

1. INTRODUCTION

This study has been carried out for the attainment of a master's degree in applied science from the Department of Town and Regional Planning, University of Pretoria. The field of study is low-income subsidised housing in Mamelodi and it is focused on how the design of housing (form), be they starter units or site and service, how the placing of the top structures have affected the use of space, and the socio-economic issues prevalent within the selected areas has influenced the process of consolidation.

For the purpose of this study consolidation is seen as: *the process of formalisation of core/self-help housing. It refers to the process where self-help settlements undergo an incremental physical transformation toward a formal house (Hart & Hardie, 1983).*

Two case studies, with differing housing provision, form the basis of this research, i.e. Mamelodi extension 6 was provided with a site and service scheme whilst Mamelodi extension 10 was provided with roof structures and services.

The structure of this chapter is as follows (refer to figure 1 below):

- This chapter begins by discussing the background to the problem in the local context. This section focuses on the housing environment inherited by the ANC government in 1994. It sets the scene for the motivation of this study.
- The aims and objectives are then highlighted and the statement of the problem is spelled out accompanied by the sub problems.
- The relevance of the study with its limitations is then presented, which motivate the need for a refocus on the qualitative rather than quantitative approaches.
- The scope of the study is set out.
- Finally, the definition of terms is listed followed by the structure of the rest of the report.

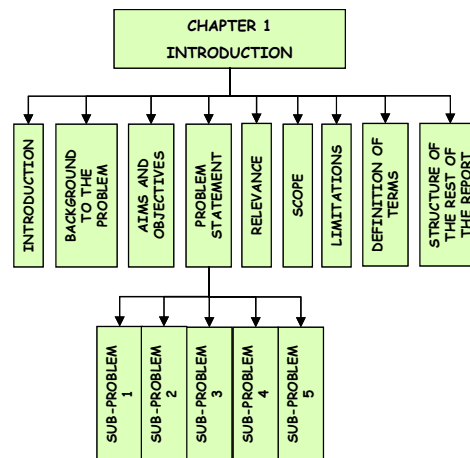


FIGURE 1: Structure of chapter

2. BACKGROUND TO THE PROBLEM

In 1994, the new government was faced with many severe problems inherited by the pre-democratic era. The policies and politics of this pre-democratic era, as stated within the National Housing Code: User Friendly Guide (2000), created a housing environment characterised by:

- **Housing backlog:** was estimated in 1990 as approximately 1,3 million units. By 1997, the housing backlog stood at 2.2 million. Despite the efforts made by government, the backlog continued to increase. As a result of population growth, the backlog figure is estimated to increase by 204 000 every year.
- **Lack of affordability:** Due to the high levels of unemployment and relatively low average wage levels, a large number of South Africans cannot afford to provide for their own housing needs independently. Approximately 80% of South African households appear to be without an income or earning up to R3500 per month (1996).
- **Fragmented housing policy and administrative systems:** The early 1990's were characteristic of a fragmented Housing Sector, which was inconsistently funded, lacked role definition and defined lines of accountability. Inappropriate laws and procedures inherited by apartheid needed to be amended or repealed as well.
- **Lack of capacity:** Due to the apartheid legacy, the Housing Sector also experienced a lack of capacity in terms of human resources and materials to provide housing fast.
- **Non-payment of housing loans and service payment boycotts:** Boycotts during the 1980's by communities resulted in many being unable or reluctant to pay for the bonds, rent and services.
- **Lack of end-user finance:** As a result of many reasons including the non-payment of home loans by the communities during the boycotts, lenders were reluctant to lend to low income families. This problem was exacerbated by redlining and discrimination, poorly designed credit instruments, and the lack of willingness of households to save.
- **Insufficient land:** Land identification, allocation and development was slow and complex, which resulted in insufficient land for housing development.
- **Inappropriate standards:** Infrastructure, service and housing standards were inappropriate to the needs

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- **Different requirements between Provinces:** Different policy responses were needed in the different provinces as a result of unique circumstances in each case.
- **Special needs of women:** Demographic trends in South Africa show that women are poorer with less access to resources than any other groups. Special attention needs to be given to women in housing.
- **Inexperienced housing consumers:** Due to apartheid many people have never bought or rented a house. As a result, many inexperienced housing consumers make mistakes or fall prey to unscrupulous operators who steal their money.
- **A culture of building:** An inherent culture of building exists within many cultural groups in South Africa where households build their own homes via savings.
- **The Housing Sector as a contributor:** The Housing Sector has the potential to increase employment, individual wealth, encourage households to save, increase the demand for consumer goods and services, etc. If effective, it can contribute to the economy.

The severity of the problems displayed after apartheid appear daunting. However, this study will attempt to address the *culture of building*. This has come out as a way for households in the low-income bracket to build their own homes without the assistance of government. This study will explore this arena in two circumstances with the initial assistance of government, i.e. two different areas where two different types of housing have been provided. Details will be provided later on in this chapter and within chapter 2.

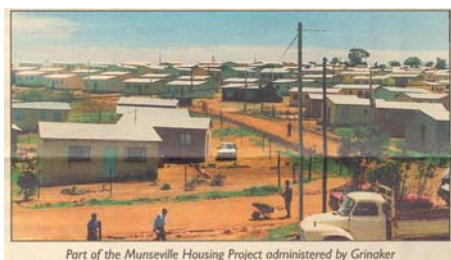
The study will also look at the appropriateness of housing provision:

- **Inappropriate standards:** previously (pre-democratic era) and presently, houses are built to high standards, which make it unaffordable for the low-income market (*lack of affordability*). This study will focus on two types of housing provision that would appear to reflect a more appropriate solution to increase affordability levels and the ability of households to consolidate,
- The different responses needed for different circumstances (*different requirements between provinces, special needs of women*): The uniqueness of each household will be displayed in an attempt to show the demand for a unique approach to housing, i.e. choice in the provision of housing is essential.

Government's response to the inherited environment was aimed at the *housing backlog* that developed over the 50 years of apartheid rule: Before the elections in June 1994, the African National Congress (ANC) government-in-waiting promised to build one million **houses** for low-income households within five years. This commitment, quantitatively a remarkable achievement, took six years to complete and today the periphery of South Africa's cities is covered in housing that has been erected over the past ten years.

Although the effort appeared to be successful in the number of units produced, problems emerged during the provision that began to challenge the initial objective. Amongst complaints, the major one was about the quality of houses being built. It is generally acknowledged that the need to deliver large numbers of houses within a short time span and with a limited budget has impacted negatively on the quality (*Rust, 2003*):

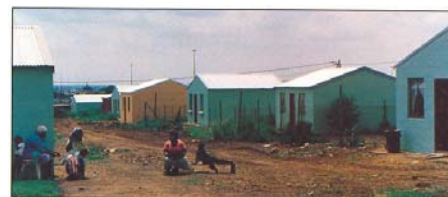
- only 30% of housing units produced complied with the standards imposed;
- there were reports of RDP houses that began to crack and crumble during floods (*Rust, 2003*); and
- the roofs were being blown off during storms (*Rust, 2003*);
- other complaints were of being generally located too far from centres of economic and social activity as well as being located on the urban periphery. (*Rust, 2003*);
- the repeated monofunctionality of the past became evident (*Finlayson, 1978*);
- investment was made in private spaces instead of public spaces;
- the design of units were still very limited (*Finlayson, 1978*):
 - the actual units built provided little choice for expansion;
 - the placing of the units was done arbitrarily.



Part of the Munseville Housing Project administered by Grinoker
(*Housing for Gauteng, newsletter, issue no. 2, 1999*)



(*Housing for Gauteng, newsletter, issue no. 1, 1999*)



(*Housing for Gauteng, newsletter, issue no. 1, 1999*)

Example 5

The bricks used are already crumbling and externally porous
(Waldeck, J. L., 2002).



(Waldeck, J. L., 2002)



(Waldeck, J. L., 2002)

Example 1

The pine door is not acceptable for external use and has essentially already failed
The lintel detail above the windows and doors are not according to specification (Waldeck, J. L., 2002).

Three different types of brick, all different sizes, and two types of material were used on these houses:

Clay and cement bricks should not be used in the same wall due to differences in their coefficients of expansion and contraction.

Bricks of different sizes will cause a bonding problem especially where walls meet (corners, internal and external wall abutment)

The uneven roof is indicative of a low quality of workmanship (Waldeck, J. L., 2002).



(Waldeck, J. L., 2002)

Government strives to achieve two goals: eradicate the housing backlog and to provide the poor with proper houses. Government's attempts have revealed the impossible situation of trying to achieve both. DoH acknowledged in this regard in 1996: *'WE APPROACH MASS DELIVERY WITH A VERY REAL THREAT: THAT IN OUR CHASE OF THE QUANTITY, WE FALL SHORT ON THE QUALITY. IT WILL BE NO SOLACE AT ALL THAT WE CREATED OUR NEW GHETTOS DEMOCRATICALLY'* (Rust, 2003: 10).

The department took steps once again, but this time aimed at **protecting the integrity of the housing products** produced, i.e. a shift from quantity to quality. **Firstly**, norms and standards were introduced in the Housing Act of 1997. This time around these norms and standards would determine how the housing subsidy would be spent, i.e. the amount spent on land and services were reduced to allow more money to be spent on the construction of the housing unit. Previously more money was spent on the acquisition of land and services. In 2002, the **second** initiative was to extend the brief of the National Home Builders Registration Council (NHBRC) to include all houses into its warranty to ensure that all houses built were of good quality. The **third** step was where government placed more emphasis on the 'people's housing process' with the opinion that it often led to better quality homes in terms of size and finishes. In 2002, two more policy shifts were introduced: RDP houses would no longer be provided, and the focus would rather be on beneficiary responsibility where households would control the construction of their own homes.

However, this does not completely satisfy the Housing vision as stated within the Housing Act, 1997 (no. 107 of 1997):

1(iv) "...the establishment and maintenance of habitable, stable and sustainable public and private residential environments to ensure viable households and communities, in areas allowing convenient access to economic opportunities and to health, educational and social amenities, in which all citizens and permanent residents of the Republic will, on a progressive basis have access to:

- (a) permanent residential structures with secure tenure, ensuring internal and external privacy and providing adequate protection against the elements; and
- (b) potable water, adequate sanitary facilities and domestic energy supply."

The only aspects being satisfied in most cases is (b) and part of (a), i.e. secure tenure is provided. Therefore, problems persist. Although it is government's aim to develop final housing products, the actual product (called the top structure, instead of a house) was produced. Such a product has to grow incrementally because it does not address the needs of the residents in terms of size and space, etc. The focus back to quality (by government) was merely placed on the engineering quality of the structures produced with the involvement of beneficiaries, i.e. the house, with no mention about the environments created. The approach to the construction of the structures was also done 'with blinders on', i.e. the structures were built for the present context without consideration of the future. Presently houses are developed at a massive scale, placed randomly and no consideration is given to the expansion opportunities or consolidation of the initial product. This often hampers expansion possibilities by making it difficult and expensive. Internal and external privacy are not addressed either.

Many studies, especially Dewar, have indicated the importance of space on the quality of life especially of poor populations. Careful and informed design could have a major impact on the ability to consolidate and the quality of the end-product. Much international research has been done, especially on the process of consolidation, e.g. Turner, Gilbert and Gugler. Locally such research is conducted by Napier, Hart and Hardie, etc.

Now more than one million houses have been badly planned and are short of the quality target. These units are nevertheless improved incrementally by the residents that display space as a crucial component. This is an opportunity to study the process to inform large numbers of new houses to be built in the future. With this information government would be better enabled to provide an appropriate, sustainable form of housing that people can expand to their desired needs and would make optimal use of the limited resources to house more of the poor.

Most research on low-cost housing focuses on satisfaction and socio-economic issues and much criticism is anecdotal and not based on in-depth research. There is a need to understand how consolidation takes place - how construction takes place (builders, materials, funding), what form it takes, how space is used and which factors (socio-economic, spatial) impact on the process. The future housing process and product would also benefit from such information.

3. AIMS AND OBJECTIVES

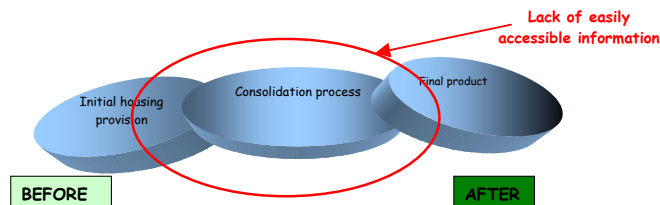


FIGURE 2: Research aims and objectives

Knowledge of what people were initially provided with, (BEFORE) is available. Knowledge of the existing houses is also easily accessible (AFTER). What is unknown, is **how** and **why** the final product looks the way it does. We also don't know the process followed and the **difficulties experienced**, by people that are still in the consolidation phase, to achieve that final product.

The aims and objectives of the study is to inform the design of low income subsidised housing in order to ensure a better end product, and to develop a better understanding of:

- **the construction process** (location and transport of material supplier, cost of materials, the builder, the time taken to construct the house/ extension, the cost of the builder, type of materials (permanent or temporary)
- **the spatial configuration and use of space** (the placing of the units/ extensions, the arrangement of space, the use of space on the erven, the use of space within the houses/ units)
- **the socio-economic factors that impact on the consolidation process** (the household structure, family structures, income, expenditure, employment, employment type, employment location).

4. THE PROBLEM STATEMENT

How does consolidation of low-income subsidised housing take place and how is this process influenced by spatial and socio-economic aspects in the case of Extension ten and Extension six in Mamelodi, Tshwane?

4.1. THE SUB-PROBLEMS

Sub problem 1:

What were the original spatial configuration of housing provided and the process of delivery?

Sub problem 2:

How has the original spatial form of housing changed over time?

Sub problem 3:

What are the uses within the erven and structures today?

Sub problem 4:

What factors have impacted upon consolidation?

Sub problem 5:

What are the perceptions and levels of satisfaction of the residents?

5. RELEVANCE

A large number of houses have been constructed and many more planned since government's aim to construct one million houses within 5 years. However, the quality of these homes was in question.

This research could make an impact to future housing through achieving higher quality and appropriate housing by developing a better understanding of the process of incremental housing that residents undergo.

6. SCOPE

The scope of this study is on low income subsidised housing built after 1994. It covers the socio-economic profiles

of families residing in the case study areas, physical changes to the original product, the construction process, the current use, and the perceptions and levels of satisfaction of the residents and the efficiency of the use of space. Whilst consolidation can be defined as the number of units produced and the number of only permanent structures of produced, consolidation within this study will be defined as the production of permanent structures.

7. LIMITATIONS

The limitations of this study are as follows:

- Limited to two case studies
- Limited number of interviews with a focus on in-depth descriptive information rather than broad statistical representation.
- It does not question the housing delivery system, financial support, etc, but focuses on the actions of the residents toward consolidation.

8. DEFINITION OF TERMS

- Small areas within extensions have been selected for the study instead of the entire areas. The focus is on quality research and not quantities.
- Maps and drawings produced are not to scale.

Consolidation: the process of formalisation. Reaching a point of security that is brought about by making the house permanent/formal as opposed to informal. This permanency is achieved by making improvements to the house, extending, etc., with the use of permanent materials.

Consolidation refers to the process where self-help settlements undergo and incremental physical transformation. In the context of squatter settlements, it may include changes in conditions of tenure, changes in levels of service infrastructure, and the progressive upgrading of dwellings (*Hart & Hardie, 1983*).

Housing delivery system: the way in which housing is provided, e.g. in the form of mass housing or self-help housing. Housing can be provided via the local government, private institutions or housing associations.

Housing: In terms of this study housing will be defined not just as a unit but as shelter, improvement of living standards, improvement of the surrounding environment, access to housing credit, participation in the housing process, etc. Housing will be defined in terms of everything that is attached to process and the product. Much more emphasis will be placed on the product.

Incremental: A process that occurs in stages and eventually builds up to the end-product.

RDP: The Reconstruction and Development Programme (RDP) is a policy framework for integrated and coherent socio-economic progress. It seeks to mobilise all our people and our country's resources toward the final eradication of the results of apartheid. Its goal is to build a democratic, non-racial and non-sexist future and it represents a vision for the fundamental transformation of South Africa by:

- Developing strong and stable democratic institutions
- Ensuring representivity and participation
- Ensuring that our country becomes a fully democratic, non racial and non sexist society
- Creating a sustainable and environmentally friendly growth and development path (*The White Paper on Reconstruction and Development, No. 1954 of 1994*).

The Reconstruction and Development Programme is a developmental programme aimed at co-ordinating government's developmental efforts in terms of a common vision of reconstruction, development, growth, employment and redistribution (*National Housing Code - user friendly Guide, 2000*).

Site and service: Is the provision of a site with services (wet closet, sewerage, water). **Site and service** is the provision of a site with services such as sanitation, storm water drainage, lighting, electricity, drinking water, etc. The construction of the dwelling itself is left to the occupant (*Ward, 1982*).

Roof structures: Is the provision of a site with services and a roof structure. It is classified as a **non-habitable core** house, which has one or more of the major built components missing and therefore requires some input from residents before becoming habitable. These take the form of floor houses (slab only) and roof houses (normally a frame and roof)(*Ward, 1982*).

Core Housing: The provision of a core unit on a site with services. **Core housing** involves the construction of the basic structure with the intention that it be completed at a later stage. Completion is done by either the inhabitants or their direct agents. There are, however, further categories of core housing (*Ward, 1982*).

Self-help: The process of housing provision where recipients of housing build their own houses with the assistance of government in the initial stages. *'Self-help housing is the process where the people that are to be housed take*

responsibility for the planning, organisation, and implementation of particular tasks leading to the provision and maintenance of houses and residential infrastructure. Self-help housing implies the mobilization and self-management of various resources including time, personal savings, and individual and co-operative labour. These resources are consumed during the process. This process does not exclude the use of paid labour provided the contractor is organised by the self-help builder' (Hart & Hardie, 1983).

9. STRUCTURE OF THE REST OF THE REPORT

The methodology of the study is presented as chapter 2. The type of research undertaken is presented as the larger framework within which the study is scoped. The case study areas are introduced with brief descriptions, but prior to this, the criteria developed for the selection of the case study areas are illustrated. The sub-problems of the study are explained in terms of the data requirements, analysis and interpretation after which the types of data required are elaborated on. The acquisition of data involved interviewing residents of the areas. This, however, first required sampling to be done. The sampling method and process is explained in each area. The households selected for the interviews are represented on maps.

Chapter 3, Low income housing delivery and consolidation, serves as the theoretical framework for the basis for this research. It examines the origins of consolidation and the factors that affect consolidation.

Chapter 4 focuses on the case study areas. It provides the background to the process of housing provision, what the spatial configuration looked like and how it has changed since.

More in-depth investigation into the two case study areas is done in chapter 5. The focus of this chapter is on the socio-economic profiles of residents, the process of construction of the structures built, the changes over time, the uses of the erven, the uses of the structures and an analysis of privacy. Conclusions include the factors that affect consolidation between households in specific typologies.

Chapter 6 uses all the data and analysis presented in chapter 5 to develop trends, profiles of consolidators and non-consolidators, and most importantly, identifies the factors affecting consolidation.

Chapter 7 assesses the perceptions and priorities of residents of the two areas and comparisons are made.

Chapter 8 serves as the conclusion and provides guidance for the design and provision of housing.

Figure 3 indicates the different levels of analysis. Chapter 1, 2 and 3 provide the higher level framework and basis of the research. The focus is then moved onto the two case study areas in chapter 4. Chapter 5 analyses case study areas and within the case study areas, i.e. typologies developed within the case study areas and households. From this point, the level of analysis increases again to the comparative chapter, where comparisons are done at typology level and area level. Chapter 7 also displays comparisons at area level. The concluding chapter, chapter 8, brings the study back to the level initially started off with.

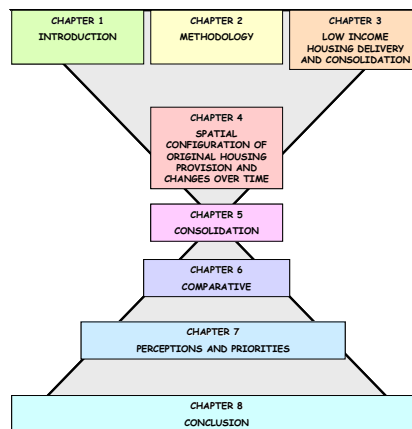


FIGURE 3: Structure of dissertation

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