

## 1. INTRODUCTION

This chapter describes the methodology pursued and defines the research process that was followed with reference to the two case studies selected.

The structure of the chapter appears as follows (refer to figure 4):

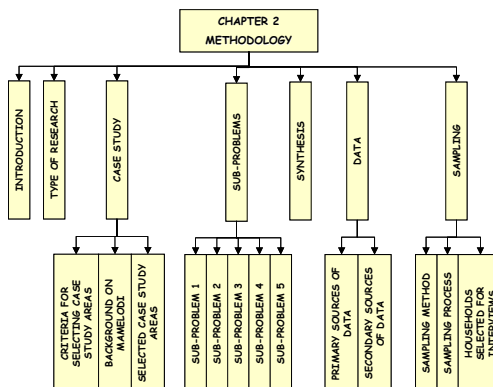


FIGURE 4: STRUCTURE OF CHAPTER

The type of research conducted is firstly discussed with the methods used, which sets the broader framework for the methodology.

Considering that the type of research is a case study, the next section elaborates on the case studies firstly by spelling out the criteria developed for the selection of the case studies before introducing the area within which the case studies exist and the specifics (location, size, date of establishment) of the case studies themselves.

A methodology is meant to describe the process followed in conducting the study, which requires a question/problem to be answered eventually. In order to answer the mentioned question/problem, it would have to be broken down into sub-problems, which will require information to be collected, analysed and presented in a manner that answers both the sub-problems and the main problem. As such the problem and sub-problems are presented with highlights on the synthesis that had been undertaken during the analysis of the data.

The information required is identified with the guidance of the sub-problems presented within the following section. The type of data is categorised twice, firstly into primary and secondary sources where the actual data required is listed and secondly into categories that inform the reader how the data will be captured, i.e. socio-economic profiles of residents, building activity, and land use is *primary data* that can be categorised as data that can be captured via *interviews and observations*. The data captured is then explained in terms of a timeline (from past to present) and the increase in focus and detail with the increase in time.

Part of the data capturing process required interviews and observations, which could not have been carried out without a strategic plan in place. Before these could be conducted, a questionnaire had to be developed and a sample selected. The following section details the sampling methods employed as well as the sampling process and selection. The households selected are presented in maps of the two areas with numbers corresponding with the presentation of data related to these households.

Within this dissertation, figure 5 indicates the present position of this chapter.

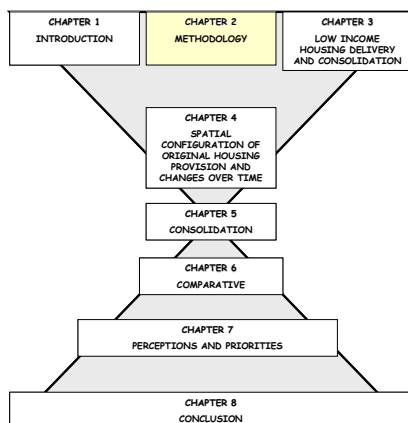


FIGURE 5: POSITION OF CHAPTER WITHIN DISSERTATION

## 2. TYPE OF RESEARCH

Within the broad framework of the study, the type of research conducted was a case study within which a combination of both qualitative and quantitative methods was employed.

**Case Study:** a detailed in-depth study of one group or event. The group or event is not necessarily representative of others of its kind, and case studies are sometimes used as preliminary pieces of research to generate hypothesis for subsequent research (Lawson & Garrod, 2000:28).

In this case, two case study areas were selected to demonstrate two purposes within the context of the form/type of housing provided. Firstly, to illustrate in-depth, detailed studies and secondly, to demonstrate the differences between one another.

The aspects focussed on, reflect qualitative research that does not only focus on housing aspects directly. It is meant to show the environment in which housing resides, the linkages this has with other aspects (spatial and socio-economic factors, etc.) and how these affect consolidation.

As mentioned above, both qualitative and quantitative research methods were used:

**Qualitative research methods** are defined as methods, which will result in mainly qualitative data. They include observation, participant observation and unstructured interviews. In using secondary data, the sociologist would be most likely to refer to personal documents (Lawson & Garrod, 2000:229).

For the purposes of this study, the qualitative methods included:

- Unstructured interviews conducted with relevant people that had background knowledge of Mamelodi Extension six and Extension ten consisting of general background knowledge and knowledge of the process of housing provision.
- During other interviews conducted with residents of the two areas, with the use of structured questionnaires, observation was also necessary. Certain aspects of the questionnaire required observation to be used in the acquisition of the correct data.

**Quantitative research methods** on the other hand are methods which will result in mainly quantitative data. They include social surveys and structured interviews (Lawson & Garrod, 2000:229).

Structured interviews were used for the collection of data from the residents of Mamelodi extension six and extension ten. These were made possible via a structured questionnaire.

Although the intention was to conduct qualitative research, the quantitative aspect of research could not be excluded. A combined effort was required for the purpose of answering the sub-problems posed, for example, the interview phase undertaken required the use of structured questionnaires and observations. The information required could not be gathered purely by just using the one or the other.

With the broader framework set out, the details of the methodology can be explained with the initial focus being on the case studies.

## 3. CASE STUDY

Two case study areas were selected with an emphasis on qualitative research and a desire to show the differences between the two areas. However, in order to ensure that comparisons could be made certain criteria had to be fulfilled:

### 3.1. CRITERIA FOR SELECTING CASE STUDY AREAS

The criteria used for the selection of the case studies encompass the following aspects, which will be elaborated on in the paragraphs to follow:

- Low income subsidised housing areas
- Differing types of housing delivery
- Period of residency (date of establishment until now)
- Accessibility (location, local informant, representative of area)
- Availability of data

**Firstly**, the selection of the areas had to be that of low-income subsidised housing provision by government considering that this is the focus of the study.

**Secondly**, the type of housing provision was a major consideration at play. In order to make a comparison of the design impacts on the level of consolidation in terms of the use of space, it was important to select two areas of differing housing types, i.e. site and service scheme and roof structures with services.

**Thirdly**, the age of these case studies had to be such that they reflected a significant change in structures over time. The time frame for such change had therefore been decided upon as being between five and ten years.

**Fourthly**, accessibility played a role in ensuring constant interaction with the case study areas at various levels, which was dependent on a number of factors. *Firstly*, the subject areas had to be located within a manageable travelling distance that ensured minimal travel. *Secondly*, a local informant was required to assist in the communication with the residents and to get approval from the community councils to conduct such a study in the areas. For safety reasons, entrance into the case study areas required the constant accompaniment of the local informant, the availability of which at times was poor. This required a quick response to conduct interviews when the availability of the

local informant was positive. *Thirdly*, during the interviewing stage, representatives of the specific areas had to accompany both the local informant and the interviewer to ensure accessibility into the resident's homes, transparency and the ease of communication between interviewer and interviewees. Such intense interactions were necessary in order to attain the appropriate level of detailed information required. Having case study areas close by and easily accessible ensured the ease of information flow.

**Lastly**, the availability of information (aerial photographs, background information, etc.) of the case study areas was also very important to the success of the study. Lack of such information would have cancelled out considering all of the above criteria. The supporting information was therefore crucial to the process.

The two case study areas selected were, therefore, within the confines of Mamelodi, i.e. Mamelodi extension 10 (roof structures and services) and Mamelodi extension 6 (site and service scheme). These areas are east of Pretoria and have been established for more or less ten years. In terms of the delivery of housing, there is a three-year difference between the two areas, i.e. delivery in extension 10 began in 1994 and in extension 6, in 1997. For more detailed information about the case study areas refer to the sections to follow and chapters 4 and 5. The context of the two case study areas has to be understood.

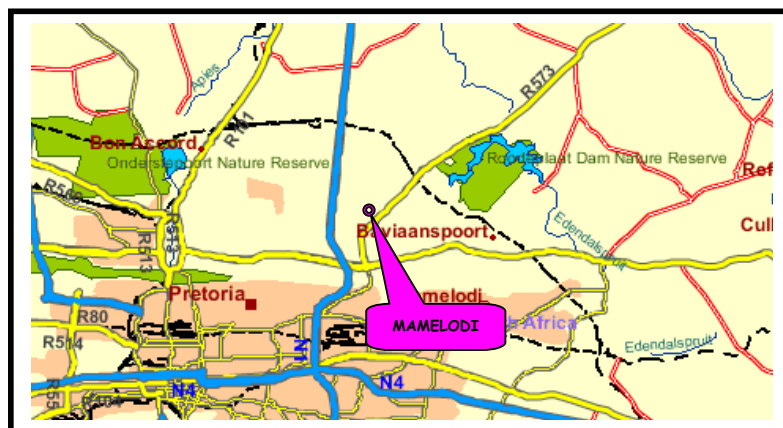
### 3.2. BACKGROUND ON MAMELODI

In the 1960's, African residential areas falling within the designated 'White group areas' were demolished. In Pretoria such areas included Mooiplaats, Schoolplaats, Bantule, Lady Selborne, Kilnerton, Eastwood, Newlands and Riverside. During this apartheid era, areas east (Mamelodi) and west (Atteridgeville) of Pretoria were built to accommodate a majority of the Black population. The Coloured population were accommodated in Eersterus, a former African cluster adjacent to Mamelodi that was redeveloped. Laudium was an Indian suburb situated in a south-westerly direction with a buffer of hills between them and Atteridgeville. Marabastad still remained the host for the remainder of the Indian population (*Hattingh & Horn, 1991*).

Mamelodi, established in 1945 to house black people, is an urban black residential area, 22km on the eastern side of central Pretoria with an estimated population of  $\pm 750\ 000$  (Central Statistics Service, 1995). It is divided into three sectors, namely Mamelodi West, Mamelodi East and Stanza Bopape (*Ballantyne, P, 2004*).

In search of a cultural norm of black people a delegation from the Pretoria Council visited Botswana where rondavel huts were seen. As such, the first houses built in Mamelodi in 1947, were replicas of these huts. After much dissatisfaction displayed by the community, this 'lapa' plan was discontinued and replaced with four bedroom houses, more commonly known as 'match box' houses. Most of the residents of Mamelodi had been forcefully removed from mixed areas in Pretoria such as Lady Selbourne and Marabastad. 'As one study puts it "apartheid created Mamelodi as a bedroom community for black workers commuting to Pretoria"'. Residents, however, had to have special permits to live in Mamelodi (*Ballantyne, P, 2004*).

No housing took place in Mamelodi after the late 1960's until 1982 and was targeted at the high and middle income black people that were slowly emerging. The housing backlog had increased alarmingly by this stage, being fuelled by urban rural disparities and population growth from rural immigration. Some had received loans to build (part of policy to divide the black community), whilst others moving from the rural to urban areas in search of employment either stayed with relatives in the townships or in hostels. In order to deal with the increased population in these areas, those that were not awarded with loans, began to build back rooms (corrugated iron and other temporary materials) (*Ballantyne, P, 2004*).



MAP 1: LOCATION OF MAMELODI

Most black townships were faced with black on black violence in the late eighties and early nineties. However, Mamelodi was not affected by this. Its peaceful nature attracted more people to resettle in Mamelodi. The problem of housing therefore increased to far greater proportions (*Ballantyne, P, 2004*).

After the shock of the killing of 21 residents in 1986, the community (led by the Mamelodi Civic Association)

declared a rent and service charges boycott. The Council initially did not take the community seriously. In the late 1980's the Council eventually accepted the circumstances and began 'negotiations'. At this point, the arrears on taxes for services had reached alarming proportions and people were not able to pay back these backlogs once the boycotts were over. The agreement reached was to scrap the tax arrears in an attempt to encourage people to at least pay rent. Land was also made available for low income earners whilst those that were not allocated a piece of land, began to invade municipal land (*Ballantyne, P, 2004*).

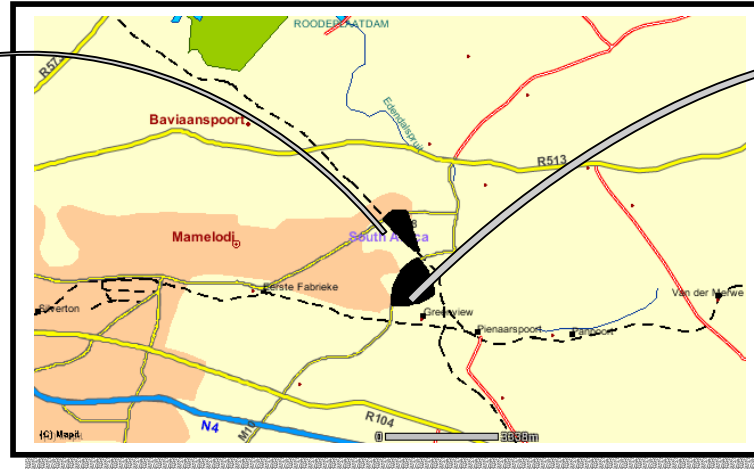
With the arrival of the new government, the housing backlog was more than 20 years old. As a result, not much could be done to change the existing situation. Joint action was taken, between the communities and the Pretoria Metropolitan and City Council in this regard (*Ballantyne, P, 2004*).

Apartheid has left behind unemployment rates in Mamelodi that stand at 60% and an estimated 150 000 people that live in informal settlements (*Ballantyne, P, 2004*). Extensions 10 and 6 have developed over a period of harsh reality. The present government has provided housing in these areas in the late 1990's where the status quo of these two areas are discussed in the following section.

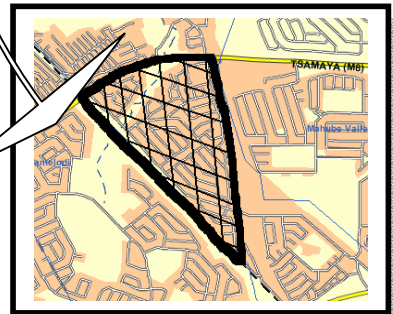
CHAPTER 2: METHODOLOGY

3.3. SELECTED CASE STUDY AREAS

3.3.1. LOCATION



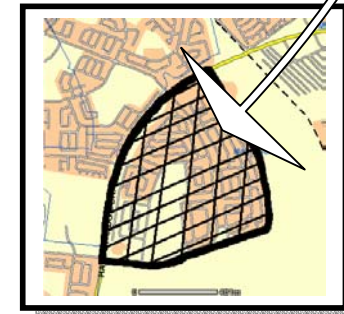
EXTENSION 10



MAP 3: EXTENSION 10

Extension ten has a triangular shape. The railway line forms the south western border with another major route (Tsamaya Road M8) forming its northern border. Mahube Valley and Mamelodi extension 7 is the eastern border.

EXTENSION 6



MAP 4: EXTENSION 6

Extension six also took the form of a triangle and was located along a major route (Hans Strydom Drive) through Mamelodi East. Hans Strydom Drive formed the western and north western border with a railway line to the east. Immediately south is land belonging to Spornet.

3.3.2. SIZE

It is approximately 22.22ha with a total of approximately 655 stands (Minty, 2002). Erven are approximately 208m<sup>2</sup> in size with dimensions of 16m x 13m.

Extension 6 is approximately 48.7ha. It has 1667 stands (Minty, 2002). The erven within this area are approximately 176m<sup>2</sup> in size (11m x 16m).

Housing provision began in 1994 and majority (provision of roof structures and services) was completed in 2000 (Minty, 2002).

Housing provision began in 1997 and majority (site and service) was completed in 1999 (Minty, 2002).

**4. SUB-PROBLEMS**

## 4.1. SUB PROBLEM 1:

**WHAT WERE THE ORIGINAL SPATIAL CONFIGURATION OF HOUSING PROVIDED AND THE PROCESS OF DELIVERY?**

The aim of this sub problem was firstly, to find out what type of housing was provided to each case study area and its spatial configuration. The data needed was therefore aerial photographs of the case study areas that reflected the original form of housing provided. Background information of the case study areas was also needed with specific relation to the process and provision of the type of housing. Such information needed to be acquired from interviews with relevant people. This sub-problem therefore required the use of primary (background information) and secondary data (aerial photographs, and layout plans).

The analysis of the data was also twofold: *firstly*, the data acquired from the interviews was cross-checked between one another and with the aerial photographs to ensure consistency. The data was then collated to answer this sub-problem. *Secondly*, a process of tracing the building footprints from the aerial photographs was conducted. The completed product was a 2D representation of the spatial configuration of the original provision of housing.

## 4.2. SUB PROBLEM 2:

**HOW HAS THE ORIGINAL SPATIAL FORM OF HOUSING CHANGED OVER TIME?**

Once the original form of housing provided in each area had been captured, further analysis was required. The aim of this was to determine how the structures and their spatial configuration had changed since being built. The data needed had to address the following aspects: **firstly** the physical changes over time that looks at how the original structures had changed, and **secondly** the building activities related to this. These two aspects have sub issues related to them. The physical changes required determining how the structure had changed in configuration, use of materials (temporary and permanent), size, and height. It also focused on the placing of the new buildings, how the space in front of the structures were used, how the space at the back of erf was used, changes in erf dimensions, and perimeter fencing.

Such information was gathered from the interpretation and tracing of the new building footprints from the aerial photographs, interviews with the residents, and observation. The information was presented in groupings, i.e. the typologies that were developed. Comparisons were made between each household in their specific typologies and between each of the typologies.

## 4.3. SUB PROBLEM 3:

**WHAT ARE THE USES WITHIN THE ERVEN AND STRUCTURES TODAY?****Phase 1:**

The aim of this sub problem was to examine the use of space of the erven. This had implications for the placing of structures and the amount of space needed in front and behind the structures. In order to do this, the analysis of the erven and their usage was necessary. With that in mind, activities such as gardening, rental housing, commercial activity, services, agriculture, and parking areas were closely looked at, not only in terms of the variety of activities but also in terms of the actual positioning of such activities in relation to the erf. Such data were acquired through the questionnaires and via observation.

The data had been analysed using excel spreadsheets and were presented in terms of the typologies that were developed. Comparisons were made within each typology, as well as between typologies.

**Phase 2:**

In order to fill gaps in information gathering (due to the absence of head of households, which didn't allow for the completion of the interviews, etc.) a second phase was conducted. It allowed for the cross-checking of the information gathered.

## 4.4. SUB PROBLEM 4:

**WHAT FACTORS HAVE IMPACTED UPON CONSOLIDATION?**

The intention of this sub-problem was to extract the factors that have influenced consolidation in both areas through the analysis and synthesis of all the information gathered through the interviews and observation.

The intention was to develop a profile of both the structures and the residents because of the influences of one upon the other and of both upon the process of consolidation. It is important to understand the background of the people housed in order to better understand the decisions that they made in relation to the extensions to their homes. Such factors at play were family size, income levels, the use of space etc. The data needed was acquired through the questionnaires that were developed (primary data). The questionnaires are included as

Annexure A1 and A2. The factors that affect consolidation have been analysed between households in the respective typologies and have been presented to answer questions of affordability, the products produced, the process followed, the use of space on the erven and within the structures, and the public/private interface. It has also been presented at the end of the comparative chapter where a more detailed effort is made.

## 4.5. SUB PROBLEM 5:

**WHAT ARE THE PERCEPTIONS AND LEVELS OF SATISFACTION OF THE RESIDENTS?**

An important distinguishing factor between the two study areas and the type of housing provision is the level of satisfaction of the residents and their perceptions. The aim is to determine how happy people are with being provided with roof structures compared to that of site and service schemes or vice versa.

The data needed for this sub-problem was with the residents of the two areas. The data was acquired through interviews and the use of the questionnaires developed.

## 5. SYNTHESIS

At various points in the analysis and answering of the sub-problems, data from across the various sub-problems were used, i.e. a mixture of information was used.

## 6. DATA

There are two types of data acquired for this study, i.e. primary and secondary data. Primary data is acquired directly from the source whilst secondary data is data that is already captured in some form, e.g. maps, etc.

### 6.1. PRIMARY SOURCES OF DATA

- a. Background information on the case study areas;
- b. Socio-economic profiles of the residents (family size, employment and income, expenditure, etc.);
- c. Building activity (how many structures they built, the materials used, the cost of materials, the transport of the materials, who constructed them, etc.);
- d. The land use and use of space (denotes how the residents make use of their erven and the space within their homes);
- e. Qualitative profile and background (period of occupation, how the residents feel about their new homes compared to the previous one, do they feel supported by government, how do they value a home in terms of internal and external characteristics, etc.)

#### 6.1.1. BACKGROUND INFORMATION

The background information of the case study areas selected had to be gathered and interpreted. The parameters of this information included the development of Mamelodi, the history of the formation of the study areas within Mamelodi, the type of housing provision within each area, the process of housing provision, and the problems and other issues associated with it. Gathering of the background information required an informed process of interviews with relevant people (people that had sound knowledge of the area) as well as internet searches. Two such people from the Pretoria Council were selected for the interviews, which were conducted on separate occasions. The information gathered via this process was merely captured and used in the dissertation where appropriate (refer to sub-problems).

#### 6.1.2. INTERVIEWS AND OBSERVATIONS

This was a more intense exercise of narrowing down to a concise set of questions in the form of a *questionnaire* aimed at extracting the necessary and vital information (displayed as numbers b. to e. above), required to adequately satisfy the expectations of the derived sub-problems. The availability of the contact person, representative of the area being visited, and residents determined the number of visits conducted within the timeframe.

It became necessary to test out the prepared generic questionnaires in order to determine their applicability and appropriateness. Initially it was tested in the first case study area (extension 10) upon which changes were made to better align the questioning to the uniqueness of the area in which it was applied. Such incremental changes to the questionnaire were made along the way during the interviewing process to ensure that the maximum and appropriate information could be captured. Due to the uniqueness of both areas, the questionnaire did call for the inclusion of one or more questions in the second area, extension 6.

### 6.2. SECONDARY SOURCES OF DATA

- a. aerial photographs, and
- b. layout plans.

#### 6.2.1. AERIAL PHOTOGRAPHS AND LAYOUT PLANS

The aerial photography purchased from AZUR represented Mamelodi extension 10 and 6 in 1999/2000. The photographs were acquired for the extraction of the initial provision of housing and the most recent state of settlement in the form of building footprints. The intention was to compare the structures that had existed from the initial stage of housing provision to the present state (depending on the availability of up-to-date aerial photographs). This gave a clear representation of the change of the physical form of the structures over time.

The formal (permanent structures), informal structures (temporary) and the development till 1999/2000 could be viewed from these aerial photographs. The formal structures were distinguishable from the informal ones merely by the regularity in shape and smoothness of the lines of the building footprints. The temporary structures also appeared multi-toned in comparison with a building footprint that appeared to have a rougher edge.

The capturing of the data from these photographs involved a process of tracing the built form and presenting them as diagrams. It **firstly** entailed the extraction of the type of housing provided by government.

The **second** involved the extraction of the structures built thereafter by the residents. Therefore, a comparison between the initial provision until the year 1999/2000 can be made to note the progress, or lack thereof, made by the residents. The capturing of this data also reflected the spatial configuration of the layouts. The layout plans of the two study areas assisted where the interpretation of boundary lines and fences weren't clear on the aerial photographs. The aerial photographs also served as a cross check for information gathered via the interview process with the residents.

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6.3. TIMELINE AND INCREASED FOCUS OF DATA

The data required for this study has been clearly defined into three categories, i.e. background information and layout plans, aerial photographs, and interviews and observations. Such data, if presented in the order of acquisition seemed to be representative of a timeline and increasing focus: the *background information* reflects that of the initial provision of housing in the two study areas and the movements of residents into these areas. This information dated back to between 1994 and 1997. The *layout plans* gathered were reflective of the period before housing provision could be implemented, whilst the aerial photographs illustrated the most recent of the areas, thereby representative of changes since the date of occupation until the year 2000. Lastly, interviews and observations enabled the gathering of information that reflected the process carried through, i.e. consolidation phase that resulted in the present situation. Therefore, this type of data not only presents the consolidation process but also the present status of the residents, their homes, and their erven. This data is therefore representative of 2003 and the period between 1994 and 2003. The movement was therefore from the past to the present:


	AGE OF DATA	DATA	SYNTHESIS OF DATA PROVIDES INFORMATION:
	2003	Interviews and observations	<i>Between 1994 - 2003 &amp; 2003</i>
	1999 & 2000	Aerial Photographs	<i>1999 &amp; 2000</i>
	1994/1997	Background information and layout plans	<i>1994/1997</i>

FIGURE 6: Synthesis of data

The increasing focus from the study areas (background information and layout plans); to the overall housing structures and erven (aerial photographs); and finally down to the details of the residents, their homes, and their erven (interviews and observations) can be seen. With an increase in focus there was also an increase in detail.

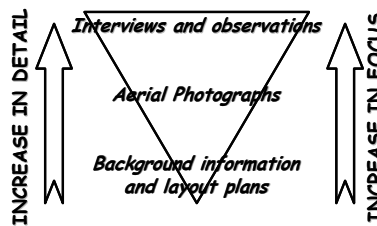


FIGURE 7: Focus and detail

7. SAMPLING

7.1. SAMPLING METHOD

Three sampling methods had been employed in this study, namely purposive sampling, random sampling, and stratified sampling.

**Purposive sampling:** (subjective or hunch sampling), in which samples thought to be typical of the population as a whole are chosen, usually for convenience, arbitrarily and subjectively by the researcher (Goodall, 1987: 420). In the case of this study, sample areas within each extension were selected. A large enough area was selected, in both cases, to be representative of the entire extension/s.

**Random sampling:** a way of choosing a smaller number of 'subjects' from a larger population, with each member of the population having an equal chance of being chosen, through the use of an unbiased selection method. Each subject in the population is given a number and then the sample is chosen by a random method. The sample is usually generated using random number tables, though picking names from a hat would also be effective. The benefit of using a random method is that it usually generates a group which is representative of the population as a whole (Lawson & Garrod, 2000:232).

Random sampling was used to identify the number of households to be interviewed. Within extension 10 the number of households decided upon to interview was fifteen and within extension 6, twelve. It was originally decided that each area would have the same number of households interviewed, but as a result of the typologies developed (discussed below), the number of households interviewed within extension 6 appeared sufficient to be representative of the area and the typologies developed.

**Stratified sampling:** a form of sampling in which the *survey population* is first divided into mutually exclusive groups and then a *sample* is drawn from each, the size of the sample in each being proportionate to the number of members



of that group in the survey population. For example, a survey of a college in which there were 2000 students, equally divided between males and females, might be conducted by drawing a simple random sample of 100 male and 100 female students. However, if the students were drawn from three distinct and very different neighbourhoods, in the proportion of 1000 students from neighbourhood A, 800 from neighbourhood B and 200 from neighbourhood C, the students could first be divided into three groups, A, B and C, reflecting their home neighbourhood. A sample could then be drawn from each group, with 100 from A, 80 from B and 20 from C, with equal numbers of male and female students in each, assuming that each group had a roughly equal balance of males and females. This arrangement is likely to be more *representative* than a *simple random sample* (Lawson & Garrod, 2000:276).

Typologies were developed, to represent the mutually exclusive groups necessary for stratified sampling. Samples were then selected from these typologies. Within typology 10, three typologies were developed (refer to 5.3.), which allowed for the number of households decided upon to be split between the three typologies, i.e. five households per typology. Four typologies had been developed within extension 6 (refer to 5.4.). This allowed for three households to be interviewed for each typology.

The households selected were, therefore, dependent on the typologies developed and the number of households to be interviewed per typology. This required a site visit to identify the households to be interviewed.

## 7.2. SAMPLING PROCESS

Upon being satisfied with the appropriateness of the questionnaire, the process of interviewing was determined by the uniqueness of each area. The aim was to interview between ten and fifteen households within each area. This total was based on the premise of categorisations (of the types of structures). The categorisations were meant to be representative of the incremental stages of growth of the structures from the provision of the housing until now and were directly derived from the type of housing delivery that took place in each extension. They are therefore not generic categorisations but are representative of the specific area. The households selected in both areas can be seen in the following:

### 7.2.1. SAMPLING IN EXTENSION 10

Extension 10 was provided with roof structures and services. The total number of stands was 655, of which 15 were selected for the interviewing phase. It was clear from the site visit that all roof structures were in certain phases of development. This made the categorisation possible, which reflected a gradual progression to a complete home. Therefore, by examining the different phases, the encouraging and inhibiting factors that lead to a completed home could be pin-pointed.

- **Typology 1:** a roof structure with no permanent additions, i.e. looks the same as when provided by government,
- **Typology 2:** a roof structure with permanent additions, but is an incomplete structure, and
- **Typology 3:** a completely enclosed roof structure.

The placing of the structures on the erven was also examined. Fifteen interviews were decided upon, i.e. five of each typology. The process of interviews involved driving through the streets and identifying suitable structures with available household members.

### 7.2.2. SAMPLING IN EXTENSION 6

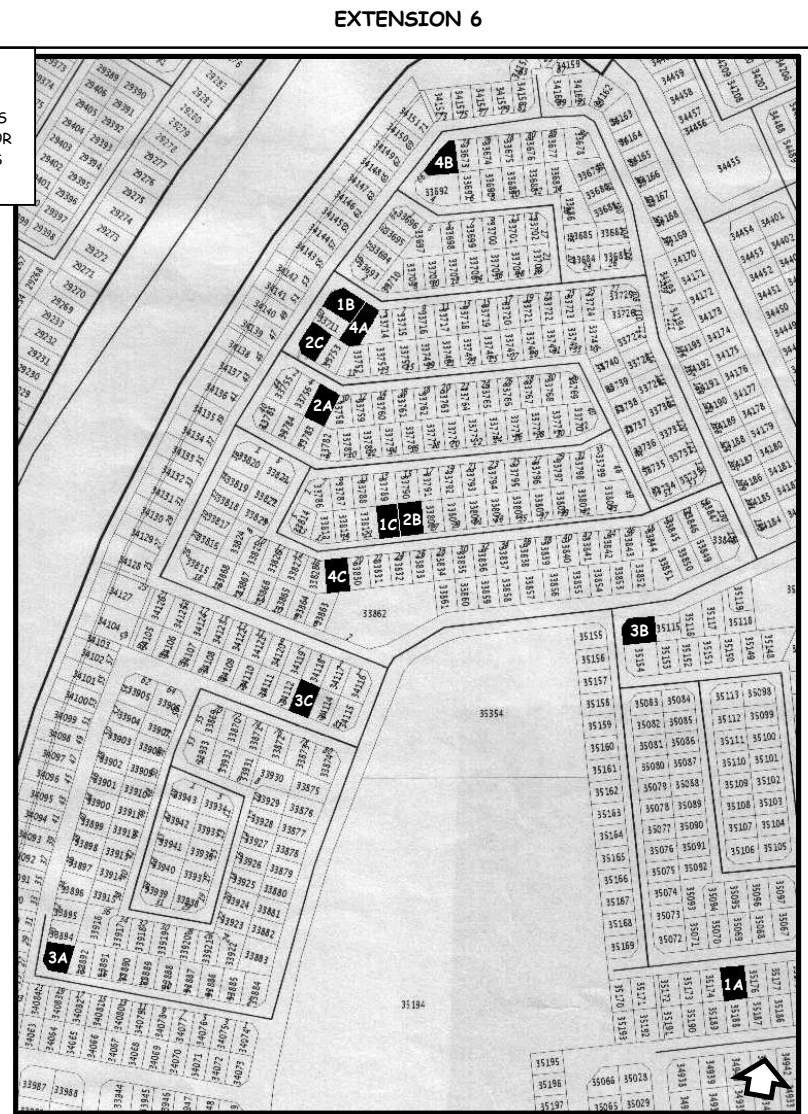
Extension 6 was a site and service scheme with 1667 number of stands. 12 were selected for the interviewing phase. The criteria for categorisation differed in this case. The absence of the provision of a top structure by government meant that, in terms of the phases of development, one would have two, i.e. toilets with shacks, and the completed home. People in the phase of constructing permanent homes were not available for comment; therefore, another criterion had to be added to extract other information of importance, i.e. the location of the structures on the erven:

- **Typology 1** represents structures that have been positioned at the back of the erf.
- **Typology 2** is representative of structures placed at the side of the erf and
- **Typology 3** is characterised by structures placed at the front of the erf.
- The final, **typology (4)**, reflects complete houses.

The toilet and shack phase was therefore broken up into three categories. Three interviews of each typology were conducted, totalling twelve interviews with the same process as mentioned above in extension 10.

CHAPTER 2: METHODOLOGY

7.3. HOUSEHOLDS SELECTED FOR INTERVIEWS



NOTE: The households have been numbered according to their typologies and correspond to the presentation of data in following chapters for purposes of consistency.

