied to broken promises and issues of trust with local authorities. The idea of the neighbourhood further informs the evolving vernacular architecture. The findings show that the settlements are composed of sub-clusters of residents sharing the limited common spaces in front of their dwellings. In some instances the spaces are wider than the passages and offer sitting areas and play areas in front of the dwelling. This varies from the settlement wide communal spaces created around ablution facilities and other recreational spots (see Photo 11-2 in the appendix).

The procedure of forming a settlement was by stamping a presence through the occupation of land, the most important being the evidence that the occupant slept in the shelter, proved by the presence of the bed. While the procedure seemed straight forward, it creates dynamic relationships between the actors, where the only positive relationship was that between the existing resident (usually the ‘community leader’) and the new comer, and the NGO if present. It is therefore recommended that

the relationships between the settlement residents and non-residents are improved for mutual benefits. spaces. Figure 9-1 shows the dynamics between the actors.

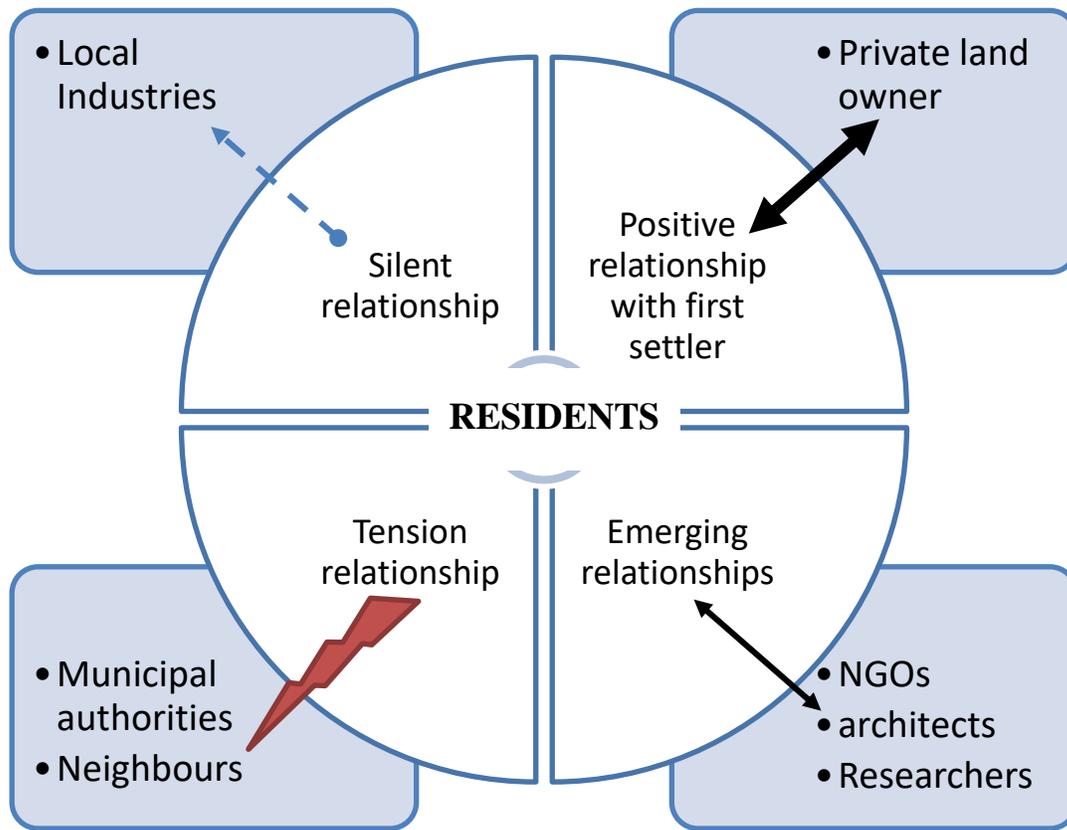


FIGURE 9-1 RELATIONSHIP BETWEEN ACTORS

The urban vernacular drivers can be summarized in the actors, the context and the procedure of engagement see Figure 9-2. A critical evaluation of these factors as described above give the rise to the architectural language. It is recommended that these relationships should be improved and closely monitored during upgrading programs.

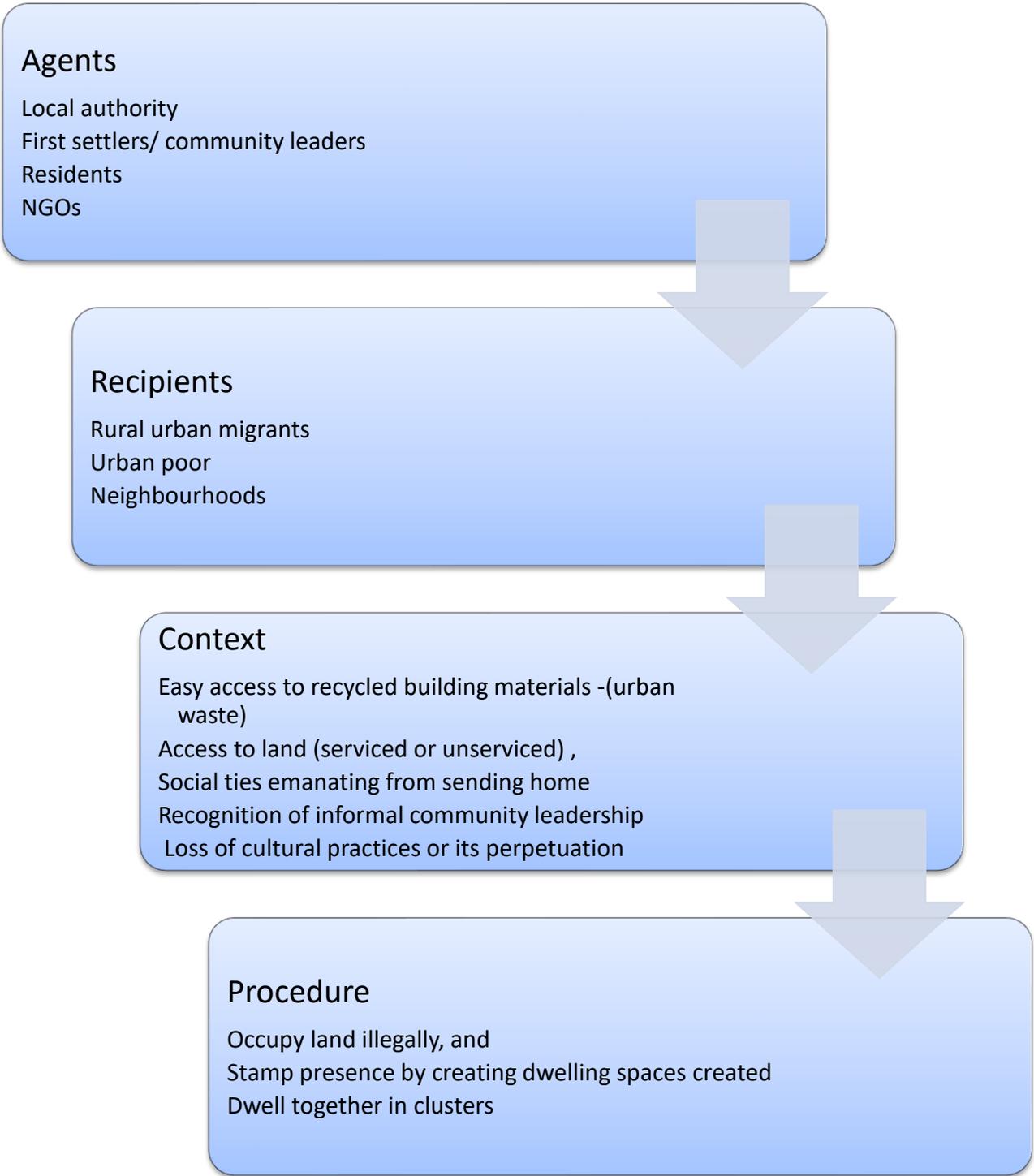


FIGURE 9-2 URBAN VERNACULAR ARCHITECTURAL LANGUAGE (UVAL) DRIVERS

9.5 IMPLICATIONS FOR UPGRADE PROGRAMS

The study has shown the importance of settlement governance, and the communication channels and networks to reduce the tensions between formal and informal governance systems. It is important to understand the urgent prompts for upgrade and the indicators, the settlement size being the key indicator. The findings showed that the first settlers had a key role to play in how fast a settlement grew. It also showed that access into the settlement was by invitation and consent of those present. On arrival a spot was allocated, and the dwelling erected.

Efforts should be made to advise informal settlement 'leaders' in terms of the settlement size, such that state intervention would be more efficient. Further to this, the monitoring of settlement size, and density should be done in conjunction with the settlement leaders. Settlement leaders should be made aware of the consequences of uncontrolled growth, such include fires, flooding and insufficient delivery of much needed services, and the also environmental threats and hazards.

It is also important to develop communication networks and engage in the co-production of knowledge, between the residents, agents and the organs of state. While the findings have shown that the residents prefer internal informal governance structures and often rely on the 'intellectual' of the settlement, the agency roles of NGOs and other voluntary organisations should be maximised in providing mediation between the formal state organ and the informal residents.

In terms of the continuous growth of the settlements, there is a need to reduce the rate of settlement growth. Attention should be drawn to rural development. The findings have shown that residents are interested in the rural life but aspire to enjoy the social services and employment opportunities of the urban areas. It is recommended that larger cities with informal settlements should critically investigate the sending homes of residents and engage in bilateral relationships to reduce the migration rates. While the state engages in developing human settlements, residents have shown that they can develop settlements (despite the inefficacies) without state assistance. By providing the much needed social and infrastructural services in the rural areas, the development rate of informal settlements in urban areas will be reduced. It is recommended that further research is carried to establish and share the housing responsibilities of sending homes and receiving towns. This would reduce the illegal occupation of urban land. It is further recommended that the parcelling of land is made more affordable.

The findings further show that the low quality of the dwellings built are due to two main factors, i.e. difficulty in assessing building materials and the hurriedness in assembling the dwelling. High cost of building material forces the residents to make use of recycled building materials or more commonly, waste materials from industrial areas. An important implication was that the residents were attracted by the illusion of finding jobs in the industries, but rather access waste materials from the factories to use as building materials.

In terms of building norms and standards, the findings showed that these are often unattainable for the urban poor. The norms and standards can be divided into the subjective and objective standards, whereby the objective standards are non-negotiable. It is recommended that the norms and standards are reviewed, taking into consideration the findings of this research, and made to focus more on the objective standards which refer directly to health and safety of residents.

While it has been argued that the multilayering of space within the dwelling is a more efficient way to use the limited dwelling space through the day, care must be taken to separate activities such that health and safety of residents is not compromised. This could form a key principle for the 21st century urban vernacular architectural language. The evidence of clustered spatial patterns should be carried through in any upgrading program, to allow for enhanced social support systems, which extend to the rural sending homes.

9.6 RESEARCH LIMITATIONS AND POSSIBLE FURTHER STUDIES

The study was limited in terms of scope. In this research the scope of study was limited to three informal settlements in the KwaZulu-Natal area of South Africa, which was reflective of only one vernacular language. Further studies will be needed in other traditional contexts to show the similarities of informal dwellings to the local vernacular. It is also acknowledged the further scrutiny of the data from interview and sketches by the residents, could reveal further clues to the definition of the 21st century vernacular architectural language. This will be an ongoing process to be disseminated through journal articles and other publications over time.

In terms of land allotment, this research did not consider the size of plot most appropriate for a poor urban household. However, the findings showed that there was a system in place that resulted in similar plot sizes, whereby each spot allocated to a household was an average of 24sqm. While literature showed that the urban poor were economically excluded from participating in the urban

housing market, the findings showed that if they were able to access land legally, the need to hurriedly erect shelters would be eliminated, and households would be able to build more stable dwellings. It is therefore necessary to conduct further studies to determine the most appropriate plot size in terms of affordability and spatial usability.

Further to this, the research has shown that the informal settlements are incubators for innovative building technologies. Therefore, further studies should be carried out to investigate these innovations, especially in the recycling of waste materials from industries and factories to produce affordable building materials. This would create the opportunity for better quality affordable self-build dwellings. Other areas of possible further research arose in terms of the relationship between vernacular architecture and the rural urban transition. The research found that there was the clustering of dwellings, and thereby the creation of neighbourhoods within the settlements, but further investigations will be necessary to unearth relationships between the external neighbours as this was not carried out in the study. It is however noted that it entails aspects of sociology which was beyond the scope of the study.

9.7 CONCLUSION

In conclusion, 'to dwell' has been conceptualised as being at peace in a place. It however goes beyond the inhabitant's traditional belief systems represented in the 'fourfold of the earth, sky, mortals and divinities' as described in Chapter 3, and presents a transforming dwelling typology. To dwell is influenced by a number of factors from accessibility, to governance and culminates in the creation of dwelling places and neighbourhoods with meaning to the residents, rather than mere spaces on the urban landscape. Based on the phenomenology paradigm, the research showed various meanings created in the informal settlements. These meanings go far beyond the physical dwelling and include philosophical meanings to the residents. The knowledge gap addressed is the evolution of vernacular architectural language in the 21st century. While earlier vernacular is conceived as a language that is static in geographical terms, the 21st century vernacular architectural language is transposed across the rural urban route, adapting to new context. It is an era characterised by low (or no) income, little technological advancement, lack of access to land, and yet large-scale urbanisation. The research has shown how spatial generators such as actors, context and interaction dynamics shape the vernacular language of the urban environments. While the interactions were hostile with non-residents, internal cohesion was observed amongst the residents

largely due to the methods of gaining access to the settlement. The urban vernacular architecture is thus defined by evolving meanings and the morphological ordering of space. Migration, modernisation and governance are key drivers in the modification of the rural vernacular language as it transposes into the urban vernacular, with the informal settlements as the breaking grounds for the evolution of the 21st century urban vernacular architecture.

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11 APPENDICES

11.2 INTERVIEW SCHEDULE- RESIDENTS



University of KwaZulu-Natal
School of Built Environment and Development Studies
Discipline of Architecture
PhD Research

Researcher: Judith T Ojo-Aromokudu (0312602427) **Supervisor:** Claudia Loggia (0312603144)

Co-Supervisor: Prof Walter Peters +27 (0)51 401 2197

Sawubona

My name is Judith T Ojo-Aromokudu and I am registered for a PhD in the discipline of Architecture at the University of KwaZulu-Natal. As a member of the community, you are invited to participate in the research. The aim of my research is to gain an understanding of how space is used in your dwelling. The study is expected to enroll 25 participants from three different settlements in the eThekweni municipality and will involve interviews in the dwelling, during which I will be taking notes, photos and making use of audio recording. The interview will take not more than 20 minutes. Kindly indicate to me if you wish to be anonymous.

The potential benefit of your participation is that an understanding of your dwelling conditions will be articulated and useful for future upgrade programs. There is no financial reward for your participation. Your participation is voluntary and you are free to withdraw from the study at any stage and for any reason. You are reminded that should you wish not to participate in the research this will not result in any form of disadvantage to you.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (Protocol reference number HSS/1642/015D).

Should you have any queries concerning this research please contact

Researcher: Judith Tinuke Ojo-Aromokudu – 083 992 4644; ojoaromokud@ukzn.ac.za

Supervisor: Dr Claudia Loggia – 0312601771; loggia@ukzn.ac.za

Research office: UKZN Humanities & Social Sciences Research Ethics Administration
Research Office, Westville Campus, Govan Mbeki Building, Private Bag X 54001 Durban
4000, KwaZulu-Natal

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UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

School of Built Environment and Development Studies

Discipline of Architecture

PhD Research

Researcher: Judith T Ojo-Aromokudu (0312602427) **Supervisor:** Claudia Loggia
0312603144) **Co-Supervisor:** Prof Walter Peters +27 (0)51 401 2197

Sawubona

Igama lami ngingu Judith T Ojo-Aromokudu. Ngenza iziqu zobudokotela ngaphansi komkhakha wezokwakha eNyuvesi yaKwaZulu-Natal e Thekwini. Njenge lunga lomphakathi uyamenywa ukuba ube yingxenywe yalolu cwaningo. Injongo yalolu cwaningo ukuthola ubuciko obusha osetshenziswa ekwakheni imijondolo. Lobu buciko bungaba usizo ezinhlelwenzi zokwenza ngcono imijondolo. Lolu cwaningo lulindeleke ukuba luthole abahlanganyeli abangama 25 abahlala emjondolo ezingxenyeni ezintathu ezihlukene ngaphansi kuka Maspala weTheku. Laba bahlanganyeli bazobuzwa imibuzo mayelana nendawo abahlala kuyo, izithombe zendawo abahlala kuyo ziyothathwa, kuphinde kubhalwe phansi loko okubonakala endaweni abahlala kuyo kanye nabakuphendulayo. Le mibuzo angeke ithathe isikhathe esingaphezulu kwehora. Ulwazi olutholakale kulemibuzo luzogcinwa iminyaka eyisi 5 esikhungweni ngaphambi kokuba ilahlwe. Ukuba yingxenywe kwakho kulolu cwaningo kuyoba usizo ekubhaleni ngokuqonda izimo ohlala ngaphansi kwazo kanye nezinhlelo zokwenza ngcono imijondolo. Akukho muholo ozowuthola ngokuba yingxenywe yalolu cwaningo kepha uzozenzela ngokuvolontiya. Ukhululekile ukuphuma kulolucwaningo noma ngabe yinini, noma ngabe yisiphi isizathu uma unesifiso. Uyakhunjuzwa futhi ukuthi ukungavumi kwakho ukuthi ubeyinhlenganisela yalolu cwaningo angeke kube nasici kuwena. Lolu cwaningo lubuyekwezwe lwaphasiswa yihhovisi le Nyuvesi yaKwaZulu-Natal Humanitie and Social Development Research Ethics Committee

Uma unemibuzo ethile ngalolu cwaningo ungashayela kule mininigwane

Researcher: Judith Timuke Ojo-Aromokudu – 083 992 4644; ojoaromokud@ukzn.ac.za

Supervisor: Dr Claudia Loggia – 0312601771; loggia@ukzn.ac.za

Research office: UKZN Humanities & Social Sciences Research Ethics Administration
Research Office, Westville Campus, Govan Mbeki Building, Private Bag X 54001 Durban
4000, KwaZulu-Natal South Africa

ISIVUMELWANO

Mina.....(amagama aphelele ophendulayo) ngiyaqiniseka ukuthi ngiyakuqonda okuqukethwe yilombhalo nesimo socwaningo, ngithi ngiyavuma ukuba yinhlanganisela nengxenywe yako.

Niyaqonda ukuthi ngiyingxenywe yalolu cwaningo ngokuvolontiya nokuthanda kwami. Ngiyaqonda ukuthi ngikhululekile ukuyeka ukuba yingxenywe yalolucwaningo noma ngabe yinini uma ngifisa futhi ukwenza loko angeke kube nomthelela omubi kimina.

Ngithela ukhethe kuleli bhikisi			
		Y	C
	Ukuopha ivideo		
	Ukuqopha inkulumo		
	Izithombe		

DECLARATION:

I..... (Full names of participant), hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am taking part in this project voluntarily. I also understand that I am free to refuse to answer any questions and am also free to withdraw from the project at any time, should I so desire, and that doing so will not have negative consequences for me.

Please tick the appropriate box			
		Y	N
	Video recording		
	Audio recoding		
	Photographs		

SIGNATURE OF PARTICIPANT:

DATE:

INTERVIEW SCHEDULE FOR RESIDENTS

Abahlali bomjondolo _____ Ikheli lomjondolo _____

Ubulili _____ Umnyaka _____

Imiyalelo: Please answer all questions as accurately as possible. Ngisacela uphendule yonke imibuzo ngokucophelela nangeqiniso.

Tell me a bit about your background; Ngicela ungitshela kancane ngemvelaphi yokho;

Where were you born? Wazalwelaphi?

Where did you live before here? Wawuhlalaphi kuqala?

Why did you come to live here? Ngabe iyini eyakwenza uzohlala lana?

How often do you visit your home? Uvakasha kwangakhi ekhaya?

Weekly	Forth nightly	Monthly	Quarterly	Yearly	Never

How long have you lived in the settlement? Sekwisikhathi esingakanani ungumhlali wasemjondolo?

HOUSEHOLD

Relationship with Household head. Ubudlwelane nehloko yasekhaya.

What is your relationship with the Household Head/ Ngabe bunjani ubudlwelane nehloko yasekhaya?	
I am the head of the household/ Yimi inhloko yasekhaya.	

Spouse/ Oshade naye	
Child/ Ingane	
Foster child/ ingane eyintandane	
Other family/ Izihlobo	
Not related / Ongahlobene	

Household members/ Inani yabantu abahlala endlini

Total number/ Amanani esehlangene					
Male/ Abesilisa	Inani				
0-16	1	2	3	4	>4 cacisa
17-25					
26-48					
49-59					
>60					
Female/Besifazane	Inani				
0-16	1	2	3	4	>4 cacisa
17-25					
26-48					
49-59					

>60					
-----	--	--	--	--	--

Tell me a bit about your Dwelling/ Ngicela ungitshela kancane ngomuzi wakho.

Do you own this dwelling?/ Ngabe nguwe umnikazi walomuzi?

When did you build this shelter ?/ Sakhiwa nini lesakhiwo? _____

How did you build this shelter (i.e. Did you have any assistance? From who?)/ Wasakha kanjani lesakhiwo sakho (i.e. ngabe wathola usizo? Futhi kuba?)

Please indicate what material your dwelling is made of?/ Ngicela usicacisele ukuthi wakhengani umuzi wakho?

Material	Wall	Roof	Floor finish	Window / Door frame	Door
Corrugated iron/ Uthayela					
Cardboard/ Ikhadibokisi					
Plastic/ <i>uPlastiki</i>					
Adobe wattle and daub (<i>Umhlabathi</i>)					
Glass/ iglasi					
Timber/ Ukhunu					

Brick/ Blocks and mortar/ Isitini/ibloxi					
Fabric (carpet, etc)/indwangu nokhaphethe					
Other (Please describe)/ Nokunye (Ngicela uchaze)					

How did you come to locate your dwelling here? / Kwadalwa yini ukufuna ukwakha noma ukuhlala la?

What challenges do you experience in terms of space? / Yiziphi izinselelo owabekana nazo mayelana nendawo yokwakha?

What do you think about the environment you live in? / Ucabangani ngesimo sendawo ophila kuyo?

What value, if any do you attach to you dwelling?

If you were to name you dwelling, what would you call it?/ Uma kuthiwa qamba indlu yakho igama, ungaliqamba ngaliphi?

PREVIOUS CONSTRUCTION EXPERIENCE (SELF-HELP PRACTICES)/ Isipiliyoni sokwakha? (Ukuzakhela)

Have you ever taken part in the construction of your dwelling? / Buyinxenye yokwakhiwa komuzi wakho?

How did you participate? / Udlale yiphi indima?

Describe the experience? / Ngisacela uchaze isipiliyoni sakho ekwakheni komuzi wakho.

SPACE / INDAWO

What activities do you do in your dwelling? / Ngabe yimiphi izinto ozenzayo endlini yakho nsukuzonke?

Which space do you consider most important? / Ngabe iyiyiphi indawo oyibona ibalulekile kunazo zonke?

Do you share spaces with your neighbour? Ngabe nisebenzisa izindawo ezifanayo nomakhelwane wakho?

Are there times you quarrel with your neighbours due to space conflicts? / Ngabe kwake kwaba nodweshu noma inxabano phakathi kwakho nomakhelwane wakho mayelana nendawo?

Do you think you have better living space here than in your previous home? Ngabe uyibona inconyana indawo manje kunale owawuhlala kuyona kuqala?

ACTIVITIES

What activities do you carry out indoors? / Yiziphi izinto ozenzayo phakathi endlini nsukuzonke?

What activities do you do outdoors? / Yiziphi izinto ozenzayo ngaphandle emagekeni nsukuzonke?

What activities are you not able to do here? / Yiziphi izinto ongakwazi ukuyenza kulendawo?

Describe the sleeping arrangements at night? / Ngisacela uchaze indlela enilala ngayo endlini ebusuku.

DAILY ACTIVITIES

In the table below describe to the best of your ability what you are doing in each time zone. Kulelitafula ngisacela uchaze ukuthi usuke uwenzani ngesikhithi esithile?

Time	
4.30am	
6-8am	
8-10am	
10-12noon	
12-3pm	
3-6pm	
6-9pm	
9-11pm	
11-4.30	

List of possible activities around the dwelling / Uhlelo lezinto ezenziwayo ekhaya.

Toilet	Sweep indoor/outdoor
--------	----------------------

Bath	Business activity
Brush	Relax
Think/meditate	Watch TV
Eat	Sleep
Cook	Drink
Talk	Play games
Wash cloths	Intimacy
Family discussion	etc

11.3 INTERVIEW SCHEDULE ARCHITECTS



University of KwaZulu-Natal

School of Built Environment and Development Studies

Discipline of Architecture

PhD Research

Researcher: Judith T Ojo-Aromokudu (0312602427) **Supervisor:** Claudia Loggia (0312603144)

Co-Supervisor: Prof Walter Peters +27 (0)51 401 2197

Greetings

My name is Judith T Ojo-Aromokudu and I am registered for a PhD in the discipline of Architecture at the University of KwaZulu-Natal, Durban, South Africa. As a social architect, I would like to interview you as part of the research. The aim of my research is to gain an understanding of the new architectural language emerging in informal settlements, which could inform appropriate response and interventions to informal settlement upgrade programmes. The interview will take not more than 20 minutes of your time. The data collected will be kept for five years within the discipline and then disposed of. Should you wish to be kept anonymous in the reporting, kindly indicate this to me.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (Protocol reference number HSS/1642/015D).

Should you have any queries concerning this research please contact the researcher, supervisor or co-supervisor whose contact details are above. You can also contact the research office: UKZN Humanities & Social Sciences Research Ethics Administration Research Office, Westville Campus, Govan Mbeki Building, Private Bag X 54001 Durban 4000, KwaZulu-Natal South Africa. Tel: 27 31 260 4557; Fax: 27 31 260 4609; email: HSSREC@ukzn.ac.za

DECLARATION:

I..... (Full names of participant), hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am taking part in this project voluntarily. I also understand that I am free to refuse to answer any questions and am also free to withdraw from the project at any time, should I so desire, and that doing so will not have negative consequences for me. I consent to audio recording of this interview.

SIGNATURE OF PARTICIPANT:

DATE: _____

Kindly answer the following questions

1. What do you think about the concept of Architecture without Architects?

2. Do you think there is any architectural value in informal dwellings ? Yes__No__

a. If yes Please describe this

3. What values and character would you consider important in defining architecture and particularly vernacular architecture?

4. What would you say are useful considerations in interpreting an architectural language?

5. How best can you define 'informal' dwellings without making reference to the formal?

6. How do you incorporate cultural and indigenous requests that go contrary to norms and standards in design?

7. Do you think there is any kind of architectural value (or some kind of architectural language) hidden in informal settlements? Yes____ No _____

8. Do you think the current norms and standards are ignorant of cultural and indigenous practices?

Yes ____ No_____

9. Do you think inherent in informal settlements are the beginnings of a new vernacular architecture?

Yes ____ No_____

10. Do you think current building standards are unattainable by the poor? Yes____ No_____

11.4 BUILDING STANDARDS

TABLE 11-1 MINIMUM STANDARD

Requirement	Minimum standard
Decency	
Shelter unit suited to population groupings	One structurally separate dwelling for each family or natural unit.
Sub-division of unit for carrying on ordinary functions	Enough bedrooms so that parents, boys, girls can sleep separately. In addition, a living-room and a kitchen or living-kitchen.
Possibility of privacy	Relatively sound proof walls. No windows looking directly into windows of other buildings.
Health	
Facilities for cleanliness and sanitation	Running water and flush toilets within the dwelling. Toilet ventilated. Bath or shower either in the dwelling, in the building, or in the neighbourhood (depends as much on local habits as on absolute standards).
Adequate air and cross-ventilation	No dwelling more than two rooms deep in any part, which in apartment-buildings ordinarily means no more than two dwellings per landing, if the stair-halls are also to be adequately ventilated. As large a glass area as climate and heating provisions make practical.
Purity of air	No noxious industrial streets immediately adjacent.

Maximum lights and adequate sunlight in all rooms and public corridors	<p>No small courts.</p> <p>Definite proportions between height of buildings and opens space between them.</p>
Facilities for outdoor recreation	<p>Play-spaces for small and larger children.</p> <p>Walks, parks, athletic provisions, gardens conveniently located for adults.</p>
Amenity	
Attractive outlook	<p>Lawn and gardens visible from all windows.</p> <p>Preservation of natural features of site in the plan.</p> <p>No paved inner courts.</p> <p>No blighted or rundown areas adjacent.</p>
Moderately prepossessing architecture (note that these are minima)	<p>Buildings which more or less obviously fulfil their purpose, of good materials, and simple and direct design.</p> <p>Grouped harmoniously.</p> <p>Plan clear and simple to follow, both physically and with the eye.</p>
Quiet	<p>Adequately insulated walls.</p> <p>No major traffic street immediately adjacent.</p> <p>No noise-amplifying courtyards or side alleys.</p>
Comfort and convenience	
Domestic	<p>Rooms designed to accommodate furniture and living habits and to facilitate circulation and cleanliness.</p> <p>Closet, cupboards, kitchen equipment (especially apparatus for cooking and hot water).</p>

	<p>Laundry and drying facilities, either within the dwelling, within the building, or, if with additional labour-saving devices, centralized within the community.</p> <p>Electricity.</p> <p>Not too many stairs to climb. Say no more than four stories or three flights.</p> <p>In cold climates, adequate heating provision.</p> <p>In hot climates, high enough ceilings.</p>
Communal	<p>Immediate or easy access to schools, necessary shops, cafes, and social centres.</p> <p>Work, let us say, not more than thirty minutes away at a maximum.</p> <p>Some facilities for choices of dwelling and location on part of tenant and therefore possibility of natural population groupings.</p>
Safety	
Firmness of construction	Adequate and workable building codes.
Play-space for small children without crossing a through street.	Use of super-block, dead-end street, or large open block-interior.
Passable fireproof	<p>Regulations against predominantly wood construction except for isolated low dwellings.</p> <p>Stairs and corridors wide and directly accessible to outside.</p>
Permanent immunity from partial and total neighbourhood 'blight'	Communities planned, constructed and administered continuously as a functional unit.

Source (Bauer, 1934: 142)

11.5 DWELLING NAMES FROM RESPONDENTS

TABLE 11-2 DWELLINGS NAMES

Descriptions	Zulu	English translation
Progressive	Nqubekela	Place of development
	Nqubekela phambili	Place of development/growth
	Vuka uyiseshe	Wake up and check/search
	Siyakhulisa	Bringing them up (she runs a creche)
	Behlale bezonda abafazi namadoda	Always hating women and men
	Siyathuthuka	Developing
	Bekezela	Be patient
	Siyazama	Trying
	Mpumelelo	Success
	Scelithemba	Asking for hope
		New stand
	Vukazakhele	Wake up and build
	Ukufezeka kwamaphupho	Dreams come through
	Isqalo	Beginnings
	Osizweni	Help
Isibuko Sezwe	Mirror of the nation	
Function	Fihli khanda	Hide your head
	Cabin	A place to stay

	Kwatshitshi Phaqa	Place where there are more young girls staying
	Ekuphumleni	Place of rest
	Umthunzi	Shelter
	UmpHEME wami wokukhosela	Shelter
	Indu yodaka	Mud house
Psychological	PhumaUhleke	Happy place
	Phiweyinkosi	Given by God
	Entokozweni house	Happy home
	KwaMathapi	Place of Mathapi family
	ekuthuleni	Place of peace
	Indawo evukelekile	Safe haven
	ebuhleni	Beautiful
	emsindweni	Noisy place
	Indawo yokuphumula	Place of rest
	Ikasi lami	My township/hood/ home
Size	Ikopi	Tin house
	Kwavezu nyawo	When sleeping the head is covered but feet stays outdoors.
	Nguvezu Unyaw	My small shack
	igumbi	Room
	jondi	Slang for shack

11.6 TYPICAL SETTLEMENT TYPOLOGY

<p>Single shack</p>		<p>Informal dwelling in Havelock settlement (2016)</p>
<p>Backyard shack</p>		<p>Backyard shack in eMagwaveni settlement, eThekweni (2016)</p>
<p>Formal informal dwelling</p>		<p>Formal structure with no building plans or secure tenure in Piesang River eThekweni. (2016)</p>

11.7 PHOTO VOICE

PHOTO 11.6.1 INTERIOR WALL FINISHED WITH RECYCLED SHOWER CURTAIN AND WATER PROOF BANNERS

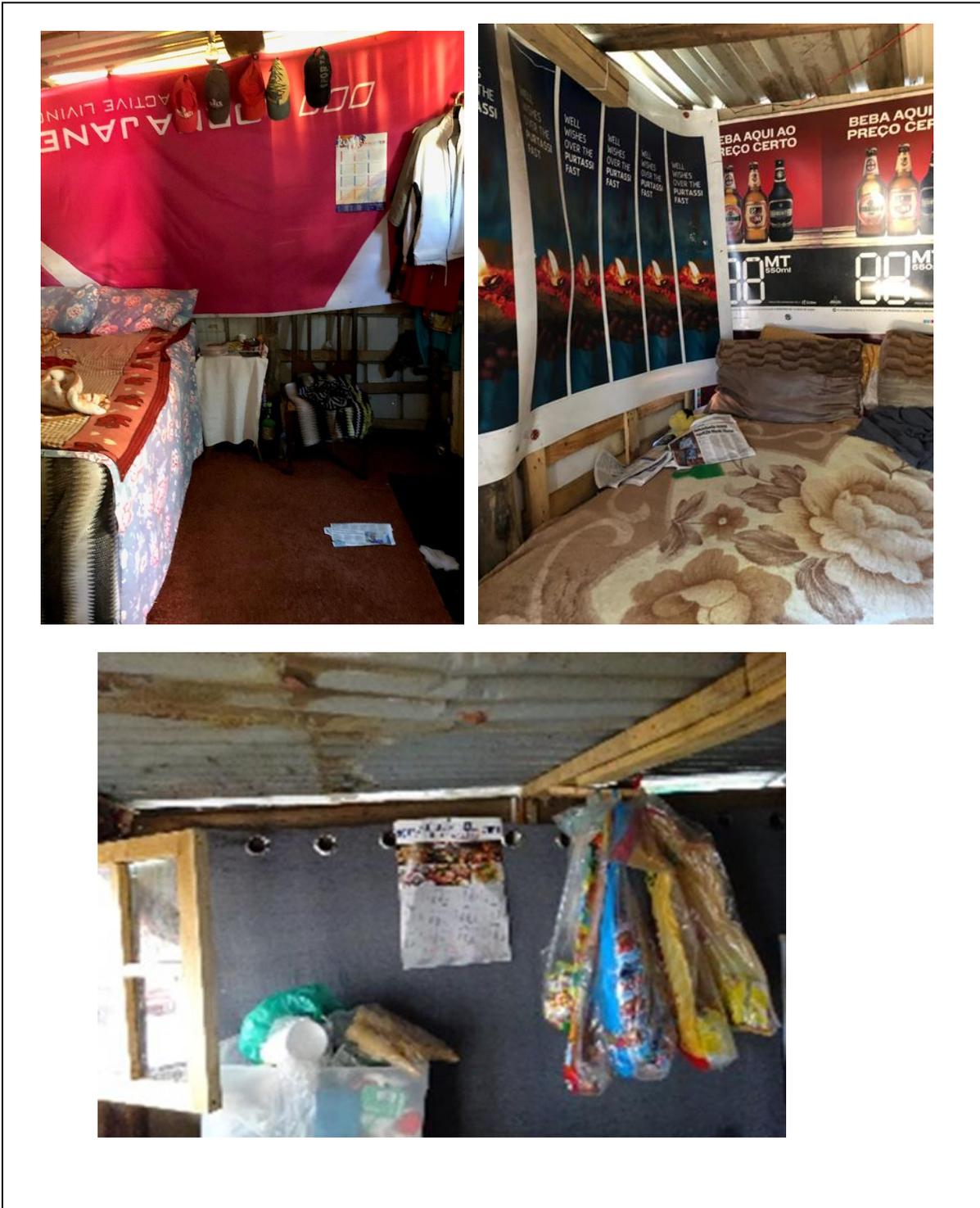


PHOTO 11.6.2 COMMUNAL GATHERING AREAS

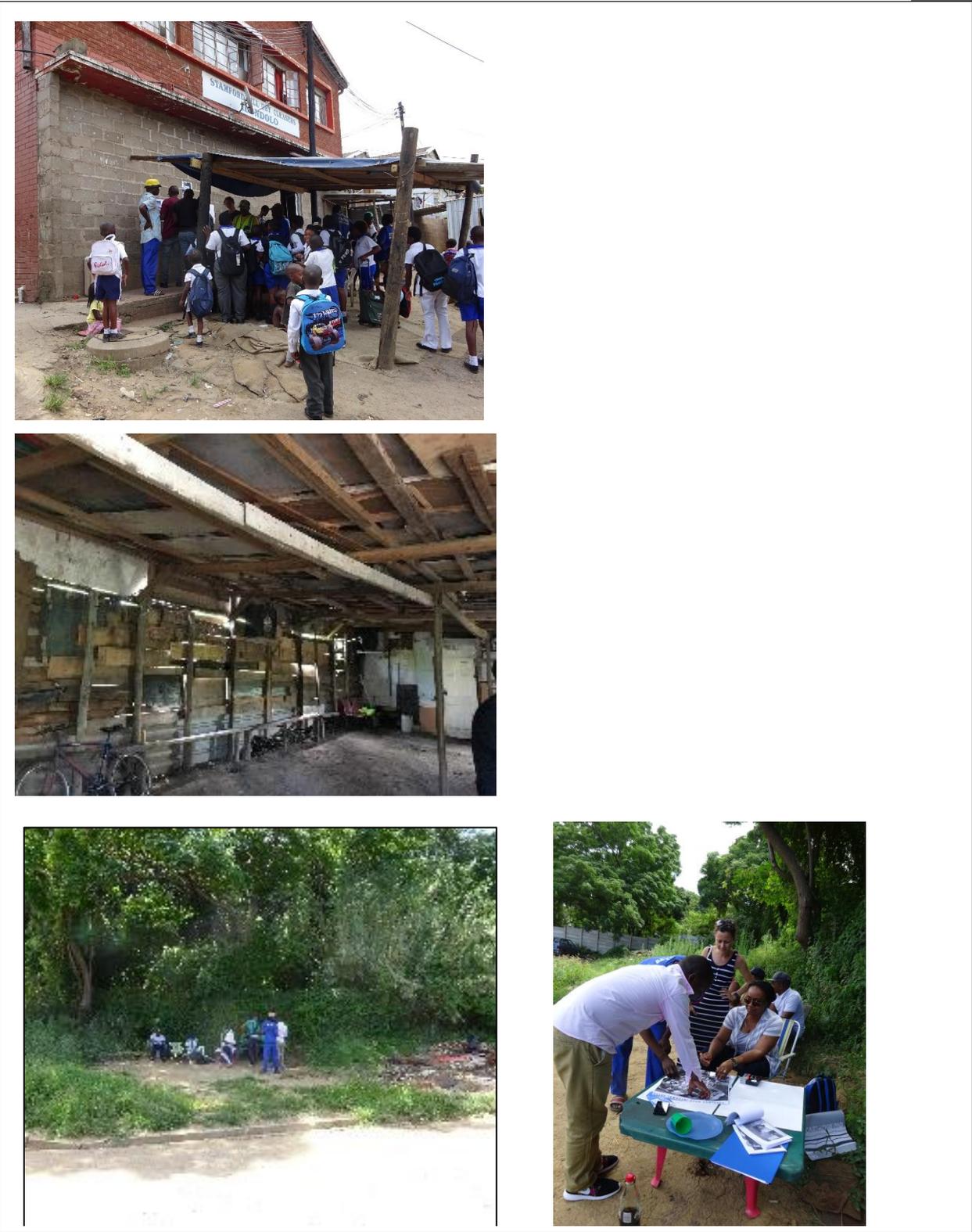


PHOTO 11.6.3 VARIOUS BUILDING MATERIALS



PHOTO 11.6.4 VEGETABLE GARDENING



PHOTO 11.6.5 POORLY LITE INTERIOR WITH VENTILATION GAPS BETWEEN WALLS AND ROOF



PHOTO 11..6.6 DECORATIVE FEATURES



PHOTO 11.6.7 SCALE AND SIZE OF DWELLING



PHOTO 11.6.8 CLUSTER OF ENTRANCES



PHOTO 11..6.9 ENVIRONMENTAL CHALLENGES



Strom water channel in Quarry road flooded with refuse



Erosion in kwaMathambo



Dumping in the drainage channel in Havelock

PHOTO 11..6.10 ENTREPRENEURIAL ACTIVITIES IN THE DWELLING



PHOTO 11.6.11: OTHER ACTIVITIES IN THE DWELLING

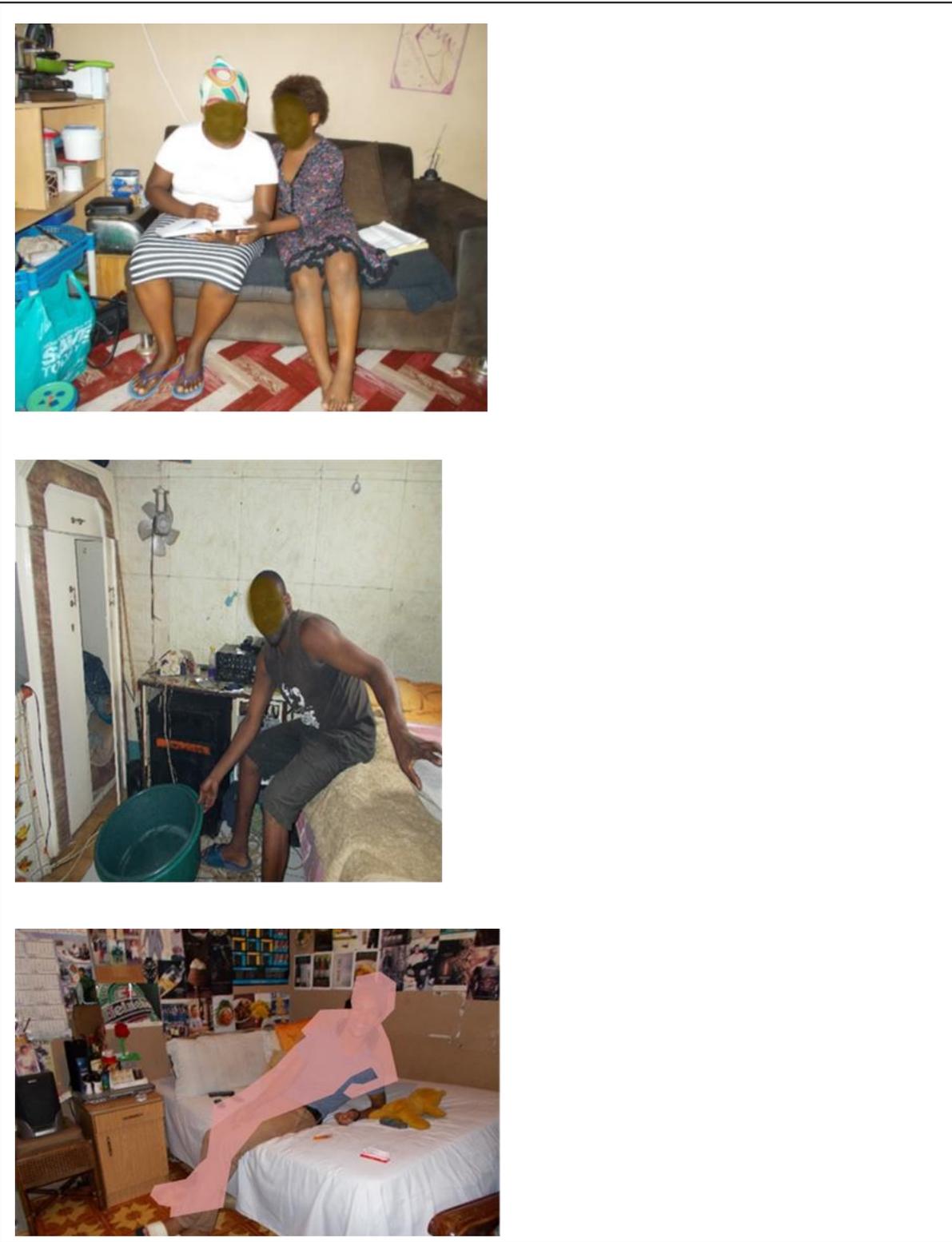


PHOTO 11.6.12 INTERIOR OF THE DWELLING

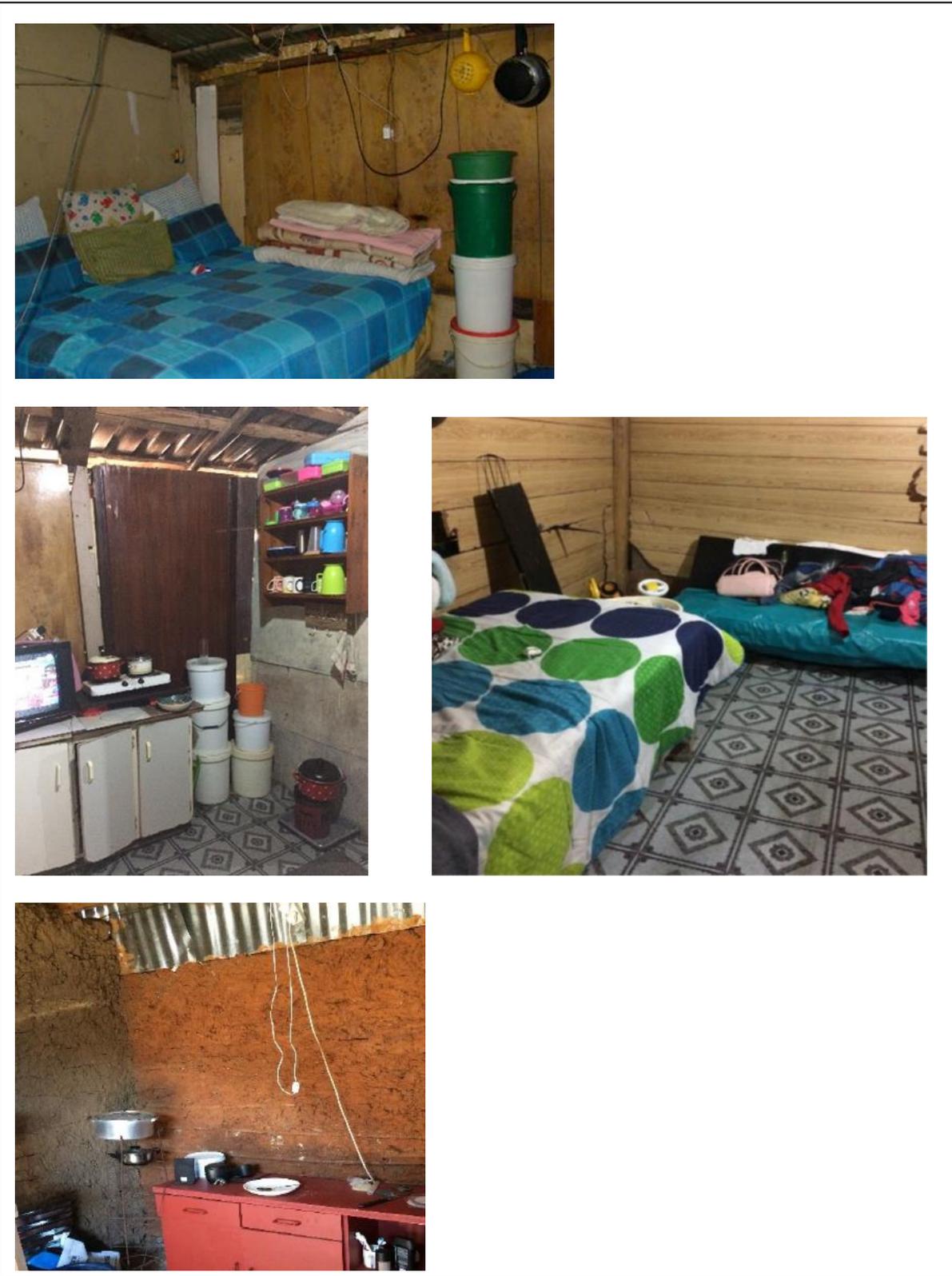


PHOTO 11.6.13 WASHING AND DRYING OF CLOTHES IN THE SETTLEMENTS

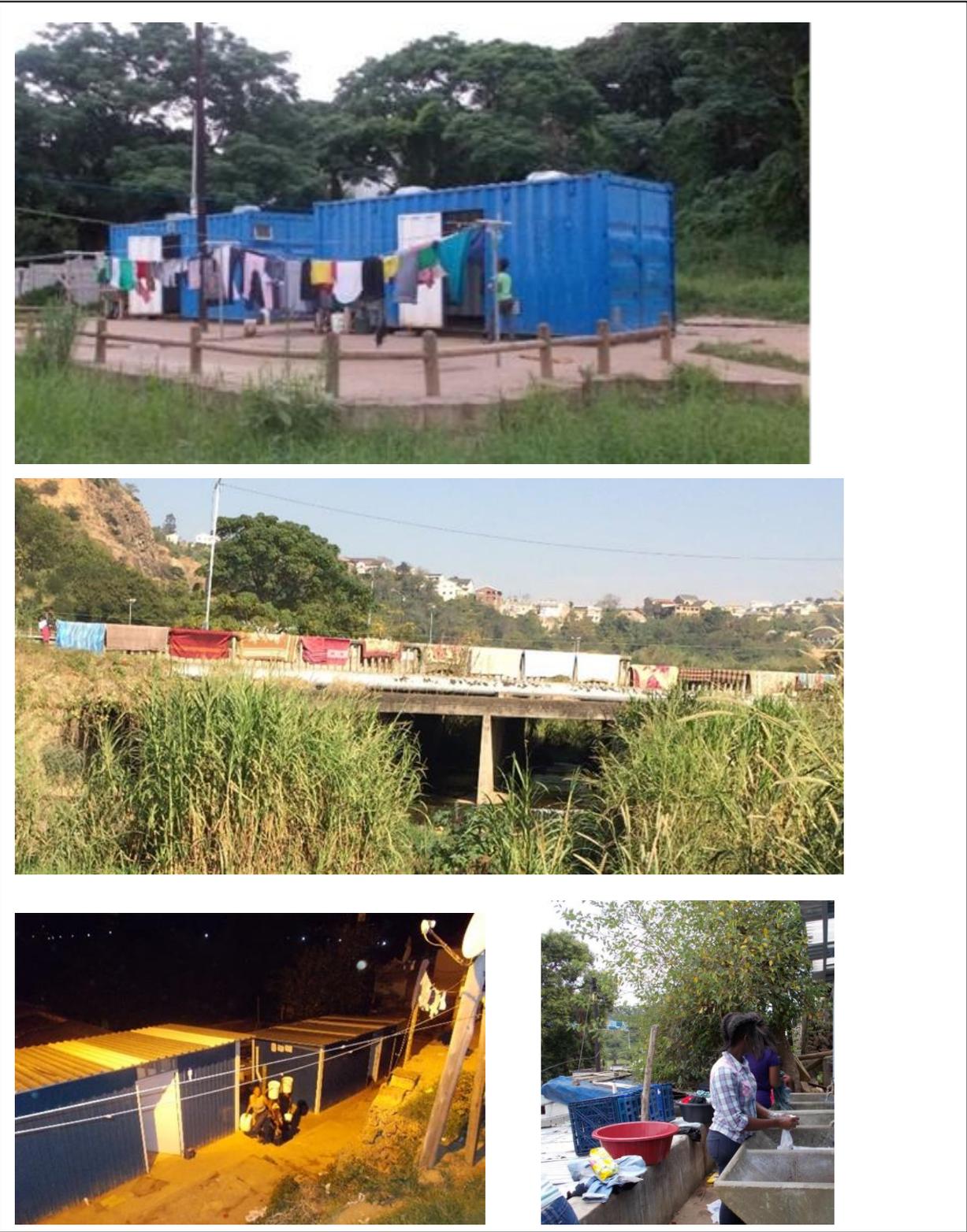


PHOTO 11.6.14 OTHER ACTIVITIES OUTSIDE THE DWELLING



11.8 TRADITIONAL VS INFORMAL DWELLINGS

Comparing of the traditional and urban dwellings is done based on the Vitruvian values of firmness, commodity and delight.

Similarity	Traditional Dwelling character	New Urban Prototype characters	
Very similar	1.1	Collective and individual marks of the dwelling - No dwelling is alike	Same
	1.2	Embodies community	Same
	1.3	Houses have a single entrance (with interior court yard)	Same
	1.4	Dwellings are low rise	Same
	1.5	Function of the palaver tree for men not working	A common place of meeting for discussions under a tree
	1.6	Dwell then build; building does not necessarily mean to dwell	Dwell then build
	1.7	Head of the household as gate keeper. Acts as family guardian directing allocation of dwellings	Strong presence of gate keeping practices whereby access into the settlement is done by referral by a family member or close friend
Similar	2.1	Collection of identical dwellings	Collection of similar structures - Post frame structure
	2.2	Dense dwellings for safety and security - settlements are tucked into the site	Dense settlements
	2.3	Water Jar	Empty water basins
	2.4	Light source is the sun - small openings stronger light - place of the source of light.	Light beams into a cool dark interior induces quiescent state of mind (calmness)
	2.5	Granary- Agricultural activity work from home	Work from home - some economic activities like selling
	2.6	Community lives in clusters	Reasonably so - a number of residents are from the same traditional community

	2.7	Connection between houses and the dwellers dynamic and interactive human scale - Human dimension, human reach, relationship based on mutual vulnerability	Human scale very evident.
	2.8	Imprinting on the landscape	Dwelling transcends beyond the interior imprinting on the landscape
	2.9	Communicate feelings of familiarity symbolic and functional	
	2.1 0	Trans individual being personal and collective	
	2.1 1	Communal identity - size, placement, relation to site, aesthetic quality, technique of construction, order of construction.	
	2.1 2	Continuous renewal, ongoing participation (voluntarily)	There perpetuation of the settlement by word of mouth
	2.1 3	Communal identity vs individual identity	Single planning principle?? Similar form of the dwelling i.e. communal identity.
	2.1 4	Life giving speech - memory - the present is woven from the past	This is evident in the mirroring of the rural dwellings.
	2.1 5	Tradition provides a basis for creativity	Very similar
Slightly similar	3.1	Social regulator?	The socio-economic regulator
	3.2	Head of the household provides spiritual contact with the ancestors	Seems to be missing. However, contact is kept with the rural areas.
	3.3	The bigger the family, the bigger the house. Dwelling grows with the arrival of new wife/child	Space allows only for limited expansion or increase of the number of dwellings.
No similarity identified	4.1	Transforming of the house as family members die and join the ancestors	Family members return to the rural areas
	4.2	Respect for the earth as an inspiration. Conscious of environmental impact	Not conscious (has to do with responsibility?)

4.3	Positioning of doors in the Batammalibas, orientates to face the sun i.e. west	Not evident
4.4	Door alignment	Not evident
4.5	Walls for social and defensive functions	Not evident. Huge problem of privacy. No audio privacy

11.9 VERNACULAR ARCHITECTURE DEFINITIONS

TABLE 11-3 VERNACULAR ARCHITECTURE DEFINITIONS

In the table below the vernacular discussed has been colour coded based on the country.

Page no	Definition	Source theorists/ year / place	Referring to	Vernacular architecture era	Category
62	Siwalatri, et al. (2014) notes that vernacular architecture is formed through several considerations such as kinship system, geographical conditions and social belief systems.	Siwalatri, et al., (2014), Asia	Functional value	modernism - post modernism	3
63	Other African scholars (Osasona 2005, Amole, 2000) have however identified the vernacular as a modification of the traditional due to external influences particularly colonialization.	Osasona 2005, Amole 2014 Nigeria	Something else linked to the traditional	modern movement	2
64	Others have linked vernacular architecture to the instinctive command of particular materials	Hitchcock, 1963, UK	Common practice instinctive expertise	colonial / industrial revolution	1
64	The period was followed by the era of colonialization and by the 1950s vernacular architecture was recognised but considered non-monumental, non-classic, and non-medieval. It was an era that 'romanticised' the un-architectural nature of vernacular architecture.	Rudofsky, 1965, UK	Something else- linked to some standard	modern movement	2
63	It can be argued that this traditional architecture is synonymous with the 'particular universal' which is described as that which is unique to a particular society, or a major part of the whole satisfying the attributes of all in the particular society or community.	Wang and Heath, 2011, UK	Common practice - particular universal' unique to a particular society'	globalisation	4
	Vernacular architecture is considered of noble value (Vellinga, 2013).	Vellinga, 2013, UK	Noble value-honourable value?	modernism - post modernism	3

	One idea is that vernacular architecture is poorly defined and used more as a generic term referring to local or regional traditions that are self-built and have developed in response to local climatic conditions and using available resources over long periods of trial and error (Vellinga, 2013).	Vellinga, 2013 UK	Evolving (developing) Particular universal	sustainability	5
59	...vernacular architecture is thus referred to as a grand tradition, 'an architecture that is able to be practiced by most if not all members of the group'.	Frescura, 1980, South Africa	Grand tradition practiced by all	modernism - post modernism	3
	Vernacular architecture is celebrated for having an identifiable prototype, competence and an acceptable configuration.	Radford, 1987 South Africa	Identifiable prototype, competence and an acceptable configuration	modernism - post modernism	3
59	The vernacular refers to self-help efforts within a particular environmental context, and utilizes traditional technologies, built to meet specific needs. He argues that it reflects the values, economies and way of living of the cultures that produce them.	Oliver, 1997 South Africa		modernism - post modernism	3
64	The second phase of the vernacular architecture is noted during the modernist movement period that started in the early 1900s. The discourse raised a number of questions due to the unstructured nature of reading the built environment. During this period, vernacular architecture was considered of no 'architectural' value and was subdued by the modernist thought.	Haarhoff, 2011, South Africa	Something else- linked to some standard	modern movement	2
48	Yet responds to physical, social and cultural context, manifesting the Vitruvian principles of commodity.	Baker, 2012, South Africa	Functional value	modernism - post modernism	3
63	In the words of Rapoport the "it is more closely related to the culture of the majority, and life as it is really lived, than is the grand design tradition".	Rapoport, 1969, US	Grand design tradition	modernism - post modernism	3

62	Glassie, (1990) argues that the process of making the vernacular continuously teaches the 'occupants' about their position in the universe and surrounds them with a sense of their capabilities.	Glassie, 1990, US	Free of rigidity – continuously evolving	modernism - post modernism	3
48	According to (Glassie, 1990) vernacular politics are egalitarian, i.e. they are free of rigidity, even though actors are neither equal nor the same. Instead he argues that their diversity interlocks and their individuality and needs combine for mutual benefits. The vernacular was considered to be an architectural form that was non-monumental, non-classic and non-medieval.	Glassie, 1990, US Upton, 1993, US	Egalitarian – democratic, free, classless Something else – different - linked to some unknown standard	modernism - post modernism modernism - post modernism	3 3
63	The term vernacular has to do with the unselfconsciousness or non-masterly of architecture.	Johnson, 1994, US	Something else- linked to some standard	modernism - post modernism	3
63	It is often used interchangeable with traditional, indigenous, popular, folk or historical (Glassie, 1995).	Glassie, 1995, US	Something else linked to the traditional	modernism - post modernism	3
63	The term vernacular has to do with the unselfconsciousness or non-masterly of architecture	Johnson, 1996, US		globalisation	4

DATA ON SETTLEMENTS

11.10 KWAMATHAMBO

Column1	code	1.1 place of birth	1.2 place of origin	1.4 frequency of visit 'home'	1.5 No of years in the settlement	1.3 why did you come to live here
1	KM005	Bizana	Bizana	quarterly	6	job opportunity
2	KM011	Flagstaff EC	Flagstaff EC	yearly	17	job opportunities
3	KM012	Maphumulo	Maphumulo	quarterly	9	job opportunities
4	KM018	Kwaswayimane	Kwaswayimane	monthly	no response	job opportunities and cheaper rent
5	KM019	Maphumulo	Maphumulo	monthly	15	job reasons
6	KM020	Bizana	Bizana	monthly	15	job reasons
7	KM021	UMzimkhulu	UMzimkhulu	quarterly	20	job opportunities
8	KM002	New Hanova	New Hanova	quarterly	17	job opportunities
9	KM029	Maputo	RedHill	bi	3	to join husband
10	KM036	JHB	New Castle	yearly	18	to join family member
11	KM040	Transkei	Dassenhok	yearly	6	job opportunity
12	KM062	Ntabankulu EC	Ntabankulu EC	quarterly	13	to look for job opportunity
13	KM088	Flagstaff EC	Flagstaff EC	monthly	20	general work
14	KM110	Maphumulo	Maphumulo	quarterly	12	looking for job
15	KM116	Nongoma	Nongoma	quarterly	11	job reasons

16	KM121	Newlands	Newlands (another room in Kwamashu)	quarterly	9	married into this home
17	KM180	Bizana	Bizana	quarterly	6	job opportunities
18	KM190	Bizana	Bizana	quarterly	15	looking for job (domestic)
19	KM199	Portshepstone	Portshepstone Scottburgh	quarterly	10+	work
20	KM201	Flagstaff EC	South Coast (Beniza)	bi	4	looking for work
21	KM213	Emkhumbane CatoManor	Kwamashu	never	19	for the purpose of owning a place to call home
22	KM220	KwaNongoma	KwaNongoma	yearly	13	job opportunities close by
23	KM010	Lusikisiki	Overport	yearly	8 months	job opportunities

11.11 HAVELOCK

Column1	code	1.1 place of birth	1.2 place of origin	1.4 frequency of visitshome	1.5 No of years in the settlement	Household size
1	HV003	lusikisiki EC	Lusikisiki EC	quarterly	20	6
2	HV005	Kranskop KZN	Kranskop KZN	quarterly	12	5
3	HV009	Maphumulo Stanger	Maphumulo Stanger	monthly	7	1
4	HV010	Harding KwaMaci	Hostel Webly	yearly	5	2
5	HV048	Emakhabathini KZN	Greytown	monthly	15	1
6	HV050	Mount Ayliff	Mount Ayliff	yearly	7	4

7	HV084	Greyville	Eshowe	quarterly	18	3
8	HV087	Maclaire EC	Maclaire EC	quarterly	16	1
9	HV090	Bizana EC	Clearmont sub 5 township	quarterly	16	1
10	HV095	Cofimvaba EC	South Beach	quarterly	1	2
11	HV100	Richmond	eRoserary	monthly	25	2
12	HV101	Queens town EC	Queens town	yearly	15	nr
13	HV117	Kwavuma	Kwavuma	quarterly	5	nr
14	HV118	Grey town	Grey town	monthly	0	2
15	HV121	EC	Emanoti (Inanda)	never	25	4
16	HV135	Grey town	eNgoma	monthly	16	2
17	HV153	Hlazuka Richmond	Hlazuka Richmond	monthly	6	2
18	HV165	Ingwavuma KZN	Ingwavuma KZN	quarterly	1	1
19	HV168	Grey town Elangeni	Avoca	quarterly	2	1
20	HV173	Embumbulu	Mayville	monthly	3	1
21	HV185	Eminbeni Lady Smith	Emlazi	monthly	11	2
22	HV193	Eshowe	North beach	monthly	0.5	1
23	HV202	Mnambitli	Mnambitli	monthly	24	1
24	HV203	Emzimkhulu Ngwnitini	Emzimkhulu Ngwnitini	monthly	15	2
25	HV204	Kwamashu	Tongaat Redhill	quarterly	0	7
26	HV205	Kwamaphumulo	Kwamaphumulo	never	22	1

11.12 QUARRY ROAD WEST

	code	1.1 place of birth	1.2 place of origin	1.4 frequency of visit 'home'	1.5 No of years in the settlement	2.2 household size
	Q003	Bergville New stand	Bergville New stand	monthly	10	1
	Q004	Lusikisiki	Kennedy Road	monthly	7	2
	Q005	Bizana	Bizana	fortnightly	15	4
	Q006	Lusikisiki	Emzintlamvu near lusikisiki	monthly	13	5
	Q007	Mkhomazi	Mkhomazi	yearly	15	nr
	Q008	Matatiyela	Hammersdale	yearly	10	5
	Q009	uMzinkhulu South coast	Palmiet Clare road IS	yearly	20	1
	Q010	Emandeni	Emandeni	yearly	20	3
	Q011	Greytown	Greytown	quarterly	17	nr
	Q012	Richmond	Inanda	fortnightly	10	4
	Q013	Eshowe	Kenani	quarterly	17	3
	Q014	Ndwedwe	Palmiet Clare road IS	monthly	17	6
	Q015	Umzinkhulu Ensikeni	Umgudulu IS	never	24	nr
	Q016	Umtata (emqhekezweni EC)	Umgudulu IS	yearly	13	3
	Q017	Umzinkhulu Ensikeni	Umgudulu IS	never	27	3
	Q018	Umzinkhulu Ensikeni	Umgudulu IS	yearly	37	2
	Q019	Bizana	Portshepstone	quarterly	7	1
	Q020	Ibhulwa Kwanonguqu KZN	eBhulwa	yearly	17	4
	Q021	Nongoma	Clermont	yearly	7	4
	Q022	Bizana	Jacobs	quarterly	4	1
	Q023	Umtata (emqhekezweni EC)	umtata	yearly	4	3
	Q024	Bizana	Portshepstone	monthly	15	3
	Q025	Bizana	Bizana	monthly	10	2

11.13 LIST OF PUBLICATIONS

- Ojo-Aromokudu J., Loggia C. 2016 Normal informality in low-income settlements of KwaZulu-Natal South Africa Loyola Journal of Social Sciences, Vol XXX No 2, 191-212
- Ojo-Aromokudu, J., & Loggia, C. (2017). Self-help consolidation challenges in low-income housing in South Africa. Journal of construction Project Management and Innovation, 7(SI(1)), 1954-1967.
- Ojo-Aromokudu, J.T., Loggia, C. and Georgiadou, M.C (2016) “Normal” Informal Living Spaces in Low-Income Human Settlements in South Africa”. Proceedings of the 52nd ISOCARP Congress, Durban, South Africa, 12-16 September 2016. Cities We Have vs. Cities We Need. Editor: Guy Perry & Slawomir Ledwon. ©ISOCARP 2016. Produced and published by ISOCARP. ISBN: 978-94-90354-47-3 (<https://isocarp.org/activities/isocarp-annual-world-congress-2/52nd-isocarp-congress/2016-congress-proceedings/>)

Conference presentations

- KZNIA New Paradigms: THE ARCHITECT AND STATE HOUSING IN SOUTH AFRICA
- SAHF 2013: South African Housing Scape: Subsidy criteria and the housing backlog
- UIA 2014: Housing consolidation: innovative attempts of households in consolidation of low-cost housing in South Africa”
- Human Habitat III -World Urban Forum 2018
- African Centre for Cities International Urban Conference 2018 from 1 to 3 February 2018 in Cape Town, South Africa - RE-interpreting informal dwellings as an expression of a ‘new vernacular architecture’. Funding from Africa Centre for Cities (ACC) under the International Journal of Urban and Regional Research (IJURR) foundation fellowship to attend the conference

- The City re-shaped, Leeds University 11-12 September 2018:
Society, power and dwelling spaces in informal settlements in South Africa,
challenges and opportunities funding from UCDP International travel grant
- International conference on Architecture and urbanism, University of Lagos, 15-16
November 2018.
Conceptualizing the Urban Vernacular Architecture of the 21st Century: Place
Making Lessons from Informal Settlements in Durban

Upcoming publications

- Encyclopaedia of Vernacular Architecture of the World -2nd Edition: Informality
(South Africa)