

**POST-OCCUPANCY EVALUATION
TO DETERMINE THE HOUSING SATISFACTION
OF A SELECTED GROUP OF RESIDENTS
OF STATE SUBSIDISED HOUSING IN TSWELELANG,
WOLMARANSSTAD,
IN THE NORTH WEST PROVINCE**

Young Yee Shin

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VIR CHRISTELIKE HOËR ONDERWYS**

Supervisor: Ms. M.D. Venter
Co-supervisor: Dr. L.A. Greyvenstein

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ABSTRACT

The current housing shortage in South Africa is estimated to be between two and three million houses and it is growing by a further 200 000 every year. When the new government came into power during 1994, it developed a new housing policy and strategy to address these critical shortages. A Housing Subsidy Scheme was introduced and more than 800 000 new housing opportunities were created in the first five years.

The aim of this study was to determine the satisfaction of housing subsidy beneficiaries with their housing. Aspects included in the study were *the awareness of the housing process* as well as *the satisfaction with the housing product* and *the project management*. To achieve this aim, a *post-occupancy evaluation* was conducted among the occupants of subsidised houses in Tsweleng, Wolmaransstad, in the North West Province.

For this study 120 residents were selected by both random and systematic sampling methods and twelve trained fieldworkers conducted interviews with the residents using a structured interview schedule. A relevant interview schedule was developed by the researcher to obtain demographic information about the residents and to establish the awareness regarding the housing process and the satisfaction with the housing product, the project management as well as the participation of the user during the entire housing development process.

A focus group discussion was conducted with the fieldworkers and photographs were taken during the empirical research period to increase the reliability of the observations. The results were statistically analysed and a Housing Satisfaction Score (HSS) was calculated to determine the satisfaction with the product and the project management.

The results of the research showed that the respondents were mostly not informed about the housing process. There was no practical or statistical relationship between housing satisfaction and demographic factors. Most of the respondents did not have detailed knowledge about the subsidy process, affordability, costing and legal aspects. They also had little knowledge of their rights regarding the building process and home ownership. Quantitative data, which is statistically and practically significant, indicated that the respondents were satisfied with the final product but qualitative data indicated that some respondents wanted to have larger houses, wooden doors and larger windows. Some also complained about the poor workmanship

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regarding the finish of the houses such as the walls, the floor and the roof. Respondents were satisfied with the project management. The results, which are statistically and practically significant, indicate that respondents are satisfied with the housing they received.

It may be stated that the users' participation in the housing process and the provision of relevant information through proper communication channels are important factors for consideration in future housing projects.

OPSOMMING

Die huidige behuisingstekort in Suid-Afrika word geraam as tussen twee en drie miljoen huise en hierdie getal neem elke jaar met ongeveer 200 000 toe. Nadat die nuwe regering in 1994 aan bewind gekom het is 'n nuwe behuisingsbeleid en strategie ontwikkel om hierdie tekorte aan te spreek. 'n Behuisingssubsidieskema is ingestel en meer as 800 000 nuwe behuisingsgeleenthede is gedurende die eerste vyf jaar geskep.

Die doel van hierdie studie was om die mate waartoe nuwe huiseienaars ingelig was en deelgeneem het aan die *behuisingproses* te bepaal sowel as hulle tevredenheid met die *behuisingprodukt* en die *projekbestuur*. Om hierdie doelwit te bereik is 'n post-okkupasie evaluering om die tevredenheid van inwoners van gesubsidieerde woonhuise in Tswelelang, Wolmaransstad in die Noordwes Provinsie te bepaal, uitgevoer.

Vir hierdie studie is 120 inwoners deur middel van beide willekeurige en sistematiese steekproeftrekking geselekteer. Twaalf opgeleide veldwerkers het onderhoude met behulp van gestruktureerde onderhoudskedules gevoer. 'n Relevante onderhoudskedule is ontwikkel waardeur demografiese inligting en inligting met betrekking tot die behuisingproses, die woonburt, die behuisingprodukt, projekbestuur en deelname van die inwoners aan die behuisingontwikkelingsproses bepaal, is.

'n Fokusgroep is met die veldwerkers gehou en foto's is van die huise geneem om die betroubaarheid van die resultate te bevorder. Die resultate is statisties verwerk en 'n Behuisingtevredenheidskaal is ontwikkel. Die behuisingtevredenheid is bereken ten opsigte van die proses, die woonbuurt, produkt, projekbestuur en totale behuisingtevredenheid.

Die resultate het aangetoon dat respondente meestal nie ingelig was oor die behuisingproses nie. Daar was geen praktiese of statistiese verwantskap tussen behuisingtevredenheid en demografiese faktore nie. Meeste van die respondente het nie kennis oor die subsidieproses, bekostigbaarheid, finansiële of wetlike aspekte gehad nie. Hulle het ook baie min inligting oor hulle regte ten opsigte van die bouproses en huiseienaarskap gehad. Volgens die resultate wat statisties en prakties betekenis vol was blyk dit dat die respondente tevrede was met die produkt maar kwalitatiewe data het aangetoon dat hulle graag groter huise, houtdeure en groter vensters wil hê. Daar was ook klagtes oor swak vakmanskap, veral ten opsigte van die afwerking van

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die mure, die vloer en die dak. Respondente was tevrede met die projekbestuur. Die resultate wat statisties en prakties betekenisvol is, dui aan dat respondente tevrede is met die behuising wat hulle ontvang het.

Aanduidings is dat groter deelname aan die behuisingproses en beter kommunikasie van relevante inligting deur geskikte kommunikasiekanale belangrike faktore is om aanmerking te neem tydens die beplanning van toekomstige behuisingprojekte.

CHAPTER 1

ORIENTATION

1.1 INTRODUCTION

The White Paper on Housing (SA, 1994:21) defines housing as a “variety of processes through which habitable, stable and sustainable public and private residential environments are created for viable households and communities”. This definition recognises that the environment is as important as the house itself in satisfying the needs and requirements of the occupants. Housing construction should not only concern durability and safety, but also aesthetics, comfort and efficiency of the people living and working within a construction. In modern housing development the architect, the designer and the other professionals work separately to finish the building without much consideration of the occupant’s needs. There is frequently a gap between the designer’s focus and the user’s needs in modern residential construction. Participation of the eventual user during the design process may be one avenue to bridge this gap between designers and users. User’s participation in the design process can also help to reduce errors in housing design. Participation in design helps to satisfy people’s needs regarding creativity and control, and is a constructive way of producing environments responsive to the needs of future occupants (Bell *et al.*, 1996:442). Therefore, involving people in a housing project is an important factor for the satisfaction of occupants as far as their housing is concerned as well as for the success of a housing project. Producing more habitable housing with a pleasant environment directly influences and improves the quality of life of individuals and their families.

Preiser *et al.* (1988:4) describe ‘post-occupancy evaluation’ (POE) as the systematic and scientific measurement, which analyses the differences between the performance criteria and the actual building performance. Through this comparison designers can solve building problems and provide guidelines to improve design criteria. Therefore, post-occupancy evaluation provides insights into the consequences of past design decisions and building performance that could lead to recommendations for better buildings in the future. It helps to improve both housing and the environment and it affects the quality of life of residents.

1.2 STATEMENT OF THE PROBLEM

Tomlinson (1996:64) reports on problems relating to the new subsidised housing scheme in the National Housing Programme. The users have an almost total lack of knowledge of their key role in ensuring community participation in the Subsidy Scheme. Shelter was delivered with little or no consultation and the user was not involved during the decision making process. People who have been subsidised for new housing were not satisfied about the cost, the quality or the size of their housing. The general quality of housing seems to leave much to be desired. The size of the house is far too small in relation to what occupants were paying. Infrastructure, amenities and location were also unsatisfactory. Sometimes access to amenities was rather difficult. A lack of storm water drainage caused water to accumulate on sites.

Cooper and Rodman (1994:60) state in their research on the quality of life in housing co-operatives that users' participation in the housing process gives satisfaction and enhances the quality of life of residents. The quality of housing and the environment is one of the important aspects that affect human well-being. Therefore, the problems of the National Housing Programme could have an influence on people's well-being. The problem is that little research information is available on the housing satisfaction of residents of state subsidised housing and even less research on users' participation in the housing process. Housing satisfaction is the result of the occupant's attitude towards the housing product, which is directly influenced by the housing process. Therefore, the user's participation during the housing development process could play an important role in meeting the housing needs of the occupant. If these needs are not accommodated in the housing process, dissatisfaction with the housing product might occur due to a lack of information regarding the subsidy process, the design and the delivery of the housing product.

1.3 AIMS OF THE RESEARCH

The main aim of this study was to complete a 'post-occupancy evaluation' to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province. The following aims were, therefore, pertinent to this research:

1.3.1 To determine the relationship between housing satisfaction and different demographic factors such as education, occupation, type of family, stage of the family life-cycle, family income and the number of people living in the house.

1.3.2 To determine the awareness of the residents regarding various aspects within the housing process such as the subsidy process, the process of choice and decision, the builder, the date of completion and occupation, the letter of acceptance, ownership and neighbourhood.

1.3.3 To determine the satisfaction of residents regarding different aspects of the housing product that include site placing, floor plan, surface size, structure (windows, doors, wall finishing, roof), aesthetic quality, water and sanitation, temperature regulation, quality of construction, changes and extension to the construction as well as the use of the informal house (“mokhuku”).

1.3.4 To determine satisfaction with the project management during the housing delivery process.

1.3.5 To determine whether there was any participation of the user during the housing development process (including input about the product).

1.3.6 To make recommendations to improve future housing developments

1.4 A CONCEPTUAL FRAMEWORK

The following conceptual framework was developed from Morris and Winter (1978:162) and adapted to South African circumstances. It is within this framework that a post-occupancy evaluation to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province, was conducted.

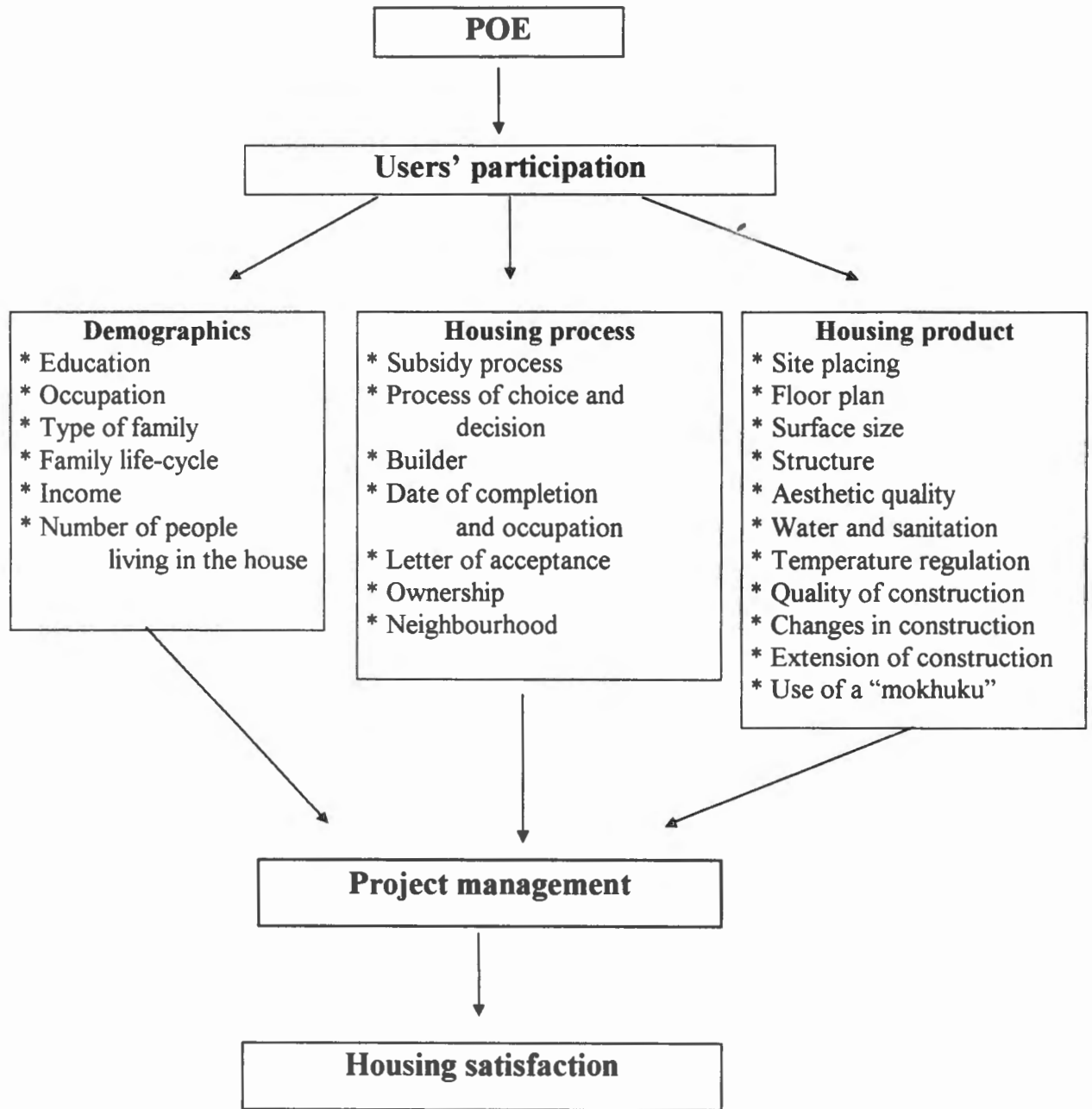


Figure 1.1: A conceptual framework for this post-occupancy evaluation research

The National Housing Programme aims to provide housing to the underhoused and homeless in South Africa. A Subsidy Scheme to facilitate this programme has been developed but no attention has been given to the beneficiaries' perception of this programme. Post-occupancy evaluation can be used to determine the beneficiaries' satisfaction with their houses and whether they took part in the housing process. Different aspects of the project such as demographic characteristics, the beneficiaries' knowledge of the housing process and their satisfaction with the project management will be investigated.

1.5 A DEFINITION OF BASIC CONCEPTS

Each of the above mentioned concepts will now be defined. The first category of concepts is related to the National Housing Programme.

1.5.1 The National Housing Programme

The National Housing Programme aims to facilitate housing development including, but not limited to, any housing assistance measure or other arrangement or measure intended to assist persons who cannot independently provide for their own housing needs, or to facilitate housing delivery or to assist in the rehabilitation and upgrading of existing housing stock, including municipal services and infrastructure (SA, 1996a:5).

1.5.2 The Housing Subsidy Scheme

Subsidy refers to financial assistance that one is not expected to repay. Subsidy can be paid by affordability level as it increases the financial worth of the beneficiary over and above the income/joint income of prospective occupants. The Housing Subsidy Scheme is applicable within the total geographical area of South Africa. The Housing Subsidy Scheme provides for subsidies to be available only to beneficiaries who haven't previously received government assistance in order to enable them to acquire either an initial home or a serviced site. Subsidies are paid from the National Housing Fund through the provincial structures to enable a qualifying beneficiary to acquire a residential property with secure tenure. It also provides for the health and safety requirement of potable water, adequate sanitary facilities, waste disposal and domestic electricity supply. The subsidy can be utilised for a fixed residential property (a serviced site, a site plus starter house, a conventional house, or a walk-up) or for the upgrading of a site, or for service or structure (SA, 1995:6).

1.5.3 Housing satisfaction

Housing satisfaction refers to the experience of an occupant being gratified by the subjective evaluation of the degree of housing needs that have been met (Brink & Johnston, 1979:338).

Residential satisfaction relates to the overall housing condition, including the housing tenure status, the structure type, space, quality, expenditure and neighbourhood. Family and cultural norms determine one's judgement of a family's housing condition and the family's behaviour. Normative deficits occur when current housing conditions result in dissatisfaction of the occupants with their housing (Morris & Winter, 1978:157).

1.5.4 The housing process

'Housing process' means the whole methodical procedure, which is used to accomplish provision for shelter by means of acquisition. It includes policy making, land distribution, the facilitation of basic services, a decision about a site, programming, design, construction, evaluation and the subsidy process. It also includes the completion of the subsidy application, the operating facet of the subsidy application approval, the setting up of the project committee, the tendering process and the construction of show houses, the selection of a house by the beneficiary, the appointment of a builder and the hand-over of the house to the future user with the signing of a letter of acceptance, the so called "Happy letter" (Venter *et al.*, 1999:3).

1.5.5 The housing product

The 'housing product' relates to a house, which is produced by effort. It includes the site; the floor plan; the size of rooms, windows, doors, walls and roof; water and sanitation; temperature regulation mechanisms, and a neighbourhood as environment (Lewis, 1994:135).

1.5.6 The post-occupancy evaluation

'Post-occupancy evaluation' refers to the process of evaluating buildings in a systematic and rigorous manner after they have been built and occupied for some time. Post-occupancy evaluation focuses on the occupants of a building and their needs, and thus provide insights into the consequences of past design decisions and the resulting building performance. This knowledge forms a sound basis for creating better buildings in the future (Preiser *et al.*, 1988:3).

1.5.7 The participation of the user

This refers to the participation of occupants in their housing process to produce a more suitable living place by matching the needs and activities of the occupants. Suitability includes aesthetic needs, functionality and energy efficiency (Sommer, 1983:12).

1.5.8 The project management

This refers to the act of controlling or supervising the housing development project. The developer should organise and control the project from the beginning to the completion of the project. The developer should visit the project site regularly during the execution of the project to check on work as it progresses, give additional guidance to the project, and resolve any problems that might occur. For this project, the term also includes the participation of the local government and Steering Committee in the completion of a housing delivery project.

1.5.9 The letter of acceptance

The 'letter of acceptance', generally known as the "Happy letter", is a document which the new homeowner signs as proof that he/she has received a government subsidised home. It also indicates that he/she is satisfied with the house. The developer needs this document to be able to claim the relevant subsidy from the Provincial Government (Wijnbeek, 1998:8).

1.6 METHODOLOGY

This study is a descriptive exploratory study. A selected group of subsidised residential housing units in Tswelelang, Wolmaransstad, in the North West Province were part of the systematic sample used for evaluation of user's participation in subsidised residential housing in the above-mentioned area. Data were collected by means of a structured questionnaire, observation and interviews. Data were analysed, frequencies and percentages were calculated for the relationship between housing satisfaction and demographics as well as satisfaction with the housing process, the housing product and the project management of the housing. The results are presented as frequency tables and a satisfaction score.

1.7 SUPPOSITION

It was assumed that the respondents would be completely honest and that the respondents would be able to understand the questions because they would be assisted by well-trained fieldworkers using the same language (Tswana) and culture base. It was assumed that the fieldworkers would be able to gather relevant and reliable data.

1.8 AN EXPOSITION OF CHAPTERS

Chapter 1 presents an orientation about the research that is undertaken. This chapter includes an introduction, a problem statement, objectives and aims, a conceptual framework, an exposition of methodological considerations, suppositions and relevant concepts utilised in this study. In chapters 2 and 3 literature relevant to this study will be discussed. Chapter 2 explores four important issues: housing needs, housing satisfaction, quality of life and the profile of the National Housing Programme. Chapter 3 discusses the housing product and the participation of the user in the design process as well as a post-occupancy evaluation. Chapter 4 elaborates on the empirical research. Chapter 5 discusses the results of the empirical study. Chapter 6 presents the conclusions and recommendations of this study.

The following chapter will focus on the literature relating to this study.

CHAPTER 2

HOUSING SATISFACTION AND THE NATIONAL HOUSING PROGRAMME

2.1 INTRODUCTION

According to Lewis (1994:10), housing is an important part of the environment that affects the well-being of people. Housing may fulfil people's basic needs such as physical protection, security, love and acceptance, self-esteem and self-actualisation. Housing is not only a shelter. The quality of housing and its environment is important to give satisfaction for individuals and their family. Satisfaction with housing and its environment is one of the main aspects of the quality of life of the residents. Improving housing and the environment directly affects the improvement of the quality of life of the residents. The South African Government emphasises that the National Housing Programme should be people-centred and development orientated. It should be a development process based on community needs and the fulfilment of human rights as a basic principle (SA, 1994:23). It means that the National Housing Programme through the Housing Subsidy scheme should aim to satisfy people's needs as well as the development of the physical environment for improving the quality of life of all people. A successful National Housing Programme can indeed help to improve the quality of life of South Africans.

In this chapter, housing needs, housing satisfaction, quality of life and the overall National Housing Programme will be discussed.

2.2 HOUSING NEEDS

According to Lewis (1994:10), Maslow's theory shows that life involves basic human needs. Human needs progress upwards in the pyramid to the next level. Physical needs should be met first. When physical needs are satisfied, people should try to fulfil other needs such as security, love, esteem and self-actualisation. Housing is an important aspect of meeting human needs. Housing, as part of the total environment entails the fulfilment of both physical and psychological needs.

2.2.1 Physical needs

Housing fulfils primarily the need for shelter and protection from the weather and outside dangers. Inadequate shelter may result in discomfort, illness or even death. Therefore, it is a most basic human need and essential for survival (Lindamood & Hanna, 1979:3; Lewis, 1994:10).

2.2.2 Psychological needs

2.2.2.1 Security

Housing provides security through protection from physical danger and unknown hazards. The home provides privacy from outsiders with walls that protect one from visual and various degrees of acoustical intrusion. Windows provide some flexibility between total seclusion from and total exposure to the outside world. Inside the home, the floor plan first sets the privacy levels at which the home functions. The layout of the rooms and the amount of privacy affect attitudes and mental health (Nissen *et al.*, 1994:145; Lewis, 1994:10). Direct and indirect window light has an effect on work attitudes, behavioural intentions and the well-being of the worker. Windows are more than a matter of simple preference, they influence the emotional and psychological well-being of persons (Leather *et al.*, 1998:754; Heerwagen, 1990:631). Adequate privacy also has a direct bearing on the feeling of security that provides psychological well-being to the occupants (Duvall-Early & Benedict, 1992:678). Therefore, adequate housing helps people to feel safe and protected.

2.2.2.2 Love and acceptance

According to Bell *et al.* (1996:448), housing enhances social life and bonding of the family by offering a location for the major activities of daily living. Wilson and Baldassare (1996:29) found that people may feel stressed and react by withdrawing if the actual privacy is less than is desired. On the other hand the individual may experience a state of isolation if the actual privacy is more than is desired. Arrangement of space is important as it affects the behaviour of individuals. If individuals have their own appropriate private place, they know that others care about them. Therefore, housing provides feelings of being loved and accepted through family care (Lewis, 1994:13).

2.2.2.3 Self-esteem

According to George and Bearon (1980:76), self-esteem refers to an individual's overall general sense of self-worth. A sense of self-worth can be gained by respecting other people and obtaining satisfaction in life. Self-esteem responds to changes in the external environment. It is important that the external environment is amenable to one's personal needs and offers some satisfaction. Thurber and Malinowski (1999:487) discovered that children's attitudes are influenced by an environment which is not satisfactory. Such influences may cause negative emotions that can result in compensatory behavioural withdrawals. Housing accordingly provides satisfaction that helps to reinforce self-esteem by gaining approval and the respect of others as well as the enjoyment provided by appropriate housing (Lewis, 1994:13).

2.2.2.4 Self-actualisation

Self-actualisation concerns the achievement of one's full potential (AHD, 1982:1112). A house is more than just a place to live. People and their environment such as the house are affected by each other. People can experience progress in their development as far as the environment allows this progression (Lewis, 1994:13). Housing as an important living place therefore, also affects people directly in developing their full potential as persons.

2.3 HOUSING SATISFACTION

2.3.1 Definition

"Housing satisfaction is a continuous subjective individual response to the gratification of housing needs, resulting from the consumer being constantly engaged in an evaluative process. In this process housing expectations, housing aspirations and previous home experiences are being compared to the present time situation" (Brink & Johnston, 1979:339; Keller *et al.*, 1997:17).

2.3.2 Description of housing satisfaction

Morris and Winter (1978:154) developed an overall measure of housing satisfaction that includes quality, expenditure, space, ownership, structure-type and neighbourhood satisfaction.

Every family evaluates its present housing according to cultural and family norms, which prescribe appropriate levels for housing conditions. Housing norms prescribe what types of housing structures, tenure, space, quality, expenditure and neighbourhood are appropriate for different ages and compositions of families. Housing norms are also influenced by cultural differences. Preference of house style is influenced by experience of different cultures and geographic locations (Purcell, 1998:374). Chen *et al.* (1992: 201) found that people who live in modern housing in an area of Beijing called the Western District were more dissatisfied than people who live in traditional housing, because cultural and family norms were not met.

According to Nissen *et al.* (1994:144), housing must be functional in terms of user behaviour and satisfaction. In other words, a living space should contribute positively to the comfort and efficiency with which activities take place. Housing dissatisfaction occurs when the physical design of a house is incongruent to the desired activities of the occupant. According to Bell *et al.* (1996:451) and Van Wyk (1990:37), housing should fulfil the physical, psychological and social needs of occupants. Housing quality cannot be measured by physical standards only. On the contrary, housing satisfaction is determined by physical, psychological and social factors. Physical conditions such as facilities, space, heating, plumbing and quality of structure are strongly related with housing satisfaction. Kaitilla (1993:514) found that satisfaction with the physical housing quality (including the small size of the house, the number of rooms, the lack of storage space, poorly designed kitchens and toilet and bathroom facilities of low quality) directly affect dissatisfaction of the occupants. Psychological and social factors such as a lack of privacy and a pleasant neighbourhood can also be important sources of dissatisfaction with housing. Cassidy (1997:193) and Bell *et al.* (1996:398) state that the physical design of a neighbourhood influences the social interaction, and hence the amount and quality of social support.

The home should provide privacy from outsiders with walls that protect one from physical, visual and various degrees of acoustical intrusion. If people have a lack of privacy, they also experience negative relationships within the family and the neighbourhood. Therefore, the physical environment must create an opportunity for social interaction, while maximising opportunities for privacy. Wilson and Baldassare (1996:39) found that by reducing the social stresses of having too many unwanted interactions with neighbours the satisfaction obtained by means of privacy could provide more positive relationships with the neighbourhood. Therefore,

housing satisfaction can be achieved when the relevant physical, psychological and social factors are optimised within the housing project.

2.3.2.1 Satisfaction with quality and expenditure

According to Morris and Winter (1978:131), the measurement of housing quality requires knowledge of the objective attributes that contribute to the measure of housing quality through the subjective reactions of families. The quality norms have three dimensions, referring to structure quality, service quality and maintenance. Structural quality concerns primarily the durability of the house. Service quality refers to convenience and safety of the equipment and facilities provided. The state of maintenance pertains to easy, safe and affordable maintenance and caretaking of the house.

Housing quality assumes that a family allocates its money for housing in a rational way according to its perception of housing needs. Housing quality is highly tied up with income so that affordability affects the maximum satisfaction in a direct sense. Yust *et al.* (1997:72), for example, found that income is an important factor to improve the quality of housing. Housing expenditure concerns the question of how much income a family should spend on housing, including taxes, utility costs, interest, rent and mortgage. When a family's income increases, housing expenditures increase and vice versa. Therefore, satisfaction with housing quality is highly dependent on the proportion of expenditure of a family's income (Morris & Winter, 1978:132).

2.3.2.2 Satisfaction regarding available space

The necessary amount of space is dependent upon family size, age, sex and family roles. Space in a dwelling may be specified by individual rooms, the number of rooms, or the number of bedrooms or other specific rooms. A deficit of space occurs when the relation between the measure of space and the occupants of the space do not match. There is a basic need for a place to prepare food, a place to eat, a common area for living and a bedroom. There is a need to increase space when the family size increases. Therefore, the space norm would change as children progress through the family life-cycle (Morris & Winter, 1978:96). Shoul (1993:56) found that the design of space according to the individual's own life-style can give more

satisfaction to the user. Lindamood and Hanna (1979:83) emphasise that the types of space available are more important than the amount of space. Good organizing of available space in smaller spaces can help to increase the utility rate and provide comfort to the family. According to Arkkelin and Veitch (1995:344), there are four types of space plans such as a closed plan, an open plan, a one story plan and a multiple story plan. The closed plan does limit flexibility but offers maximal privacy. The open plan provides a maximum of flexible group space but involves a lack of privacy and an extra amount of noise transmission. The one-story plan has the advantage of easy supervision of children by avoiding stairways and giving an easy access to the out-of-doors. The multiple-story plan has the advantage of being less expensive to build than a comparable one-story house. The vertical separation of space also helps to facilitate privacy. It is clear that the layout of space is important to provide satisfaction of occupants.

2.3.2.3 Satisfaction regarding structure type and ownership or tenure

According to Morris and Winter (1978:109), home ownership and structure type are influenced by economic factors, demographic factors, changing norms and political factors. Over decades home ownership rates and structure type changed in terms of rapid urbanisation, increasing population, economic conditions and government involvement. For a long time the single-family dwelling has been the predominant form of housing. But, urbanisation has the effect to increase multifamily housing in the cities. The choice of structure types is affected by the stage of the family life-cycle and the life style of the family. Van Wyk (1990:40) found that satisfaction with structure was different according to the family life-cycle and cultural differences. Young couples prefer a duplex structure contrary to couples with children. White people rather than other races prefer the duplex type.

Morris and Winter (1978:110) mention that ownership has often been controlled by economic factors, including income tax laws, inflation, interest and government-insured mortgage. Ownership usually benefits the homeowner because lending institutions and creditors extend credit more easily to owners than to renters. Home ownership also renders social status and emotional security to the individual and the family. In the long run, the home-owner's financial position is likely to be better than the renter's because of the tax advantage. Structure type and home-ownership are therefore important factors for providing satisfaction of occupants.

2.3.2.4 Satisfaction regarding the neighbourhood

The location of the dwelling unit and the nature of its immediate area are important to select appropriate housing. Location as site refers to the relation of the housing unit to work, shopping, schools and recreation facilities as well as to the locations of the homes of friends and relatives. Location as physical environment includes the individual aspects of the environment (like density, light, air and the condition of the other dwellings surrounding the housing unit) and the quality of community facilities, services and utilities (like fire and police protection, garbage collection, water and sewage).

The location as social environment includes the characteristics of the people in the area. The quality of the physical and social environment is important on account of the safety of the family (Morris & Winter, 1978:138). Stewart and Peck (1985:371) found that housing satisfaction is significantly related to neighbourhood satisfaction. Carvalho *et al.* (1997:758) found that neighbourhood is an important factor to provide a feeling of safety to the occupants. Therefore, quality of neighbourhood and social support are major factors for providing housing satisfaction.

2.4 QUALITY OF LIFE

2.4.1 Definition

Quality of life is the level of satisfaction or confidence with one's conditions, relationships and surroundings (McGregor & Goldsmith, 1998:2).

Quality of life is self-explanatory, as are its synonyms - life satisfaction, happiness, need satisfaction or social well-being (Moller *et al.*, 1987:13).

2.4.2 The relation between housing satisfaction and quality of life

People are influenced directly by the cultural and psychic environment as well as the physical environment. Housing as one part of the total environment has a great effect on the life style and individual development of persons. Whether people live alone or with others, individuals

and their family interact with the housing set-up. Housing affects the family's behaviour and the family's action affects the housing (Lewis, 1994:10). The individual's overall sense of quality of life may be measured by means of the different main aspects, such as family life, marriage, financial situation, housing, education, religion, friendship, health and occupation. Satisfaction with housing is one of the main aspects that is related to satisfaction with life as a whole (Moller & Schlemmer, 1983:235; Campbell, *et al.*, 1976:219). Cooper and Rodman (1994:65) found that for disabled persons control of the physical environment is directly related to quality of life. Steward and Peck and (1985:371) found that housing satisfaction is significantly related to overall satisfaction with the quality of life. The degree of satisfaction with housing is dependent upon the extent to which it provides for the various needs, wants and desires of occupants in both objective and subjective ways. When people's needs, wants and desires are fulfilled it enhances a person's perceived quality of life. When housing conditions fail to provide a satisfactory environment and thus produce dissatisfaction, this leads to a lowered perceived quality of life (Van Wyk, 1989:19).

Improvement of housing and its environment is important to enhance the quality of life for individuals and their families by meeting the individual's needs and values. The combined needs and values of the members may determine the type of housing environment in which they live. If all the members are concerned about the well-being of the group as a whole, the quality of life for everyone may be satisfactory. Housing directly affects the quality of life for society as a whole as well as for individuals and their families. Satisfaction depends on individuals and groups who work to improve the situation for everyone. This means that people work together and use their resources to maintain and support pleasing surroundings which enhance satisfaction of needs and values of many people in society. Housing conditions, which fail to provide a satisfactory environment, produce dissatisfaction and thus a lowered perceived quality of life for many people. Therefore, housing affects the quality of life for both individuals and society (Lewis, 1994:24).

When the Government of National Unity came into power in 1994, it was established that South Africa had a urban housing backlog of about 1.5 million houses. The government realised that the "consequences of this backlog are physically reflected in overcrowding, squatter settlements and increasing land invasions in urban areas. Socially and politically, this backlog gives daily impetus to individual and communal insecurity and frustration, and contributes significantly to

the high levels of crime and instability prevalent in many communities in South Africa” (White Paper, 1994:10). Housing development to improve the lives of the underprivileged was high on the agenda of the new government. A new National Housing Programme and a Subsidy Scheme to facilitate the housing development process were therefore established.

In the next section, the National Housing Programme will be discussed. It will include a profile and the implementation of the National Housing Programme.

2.5 PROFILE OF THE NATIONAL HOUSING PROGRAMME

2.5.1 Definition of housing development

The Government Gazette (SA, 1997b:4) regarding the Housing Act, Number 107 of 1997, defines housing development as 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 a domestic energy supply”.

2.5.2 The goal of the National Housing Programme

The White Paper (SA, 1994:22) states that the goal of the government was to increase the total budget for housing to five percent and to increase housing delivery on a sustainable basis to a peak level of 350 000 units per annum in order to reach the target of 1 000 000 houses within a five year period. A delivery rate of 300 000 housing units per annum was achieved during 1997 and was sustained during 1998 (Karsen, 1999:5). By 1999, 800 000 houses were built or were under construction, giving shelter to more than three million people (Mthembi-Mahanyele, 1999:1).

2.5.3 The foundational principles of the National housing Programme

2.5.3.1 Basic human rights

People have the right to access adequate housing in order to fulfil basic human needs. Housing as both a product and a process can be a key sector of the national economy as a primary function of the development process. Improvement of housing can influence the vital socio-economic well-being of a nation. Housing development includes the establishment and maintenance of habitable, stable and sustainable public and private residential environments. Housing development helps to improve overall quality of life to all people through secure tenure, which ensures privacy, potable water, adequate sanitary facilities, waste disposal, domestic electricity supply, and educational and social amenities (SA, 1994:22).

2.5.3.2 People-centred development

Government policies and strategies are designed for development processes aimed at empowering people through economic empowerment, physical environment improvement and the satisfaction of basic needs. The government emphasised that the development process must be driven from within communities. Therefore, the government supports not only financial resources, but also encourages community initiative through the creation of appropriate institutional frameworks and structures (SA, 1994:23).

2.5.3.3 Freedom of choice

People have a right to exercise their choice in the housing development process to satisfy their own housing needs. People should be able to access and leverage resources to improve their housing circumstances (SA, 1994:23).

2.5.3.4 Non-discrimination

New policies, strategies and legislative actions should be non-discriminatory mechanisms which respect gender, race, religion and creed. The government has also identified the need to support the role of women in the housing delivery process (SA, 1994:23).

2.5.3.5 Sovereignty of the constitution

The policy challenge for housing is to facilitate maximum devolution of functions and powers to provincial and local government tiers through concurrence between national and provincial governments, while at the same time ensuring that national processes and policies essential to an effective and equitable housing sector are in place (SA, 1994:22).

2.5.3.6 The role of the state

The Government aims to afford access to secure tenure, basic services and basic shelter in general to society as a whole. The state ensures conditions conducive to the delivery of housing through a variety of mechanisms. The state assists particularly the poor to enable them to acquire adequate housing through appropriate structures and acts (SA, 1994:22; SA, 1995:22).

2.5.4 The overall strategy for housing development

According to the Housing Act No. 107 of 1997 a housing development project must give priority to the needs of the poor. Housing development maximises the freedom of the individual to exercise a choice that can satisfy his or her housing needs by providing access on a fair and equitable basis for citizens and permanent residents of the Republic. Housing development encourages and supports individuals and communities without limitation. The government assists them in accessing land, services and technical assistance in a way that leads to transfer of skills and the participation of all relevant stakeholders in the housing development process (SA, 1996a:5; SA, 1997b:6).

This government support can help to improve the economy, the level of skills as well as job creation, and thus promote empowerment of the community. The housing process must be sustainable economically, fiscally, socially, financially and politically in the long term. For sustainable development, the government should unremittingly maximise the sustained investment from the state, the private sector and individuals. The government should also establish an institutional, technical and logistical housing support mechanism to enable communities to improve their housing circumstances continuously (SA, 1994:21).

In the Housing Act No. 107, 1997, the national government establishes such a national institutional funding framework. The Housing Fund consists of all money, which immediately before the commencement of this part of the draft Housing Bill of 1996 stood to the credit of the fund or which was payable to the fund subject to this section. Money was also appropriated by Parliament to strengthen the capital of the fund and contributions from any source could be added for the purposes of housing development. The Minister of Housing may allocate money out of the fund after consultation with the members of the executive councils and determine the amount of any allocation. Allocation of money must be paid into a provincial housing fund under a law of the province by the Director General in such amounts as may from time to time be required for the purpose of implementing any national housing programme in a province (SA, 1996a:18; SA, 1997b:30).

The Housing Subsidy Scheme provides that subsidies will be available only to beneficiaries who have not previously received government assistance in order to enable them initially to acquire either a house or a serviced site. Subsidies will be paid out of the National Housing Fund in order to enable a qualifying beneficiary to acquire a residential property with secure tenure. A qualifying subsidy beneficiary can be a person whose gross monthly household income does not exceed R3 500.00, who is a lawful resident in South Africa and legally competent to engage in a contract. No subsidy is payable if the price of the property acquired exceeds R65 000.00 (SA, 1996b:8).

The role of the national government on the whole is to create an environment conducive to enabling provincial and local governments, the private sector, communities and individuals to achieve housing development. The national government assists provinces to develop the administrative capacity required for the effective exercise of their powers and performance of their duties in respect of housing development. It also supports and strengthens the capacity of municipalities to manage their own affairs, to exercise their powers and perform their duties in respect of housing development. The national government sets broad national housing delivery goals and supports provincial and local government housing goals. It determines the broad national housing policy, including land development and use, minimum national norms and standards, a national subsidy programme, fund allocation and the spatial restructuring of cities, towns and the rural settlement pattern (SA, 1994:7; SA, 1997b:9).

The Minister of Housing must, after consultation with every Member of the Executive Council of a province (MEC) and the national organisations, allocate funds and negotiate for the national apportionment of the state budget for housing development. The Minister should also obtain funds for land acquisition, infrastructure development, housing provision and end-user finance (SA, 1994:35; SA, 1996a:7; SA, 1997b:9). Provincial governments promote and facilitate the provision of adequate housing in their province within the framework of the national housing policy. The Provincial Housing Development Board has 18 members who are appointed by the MEC with the approval of the executive council, of which he or she is a member. Every provincial government must, after consultation with the provincial boards, determine and promote the adoption of provincial legislation to ensure effective housing delivery. They set the provincial delivery goal in support of the national housing delivery goal. They may support municipalities in the exercising of their powers and the performance of their duties by taking reasonable and necessary steps (SA, 1994:36; SA, 1996a:12; SA, 1997b:18).

Local government consists of municipalities, which deal with issues that affect the local community. The municipal council writes by-laws, which are in-line with the constitution. The local government takes all reasonable and necessary steps to ensure that the inhabitants of its area of jurisdiction have access to adequate housing opportunities on a progressive basis. They create and maintain the public environment conducive to a viable development of healthy communities. They also provide for the planning, funding and provision of bulk engineering services and regulate health and safety standards with regard to housing developments (SA, 1994:37; SA, 1996a:14; SA, 1997b:24).

2.5.5 Implementation

2.5.5.1 The seven strategic thrusts

To achieve the vision of a nation adequately housed and the target of one million houses in five years, seven strategic thrusts were formulated by the Department of Housing.

2.5.5.1.1 Stabilising the housing environment

In the White Paper (SA, 1994:34) the government emphasised its intention of creating a habitable public environment through private investment and sustainable development in which

the communities and the local government would be fully involved. The government realised that it could not meet the massive housing needs of the poor on its own, given its limited resources. To help individuals and low-income families, the government at all levels, in conjunction with the private sector and civil society, planned housing support mechanisms throughout the country (SA, 1995:6; SA, 1998:47). To encourage public and private partnerships and to attract private investment in the low-income housing market, five interventions were initiated to stabilise the housing environment, including the Masakhane Campaign, the Mortgage Indemnity Fund, Servcon Housing Solutions, Thubelisha Homes and the National Home Builder's Registration Council. These five initiatives sought to decrease the risk levels and to build trust within the housing industry and between beneficiaries and service providers (Karsen, 1999:3). The role of these five interventions were the following:

- The Masakhane Campaign: seeking to uplift communities and their environments in partnership with the government and the private sector (SA, 1995:8).
- The Mortgage Indemnity Fund: to encourage private sector banks to resume lending in the affordable housing market in a sustainable manner in neglected areas of the country (SA, 1995:8; SA, 1998:49).
- Servcon Housing Solutions: to deal with those cases where the borrowers were in default of a payment, normalising payment and providing alternative affordable accommodation (rightsizing) if they cannot afford to purchase (SA, 1995:8; SA, 1997a:58).
- Thubelisha Homes: to procure rightsizing stock for Servcon clients (SA, 1998:49).
- National Home Builder's Registration Council (NHBRC): to protect consumers and to regulate home builders, as well as to raise construction standards. It also introduced a basic level of consumer protection and supported the national warranty fund in order to be able to intervene where builders fail to honour a standard warranty (SA, 1996b:33; SA, 1997a:59; SA, 1998:51).

2.5.5.1.2 Housing support for a people-driven housing delivery process

According to the White Paper (SA, 1994:28), the government undertakes to help individuals and low-income families with proper housing by planning housing support mechanisms throughout the country in co-operation with the government at all levels as well as in conjunction with the private sector and civil society. The 'National Housing Policy: Supporting

the People's Housing Process' was adopted during May 1998 with the objective of assisting people who wish to build or organise the building of their homes themselves, to access housing subsidies and technical, financial, logistical and administrative support regarding the building of their homes on a basis which is sustainable and affordable (Karsen, 1999:4). Through the Social Housing Foundation, which was established by the National Housing Finance Corporation (NHFC), international financial and technical assistance were mobilised (SA, 1997a:11). The NHFC developed appropriate funding for institutions by providing affordable housing finance with a variety of tenure options (SA, 1997a:54). It also provided the technical and administrative support to increase the capacity of intermediaries by trained employees (SA, 1999:17).

2.5.5.1.3 Mobilising housing credit and savings

The White Paper (SA, 1994:29) provided that a credit, supplemented with savings, can enable a large proportion of people in need of housing and eligible for state housing subsidies, to acquire access to formal starter housing under a range of tenure options. According to the Department of Housing (SA, 1995:10), individual savings for housing is a major route towards mobilising housing resources. Virtually none of the nation's savings is currently being invested in low-income housing. Therefore, the majority of the population is practically excluded from access to housing finance. The Housing Subsidy Scheme, in conjunction with the various interventions aimed at mobilising credit, is one of the cornerstones of the government's approach to the housing challenge. Karsen (1999:4) states that the most crucial problem experienced in this regard relates to the fact that access to housing credit for the poor has been limited, not only because the poor were not able to afford borrowing money, but for a variety of other reasons as well that have little to do with affordability. Phenomena such as red-lining and discrimination, as well as poorly designed credit instruments and the lack of a consumer propensity to save, are generally accepted as factors limiting access to home finance.

The strategy to mobilise housing credit involves the development of mechanisms and approaches towards risk management as well as the sharing and development of a track record of experience in the low income housing market, so that the private sector is 'brought back' into this market segment. The strategy to mobilise housing credit is spearheaded by the National Housing Finance Corporation (NHFC) and the National Urban Reconstruction and Housing

Agency (NURCHA). According to the Department of Housing (SA, 1995:3), the NHFC operates an equity participation of the private sector financial industry to improve access to finance for low-income families.

2.5.5.1.4 Providing housing subsidy assistance

The White Paper (SA, 1994:31) envisages a subsidy policy that should be as flexible as possible in order to accommodate a wide range of tenure and delivery options that should enable a flexible application of subsidies at the delivery level in order to obtain maximum gearing with private investment, savings and acceptable equity. The Housing Subsidy Scheme allows for a range of tenure options for an individual on a group basis in urban areas and for families in rural areas who have functional security of tenure in terms of the Interim Protection of Informal Land Rights Act, 1996 (SA, 1997a:11).

The government has also developed guidelines focused on the special housing needs of disabled people. The amount of subsidy for disabled people was increased and enhanced to be more accessible to the disabled (SA, 1997a:18). An adjustment was made in August 1998, to the subsidy amounts in order to offset the effect of inflation. The adjusted subsidy values were implemented as from 1 April 1999 (SA, 1998:33).

Highlights of the Housing Subsidy Scheme include the approval of more than one million housing subsidies, the construction of three quarters of a million housing units and the expenditure of more than ten billion rand since 1994. A delivery rate of 300 000 dwelling units per annum was achieved during 1997, and could have been sustained during 1998 if an amount of R4,6 billion had been made available for the 1998/99 financial year, as opposed to the actual appropriation of R2,88 billion. If sufficient funds had been available, the target of one million housing units would have been achieved in the 1998/99 financial year.

The share of the housing project in the total state budget for the 1998/99 financial year amounted to only 1,8%, which was far short of the national housing goal of 5% per annum of total state expenditure. The medium term expenditure framework amount of R2,886 billion allocated to housing for the 1999/2000 financial year and the inclusion of an equivalent amount as a planning guideline for each of the subsequent two financial years, will severely retard progress and cause a loss in momentum. It was, however, not possible for the government to

allocate a higher expenditure priority to the housing function in view of the state of the economy and other more pressing social priorities (Karsen, 1999:5).

2.5.5.1.5 Rationalizing institutional capacities within a sustainable institutional framework

In the White Paper (SA, 1994:31) the government rationalises institutional capacities with a sustainable institutional framework. The government tries to remove fragmentation, overlapping, wastage and inefficiencies in the institutional housing set-up in order to establish an institutional basis from which a sound long-term strategy can be launched. The Housing Act of 1997 established a rationalised institutional framework, redefined the roles and functions of all three spheres of government and repealed all racially based housing legislation (SA, 1997a:6).

The Minister of Housing together with the nine members of the Executive Councils of the provinces and the chairperson of the South African Local Government Association, meet regularly as a non-statutory forum, commonly known as 'Minmec Housing' to guide and oversee the formulation and implementation of housing policy and strategy. Similarly, the heads of the national and the provincial housing departments, as a joint forum, provide administrative support to 'Minmec Housing' and use their meetings to co-ordinate activities, share experiences and discuss matters of mutual concern (SA, 1996b:40). Various other co-operative structures have been established to co-ordinate, for instance, the housing budget, to oversee the implementation of housing legislation or to attend to a variety of policy matters. The housing institutions have been established in support of the housing policy and strategy. They have all to a greater or lesser degree filled a capacity gap and most will continue to build capacity (Karsen, 1999:6).

2.5.5.1.6 Facilitating the speedy release of land

In the White Paper (SA, 1994:32), it is acknowledged that appropriate allocated land for housing is critical to achieve the desired rate of delivery of housing. A short-term intervention by government in order to facilitate the speedy delivery of land for development purposes is essential for the launch of the envisaged housing programme. Karsen (1999:6) states that the main thrust of land release reform has been the adoption of the Development Facilitation Act, 1995. The Green Paper on Planning and Development, as well as other activities of the Development Planning Commission, hold the promise of a streamlined and coherent system of

spatial planning for South Africa that should contribute significantly to time and money being saved.

2.5.5.1.7 Co-ordinating development by facilitating co-ordinated and integrated action by the public and private sector

In the White Paper (SA, 1994:33), housing delivery requires co-ordinated and integrated action by a range of players in the public and private sector. Mechanisms are to be instituted at provincial and local government levels, which will ensure co-ordinated planning and budgeting on a multi-year basis between all relevant government functions and the private sector. The Housing Act, No. 107 of 1997 was approved in parliament to facilitate a sustainable housing development process in which national, provincial and local governments, as well as the business sector, citizens and permanent residents all work together to access adequate housing (SA, 1997a:6). Co-ordinated and integrated development lies at the core of several programmes, such as the Special Presidential Projects on urban renewal, the National Presidential Job Summit Project on Housing, the Consolidated Municipal Infrastructure Programme and the Local Economic Development and Partnerships project for delivery and institution building. Nevertheless, functional disparities and co-ordination inefficiencies, which are not conducive to an effective housing development process, still require further attention (Karsen, 1999:6).

2.5.5.2 The different tasks of government at all levels

According to the Government Gazette (SA, 1996a:7-17; SA, 1997b:8-26), the national government should establish a sustainable national housing development process that enables all citizens and permanent residents of the Republic to obtain access, on a progressive basis, to secure housing tenure in viable communities within a safe and healthy environment. It should set broad housing delivery goals and minimum standards and also develop norms and a feasible policy for the nation. It should, furthermore, support provincial and local government goals, minimum standards, norms and policy. The national government has to establish a national institutional and funding framework and has the responsibility of financing housing development and allocating funds.

The provincial government should do everything in its power to promote and facilitate the provision of housing in its province within the framework of the national policy in respect of housing development. It has to support and strengthen the capacity of local government to effectively perform its duties and responsibilities. The local government may participate in a national housing programme by promoting a housing development project initiated by a developer, a joint venture or an administrator.

The local government must take all reasonable and necessary steps within the framework of the national and provincial housing legislation and policy to ensure that the inhabitants of its area of jurisdiction have adequate housing on a progressive basis. It should also ensure that conditions not conducive to the health and safety of the inhabitants of its area of jurisdiction are prevented or removed. It must also ensure that services in respect of water, sanitation, electricity, roads, storm water drainage and transport are provided in an economically efficient way. It should provide bulk engineering services and plan and manage land usage. Furthermore, it should create and maintain a public environment conducive to housing development, which is financially and socially viable.

2.5.5.3 Supporting organisations

The White Paper (SA, 1994:38) mentions that new and reconstructed parastatal organisations should fulfil all housing funding functions under the control of other government departments and promote agreement between such departments. Restructuring and rationalisation within a coherent long term institutional framework enhances overall cost effectiveness, efficiency and sustained delivery.

2.5.5.3.1 The National Home Builders Registration Council (NHBRC)

According to the Department of Housing (SA, 1996b:34; SA, 1997a:52), the NHBRC was established to provide self-regulation for the home building industry. This is achieved by various activities, like registering home builders, setting minimum standards and guidelines, requiring all bondable homes with a total selling price of R250 000 or below to be enrolled with the NHBRC by registered home builders, and carrying out spot check inspections on enrolled homes. According to the Department of Housing (SA, 1998:51), the main aim of the NHBRC is to protect consumers and to regulate home builders, as well as to raise construction

standards, introduce a basic level of consumer protection and support the national warranty fund so that it is possible to intervene where builders fail to honour a standard warranty. The 'Defects Warranty Scheme' of the NHBRC is the first scheme ever established in South Africa, which aims to protect the consumer against shoddy workmanship in the house building industry. It has also managed to obtain the support of banks and other financial institutions for its 'Defects Warranty Scheme'. A total of 49 809 homes have been enrolled under the 'Defects Warranty Scheme'.

2.5.5.3.2 The National Housing Finance Corporation (NHFC)

According to the Department of Housing (SA, 1998:52), the NHFC was established in April 1996 and became fully operational in early 1997. The NHFC was launched by the government because of an absence in the market of housing finance in the R15 000 to R50 000 price range. The Annual Report (SA, 1999:8) states that the activities of the NHFC are to invest in housing-focused programmes and micro-lenders alike (the 'Niche Market Lenders Programme' and the 'Rural Housing Loan Fund'); to make equity investments in order to help build the capacity of housing institutions; to provide technical assistance in order to increase the capacity of intermediaries with the help of the 'Housing Equity Fund' and the 'Rural Housing Loan Fund'; to launch new start-up lenders (by means of the 'Housing Equity Fund' and the 'Rural Housing Loan Fund'); and finally to partner with banks to increase housing opportunities for low-income households through an effective secondary home loan process ('Gateway Home Loans'). The NHFC was to develop the capacity of these lenders in order to make an increasing contribution at the lower end of the market and to facilitate the ongoing improvement of the housing circumstances of households in the government subsidised market.

The NHFC recently announced the implementation of its secondary market programme called 'Gateway'. Gateway involves banks and other lenders to provide standardised home loans for the purchase of houses. Gateway seeks to provide security to pools of such loans by issuing marketable securities. In order to achieve its objectives the NHFC established programmes such as the 'Housing Equity Fund' (HEF), the 'Niche Market Lenders' (NML), the 'Housing Institutions Development Fund' (HIDF) and the 'Rural Housing Loan Fund' (RHLF) (SA, 1998:52).

2.5.6 The Capital Subsidy Scheme

The 'South African Housing Fund', established by the Housing Arrangements Act No. 155 of 1993, continues to exist for the purposes of financing activities. Its funding is derived from three sources: "The fund consists of (a) all money which immediately before the commencement of this part [of the Bill] stood to the credit of the fund or was payable to the fund subject to this section; (b) all money appropriated by Parliament to strengthen the capital of the fund; (c) contributions from any source for the purpose of housing development" (SA, 1997(b):30).

According to the Government Gazette (SA, 1997b:30), regarding the Housing Act, No. 107 of 1997, the Minister may allocate and determine money out of the Fund for the purpose of financing the implementation in a province of any national housing programme as well as any provincial housing programme after consultation with the Executive Council of a province (MEC). Any money which the Minister has allocated to the National Housing Programme must be paid into a Provincial Housing Development Fund, to be established by provincial legislation. It must be paid by the Director-General in such amounts as may, from time to time, be required for the purpose of the implementation in the relevant province of any national housing programme or any provincial housing programme.

A task team of the Ministry of Housing (SA, 1997c:5) states that "approximately 49 percent of all households in South Africa have an income below R1 000 per month. These households are living below the minimum subsistence level, which is currently calculated at R1 072 per month. They are unable to make any contribution towards mortgage finance and are dependent on the government subsidy to fulfil their housing needs".

The White Paper on Housing (SA, 1994:43) states that the Housing Subsidy Scheme is a cornerstone of the National Housing Programme. Housing subsidy is available to a person who is married, or with dependants, to eligible people in the income bracket of less than R3 500. There are six types of subsidies, namely: Project-linked Subsidy, Individual Subsidy, Consolidation Subsidy, Institutional Subsidy as well as Relocation Assistance and the Discount Benefit Scheme (SA, 1997a:11).

The following *Table 2.1* explains the applicable amount of subsidy.

Monthly income of beneficiary (R)	Previous subsidy amount (R)	Current Subsidy amount (R) (from 1/4/99)
Up to 800.00	15 000.00	16 000.00
801.00 to 1 500.00	12 500.00	16 000.00
1 501.00 to 2 500.00	9 500.00	10 000.00
2 501.00 to 3 500.00	5 000.00	5 500.00
Consolidation subsidies		
Up to 800.00	7 500.00	8 000.00
801.00 to 1 500.00	5 000.00	8 000.00

Table 2.1: Amount of subsidy (SA, 1998:13)

The new categories applicable to housing subsidy incomes enable families earning R1 500 or less per month to qualify for a subsidy of R16 000. In the past only families that earned R800 or less per month qualified for a subsidy of R15 000. The consolidation subsidy scheme will also benefit from the merging initiative as all qualifying households with an income of less than R1 500 per month are now entitled to a subsidy of R8 000. The amount of a housing subsidy differs in the case of special housing needs of those disabled persons who are eligible for housing subsidies. The guidelines entail an increase in the subsidy amount depending on the severity of a beneficiary's disability to improve the dwelling unit by installing special equipment and to make design adjustments to enable such persons to live independently (SA, 1998:1).

2.5.6.1 Individual subsidy

Individual subsidies afford people access to housing subsidies in order to acquire ownership of an existing property or of a property not located in a project approved by a Provincial Housing Development Board. A person may buy a serviced site and construct his or her own home. It can be used in two ways: individuals obtain the chance to own a house in projects approved by Provincial Housing Development Boards, either on a non-credit basis or on a credit-linked basis. From the implementation of the programme in June 1995 up to December 1998, 101 290 individual subsidies were awarded (SA, 1998:10).

2.5.6.2 Project-linked subsidy

Project-linked subsidies provide housing opportunities for individuals on an ownership basis within housing projects approved by Provincial Housing Development Boards. From March

1994 up to December 1998, a total of 782 176 project-linked subsidies were reserved in respect of housing projects, representing an equal number of housing opportunities. Of these, a total of 308 213 were approved for individuals who bought units in such projects. For the period January 1998 up to December 1998, 227 107 project-linked subsidies were reserved and 128 442 approved for individuals who have bought homes (SA, 1998:10).

2.5.6.3 Consolidation subsidy

Consolidation subsidies are granted for the provision of a top structure or for the upgrading of such a structure. People, who have received housing assistance from the state in the ownership of a serviced site, may apply for a further benefit from the state to improve their housing circumstances. Between June 1995 and December 1998 a total of 54 694 consolidation subsidies were reserved in respect of projects and 38 822 were approved for individual beneficiaries who had concluded an agreement with a developer in a consolidation scheme to provide or upgrade a top structure on such sites. During the year under review 33 708 consolidation subsidies were set aside for approved projects, whilst 17 639 subsidies were approved in respect of individuals (SA, 1998:10).

2.5.6.4 Institutional subsidy

Institutional subsidies are available to institutions, thus creating affordable housing stock to allow eligible people to live in subsidised residential properties with secure tenure. On an approved project, an institution is entitled to receive R15 000.00 for each residential property that will be occupied by a qualifying beneficiary. Since December 1995, 20 438 subsidies have been set aside in approved projects. During the period under review a total of 11 709 were set aside. By 31 December 1998, 5 752 had been approved in respect of individual beneficiaries who had concluded an agreement with an institution (SA, 1998:11).

2.5.7 Informal housing

Harrison (1992:14) defined informal housing very broadly as “shelter constructed outside of the formal housing delivery mechanism”. There are two general categories of informal housing: firstly, “spontaneous informal housing that falls entirely outside the framework of conventional town planning. This category includes backyard shacks within formal towns and free-standing

informal settlements such as Crossroads. Secondly, there is informal housing constructed within the context of officially sanctioned site-and-service schemes” (Harrison, 1992:14). Increasing population, rapid industrialisation and declining rural economies influenced urbanisation with the growth of informal settlements. Insufficient housing, inadequate social services and a high incidence of unemployment are some of the characteristics of informal settlements (Harrison, 1992:15; De Beer, 1989:72).

According to the White Paper on Housing (SA, 1994:10), approximately 1,5 million (18%) of all households lived in squatter settlements, backyard shacks or in over-crowded conditions in existing formal housing in urban areas, with no formal tenure rights over their accommodation. An estimated 5,2% of all households resided in private sector, grey sector and public sector hostel accommodation. Approximately 13,5% of all households (1,06 million) lived in squatter housing nation-wide, mostly in free-standing squatter settlements on the periphery of cities and towns and in the backyards of formal houses. In rural areas, 14,5 million people lived outside the commercial farming areas. There one finds a mix of both formal and informal house structures, but they generally have inadequate access to potable water and sanitation and are subject to a general insecurity of tenure.

Due to the high rates of population growth and low rates of housing provision, it is estimated that the housing backlog is presently increasing at a rate of around 178 000 units per annum. The Ministry of Housing (SA, 1997c:5) reported that 49% of South Africa’s households earn less than R1 000 per month, which is below the minimum living level, which has recently been estimated at R1 072 per month. The Department of Housing (SA, 1996b:25) states that specifically 48,35% of black households earn less than R799 per month. When comparing average household incomes per month and the minimum living level, the number of households in South Africa unable to make any contribution to their own housing needs is more than 4,5 million. In the White Paper on Housing (SA, 1994:42), the government introduced subsidies to provide security of tenure and access to basic services for the poor households. Subsidies paid out of the National Housing Fund have to comply with the basic principle of the Housing Subsidy Scheme that qualifying beneficiaries should obtain a secure right to occupy, use or own a residential property on a permanent basis in terms of a tenure, which can be registered with a competent authority.

2.5.8 Project management

The key principle of the National Housing Programme is a people-centred development based on community participation. This programme could lead to broader development of local people including the creation of jobs, the establishment of community health care, education and recreation facilities. The housing project management based on community participation entails several steps:

2.5.8.1 The engagement phase

According to Clacherty and Adatia (1997:2-4), this is an important phase to get to know the community, understand their concerns and identify their needs. In this stage, adequate time and resources for facilitation should be budgeted for existing community structures and leadership should be identified. The work in this phase involves making contacts, sharing information and building relationships with the different groups within the community. For a successful project, the creation of some kind of community structure must be done through works of this kind. To get an understanding of the community structure, it can be useful to draw a diagramme (or map) of the various groups within the community, including women, youth and minority groups. A representative and mandated group within the community, who will take care of their concerns and take the project forward, should be established at this stage. Successful community participation in the housing project depends upon the successful performance of this phase.

2.5.8.2 The project formulation phase

According to Clacherty and Adatia (1997:11-16), this is the first step /which takes place/ by the developer or project manager to collect information. It is important that local people be involved in both the needs assessment and the information gathering process. Several types of information are needed, including physical and social factors, which can determine whether or not the area is suitable for safe, healthy housing. Such physical factors include the slope of the land, soil and rock conditions, air pollution from factories, contamination of land by toxic waste, access to transport services, schools, clinics and other facilities. Such physical conditions can affect the cost of house construction to a considerable degree. Social information regarding unemployment, income levels and number of children is needed to assist in planning a housing development, which people can afford and which meets some of their other needs such as the

provision of jobs and schools.

Information should be clear and accurate and the source of the information should be known. The process of information gathering is interactive. People can thus learn through talking and sharing their own experiences. By the end of this stage there should be a plan of action that brings together the expectations and needs of beneficiaries within the physical and financial constraints through a planning workshop. In this phase the developer and the local government should give attention to the provision of basic services, such as the quality of water, waste removal and payment for services. Enough information should be given to the community.

2.5.8.3 The establishment of a community development vehicle (a Housing Committee or Housing Forum)

According to Clacherty and Adatia (1997:23-27), involvement of a community-based organisation is necessary to manage development on behalf of the beneficiaries. In order to qualify for the receipt of funds for the project, a legal organisation should be established. This can be considered the development “arm” of the local community-based partner. The composition of a Housing Committee or a Housing Forum should include representatives from each sector of the community. A housing development programme is not an easy task. For avoiding problems in the Housing Committee or Housing Forum, their roles and responsibilities must be clarified and also reviewed on a regular basis. A code of conduct as guiding action of standards and/or principles needs to be established. These institutions have to carry out administrative, accounting and management work. They need to understand the housing development process and how they can involve the community in it. For a successful performance they should be trained by the different committees regarding the different roles involved. This can be considered the key to success in their management of the housing project.

2.5.8.4 The project preparation phase

In this phase, the details of the project plan have to be submitted to the different authorities so that funding can be released. Usually the local authority approves the design aspects, including planning permission and services, while the Provincial Housing Development Board considers the housing subsidies. If during this process any aspect of the project has to be changed, and the community should approve the changes. In this stage a secure funding system is necessary for the successful implementation of the project. The community needs to understand what this

phase entails, how long it can take and why it is necessary. The project plan and the application of subsidies must reflect the community's choice. The community must also be informed about the progress of the subsidy application. The Provincial Housing Development Board confirms ownership of land, or agreements that authorise the developer to apply for an allocation from the development scheme. It is most important to understand the process of subsidy grants, how long this procedure can take and why it can be delayed in the process of approval by the Provincial Housing Development Board (Clacherty & Adatia, 1997:29-31).

2.5.8.5 The project implementation phase

Clacherty and Adatia (1997:33-37) state that this is the phase during which the construction work for the project takes place. In this stage secondary goals such as job creation and the training of local people in construction skills can be achieved. The main aim is to provide serviced sites and upgrade or produce new housing. In this phase the concerns of the community as well as the necessary information given to the community as to their needs are vital for the success of this phase. The project management or project steering committee is responsible for the day-to-day running of this project. For the house building process in this phase it is important to secure the transfer of ownership of a land or house. The allocation of serviced sites and the provision of services, including the installation of pipe lines for water and sewerage, electricity networks and access by road, must be done carefully. Competent planners and engineers are needed to ensure that the work is designed and planned correctly, according to the particular conditions of the land and the building regulations.

In this phase it is possible to facilitate job creation and small business development through the use of local labour and local contractors as well as the local production of building materials. It is a good idea to discuss how local labour will be employed, and also to try to encourage the use of skilled local contractors as well as unskilled labourers. The Housing Committee or Housing Forum has to help people understand the process and to check that people's personal details are written correctly on the documents. In order to avoid technical errors, the beneficiaries and the community should be kept informed about the plan agreed to for the project.

2.5.8.6 The operation and maintenance phase

In this phase the focus should be on ownership, including how to keep houses and services functioning, how to check a house for any defects (cracked or damp walls; a leaking roof) and how to get these defects fixed. In this phase ownership training should concentrate on the maintenance of houses and services, on budgeting for bond repayment and ongoing service charges, and how occupants can improve the environment around their houses (Clacherty & Adatia, 1997:40).

2.5.8.7 Evaluation and monitoring

Monitoring should be done throughout the project to make sure the project's aim and objectives are being met. It is better that any problem be identified and addressed sooner rather than later. Evaluation can usually be done at the end of a phase and at the end of a project. Evaluation should include particulars whether the project achieved its goal or the reason why the goal had not been achieved, as well as indications of what could have been improved, how the community was affected by the project and what the impact on the community has been (Clacherty & Adatia, 1997:32).

2.5.9 Major influences on the economy: job creation

From April 1994 to September 1998, a total of 630 000 houses were built or were under construction in South Africa, which resulted in 14.5 million person workdays. During the same period, 162 000 houses were built or were under construction in Gauteng, resulting in 3.7 million person workdays. From January to September 1998 more person workdays were created in Kwazulu-Natal (832 000) than in Gauteng (494 000), as the number of houses completed or under construction in Kwazulu-Natal (36 000) exceeds that in Gauteng (21 000) for this period (SA, 1998:42). Detailed information about particulars in the North West Province is at present not yet available. It may, therefore, be concluded that housing creates jobs for the population.

2.6 CONCLUSION

Housing is the essential environment that affects the well-being of people. Housing fulfils people's basic needs by providing physical protection and psychological safety. The quality of housing and its environment is important to give satisfaction of life for individuals and family. Therefore, improvement of housing and its environment directly influences the quality of life. The Government emphasises that the National Housing Programme should be people-centred and fulfil human rights. It means that the National Housing Programme aims to satisfy people's needs as well as the development of the physical environment for improving the quality of life. A successful National Housing Programme will therefore help with the improvement of quality of life for all people.

In this chapter the housing needs, housing satisfaction, the quality of life and the profile of the National Housing Programme as a whole were examined. The next chapter will discuss the housing product and the user's participation in the design process as well as details of a post-occupancy evaluation.

CHAPTER 3

THE HOUSING PRODUCT AND THE PARTICIPATION OF THE USER IN THE HOUSING DEVELOPMENT PROCESS

3.1 INTRODUCTION

The housing product should fulfil the basic functions for the occupants, such as effectiveness, beauty and psychological or social comfort. Satisfaction with the housing product can be achieved when the product fits the user's needs by providing an integration of all physical, functional, aesthetic, psychological and social factors. Design is an evolutionary process that involves the search for congruence or fit between the product and the user. Knowledge of the user's needs, such as their own particular life style, age, preference and culture is important during the design process for the eventual success of the housing product and the building. User's participation in the design process of the housing is therefore necessary to provide satisfaction with the housing product.

In this chapter the housing product and the user's participation in the housing development process will be discussed.

3.2 THE HOUSING PRODUCT

3.2.1 The site

According to Lewis (1994:62), each site, as the piece of land on which the dwelling is built, has its own characteristics with a specific size, shape, contour and soil type. It will determine the particular view, the amount of sunlight and the amount of protection from wind. It is necessary to consider carefully the constraints or obstacles of the site in order to increase the satisfaction level with the housing product. There are two types of limitations: natural constraints and legal restraints. Natural constraints include the type of landscaping, the type of soil and water, as well as the orientation of sun and wind. Landscaping can be used to change the appearance of a

site by altering the topography, e.g. by adding plantings. Poorly-drained soil freezes and expands, thereby causing sidewalks and driveways to crack and bulge. High water levels of soil can cause swampy yards, damp rooms and poor plant growth. The orientation of sun and wind influence the temperature of the house. Scenery orientation is also important in order to have a pleasant view.

Dwelling units encompass three zones, including the public, the service and the private zone. The public zone is mostly the part of the site that can be seen from the street or road. It is usually the front of the house. The service zone is that part of the site that can be used for necessary activities. It includes sidewalks, driveways and a storage area. The private zone is the part of the site, which is hidden from public view. A wise arrangement of the three zones is necessary and can be achieved through proper management of site differences. For a good placement of the house all these natural and legal restraint factors as well as the arrangement of the three zones should be taken into consideration (Lewis, 1994:63).

3.2.2 The floor plan (the interior space)

The interior space silently communicates to people. Spaces should be not only beautiful in their shapes and colour but also promote comfort, enhance security and encourage communication spaces by supporting social behaviour, organising life styles and even challenging the imagination, thereby contributing to the growth of the people within them (Logan *et al.*, 1980:4). The space inside the house divides itself into zones, such as a social, a work, and a private area, differentiated by kinds of activities. When designing the floor plan, it is desirable to minimise interference by these activities in order to block out sound, a view, or both, by means of a kind of buffer between the zones. The social zone encompasses the areas where members of the household gather and where friends are entertained. It should emphasise a variation of social activities. It should also take account of eventual changes in the family life-cycle, their experiences and the economic status of the family (Nissen *et al.*, 1994:206). The work zone sustains the maintenance of daily living, such as preparing food, care for clothing and storage of equipment. Work spaces may include facilities for laundry, housekeeping, sewing, record-keeping and different types of shop work or hobbies as well as various storage needs. The work zone is also influenced by the life- style of the household (Nissen *et al.*, 1994:247).

Furthermore, every human being needs privacy for psychological well-being. Individuals require different degrees of privacy both physically and psychologically. Intelligent planning is crucial to provide each person with private space in which to retreat for rest and spiritual regeneration. In the floor plan the private zone, including bedrooms should be separated from the social and work zones (Nissen *et al.*, 1994:256).

The designer should, when planning the spaces, survey the information available from the family such as type of family, age, life style, physical condition and habit. The basic types of floor plan include the closed and the open plan, as well as a horizontal and a vertical plan. The size, shape, contour and environment of the space influence the type of floor plan. For a good floor plan the convenience and safety of all people should be considered (Pile, 1995:156).

3.2.3 The structure

3.2.3.1 The foundation

The foundation is the substructure of the house - that is, the part that lies largely below ground level. The foundation is the underlying base of the house, including the footing and foundation walls. A foundation must be able to bear safely both its own weight and the weight of the superstructure of the house. Building codes establish guidelines to insure that the foundation is designed and constructed in such a way that it will provide adequate support. The foundation depends on the superstructure of the house, such as the type of house and the material of the house. Soil conditions may necessitate whether special construction methods should be applied or not. All such factors are reflected in local building codes. The footings are concrete volumes sunk into the ground to form a base for the foundation. The footing needs to be the correct width, thickness and consistency in order to support the weight of the house. Footings must distribute the weight of the house evenly so that the house will settle uniformly. The dimensions of the footings are governed by the type of house and the material used for building the house (Reader's Digest, 1982:22). Houses on clay or sand soils need wider and deeper foundations than those built on gravel soils or solid rock (Lawrence, 1994:10). Without a sound foundation, a house may settle unevenly, causing walls to crack, water to infiltrate and even a general disintegration. Serious stress cracks damage the house and will be costly to fix. The quality of the foundation is therefore important to obtain a good house structure (Lewis, 1994:136).

3.2.3.2 The exterior and interior walls

The basic function of walls is to provide protection and privacy. The walls determine spatial relationships within the house and it also has a great effect on light, heat, sound and ventilation. It also makes an aesthetic contribution to the house (Logan *et al.*, 1980:315; Nissen *et al.*, 1994:439). Since walls support roofs, load-bearing walls must be considered to provide the structural strength. The material used for the walls is usually determined by the architectural design of the building. The primary material, often covered and concealed by the finishing materials, can be an important interior element when left exposed (Pile, 1995:222). Masonry materials used include brick, block, stone, concrete and stucco. Masonry materials are available in a wide range of sizes, colours and textures to produce different architectural effects. Masonry material can create special effects by means of the bond between bricks, or the way that the masonry units are arranged together in a pattern. By varying the bonds and the depth and shape between units, additional depth dimensions and shadows can be added to the masonry wall. Massive masonry provides anchorage and security, while plastered walls are less bulky and more passive but still protective (Lewis, 1994:140).

The wall finish is important to obtain acoustic, light, and aesthetic quality. The wall finish actually provides a feeling of a strict, firmly established and unchanged order through the systematic balance and placement of doors and windows. The form of stable, precise and smooth surfaces increases the aesthetic quality. Walls also affect the light absorption and reflections with different texture and colour. A smoother surface can reflect more light. Light-coloured walls increase the apparent size and make rooms easier to illuminate. Darker colours and heavier textures generally bring walls inward. Hard materials, such as metal, plastic, masonry, wood, plaster and glass surfaces bounce and reflect sound. Soft porous materials, such as cork, fabric and vinyl absorb it. For the sake of both comfort and the conservation of energy, walls sometimes need to be supplemented by insulating qualities with surface treatments of vinyl, fabric, carpet, cork and other suitable materials (Nissen *et al.*, 1994:450).

3.2.3.3 The roof

There are several types of materials for a roof, such as asphalt, fibreglass, wood, tile, slate, concrete and metal. The material used for the roof provides the colour and texture that make the exterior of the house more attractive. The roof must provide protection from rain. It must

be durable. Most corrugated iron roofs last well. This kind of roof is used generally in low cost housing in South Africa - and exclusively in the Tswelelang suburb extensions, which are been the focus of this investigation. In the case of a pitched roof, if constructed well, it will last for decades. Many do, however, suffer from a series of common problems. Slates, especially, can become brittle and porous with age, and can be cracked by careless clambering about on the roof surface (Lawrence, 1994:16). Some houses having sloping roofs are covered with shingles. Shingles are thin pieces of material, which are laid in overlapping rows on roofs. When applying the roof materials, the roof frame is first covered with sheathing. Then the sheathing is covered with felt. This process will help keep out a limited amount of rain. The distance between the shingles should always be equal. The roof should provide proper protection from rain and hail because if the roof leaks, the structure of the house and its contents can be damaged (Lewis, 1994:140).

3.2.3.4 The windows

The functions of windows are ventilation, light admission and visual communication. Their size, shape and placement on the exterior affect the appearance of the house. There are two categories of windows: fixed and operable. The fixed window is essentially for light and views and the operable window is for ventilation. There are basic three types of windows, such as sliding windows, swinging windows and fixed windows. The type one chooses for a house depends on the exterior style of the house, the building codes and personal preference. Rather than a strict reliance on only one form of window, a combination of operable and fixed windows as well as various types of glass help to provide the best solution for climate control in the home from both an aesthetic and environmental point of view. The location and size of windows influence the thermal and aesthetic quality, the view, privacy and security. Most colourless, transparent materials are poor insulators (Pile, 1988:128; Nissen *et al.*, 1994:499-504). The window orientation affects the thermal regulation directly, depending on the region of the globe concerned.

In the case of South Africa, glass facing north brings welcome winter sun into the house and this design also excludes hot summer sun. Glass facing east admits the morning sun, thereby cheering the winter and seldom becoming too hot in summer. Glass on the west side lets hot afternoon heat deep into the house and should be avoided. Glass on the south admits winter

cold and hot south-western sun in summer. Windows facing the street or nearby neighbours offer less privacy both day and night. Windows should be built into the house to optimise all their functions, including air protection and better insulation. Careful consideration of all factors in advance of construction is needed to solve as many problems as possible that may arise during the building phase (Nissen *et al.*, 1994: 501).

3.2.3.5 The doors

Doors have many functions, including traffic paths, privacy, protection, safety and ventilation. They also provide a barrier against sound, extreme temperatures and light. Doors are often classified by their method of operation on hinges and the direction of swing. In order to enter and exit a room the door needs to be able to swing open and close. Sliding doors are set on a track and opened or closed by gliding on the track. A folding door folds when open into a multisection stack (Lewis, 1994:142; Pile, 1995:231). Doors control travel through the room in varying degrees depending on their location, design and material. Doors should be positioned to offer the best and shortest passage possible. Privacy can be controlled by door location and the kind of material utilised for the door. Light and ventilation can come through doors as well as windows. Ventilation can be accomplished quickly by opening doors, especially in opposite walls. Consideration should be given to the placement and types of doors in order to increase the function of doors. There are several important things to remember when using doors: the possibility of removing unneeded doors, sealing up or covering doors, refinishing doors, painting them with other colours and changing older doors (Nissen *et al.*, 1994:526).

3.2.4 Aesthetic quality

The aesthetic appearance can be defined in terms of beauty. Beauty bestows the quality that provides pleasure to the senses. A sense of beauty differs according to time and culture, with purpose and context. Housing is often used to express beauty by means of a unique individual idea of beauty. Beauty is subject to highly individual interpretation. Almost everyone can remember having had different tastes at some time in the past, tastes that have changed with growth, education and experience. Satisfaction of housing can be achieved through a combination of efficiency, comfort and beauty. To optimise the aesthetic quality of a house it is necessary to combine functional and technical aspects (Pile, 1995:34).

3.2.5 Water and sanitation

It is very important to construct the water and sanitation systems before building of the house commences. Two systems are needed, namely the water supply system and the waste system. Hot- and cold-water branch lines travel throughout the house to each fixture or appliance that has a water requirement. Piping for the water supply system is located in the floor, walls or ceiling of a house. Water lines are usually made of copper, plastic or galvanised steel pipes. Local codes may restrict the use of certain types of pipe.

A stopvalve is installed in the building next to the water meter as well as on each branch line next to the fixture or appliance. This stopvalve is the user's primary control in the case of an emergency. Inside the house water provided by a branch pipe from the rising main line supplies the cold tap in the kitchen to guarantee a supply of pure water for drinking and cooking purposes (Lawrence, 1994:34). In the house, water-borne waste comes mainly from bathrooms, kitchens and laundry areas. Since it tends to decompose quickly, the waste needs to be removed before it causes odours or becomes hazardous to people's health. Waste disposal pipes are completely separate from the water supply system. Usually they are much larger than water supply lines and are not pressurised; instead, they rely on gravity to remove the waste (Lewis, 1994:149). Careful design of various connections to the stack is essential to guarantee good performance. Traps are fitted at various points to keep drain smells out of the house. Wastewater going through the community sewer lines ends up in treatment systems and is usually recycled. Therefore, a good water and sanitation system is important to keep all people healthy (Lawrence, 1994:38).

3.2.6 Quality of construction

Conventional construction is a step-by-step process of cutting, fitting and assembling parts and pieces of materials on the site. Conventional construction includes excavating, building the foundation, making rough enclosures, as well as the preliminary work of installing utilities and equipment, adding surface layers, installing equipment, placing work tops, painting and finishing. The quality of a conventional house ranges from poor to excellent, and is influenced by the quality of workmanship and materials used. Good construction is taken for granted in the absence of defects. To obtain a good quality of construction many different materials are

used to attain the best combination of economy, durability, safety and appearance (Lindamood & Hanna, 1979:107).

3.2.7 The neighbourhood

A neighbourhood consists of a group of houses and people within the community. The neighbourhood includes a physical and social facet. The physical neighbourhood is determined by the way the land and buildings are used. Neighbourhoods often combine residential, commercial and industrial buildings. Planning the neighbourhood should be done before the size and layout of individual sites are determined for creating the shape of the neighbourhood and before dwellings are being built. The quality of construction and the type of design are sometimes controlled in a planned neighbourhood (Lewis, 1994:61).

The kind of people in the neighbourhood constituting the social neighbourhood also has a decisive effect on the quality of the living environment. Socio-economic status, such as age, ethnic background, income level and occupation are important factors affecting the social neighbourhood. The similarity of these factors in neighbourhoods helps to increase the interrelationship between various neighbourhoods. When planning neighbourhoods, the location of recreational facilities, as well as specific police, fire protection, school, park and public facilities, should all be placed in convenient and safe sites for people living in these neighbourhoods (Cassidy, 1997:193).

3.3 THE PARTICIPATION OF THE USER IN THE DESIGN PROCESS

3.3.1 Influences of residential design

During the last decades our physical settings have changed rapidly through both an increasing population and developing technologies. The environment becomes unnatural or man-made with far-reaching implications for human behaviour. When people build houses, they create not only a physical environment but also a psychological environment of meanings that influence certain behaviours of people. People may experience stressful stimuli derived from information stemming from the surrounding environment. The effect of environmental stress and behavioural constraints influence residents in their specific behaviour, such as affiliative behaviour, pro-social behaviour, crime, stress and coping behaviour (Bell *et al.*, 1996:408).

Especially urban life, contaminated by noise, pollution and over-crowding often ends up with high rates of social problems next to health hazards. The building environment therefore affects human behaviour, impacting on the physical and psychological well-being of everyday life. It is also recognised that social problems impinge not only on the people of the house, but also on others that share a living with them (Ittelson *et al.*, 1974:246; Cassidy, 1997:169).

3.3.2 The importance of participation by the user in the design process

In the primitive housing process, occupants participate from the beginning in the construction with the result that the needs of the occupants are met in a natural way. These shelters have evolved over time under the unforgiving challenges of survival and they represent successful integration of unique cultural and environmental demands (Bell *et al.*, 1996:414). According to Morris and Winter (1978:21), housing, as the social sphere of the individual and the family, contributes significantly towards the cultural and social systems practised within the house. A specific community or family may have a different housing norm according to their cultural habits. Kent (1991:465) found that the architecture, the space occupied and the culture practised are interrelated. The organisation of space and the built environment are also influenced by different gender roles within the specific culture. The use of space is a behaviour that is culturally defined: segmented cultures tend to promote a segmented behaviour and a segmented built environment.

In the modern building design the needs of the eventual user are often ignored because designers or other professionals rather than the occupants are directly involved in the whole process of housing (Bell *et al.*, 1996:415). Pile (1995:33) describes design, as “all of the decisions that determine how a particular object, space or building will be”. Ittelson *et al.* (1974:342) states that it can be the creation of a physical setting with one or several human specifications as primary. In this process human assumptions are made about what man is like and how people will react to and feel about given environments. It often happens that settings have unintended consequences in eliciting a negative behaviour of the user when the user’s needs are not involved in the design process (Bell *et al.*, 1996:422).

According to Nissen *et al.* (1994:169), the design of a building proceeds through various stages, including planning, financing, programming, work drawings and construction. During the

programming stage the designer should analyse the situation and have a consultation with the future occupants. In the programming stage, identification of all the elements is imperative as all needs can only be met by detailed information and analysis. In the programming stage the designer should also collect all pertinent information about the client, including the type of household, the different ages within the household, the stage of the life-cycle, the type of life style, the period of stay, preferences within the household and the psychological reaction of the household.

Adequate knowledge about the people who will live in the home is most important for a successful design of the residence. The number, ages, sex, sizes, activities and relationships of people within the household should be a primary concern in the planning of the home in order that special needs and interests of individuals and the family as a group can be met. The ages and the stage in the life-cycle of household members are determining factors in planning the house type (Nissen *et al.*, 1994:170).

When determining the type of house, it is important to take the household's lifestyle into consideration. The household's lifestyle differs in terms of entertainment habits, social activities and cultural background. The household's lifestyle includes not only how they live, but also how they would like to live in the future. The period of stay by the household in the home should therefore also be considered in the design process of the house. Long-term occupants tend to personalise their homes more than those who will be only short-term occupants. This fact may of course affect the type of furnishings and personal possessions. Gifford (1997:395) states that in designing the house all information should be taken into account. This information cannot be collected if the user does not participate in the design process.

In order to collect all these factors, the designer has to understand what the client's objectives are or should be, and whether and how they can manage their resources to carry out a proposed plan through sensible communication. Communication failures reinforce the gap between designer and user. If communication with the client collapses, the designer can not match the programme of materials, equipment needs, space requirements, the character of the housing, site choice, orientation and budgeting. Effective communication helps in the exchange of information as well as in bonding the user and the designer in feelings of togetherness. Other professions can thus also be drawn in to share ideas about problems and what can be done about

them. Through the co-operation of user and designer a more appropriate design of the living environment can be achieved. The user's participation in the design process is therefore a prerequisite for satisfying the housing needs of the future user and creating and controlling a proper environment for the occupants (Bell *et al.*, 1996:419).

3.3.3 Advantages of user participation in the residential design process

3.3.3.1 Providing a more habitable and satisfactory place for the occupants

Putting the detailed information about the primary conditions of the future user in the design process, such as the life style, the cultural background, the age, the specific stage of the family life cycle and preferences, helps to provide a more habitable home for the user because actual needs are being matched. Congruence of user's needs and behaviour then produces housing satisfaction for the occupants in a natural way (Gifford, 1997:393).

3.3.3.2 Educating the occupants and designer

User's participation in the design process presupposes that designer and user work together as a team. The designers must be willing to listen to the occupants, and the occupants must be willing to commit themselves to the work of learning how to contribute effectively to the planning process. The occupant must acquire knowledge about the project, its goals, methods, costs, constraints and the nature of the planning process for effective participation in the design process. It is accordingly necessary to have initial educational instruction sessions regarding technical details as well as information about the design process and the social organisation of the facilities (Sommer, 1983:121). Through an interview, the designer can also learn much from the various groups of occupants. It thus provides feedback for improvement in the design of the next housing development and to increase a useful external perspective on the project. User's participation in the design process can therefore help the designer to learn about the actual needs of the user (Gifford, 1997:386).

3.4 POST-OCCUPANCY EVALUATION (POE)

3.4.1 Definition

“‘Post-occupancy evaluation’ is the process of evaluating buildings in a systematic and rigorous manner after they have been built and occupied for some time” (Preiser *et al.*, 1988:3).

3.4.2 Purpose of post-occupancy evaluation

The National Housing Programme focus on a people-centred development and the fulfilling of basic human needs for improving the quality of life of residents (SA, 1994:23). A POE usually utilises tests for building effectiveness and the evaluation is essentially an identification of the needs of the user. The evaluation of the effectiveness gives an indication of the housing satisfaction of the users (Gifford, 1997:404). The purpose of post-occupancy evaluation, therefore, is to create better future housing for users by analysing whether the product that has been designed and delivered through an assessment of the needs of the user and the delivery process, was indeed successful (Sommer, 1983:136; Venter *et al.*, 1999:5).

3.4.3 Benefits of post-occupancy evaluation

- Post-occupancy evaluation benefits occupants by contributing to an appropriate, effective and enjoyable environment (Preiser *et al.*, 1988:29).
- Post-occupancy evaluation benefits occupants by increasing excellence of housing products and an informed decision-making regarding housing (Preiser *et al.*, 1988:29).
- Post-occupancy evaluation contributes to the improvement of building performances through improvement of design databases, standards, criteria and guidelines (Preiser *et al.*, 1988:5).
- Post-occupancy evaluation identifies whether the housing design is suitable for the life styles of the occupants within the low-cost housing sector (Venter *et al.*, 1999:7).
- Post-occupancy evaluation helps to improve the housing process by using essential information gained through the evaluation process (Venter *et al.*, 1999:7).
- Post-occupancy evaluation helps to improve the housing product and environment that leads to the creation of healthy families and communities (Venter *et al.*, 1999:7).

3.4.4 Steps in post-occupancy evaluation

3.4.4.1 Planning post-occupancy evaluation

The planning of post-occupancy evaluation involves reconnaissance, resource and research planning. Reconnaissance is to determine the scope and level of effort that will help to select the most appropriate type of post-occupancy evaluation. Resource planning relates to determining suitable methods of data collection and analysis. An appropriate allocation of personnel and time should be scheduled in detail. Research planning as final step before conducting the actual on-site post-occupancy evaluation is an equivalent activity to work drawings in design (Preiser *et al.*, 1988:66).

3.4.4.2 Conducting post-occupancy evaluation

Conducting post-occupancy evaluation involves data collection. This embraces three steps: initiating the on-site data collection process, monitoring and managing the data collection, and analysing the data. For initiating the on-site collection of data, a mobilising effort is needed to collect the actual evaluation data. This step includes establishing a base for an operational post-occupancy evaluation team, pilot testing and the co-ordination of data collection methods. The monitoring and managing of data collection can help to acquire and control the quality of data collection. It should establish the consistency and usefulness of the data collection. In the step of analysing the data, more sophisticated analysis techniques should be used. Analyses at the indicative level of post-occupancy evaluation typically yield qualitative and quantitative indicators of successes or failures in building performance. At the investigative level, simple descriptive and statistical techniques may be used. The analysis of data should be based more on fact than on the intuition of the evaluator or of the occupants of the house (Preiser *et al.*, 1988:75).

3.4.4.3 Applying post-occupancy evaluation

This step reports on the various findings and recommendations, and reviews the effects of specific actions and operations on the occupants. These activities fulfil the original goals of the post-occupancy evaluation process. Reporting on the indicative post-occupancy evaluation focuses on problem identification and short-term objectives. Recommendations may have

different time spans for their implementation, such as short-term, medium-term and long-term. The last action in applying a post-occupancy evaluation is to review the outcomes. A review of the outcomes should not occur immediately as a transitional period is necessary. Communication on a continual basis between the evaluators and the occupants is important to provide further recommendations (Preiser *et al.*, 1988:90).

3.5 CONCLUSION

The housing product should fulfil the basic functions, such as effectiveness, beauty, and psychological or social comfort to the occupants. Satisfaction with the housing product can be achieved when the product fits the user's needs through an overall integration of physical, functional, aesthetic, psychological and social factors. It should be remembered that design is an evolutionary process that involves a search for congruence or fit between the design and the user. Knowledge of the user's needs, such as the life style, the age, the preferences and cultural dispositions, is essential for the design process with a view to the success of the housing product and the building. The participation of the user in the design process is accordingly necessary to provide satisfaction with the housing product.

This chapter examined the housing product and the user's participation in the design process by investigating the housing product (including the floor plan, the foundation, the walls, the doors, the windows, the roof and the neighbourhood) and the importance and advantage of the user participating in the design process. Post-occupancy evaluation was discussed as a method with a people centred focus that can be used for project evaluation. The post-occupancy evaluation gives an indication of the housing satisfaction of the occupants that received government subsidised housing. The next section will discuss the empirical research utilised in this project.

CHAPTER 4

EMPIRICAL METHOD

4.1 INTRODUCTION

This chapter will focus on the empirical research methods and techniques that have been used for a post-occupancy evaluation to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tsweleng, Wolmaransstad, in the North West Province. The research design will be described in this chapter. The use of various investigative methods for the empirical research will also be discussed.

4.2 THE RESEARCH DESIGN

In order to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tsweleng, Wolmaransstad, in the North West Province the following research design was implemented.

4.2.1 Literature orientation

According to Arkava and Lane (1983:25), a literature search or review enables the researcher to establish a relevant research topic. The literature search also enables the researcher to develop a deeper insight into and gain a better understanding of the complexities inherent in the identified problems. It is important to equip the investigator with a complete and thorough justification of the subsequent steps, as well as an awareness of the importance of the undertaking.

During the study of relevant available literature in a global and local context, the researcher found that a knowledge base exists with regard to the study of housing needs, housing satisfaction, quality of life, the National Housing Programme, the housing product, the participation of the user in the design process and a post-occupancy evaluation. This has led to the following study design.

4.2.2 Type of study

In order to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province, a descriptive exploratory study was designed. Babbie (1995:91) states that descriptive research is fairly obvious when dealing with descriptive questions for a frame of reference. This research will comprise basic research in so far as it seeks to advance the knowledge base pertaining to the housing process and housing product rather than to solve an immediate or perceived problem.

Babbie (1995:84) states that exploration is typical when a researcher is examining a new interest or when the subject of study itself is relatively new and unstudied. Exploratory studies are most typically done for a purpose like satisfying the researcher's curiosity and desire for better understanding and when there is no previously tested methodology available. Exploratory studies are also intended to test the feasibility of undertaking a more careful and detailed study and to develop methods that could be employed in a more extensive study.

4.2.3 The target and study population

The target population for this study was a selected group of residents of state subsidised housing in the Tswelelang suburb of Wolmaransstad in the North West Province. Tswelelang is a typical residential area in the North West Province and the community, town council and developer indicated that they wanted to take part in this study. The population consisted of residents of state subsidised housing in extension 2, 4, and 10 of this suburb. All the stands in the area have been allocated for housing but only 940 houses were completed during the first stage of this research project. The questionnaire was filled in by the head of the household. The target population had received houses built according to either plan F₂ (cf. *Addendum 2*) or G₂ (cf. *Addendum 2*). The specifications of the houses and construction or materials are described in the *Addendum 2*.

To determine the sample size the following formula was used:

$$n \geq \frac{N}{1 + \frac{N d^2}{10\,000}}$$

$$N = \text{Population (940)}$$

$$n = \text{Study population/sample (120)}$$

$$d = 5 \text{ (certainty that an error of no more than 5 \% will occur)}$$

(Barnett, 1974:44)

$$n \geq \frac{940}{1 + \frac{940 \times 25}{10\,000}}$$

$$n \geq 280$$

If $n = 120$ and is substituted in the above formula:

$$120 = \frac{940}{1 + \frac{940 \times d^2}{10\,000}}$$

$$d^2 = 72.695$$

$$d = 8.526$$

It is clear that a sample of 120 provides a certainty that an error of no more than 8.526% will occur.

Due to the descriptive nature of the study and taking into account the funds available and other resources, it was decided to work with a sample of 120.

4.2.4 The sampling method

A random and systematic sampling method was used to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province. The researcher used random sampling to select the first house. Systematic sampling was used to identify the rest of the houses by selecting every eighth house, starting with the first number of the house on the map, selecting proportionally according to area size to have 120 ($n=120$) final households.

Bailey (1987:81) defines sampling as the element of the population considered for actual inclusion in the study. It can also be viewed as a subset of measurements drawn from a population.

Bailey (1987:87) states that systematic sampling implies that the researcher assumes the units to be randomly listed in the sampling frame and then every k^{th} element chosen, with k being any constant. K is then *any* number that the researcher wishes, depending on the proportion of the sampling frame needed in the sample. To guard against any possible human bias, the first element is randomly selected. Systematic sampling is practical in that it involves less work, because it is simple to perform and may reduce error. The sampling method of this study to determine the housing satisfaction of a selected group of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province, accordingly entailed both random and systematic sampling.

4.3 THE METHOD OF DATA COLLECTION

The following methods were used to gather data for this study with the objective to determine the housing satisfaction of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province. Each will be discussed briefly.

4.3.1 The structured questionnaire

A structured questionnaire was used during this study. According to De Vaus (1990:80), the structured questionnaire is a highly structured data collection technique whereby each respondent is asked the same set of questions. It also provides a very efficient way of creating a variable by case matrix for large samples. The questionnaire can be filled out by the respondent and returned to the researcher or administered by interviewers. In this study, the interviewers filled in the questionnaires according to the responses from the participants.

The questionnaire consisted of four sections A, B, C and D. Section A intended to collect data for use in determining possible relationship, between housing satisfaction and the demographic data of respondents. Section B was aimed at determining the satisfaction of residents regarding the housing delivery process and also to investigate the participation of users during the housing process. Section C had as objective to determine the satisfaction of the residents with the housing product. Section D aimed at determining the satisfaction of residents with the project management. The structured questionnaire will now be described briefly.

SECTION A: DEMOGRAPHIC INFORMATION

Section A consisted of questions one to six, which included education level, occupation, type of family, life-cycle, total family income and the number of residents. These questions were both closed-ended and open-ended. The respondents were required to mark the appropriate answer with a cross for the five closed-ended questions and to write the appropriate answer for the one open-ended question. Unfortunately the open-ended question (Question No.6) was not correctly answered and the data was viewed as being invalid for use in this project.

According to Bailey (1987:118), closed-ended questions measure variables that are nominal (gender or skin colour) or ordinal (education level) or questions measured by intervals that have been collapsed into relatively few ordinal categories. These are generally self-contained, can be answered quickly, and require fewer instructions than open-ended questions. Closed-ended questions were accordingly used to determine the demographic information of respondents.

*SECTION B: THE SATISFACTION OF RESPONDENTS
WITH THE HOUSING PROCESS AND THE PARTICIPATION OF USERS*

Section B consisted of questions seven to thirteen and contained both closed-ended and open-ended questions about satisfaction with the housing process. It also investigated the user's participation in the housing process.

Bailey (1987:120) states that open-ended questions are used for complex questions that cannot be answered in a few simple categories but require more detail and discussion. They are used to elicit the respondent's unique views, philosophies or goals. Both closed-ended and open-ended questions were accordingly used to determine the measure of satisfaction about the housing process as well as the participation ratio of users in the housing process.

*SECTION C: THE SATISFACTION OF RESPONDENTS
WITH THE HOUSING PRODUCT*

Questions in Section C (fourteen to twenty-four), entailed both closed-ended and open-ended questions to determine the satisfaction of respondents regarding the housing product.

*SECTION D: THE SATISFACTION OF RESPONDENTS
WITH THE PROJECT MANAGEMENT DURING THE HOUSING
DEVELOPMENT PROCESS*

Section D consisted of questions twenty-five to twenty-nine, which included both closed-ended and open-ended questions. By means of these questions the satisfaction of the respondents about the project management during the housing development process could be ascertained.

4.3.2 The Likert scale

The Likert scale with ‘smiley faces’ was used to determine the respondent’s satisfaction about the housing process, the housing product and the project management. A three point Likert scale with ‘smiley faces’ measured housing satisfaction. This scale was presented to the respondents in order to establish whether they were satisfied or not. This scale was used to measure (1) not satisfied, (2) do not know, and (3) satisfied (cf. *Addendum 1*).

Example:

10.2 How satisfied are you with the time used for building?	☹	1	
	☺	2	
	😊	3	

Ghosh (1985:145) states that the Likert scale supplies a more precise and definite response towards an issue. It is also more informative and reliable because of several degrees of agreement or disagreement. It also has a method of checking interval consistency. The Likert scale with ‘smiley faces’ was accordingly utilised for determining the housing satisfaction of a selected group of state subsidised dwellers in Tsweleng, Wolmaransstad, in the North West Province.

4.3.3 Interviews

Interviews were used to collect demographic information of respondents, as well as their awareness about the process and their satisfaction with the product and the project management.

Bailey (1987:174) identified the advantage of the interview as its flexibility, because the interviewer can probe the more specific answers and can repeat a question. The interview technique tends to have a better response rate than a mailed questionnaire. This is the case because persons who are unable to read and write and accordingly not willing to write an answer, can easily answer a question in an interview. An interviewer can standardise the interview environment by ascertaining that the interview is conducted in privacy. The interviewer is then present in person to observe non-verbal behaviour and to assess the validity of the respondent's answer. The interviewer can also ensure that all the questions are answered and can record the exact time, date and place of the interview. For these reasons, interviewers were accordingly used to gather the data for determining the housing satisfaction.

4.3.4 Training fieldworkers as interviewers

Bailey (1987:204) states that the interviewer must be familiar with every word of every question, and must also understand all instructions in the questionnaire. She or he must be familiar with the general purpose of the study, how the sample was selected, and how the data will be coded, analysed and published.

In accordance with the objectives outlined above, the researcher trained twelve fieldworkers by informing them in a training session about the aims and goals of the research. The fieldworkers were 12 young Tswana males and females from the community identified by the housing official of the local town council. They were all unemployed and had matriculation certificates. Every fieldworker was allocated 10 houses according to the numbers of houses selected through the sampling process. They were instructed to visit every house three times in order to find the head of the household. If this person was not available after the third time, they had to try the house next door on the left and if this was also unsuccessful, they had to move to the house on the right side of the allocated number. During the training session the fieldworkers were taught the following skills:

- (1) how to complete the questionnaires;
- (2) how the Likert scale (smiley scale) works; and
- (3) the appropriate way for a fieldworker to interview a respondent without being biased or leading the particular respondent towards a specific response.

Fieldworkers were accordingly used to gather the appropriate data to determine housing satisfaction.

4.3.5 Testing the questionnaire

The questionnaire was tested during a previous study by Wijnbeeck (1998) on a similar population in another area of the North West Province. Minor adjustments relevant to the specific aims of this project were made to the questionnaire which was pilot tested by the 12 fieldworkers in Tswelelang.

Bailey (1987:141) states that pre-testing is the final stage in the construction of a questionnaire and the initial effort is seen merely as a rough draft. It can be administered to a limited number of respondents so that any flaws can be identified and corrected. The pre-testing of questionnaires is generally helpful in identifying redundant questions. After the pre-testing in Tswelelang was completed, the researcher found that respondents were quite able to complete the questionnaire by means of an interview under the researcher's instruction.

4.4 THE FOCUS GROUP

The researcher conducted focus group discussions with the team of 12 fieldworkers after the completion of the questionnaires.

Patton (1990:250) states that the focus group discussion should be with a small group of people on a specific topic. The participants are typically a relatively homogeneous group of people. This has the advantage of employing a highly qualitative data collection technique. The focus group also provides some quality controls on data collection in so far as participants tend to provide checks and balances on each other that weed out false or extreme views. They frequently also bring out aspects of the topic that would not have been anticipated by the researcher and would not have emerged from interviews with individuals. The focus group discussion was accordingly utilised to gain insight into the housing satisfaction of the target group and to confirm and expand on the data already collected.

4.5 OBSERVATION

Throughout the research process the researcher conducted observations and took photographs of different houses. The questionnaire was used as a guideline for the observation and the photographs were taken of different aspects of the housing structure.

Bailey (1987:239) states that observation is superior to survey research, experimentation or a document study for collecting data on non-verbal behaviour. In academic research, observations are often conducted as a preliminary to surveys, and may also be conducted jointly with a document study or experimentation. The observation technique is used when one wants to study in detail the behaviour occurring in some particular setting or institution.

4.6 VALIDITY AND RELIABILITY

De Vos (1998:359) describes a combination of qualitative and quantitative approaches. The researcher in this case mixes aspects of the qualitative and quantitative paradigm, or several methodological steps in the design. The use of multiple methods of data collection increases the reliability of the observation. Multiple methods of data collection were, therefore, applied:

- Interviews were conducted with the home owners.
- Discussions were conducted with fieldworkers as a focus group to elicit information and to share research insights.
- The researcher and the fieldworkers made observations and took photographs of the houses to obtain a more comprehensive perspective.

4.6.1 Validity

4.6.1.1 Construct validity

According to De Vos and Fouché (1998:85), construct validity is concerned with the meaning of the instrument. It refers to what is being measured and how and why it operates the way it does. It involves not only validation of the instrument itself, but also of the theory underlying it.

This research was based on a model and concepts constructed out of existing relevant literature. The construct of the research design is, therefore, considered to be valid.

4.6.1.2 Content validity

According to De Vos and Fouché (1998:84), content validity refers to the representative or sampling adequacy of the content (topics or items) of an instrument. It is the extent to which the indicators measure the different aspects of the concept. Content validity is a judgmental process and colleagues or co-researchers can implement a content validation.

The framework of this research was conceptualised from appropriate literature, all concepts were defined in the course of the research, and four experts in the housing field evaluated the framework as well as the questionnaires. After minor changes were made, there was general agreement about content validity.

4.6.1.3 Face validity

De Vos and Fouché (1998:84) state that face validity is important to structure an instrument so that it not only measures the attributes under consideration accurately, but also appears to be a relevant measure of those attributes. The housing experts as well as the researcher agreed that this questionnaire does measure housing satisfaction.

4.6.2 Reliability

According to De Vos and Fouché (1998:85) reliability is defined as the accuracy or precision of an instrument, or as the extent to which independent administrations of the same instrument would yield the same results under comparable conditions. Because this study entails descriptive exploratory research, the process of testing/re-testing was not implemented. Reliability was obtained by the training and the choice of fieldworkers, the pre-testing of questionnaires and by triangulation (cf. Par. 4.6.2.3).

4.6.2.1 The training of fieldworkers

The researcher trained fieldworkers to understand the aims and goals of this study, how to use the instruments and how to conduct an interview. The fieldworkers all belonged to the same language and cultural group as the respondents.

4.6.2.2 Pre-testing

Pre-testing was done, as described in paragraph 4.3.5. Before the main test, questionnaire was tested by the twelve fieldworkers.

4.6.2.3 Triangulation

De Vos (1998:359) describes triangulation as referring mainly to the use of multiple methods of data collection with a view to increasing the reliability of observation. Methodological triangulation is the use of two or more methods of data collection within a single study. Data triangulation attempts to gather observations through the use of a variety of sampling strategies to ensure that a theory is tested in more than one way.

De Vos (1998:357) considers the quantitative approach to be more formalised as well as more explicitly controlled than the qualitative approach, with a range that is also more exactly defined, and which is relatively close to the physical sciences. The researcher's role is described as that of an objective observer. Studies that are conducted are focused on specific questions or hypotheses that remain ideally constant throughout the investigation. Data collection procedures and types of measurement are constructed in advance of the study and applied in a standardised manner. Qualitative approaches on the other hand are those in which the procedures are not as strictly formalised, while the scope is more likely to be undefined and a more philosophical mode of operation is adopted. The researcher in this case attempts to gain a first-hand, holistic understanding of phenomena, and data collection is shaped as the investigation proceeds. Here methods such as participant observation and unstructured interviewing are used.

In this research project both quantitative and qualitative data collection methods were used to identify the awareness and possible satisfaction of respondents. For quantitative data collection, a Likert scale with 'smiley faces' (Blakemore, J.E, 1997; Otta, E., 1997) was utilised to measure the degree of satisfaction with the housing product and the project management. For qualitative

data collection, open-ended questions were utilised to uncover the reasons for dissatisfaction with the housing. Qualitative data were also obtained by means of focus group discussions and observations. Through the use of qualitative and quantitative data collection the researcher was able to determine the feelings of respondents.

During the data collection phase, interviews, focus group and observation techniques were used to increase the reliability of this study.

4.7 THE COMMENCEMENT OF THE RESEARCH

After the researcher trained the fieldworkers and the structured questionnaire was tested, the main research took place. Every fieldworker had to visit 10-12 houses, which were determined by both random and systematic sampling, and had to conduct interviews with the head of the households irrespective of whether they were male or female. While the fieldworkers conducted the interviews with the respondents, the researcher observed the site and house, and regularly took photographs. After the respondents completed the questionnaires, the researcher conducted discussions with the focus group of 12 fieldworkers.

4.8 METHODS OF ANALYSIS

4.8.1 Descriptive statistics

The results were computerised and analysed by the SAS System for Windows Release 6.12 (1996) was used to analyse the results, presenting both descriptive statistics and calculating Housing Satisfaction Scores with regard to the housing product and the project management. The results will be presented as frequency tables and percentages in chapter 5 in paragraphs 5.4 and 5.5.

The results of questionnaire Section B regarding satisfaction with the housing process and neighbourhood will be discussed while a Housing Satisfaction Score will be calculated for Section C (the housing product) and D (the project management).

4.8.2 The Housing Satisfaction Score

Housing Satisfaction Scores regarding the housing product and the housing project management will be presented in paragraph 5.6 by utilising a table with means, standard deviation, and minimum and maximum satisfaction scores. The Housing Satisfaction Score was developed according to Van Wyk's method (Van Wyk, 1993:169).

Housing satisfaction	Number of questions	Satisfied (maximum score 3)	Do not know (score 2)	Not satisfied (minimum score 1)
Product	23	69	46	23
Management	3	9	6	3
Total	26	78	52	26

Table 4.1 : The Housing Satisfaction Score

In order to measure satisfaction with the housing product and the project management, the questions were scored on a 3 point Likert scale with 'smiley faces' (cf. *Addendum 1*). Respondents were given a choice between "not satisfied": 1 point; "do not know": 2 points; and "satisfied": 3 points. For measuring satisfaction, a total of 26 questions were utilised, 23 questions about the housing product and the project management. The maximum score regarding satisfaction with the housing product was 69, while the minimum was 23. The maximum score regarding satisfaction with the project management was 9, while the minimum was 3.

- 1) According to Steyn (1999:1) the latest trend in statistical testing is to place more emphasis on confidence intervals and effect sizes. It is also important to determine whether statistically significant results are also practically significant.
- 2) The mean values of the housing satisfaction of the respondents were compared with the maximum satisfaction value that could be obtained by doing an one sample T-test and then the effect size was calculated to determine whether these results were statistically significant.
- 3) Steyn (1999:3) further recommends that the following formula should be used to calculate d-values in order to determine whether the difference between the mean values and maximum values obtained for the product, management and total housing satisfaction are practically significant.

$$d = \frac{\text{mean}}{\text{standard deviation}}$$

where x is the difference between the mean and the total satisfaction score

- If $d = 0.2$ the effect is small
- If $d = 0.5$ the effect is medium
- If $d = 0.8$ the effect is large and practically significant

4.8.3 The difference between the mean value of the Housing Satisfaction Score (HSS) and the demographic factors

- An analysis of variances (ANOVA) was done for the different Housing Satisfaction Scores to determine if the mean vales for the different demographic groups were statistically significant. According to the Statistical Consultation Services of the University of Potchefstroom, there are statistically significant differences if the p-value is <0.05.
- To determine if the differences between the means are also practically significant, the effect size f is calculated (Steyn 1999:9)

$$f = \sqrt{(k-1) F / (N-k)}$$

f = 0.1 small

f = 0.25 medium

f = 0.4 large and practically significant

- If there is any statistically significant difference between the mean values of the Housing Satisfaction Score and the different demographic factors, 95% confidence intervals is calculated.
- The following effect size was calculated in the cases where the confidence intervals were statistically significantly different.

$$d = \frac{(\text{mean 1} - \text{mean 2})}{\sqrt{\text{MSE}}}$$

where M is the mean square error

If $d = 0.2$ the effect is small

If $d = 0.5$ the effect is medium

If $d = 0.8$ the effect is large and practically significant (Steyn, 1999:3)

4.9 CONCLUSION

This chapter focused on the empirical method that was used to determine the housing satisfaction of a selected group of residents of state subsidised housing in Wolmaransstad in the North West Province. Various investigative methods used for the empirical research were described and the design of the questionnaire was given. The design of the research project and the procedures utilised also received attention in this chapter.

The following chapter will focus on the results that were obtained and will provide a discussion of the data acquired in this study.

CHAPTER 5

AN ANALYSIS AND DISCUSSION OF THE RESEARCH RESULTS

5.1 INTRODUCTION

This chapter will focus on the analysis of the data collected during interviews using a structured questionnaire. The results will be presented in accordance with the nature of the questionnaire. Section A refers to demographical data, Section B to satisfaction with the housing process and the participation of the user, Section C to satisfaction with the housing product and Section D to satisfaction with the project management. The majority of the results are presented as frequency tables and percentages. A Housing Satisfaction Score was calculated and differences between the demographic groups and the Housing Satisfaction Score was determined (cf. Par. 4.8.2). Qualitative data will be used to determine the reasons for satisfaction or dissatisfaction expressed in the answers of respondents. It is important to note that not all questions were answered by all the respondents, even though the fieldworkers had sufficient skills in and training for the use of interviews and structured questionnaires. The total number of respondents in each section is stated in the various tables. It was found, however, that the respondents answered the questions which used the Smiley Scale more easily and readily.

The first issue to be discussed is the *demographic profile* of the respondents in the Tswelelang, suburb of Wolmaransstad.

5.2 SECTION A : DEMOGRAPHIC PROFILE OF THE RESPONDENTS

Result 1: *Responses to Question 1 regarding the educational level of respondents*

Years of education	Number of respondents	Percentage (%)
Lower than St. 3	71	59.2
St. 3 - St. 6	30	25.0
St. 7 - St. 10	16	13.3
Higher than St. 10	3	2.5
Total	120	100

Table 5.1: The educational level of respondents

The data in *Table 5.1* indicate that the highest percentage of respondents (59.2%) are educated to the levels lower than Standard 3, with a small number of respondents (2.5%) educated to a level higher than Standard 10. A quarter of the respondents are educated to the level of Standards 3 to 6 (25%), and a smaller group between Standards 7 to 10 (13.3%).

Result 2: *Responses to Question 2 regarding the occupation of respondents*

Occupation	Number of respondents	Percentage (%)
Unemployed	65	54.2
Part-time work (work less than five days per week)	28	23.3
Full-time work (work five or more days per week)	27	22.5
Total	120	100.0

Table 5.2: The occupation of respondents

The data in *Table 5.2* indicate that the majority of the respondents are unemployed (54.2%). A lower percentage of the respondents are full-time workers (22.5%) or part-time workers (23.3%).

Result 3: *Responses to Question 3 regarding the type of family*

Type of Family	Number of respondents	Percentage (%)
Nuclear family	76	63.3
Extended family	44	36.7
Total	120	100.0

Table 5.3: Type of family

The data in *Table 5.3* indicate that a high percentage of respondents (63.3%) live as a nuclear family while a lower percentage of respondents (36.7%) live with an extended family.

Result 4: *Responses to Question 4 regarding the phase of respondents in the life-cycle*

Life-cycle phase of residents	Number of respondents	Percentage (%)
Living alone	7	5.8
Couple without children	7	5.8
Parents and younger children	29	24.2
Parents and teenage children	32	26.7
Parents and older children (over 18 years old)	43	35.8
Ageing couple	2	1.7
Total	120	100.0

Table 5.4: The life-cycle phase of residents

The data in *Table 5.4* indicate that those respondents, who are in a stage in the life cycle where they are living with parents and older children, reflect the highest percentage (35.8%), while only a few respondents are ageing couples (1.7%). Other life stages of respondents include parents with teenage children (26.7%), parents with younger children (24.2%), couples on their own (5.8%) and single respondents (5.8%). Only small percentages live in a residence as a couple (5.8%) or single (5.8%).

Result 5: Responses to Question 5 regarding the total household income per month

Amount of income	Number of respondents	Percentage (%)
Under R500	82	68.3
R501 - R1000	28	23.3
R1001 - R1500	7	5.8
R1501 - R2500	3	2.5
R2501 - R3500	0	0
Total	120	100.0

Table 5.5: Total household income per month

The data in *Table 5.5* indicate that the highest percentage of households (68.3%) earn less than R500.00 per family per month. A small number of households have an income of between R1 501.00 and R2 500.00 (2.5%) per month. About a quarter of the households have an income between R501.00 and R1 000.00 (23.3%) per month, while no households had an income between R2 501.00 and R3 500.00 (0%) per month.

The following is a summary of the demographic profile:

- The education levels of the respondents were ‘Lower than Standard 3 (59.2%)’, ‘Between Standard 3 and 6 (25%)’, ‘Between Standard 7 and 10 (13.3%)’ and ‘Higher than Standard 10 (2.5%)’.
- The distribution of the employment status of the respondents was ‘Unemployed (54.2%)’, ‘Full-time workers (22.5%)’ and ‘Part-time workers (23.3%)’.
- The type of family of the respondents was ‘Nuclear family (63.3%)’ and ‘Extended family (36.7%)’.
- The stages of the life-cycle of the respondents were ‘Parents and older children (35.8%)’, ‘Parents and teenage children (26.7%)’, ‘Parents and younger children (24.2%)’, ‘Couple without children (5.8%)’, ‘Living alone (5.8%)’ and ‘Aging couple (1.7%)’.
- The levels of the total household income of the respondents were ‘Under R500 (68.3%)’

per month’, ‘Between R501 to R1000 (23.3%) per month’, ‘Between R1001 to R1500 (5.8%) per month’ and ‘Between R1501 to R2500 (2.5%) per month’.

As the demographic profile of the respondents living in the Tswelelang suburb of Wolmaransstad has now become clear, it is feasible to treat the next issue that was researched within the context of the background knowledge of the people living in this community. This issue relates to the *housing process* and the *participation of the residents* in this process.

5.3 SECTION B: HOUSING SATISFACTION WITH REGARD TO THE HOUSING PROCESS AND THE PARTICIPATION OF THE RESIDENTS

Result 6: Responses to Question 7 regarding various items concerning the Subsidy Scheme

Question 7 covered 14 aspects of the Subsidy Scheme. The results obtained from the responses to various questions on the Subsidy Scheme can be generalised and presented in tables under eight main headings: (a) the nature and degree of *information* about various facets of the scheme; (b) the degree of *satisfaction* with various aspects of the scheme; (c) the *source* of information about the *Subsidy Scheme*; (d) the kind of *action* taken for obtaining a subsidy; (e) the *source* of the information regarding the *subsidy procedure*; (f) the *application venue* for the subsidy; (g) the *point of time* when respondents received their subsidy and (h) the *time lapse* between application and approval of the subsidy.

Result 6 (a): Responses to Questions 7.1, 7.5, 7.8 and 7.12 regarding relevant information about the Subsidy Scheme

Question no.	Answer	Yes	No	Total (n=120)
7.1	Knowledge about the overall Subsidy Scheme	75 (62.5%)	45 (37.5%)	120 (100%)
7.5	Knowledge about the subsidy procedure	47 (39.2%)	73 (60.8%)	120 (100%)
7.8	Knowledge about the amount of subsidy	65 (54.2%)	55 (45.8%)	120 (100%)
7.12	Knowledge about the waiting period for a subsidy grant	43 (35.8%)	77 (64.2%)	120 (100%)

Table 5.6: Information about the Subsidy Scheme

The data in *Table 5.6* indicate that almost two thirds of respondents (62.5%) knew about the overall Subsidy Scheme, while over one third of respondents (37.5%) did not have knowledge about the overall Subsidy Scheme. Almost two thirds of the respondents did not know about the subsidy procedures. Almost half of the respondents (45.8%) did not know about the amount of subsidy before applying. A high percentage of respondents (64.2%) did not know how long the waiting period for a subsidy grant would be.

Result 6 (b): *Responses to Questions 7.3, 7.9, 7.11 and 7.14 regarding satisfaction with the Subsidy Scheme*

Question no.	Question content	Not satisfied	Do not know	Satisfied	Total (n=120)
7.3	The fact that the respondent did not know about the Subsidy Scheme	8 (17.8%)	21 (46.7%)	16 (35.6%)	45 (100.0%)
7.9	The amount of subsidy	1 (1.5%)	3 (4.6%)	61 (93.8)	65 (100.0%)
7.11	The fact that the respondent had no information about the amount of subsidy	26 (46.4%)	21 (37.5%)	9 (16.1%)	56 (100.0%)
7.14	Waiting period for grant of subsidy	20 (16.7%)	32 (26.7%)	68 (56.7%)	120 (100.0%)

Table 5.7: Satisfaction with the Subsidy Scheme

The total number of respondents shown in questions 7.3, 7.9 and 7.11 in the *Table 5.7* indicates only the people who used either 'Yes' or 'No' as a response to the questions 7.1 and 7.8 used in the *Table 5.6*. The data in Result 6(b) therefore does not reflect the percentage of the total number of respondents in the project, but shows only the percentage of the number of respondents who actually answered the specific questions.

The data in *Table 5.7* indicate that a lower percentage of respondents (17.8%) were not satisfied with the fact that they had no information about the Subsidy Scheme while almost half of respondents (46.7%) answered that they did not know. Most of these respondents (93.8%) were satisfied with the amount of subsidy received, while a small minority of these respondents (1.5%) were not satisfied. Almost half of respondents (46.4%) were not satisfied that they had no information about the amount of subsidy. A high percentage of respondents (56.7%) were satisfied with the waiting period for the subsidy to be granted, while a lower percentage of respondents (16.7%) were not satisfied with the waiting period.

Result 6 (c): *Responses to Question 7.2 regarding the source of information regarding the Subsidy Scheme*

Source	Number of respondents	Percentage (%)
Councillor	3	4.0
Neighbours	12	16.0
Friend	8	10.7
Block leader	22	29.3
Relative	6	8.0
Radio, TV	1	1.3
Politician	8	10.7
Builder	3	4.0
From a community meeting	12	16.0
Total	75	100

Table 5.8: The source of information on the Subsidy Scheme

Table 5.8 shows the distribution of the 75 out of 120 respondents who answered 'Yes' to the question 7.1. The data in *Table 5.8* indicate that the highest percentage of respondents (29.3%) obtained the information about the Subsidy Scheme from a block leader, with a very small percentage of respondents (1.3%) indicating radio and television as the source of information. Other respondents received their information from the neighbourhood (16.0%), from friends (10.7%), from a politician (10.7%), from relatives (8.0%) from a councillor (4.0%) or from a builder (4.0%).

Result 6 (d): *Responses to Question 7.4 regarding the kind of action taken for information about the subsidy*

Answer	Number of respondents	Percentage (%)
By attending a meeting	10	8.3
By asking block leaders and councillors for information	43	35.8
By applying	28	23.3
No action taken	20	16.7
No answer given	14	11.7
Do not know	5	4.2
Total	120	100

Table 5.9: The kind of action taken in order to obtain information about the subsidy

The data in *Table 5.9* indicate that the highest percentage of respondents (35.8%) asked block leaders and councillors for information about the Subsidy Scheme. Some respondents attended a meeting (11.7%) and some respondents (23.3%) got information when they applied for the subsidy. Some respondents (16.7%) did not take any action. Some respondents (11.7%) did not answer, while a few respondents (4.2%) answered as 'do not know'.

Result 6 (e): Responses to Question 7.6 regarding the source of information about the subsidy procedure

Answer	Number of respondents	Percentage (%)
Municipality	17	23.3
Block leader	20	27.4
Friend	9	12.3
Builder	2	2.7
Others	25	34.2
Total	73	100

Table 5.10: The source of the information about the subsidy procedure

Table 5.10 shows the distribution of the 73 out of 120 respondents who answered 'No' to question 7.5. The data in *Table 5.10* indicate that the highest percentage of respondents (34.2%) who responded to this question received their information about the subsidy procedure from others (including neighbours, relatives and rumours). Other respondents received their information from the block leader (27.4%), municipality (23.3%) and from a friend (12.3%), while only a few respondents (2.7%) obtained it from the builder.

Result 6 (f): Responses to Question 7.7 regarding the application venue for a subsidy

Answer	Number of respondents	Percentage (%)
Municipal office	72	60.0
Local complex	1	0.8
RDP office	12	10.0
Company	1	0.8
Did not know where to go	20	16.7
No answer given	14	11.7
Total	120	100

Table 5.11: The application venue for the subsidy

The data in *Table 5.11* indicate that the highest percentage of respondents (60%) applied for a subsidy at the municipal office, while very few respondents (0.8%) made their application at the site of the company. Other respondents applied at a local complex (0.8%) or answered that they did not know where to go (16.7%). Some did not even answer the question (11.7%)

Result 6 (g): *Responses to Question 7.10 regarding the point of time when respondents knew the amount of subsidy they were to receive*

Answer	Number of respondents	Percentage(%)
Before the construction	65	54.2
During the building	8	6.7
After the building	10	8.3
Do not know	37	30.8
Total	120	100

Table 5.12: The point of time when respondents knew the amount of the subsidy grant

The data in *Table 5.12* indicate that the highest percentage of respondents (54.2%) knew about the subsidy they were to receive before the construction of their house, while a low percentage of respondents obtained knowledge about their subsidy either during the building process (6.7%) or after the building was completed (8.3%). Almost one third (30.8%) of the respondents did not know when they gained information about the amount of subsidy.

Result 6 (h): *Responses to Question 7.13 regarding the time lapse between application and approval of the subsidy*

Amount of time	Number of respondents	Percentage (%)
0-3 months	32	26.7
4-6 months	25	20.8
7-9 months	11	9.2
10-12 months	9	7.5
13-15 months	2	1.7
16-18 months	3	2.5
19-21 months	4	3.3
22-24 months	34	28.3
Total	120	100

Table 5.13: The time lapse between application and approval of the subsidy

The data in *Table 5.13* indicate that the highest percentage of respondents (28.3%) had to wait 22-24 months for a subsidy to be granted, while an almost equal number of respondents waited 0-3 months (26.7%) and 4-6 months (20.8%). A small group of respondents had to wait 7-9 months (9.2%), 10-12 months (7.5%), 13-15 months (1.7%), 16-18 months (2.5%), and 19-21 months (3.3%) for the grant to be made.

Result 7: *Responses to Question 8 regarding the process of choosing and deciding*

This process entails two important facets, namely (a) the stage at which a plan for the future home was chosen and (b) who the decision makers regarding the type of house that would be built for the respondent, had been.

Result 7 (a): Responses to Question 8.1 regarding the stage at which a house plan was chosen

Answer	Number of respondents	Percentage (%)
On signing up with a building contractor	3	2.5
0-12 months before the house was built	32	26.7
13-24 months before house was built	11	9.2
After application had been approved	8	6.7
During the building procedure	4	3.3
Do not know	13	10.8
No answer given	49	40.8
Total	120	100

Table 5.14: The stage at which a plan was chosen

The data in *Table 5.14* indicate that the highest percentage of respondents (40.8%) provided no answer about the time when a plan was chosen for the house, while only a few respondents (3.3%) chose a house plan during the building process. Other respondents indicated that they chose a plan 0-12 months before building commenced (26.7%), a lesser number 13-24 months before the building process (9.2%), and an even smaller group after the application had been approved (6.7%). Some respondents (10.9%) did not know the time when they chose a plan for their house. The first four options are all before the start of this building process and total 45%.

Result 7 (b): Responses to Question 8.2 regarding the decision-makers about the specific type of house

Answer	Number of respondents	Percentage (%)
Only the father	30	25.0
Only the mother	15	12.5
Father and mother	35	29.2
All family members	39	32.5
Other people	1	0.8
Total	120	100

Table 5.15: The decision makers for the type of house

The data in *Table 5.15* indicate that in a quarter of the cases (25%) the father took the decision on his own. In 12.5% of the cases the mother took the decision, while 29.2% reported joint decision-making between the mother and father. Almost one third (32.5%) indicated that all family members were involved in the decision-making process.

Result 8: *Responses to Questions 9.1 and 9.2 regarding acquaintance with the builder and satisfaction with the service provided by the builder*

Result 8 (a): *Knowledge about who the builder was*

Answer	Number of respondents	Percentage (%)
Yes	34	28.3
No	86	71.7
Total	120	100

Table 5.16: Knowledge about who the builder was

The data in *Table 5.16* indicate that a high percentage of respondents (71.1%) did not have knowledge of who the builder was, while a lower percentage of respondents (28.3%) knew who the builder was.

Result 8 (b): *Satisfaction with the performance of the builder*

Answer	Number of respondents	Percentage (%)
Not satisfied	17	14.2
Do not know	10	8.3
Satisfied	93	77.5
Total	120	100

Table 5.17: Satisfaction with the builder

The data in *Table 5.17* indicate that the highest percentage of respondents (77.5%) were satisfied with the builder, while a low percentage of respondents (14.2%) were not satisfied.

Result 9: *Responses to Question 10 regarding the date of completion and occupation*

Result 9 (a): *Responses to Questions 10.1, 10.6 and 10.8 regarding information about the date of completion and occupation, 10.3 regarding completion on the promised day and 11.1 regarding information about an acceptance letter*

QT. no.	Question content	Yes	No	Do not know	Total (n=120)
10.1	Knowledge about the completion day of the house	32 (26.7%)	88 (73.3%)	0 (0%)	120 (100%)
10.3	Completion of the building on the promised day	41 (34.2%)	63 (52.5%)	16 (13.3%)	120 (100%)
10.6	Knowledge about the day when respondents could move into the house	25 (20.8%)	95 (79.2%)	0 (0%)	120 (100%)
10.8	Whether the respondents could move into the house on the promised date	77 (64.2%)	43 (35.8%)	0 (0%)	120 (100%)
11.1	Knowledge about the acceptance letter ("Happy Letter")	25 (20.8%)	95 (79.2%)	0 (0%)	120 (100%)

Table 5.18: Information about the date of completion and occupation

In question 10.3, the respondents were asked to answer either 'Yes' or 'No'. However, some respondents (13.3%) answered 'do not know'. The data in *Table 5.18* indicate that a high percentage of respondents (73.3%) did not know when the house would be finished, while some respondents (26.7%) were aware of the date. Almost half of the respondents (52.5%) answered that the house had not been completed on the promised day. About a third of the respondents (34.2%) answered that the house was finished on the promised day. A high percentage of respondents (79.2%) did not know when they could move in. About a third of the respondents (35.8%) answered that they could not move into the house on the promised date. A high percentage of respondents (79.2%) did not know what the acceptance or "Happy Letter" was.

Result 9 (b): *Responses to Questions 10.2, 10.4, 10.7 and 10.9 regarding satisfaction with completion and occupation dates, as well as to Question 11.2 regarding the attitude of the respondent about not having had knowledge of the acceptance letter (the so called "Happy Letter")*

Question no.	Question content	Not satisfied	Do not know	Satisfied	Total (n=120)
10.2	Time needed to complete the building	16 (13.3%)	10 (8.3%)	94 (78.3%)	120 (100%)
10.4	Not finished on the promised day	22 (34.9%)	26 (41.3%)	15 (23.8%)	63 (100%)
10.7	No information about the date to move in	28 (29.5%)	24 (25.3%)	43 (45.3%)	95 (100%)
10.9	The fact that the respondent could not move into the house on the given day	20 (45.5%)	6 (13.6%)	18 (40.9%)	44 (100%)
11.2	No information about an acceptance letter	40 (42.1%)	25 (26.3%)	30 (31.6%)	95 (100%)

Table 5.19: Satisfaction with completion and occupation dates and the use of a "Happy Letter"

The number of respondents to questions 10.4, 10.7, 10.9 and 11.2 in *Table 5.19* indicates only the people who used either 'Yes' or 'No' as a response to the questions 10.3, 10.6, 10.8 and 11.1 used in the *Table 5.18*. The data in Result 9(b) therefore does not reflect the percentage of the total number of respondents in the project, but shows only the percentage of the number of respondents who actually answered the specific questions. The data in *Table 5.19* indicate that a high percentage of respondents (78.3%) were satisfied with the time that was needed for completing the house, while a small group of respondents (13.3%) were not satisfied. Question 10.3 shows that 63 out of 120 respondents answered that the building was not completed on the promised day. In the question 10.4, 22 out of 63 respondents (34.9%) whose homes were not

finished on the promised day were not satisfied that the building had not been completed on the promised day. The question 10.6 shows that 95 out of 120 respondents answered that they did not have knowledge about when they could move in. In the question 10.7, 28 out of 95 respondents (29.5%) were not satisfied with the fact that they had no information about the date to move in. Question 10.8 shows that 44 out of 120 respondents answered that they did not know whether they could move in on the promised date. In the question 10.9, 20 out of 44 respondents (45.5%) who could not move in on the promised day were not satisfied with the fact that they could not move in on the given day. Question 11.1 shows that 95 out of 120 respondents answered that they did not know about the acceptance letter or “Happy Letter”. In the question 11.2, 40 out of 95 respondents (42.1%) were not satisfied that they did not receive information about the use of an acceptance letter or “Happy Letter”.

Result 9 (c): *Responses to Question 10.5 regarding the reasons why the house had not been completed on the promised day*

Reasons why the building had not been completed on the promised day are of such a nature that they cannot be represented in a table, being qualitative responses (n=120). Examples of reasons are:

- Respondents did not answer the question (53).
- Respondents did not know the reason why the house was not finished on the promised day (32).
- Due to a lack of materials (22).
- The builder delayed the building of the house (6).
- Too many houses were being built at the same time (4).
- Water provision for building operations had not been in place (1).
- Bad weather interrupted or slowed down the building process (1).
- Corruption had a negative effect on building procedures (1).

Result 10: Responses to Question 11.3 regarding the meaning of a letter of acceptance (the so called “Happy letter”)

Answer	Number of respondents	Percentage (%)
Do not know the meaning	76	63.3
Did not receive the letter	4	3.3
Indication of ‘satisfied with the house’	2	1.7
An acceptance certification	3	2.5
Ready to move into the house	25	20.8
A presentation of ownership	6	5.0
No answer given	4	3.3
Total	120	100

Table 5.20: The meaning of the acceptance letter (“Happy Letter”)

The data in *Table 5.20* indicate that the highest percentage of respondents (63.3%) did not know what the “Happy Letter” was, with only a very small minority (2.5%) being acquainted with the “Happy Letter” as an acceptance certification. Other respondents understood the “Happy Letter” as meaning that the user was ready to enter the house (20.8%) or as a presentation of ownership (5.0%). A small percentage of respondents (3.3%) did not receive the letter.

Result 11: Responses to Question 12 regarding ownership and building costs

Result 11 (a): Responses to Question 12.1 regarding the provider of the house

Answer	Number of respondents	Percentage (%)
Government	73	60.8
Local government	3	2.5
Mandela	13	10.8
Builder	19	15.8
Block leader	1	0.8
Myself	1	0.8
No one	6	5.0
Do not know	2	1.7
No answer	2	1.7
Total	120	100

Table 5.21: The provider of the house

The data in *Table 5.21* indicate that the government (60.8%), local government (2.5%) and Mandela (10.8%) gave them their houses. This data includes that the respondents were aware of the fact that the government was responsible for the major supply of houses. Other respondents had many different answers, such as the house came from the builder (15.8%), the

block leader (0.8%), or no one (5.0%), while an equally small group did not know who gave them the house (1.7%).

Result 11 (b): *Responses to Question 12.4 regarding the opinion of the respondent about ownership of the house and 12.6 & 12.7 regarding information about payment for the house and services*

Question no.	Question content	Yes	No	Total (n=120)
12.4	Opinion about ownership of the house	113 (94.2%)	7 (5.8%)	120 (100%)
12.6	Knowledge about payment for the house	17 (14.2%)	103 (85.8%)	120 (100%)
12.7	Knowledge about payment for the services	91 (75.8%)	29 (24.2%)	120 (100%)

Table 5.22: Opinion about ownership and payment for the house and services

The data in *Table 5.22* indicate that most respondents (94.2%) answered that they felt that they owned the house. Most respondents (85.8%) knew that they did not have to pay for the house. A high percentage of respondents (75.8%) also knew that they would have to pay for the services.

Result 11 (c): *Responses to Questions 12.2, 12.3, 12.5, 12.6.1 and 12.7.1 regarding satisfaction with government providing the house, home ownership and costs*

Question no.	Question content	Not satisfied	Do not know	Satisfied	Total (n=120)
12.2	The fact that the government provided the house	0 (0%)	1 (0.8%)	119 (99.2%)	120 (100%)
12.3	The house received from the Government as free	0 (0%)	1 (0.8%)	119 (99.2%)	120 (100%)
12.5	Satisfaction with ownership of the house	0 (0%)	2 (1.8%)	111 (98.2%)	113 (100%)
12.6.1	Satisfaction with payment for the house	1 (5.9%)	0 (0%)	16 (94.1%)	17 (100%)
12.7.1	Satisfaction with payment for the services	2 (2.2%)	10 (11.0%)	79 (86.8%)	91 (100%)

Table 5.23: Satisfaction with government providing the house, home ownership and costs

The total number of respondents of questions 12.5, 12.6.1 and 12.7.1 shown in *Table 5.23* indicates only the people who used either 'Yes' or 'No' as a response to questions 12.4, 12.6 and 12.7 used in the *Table 5.22*. Questions 12.5, 12.6.1 and 12.7.1 in the Result 11(c) therefore

does not reflect the percentage of the total number of respondents in the project, but shows only the percentage of the number of respondents who actually answered the specific questions. The data in *Table 5.23* indicate that a high percentage of respondents (99.2%) were satisfied that the government gave them the houses. A high percentage of respondents (99.2%) were satisfied that the house which they had received, was free of charge. 111 out of 113 respondents (98.2%) were satisfied with home ownership. As far as payment for the house was concerned, 16 out of 17 respondents (94.1%) were satisfied, while 79 out of 91 respondents (86.8%) were satisfied with payment for services. On the other hand, only 1 out of 18 respondents (5.9%) were not satisfied with payment for the house, while only 2 out of 91 respondents (2.2%) were not satisfied with payment for services.

Result 12: *Responses to Question 13 regarding the neighbourhood*

Result 12 (a): *Responses to Question 13.1 regarding knowledge of neighbours*

Answer	Number of respondents	Percentage (%)
Yes	116	96.7
No	4	3.3
Total	120	100

Table 5.24: Knowledge of neighbours

The data in *Table 5.24* indicate that a high percentage of respondents (96.7%) knew their neighbours, with only a few respondents (3.3%) who did not know their neighbours.

Result 12 (b): *Responses to Question 13.2 regarding satisfaction with neighbours*

Answer	Number of respondents	Percentage (%)
Not satisfied	2	1.7
Do not know	2	1.7
Satisfied	112	96.6
Total	116	100.0

Table 5.25: Satisfaction with neighbours

The data in *Table 5.25* indicate that 112 out of 116 respondents (96.6%) were satisfied with the neighbourhood, while only a few respondents (1.7%) were dissatisfied. A few respondents (1.7%) answered 'do not know'.

Result 12 (c): *Responses to Question 13.3 regarding reasons for dissatisfaction with neighbours*

These qualitative responses cannot be represented in a table. Examples of reasons for dissatisfaction with the neighbourhood include (n=2):

- No co-operation with each other (1).
- Neighbours do not greet each other (1).

In the next section various issues regarding the *housing product* will be discussed.

5.4 SECTION C: SATISFACTION WITH THE HOUSING PRODUCT

Result 13: *Responses to Questions 14, 15 and 16 regarding satisfaction with the housing product (including location on the site, the direction the house is facing, the floor plan, the size and shape of house, and the number and size of rooms)*

Result 13 (a): *Responses to Questions 14.1, 14.3, 15.2, 15.6, 15.8, 15.11, 16.1 and 16.3 regarding satisfaction with various facets of the housing product*

Question no.	Product	Not satisfied	Do not know	Satisfied	Total (n=120)	
14.1	Placement of house on site	3 (2.5%)	0 (0%)	117 (97.5%)	120 (100%)	
14.3	Direction the house is facing	0 (0%)	1(0.8%)	119 (99.2%)	120 (100%)	
15.2	Choice of floor plan	'G ₂ '	16 (20.3%)	9 (11.4%)	54 (63.4%)	79 (100%)
		'F ₂ '	5 (12.2%)	7 (17.1%)	29 (70.7%)	41 (100%)
		sub total	21 (17.5%)	16 (13.3%)	83 (69.2%)	120 (100%)
15.6	Appearance of the house	8 (6.7%)	8 (6.7%)	104 (86.7%)	120 (100%)	
15.8	Insufficient information about the appearance of the house	31 (55.4%)	11 (19.6%)	14 (25.0%)	56 (100%)	
15.11	Size of the house	32 (26.7%)	8 (6.7%)	80 (66.7%)	120 (100%)	
16.1	Number of rooms	29 (24.2%)	4 (3.3%)	87 (72.5%)	120 (100%)	
16.3	Size of rooms	16 (13.3%)	3 (2.5%)	101 (84.2%)	120 (100%)	

Table 5.26(a): Satisfaction with the housing product

Result 13 (b): *Responses to Question 15.1.1 regarding the choice of the floor plan*

Type of floor plan	Number
Floor plan 'G ₂ '	79 (65.8%)
Floor plan 'F ₂ '	41 (34.2%)
Total	120 (100%)

Table 5.26(b): The choice of the floor plan

The data in *Table 5.26(b)* show that 79 out of 120 respondents received the floor plan 'G₂' (65.8%) while 41 respondents received the 'F₂' floor plan (34.2%).

The data in *Table 5.26(a)* show that the highest percentage of respondents were satisfied with the site of the house (97.5%) and the house direction (98.3%), while only a few respondents (2.5%) were dissatisfied with the site of house. In the question 15.2, 83 out of 120 respondents (69.2%) were satisfied with the types of floor plan (either 'G₂' or 'F₂' type) while some respondents were dissatisfied (17.5%). Among those who answered as being "satisfied" with the type of floor plan, 54 out of 79 respondents (63.4%) who received the 'G₂' type were satisfied, while 29 out of 41 respondents (70.7%) who received the 'F₂' type were satisfied. A high percentage of respondents (86.7%) were satisfied with the appearance of the house. Out of 120 respondents, 56 (46.7%) indicated that they did not have enough information about the house type. Half of the respondents (55.4%) were not satisfied with the fact that they had insufficient information about the appearance of the house. A high percentage of respondents were satisfied with the size of the house (66.7%) or with the number of rooms (72.5%) and the size of rooms (84.2%). Other respondents were not satisfied with the size of house (26.7%) or with the number of rooms (24.2%) and the size of rooms (13.3%).

Result 13 (c): *Responses to Questions 14.2, 14.4, 15.3, 15.12, 16.2 and 16.4 regarding reasons for dissatisfaction with various facets of the housing product*

Reasons for dissatisfaction with the housing product (placement of the house on the site, the direction in which the house faces, the floor plan, the size of the house, the number of rooms, and the size of rooms) contain qualitative data, which cannot be presented in a table. Examples of reasons are:

- Question 14.2 (n=3). The placement of the house on the site was not satisfactory. The reasons given were that "the site was too small" (3).
- Question 14.4 (n=0). No one complained about the direction the house faced (0).
- Question 15.3 (n=20). The type of floor plan was not satisfactory because there was no other choice available (8) and poor information was given about the type of floor plan (7). Five respondents gave no answer.
- Question 15.12 (n=32). The size of the house was too small (20) and no information was given about the size of house (10). Two respondents gave no answer.

- Question 16.2 (n=29). The number of rooms was insufficient (29).
- Question 16.4 (n=16). The size of the rooms was too small (16).

Result 14: *Responses to Question 15 regarding the floor plan of the house*

Result 14 (a): *Responses to Questions 15.1, 15.5, 15.7 and 15.10 regarding information about the floor plan of the house*

Question no.	Question content	Yes	No	Total (n=120)
15.1	Seeing and receiving a floor plan to choose from	61 (50.8%)	59 (49.2%)	120 (100%)
15.5	Knowledge about the appearance of the house when completed	76 (63.3%)	44 (36.7%)	120 (100%)
15.7	Receiving enough information about the appearance of the house	64 (53.3%)	56 (46.7%)	120 (100%)
15.10	Knowledge of the size of the house before moving in	57 (47.5%)	63 (52.5%)	120 (100%)

Table 5.27: Information received about the floor plan

The data in *Table 5.27* indicate that half of the respondents (49.2%) did not see or receive a floor plan to choose from. About a third of the respondents (36.7%) did not know what the house would look like on completion. Almost half of the respondents did not receive enough information about the appearance of the house (46.7%) or did not know the exact size of the house before moving in (52.5%).

Result 14 (b): *Responses to Question 15.4 regarding the reasons for respondents choosing a specific floor plan*

The reasons for choosing the floor plan deal with qualitative data, which could not be represented in a table. Examples of reasons are as follows (n=120):

- Respondents liked it (33).
- Good appearance (12).
- The floor plan looked large enough for the family (10).
- The floor plan seemed simple and suitable for future extensions (1).
- Respondents did not have a choice (25).
- No answer was given (27).
- Respondents did not know why they chose it (7).
- The floor plan looked strong (5).

Result 14 (c): Responses to Question 15.9 regarding the reasons for dissatisfaction with insufficient information

The reasons for dissatisfaction about not receiving sufficient information relate to qualitative data and can therefore not be represented in a table. Examples of reasons include the following (n=31):

- Respondents thought that they had a right to have the information (14).
- They did not know what the house would eventually consist of (9).
- There were no communication between respondents and the builder (2).
- No answer was given (6).

Result 15: Responses to Question 17 regarding the structure of the house

Result 15 (a): Responses to Questions 17.1.1, 17.1.3, 17.1.5, 17.2.1, 17.2.3, 17.2.5, 17.3.1, 17.3.3, 17.4.1 and 18.1 regarding satisfaction with various facets of (i) the house structure (windows, doors, exterior wall finish, interior wall finish, roof) and (ii) the aesthetic quality of the house

Question no.	Various facets of house	Not satisfied	Do not know	Satisfied	Total (n=120)
17.1.1	Number of windows	7 (5.8%)	0 (0%)	113 (94.2%)	120 (100%)
17.1.3	Size of windows	9 (7.5%)	1 (0.8%)	110 (91.7%)	120 (100%)
17.1.5	Placement of windows	1 (0.8%)	0 (0%)	119 (99.2%)	120 (100%)
17.2.1	Number of doors	4 (3.3%)	2 (1.7%)	114 (95.0%)	120 (100%)
17.2.3	Placement of doors	2 (1.7%)	0 (0%)	118 (98.3%)	120 (100%)
17.2.5	Type of doors	32 (26.7%)	1 (0.8%)	87 (72.5%)	120 (100%)
17.3.1	Exterior wall finish	20 (16.7%)	3 (2.5%)	97 (80.8%)	120 (100%)
17.3.3	Interior wall finish	22 (18.3%)	5 (4.2%)	93 (77.5%)	120 (100%)
17.4.1	Roof	25 (20.8%)	3 (2.5%)	92 (76.7%)	120 (100%)

Table 5.28(a): Satisfaction with various facets of the house

Result 15(b): Response to question 18.1 regarding the aesthetic quality of the house

Answer	Number of respondents	Percentage (%)
Yes	105	87.5
No	15	12.5
Total	120	100.0

Table 5.28(b): Aesthetic quality

The data in *Table 5.28(a)* indicate that only a small percentage of respondents were dissatisfied with the number of windows (5.8%), the size of windows (7.5%), the placement of windows (0.8%), the number of doors (3.3%) and the placement of doors (1.7%). Some respondents were dissatisfied with the type of doors (26.7%), the exterior walls (16.7%), the interior walls

(18.3%), and the roof (20.8%). Dissatisfaction with the type of doors, walls and roof reflected a higher percentage than the dissatisfaction with the number, size and placement of windows and doors. The data in *Table 5.28(b)* indicate that a high percentage of respondents (87.5%) responded that the house was attractive, while a lower percentage of respondents (12.5%) did not think that the house was attractive.

Result 15 (c): *Responses to Questions 17.1.2, 17.1.4, 17.1.6, 17.2.2, 17.2.4, 17.2.6, 17.3.2, 17.3.4, 17.4.2 and 18.2 regarding reasons for dissatisfaction with the structure and aesthetic quality of the house*

The reasons for dissatisfaction with the structure and aesthetic quality of the house are related to qualitative data, which could not be represented in a table. The various reasons can be presented in two sections:

(i) Windows, doors, exterior wall, interior wall, and roof

Examples of reasons mentioned include:

- Question 17.1.2 (n=7). The number of windows was insufficient (7).
- Question 17.1.4 (n=9). The size of windows was too small (8) and the appearance was not good (1).
- Question 17.1.6 (n=1). Doors should be placed in another place (1).
- Question 17.2.2 (n=4). The number of doors was insufficient (4).
- Question 17.2.4 (n=2). Doors banged and cracked walls (2).
- Question 17.2.6 (n=32). Doors were too noisy (27), too heavy (1) and not a favourite type (4).
- Question 17.3.2 (n=20). The exterior walls were not satisfactory with only a single layer of bricks used (4), cracking easily (2), poor finishing (7), not straight (2) and not cemented well (5).
- Question 17.3.4 (n=22). Interior walls were not properly finished (7), not smooth (2), not strong (1), not a good looking (2), not straight (3), made from poor material (1) and not cemented or plastered (6).
- Question 17.4.2 (n=25). The roof leaked (7), was too weak (11), too light (3), too short (3), too low and not well attached (1).

(ii) The aesthetic quality of the house

Examples of reasons mentioned include (n=120):

- Question 18.2. Most of the respondents were satisfied with the aesthetic quality because it looked beautiful (72), it was better than the quality of a “mokhuku” (14), it included an appealing yard (5) and good materials were used (4). Some respondents were dissatisfied because they did not like the house (3), all the houses looked similar (1), small sized windows (1), house was too small house (1), the walls were not straight (2), the house looked unattractive when extended (5) and poor material was used (1). Eleven respondents gave no answer.

Result 16: *Responses to Question 19 regarding water and sanitation***Result 16 (a):** *Response to Questions 19.1 and 19.3 regarding satisfaction with the placement of a water point and a toilet*

Question no.	Placement position	Not satisfied	Do not know	Satisfied	Total (n=120)
19.1	Water	10 (83%)	2 (2%)	108 (90.0%)	120 (100%)
19.3	Toilet	5 (4.2%)	0 (0%)	115 (95.8%)	120 (100%)

Table 5.29: Satisfaction with the placement of a water point and the toilet

The data in *Table 5.29* indicate that a high percentage of respondents (90.0%) were satisfied with the placement of a water point. A high percentage of respondents (95.8%) were satisfied with the placement of the toilet.

Result 16 (b): *Responses to Questions 19.2 and 19.4 regarding reasons for dissatisfaction with the placement of a water point and the toilet*

Examples of reasons for dissatisfaction with the placement of a water point and a toilet are:

- Question 19.2 (n=10). The water placement was wrong as it should have been in the front of the kitchen (8) or in the backyard (2).
- Question 19.4 (n=5). The toilet was also often placed on the wrong side, for example facing the kitchen (4). No answer was given by one respondent.

Result 17: Responses to Question 20 regarding temperature regulation**Result 17 (a): Responses to Questions 20.1 & 20.2 regarding satisfaction with the temperature of rooms**

Answer	Number of respondents	Percentage (%)
Yes	109	90.8%
No	11	9.2%
Total	120	100.0%

Table 5.30 (a): Warm temperature of rooms

The data in *Table 5.30 (a)* indicate that a high percentage of respondents (90.8%) replied that rooms were warm while a small group of respondents (9.2%) replied that they were not.

Answer	Number of respondents	Percentage (%)
Not satisfied	11	9.2
Do not know	0	0.0
Satisfied	109	90.8
Total	120	100.0

Table 5.30 (b): Satisfaction with the temperature of rooms

The data in *Table 5.30 (b)* indicate that a very high percentage of respondents (90.8%) were satisfied with the temperature of rooms, while a small group of respondents (9.2%) were dissatisfied.

Result 17 (b): Responses to Question 20.3 regarding reasons for dissatisfaction with the temperature regulation

Examples (n=8) of reasons that the house proved to be cold in winter and hot in the summer were that no air bricks were used (6) and no ceilings were installed (2).

Result 18: Responses to Question 21 regarding the quality of various facets of the construction, like the overall quality of the construction, the kind of bricks, the usage of single layer walls and 'raft' foundations**Result 18 (a): Responses to Questions 21.1, 21.3, 21.5 and 21.7 regarding the quality of the construction**

Question no.	Construction	Not satisfied	Do not know	Satisfied	Total (n=120)
21.1	Overall quality of the construction	8 (6.7%)	0 (0%)	112 (93.3%)	120 (100%)
21.3	Bricks	14 (11.7%)	3 (2.5%)	103 (85.8%)	120 (100%)
21.5	Single layer bricks	19 (15.8%)	1 (0.8%)	100 (83.3%)	120 (100%)
21.7	Foundation	8 (6.7%)	5 (4.2%)	107 (89.2%)	120 (100%)

Table 5.31: Satisfaction with the quality of the construction

The data in *Table 5.31* indicate that a high percentage of respondents (89.2%) were satisfied with the construction of the house, while a small group of respondents (6.7%) were not. Some respondents were not satisfied with the bricks (6.7%), with the use of a single layer of bricks (11.7%) or with the foundation (15.8%).

Result 18 (b): *Responses to Questions 21.2, 21.4, 21.6 and 21.8 regarding reasons for dissatisfaction with the quality of construction*

Qualitative data that relate to examples of reasons for dissatisfaction with various facets of the construction may be summarised in the following four sections:

- (i) *Reasons for dissatisfaction with the overall quality of the construction (Question 21.2, n=8)*
- Quality of brick differed (2).
 - Roof leaked (1).
 - A single layer of bricks was used (1).
 - The concrete base for the foundation was not thick enough (2).
 - Exterior and interior walls were not finished well (1).
 - The house was not attractive (1).
- (ii) *Reasons for dissatisfaction with the bricks being used for the house (Question 21.4, n=14).*
- Respondents did not like the type of bricks (4) or the colour of the bricks (1).
 - The bricks did not match in colour (2).
 - Water penetrated bricks (6) and they broke easily because of poor quality (1).
- (iii) *Reasons for dissatisfaction with the use of a single layer of bricks for the exterior wall (Question 21.7, n=19).*
- The quality of a single layer proved to be poor and so weak that cracks appeared soon (9).
 - The walls were not finished off with cement (1).
 - Respondents did not like the single layer bricks (9).

(iv) *Reasons for dissatisfaction with the foundation (Question 21.8, n=8).*

- Good quality material was not used for the foundation (2).
- The floor tended to gather dust and was not smooth because the floor surface was not properly finished (2).
- The foundation was not constructed with enough concrete nor thick enough (3).
- The floor level was too high (1).

Result 19: *Responses to Question 22 regarding changes to the construction of the house*

Result 19 (a): *Responses to Questions 22, 22.1, 22.2, 22.3, 22.4, 22.5, 22.6 and 22.7 regarding changes to building elements of the house, like the windows, doors, wall finish and roof*

Answer	Number of respondents	Percentage (%)
Yes	31	25.8
No	89	74.2
Total	120	100.0

Table 5.32 (a): Changes to the house construction

The data in *Table 5.32(a)* indicate that a high percentage of respondents did not change the construction of the house but other respondents (25.8%) did change the construction.

Question no.	Question content	Yes	No	Total (n=120)
22.1	Moved windows	2 (1.7%)	118 (93.3%)	120 (100%)
22.2	Put in other windows	6 (5.0%)	114 (95.0%)	120 (100%)
22.3	Moved doors	3 (2.5%)	117 (97.5%)	120 (100%)
22.4	Put in other doors	3 (2.5%)	117 (97.5%)	120 (100%)
22.5	Exterior wall finishes	1 (0.8%)	119 (99.2%)	120 (100%)
22.6	Interior wall finishes	16 (13.3%)	104 (86.7%)	120 (100%)
22.7	Put on other roof	0 (0%)	120 (100.0%)	120 (100%)

Table 5.32 (b): Changes to the house construction

The data in *Table 5.32* indicate that only a few respondents moved windows (1.7%) or doors (2.5%). A few respondents put in other windows (5.0%) or doors (2.5%). One respondent changed the exterior wall (0.8%) and a higher percentage changed an interior wall (13.3%). All respondents (100.0%) retained the roof and did not make changes to the roof.

Result 19 (b): *Responses to Questions 22.1.1, 22.2.1, 22.3.1, 22.4.1, 22.5.1, 22.6.1 and 22.7.1 regarding reasons for changes to the building*

Examples of reasons for changing one or more building elements of the construction can be

summarised as follows:

- Question 22.1.1 (n=2). Windows were moved because the house was dark due to small windows (2).
- Question 22.2.1 (n=6). Windows were changed because they were too small (6).
- Question 22.3.1 (n=3). Doors were moved to prevent noise (2) and to prevent the penetration of water (1).
- Question 22.4.1 (n=3). Doors were changed (3).
- Question 22.5.1 (n=1). The finish of exterior walls was changed by proper cementing (1).
- Question 22.6.1 (n=16). Interior walls were changed by plastering the wall (9), by making walls more attractive (6) and by making the walls brighter (1).
- Question 22.7.1 (n=0). No one changed the roof (0).

Result 20: *Responses to Question 22 regarding the funding of changes*

Result 20 (a): *Responses to Question 22.8 regarding the use of additional money*

Answer	Number of respondents	Percentage (%)
Yes	19	19.0
No	101	84.2
Total	120	100.0

Table 5.33: Whether additional money had to be used for changes to the house

The data in *Table 5.33* indicate that a high percentage of respondents (84.2%) did not use extra money for changes, while a small group of respondents (19.0%) did use additional money to bring about changes to the building.

Result 20 (b): *Responses to Question 22.8.1 regarding the reasons for extra funding (n=19)*

Qualitative data that relate to examples of reasons for the use of extra funding to make changes to the construction indicate that respondents needed extra money for plastering and cementing the walls (8), paying for labour (1), making better wall finishes (4), changing doors (3) and putting in windows (3).

Result 20 (c): Responses to Question 22.9 regarding the source of extra funding

Answer	Number of respondents	Percentage (%)
Own money	17	89.5
From relatives	1	5.3
Do not want to answer	1	5.3
Total	19	100.0

Table 5.34: The source of the money used to make changes to the house

The data in *Table 5.34* indicate that 19 out of 120 respondents answered this question and that 17 out of 19 respondents (89.5%) used their own money for changes to their houses. One respondent (5.3%) answered that relatives provided the funds and one respondent (5.3%) replied that he did not want to answer the question.

Result 21: Responses to Question 23 regarding extensions to the current floor plan of the house**Result 21 (a):** Responses to Question 23.1 regarding the respondent extending the building himself/herself

Answer	Number of respondents	Percentage (%)
Yes	4	3.3
No	116	96.7
Total	120	100.0

Table 5.35: Extension to the building performed by the respondent

The data in *Table 5.35* indicate that a high percentage of respondents (96.7%) did not extend the house themselves, while only a small minority of respondents (3.3%) extended the house themselves.

Result 21 (b): Responses to Question 23.2 regarding a desire to add a further room to the house

Answer	Number of respondents	Percentage (%)
Yes	51	42.5
No	69	57.5
Total	120	100.0

Table 5.36: A desire to add a further room

The data in *Table 5.36* indicate that nearly half of the respondents (42.5%) had a desire to add other rooms to their houses, while a slightly higher percentage of respondents (57.5%) did not express a desire to add further rooms.

Result 21 (c): Responses to Question 23.3 regarding reasons for adding a further room to the house

The main reason for wanting to add rooms was that the house did not contain enough rooms for the needs of the family (n=51).

Result 21 (d): Responses to Question 23.3.1 regarding the provider of money for an extra room or rooms

Answer	Number of respondents	Percentage (%)
Own money	21	41.2
Children or relatives	5	9.8
The government	3	5.9
Loan from a bank	11	21.6
Do not know	9	17.6
No answer	2	3.9
Total	51	100.0

Table 5.37: The provider of money for an extra room

The data in Table 5.37 indicate that 51 respondents would like to add a room. Almost half of these respondents (41.2%) would have to provide money themselves for an extra room or rooms. Only a small percentage of the respondents (5.9%) would obtain money from the government, and a somewhat larger group of respondents would borrow the money from a bank (21.6%). Some respondents did not know where they would find the money (17.6%).

Result 21 (e): Responses to Question 23.3.2 regarding where building materials will be obtained from

Answer	Number of respondents	Percentage (%)
Buy it	34	66.7
Ask other people	1	2.0
The government	2	3.9
Do not know	12	23.5
No answer	2	3.9
Total	51	100.0

Table 5.38: Where building materials will be obtained from

The data in Table 5.38 indicate that the highest percentage of respondents (66.7%) would buy the building materials while a small percentage intended to obtain building materials from other people (2.0%) or from the government (3.9%).

Result 22: *Responses to Question 24 regarding the use of a former informal house (the so called “mokhuku”)*

Result 22 (a): *Availability and use of a “mokhuku”*

Answer	Number of respondents	Percentage (%)
Yes	103	85.8
No	17	14.2
Total	120	100.0

Table 5.39: Availability and use of a “mokhuku”

The data in *Table 5.39* indicate that a high percentage of respondents (85.8%) were still using their “mokhuku”, while a small percentage of respondents (14.2%) did not use a “mokhuku”.

Result 22 (b): *Reasons for the use of a “mokhuku”*

Examples of reasons for the use of a “mokhuku” include the following (n=103):

- The need for an extra room (47) or for a kitchen (22).
- The need to use as a kitchen and a bedroom (26) or as a store room (4).
- A necessary addition to the house for accommodating other members of the family (4).

5.5 SECTION D: SATISFACTION WITH THE PROJECT MANAGEMENT

Result 23: *Responses to Questions 25, 26 and 27 regarding the management of the housing project, including the Steering Committee, the professionals, and the Town Council*

Result 23 (a): *Responses to Questions 25.1, 26.1 and 27.1 regarding satisfaction with the project management*

Question no.	Question content	Not satisfied	Do not know	Satisfied	Total (n=120)
25.1	Steering Committee	6 (5.0%)	8 (6.7%)	106 (88.3%)	120 (100%)
26.1	Professionals	1 (0.8%)	3 (2.5%)	116 (96.7%)	120 (100%)
27.1	Town Council	7 (5.8%)	1 (0.8%)	112 (93.3%)	120 (100%)

Table 5.40: Satisfaction with the project management

The data in *Table 5.40* indicate that very few respondents were dissatisfied with the Steering Committee (5.0%), the professionals (0.8%) or with the Town Council (5.8%).

Result 23 (b) *Responses to Question 25.3 whether the Steering Committee did represent the interests of the community*

Answer	Number of respondents	Percentage (%)
Yes	110	91.7
No	10	8.3
Total	120	100.0

Table 5.41: The representation of the community interest by the Steering Committee

The data in *Table 5.41* indicate that some respondents (8.3%) were dissatisfied that the Steering Committee did not represent the community's interests.

Result 23 (c): *Responses to Questions 25.2, 25.4, 26.2 and 27.2 regarding reasons for dissatisfaction with the management of the housing project*

Examples of reasons for dissatisfaction with the Steering Committee, professionals or the Town Council include the following:

- Question 25.2 (n=6). The Steering Committee did not give the necessary information on time (1) and did not care about community interests (5).
- Question 26.2 (n=10). The Steering Committee did not communicate with the community (1), never came to see the problems of the house (5), there was no cooperation from them (1) and they did not provide enough information to the community (2). One respondent gave no answer.
- Question 27.2 (n=1). Professionals never came back to solve urgent problems (1).
- Question 28.2 (n=7). The Town Council did not provide enough information (2), did not fulfil the community's needs (3) and treated people unfairly (1). One respondent answered that he did not know how to use the Town Council (1).

Result 24: *Responses to Question 28 regarding perceptions of the possible benefit of the housing project***Result 24 (a):** *Responses to Question 28.1 regarding perceptions of the possible benefit of the housing project for the community in general*

Answer	Number of respondents	Percentage (%)
Yes	113	94.2
No	7	5.8
Total	120	100.0

Table 5.42: Benefit of the housing project for the community

The data in *Table 5.42* indicate that a high percentage of respondents (94.2%) judged the housing project to have been beneficial to the community, while only a few respondents (5.8%) disagreed.

Result 24 (b): *Responses to Question 28.2 regarding probable reasons for possible positive or negative influences of the housing project on the community*

Qualitative data that relate to examples of reasons for good or bad influences of the housing project on the community at large, include the following (n=120):

- The housing project had a good influence because it provided houses to members of the local community (72), the government served the community well (27), the government kept promises (5), and it stimulated a spirit of co-operation (2) as well as the creation of jobs (2).
- The housing project had a negative influence on the community in so far as it did not succeed in building the houses on time (5), the government treated community unfairly (1) and did not check on existing problems properly (1).
- Some respondents did not give an answer (2) and others replied that they did not know (3).

The results of the research project as far as (1) the personal circumstances and neighbourhood of the dwellers in the Tswelelang suburb of Wolmaransstad are concerned, as well as various issues relating to (2) the building process, (3) the housing product and (4) the project management have been discussed. The results regarding the satisfaction scores are discussed in the following section.

5.6 THE HOUSING SATISFACTION SCORE (HSS)

(Cf. Par. 4.8.2 for details about how the ‘score’ was determined)

5.6.1 The significance of the Housing Satisfaction Score

Result 25: Results obtained from the **Housing Satisfaction Score**

Result 25(a) (i): *The general findings of the Housing Satisfaction Score*

Housing	N	Mean	Std Dev	Minimum	Maximum
Product	120	63.39	6.78	39.0	69.0
Management	120	8.67	0.95	3.0	9.0
Total	120	72.06	7.06	48.0	78.0

Table 5.43(i): The Housing Satisfaction Score

The data in *Table 5.43* indicate that the Housing Satisfaction Score presents the following results: a maximum of 69.0, a minimum of 39.0 and a mean value of 63.39 for the *product* and a maximum of 9.0, a minimum of 3.0 and a mean value of 8.67 for the project *management*. The maximum total HSS is 78 while the minimum is 48. The total mean value of the HSS is 72.06.

It must be noted that values do not correspond with those in Table 4.1. The minimum values in *Table 5.43(i)* are the minimum values that respondents scored in this study and not the absolute minimum score that could be obtained. The total minimum and maximum values therefore are not the sum of the Satisfaction Score with the product and management, but the minimum value of a respondent obtained.

Result 25(a) (ii): *The mean Housing Satisfaction Scores as a percentage*

Percentage	Mean	Maximum score	Percentage (%)
Product	63.39	69	92.0
Management	8.67	9	96.0
Total	72.06	78	92.0

Table 5.43 (ii): Mean HSS as a percentage

The mean values of the housing satisfaction of the respondents were compared with the maximum satisfaction that could be obtained by means of one sample T-test and then effect sizes were calculated.

Result 25(b): *One sample T-test and effect sizes for difference between the mean housing scores and total satisfaction*

Housing	N	Mean	Std Dev	T	p-value	D
Product	120	-5.61	6.78	9.07	0.0001	0.83
Management	120	-0.33	0.95	3.86	0.0002	0.35
Total	120	-5.94	7.06	9.22	0.0001	0.84

Table 5.43 (iii): The one sample T-test and effect size

5.6.2 Satisfaction with the housing product

Result 25 (b): *The finding about satisfaction with the housing product*

According to Paragraph 4.8.2, *Table 4.1*, the maximum score that could be obtained regarding the housing product was 69 and the minimum 23. In the *Table 5.43(ii,)* the mean value for the HSS regarding the housing product was 63.39 out of 69 (92%). In the *Table 5.43 (iii)*, as the d-value for the housing product (0.83) resembled a large effect, this result is statistically and practically significant.

5.6.3 Satisfaction with the project management

Result 25(c): *The finding about satisfaction with the management of the project*

According to Paragraph 4.8.2, *Table 4.1*, the maximum score that could be obtained regarding the project management was 9 and the minimum 3. In the *Table 5.43 (ii)*, the mean value for the HSS regarding the project management was 8.67 out of 9 (96%). In the *Table 5.43 (iii)*, as the d-value for the project management (0.35) resembled a medium effect, this result, although statistically significant is not practically significant.

5.6.4 Satisfaction with the total Housing Satisfaction Score (HSS)

Result 25(d): *The finding about the total satisfaction of the subsidised housing*

According to Paragraph 4.8.2, *Table 4.1*, the total maximum HSS that could be obtained was 78 and the minimum 42. In the *Table 5.43 (ii)*, the mean value for the total HSS 72.06 out of 78 (92%). In the *Table 5.43 (iii)*, as the d-value for the total HSS (0.84) resembled a large effect, it is statistically and practically significant.

5.7 THE DIFFERENCES BETWEEN THE MEAN VALUES OF THE HOUSING SATISFACTION SCORE (HSS) FOR VARIOUS DEMOGRAPHIC FACTORS

- An analysis of variances for the differences between the HSS and the demographic factors was conducted and a p-value determined. The differences are only statistically significant if the p-value is < 0.05 . There was no demographic factors with any significant p-value and the issue was not further pursued.

5.8 DISCUSSIONS WITH THE FOCUS GROUP

Result 26: *Results of discussions with the focus group*

During the focus group discussions, the fieldworkers reported the common causes of dissatisfactory expressions from the respondents regarding subsidised housing:

- Respondents did not have enough information about the Subsidy Scheme and procedure.
- Respondents did not know exactly how they were to obtain a house and who funded the house.
- Respondents did not have a discussion with the builder about the house when they made their choice.
- Respondents were poorly informed about the acceptance letter (“Happy letter”), signing a document without knowing the substance of what they had signed.
- Respondents did not know that they had any rights to complain about structural or any other problems.
- Respondents were dissatisfied with doors and walls. They preferred wooden doors rather than the steel doors provided. Reasons for dissatisfaction with walls included the use of the mixed bricks in different colours, the poor quality of bricks being supplied and the fact that walls were not plastered.
- Respondents did not understand the role of the Steering Committee and, in addition, the respondent’s perception was that there was no communication between the community and the Steering Committee.

5.9 OBSERVATION

In Chapter 4, reference was made to the use of observation as a technique to corroborate other facets of the empirical research. During the fieldwork stage, the researcher utilised observation techniques and took photographs of different aspects.

Result 27: *Findings achieved by means of photographic techniques*

From the many photographs taken during the research period, the researcher has selected the following eleven *examples* to be briefly discussed.

- The placement of the house on the site and the direction it faces: all houses face in the direction of the street (cf. *Addendum 4, photograph 1 & 2*).
- The floor plan: the 'G₂' plan (cf. *Addendum 4, photograph 3*) has larger rooms than the 'F₂' plan (cf. *Addendum 4, photograph 1*).
- Windows: the windows are too small in size and moreover the number of windows installed is insufficient (cf. *Addendum 4, photographs 3 & 4*).
- Doors: the door of the house makes some noise when it is opened and closed. (cf. *Addendum 4, photograph 5*).
- The exterior wall: walls are often not properly plastered (cf. *Addendum 4, photograph 6*).
- The interior wall: it is not finished properly, or cemented or plastered adequately (cf. *Addendum 4, photograph 7*).
- The roof: the roof is flat, the overlap beyond the wall is too short and the roof is often not well attached. Sometimes there are openings through which the sky can be seen (cf. *Addendum 4, photographs 3, 4 & 7*).
- The floor: the floor is not smooth and, therefore, tends to gather dust (cf. *Addendum 4, photograph 8*).
- The aesthetic quality: houses are similar and the size of windows are too small for the particular house (cf. *Addendum 4, photographs 2 & 4*).
- Room temperature: the house has no air bricks, nor any ceilings which can cause the inside of the house to be cold in winter and hot in summer (cf. *Addendum 4, photograph 11*).
- The water point: a water tap was placed outside, sometimes not in the most appropriate place (cf. *Addendum 4, photograph 10*).

5.10 CONCLUSION

The focus in this chapter was on the analysis of the data collected from the structured questionnaire. Taking the questionnaire as the point of reference for the data acquired by the research fieldworkers, the results are presented in line with the main sections of the questionnaire. Section A refers to demographic information, Section B to the awareness of different aspects of the housing process and possible participation of the user, Section C to satisfaction with the housing product, and finally, Section D to satisfaction with the project management. The results are presented as frequency tables and percentages, together with a discussion of qualitative data. A 'Housing Satisfaction Score' was calculated to identify possible differences between the demographic factors and the HSS. Qualitative data were used to determine the reasons for satisfaction or dissatisfaction of respondents. In the next chapter, the most relevant findings of this study will be summarised and evaluated. Conclusions and recommendations for further research will be given.

CHAPTER 6

DISCUSSION OF RESULTS, CONCLUSIONS AND RECOMMENDATIONS

6.1 ORIENTATION

The housing subsidy in the National Housing Programme is based on a people-centred approach to housing development and the fulfilment of basic human rights. Previous reports (Tomlinson, 1994:64) indicated that users had a total lack of knowledge about the Subsidy Scheme, that there was no participation during the decision-making phase of the housing process and that the quality of housing left much to be desired. The aim of this study was to establish a scientifically verified base for improving the National Housing Programme using post-occupancy evaluation to determine the satisfaction of a selected group of residents of state subsidised housing in Tswelelang, Wolmaransstad, in the North West Province.

For this study, 120 residents were selected by random and systematic sampling methods and twelve trained fieldworkers conducted interviews according to a structured questionnaire. A structured questionnaire was developed by the researcher to obtain demographic information about the residents and to establish their awareness regarding various aspects within the *housing process* (including subsidy, choice and decision, the builder, the likely date of completion and occupation, the letter of acceptance, and ownership), satisfaction with the *housing product* (including location of the house on the site, the floor plan, the surface size, the structure, the aesthetic quality, water and sanitation, temperature regulation, quality of construction, changes to and extension of the construction, the use of a “mokhuku”), the *management* of the housing project (including the Steering Committee, the professionals, the Town Council) and the *participation of the user* during the housing process.

The researcher also conducted a focus group discussion and took a number of photographs during the empirical research period to increase the reliability of the data. For the analysis of the data it was necessary to calculate the following factors as a percentage and frequency table: the demographic information, satisfaction with the housing process, satisfaction with the housing

product, and satisfaction the project management. A Housing Satisfaction Score (HSS) was calculated regarding the product and the project management. The following conclusions may be drawn from this study.

6.2 DISCUSSION OF THE RESULTS OBTAINED

The following discussion will be described according to the aims of this research (cf. Par 1.3).

6.2.1 The demographic profile of the respondents and possible relationship between housing satisfaction and different demographic factors

The level of education of more than a half of the respondents was lower than standard 3 and half of the respondents were unemployed. About two-thirds of the respondents lived as nuclear families, parents and children of various ages and most of the respondents earned less than R500.00 a month.

There was no statistically significant relationship between the calculated Housing Satisfaction Score and any demographic factors.

6.2.2 The awareness of residents regarding various aspects within the housing process

6.2.2.1 The subsidy process

Almost two-thirds of the respondents knew about the existence of a Subsidy Scheme and more than half knew what the amount was that they received. However, three-fifths of the respondents indicated that they did not have any knowledge of the subsidy procedure and almost the same amount indicated that they did not know about the waiting period for the subsidy. These results correspond with the results that Wijnbeeck (1998:52) obtained from a pilot study that was done in Ikageng, Potchefstroom and with the findings of Tomlinson (1996:48). Tomlinson conducted a study with different focus groups in all the provinces of South Africa.

When asked how satisfied they were with different aspects of the subsidy process, the respondents answered as follows:

- A third were satisfied with the fact that they did not know about the subsidy process.
- Almost half of respondents were not satisfied with the fact that they had no information about the subsidy.
- More than half were satisfied that they did not know about the waiting period for the subsidy.

The results from the focus group with fieldworkers confirm that respondents did not have enough information about the Subsidy Scheme and procedure.

The respondents indicated that they obtained information from the block leader, neighbours, community meetings, politicians, friends, councillors, builders and radio/TV. When asked what they did to obtain more information about the subsidy process, one-third of the respondents said that they asked block leaders or councillors, approximately a quarter said they obtained information when they applied for the subsidy and some indicated they attended community meetings. When the percentages are totalled more than nearly a third indicated that they did not take any action, that they did not know and did not receive an answer. These results are supported by the study of Tomlinson (1996:9) who reported that beneficiaries did not get enough information and did not try to get the information.

6.2.2.2 Decision-making regarding the house plan

Approximately a quarter of the respondents answered that only the father decided on the type of house, while about a third indicated that the father and mother took the decision together. More than a third replied that all family members took part in the decision-making process. More than half of the respondents were uncertain about at what stage of the housing process they decided about a plan and about one third indicated that it was in the year before the house was built.

6.2.2.3 The builder

Almost three-quarters of the respondents indicated that they did not know the builder. Tomlinson study (1996:13) also reported that the people did not know the builder, that the

builder just started to build one day and that the potential home-owners did not take part in any planning. However about three-quarters of the respondents indicated that they were satisfied with the builder. The results from the focus group confirm that respondents did not interact sufficiently with the builder.

6.2.2.4 The completion and occupation of the house

Regarding the questions about knowledge about the completion day of the house, almost three-quarters of the respondents said that they did not know when the completion day was and four-fifths also indicated that they did not know beforehand when they could move into the house. They were also very unsure about the time needed to complete the house and about their satisfaction regarding the completion and occupation dates. This corresponds with the results found by Wijnbeeck (1998:56-58). This uncertainty may suggest that the beneficiaries were not actively involved in the building of their house.

6.2.2.5 The acceptance letter or so called “Happy Letter”

Almost four-fifths of the respondents indicated that they had no knowledge about the letter of acceptance (“Happy Letter”) and two-fifths were not satisfied about having no knowledge about the “Happy Letter”. Nearly two-thirds also indicated that they did not know the meaning of the acceptance letter, few said they did not receive the letter and about one-fifth thought it was an indication about when they could move into the house. Only a small percentage (2.5%) knew that this was a certificate of acceptance. The results of the focus group confirm that respondents were poorly informed and signed a document without knowing what it really meant. The respondents also did not know that they had any rights to complain about any structural or any other problems and that they did not have to sign if they were not satisfied with the house. A similar situation was found by Wijnbeeck (1998: 58-59).

6.2.2.6 The provider, ownership and payment of the house

Two-third of the respondents knew the government provided the house while about one-third did not know exactly who the provider was. One-tenth of the respondents indicated that they obtained the house from Mandela and others indicated that they thought the builder or block

leader provided the house. Most of the respondents knew that they owned the houses and knew that they did not have to pay for the house. Almost all the respondents were satisfied with the fact that the government provided the house, that the houses were free and that they owned the houses.

Most of the respondents knew that they had to pay for services and a fairly large group (87%) indicated that they were satisfied with this fact. Some respondents did not answer the question or indicated that they did not know, which could indicate that there may be problems regarding the issue of services.

The results from the focus group confirm that the respondents did not know exactly how they were to obtain a house and also who funded the house.

6.2.2.7 The neighbourhood

Almost all the respondents were satisfied with their neighbourhood.

6.2.3 Satisfaction of residents regarding different aspects of the housing product

6.2.3.1 Satisfaction with the placement on the site

Almost all the respondents were satisfied with the placement on the site and the direction the house faced, but a few mentioned that the site was small.

6.2.3.2 Satisfaction with the floor plan

Almost nine-tenths of the respondents were satisfied with the appearance of the house. Almost half of the respondents indicated that they did not receive information about the floor plan, the appearance of the house or the size of the house before the building process started. The respondents were dissatisfied with the situation regarding no information because they thought that they had the right to have information. There was no communication with the builder, they did not know what the house would eventually consist of and they did not receive answers when they asked questions.

Almost two-thirds of the respondents were satisfied with their floor plan. The possible reasons why the beneficiaries choose a specific floor plan were that “they liked it, it had a good appearance, it looked large enough, it looked strong, it seemed suitable for future extensions”.

Two-thirds of the respondents were satisfied with the size of the house and most other respondents indicated that they found the house too small. More than two-thirds were satisfied with the number of rooms or the size of the room. The reasons given by those who were dissatisfied were that the number of rooms was insufficient and the rooms were too small. The respondents in Tomlinson’s study (1996:23-24) also complained about similar problems.

6.2.3.3 Satisfaction with the structure

- The windows: more than nine-tenths of the respondents were satisfied with the number, size and placement of the windows. Few respondents were, however, dissatisfied because an insufficient number of windows was installed and the size of the windows was small (cf. Result 15b, cf. Addendum 4, photographs 3 & 4).
- The doors: more than nine-tenths of the respondents were satisfied with the number and placement of the doors. Almost a quarter of the respondents expressed dissatisfaction with the type of doors and the fact they were noisy and banged when opened and closed (cf. Result 15b, cf. Addendum 4, photograph 5). The discussions within the focus group revealed that people preferred wooden doors.
- The exterior walls: four-fifths of the respondents were satisfied with the exterior walls. The rest were, however, dissatisfied because a single layer of bricks had been used and walls were not properly finished. According to the respondents, walls did not match as different colours of bricks had been mixed in the building process (cf. Result 18a). Respondents were not properly informed because they did not know that if maxi blocks are used, only a single layer of bricks is necessary. They also did not know that different quality bricks (mostly better and more expensive) are sometimes used for the foundation.
- The interior walls: more than three-quarters of the respondents were satisfied with the interior walls. The rest complained that interior walls were not properly finished, cemented or plastered, and moreover tended to crack easily (cf. Result 18a, cf. Addendum 4, photographs 5 & 7).

- The roof: more than three-quarters were satisfied with the roof. The rest were not satisfied with the roof because it leaked, was too flat, the overlap beyond the walls was too short and the roof was sometimes not well attached (cf. Result 15b, cf. Addendum 4, photographs 3 & 4).
- The floor: more than four-fifths of the respondents were satisfied with the floor, but a small group of respondents indicated that the best quality materials were not used and the floor surface gathered dust (cf. Result 18b, cf. Addendum 4, photograph 8). These results were confirmed by the focus group (cf. Result 26).

6.2.3.4 The aesthetic quality of the house

Almost four-fifths of the respondents were satisfied with the aesthetic quality. They indicated that the “houses looked beautiful, were better quality than a “mokhuku” and had appealing yard”. A small percentage of respondents were dissatisfied with the similar appearance of the houses, with the fact that walls were not straight and the size of windows was unsuitable (cf. Result 15b).

6.2.3.5 Water and sanitation

More than nine-tenths of the respondents were satisfied with the placement of the water point and the toilet. A small group of respondents were, however, dissatisfied with a wrong placement of the water point and the toilet. There are a few reasons for their dissatisfaction (cf. Result 16b). Respondents indicated that the water point should be placed in the backyard and front of the kitchen.

6.2.3.6 The temperature of rooms

Nine-tenths of the respondents were satisfied with the temperature of the house. Some respondents were dissatisfied with the house as it tended to be cold in the winter and hot in the summer because no air bricks were fitted and no ceiling installed (cf. Result 18a). Beneficiaries should be informed why airbricks and ceilings are not used so that they do not have the wrong perceptions.

6.2.3.7 The overall quality of the construction

More than nine-tenths of the respondents were satisfied with the quality of the house. Some respondents were dissatisfied that the exterior walls were constructed with only a single layer of bricks, that walls were not properly finished, that the foundation was not thick enough and that the roof leaked (cf. Result 18b). About one-tenth indicated that they were dissatisfied with the bricks because they thought they were “poor quality, did not match in colour, water penetrated bricks and they were not their favourite type”. More than one-tenths of the respondents were dissatisfied with the single layer of bricks because it was ‘weak and cracks appeared soon’. Less than one-tenth was dissatisfied with the foundation because according to them “not the best quality of materials was used and the foundation was not thick enough”. Most of the problems identified by Tomlinson (1996:22) and Wijnbeeck (1998:68-70) were of the same nature.

6.2.3.8 Changes to building elements of the house

More than three-quarters of the respondents did not change the elements of the construction of the house (including windows, doors, exterior walls and the roof). The most important change made was to the plastering and painting. Other changes included the installation of larger windows and more suitable doors, as well as a more appropriate finish for the exterior walls by plastering and painting (cf. Result 19a).

6.2.3.9 The adding of rooms and the use of a “mokhuku”

Half of the respondents expressed a desire to add a further room to the house and two-fifths indicated that they would use their own money. Other answers indicate that the source of money could be from children, relatives and the government. About one-fifth said that they would obtain a loan from the bank.

Almost nine-tenths of the respondents still used their former informal corrugated iron house (“mokhuku”) as an extension to their house. Napier (1999:402) reports the same findings in two cases studies done in Khayelitsha and Inanda, except that where people had stayed longer in their houses, the additions became more formal as in brick rooms.

The reasons respondents given for using the “mokhuku” were that they needed an extra room for a kitchen, bedroom, bathroom or a storeroom.

6.2.3.10 The Housing Satisfaction Score regarding the product (cf. Result 25b)

The results indicate that the mean Housing Satisfaction Score for the product is 92% and statistic calculations (d-value) indicate that this result is statistically and practically significant. Although there are some problems identified by the beneficiaries, it is clear that it was never large percentages but only a few respondents that complained. There are also almost always categories of “do not know” or “did not answer” which give an indication that respondents were not actually part of the process or did not know enough to give answers.

6.2.4 The project management

6.2.4.1 Satisfaction with the Steering Committee, the professionals and the Town Council

- The Steering Committee: almost nine-tenths of the respondents were satisfied with the performance of the Steering Committee. Some respondents complained that not enough information had been provided to the community and also that proper care for the community was lacking. In discussions with the focus group, it was established that people were not well acquainted with the role of the Steering Committee and also that communication between the community and the Steering Committee was poor (cf. Result 26). The results of the focus group indicate that the community does not understand the role of the Steering Committee and they thought that there was no communication between the community and the Steering committee.
- The professionals: almost all of the respondents were satisfied with the professionals that engaged in the housing project such as the town planners, architects and service providers. One respondent complained that they never came back to solve identified problems.
- The Town Council: more than nine-tenths of the respondents were satisfied with the way they performed their role. A few respondents did, however, indicate that sufficient information had not been provided to them and a few indicated that they treated people unfairly and did not fulfil the community needs.

6.2.4.2 The Housing Satisfaction Score regarding the project management and the total satisfaction score that was calculated (cf. Result 25c)

The HSS calculated for certain aspects of the project management indicated that the mean value of the Housing Satisfaction Score is 96%, but the statistics proved that this result is statistically significant, and practically insignificant. When the mean Satisfaction Score of the housing product and the project management are added, the results show a mean Housing Satisfaction Score of 92%, which is statistically and practically significant.

6.2.4.3 Benefits of the housing project to the community

More than nine-tenths of the respondents judged the housing project to have been beneficial, but some respondents queried the benefit of the project because houses were not built on time and problems encountered with houses were not checked and solved (cf. Result 24b).

6.3 CONCLUSION REGARDING THE DEMOGRAPHICS, THE HOUSING PROCESS, THE PRODUCT AND THE MANAGEMENT OF THE PROJECT

The conclusions will be described according to the aims of the research (cf. Par 1.3)

6.3.1 The demographics

Half of the respondents were poorly educated, unemployed, came from low-income families and were living as a nuclear families with children of various ages. There was no statistically significant difference between the satisfaction with the product, project management and any demographic groups.

6.3.2 The awareness of residents regarding various aspects of the housing process (cf. Par. 1.3)

6.3.2.1 The subsidy process

- The respondents knew about the Housing Subsidy Scheme and some knew the amount they received which is possible because they had already moved into the houses.

- The majority did not have enough knowledge about the procedure and possible waiting period.
- Most of the respondents were dissatisfied about not being informed about the process.
- Respondents obtained information from various sources such as block leaders, neighbours, community meetings, friends, relatives, councillors, builders and radio/TV.
- Very few respondents took the initiative to obtain information before the process started.

6.3.2.2 Decision-making regarding the house plan

- Mostly there was joint decision-making regarding the choice of a house plan and the respondents did not know at what stage of the process they chose a plan.

6.3.2.3 The builder

- The respondents did not choose or know their builder.
- The respondents did not interact with the builder.
- Most of the respondents were satisfied with the builder.

6.3.2.4 The completion and occupation of the house

- Most of the respondents did not know when they would be able to move into the house or whether they moved into the house on the promised day, because appropriate information was not provided about the date of completion and occupation of the house. The fact that occupants did not know the date of completion or occupation of the house indicated a lack of participation of the users in the housing process.
- Many houses were not completed on the promised day. Many respondents were ignorant about the reason for delays in finishing their house. Once again their lack of knowledge proved to correlate with their lack of participation in the housing process.
- The respondents did not know when the completion day of the house was supposed to be.

6.3.2.5 The acceptance letter or so called “Happy Letter”

- Respondents did not know about the letter of acceptance. They did not know what it actually meant.

6.3.2.6 The provider, ownership and payment of the house

- The majority of the respondents knew who provided the house but there was a small group who had misconceptions about the providers.
- Most of the respondents were satisfied with the issue of ownership of the house.
- Most of the respondents were satisfied that the government provided the house and that they did not have to pay for it.
- There were respondents that were uncertain about the issue of payment for services.

6.3.3 The neighbourhood

- Most of the respondents were satisfied with their neighbourhood.

6.3.4 Satisfaction of residents regarding different aspects of the housing product (cf. Par. 1.3)

6.3.4.1 Satisfaction with the placement on the site

- Most of the respondents were satisfied with the placement of the house on the site.
- There are indications that some thought that the site was too small.
- All houses faced the street whether the direction was appropriate or not as far as the optimal utilisation of sunlight as well as a pleasant view were concerned (cf. *Addendum 4, photographs 1 & 2*).

6.3.4.2 Satisfaction with the floor plan

- Most of the respondents were satisfied with the floor plan of the house.
- Occupants preferred the ‘F₂ floor’ plan (cf. *Addendum 2 and Addendum 4, photographs 1 & 3*).

- Many respondents were dissatisfied with having had insufficient information about the floor plan as well as the appearance and size of the house before they made a decision about a floor plan.
- Some respondents were not satisfied with the size of the house because it was too small for their needs and contained an insufficient number of rooms (cf. *Addendum 2*).

6.3.4.3 Satisfaction with the structure

Respondents were generally satisfied with the structure of the house (including the windows, the doors' the exterior and interior walls). Some respondents expressed the following complaints:

- The windows: respondents stated that the windows were insufficient in number and small in size (cf. *Addendum 4, photographs 3 & 4*).
- The doors: doors tended to be noisy and banged against the wall when opened (cf. *Addendum 4, photograph 5*).
- The exterior wall: according to some respondents' perception, poor quality bricks were used but there is no proof about this. Respondents were not informed about why certain bricks were used. Respondents were not satisfied with the walls that were not painted and plastered (cf. *Addendum 4, photograph 6*).
- The interior wall: respondents were not satisfied because the walls were not finished properly, nor cemented or plastered adequately (cf. *Addendum 4, photograph 7*).
- The roof: in many instances the roof leaked and respondents stated that it was too weak and light and the overlap was too short (cf. *Addendum 4, photographs 3, 4 & 7*). These factors combined with poor workmanship caused many roofs to leak.
- The floor: it was not smooth due to poor workmanship and therefore difficult to care for (cf. *Addendum 4, photograph 8*).

6.3.4.4 The aesthetic quality of the house

- Most of the respondents were satisfied with the aesthetic appearance of their houses, but a few respondents complained that the houses all looked similar, any extensions were not attractive, that walls were not straight and that the size of windows was too small to match the size of the house (cf. *Addendum 4, photographs 2 & 4*).

6.3.4.5 Water and sanitation

- Most of the respondents were satisfied with the placement of the water point and the toilet. A few respondents suggested that the water point should be placed in the backyard and in the front of the kitchen (cf. *Addendum 4, photograph 10*). It is obvious that the water point should be located conveniently for household functions like cooking and washing.

6.3.4.6 The temperature of rooms

- Most of the respondents were satisfied with the room temperature, but a few respondents complained of the house being cold in winter and hot in summer because no air bricks were used and no ceiling was installed (cf. *Addendum 4, photograph 11*).

6.3.4.7 The overall quality of the construction

Most of the respondents were satisfied with the construction quality. Some respondents were, however, dissatisfied. Their reasons for complaining included the following:

- Walls had a single layer of bricks and were not properly finished or plastered.
- Poor quality foundation material was used and the foundation was not thick enough.
- The floor was not smooth, because the floor surface was not properly finished.
- Roofs were sometimes not attached properly and leaked.

6.3.4.8 Changes to building elements of the house

- Most of the respondents did not change elements of the house, but some respondents changed windows, doors, exterior or interior walls and roofs.
- Small windows were changed for larger windows.
- Doors were changed for more suitable types, thereby reducing noise annoyance, creating more space and preventing the penetration of water.
- The finish of exterior walls was improved using an additional finishing.
- Changes were made to interior walls by plastering and cementing of wall surfaces, thereby making walls more durable, attractive and brighter.

6.3.4.9 The adding of rooms and the use of a “mokhuku”

- Most respondents wanted to add an additional room.
- Most of the respondents still used their “mokhuku” as an extra room.

6.3.4.10 The Housing Satisfaction Score regarding the product

- Respondents were satisfied with the housing product and the results are statistically and practically significant.

6.3.5 Satisfaction with the project management during the housing delivery process (cf. Par. 1.3)

6.3.5.1 Satisfaction with the Steering Committee, the professionals and the Town Council

In general, respondents were satisfied with management by the Steering Committee, the professionals and the Town Council. Some of the complaints expressed by respondents are listed below:

- The Steering Committee: it was felt that they did not devote sufficient attention to the interests of the community and did not provide sufficient information in time for the community.
- The professionals: they never came back to solve problems.
- The Town Council: they did not care properly for the community’s needs and did not provide sufficient information to the community.

6.3.5.2 Benefits of the housing project to the community

In general, the housing project provided benefits to the community because it improved their housing.

6.3.5.3 The Housing Satisfaction Score regarding the project management

- The results regarding the satisfaction score with the project management are statistically

significant and practically insignificant, therefore any regarding the respondents' satisfaction with the project management is not practical.

- When the HSS of the product and project management are added, the results are statistically and practically significant and the respondents are satisfied with the product and project management.

6.3.6 User's participation during the housing development process

User's participation was not specifically measured, but throughout all the proceeding presentations and discussions, it is clear that they did not partake in the housing process or in the practical aspects regarding decision-making about any aspects of the product. They did not have enough information and were not active in the entire process of receiving/developing a house.

The fact that there were so many questions "not answered" or "do not know" responses is not because the data collection was not properly controlled, but because the respondents did not take part in the process. They evidently did not know about some of the issues.

6.4 RECOMMENDATIONS

It is generally agreed that user's participation in the housing process will benefit the process and user's satisfaction with their housing (Gifford, 1997:394). It is especially true in the situation regarding low cost and subsidy housing. Two of the aims of this study (cf. Par. 1.3.2 and 1.3.5) are concerned with this issue. The first recommendations will address this issue, while the latter will deal with the construction of the house and management of the process.

1. Communities with a low socio-economic status, as is usually the case with beneficiaries of government subsidy houses, are usually ignorant and not involved in the housing process. They should be empowered to take an active part in improving their living conditions such as their housing.
2. As part of the empowerment process the following information should be provided to the beneficiaries:
 - Sufficient preliminary information should be given to the future occupants

regarding the subsidy process before commencing with the project, information about the amount of subsidy, where and how to apply, all possible role players and the waiting period should be available.

- Basic information about the contracts for first time homeowners should be available.
 - They must be informed about the responsibilities of the different role players, especially the local government officials and Steering Committee.
 - They must obtain basic information regarding the provision of services and possibly be able to choose for themselves.
 - They must obtain basic technical information so that they will be able to understand the plan in order to make an informed decision.
 - They should be informed about their rights regarding the builder and building process, quality control and the letter of acceptance.
 - They should be informed about the costing and quality of building materials in order to make their own decisions regarding windows, doors and services.
 - Advantages of new technology and building processes should be explained to them.
 - Information regarding their responsibilities towards:
 - the local government regarding payment for rates and services
 - their neighbours and communityshould be available.
 - The advantages and disadvantages of homeownership should be spelled out clearly, especially concerning financial and maintenance aspects.
 - Information about where to borrow money for extensions or improvements and the responsibilities in this regard will also be helpful.
 - Occupants should be informed about ways to individualise their homes so that all of the houses do not look the same.
3. Information should be provided in a structured manner because it is clear that the traditional use of community meetings or block leaders only reaches a few people. Local government and project leaders should think of innovative ways to facilitate this process and ensure that sufficient information reaches every household.
4. Although this project is a low-cost housing project and the issues regarding the limited amount of money available from the Subsidy Scheme is well known and

debated, attention should be given to the quality of the housing product, which should include the building materials and workmanship.

- The community should know that low-cost housing projects may use types of building materials with which they are unfamiliar such as concrete building blocks. If possible, they should be allowed to make their own decisions regarding certain materials and processes.
 - Good quality materials should be used at all times.
 - The developer should consider addressing the main causes of complaints such as the doors, windows and wall finishes. They should try to find innovative ways to solve these problems.
 - Issues of temperature regulation and ventilation inside the house should be addressed, for example, suitable facing of the house for the South-African climate and insulation.
 - There should be better control over the building quality or quality of construction. If the beneficiaries knew that they had the right to take part in the process and interact with builders, it would assist the project managers and the levels of satisfaction with the product.
 - Project managers should ensure that the beneficiaries know about the retention money and have a specific person or place where complaints can be made.
 - It should be ensured that the emerging contractors are able to deliver a good quality product. Additional training should be given if necessary.
 - Innovative ways to provide information to communities and to empower individual members so that they can play an active part during the building process and accept responsibility for their own housing should be applied.
 - Ways to assure that good quality houses and houses of high standard are delivered within the constraints of the limited amount of subsidy should be applied.
5. The project managers should ensure that the following issues are part of their liaison with the community:
- The role of all stakeholders should be clearly identified.
 - Ensure that information processes reach the entire community.
 - They should be available to address problems.
 - They should build the image that they are working for the welfare of the community.

6. Further research is needed regarding aspects such as:
 - Educating the beneficiaries through continuous post-occupancy evaluation.
 - Improving the housing product that leads to improving the living environment.

6.5 FINAL CONCLUSION

Housing is not just about the creation of shelter, but rather about focussing on the creation of quality living environments together with the respective community. The acid test for housing projects should be the extent to which they are able to successfully move communities from informal shack areas with minimal or limited services and shelter, to a more formal and complex environment. The key lies in a strategy aimed at facilitating social reconstruction through the transfer of information about the responsibilities of being a homeowner (Del Monte, 1998:32).

The White Paper on Housing, 1994 and the Housing act (Act 107 of 1997) strongly emphasises the need for a people-centred approach to housing development. More than 800 000 new housing opportunities have been created over the past five years and as a result more than 800 000 new homeowners have entered the housing market. This research has shown that very few new homeowners accessing the housing subsidy, have been able to fully benefit during the housing development process. Poor workmanship and quality control during the process has negatively impacted on the housing satisfaction of these homeowners.

The research has further shown that some definite benefits were derived from the process. The general living conditions were improved through the provision infrastructure such as roads, water and sewerage systems. Houses were built and temporary employment opportunities were created. In order to improve the housing satisfaction and resulting quality of life of the new homeowners, housing projects further should strive to allow for greater participation of the beneficiaries in the housing process and address the perception relating to quality.

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ADDENDUM 1

A STRUCTURED QUESTIONNAIRE

INTERVIEW SCHEDULE: A POST - OCCUPANCY EVALUATION**SECTION A: DEMOGRAPHICAL INFORMATION**

	Questionnaire:		
House no:			

1. Educational qualifications of the respondent

Lower than St. 3		1
St. 3 - St. 6		2
St. 7 - St. 10		3
Higher than St. 10		4

2. Occupation of the respondent

Unemployed		1
Part-time work (work less than five days per week)		2
Full time work (work five or more days per week)		3

3. Type of family

3.1 Nuclear (regular) family		1
3.2 Extended (joined) family		2

3.1: A nuclear (regular) family can be one of the following:

- Living with single parent (mother or father) and own children
- Living with parents and their children
- Living alone separately
- Living as a couple on their own

3.2: An extended (joined) family: Living with regular family and other relatives such as a grandfather, grandmother, aunts, uncles, cousins, a married sister/brother or their spouse and children, as well as other people.

4. The life-cycle of respondents

Living alone		1
Couple without children		2
Parents and younger children (1 month- 12 year old)		3
Parents and teen-age children (13 to 18 years old)		4
Parents and older children (over 18 years old)		5
Ageing couple		6

5. The total household income per month per month

Under R500		1
R501 - R1 000		2
R1 001 - R1 500		3
R1 501 - R2 500		4
R2 501 - R3 500		5

6. The number of people living in the house

Younger than 18 years old (not adult)	
Older than 18 years old (adult)	

The 'Smiley Scale'

The Likert scale with 'smiling faces' is used to determine satisfaction:



The scale is presented to the respondents for choosing a satisfaction level. This scale measures: 1. not satisfied; 2. don't know; 3. satisfied.

Example:

10.2 How satisfied are you with the time needed when they complete the building ?	1	
	2	
	3	

SECTION B: SATISFACTION OF RESPONDENTS**WITH THE HOUSING PROCESS OF STATE SUBSIDISED HOUSING****7. The Subsidy Scheme**

7.1 Did anyone tell you about a subsidy for building a house?	YES		1
	NO		2
7.2 If YES , who told you?			
7.3 If NO , how satisfied are you with the fact that you didn't know about the subsidy?	1		
	2		
	3		
7.4 What did you do to find out if you could get a subsidy?			
7.5 Did you know how the subsidy process?	YES		1
	NO		2
7.6 If NO , who gave you the information about the subsidy procedure?			
Municipality ('Stadsraad')			1
Block leader ('Blokleier')			2
Friend			3
Builder			4
Other, specify:			5
7.7 Where did you apply for the subsidy?			
7.8 Did you know how much subsidy you would receive?	YES		1
	NO		2
7.9 If YES , how satisfied are you with this amount of subsidy?	1		
	2		
	3		
7.10 When did you know how much subsidy you could receive?			
Before commencement of the building process			1
During the building of the house			2
After the building of the house			3
7.11 If NO with question 7.8 , how satisfied are you with the situation of having no information?	1		
	2		
	3		
7.12 Did you know how long you will have to wait for the subsidy to be granted?	YES		1
	NO		2
7.13 How long did you wait for the subsidy application to be granted?			
0 - 3 months			1
4 - 6 months			2
7 - 9 months			3
10 - 12 months			4
13 - 15 months			5
16 - 18 months			6
19 - 21 months			7
22 - 24 months			8
7.14 How satisfied are you with the time period you had to wait?	1		
	2		
	3		

8. The process of choice and decision about the house plan:

8.1 When could you choose a house to be built?		
8.2 Who decided what kind of house you will have?		
Father of the household alone		1
Mother of the household alone		2
Father and mother together		3
All family members of the household		4
Other people		5

9. The builder:

9.1 Did you know who the builder of the house was?	YES		1
	NO		2
9.2 How satisfied are you with the builder?		1	
		2	
		3	

10. The date of completion and occupation:

10.1 Did people tell you when the house would be finished?	YES		1
	NO		2
10.2 How satisfied are you with the time needed when they complete the building?		1	
		2	
		3	
10.3 Was the house finished on the promised day?	YES		1
	NO		2
10.4 If NO , how satisfied are you with this?		1	
		2	
		3	
10.5 What was the reason why the house was not finished on that day?			
10.6 Did people tell you when you could move in?	YES		1
	NO		2
10.7 If NO , how satisfied are you with this?		1	
		2	
		3	
10.8 If you knew when you could move in, was it indeed possible to move into the house on that day?	YES		1
	NO		2
10.9 If NO , how satisfied are you with this?		1	
		2	
		3	

11. The occupation letter (“Happy letter”)

11.1 Did people tell you about the “Happy Letter”?	YES		1
	NO		2
11.2 If NO , how satisfied are you with this?		1	
		2	
		3	
11.3 Explain what the “Happy Letter” means.			

12. Ownership:

12.1 Who give you this house?			
12.2 How do you feel about the government giving you this house?		1	
		2	
		3	
12.3 How do you feel about the fact that the house you received was free?		1	
		2	
		3	
12.4 Do you think that you own the house?	YES		1
	NO		2
12.5 If YES , how satisfied are you with this?		1	
		2	
		3	
12.6 Do you think that you do not need to pay anything for the house?	YES		1
	NO		2
12.6.1 If YES , how satisfied are you with this?		1	
		2	
		3	
12.7 If YES , how satisfied are you with this?		1	
		2	
		3	
12.7.1 If YES , how satisfied are you with this		1	
		2	
		3	

13. The neighbourhood:

13.1 Do you know that who your neighbours are?	YES		1
	NO		2
13.2 If YES , how satisfied are you with your neighbours?		1	
		2	
		3	
13.3 If dissatisfied , give reasons:			

**SECTION C: SATISFACTION OF RESPONDENTS
WITH THE HOUSING PRODUCT OF STATE SUBSIDISED HOUSING**

14. The placement of the house on the site:

14.1 How satisfied are you with the position where the house has been placed on the site?	1	
	2	
	3	
14.2 If dissatisfied , give reasons:		
14.3 How satisfied are you with the direction the house is facing?	1	
	2	
	3	
14.4 If dissatisfied , give reasons:		

15. The floor plan:

15.1 Did you see or receive floor plans to choose from?	YES		1
	NO		2
15.1.1 Write the type of floor plan you chose:			
15.2 How satisfied are you that you could only choose from the floor plans that had been presented to you?	1		
	2		
	3		
15.3 If dissatisfied , give reasons:			
15.4 Why did you choose this floor plan? Give reasons:			
15.5 Did you know what the house would look like when it would be completed?	YES		1
	NO		2
15.6 How satisfied are you with this?	1		
	2		
	3		
15.7 Do you feel that you received sufficient information about the house that you were getting?	YES		1
	NO		2
15.8 If NO , how satisfied are you with no sufficient information?	1		
	2		
	3		
15.9 If dissatisfied concerning question 15.8, give reasons:			
15.10 Did you know your house is only 31.31m ² , 32.98m ² or 33.00m ² before you moved into the house?	YES		1
	NO		2
15.11 How satisfied are you with the size of the house?	1		
	2		
	3		
15.12 If dissatisfied , give reasons:			

16. Size and number of rooms (space):

16.1 How satisfied are you with the number of rooms?	1	
	2	
	3	
16.2. If dissatisfied , give reasons:		
16.3 How satisfied are you with the size of the rooms?	1	
	2	
	3	
16.4 If dissatisfied , give reasons:		

17. The structure:

17.1 *The windows:*

17.1.1 How satisfied are you with the number of windows?	1	
	2	
	3	
17.1.2 If dissatisfied , give reasons:		
17.1.3 How satisfied are you with the size of the windows?	1	
	2	
	3	
17.1.4 If dissatisfied , give reasons:		
17.1.5 How satisfied are you with the placement of the windows?	1	
	2	
	3	
17.1.6 If dissatisfied , give reasons:		

17.2. *The doors:*

17.2.1 How satisfied are you with the number of doors?	1	
	2	
	3	
17.2.2 If dissatisfied , give reasons:		
17.2.3 How satisfied are you with the position where the doors have been placed?	1	
	2	
	3	
17.2.4 If dissatisfied , give reasons:		
17.2.5 How satisfied are you with the type of doors supplied?	1	
	2	
	3	
17.2.6 If dissatisfied , what type of door would you have preferred (name)?		

Addendum 1 Questionnaire

17.3 *The wall finishing:*

17.3.1 How satisfied are you with the exterior wall finish?	1	
	2	
	3	
17.3.2 If dissatisfied , give reasons:		
17.3.3 How satisfied are you with the interior wall finish?	1	
	2	
	3	
17.3.4 If dissatisfied , give reasons:		

17.4 *The roof:*

17.4.1 How satisfied are you with the roof?	1	
	2	
	3	
17.4.2 If dissatisfied , give reasons:		

18. **The aesthetic quality of the State subsidised housing structure:**

18.1 Is the house attractive?	YES		1
	NO		2
18.2 Give reasons for your answer:			

19. **Water and sanitation:**

19.1 How satisfied are you with the positioning of the water point?	1	
	2	
	3	
19.2 If dissatisfied , give reasons:		
19.3 How satisfied are you with the positioning of the toilet?	1	
	2	
	3	
19.4 If dissatisfied , give reasons:		

20. **Temperature regulation:**

20.1 Are the rooms in the house warm enough in the winter and also cool enough in the summer?	YES		1
	NO		2
20.2 How satisfied are you with the temperature of the rooms?	1		
	2		
	3		
20.3 If dissatisfied , give reasons:			

21. Quality of the construction:

21.1 How satisfied are you with the final product of the house?	1	
	2	
	3	
21.2 If dissatisfied , give reasons:		
21.3 How satisfied are you with the bricks used to build the house?	1	
	2	
	3	
21.4 If dissatisfied , give reasons:		
21.5 How satisfied are you with the fact that the exterior wall was built with a single layer of bricks?	1	
	2	
	3	
21.6 If dissatisfied , give reasons:		
21.7 How satisfied are you with the quality of the “raft” foundations ?	1	
	2	
	3	
21.8 If dissatisfied , give reasons:		

22. Changes to the construction material of the house:

22.1 Did you make changes to the house?	YES		1
	NO		2
22.2 Moved windows?	YES		1
	NO		2
22.2.1 If Yes , give reasons:			
22.3 Put in other windows?	YES		1
	NO		2
22.3.1 If Yes , give reasons:			
22.4 Moved doors?	YES		1
	NO		2
22.4.1 If Yes , give reasons:			
22.4.2 Put in other doors?	YES		1
	NO		2
22.4.3 If Yes , give reasons:			
22.5 Used other exterior wall finishes?	YES		1
	NO		2
22.5.1 If Yes , give reasons:			
22.6 Used other interior wall finishes?	YES		1
	NO		2
22.6.1 If Yes , give reasons:			

Addendum 1 Questionnaire

22.7 Replaced or changed the roof?	YES		1
	NO		2
22.7.1 If Yes, Give reasons:			
22.8 Did you use some money to make changes?	YES		1
	NO		2
22.8.1 If Yes, give reasons:			
22.9 Where did you get the additional money to make the changes?			

23. Adding to or extending the current floor plan:

23.1 Did you do the building yourself?	YES		1
	NO		2
23.2 Do you want to add other rooms?	YES		1
	NO		2
23.3 If YES, give reasons:			
23.3.1 Where will you get the money to build extra rooms?			
23.3.2 Where will you get the building materials?			

24. Use of a “mokhuku”

24.1 Is there still a “mokhuku” on the site?	YES		1
	NO		2
24.2 If YES, for what purpose(s) do you use the “mokhuku”?			

**SECTION D: SATISFACTION OF RESPONDENTS
WITH THE PROJECT MANAGEMENT OF STATE SUBSIDISED HOUSING**

25. Satisfaction with the Steering Committee:

25.1 How satisfied are you with the Steering Committee?	1		
	2		
	3		
25.2 If dissatisfied , give reasons:			
25.3 Do you feel the Steering Committee represented the community’s best interest?	YES		1
	NO		2
25.4 If NO , give reasons			

26. Satisfaction with the Professionals:

26.1 How satisfied are you with the professionals (project managers, administrators, engineers, architects)?	1	
	2	
	3	
26.2 If dissatisfied , give reasons:		

27. Satisfaction with the Town Council:

27.1 How satisfied are you with the Town Council's handling of the housing project?	1	
	2	
	3	
27.2 If dissatisfied , give reasons:		

28. Significance of the housing project:

28.1 Do you think that the housing project benefit the community in general??	YES		1
	NO		2
28.2 Give reasons for your answer:			

EXAMPLE OF 'SMILEY SCALE'
TO BE SHOWN TO RESPONDENTS

**EXAMPLE OF 'SMILEY SCALE'
TO BE SHOWN TO RESPONDENTS:**



1 DISSATISFIED



2 DON'T KNOW

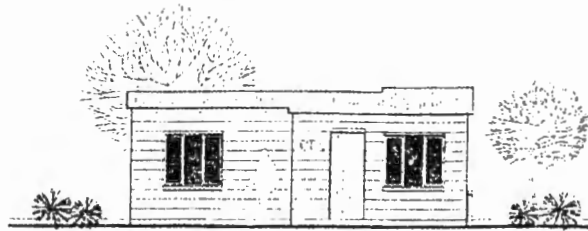


3 SATISFIED

ADDENDUM 2

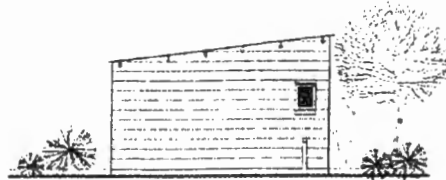
THE FLOOR PLAN

FLOOR PLAN F₂



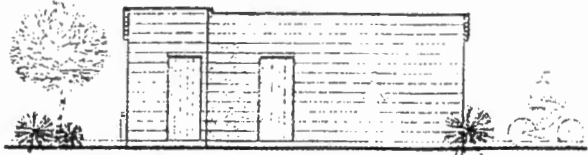
FRONT ELEVATION

SCALE = 1 : 100



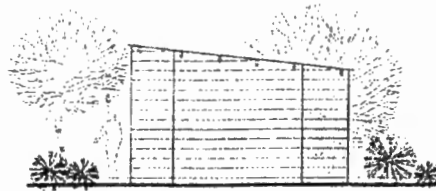
SIDE ELEVATION

SCALE = 1 : 100



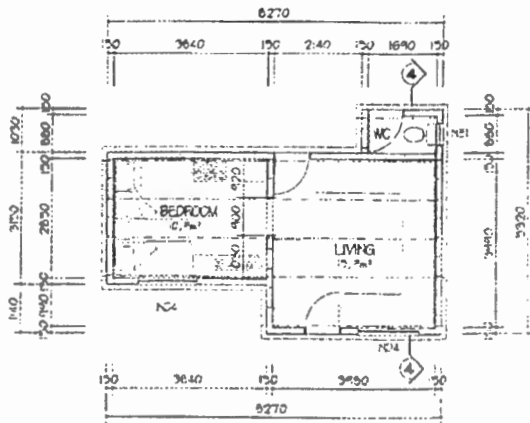
REAR ELEVATION

SCALE = 1 : 100



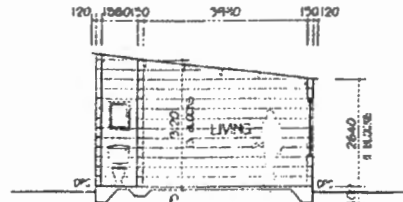
SIDE ELEVATION

SCALE = 1 : 100



PLAN

SCALE = 1 : 100



SECTION 4.4

SCALE = 1 : 100

HOUSE TYPE F.2

AREA = 32,90m²

HEIGHT = 2640 / 3120

NOTES

ROOF:

0,3mm FULLHARD GALVANISED CORRUGATED ROOF SHEETINGS (FULL LENGTHS) FIXED TO RAFTERS WITH APPROVED DGF DEALING SCREWS. (MIN. 3 SCREWS PER SHEET PER RAFTER) PROVIDE STANDARD GALVANISED SHEET METAL RIDGE CAPPANS SERRATED TO FIT ROOF SHEET CORRUGATIONS. ROOF OVERHANG TO BE A MINIMUM OF 120mm TO ALL SIDES.

RAFTERS:

150x50mm UNNROUGHT FIRST GRADE RAFTERS BUILT INTO WALLS AND FIXED WITH ANCHOR WIRES, BENT INTO WALL 3 COURSES FROM THE TOP. (WIRES THROUGH HOLES IN BLOCKS AND HOLES TO BE FILLED WITH MORTAR.) CREOBOTE FINISH ALL ROUND TO TIMBER EVEN BEFORE BEING BUILT IN.

WALLS

450x220x150mm STANDARD CONCRETE BUILDING BLOCKS BUILT WITH FULL 15mm G11 PLUSH JOINTS WITH A BRUSHED FINISH.

NOTE: THIS DESIGN IS BASED ON MODULAR BLOCKS - TO BE ADAPTED TO ACCOMMODATE BLOCKS APPROVED BY THE COMMUNITY. BLOCKS MAY ONLY BE CUT USING AN ELECTRICAL GRINDER.

WINDOWS:

STANDARD STEEL WINDOW FRAMES WITH 110x70mm CONCRETE LINTELS OVER, WITH 600mm LENGTHS BRICKWORK, OVERLAPPING THE LINTEL WITH 30mm.

PROVIDE STANDARD CONCRETE WINDOW SILL BEDED IN A 1:3 BEDDING MIXTURE ON A DPC.

WHERE A FIXING LUG DOES NOT CORRESPOND WITH BLOCK COURSE, THE HEAD OF THE BLOCK TO BE CHOPPED OPEN, THE LUG TO BE BENT AND THE BLOCK TO BE FILLED WITH MORTAR.

DOORS:

STANDARD 203x913mm PREBENT STEEL DOORS AND FRAMES WITH RED OXIDE PRIME COAT FINISH. FRAMES TO BE FILLED WITH MORTAR.

WHERE A FIXING LUG DOES NOT CORRESPOND WITH BLOCK COURSE, THE HEAD OF THE BLOCK TO BE CHOPPED OPEN, THE LUG TO BE BENT AND THE BLOCK TO BE FILLED WITH MORTAR.

DOOR FRAME TO BE HORIZONTAL PROPPED IN THE CENTRE UNTIL MORTAR IS DRY.

FLOORS/FOUNDATIONS:

FOUR FLOATED CONCRETE SURFACE BED AND RAFT FOUNDATIONS TO STRUCTURAL ENGINEERS' DETAILS.

VERBODEN TO EGROUPEER

P.O. BOX 263, LEVENBERG CH4, NORTH-WEST PROVINCE
TEL: 044 25248 • FAX: 044 25434 • CELL: 053 578 1001

PROJECT-LINKED HOUSING SCHEME
TWELELANG WOLMARANSGTAD

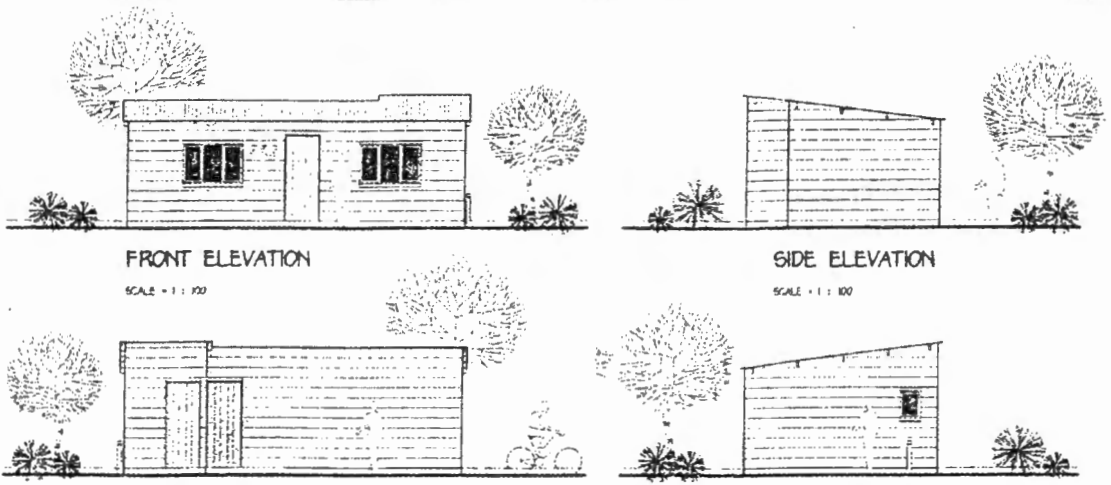
PLAN • SECTION • ELEVATIONS



DATE: 11/09/04
DRAWN BY: J.S.B.
CHECKED BY: L.P.R.
DATE: 11/09/04
PROJECT NO: 97.16.04

F.2

FLOOR PLAN G₂



FRONT ELEVATION

SCALE = 1 : 100

SIDE ELEVATION

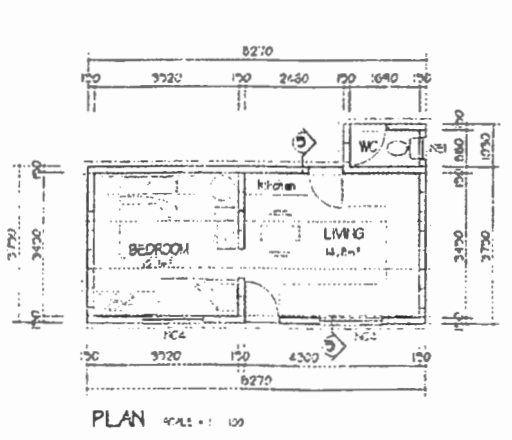
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REAR ELEVATION

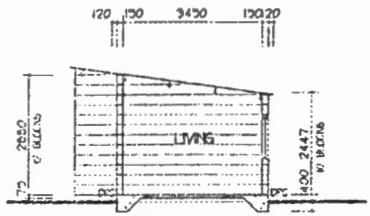
SCALE = 1 : 100

SIDE ELEVATION

SCALE = 1 : 100



PLAN SCALE = 1 : 100



SECTION 5.5


SCALE = 1 : 100

HOUSE TYPE G₂


AREA = 33.00m²
HEIGHT = 2400 / 2870

NOTES

- ROOF:**
0,3mm FULLHARD GALVANISED CORRUGATED ROOF SHEETING (FULL LENGTHS) FIXED TO RAFTERS WITH APPROVED SELF SEALING SCREWS. (MIN. 3 SCREWS PER SHEET PER RAFTER) PROVIDE STANDARD GALVANISED SHEET METAL RIDGE CAPPINGS BERRATED TO FIT ROOF SHEET CORRUGATIONS. ROOF OVERHANG TO BE A MINIMUM OF 120mm TO ALL SIDES.
- RAFTERS:**
150x50mm UNKILNDRY FIRST GRADE RAFTERS BUILT INTO WALLS AND PEXED WITH ANCHOR WIRES. (WIRES BENT INTO WALL 3 COURSES FROM THE TOP. HOLES TO BE FILLED WITH MORTAR.) GREENOTE FINISH ALL ROUND TO TIMBER EVEN BEFORE BEING BOLTED IN.
- WALLS:**
450x220x150mm STANDARD CONCRETE BUILDING BLOCKS BUILT WITH FULL 15mm G11 FLUSH JOINTS WITH A BRUSHED FINISH.
NOTE: THIS DESIGN IS BASED ON MODULAR BLOCKS - TO BE ADAPTED TO ACCOMMODATE BLOCKS APPROVED BY THE COMMUNITY. BLOCKS MAY ONLY BE CUT USING AN ELECTRICAL GRINDER.
- WINDOWS:**
STANDARD STEEL WINDOW FRAMES WITH 10x70mm CONCRETE LINTELS OVER, WITH 800mm LENGTH BRICKFORCE, OVERLAPPING THE LINTEL WITH 300mm.
PROVIDE STANDARD CONCRETE WINDOW SILLS BEDDED IN A 1:3 BEDDING MIXTURE ON A DPC. WHERE A FIXING LUG DOES NOT CORRESPOND WITH BLOCK COURSE, THE HEAD OF THE BLOCK TO BE CHOPPED OPEN, THE LUG TO BE BENT AND THE BLOCK TO BE FILLED WITH MORTAR.
- DOORS:**
STANDARD 2032x813mm PNEUMATIC STEEL DOORS AND FRAMES WITH RED OXIDE PRIME COAT FINISH. FRAMES TO BE FILLED WITH MORTAR. WHERE A FIXING LUG DOES NOT CORRESPOND WITH BLOCK COURSE, THE HEAD OF THE BLOCK TO BE CHOPPED OPEN, THE LUG TO BE BENT AND THE BLOCK TO BE FILLED WITH MORTAR. DOOR FRAME TO BE HORIZONTAL CHOPPED IN THE CENTRE UNTIL MORTAR IS DRY.
- FLOORS/FOUNDATIONS:**
POWER FLOATED CONCRETE SURFACE BED AND RAFT FOUNDATIONS TO STRUCTURAL ENGINEER'S DETAILS.

JOHN GOUGHMAN & COSMINE ARCHITECTS

 74, 506 257, LONTJANEN STR., NORD-VEST PRINKEP
 TEL: 044 72448 • FAX: 044 72434 • CELL: 083 375 0014

PROJECT-LINKED HOUSING SCHEME
 TSWELELANG WOLMARANGSTAD

WORKING DESCRIPTION
 PLAN • SECTION • ELEVATIONS


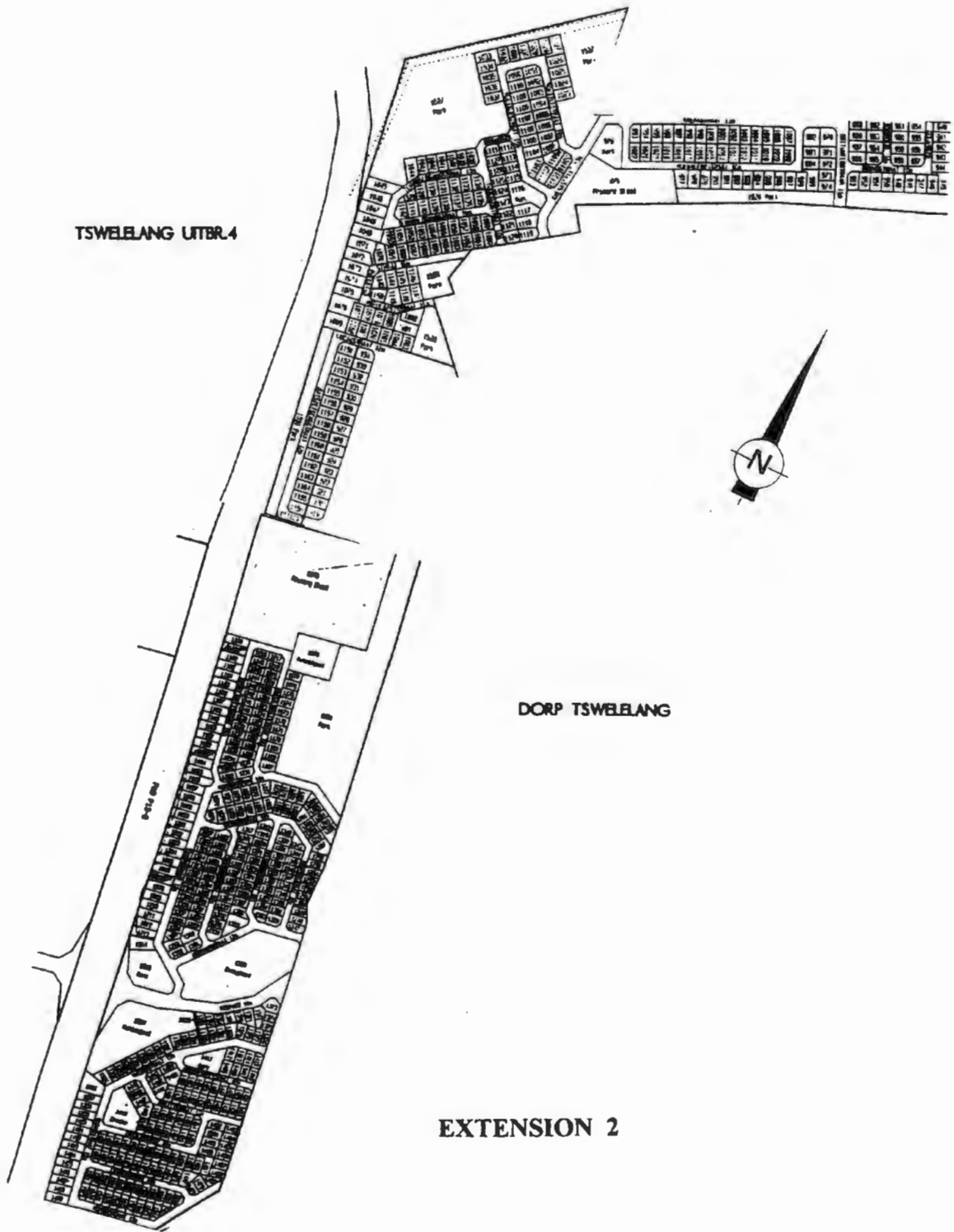
DATE: 17.09.05	DESIGNED BY: HOUSE-G2
DRAWN: J.B.	CHECKED: MARCH 2006
DATE: 17.09.05	SCALE: 97.16.05

G₂

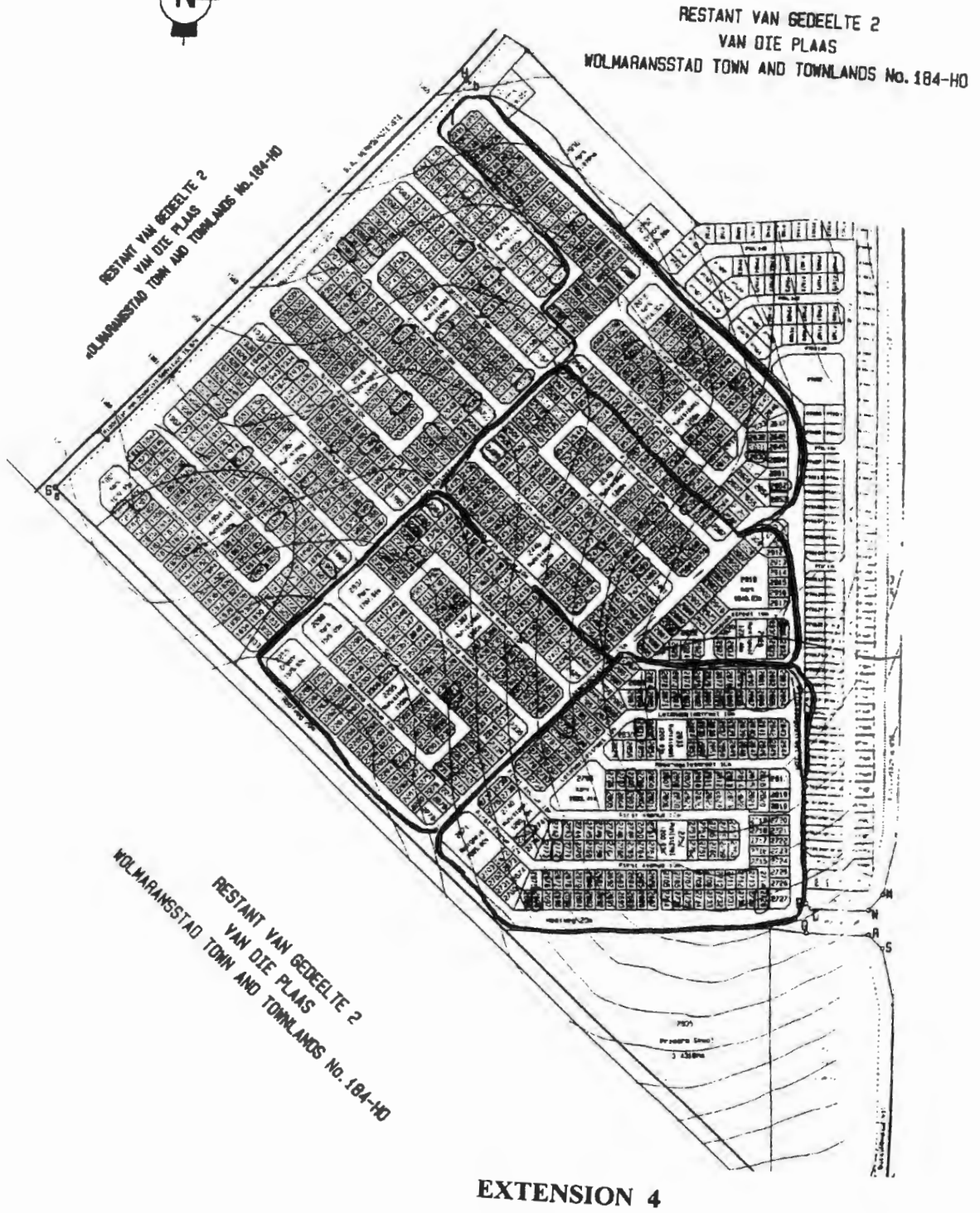
ADDENDUM 3

SITE MAP FOR THE SAMPLING

Addendum 3 Site map for sampling



Addendum 3 Site map for sampling



ADDENDUM 4

THE PHOTOGRAPHS



PHOTO 1



PHOTO 2



PHOTO 3



PHOTO 4



PHOTO 5



PHOTO 6



PHOTO 7



PHOTO 8



PHOTO 9



PHOTO 10



PHOTO 11