CHAPTER 6: COMPARATIVE ANALYSIS

1.   **INTRODUCTION**
It has already been thoroughly discussed how the typologies were formulated. For purposes of this comparative exercise, it would be imperative to firstly recap on the typologies:

EXENSION 10
Typology 1 a roof structure with no permanent additions,
Typology 2 a roof structure with permanent additions, but is an incomplete structure, and
Typology 3 a completely enclosed roof structure.

EXTENSION 6
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 typologies within extension 10 were developed with gradual progression of consolidation in mind by analysing the state of the roof structures, whilst the typologies within extension 6 were developed with the placing of the structures in mind since the area was provided with no top structure, just a water closet and services. However, although the placing of the structures was the focus, a developmental progression could also be observed. This can be viewed within the trends between these four typologies observed, which inevitably highlight the characteristics of each typology.
The aim of this chapter, hence, is to arrive at factors that affect consolidation. This would require the extraction of trends (which will reveal differences between the typologies), an analysis of the use of space, an overall picture of the two case study areas. The analysis of the use of space is specifically focused whether space has been used efficiently. A similar analysis was done in chapter 4. The difference with doing this analysis at this point is to analyse the typical patterns that have been derived from the typologies.
However, another two components will also be added to this section, i.e. hypotheses will be tested and perceptions and preferences of residents are presented.
In an attempt to add to previous studies done hypotheses have been developed (below). It is a combination that has been drawn from previous studies (refer to Chapter 3, sections 5 and 6) and general assumptions made of the process of consolidation in relation to this study.

1.   Larger families imply less consolidation
2.   Less income implies less consolidation
3.   More time implies greater consolidation
4.   More expenses imply less consolidation
5.   More savings implies more consolidation
6.   Rental activity is prominent in the initial stages of consolidation

7.   Lack of building skills implies less consolidation
8.   High cost of building materials implies less consolidation
9.   Uses within the structures increase with formality
10.   Complexity in the use of the erven increases with formality
11.   The area occupied by the houses / structures increases with formality

This type of analysis will be done at different levels, i.e. typology level and extension level. Firstly, trends are developed from the characteristics of the typologies, which give a clear representation of the differences between typologies. Graphs have been added to assist visually. Secondly, an overall picture of the two case study areas is presented in the various categories (refer below). The final section draws on these two sections (trends and overall picture) and chapter 5 to identify factors affecting consolidation. The factors derived from the trends, the analysis of the use of space and chapter 5 are analysed and presented within the framework of profiles of non-consolidators and consolidators, whereas the factors identified via the overall picture are presented immediately after the **Consolidators**, the reason being that some factors are better seen at a higher level than an in-depth level. The hypotheses presented above will then be tested, where the first six will apply to the profiles of consolidators and non-consolidators and the last five, will be done at a higher level (case study areas as a whole). The final section about the perceptions and preferences of residents will reveal how the residents feel about housing in general and about the housing that has been provided.

The structure of this section is as follows (refer to figure 50):
• Trends are exposed and discussed in comparison to each typology;
• The analysis of the use of space is done;
• An overall picture of the study areas are presented and consists of:
    • The Socio-economic Profile
    • The Building Activity Profile
    • The Use of Space

• Factors affecting consolidation are then extracted with the use of profiles of consolidators and non-consolidators and an overall picture;
• The hypotheses set up at the beginning of the chapter, will be tested;

CHAPTER 6: COMPARATIVE ANALYSIS

- The perceptions and preferences of households serve as the conclusion to this chapter.
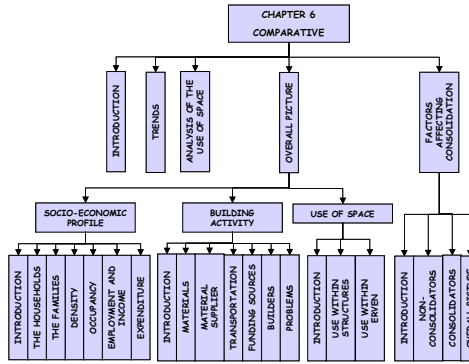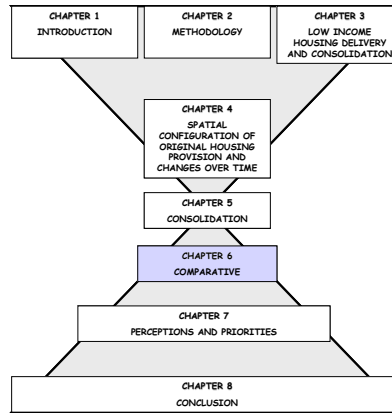
FIGURE 50: Structure of chapter

FIGURE 51: Position of chapter within dissertation

The figure above indicates the position of this chapter within the framework of the dissertation.

## CHAPTER 6: COMPARATIVE ANALYSIS OF TYPOLOGIES

EXTENSION 10	EXTENSION 6

2. TRENDS

2.1. Family size: In general family sizes tend to lessen. Typology 1 had an average family size of 5, typology 2 had an average size of 7 and typology 3 an average of 4.


CHART 1a: Family size
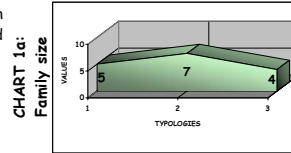
2.2. Number of sources of income: The sources of income tend to decrease as well from 2 sources to 1.


CHART 2a: No. of income sources
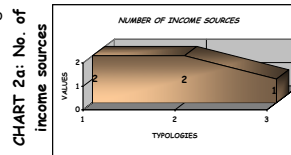
**2.3. Tenants:** The only typology that has renters are in typology 1.

CHART 3a: Tenants
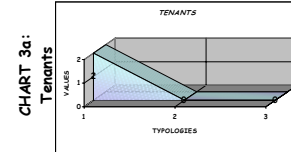
2.4. Employment: In terms of formal employment, typology 2 has the most significant percentage (88%) compared to the others. Typology 1 has the least (30%) and typology 3 stands at (50%). Just like in family size, there is a rise from typology 1 to 2 and then a decline to typology 3.


CHART 4a: Employment
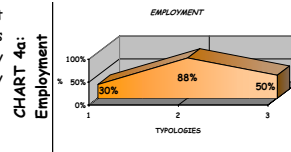
2.5. Expenditure: Typology 3 has the most expenses (11). The number of expenses decreases to eight in typology 2 and then rises to nine in typology 1.

CHART 5a: Expenditure
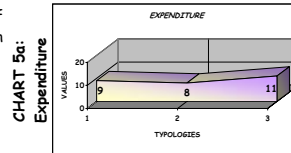
2.6. Savings: The ability of households to save increases with movement from typology 1 through to typology 3. Only one household is able to save in typology 1 and three are able to save in typology 3.


CHART 6a: Savings
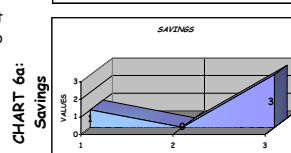
2.7. Number of extensions: Once again there is an increase in the amount of additions built from typology 1 to 2 and then a decrease in typology 3. The reasons for such a pattern could be explained by the socio-economic issues:


CHART 7a: No. of extensions
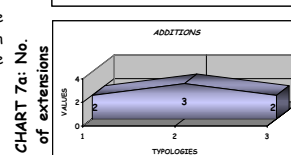
2.1. Family size: Family size generally starts small in the first two typologies and increase in typologies 3 and 4. However, typology 3 has the largest family size (8).


CHART 1b: Family size
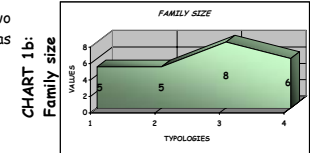
2.2. Number of sources of income: Sources of income appear almost regular in typologies 3 and 4 (2, 3). Typology 1 has the smallest number of income sources (1) and typology 2, the most (5).


CHART 2b: No. of income sources
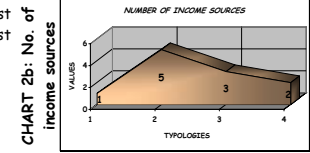
2.3. Tenants: The numbers of households that have tenants increase from 1 to 2 then back to 1 when moving from typology 1 to 3. There are no tenants in typology 4.


CHART 3b: Tenants
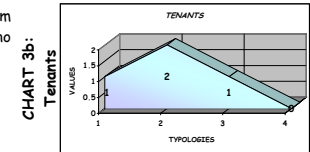
2.4. Employment: In terms of formal employment versus informal employment, the percentage of formal employment is the most in typology 1. It decreases in typologies 2 and 3 (57%) and increases again in typology 4.


CHART 4b: Employment
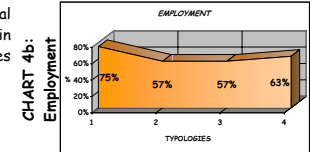
2.5. Expenditure: On average typology 2 to 4 have 11 expenditure items and typology 1, 10.

CHART 5b: Expenditure
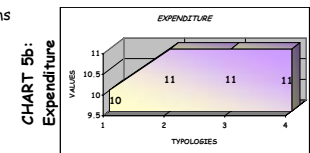
2.6. Savings: The ability of households to save reveals that it increasingly becomes possible with movement from typology 1 through to 4. In typology one, one household is able to save, whilst in typology 4, all are able to save.

CHART 6b: Savings
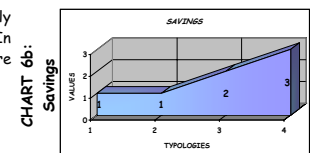
2.7. Number of extensions: Tend to be few in typology 1 and 4. Typology 2 hosts many more extensions, on average 4 were made. On average though, typologies 3 and 4 have made 3 extensions and typology 1, an average of 2. However, the household with the most additions made were noted in typology 2 (6 additions) and the least in typology 1 (1 addition). The reasons for such a pattern could be explained by the socio-economic issues:

CHART 7b: No. of extensions

CHAPTER 6: COMPARATIVE ANALYSIS OF TYPOLOGIES
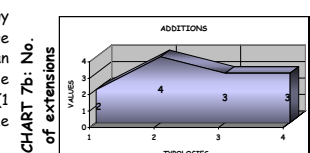
EXTENSION 10	EXTENSION 6

EXTENSION 10

a. Typology 2 has made more additions largely as a result of the percentage of formal employment in comparison to the other typologies. The other socio-economic aspects appear similar to the other typologies. The family sizes in this typology are larger, and the number of expenses appears the least here, but the number of sources of income is the same as those in typology 1.

b. Typology 1 reflects households with medium sized families (smaller than those of typology 2), on average two sources of income each and many expenses (one more than typology 2). This typology however has produced on average, two additions. This can be accounted for by the type of employment, i.e. only 30% is formal employment as opposed to 88% in typology 2.

c. Typology 3 displays a much smaller family size on average compared to that of typology 2. The number of expenses is much more and the income sources are fewer in comparison to typology 2. This typology was however able to save much more than that of typology 2, but has still managed to produce two additions on average. This can also be accounted for by the type of employment. Typology 3 has 50% of formal employment compared to the 88% in typology 2.

In this case, where comparisons are made at a higher level, the type of employment comes into play as a major role player.

2.8. Characteristics of additions:

a) In terms of the *size* of additions, it tends to increase from typology 1 to 3. The average addition size from typology 1 through to 3 is as follows: 21m², 27m², and 39m². Within typology 2 and 3 however, it is possible to distinguish between permanent structures and temporary ones. When looking at the temporary structures, the increase in size is visible: typology 2 has an average size of 17m² whilst typology 3 has an average of 19m². The same applies for permanent structures: typology 2 has an average size of 46m² and typology 3 has an average of 48m². The difference may not be substantial but an increase is noted.
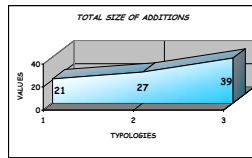

CHART 9a: Temporary addition size

CHART 8a: Total addition size

CHART 10a: Permanent addition size

b) The *coverage* depicts a different picture. Typology 1 is still the smallest but typology 2 is the largest. The figures appear as follows: 17%, 38%, 35%. The larger percentage in typology 2 can be accounted for by the average area of the temporary structures. This value is far greater than in typology 3 as a result of typology 2 having more temporary structures. Therefore, the coverage of temporary structures in typology 2 is 16% whilst in typology 3 it is 10%. The average coverage of permanent structures in typology 2 is 23% and in typology 3 it is 30%. This is indicative of more permanent structures within typology 3.
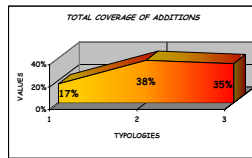

CHART 12a: Temporary addition coverage

CHART 11a: Total coverage
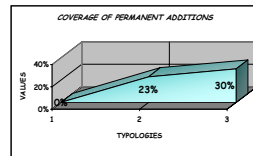
CHART 13a: Permanent addition coverage

EXTENSION 6

a. The limited amount of extensions could be accounted for by the average family size of 5, minimal source of income (1), numerous expenses, and the inability of families to save even though the type of employment inherent in this typology is formal. This displays the irrelevance of the type of employment with regards to consolidation.

b. Typology 2 displays more additions due to the same family size, a larger number of income sources (5), numerous expenses, and the inability of households to save. In this case formal employment is almost 20 percent less, but this typology was most successful in the number of additions produced. Type of employment is still not a factor at play in the process of formalisation. In the comparison between typology 1 and 2, 2 displayed similar and exact figures of typology 1 in relation to family size, the number of households able to save, and the number of expenses. The only distinguishing differing factors is the amount of income sources and the type of employment. The lack of relevance of the type of employment therefore exposes the number of income sources as the beneficial factor in typology 2.

c. Typology 3 displays a large family size on average (8) with three sources of income, 11 expenditure items where two households are able to save. Therefore, in comparison to typology 2, typology 3 has a larger family size, less income sources, one more expense, and one more household that is able to save. Although it has an advantage of two households being able to save, the other factors limit the ability to make more additions. There are other factors, however, that come into play, i.e. the type of additions made (refer to type of extensions).

d. Typology 4 is quite similar to typology 3 except the average family size is lower, income sources amount to 2, all households save and the formal employment percentage is greater. Typology 4 has more money to spare than typology 3 although the number of additions produced in both typologies is similar. In comparison to typology 2, family sizes are similar, number of income sources is fewer, the number of expenses is identical, all households are able to save and the formal employment percentage is greater. Typology 4 has an advantage of all households being able to save, but typology 2 has a smaller family size and more income sources. In this case, the type of additions made also affect the number of additions produced (refer to type of extensions).

2.8. Characteristics of additions:

a. The *size* of additions generally reflects an increase from 14m² in typology 1 to 31m² in typology 4 with a gradual change between them.

CHART 8b: Total addition size

b. The same applies for the *coverage*, i.e. from typology 1 to 4, it appears as follows: 19%, 28%, 35%, and 40%.

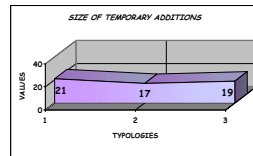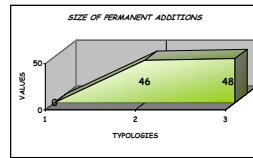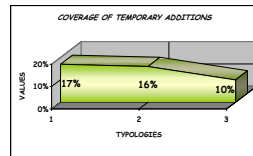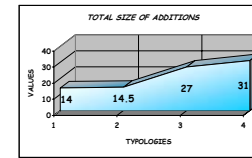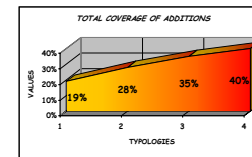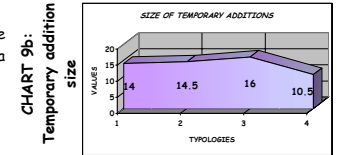CHART 11b: Total coverage
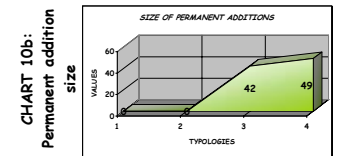

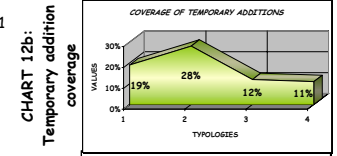CHART 9b: Temporary addition size

CHART 10b: Permanent addition size

CHART 12b: Temporary addition coverage
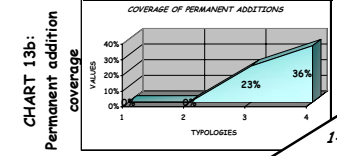
CHART 13b: Permanent addition coverage

CHAPTER 6: COMPARATIVE ANALYSIS OF TYPOLOGIES

EXTENSION 10	EXTENSION 6

EXTENSION 10

c) The *occupational densities* paint a picture of a gradual increase from 6m²/person, to 12m²/person, and finally to 19m²/person. The amount of space occupied by the structures increase from typology 1 to 3. Family size also tends to decrease in size with movement from typology 1 to 3.
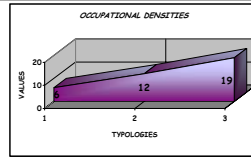

CHART 14a: Occupational density

2.9. Type of extensions: When looking at the type of additions made a trend can be extracted. The trend displays a progression from initially building temporary structures in typology 1 to the construction of more permanent structures in typology 3. Typology 1 is characteristic of temporary structures (90% had been built). Typology 2 reveals a smaller percentage of temporary structures and more permanent structures (64% temporary and 36% permanent). In typology 3, 55% of structures built were permanent structures. The remainder were temporary structures. Therefore, with progression from typology 1 through to typology 3 the ability of households to consolidate increases.
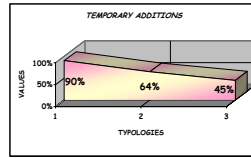

CHART 15a: Temporary additions

1.10. Level of consolidation: The type of structures produced reveals that typology 3 produced the most permanent structures. Hence, typology 3 is the most consolidated and typology 1 is the least. This can be attributed to the fact that typology 3 has the smallest family size and most households have the ability to save. 50% of the employment is also formal. Typology 2 reflects larger family sizes with no one able to save, but has 88% formal employment. Typology 1 has medium sized families with one or two households that are able to save, but only 30% formal employment.
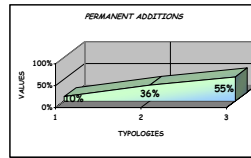

CHART 16a: Permanent additions

2.11. Time of arrival: People within typology 1 arrived between 1995 and 1997. Within typology 2, people had arrived around 1995/6. One household had arrived in 1992. Residents of typology 3 arrived between 1996 and 1997. Each typology reflects a stage in the process of consolidation and all had arrived within the same time frame. Considering that all households had arrived around the same time, this eliminates time as a factor.

2.12. Time taken between extensions: The time taken between additions reveals the priorities and needs of people. People had taken between one and two years to make additions within typology 1. Only one household had taken four years between additions. This reflects minimal time taken to save and make additions as quickly as possible. Within typology 2 residents had taken a bit more time, i.e. between a few months and three years. Typology 3 reflects a bit more time taken, i.e. between a year and four years. Therefore, when constructing the permanent structure, time was taken in saving and preparing for the construction as opposed to the construction of temporary structures, which was rapid in comparison. With movement from typology 1 to typology 3, more time was spent in the construction of structures.
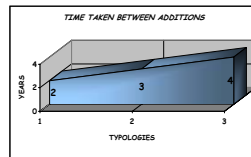

CHART 17a: Time taken between additions

2.13. Use of space within the structures: In general, the average uses within typology one reflect that of bedroom, kitchens and toilets (outdoors). With the introduction of the one permanent structure in household C, this has changed to include luxuries such as lounges, dining rooms, spaza shops, bathrooms and indoor toilets. But the typical picture presented is that of the basic needs. Typology 2 reflects households that gradually have included luxuries such as lounges and dining rooms. Typology 3 reveals a picture where all
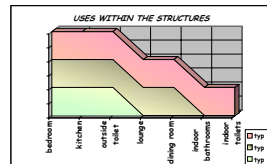

CHART 18a: Use of space within structures

EXTENSION 6

c. With such an increase in coverage, the *occupational density* also increases from 8m²/person to 13m²/person. Therefore, as families gradually approach and enter the consolidation phase, they are able to construct larger additions.
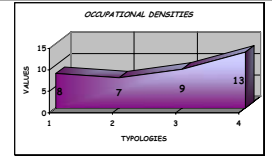

CHART 14b: Occupational density

2.9. Type of extensions: In terms of the type of additions made, typologies 1 and 2 are characteristic of temporary structures whilst typologies 3 and 4 are characteristic of a combination of temporary and permanent structures. In typology 1, 86% of the structures are temporary and 14% temporary, whereas typology 2 has 100% temporary structures. Typology 3 displays a split of 33% permanent structures and 67% temporary and typology 4 a greater percentage of permanent structures to temporary ones (63% v.s. 37%). The gradual progression from purely temporary structures through to majority permanent structures can be seen.
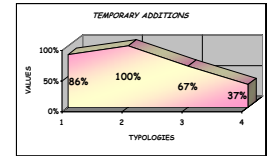

CHART 15b: Temporary additions

2.10. The level of consolidation gradually increases when moving from typology 1 through to 4. The type of structures produced in typologies 3 and 4 can also compensate for the lack of numerous additions being made, i.e. money was saved in order to build a solid permanent structure instead of building numerous smaller temporary structures.
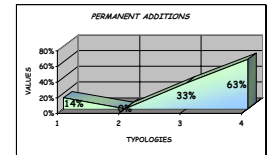Also quite evident is the transition from temporary to permanent structures increases from typology 1 through to typology 4, i.e. the first two typologies are typical of temporary structures whilst typology 3 displays the construction of one or two temporary structures before building the permanent structure. Typology 4 reveals the construction of one temporary structure before building the completed house. The gradual progression can therefore be seen.

CHART 16b: Permanent additions

2.11. Time of arrival: Time of arrival in typology 1 ranged between 1997 and 2001 and people in typology 2, around 1997. Residents of typology 3 arrived between 1998 and 2000 whilst in typology 4 people arrived between 1997 and 1998. Everyone had arrived around more or less the same time except for one or two households that arrived between 2000 and 2001, thereby eliminating time of arrival as a factor of encouraging consolidation. However, the level of consolidation differs between all of the typologies. It has been shown that typology 2 was in the best position to build additions as a result of the analysis of the socio-economic indicators, but these factors did not assist in the process of consolidation, only in the number of additions produced. Instead, typology 4 was able to consolidate at a larger rate than all other typologies. This can be explained only by the investment decisions made within the households, i.e. households within typology 4 decided to save and build the permanent structure instead of building numerous temporary ones. Prioritisation also plays a role where families need to take into consideration the comfort of their family members. It either becomes and immediate need where family sizes are too large, which would require immediate action; or households save, as in the case of people within typology 4, in order to build a more formal structure.

2.12. Time taken between extensions: The range of years between additions in each typology is indicative of the specific needs and priorities within. The ability to save is poor within typology 1 and income sources are limited, therefore money was saved over a short time period (1 – 2 years) in order to meet the shelter needs of the families. Many more additions were made within typology 2, which would explain the longer time spent between additions. The time lapse within typology 3 (few months to a year) reveals that the ability to save has enabled such short spaces of time between additions and instead of saving for a longer period in order to build more permanent structures, temporary structures were built. Typology 4 reflects the longest time spent between additions (1 to 5 years). More time was spent between additions in order to build permanent structures of good quality.
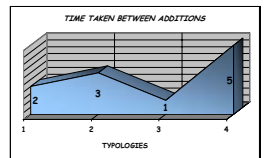

CHART 17b: Time taken between additions

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EXTENSION 10	EXTENSION 6

EXTENSION 10

households have indoor toilets, bathrooms, lounges and one household has a dining room. The gradual increase in 'luxury' uses can be seen with movement from typology 1 through to typology 3. With the increased mobility of money and the ability to consolidate, people expand their houses to include uses that are considered luxuries in the face of residents within typology 1. The initially concern for households when initiating the construction of the first few structures is that of shelter and catering for the needs of the family members. With gradual progression, priorities are being satisfied and hence change along the way, which allows for the filtering of and focus on other uses other than the essentials (bedrooms, kitchens, toilets).

2.14. Use of space of the erven: The commonality across all three typologies is uses that include gardens and parking areas for vehicles. Besides the commonalities, the focus in typology 1 is on commercial activities and renters. The survival strategies employed involve selling vegetables and goods, and renting out temporary structures. Typology 2 includes other uses such as vegetable gardens, clotheslines and the erection of tents for a bit of shelter or a carport. Typology 3 is typical of the provision of services and the conduction of commercial activity. Tents have also been erected but have been used as socialising space. Clotheslines have also been erected and storage facilities set up. Often old temporary structures become the storage facilities once the permanent structure (house) has been built. The uses from typology 1 to 3 therefore change and include more uses. The size of the housing area also changes in size, i.e. structures increase in size from typology 1 through to typology 3.

2.15. Interface: A poor attempt has been made across all households in all typologies to fence off their yards. The use of transparent wire fencing hasn't assisted in creating privacy. The households that haven't fenced off their yards have trees and plants to border the front edge.
With movement from typology 1 to 3 there is an increase in complexity. Typology 1 has very little complexity in the use of space. Typology 2 makes use of tents to break the transition from public to private space. Typology 3 makes use of tents and stairs, etc.
Transparent wire fencing has been used for the side and back boundaries. This prevents privacy from being created. In some cases, trees and plants have been used to reinforce the fence.
Roof structures have been placed close to the temporary structures. Some semi-private space is created between them. In most cases, semi-private space is created at the back of the erf behind the roof structures where they are private from the public but not from the neighbours. Typology 3 has a door at the front and one at the back, which allows interaction with the public at the front of the erf to a certain extent whilst accommodating privacy at the back. The need for privacy becomes more evident with movement from typology 1 through to 3.

2.16. The process of development of the typologies reflects a progressive change from initial stages of settlement through to final stages of formalisation. As such, typology 3 represents the stage reached when progress is taken further from typology 2. The same would apply for typology 2 and 1, where typology 1 is the beginning of the entire process of development. With this in mind, the following diagrams below represent the change in development: Households within **typology 1** have built temporary structures at the back of the erven in anticipation of the construction of the permanent structure in a few years. With the maximisation of space made for the future house, government provided roof structures and water closets for the residents. Two types of development can be observed based on the placing of the roof structures:
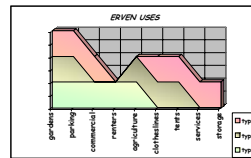

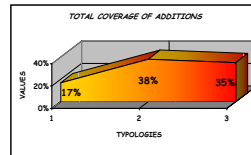CHART 19a: Use of space of the erven
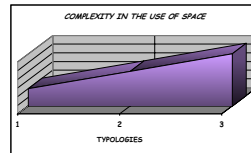

CHART 20a: Coverage of additions
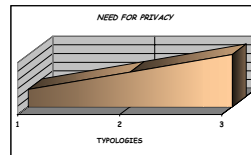

CHART 21a: Complexity in the use of space

CHART 22a: Need for privacy

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2.13. Use of space within the structures: Typology 1 reflects a very simplistic way of using space, i.e. the basic needs are catered for. Only kitchens and bedrooms are used. As one moves to the next typology, one notices a bit more complexity. Additional uses such as lounges and tents are present with the noticeable double usage of other space. In all cases, kitchens have been combined with bedrooms. This typology also houses the most tenants. Typology 3 sees various other uses added on, such as storage, bathrooms, and lounges. Finally, typology four introduces all other uses. This is where all households have the luxury of almost every usage allocated within their homes. The gradual complexity with the introduction of various uses can therefore be seen with movement from the initial typology through to the last. The amount of space used for housing increases.

2.14. Use of space of the erven: Immediately from the observation of the four typologies some differences emerge. Firstly, the use of space for housing seems to increase as one moves from typology 1 through to typology 4. The prominent housing use within the last typology is directly related to the fact that this is the final phase where people have constructed their permanent homes. The importance of the house is therefore most important.
Secondly, every household within typologies 1 to 3 have diverse usage of space, but typology 4 has fewer uses. This can also be attributed to the emphasis on the house.
With more inspection with regards to each usage, gardening occurs across all typologies. In most cases, they are located at the front of the house, but in some cases, they are positioned at the side or at the back.
Another use that cuts across all the typologies is that of parking areas for vehicles. In each typology, interestingly, the positioning is different, except for two cases, i.e. in typology 1 it is placed at the side, typology 2 and 3 in the middle, and typology 4 in front. It is pertinent to note that space allocated for parking is not the first priority in most households. The house or structure is. All other uses are worked around the house. This can attribute to the variances. Three out of four typologies encourage commercial activities that take place either within the house/structure. Rental activity occurs often as well – two typologies are host to this. However, the positioning differs. In some cases, they are to the side and in other cases at the back.
Agriculture is practiced by a few families usually at the back or side of the erven and storage at the side as well. Other uses entail the erection of tents for carport or covering for verandas (social space) and clotheslines.

2.15. Interface: Most households make use of transparent wire fencing to fence off their boundaries. In very few cases are walls used.
The transitions from public to private space appear to be somewhat complex in typologies 1, 2, and 3 but less apparent in typology 4.
In terms of the placing of the units, a trend was also noted. Typology 1 placed their structures at the back of the erven. Typology 2 reflects that of structures placed along the back and side boundaries. Even though throughout typologies 1 and 2 the units were placed in such a manner, a desire was expressed to build the permanent structures in the centre of the erven. This desire becomes reality in typology 3 and 4 where the permanent structures are placed in the centre of the erven and evidence of maintained temporary structure reveal that these households had also planned the placing of the structures, i.e. temporary structures were placed at the back of the erven.
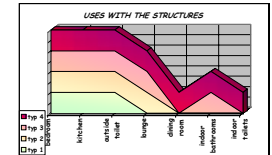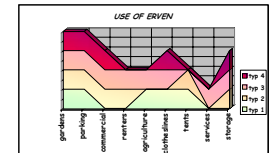

CHART 18b: Use of space within structures
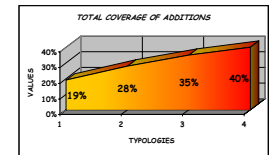

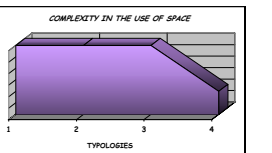CHART 19b: Use of space of the erven

CHART 20b: Coverage of additions

CHART 21b: Complexity in the use of space

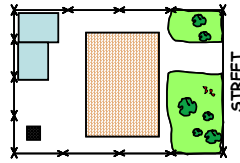## CHAPTER 6: COMPARATIVE ANALYSIS OF TYPOLOGIES

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FIGURE 52: Typology 1, pattern 1

FIGURE 53: Typology 1, pattern 2

Pattern 1: Shacks are placed at the back with roof structures centrally placed (longer side parallel to the street). No fence exists at the front.
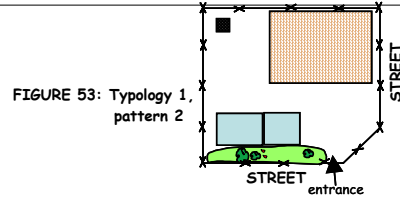
Pattern 2: Structures are used to block off one road frontage (in the case with two road frontages) and the roof structures have been placed at the back (where one road frontage is chosen as the entrance point) with gardens at the front. One-roof structures have been placed along the side boundary (dependent on the placing of temporary structures).

The roof structures have not been added to at all, they remain in the same condition as when it was provided. Gardening tends to occur mostly at the front.

Typology 2 reflects some changes to the roof structure but these are not visible via the diagrams. The other changes (not specific to the roof structure) is the additional use on the erven. Building materials tend to be stored at the back of the erven and although gardens still exist, the emphasis is not as strongly as in typology 1.
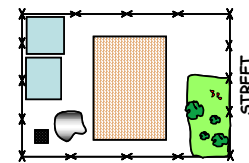

FIGURE 54: Typology 2, pattern 1

FIGURE 55: Typology 2, pattern 2

Pattern 1: Temporary structures have been placed at the back with roof structures in the centre of the erf. Gardens are placed at the entrance. Storage of building materials is done at the back of the erven.
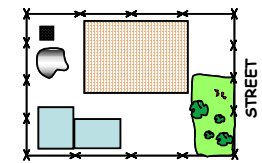
Pattern 2: Temporary structures are placed along the side and back with roof structures along the other side boundary. Gardens are present at the front and materials are stored on the erf.

Additional uses are also prevalent in typology 3, i.e. parking areas for cars are defined and previously occupied temporary structures are converted into storage facilities. In some cases, the temporary structures are kept because the transition into the new house is not complete yet or it is used to house extended family members. In this typology, the roof structure has been completely built up and people occupy the structures.
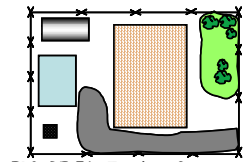

FIGURE 56: Typology 3, pattern 1

FIGURE 57: Typology 3, pattern 2

Pattern 1: Temporary structures have been placed at the back and sides of the erven. Three sides of the erven are fenced off with the frontage either fenced or decorated with boulders and bricks. Roof structures with the shorter end parallel to the road frontage have been placed along the side boundary. Vehicular parking has been accommodated on all erven, usually at the back. Storage also takes place at the back of property.
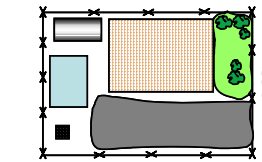
Pattern 2: Temporary structures have been placed at the back and sides of the erven. Three sides of the erven are fenced off with the frontage either fenced or decorated with boulders and bricks. Roof structures with longer side parallel to the road frontage have been placed centrally on the erven. Vehicular parking has been accommodated on all erven, usually at the back. Storage also takes place at the back.

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When looking at the placing of the front doors, it is evident that privacy was required in typology 4 and to a certain extent in typology 3. However, typologies 1 and 2 reflect the placing of structures and doors in a manner that opens out into a central open space where social interaction takes place.

Social space is also created in typology 3 but the arrangement of structures appears different to that of the first two typologies. Doors in typology 3 do however open out into these social spaces as well.
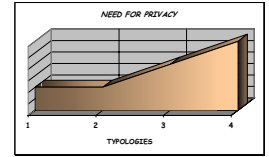

CHART 22b: Need for privacy

2.16. **The process of development** reflects a movement from the initial stages of moving in to the final stages of living in a permanent structure. In this case, four typologies will depict the process. The diagrams below will assist in the description of the process and the different typologies:

Typology 1 is characteristic of temporary structures built at the back of the erven leaving maximum space open at the front for the construction of the permanent structure in the future. This was the pattern observed:
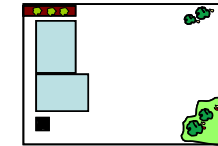

FIGURE 58: Typology 1, pattern 1

Pattern: All structures have been placed at the back of the erven leaving maximum space open in front. Gardens and trees exist at the entrance with vegetable gardens at the back.

Although typology 1 and **typology 2** are quite similar, differences are observed in the placing of the structures (along the side and back to create 'U' and 'L' shapes), which highlight another difference, i.e. the creation of the central socialising space. In terms of the developmental process, though, these two typologies can represent a single stage of development (the initial stage) since no significant changes can be observed from a developmental point of view.
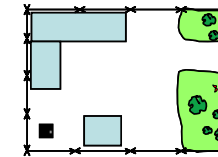

FIGURE 59: Typology 2, pattern 1

Pattern: All structures have been placed along the side and back boundaries either in 'L' or 'U' shapes creating a central space for socialising. The entire erf is fenced with a garden or trees planted at the entrance. All structures focus on the central area.

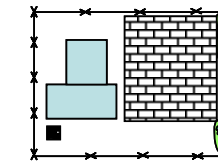FIGURE 60: Typology 3, pattern 1

Pattern: All temporary structures were initially placed at the back with the permanent structures in front leaving space at the back which is private from the public but not from the neighbours. All erven are fenced with gardens at the entrances. Tents are used at entrances to structures to create a break from public to private space and to create some socialising space.

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EXTENSION 10	EXTENSION 6
	Typology 3 (below on opposite page) represents the transition from temporary structures to permanent structures (consolidation). Temporary structures still appear at the back and the permanent structure at the front. Less attention is placed on the garden. This typology is also distinguishable by the placing of the structures on the erven and in some cases do not have permanent structures built yet.

Typology 4 is the final stage where permanent structures are built. The diagrams below depict the progression where one or two temporary structures had to be demolished to enable the construction of the house. Little or no attention is paid to the use on the erven. The focus is on the house.
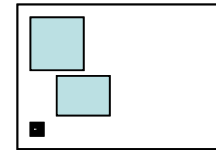
FIGURE 61: Typology 4, pattern 1, phase 1

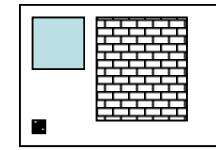FIGURE 62: Typology 4, pattern 1, phase 2

Pattern: *Initially temporary structures were placed at the back of the erven with permanent structures placed in front of them. Some temporary structures were removed in order to construct the house. Differing levels of boundary definition can be observed with little diversity in the use of space.*

The progression may not be distinct but appears very subtly.

CHAPTER 6: COMPARATIVE ANALYSIS OF TYPOLOGIES	
EXTENSION 10	EXTENSION 6

3.   ANALYSIS OF THE USE OF SPACE

As mentioned previously in chapter 4 and 5, the limited size of the erven coupled with the large family sizes requires the optimal use of the erven for living space. The type of housing provided, in this case, did not consider this, i.e. the placing of the roof structures have resulted in the inefficient use of space. From the basic diagrams above, (representatives of each typology), it is noticeable how obstructive the structure is to optimally using the erven (this analysis correlates with the analysis done in chapter 4):

Typology 1
In pattern 1 of typology 1, a large space is created for gardening by placing the structure in centre of the erven. Less living space is created with less privacy. Garden space should have been minimised by possibly placing the roof structure closer to the street, thereby increasing the amount of space behind the roof structure, which capitalises on privacy and living space.
Pattern 2 of typology 1 reflects a household with an corner property, i.e. two street frontages. The general response made to such situations is to attempt to close off one street frontage in an attempt to create privacy. The rest of the erven is left open for the construction of the future house. Roof structures were placed in odd positions in response to this. Ion some cases the roof structures were placed very close to the temporary structures, which created odd dysfunctional spaces. In the case of pattern 2, the space appears to be used efficiently.

Typology 2
Pattern 1 of typology 2 presents the same situation where large spaces are wasted at the front of the erven. In some cases the roof structures were placed too close to the temporary structures. Only very narrow passages existed between the two. Odd spaces are created again.
Pattern 2 could have been avoided if the roof structure were rotated 90° and placed closer to the street. Living space and privacy would have been optimised. In the diagram odd spaces are created that could have been avoided. Garden space occupies too much of the erven, considering that the need is for living space.

Typology 3
The same picture is presented within the two patterns in typology 3 as in typology 2. Too much space is created at the front. Space has not been optimised.

3.   ANALYSIS OF THE USE OF SPACE

Space appears to be optimally used in these cases. The placing of the water closets doesn't seem to affect the process of consolidation or the optimisation of the use of space.