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**An evaluation of the Integrated Residential Development Programme
(IRDP) as a strategy of spatial integration of low-income housing
projects. A study of Cornubia, Durban, South Africa.**

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ABSTRACT

This dissertation evaluates the Integrated Residential Development Programme (IRDP) as a strategy to address spatial integration of low-income housing in South Africa. The colonial, segregation and apartheid city resulted in the production of distorted settlement patterns that were deeply rooted in social segregation and physical fragmentation in the sense that the majority of poor, mainly black households were confined to areas on the outskirts of city centers. Theoretical underpinnings such as neoliberalism and locational theories also had a major influence on the urban spatial planning approach of South Africa. The adverse effects of neoliberalism such as principles of the ‘rolling back’ of the state and free markets result in the poor continuing to be segregated and spatially disintegrated. The poor are unable to afford to purchase land or housing in well-located areas and are subsequently deprived of its accompanying opportunities, services and amenities.

Since the turn of democracy, both South African planners and legislation have made ‘restructuring’ their top priority. The true challenge faced by them was the redevelopment of the South African city to one that was viable and enabled all citizens to engage with the qualities of a well-integrated city. As a means to achieve a well-integrated city the South African post-apartheid government introduced the IRDP. The aim of this study was to obtain detailed findings on whether or not low-income housing development has improved in terms of spatial integration since the introduction of the IRDP. The IRDP was introduced to facilitate the development of all-inclusive human settlements in well-located areas. One of the spatial integration initiatives undertaken by the IRDP was the Cornubia phase 1A housing project in Durban, South Africa.

Hence the Cornubia phase 1A housing project was used as a case study to analyse whether the IRDP can be used as an effective strategy to address the lack of spatial integration in low-income households. In order to achieve the abovementioned objective of the study, both primary and secondary data was used by the researcher, and the research was case study-based. The findings of this dissertation have shown that the IRDP is a strategy that has the potential to address the lack of spatial integration in low-income housing development in South Africa. However the results of the research have also identified gaps and room for improvement in the IRDP which is used as a basis for recommendations.

As the candidate's Supervisor I agree/ do not agree to the submission of this dissertation.

Supervisor signature:.....

Date:.....

DECLARATION

I Shaheel Sunil Singh declare that:

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

1.1 Background and context of the study

In order to understand the intentions, aims and processes of contemporary housing delivery programmes and projects in South Africa, one would argue that it is of vital importance to take a step back and familiarize oneself with the history and legacy of housing policies and delivery systems prior to 1994 and understand why and how spatial integration was incorporated in pre-1994 housing delivery programmes and projects. The manner in which housing policies and delivery mechanisms function currently is directly due to repercussions of housing policies and strategies that were pursued prior to the year 1994 (Sabela, 2014).

South Africa's history in respect of spatial disintegration dates far back to the early 1600s and can be broken down into three phases namely, the colonial city (pre- 1910), the segregation city (1910 - 1948) and the apartheid city (1948 – 1994) (Van de Merwe, 1998). Elements of segregation among the South African population arose during the period of Dutch rule between 1652 and 1806 and progressively exacerbated as time passed by. In the twentieth century, the segregation ideology was fully extended and refined (Beinart and Dubow, 1995). In this phase, social divisions took a rigid character and in 1910, the most severe racial discrimination was enforced by the white power. The enforcement of white power resulted in various legislative acts being enacted to remove and restrict non-whites in all spheres (Schoor, 1951).

The transition from the segregation city to the apartheid city took place in 1948. The apartheid city was an elaboration and intensification of the segregation measures that were previously enforced by the ruling party (Beinart and Dubow, 1995). The apartheid city was fully regulated by the apartheid government which classified where people could reside and work, according to their race. This was done by the implementation of discriminatory laws and regulations (Schoor, 1951).

The result of the colonial, segregation and apartheid city was the production of distorted settlement patterns that were deeply rooted in social segregation and physical fragmentation which restricted poor households to areas on the outskirts of city centers. The peripheral location of low-income households lacked accessibility to essential urban services and facilities such as, but not limited to, schools, shops, clinics, police stations and places of employment and recreation.

Since the turn of democracy, both South African planners and legislation have made ‘restructuring’ their top priority. The true challenge faced by them was the redevelopment, reconstruction and improvement of the South African city to one that was viable and enabled all citizens to engage with the qualities of a well-integrated city.

Among the more important post-apartheid legislative and policy instruments, programmes and initiatives relating to low-income housing delivery in South Africa that have thus attempted to create integrated human settlements are the Reconstruction and Development Programme (RDP) of 1994, the Housing White Paper of 1994, the Development and Facilitation Act (DFA) of 1995, Constitution of Republic of South Africa of 1996, Housing Act of 1997, Breaking New Ground (BNG) of 2004, Inclusionary Housing Policy (IHP) of 2007, National Housing code (2000, revised in 2009), the Integrated Residential Development Programme (IRDP) of 2009 and the Spatial Planning and Land-Use Management (SPLUMA) act no 16 of 2013. All of the above policy instruments, programmes and initiatives have contributed to the spatial planning of low-income housing development since the demise of apartheid. For the purposes of this chapter, it is only the IRDP that is discussed as it is the programme which is the focus of this study. The remaining policy instruments, programmes and initiatives relating to the delivery of low-income housing are discussed in chapter four of this study.

Prior to the initiation of the IRDP, in 1994 the Reconstruction and Development Programme (RDP) low-cost housing was an ambitious attempt on the part of the ANC to provide shelter to as many people as possible within the shortest amount of time in order to reduce the imbalances in housing delivery inherited by the apartheid regime which caused major income poverty among those affected. RDP low-cost houses were developed through the Housing White Paper and was successful in developing quantity of housing. Unfortunately the initiative encountered various failures as it continued to marginalise the poor by confining low-income households to peripheral areas on the outskirts of cities (Nell, 2015). According to Sokhela (2006) in majority of the neighborhoods, housing location failed to offer a range of amenities to its residents.

In 2013, the then public protector Thuli Madonsela presented a report on the problems of low-cost housing to Parliament’s oversight committee on human settlements. The report outlined the various defects and complaints in respect of RDP low-cost housing built under the Housing White

Paper. The defects and complaints were made with regard to the use of cheap materials and the subsequent need for some of the houses to be demolished and rebuilt as a result of being inhabitable. She further reported that in a space of one year, there had been approximately five thousand complaints received by her regarding the poor quality of the housing (Bailey, 2017).

After two years of implementing the RDP, the government adopted a macro-economic strategy known as the Growth, Employment and Redistribution (GEAR) policy in order to strengthen growth and redistribute employment opportunities (Huchzermeyer, 2001). Due to the failures of RDP low-cost housing built under the Housing White Paper, the Breaking New Ground (BNG) policy was approved by the South African Cabinet in 2004 and was formulated to respond to and remedy the various gaps identified in RDP low-cost houses and criticism received by its erstwhile low-income housing delivery approaches (Tissington and Vartak, 2009). The BNG aimed to ensure that residents of settlements are not only provided with shelter but are also able to reside in a safe and secure environment with easy accessibility to economic opportunities, safe and secure housing and tenure types and basic services (Dept. of Local Gov and Housing, 2005).

McLean (2006) states that despite the adoption of BNG, low-income housing continues to be located on the outskirts of urban areas which reinforces pre-1994 human settlement planning patterns characterised by the lack of spatial integration of poor households. This view is corroborated by Trusler (2009) and Mtantato (2011) who state that despite the talks about creating an integrated society and the need to bring people closer to economic opportunities, the BNG has not yet achieved this goal.

In 2009 the IRDP was introduced which aims to facilitate the development of all-inclusive human settlements in well-located areas. This was envisaged to be achieved by addressing the aspects of economic, social, environmental and spatial integration that were lost under the apartheid settlement planning patterns and subsequently not adequately executed in contemporary low-income housing projects. IRDP housing developments are aimed to provide convenient accessibility to urban amenities, including places of employment, as well as create social cohesion (Tissington, 2010).

The IRDP is a tool to plan and create integrated settlements that comprise of all the essential land-uses and housing types and price categories to create a truly integrated community. The first phase of the programme encompasses planning, acquiring land, establishing a township and providing serviced stands such as residential, commercial and business, comprising of various pricing types to ensure a holistic and integrated community. The second phase makes provision for beneficiaries, who for various reasons do not qualify for subsidies, an opportunity to purchase the various stands (Aigbavboa, 2014).

A study that looks at the historical background and the previous attempts by the South African government to incorporate spatial integration in housing development is necessary. Spatial integration is a complex concept which entails a variety of components being incorporated in order to be successful. An analysis of the history of spatial development patterns in South Africa allows a comprehensive understanding of the successes and failures of the implementation of spatial integration and the history assists the researcher in determining whether or not spatial integration is an achievable goal in general and whether it has been implemented successfully in the Cornubia phase 1A housing project in particular.

1.2 Problem statement

The colonial, segregation and apartheid city urban planning resulted in the production of distorted settlement patterns that were deeply rooted in social segregation and physical fragmentation in the sense that the majority of poor households were confined to areas on the outskirts of city centers (SACN, 2011; Treasury, 2011). Apartheid settlement planners did not view housing in a holistic way, rather just as a means of shelter, ignoring the other vital elements that are part and parcel of it, such as accessibility to well-located land, employment opportunities, and the creation of a good social and physical environment which in turn, has positive benefits on human well-being and improves standard and quality of life (Turok, 2001; Turok, 2012).

As a result of the spatial fragmentation created by the colonial city, segregation city and apartheid city, the South African democratic government set out to redress such fragmentation in 1994. In 1994 the post-apartheid government aimed to provide basic low-income housing on a progressive

basis and to reduce poverty by spatially integrating previously marginalized people in well-located land closer to urban centers (Todes, 2003; Sokhela, 2006; Huchzermeyer, 2011; Cooke, 2014).

In order to redress the spatial fragmentation, the South African post-apartheid government has implemented legislations, policies, strategies and programmes. Although reversing the negative settlement patterns and trends of the apartheid government had been at the forefront of the democratic government of South Africa, all that has seemed to be achieved is to further reinforce the same urban pattern characterized by spatial marginalization and social-economic exclusion of opportunities that occurred during the apartheid era, albeit inadvertently (Dhladhla, 2014; Mashazhu, 2016). While the government has shown it can deliver low-income housing on a large scale, the bulk of low-income housing projects that have been delivered are located on the periphery of urban centers, failing to consider the spatial, social, environmental and long-term economic consequences of placing low-income individuals in such secluded locations (Todes, 2003; Royston, 2003; Sokhela, 2006; Godfrey, 2011; Huchzermeyer, 2011).

This meant that many low-income individuals are subjected to long travelling distances to access employment opportunities, transport networks and basic facilities and amenities, thereby repeating the spatial patterns of the apartheid era. Moreover, the long travelling distances result in additional costs which place a substantial financial burden on these individuals. This is because many low-income individuals do not own vehicles and cannot afford to maintain such vehicles hence they are dependent on public transportation.

Even in the event of these individuals owning vehicles, they would be subjected to exorbitant transportation costs as a result of the long distances having to be travelled. This results in a large percentage of their income being spent on transportation which is not even subsidized as they live far from where municipalities are willing to offer transportation services (Gilat and Sussman, 2003; SACN, 2016). In other words, contemporary housing projects have made little contributions to restructuring and integrating the apartheid city (Charlton, 2003). The reinforcement of apartheid spatial patterns by current low-income housing strategies has caused serious impacts on not only the residents but the state as well (SACN, 2016). The state and more specifically the local

governments' ability to deliver on their goals in terms of spatial transformation is affected (FFC, 2011).

According to the IRDP (2009) cited in Tissington (2010) there has been minimal scope for integration of housing prices, categories, commercial and social amenities in South African housing projects prior to the initiation of the IRDP. Furthermore, as stated by Charlton (2003), low-income houses do not meet the individual spatial, economic and social demands of the beneficiaries and this results in some beneficiaries being obliged to rent or sell the houses and moving back into informal settlements they previously occupied which were well-located.

Even in the event of low-income housing projects addressing the lack of integration and meeting the spatial, economic and social demands of beneficiaries, the NIMBY (not-in-my-backyard) syndrome of formal residents creates a major obstacle in the delivery of low-income housing. This means that even where the government identifies well-located land for low-income housing development, the delivery process is halted or disrupted by adjacent property owners who object to the development itself (Royston, 2003; Ngxubaza, 2010; Sabela, 2014).

In order to move away from the trend of housing development lacking integration, in 2009 the IRDP was introduced by the National Housing Code which replaced the previous Project Linked Subsidy Programme in order to develop low-income housing projects that were holistically integrated (Tissington, 2011). The study set out to assess the extent to which the IRDP has met such objectives by addressing spatial integration in low-income housing projects in South Africa, generally, and in the Cornubia phase 1A housing project in particular.

1.3 Research objectives

The study intended to evaluate the extent to which the IRDP has addressed spatial integration in South African low-income housing in general and in the Cornubia phase 1A housing project. The specific objectives of this study were as follows:

- 1.3.1** To trace the historical and post-apartheid housing delivery practices that have resulted in the lack of spatial integration of low-income housing projects.

- 1.3.2** To identify the objectives of the IRDP in respect of spatial integration within housing developments in South Africa.
- 1.3.3** To examine international practice in spatial integration of low-income housing projects for lessons that could inform the South African context.
- 1.3.4** To determine whether spatial integration has been achieved in the Cornubia phase 1A housing project.
- 1.3.5** To propose how the performance of the IRDP can be enhanced on the basis of the findings in the Cornubia phase 1A housing project.

1.4 Research Question

Over the years, various South African housing policies, legislation and programmes have been developed in order to create integrated human settlements which are holistic and sustainable. One of the key programmes initiated to give effect to creating integrated human settlements is the IRDP, thus the main research question is:

To what extent have the IRDP objectives of spatial integration been met in South African low-income housing developments and in the Cornubia phase 1A housing project specifically?

From the main question indicated above, five interrelated sub-questions have been constructed.

1.4.1 Sub-Questions

- 1.4.1.1** How have historical and post-apartheid practices resulted in the lack of spatial integration of low-income housing development projects?
- 1.4.1.2** What are the objectives of the IRDP in respect of spatial integration of housing developments in South Africa?
- 1.4.1.3** How has spatial integration of low-income housing development been practiced internationally and what aspects of such practice have relevance for South African low-income housing developments?
- 1.4.1.4** Has spatial integration been achieved in the Cornubia phase 1A housing project?
- 1.4.1.5** On the basis of the findings in the Cornubia phase 1A housing project, how can the performance of the IRDP be enhanced?

1.5 Hypothesis

The Integrated Residential Development Programme (IRDP) has the potential to address spatial integration if it is used to package low-income housing developments that holistically incorporate transport networks, economic opportunities, social interaction and accessibility to basic services and facilities in the development of low-income housing.

1.6 Justification of the study

The importance of this study lies in obtaining detailed findings on whether or not low-income housing development has improved in terms of spatial integration since the introduction of the IRDP. The programme has been implemented for approximately eight years in South Africa. However, there has not been much local or international discussion of its success or failure. Also, the findings of this study can be useful in identifying the ‘thin’ areas of the IRDP as a programme and in its implementation, with a view of proposing how it could be improved to achieve spatial integration in low-income housing in South Africa.

The study critically examines how effective the strategies of the IRDP have been in reversing the pattern of social and economical fragmentation in South Africa and specifically examines the implementation of IRDP in the Cornubia phase 1A housing project. Thereafter the study makes recommendations for how the IRDP can be improved to ensure that future housing developments are spatially integrated, therefore redressing the segregated settlement patterns of the past. The absenteeism of spatial integration in housing projects in South Africa can only be understood if one analyses how the problem started and evolved over time. The lack of spatial integration in low-income South African housing projects is complex and this research begins by analyzing previously distorted housing settlement patterns.

1.7 Location of the study

The Case study selected for this study is the Cornubia Housing Development project. The Cornubia area itself consists of 750ha which is developable (Tongaat Hullet Developments, 2017). The Cornubia housing development is situated in the Northern Corridor of eThekweni and lies adjacent to Umhlanga in the east, Mount Edgecombe in the south, Ottawa in the west and Waterloo in the north. The settlement is bordered by the N2 freeway, the M41 arterial and Ohlanga River,

approximately seven kilometers south of the King Shaka International Airport (Department of Human Settlements, 2014; Bodhi, 2016). The Cornubia project is an urban housing development project consisting of five phases. Phase 1A of the project, which is the focus of this study, consists of the development of 482 low-income residential units which was completed by January 2014. These units are double-storey row housing (Sutherland et al, 2015).

Map 1: Locality of the Cornubia Housing Development



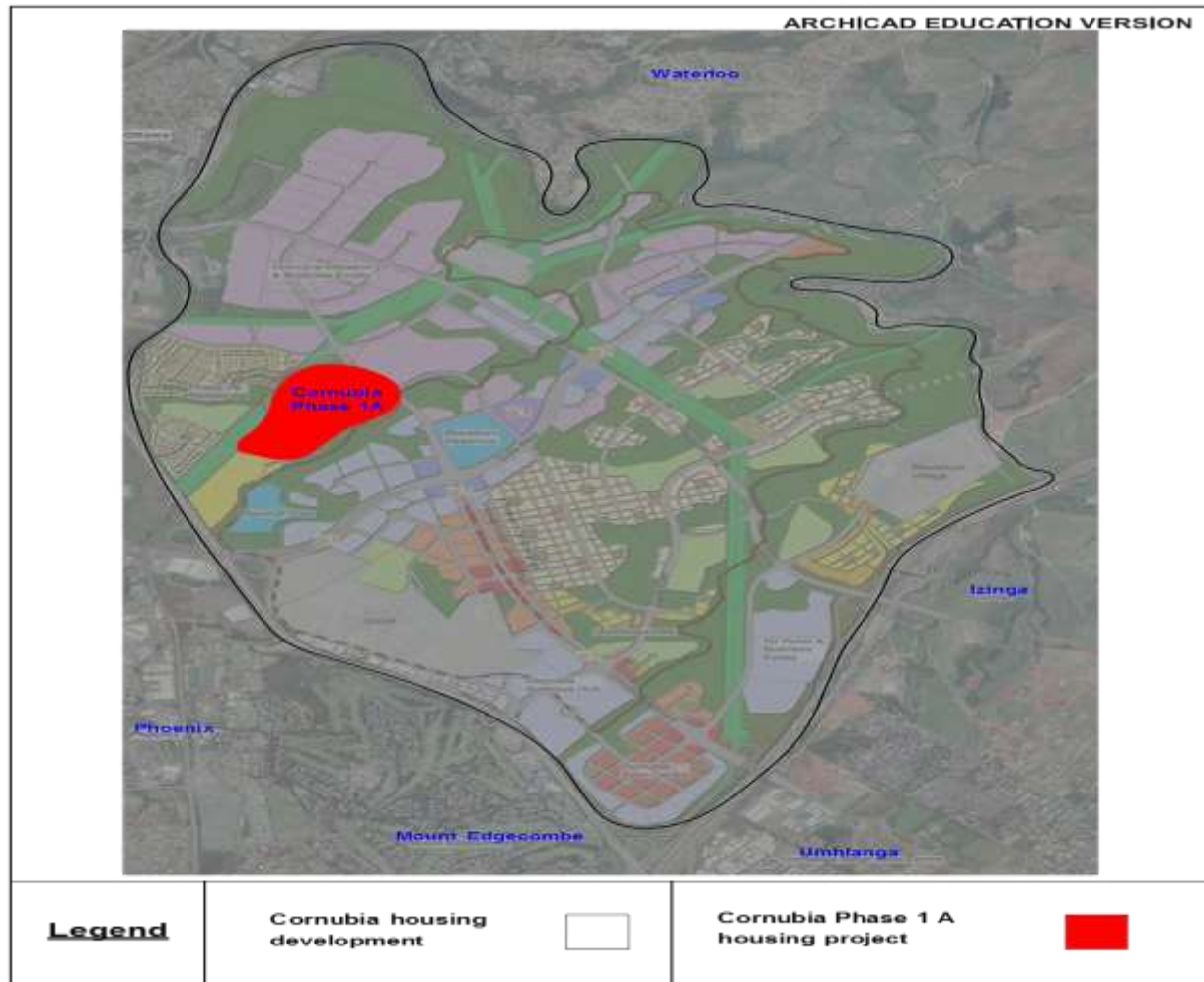
Source: Google maps (2017, adapted by researcher, 2017)

Map 2: Cornubia housing development and adjacent areas



Source: Google maps (2017, adapted by researcher, 2017)

Map 3: The Cornubia phase 1A housing project



Source: www.cornubia.co.za (2017, adapted by author, 2017)

1.8 Ethical considerations

1.8.1 Informed consent and confidentiality

This research entailed direct interaction with the beneficiaries and stakeholders of housing development. The participants were advised verbally as well as in the consent letter that their contribution in this study was not compulsory. The said consent letter was explained to each participant and was signed by potential participants to signify their commitment to participate in the empirical enquiry.

They were further informed that they were entitled to withdraw their participation at any time during or prior to the conclusion of the questionnaire process. Respondents were also informed

that this is a research and that there would be no benefits in favour of the respondents as a result of their participation. From the onset, participants were informed of the objectives of the research and that it is a requirement for the fulfillment of the researcher's university studies. This was done to prevent any false expectations being created in the minds of the participants.

With regards to the use of electronic communication such as audio and visual materials, permission was obtained from the participants prior to the conduct of the research. In the event of participants' wishing to remain anonymous, their right to do so was respected. Participants' right to remain anonymous was guaranteed by allowing participants to contribute to the study without stating their names or any personal details. The study did not discriminate against respondents based on gender, race, national origin, disability, health condition, or any other possible bias that is unlawful.

1.8.2 Validity, rigour and reliability

Since the study used a mixed-method approach, the researcher ensured validity by giving a fair, credible, honest representation of all data collected and compiled. The study reflects true results of the data collected in all forms and upholds the highest ethical standards applicable in the research field and beyond, as explained in the preceding section. In order to achieve such standard, all submissions made by the participants were included in the findings without any bias on the researcher's part, provided such submissions were not offensive.

All clearance required by the university with respect to ethical considerations was obtained prior to the commencement of the study. At the end of the interview sessions, the researcher shared the information obtained to the subjects both verbally and in writing. This was done to give participants a chance to check-back on anything they had missed, and finally to give them peace of mind that they had been represented correctly. It further ensured that the information obtained by the researcher was accurate and reflected the participants' accurate accords.

1.9 Limitations of study

The study focuses on the way the IRDP was implemented by the eThekweni Municipality. For the purpose of this study, focus was placed on the implementation of IRDP in the Cornubia phase 1A housing development project only. As a result thereof, the findings of this study may only be applicable to this particular housing project, while other areas of implementation of the programme

may vary in respect of success, due to differences of location, economic constraints of the developers and beneficiaries as well as different backgrounds of beneficiaries, among other things. As much as the results may only be applicable to this particular housing project, there are various other developable areas which are very similar to Cornubia phase 1A site. Hence housing practitioners can take the experiences of Cornubia phase 1A as a reasonable indication of how spatial integration under the IRDP may unfold elsewhere. The successes and failures of Cornubia phase 1A can be used as a learning experience for future projects of this nature and extent.

Another study limitation is the early stage of the housing project being analysed. The Cornubia housing project comprises of five stages and only phase 1A is the focus of this study. This is due to the fact that only phase 1A has been completed and occupied by residents at the time of the study. However there is a sense of uniqueness in the Cornubia phase 1A study area. Implementation of other IRDP housing projects in eThekweni are rather scarce and have not been documented well. Therefore there is not a wide range of prospects to choose from for a researcher wishing to assess the success of the IRDP.

The holistic sense of spatial integration of the entire Cornubia project can only be achieved and assessed once all five phases are completed. That said, there is nevertheless value in evaluating phase 1A of the project because if the project is properly planned, spatial integration should not be deferred only to be achieved in the future, but must be occurring in each phase in its own right.

1.10 Dissertation Structure

Chapter 1: Research introduction

The first chapter begins by providing the research topic and the aim of the research. A background in terms of the South African historical development of spatial fragmentation and exclusion in South African low-income housing projects is introduced in this chapter.

Chapter 2: Research design and methodology

Chapter two research objectives along with the research questions which would guide the study of the IRDP as a strategy of spatial integration of low-income housing projects in South Africa. This

chapter also outlines the research methodology used to conduct the study and obtain the relevant data, and how the data is analyzed.

Chapter 3: Theoretical perspectives on spatial integration

Chapter three introduces the theoretical framework within which the research is contextualized. The relevant literature highlights, analyzes and provides perspectives on the concepts of ‘location’ and ‘accessibility’ as these are core elements of spatial integration. The literature discussed in this chapter provides a clear understanding of the concept of spatial integration and how it can be achieved in different ways. Furthermore chapter two outlines the literature which has over the years traced how spatial integration was influenced within cities and provides a suitable context for understanding the data collected and its analysis.

Chapter 4: Conceptualizing integration

Chapter four makes an in-depth review of the relevant literature related to spatial integration with specific reference to low-income housing development. It critically unpacks the different forms of integration. This chapter also includes arguments by various authors that are centered around housing developments that are located on the periphery of urban centres, the concept of spatial integration and its practicality in the South African context.

Chapter 5: South African housing policy, legislative instruments and programmes on spatial integration

Chapter five highlights the relevant pre-1994 and democratic South African housing legislative instruments, policies and programmes that have impacted on the past, present and future housing developments in respect of spatial integration. The chapter also draws on international perspectives of housing developments that are spatially integrated. Different locational practices of integration provide various techniques that may be applied in South Africa in order to bring about a greater change in spatial integration in housing developments in South Africa.

Chapter 6: Data presentation and analysis

The sixth chapter presents and analyses the findings obtained from the household beneficiary questionnaires, observations and the interviews with the land-use executive and town planner

involved in the development of the Cornubia phase 1A housing project. The findings are used in order to ascertain whether or not the Cornubia phase 1A housing project creates spatially integrated human settlements in accordance with the objectives of the IRDP.

Chapter 7: Conclusions and Recommendations

The final chapter provides a summary of the research and draws conclusions pertaining to the study. This chapter makes recommendations based on the findings from the empirical research as well as the literature that has been reviewed. Recommendations are made of ways to improve the IRDP in order for future housing development patterns to be better spatially integrated, thereby redressing the distorted and segregated human settlement patterns of the past and ultimately creating more sustainable human settlements.

CHAPTER TWO: Research Design and Methodology

The research methodology outlines the process by which information was obtained in order to evaluate the IRDP as a strategy for spatial integration of low-income housing projects in South Africa. The study used a mixed-method approach which provided the researcher with a better and broader understanding of the research problem as said methods allowed a comprehensive set of data to be collected. Both qualitative and quantitative methods were used in the study to obtain data.

The methodology used for the study was moreover case study based. According to Stake (1995), case studies capture the different views of the different stakeholders of, in this case, a housing project. This study required first-hand information relating to the successes, barriers and failures in the achievement of spatial integration in low-income housing developments in South Africa. Since stakeholders such as the planning and land-use executive, town planner and beneficiaries represent a diversity of views and roles with regard to the spatial integration theme, the use of a case study in this research assisted the researcher in generating a holistic picture of the successes and failures of spatial integration. The researcher was given the opportunity to gather information from the land-use executive and town planner involved in the project as well as obtain information from the end users of the housing development.

According to the Department of Human Settlements status quo report (2017), the Cornubia phase 1A housing project was an initiative by the eThekweni local municipality and Tongaat Hulett Development, which arose out of the IRDP to develop mixed-land use human settlements. THD is a private organization that became operational in the 19th century. The primary business of THD is the agriculture of sugar and starch. Although the company is an agri-processing business they are also involved in land management and property development. THD is one of South Africa's most prominent property developers with customers ranging from built environment practitioners, to smaller private developers, commercial industries and local municipalities (Petersen, 2009). One of the intentions of the public-private partnership between eThekweni municipality and THD is to get rid of fragmented pockets of spaces which were created in the apartheid era in Durban. Given the distinct separation that was created between the areas of Durban, the public-private partnership was formed to link and integrate these areas. Along with integration, THD together

with eThekweni municipality intends to address the urgent need for affordable housing, city-building and job creation in Kwa-Zulu Natal (Petersen, 2009).

With the intention of achieving the abovementioned, Cornubia phase 1A housing developments are houses built in terms of the BNG policy (eThekweni Municipality, 2010). The BNG policy was formulated by the South African government which promoted and aimed to achieve an integrated society which was non-racial. Apart from concentrating on developing a large quantity of housing units, the BNG policy also intended on developing housing units that are high in quality, as well as to create integrated human settlements which are sustainable (Dept of Human Settlements, 2017). However Mclean (2006) states that despite the adoption of the BNG policy, low-income housing continued to be located on the outskirts of urban areas. Housing built in accordance with the BNG policy often lacked spatial integration in terms of accessibility to socio-economic opportunities. The IRDP built on the failures of the previous BNG implementations and aims to develop human settlements in areas that are well-located and which provide residents with access to basic urban opportunities and amenities. As a result, Cornubia phase 1A comprises of BNG units which are built within the principles of the IRDP (Bodhi, 2016).

The Cornubia phase 1A housing project was purposely selected as a case study due to the fact that IRDP together with BNG principles were applied in its planning and implementation and it therefore presents an appropriate setting to examine the extent to which spatial integration objectives have been achieved in practice. In order to establish whether or not the IRDP is a successful strategy of spatial integration in South African low-income housing, the Cornubia phase 1A housing facilities location, access and threshold norms were carefully compared to CSIR planning standards. A standard is a general agreement that comprises of requirements to reach conformity as well as to which conformity can be tested. A standard is created by a recognised body who would be interested in the parties affected by the outcome of the particular standard. The aim of a standard is to achieve the best degree of order in a specific context (Hatto, 2010; Visser, n.d).

According to CSIR (2015) in terms of human settlement planning, there should not be a single universal standard. The reason why one common standard is discouraged is because an area is often differentiated according to its colonial history, topography, density, community size,

mobility level and cultural context. However CSIR acknowledges that it becomes problematic to measure and compare levels of service and facility provision needs without normative and quantifiable standards. Hence CSIR provides a South African benchmark for the development of planning standards, access guidelines and threshold norms designed for numerous settlement types. These guidelines are not legally binding but are vital components for the provision of services and amenities. The CSIR guidelines were used in the study as a basis to compare the level of accessibility to urban opportunities by Cornubia phase 1A housing residents in order to determine whether the occupants are in fact, spatially integrated.

2.1 Data collection

The study used two data sources, namely primary sources of data and secondary sources of data.

2.1.1 Primary data

There were three ways in which primary data was obtained to establish if and how spatial integration was considered and applied in the Cornubia phase 1A housing project. Firstly, it was collected from the planning and land-use executive of Tongaat Hulett Development, Mr. Bheki Shongwe. The Tongaat Hulett Group, a private company, initially owned the total area of the land in Cornubia. In 2005, negotiations took place between the eThekweni municipality and the Tongaat Hulett Group which resulted in the municipality purchasing a portion of the land from the group. Subsequently, a public-private partnership was formed for a mixed-use development within the Cornubia area (Sutherland et al, 2015). The Tongaat Hulett Group invested in the infrastructure as the municipality would not have been able to provide all necessary infrastructure and services for the development due to financial constraints (Cooke, 2014).

Mr. Shongwe and his team within the Tongaat Hulett Group were responsible for the preparation and conceptualization of the Cornubia phase 1A low-income housing project. Mr. Shongwe was the land-use executive and his participation in the research was solicited to understand how spatial integration was conceptualized in Cornubia phase 1A. In other words, what was the reasoning behind how the Cornubia phase 1A housing project was planned? Furthermore, information was provided by Mr. Shongwe regarding how the objectives of IRDP in respect of spatial integration were interpreted in the Cornubia phase 1A housing project. Mr Shongwe was involved in the

strategic planning of the project at the conceptual and framework planning level whilst the construction of the Cornubia phase 1A housing project was done by eThekweni municipality.

Primary data was also collected from a town planning specialist Mr Kamalen Gounden from the IYER Urban Design Studio. IYER is an interdisciplinary design practice that undertook the urban design and town planning layout for affordable housing for phase 1A of the Cornubia housing project. Mr. Gounden was the member of IYER Urban Design Studio who was in charge of the spatial planning of the Cornubia phase 1A project. He provided the researcher with information regarding how spatial integration was incorporated in the design of the Cornubia phase 1A housing project. He also advised on how the concept of spatial integration was interpreted and the principles that were incorporated in the design layout to ensure that the project comprised of development that was holistically integrated.

Information from key informants namely, Mr. Shongwe and Mr. Gounden, was solicited by the means of interviews. The interviews were face-to-face, semi-structured and were audio recorded to ensure accuracy of information obtained from the interviewees. Permission to record the interview session was sought from the parties prior to such recording. Notes were also taken by the researcher where deemed necessary, to augment what was audio recorded.

Thirdly, residents of the Cornubia phase 1A housing project themselves were surveyed using a beneficiary household questionnaire comprising of both closed and open-ended questions. The closed-ended questions consisted of questions relating to economic data such as, but not limited to, travelling costs to places of employment, recreation, schools, clinics, shops, police stations, etc. The purpose of open-ended questions was to gather information regarding their personal experience since moving into Cornubia phase 1A, in respect of distance cost and travel time, locational factors and their accessibility to socio-economic opportunities and public services and amenities. Open ended questions allowed the respondents to expatiate on the details of their expectations, experiences and satisfaction with the implementation of spatial integration in the Cornubia phase 1A housing project.

The researcher administered the beneficiary household questionnaire personally to ensure that the questions were clearly understood, and this allowed for clarity to be provided to the respondents regarding aspects they did not understand, and in turn, for the researcher to seek clarity where he did not understand them. The researcher was also able to probe for details were deemed necessary. The questions were verbally asked by the researcher and thereafter filled in manually. This method was useful as not all residents of Cornubia phase 1A were literate. Since the residents of Cornubia phase 1A are the end users of the product, they were able to provide information on a personal level by giving insights of their experiences and individual opinions on the aspect of spatial integration, how they understood it, and the extent to which they consider spatial integration to have occurred in the Cornubia phase 1A housing project.

2.1.1.1 Sampling of residents/beneficiaries for the household survey

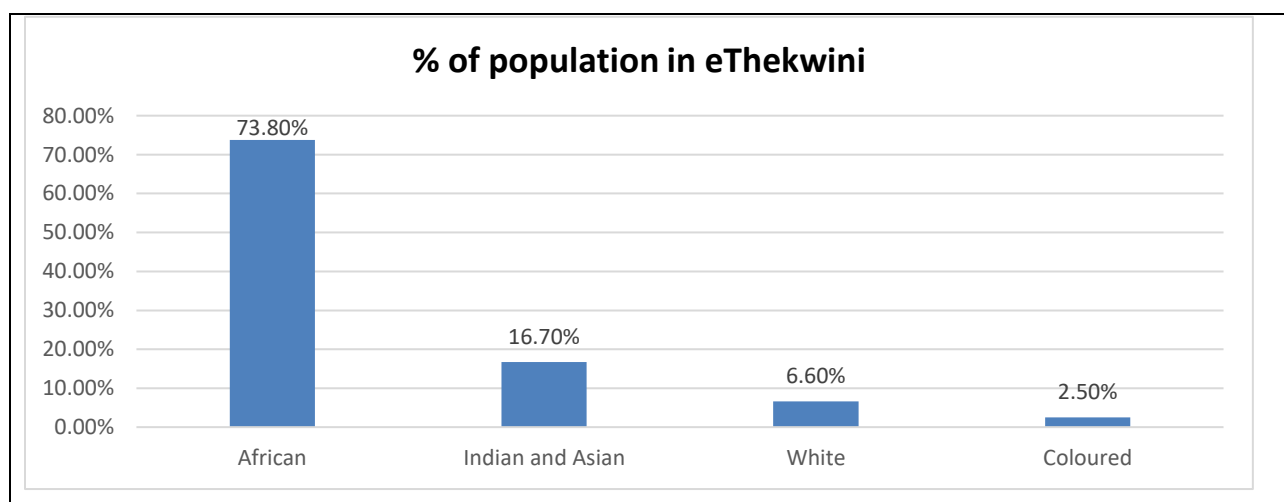
For the purpose of administering the household beneficiary questionnaire, a stratified random sampling process was used in this study as according to Black (1999) specific groups in a sample are evenly represented when stratified random sampling is conducted. Stratified random sampling was chosen in this study because although all 482 residential units in Cornubia phase 1A are homogenous, constituting of double-story row housing, the residents of the units are not. Stratification gave the researcher the ability to obtain data from different strata/grouping/categories of people who reside in similar, if not identical houses and gather information regarding their personal experiences relating to spatial integration in the particular site, which might be impacted by their strata's characteristics.

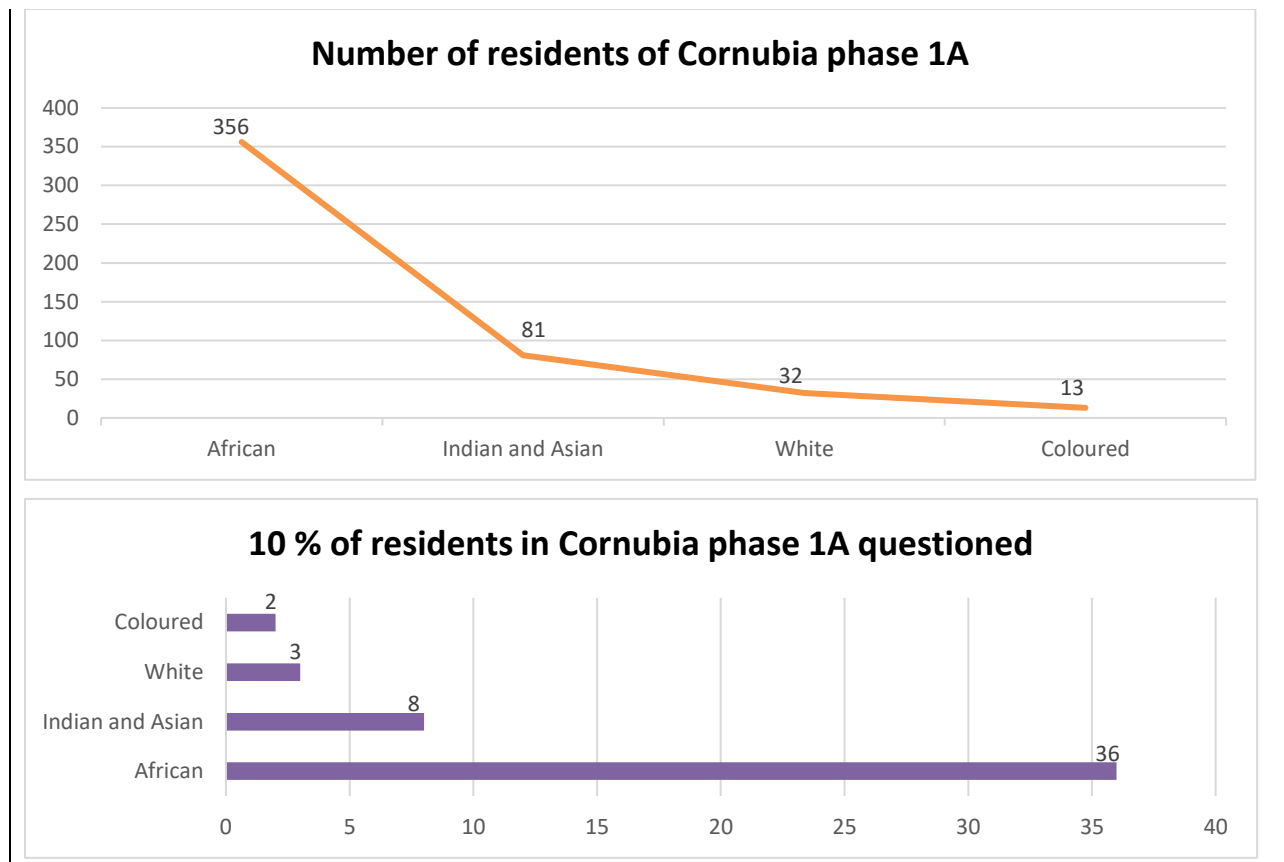
A section of the beneficiary household questionnaire was fashioned to address the Cornubia phase 1A population according to their racial strata. More specifically, the racial categories consisted of Black Africans, Indians and Asians, Whites and Coloured residents from within the Cornubia phase 1A housing project. The basis for racial stratification is due to different groups of individuals having varying needs. Race plays a vital role in ascertaining residential preferences (Harris, 1999; Ellen, 2000; Krysan and Swaroop, 2011). Neighbourhood perceptions as well as people's assessment of housing are inherently influenced by demographic characteristics (Liu, 2005). Different race groups find some characteristics essential in their neighborhoods where other race groups may find them unnecessary (Fried and Gleicher, 1961; Gans, 1962; Suttles, 1968; Muller, 1981).

For example, individuals may express preference to live among residents of the same racial and ethnical backgrounds as themselves. As neighbourhoods that are homogenous in respect of race and ethnicity allow for the sharing of cultural traditions, norms and customs which in turn allows residents to feel a greater sense of well-being, comfort and security (Wilson and hammer, 2001). On the grounds that the Cornubia phase 1A housing project falls under the jurisdiction of the eThekwin area, the researcher relied on the 2011 eThekwin census in order to establish the demographic makeup of the area and to apply the percentage of population groups in the sampling of beneficiaries of the Cornubia Phase 1A project.

As mentioned previously the Cornubia phase 1A comprises of 482 residents. The number of residents falling within each race group in Cornubia phase 1A was calculated as per the eThekwin race census. As per the 2011 eThekwin census, the population comprises of 73.8% Africans, 16.7% Indians and Asians, 6.6% Whites and 2.5% Coloureds (statistics SA, 2011). For the purpose of the study, 10 percent of each race group was sampled in Cornubia is phase 1A. For example, African residents accommodated 73.8 per cent of 482 residents which constitutes to 356 people. Thereafter 10 percent of that specific race group in Cornubia phase 1A was sampled which resulted in 36 African residents being questioned. This formula was applied to each of the eThekwin census race groups. Resultantly percentages constituted 36 Africans, 8 Indians, 3 Whites and 2 Coloureds respectively. This resulted in a total of 49 residents of the Cornubia phase 1A housing project being questioned in the beneficiary household survey, as illustrated below:

Figure 1: Race groups in eThekwin and Cornubia phase 1A



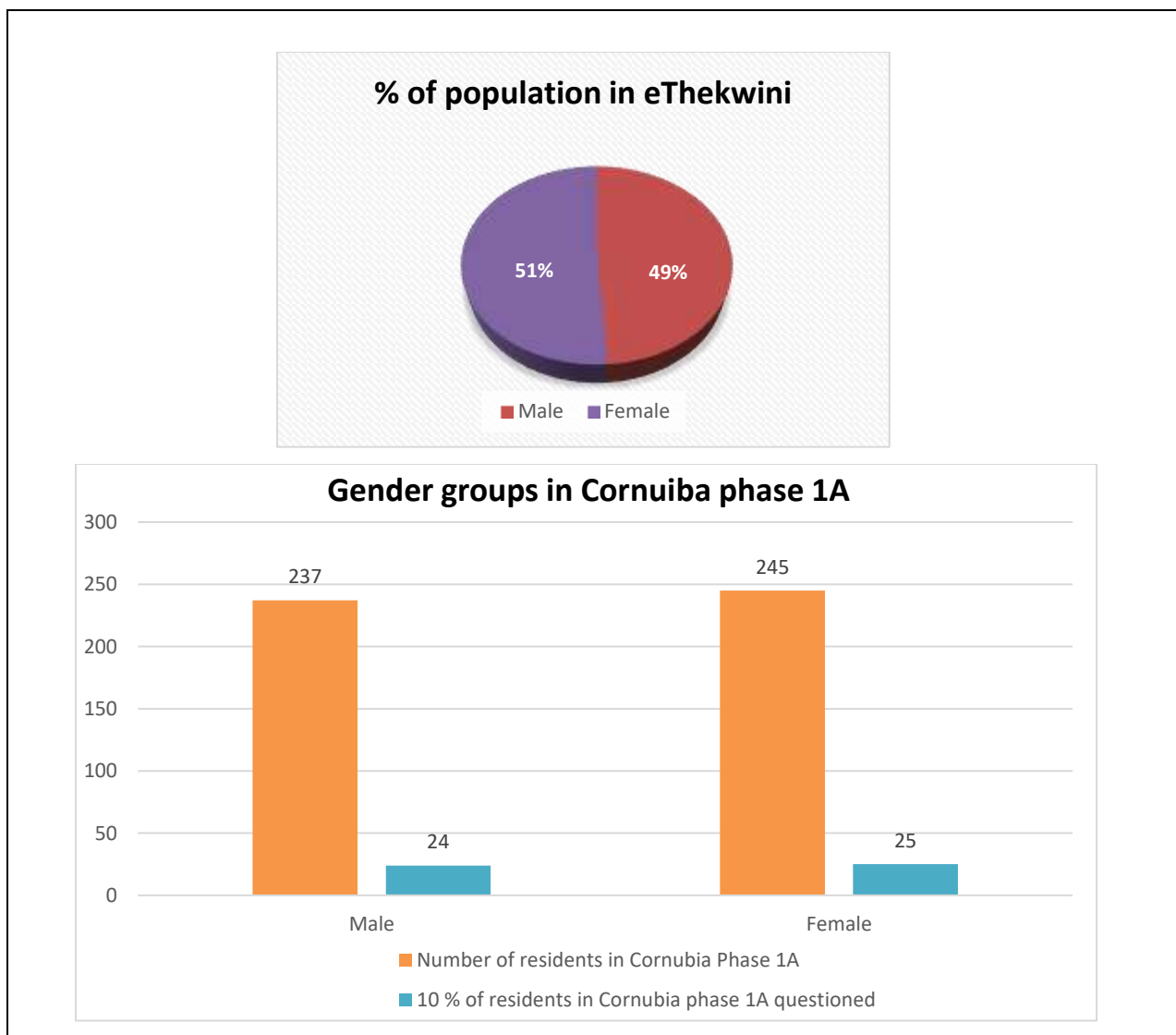


Source: Statistics SA (2011), adapted by researcher

Demographic data was collected which consisted of age and gender variables. Although the focus of the study was not solely about gender variables, it is useful to note that gender plays a significant role in assessing the successes and failures of spatial integration in a community as the personal needs and realities of men and women are inherently different. There is often strict adherence to traditional gender roles in communities and hence the need for and impact of spatial integration may differ between males and females. According to Uteng (2011) females are generally the primary care-givers of children and such child care obligations make it difficult for women to seek employment away from home. Furthermore, women are vulnerable and are easy targets of crime and therefore their mobility is limited due to self-imposed precautionary measures taken by them. As a result, spatial integration needs and its rate of success or failure vary between different genders and it is for this reason that the data was analysed and presented illustrating gender variables.

The number of residents falling within each gender group in Cornubia phase 1A was calculated as per the South African Statistics. According to statistics SA (2011) the current eThekweni population consists of 49 per cent of males and 51 per cent females. For the purpose of the study, 10 percent of each gender group was sampled in Cornubia phase 1A. For example male residents comprised 49 per cent of the 482 residents which results in 237 people. Thereafter 10 percent of the male population in Cornubia phase 1A were sampled which constituted 24 male residents. This formula was repeated for the female population. These percentages constituted 24 males and 25 females who were questioned in the beneficiary household survey, as illustrated below.

Figure 2: Gender groups in eThekweni and Cornubia phase 1A



Source: Statistics SA (2011), adapted by researcher

As previously stated, it is a complicated task to determine the level of housing satisfaction of residents in a particular project as each person's expectations, needs and affordability affect their level of satisfaction (Waziri et al, 2014). Similarly as race and gender strata were required in the study, it is also important to take into account the ages of residents as their age directly influences their perception, expectations and evaluation of housing satisfaction (Ibem et al, 2015). This view has been corroborated by Barrasi et al. (1984) and Mohit et al. (2010) who state that different age groups' perception on housing satisfaction differ from one another.

Given the varying expectations of different age groups, it is important to disaggregate the different age groups of residents in Cornubia phase 1A in order to obtain a holistic understanding of the implementation of spatial integration in the housing project from an age perspective. According to Statistics SA (2011) the population in eThekweni comprises of age classification groups which are 36 to 64 years old (working age) and 65 years and over (elderly). As per the African youth charter of 2006, the youth population age group is 15 to 35 years old.

The number of residents falling within the youth, working age and elderly aged groups in Cornubia phase 1A was calculated as per the South African Statistics. According to Statistics SA (2011) the eThekweni population comprises of 37 percent youths, 33 percentage of working age and 4.8 percent of elderly people. For the purpose of the study, 10 percent of each age group was sampled in Cornubia phase 1A. For example residents between the ages of 15 to 35 accommodated 37 percent of 482 residents which results in 178 people. Thereafter 10 percent of the specific age group population in Cornubia phase 1A were sampled which constituted 18 people between the ages of 15 to 35 being sampled. This formula was repeated for the working age and elderly age group population. More specifically, the percentages constituted 18 youth, 16 working age and 3 elderly residents that were questioned in the beneficiary household survey, as illustrated below:

Table 1: Age groups in eThekweni and Cornubia phase 1A

Age group (years)	% of population in eThekweni	Number of residents in Cornubia phase 1A	10 % of residents in Cornubia phase 1A questioned
Youth (15 to 35)	35.7	178	18
Working age (36 to 64)	33	160	16
Elderly (65 +)	4.8	24	3
Total	73.5	362	37

Source: Statistics SA (2011), adapted by researcher

The reason for emphasizing the age groups pertained to the fact that residents who are above the age of 65 years are much more tolerant regarding residential shortcomings and possess lower levels of aspirations than younger adults (youth) (Barrasi et al. 1984; Galster, 1987). Minors (under the age of 18) were not questioned directly in the survey. Questions relating to spatial integration and minor children were included in the survey, and were answered by parents or guardians on the minors' behalf.

Spatial integration needs differ according to race, gender and age groups. Therefore the formulation of the different strata assisted the researcher to obtain and analyse the data in order to determine the different spatial integration needs of these groupings and their different views on the success and failure of spatial integration in Cornubia phase 1A. The researcher went door to door randomly at the Cornubia phase 1A homes to seek individual participation of the residents in the survey. The researcher at the outset questioned the potential participant regarding their place of residence to ensure that the participant is in fact a permanent resident of the Cornubia phase 1A housing development and not a visitor.

If the potential participant was a resident of the Cornubia phase 1A housing project, then the researcher requested their permission to conduct the survey and proceeded. Each participant fell into one of the race, gender or age categories as indicated above. More often than not, participants simultaneously fulfilled more than one stratum, i.e. the participant met both race and gender,

gender and age, or race and age strata, etc. In some instances, the participant met all three strata at once. For example, if the researcher identified a female participant who granted permission to be surveyed, during the questionnaire, the age or race strata would simultaneously be met. In the event of the potential participant not being a resident of the Cornubia phase 1A housing project, the researcher thanked the visitor for his or her interest in the survey and moved on to seek participants who fell within the ambit of the data required. This process was repeated until the predetermined sample size for each stratum was surveyed.

2.1.1.2 Observation

The observation method was also used as a tool to gather information required for this study. Kothari (2004) states that this method does not generally depend on participation from respondents, therefore making it less demanding on the active co-operation on the part of respondents, as happens in the case of, for example, the interview and questionnaire methods.

Observations were made with respect to how the residents were able to interact with one another in a social setting. More specifically, sites such as open spaces, parks, recreational areas, playgrounds, places of worship and communal areas were observed by the researcher to ascertain how the different individuals come together within the community. Observations were made by taking cognizance of the different gender, age, and race groups of people located within the Cornubia phase 1A housing site and the interaction that occurred between the different groups.

A further observation was made in respect of the extent to which opportunities are available within the Cornubia phase 1A housing site for residents to conduct economic activities such as small-scale businesses, for example vending and agricultural activities. The researcher also observed whether there were public services and amenities available and accessible for residents to use. More specifically, observations were made regarding the visible presence of a health center, places of possible employment, places of worship, shops, open areas for social gatherings and public services and the convenience of accessibility to the residents.

Observations were also made of the availability and accessibility of transport networks within phase 1A of the Cornubia housing project and how effective it was for commuters. Transport

networks in this instance refer to not only physical infrastructure such as roads, railways, foot or bike paths but also public transport services such as taxis, buses and trains and how they work in practice to provide connections between different locations and activities (Allsop, 2008; Australian Capital Territory Government, 2015). The frequency of the use of these transport networks by the residents was also observed at different times of the day, during the various visits to the Cornubia phase 1A area.

Despite only one phase of the project being completed (ie; Cornubia phase 1A), the researcher attempted to assess whether or not such opportunities are available to residents and how, and to what extent residents made use of them. The researcher further observed the proximity of surrounding areas and took note of whether surrounding areas blended and integrated with Cornubia phase 1A. More specifically, the researcher looked at whether residents have easy access to surrounding areas. The researcher observed whether there was a distinct boundary between the Cornubia phase 1A site and its surrounding areas or whether the areas merged or interfaced seamlessly from one to the other.

2.1.2 Secondary data

Secondary data sources consist of published books, legislation, journals, policies, programmes, leaflets, scholarly articles and the World Wide Web. The secondary data sources were used to obtain information regarding post-apartheid housing programmes and projects in South Africa as well as the concept of integration with emphasis on spatial aspects for the purpose of the study.

The secondary data was also used to formulate a theoretical and conceptual framework and informed the main objective of this study which was to evaluate the success or otherwise of the IRDP as a strategy to address spatial integration of low-income housing projects. The secondary data was studied and used to understand the meaning of spatial integration and how provision was made for spatial integration in various housing legislation, policies and programmes. Furthermore, the secondary data was used to identify the principles of spatial integration which were then used as the indices of integration in the study, to determine whether or not the Cornubia phase 1A housing project conformed to such principles. Lastly, the secondary data provided insight into the various perspectives of spatial integration by different authors. Gaining knowledge from different

authors on the subject of spatial integration allowed the researcher to formulate his own understanding of the concept as well as to relate the various authors knowledge to his research outcomes.

2.1.3 Data analysis

The data collected was analysed thematically using simple cross tabulations and frequencies. The theme of this study is spatial integration and in order to analyze the data, spatial integration was disaggregated into key sub-themes. These sub-themes were namely economic integration, functional integration and social integration. All data collected from the land-use executive and the town planner involved in the development of Cornubia phase 1A as well as the residents themselves were presented and analyzed within these themes.

The data obtained was used to evaluate the extent of success or otherwise of the implementation of the IRDP in the Cornubia Phase 1A housing project, by taking the various participants' accounts and collating them to create a holistic picture. The convergences and divergences of their perceptions, experiences and understanding of spatial integration was noted and interpreted. The answers to the gender-related questions assisted the researcher in analyzing and determining the different spatial integration needs along gender lines and ultimately analyzing their experiences in respect to the success or failure of spatial integration in the Cornubia phase 1A housing project, on the basis of their gender.

As part of the beneficiary household questionnaire, cognizance was taken of age and participants were required to answer spatial integration questions in relation to their specific age group. The data was then analysed and presented according to age ranges of the participants as perspectives and valuations of spatial integration differs between the various age groups. The data was analysed and presented using age variables of 15 to 35 years (youth), 36 to 64 years (working age) and 65 years and over (elderly). The distinction between the age groups assisted the researcher in establishing the diverse views of the successes and failures of spatial integration in Cornubia phase 1A, depending on the varying maturities and lifestyles of the participants. Ultimately the distinctions of race, gender and age of subjects in the study area assisted the researcher in ensuring that an adequate number and wider range of residents of Cornubia phase 1A were properly and

fairly represented. It further assisted the researcher to determine the success or failure of spatial integration in Cornubia phase 1A by considering the different needs and expectations of the diverse residents.

The data obtained from beneficiaries was analysed and used to assess whether housing developed in Cornubia phase 1A met the spatial integration needs of the disparate beneficiaries. The responses of the beneficiaries indicated whether or not they had sufficient accessibility to the necessary facilities, amenities, and social and economic opportunities. The responses of the planning and land-use executive as well as the town planner of Cornubia phase 1A housing development indicated whether or not spatial integration was considered in the development of Cornubia phase 1A and if so, the extent to which it was achieved in the project. Ultimately the data collected was used to determine the extent of the IRDP in creating a spatially integrated housing development in the Cornubia phase 1A low-income housing project.

Chapter two has explored the use of a mixed method of data collection along with its pros and cons. Primary data was collected from key informants Mr. Shongwe and Mr. Gounden by means of face-to-face interviews as well as from Cornubia phase 1A residents themselves, through a beneficiary household questionnaire. To obtain information relevant to the study of spatial integration, observations of the Cornubia phase 1A area were conducted by the researcher. The chapter further explained how the data obtained from all the primary and secondary data sources as well as observations will be analyzed.

CHAPTER THREE: Theoretical perspectives on spatial integration

The theoretical and conceptual framework of this research sets out the relevant theories and highlights their primary tenets relating to integration in the context of low-income housing development. It gives insight into various theories which influence spatial integration within cities and provides a suitable context for understanding and interpreting the data collected.

3.1 Neoliberal theory

The neoliberal theory has played a major role in the continuation of disintegrated and segregated spatial patterns in South Africa. The principles of the rolling back of the state, free markets and privatization (which will be discussed next) result in the poor being unable to afford to purchase land or housing on well-located land, close to developed urban centres, thus denying poor people easy access to urban opportunities, services and amenities.

In order to truly grasp the theory of neoliberalism, one has to understand the theory of liberalism. There is a conceptual and historical affinity between liberalism and neoliberalism (Vázquez-Arroyo, 2008). Hackworth (2007) intellectualises neoliberalism as a revival of liberalism in which the values of individualism are embraced.

Liberal theorists such as John Stuart Mill among others, believe in equal rights and opportunities to all people. Liberal theorists suggest that an equal distribution of rights to opportunities can be achieved by disposing of discriminatory practices (Pirnuta and Secarea, 2012). Liberalism is associated with the notion that the role of the state should be minimal and that citizens should be free in making decisions relating to their rights and well-being (Harvey, 2005). Economic liberalism suggests that individuals should be responsible for participating in free and self-regulating markets with minimal intervention by the state in the economy (Thorsen and Lie, 2012).

Liberalism has often been distinguished in terms of classical and modern types. The classical form of liberalism is associated with the ideologies of earlier liberals such as John Locke and Adam Smith. Classical liberalism dictated that apart from enforcing law and armed forces, the government's role should be minimal. Citizens and organisations should have the freedom to establish and partake in free dealings without any government interference (Thorsen and Lie, 2012).

On the other hand modern liberalism which arose in the 20th century allows for the government to actively participate in the economy. Modern liberalism dictates that the supply of goods and services to all citizens should be the responsibility of the government. According to modern liberals such as Benjamin Constant and John Rawls, to practically enforce the goals of liberalism, the government is needed to play a role in the economy.

Although it has undergone a process of growth, neoliberalism shares some vocabulary with liberalism (Thorsen and Lie, 2012). Neoliberals such as Ricardo and Malthus can be seen as individuals who believe that freedom, liberty and prosperity of all citizens can be enhanced by prosperous free markets (Peck and Tickle, 2002). Neo-liberalism can be defined as a theory of political economic practices that focuses on the improvement of human well-being through the liberation of individual entrepreneurial freedoms and through frameworks which include strong private property rights, free markets and free trade. It is also where the state takes a back step in the delivery of goods and services and provisions and where intervention in market rates are kept to a bare minimum (Beesley and Littlechild 1983; Harvey, 2005; Ilrig Globalisation, 1989; Kay and Thompson 1986; Vickers and Yarrow 1988).

The neoliberal ideology existed since the 1940s; however it was only in the 1980s that it was seen on the global development scene (Sandhu and Korzeniewski, 2004). In terms of the neoliberal theory, the primary objective for urban development lies in economic growth. It is believed that other urban problems shall gradually ameliorate upon economic growth (Beatty, 2014). Beatty argues that in the context of neoliberalism it is only the wealthy that benefit and experience growth and expansion from cities. Entrepreneurs, financial institutions, companies and corporations use cities as 'growth machines'. Growth in urban development is promoted by such wealthy actors as they gain substantial financial benefits from place-making activities.

In a so called 'neoliberal city' the creation of isolated and insular spaces in urban and metropolitan geographies is generally done by private sector developers and such fragmentation of space is facilitated and promoted by the state sector. Cities are seen as the driving force of private redevelopment and no longer merely accommodate requests for private development. The spaces within the city are designed to accumulate capital and as such, these spaces subsequently take the form of shopping areas, cultural centres, waterfronts, sporting areas and luxury housing developments (Mele, 2011).

Generally, it is only those with the largest purchasing capabilities and powers that benefit from free market action. Neoliberalism makes room for people with capital to acquire spaces that are closer to the central business district (CBD), which have better services, are in great demand and more often than not, are much more expensive. The poor with very low or no purchasing power are located in much less valued spaces due to the fact that land is cheaper and easier to obtain. These less valued places are normally on the outskirts or periphery of urban areas and often lack infrastructure and services (Chau, 2009). Mfuku (2006) critiques neoliberalism by suggesting that the notion of extending markets to people who are not in possession of market power, specifically capital, is highly irrational. The poverty rates in countries such as South Africa are high and it is nonsensical to attempt to extend markets to those who cannot logically afford to participate.

It is the adverse effects of neoliberalism that deem the theory significant and relevant to the study of spatial integration in low-income housing development projects. The principles of the rolling back of the state, free markets and privatisation result in the poor continuing to be segregated and spatially disintegrated. They are unable to afford to purchase land or housing on well-located land and are subsequently deprived of its accompanying opportunities, services and amenities.

According to Seekings (2010), in South Africa, the 1994 democratic ANC-led state actively withdrawing its role in the regulation of markets merely replicates the deep inequalities that were persistent in the apartheid era. Without government intervention in markets, urban infrastructure, housing and services have been unattainable to the poor. This ultimately results in places characterized by segregation of housing locations along market lines, repeating the irregular spatial forms of the apartheid era.

As a result of apartheid and contemporary spatial planning practices, current housing practitioners are faced with the task of counteracting fragmented spatial patterns in low-income housing development. With relevance to this study of spatial integration, housing practitioners need to counteract the adverse effects of the apartheid and contemporary housing practices, by incorporating locational factors, distance cost, travelling time and accessibility to opportunities such as economic and transport systems, social interaction and public services and facilities in low-income housing development.

3.2 Defining Location

Before understanding locational theories, it is important to understand the term location as essentially, this is where such theories derive from.

According to Damborský (2007) the term location originates from the Latin term known as '*locare*'. The meaning of '*locare*' is to place. It is a process of selecting a suitable place wherein specific socio-economic activities are possible. The economic activities are characterised by the relevant need and each selected place offers specific resources. Places that possess optimum resources make them the most suitable locations for socio-economic activities to take place. The location of socio-economic activities may change over time as needs and availability of resources vary from time to time. When these changes take place, new locations are sought for whilst the existing space is re-used depending on the need (Wieloński, 2004).

When studying the utilisation of space, location is one of the first and most important issues dealt with. People tend to settle for places within which the conditions of survival are heightened. They are interested in locations in which food is readily available, where levels of danger are decreased and where there are the most favourable climatic conditions (Damborský, 2007).

3.3 Locational Theories

Locational theories in this study aid in understanding the importance of locational aspects in the delivery of low-income housing projects. These theories inform the way post-apartheid low-income housing projects can be developed. Locational theories identify location as a major factor that contributes to the success of a housing project in respect of employment opportunities, transport networks and public services and outlines the impact of location on low-income households. Generally, the value of land is dependent on the accessibility of the positive elements of a location.

Choices of location are dictated by accessibility. Specifically, accessibility to a market or a 'centre'. People's accessibility to a CBD and subsequently to jobs means that their travelling costs are minimal, while at the same time they enjoy easy access to a wide range of recreational and other services without the need to pay exorbitant travelling costs (Capello, 2011; Jordaan et al, 2004).

One of the first locational theorists was J. H. von Thünen, who addressed the issue of location in 1826. His theory mainly focuses on agricultural location but its principles can be applied to various branches of the economy. He suggested that closeness, distance and transportation costs are the key factors which underlie the concept of location (Damborský, 2007). Von Thunen's proposed locational theory places emphasis on the distance-cost relationship being parallel to land values. This means that land value is dependent on the distance between the urban area and the land. According to Von Thunen, due to low transport costs, land in close proximity to the CBD is in higher demand than land that is located in the periphery (Jordaan et al, 2004).

Based on similar reasoning, the urban location theory was recapitulated by Alonso in the 1960s and was based on the principle that "rents diminish outward from the center of a city to offset both lower revenue and higher operating costs" (cited in Jordaan et al, 2004: 534). Operational costs in this instance could be travelling costs to places of employment or basic facilities. Alonso's reincarnation of the urban location theory aligns with Von Thunen's proposed locational model that ultimately states that the further the land is located from the city, the less it's value (Alonso, 1960).

These locational theories explain why low-income housing projects in South Africa continue to be located on the urban periphery, increasing the operational costs of low-income households, while at the same time denying them the opportunities that more integrated spaces in the city centre have to offer and ultimately repeating the spatial patterns of the apartheid era.

Salonen (2014) states that researchers have been unable to form consensus on what the most suitable urban form consists of. However they agree that mixed-use neighbourhoods and high density cities where residents are located close to urban opportunities reduce travelling distances and makes room for the use of sustainable travel modes.

In light of the above, it is evident that although the locational theories are applied in different contexts they explicate similar principles. In essence, these theories elaborate on the relationship between distance and cost and how the value of land is determined in accordance with location. According to neoliberal and locational theorists, within the context of housing delivery specifically, low-income individuals are forced to reside on the outskirts of cities due to the unaffordable costs involved in residing in areas which are closer to the CBD.

3.4 New Urbanism

The new urbanism movement arose in the early 1980's and is an American urban design movement that is aimed at reforming the built environment design. The principles of the movement are based on rebuilding previously automobile-orientated communities in which residential areas were disconnected from commercial and social areas. This is done by re-ordering the built environment into the form of complete compact cities and neighbourhoods (Alias et al, 2011). The rebuilding of communities entails transit-oriented development as well as infill projects and attempts to rework the past into the present. Transit-oriented development (TOD) refers to development which consists of high-density and mixed-uses which are close to transit services (Shastri, 2010). Infill development refers to building in neighbourhoods that have already been established and which have scattered, vacant or underutilized land (Georgia Department of community affairs, 2017).

The aim of new urbanism is to not only provide cost effective and environmentally friendly transportation modes but also to create environments which are pleasant, comfortable, interesting and safe for pedestrian use (Kim et al, 2008). New urbanism is based on the premise that the quality of the lives of people can be improved and that their standard of living can be raised through creating improved living spaces (Kim et al, 2008). According to Talen (2000) the primary principles of new urbanism do not only concentrate on market appeal but also address the problems concerning spatial separation of land-use and mobility restrictions (Falconer Al-Hindi and Till, 2001).

3.4.1 The Principles of New Urbanism

There are nine notable benefits provided to residents of housing developments where new urbanism principles are applied. These principles are namely, walkability, connectivity, diversity and mixed use, quality architecture and urban design, traditional neighbourhood structure, increased density, smart transport, environmental sustainability and quality of life. It is important to note that these nine principles should not be viewed separately. They feed off each other in the sense that if one principle is achieved, it overlaps and paves way for the next principle to be built on. These principles are discussed briefly in order to show how spatial integration in housing development can be improved (Ng, 2011).

3.4.1.1 Walkability

In terms of the walkability principle, all basic facilities should be within a ten-minute walk from one's place of residence or place of employment (Du Plessis, 2007). The use of motor vehicles should be kept minimal and streets must be designed to accommodate pedestrians. This principle has further benefits in that people are exposed to a healthier lifestyle as they are subjected to walking and exercising. Furthermore, walking does not damage roads as compared to vehicles and thus it would reduce the need for constant maintenance. This makes room for a more efficient use of tax monies (Haas, 2012; Scheepers, 2014, Serrins, 2014).

As much as one may suggest that people would reduce the use of motor vehicles if places are within walking distance, in reality people prefer to use vehicles to reach their destinations as it is convenient. The difficulty lies in convincing people to walk and subsequently challenges the intention of the principle (Louw, 2012). The benefits of facilities being located within a ten-minute walking distance are simple but the reality of its implementation is nearly impossible. It is highly unlikely that an entire urban population can be accommodated and have access to all public facilities, amenities and services as well as work within a ten-minute walking distance from their residence.

3.4.1.2 Connectivity

The second principle of new urbanism promotes the concept of connectivity which overlaps with the walkability principle. The use of interconnected street grid network makes it easier for pedestrians to walk and arrive at their destinations within a minimal space of time as well as disperses traffic. It is necessary for a hierarchy of narrow streets, boulevards and alleys to be created as it shortens distances and is convenient for pedestrians to arrive at their destinations. Increased connectivity reduces sprawl and unnecessary congestion (Scheepers, 2014). The shape of traffic intersections influences crime and the use of interconnected street grid designs may increase crime levels, making it dangerous for people to actually make use of pedestrian friendly roads. As a result of increased crime levels, the principle of connectivity is hampered and defeats its purpose as people do not wish to walk in places which endanger their lives.

3.4.1.3 Diversity and mixed-use

Another of the main principles in respect of new urbanism relates to mixed-use, mixed houses and diversity. In terms of new urbanism, a community should consist of a mix of residential and commercial sectors (Prater, 2011). There should be a variety of houses which are different in type, size and cost. The variety of mixed-uses and mixed-houses attracts a diverse population and makes a place more interesting (Du Plessis, 2007; Ng, 2011; Lajeunesse, 2016). As much as new urbanism may promote diversity by attempting to integrate various cultures, races and ethnic groups, the challenge faced particularly in South Africa, where there is a long history of racial and social segregation is that different population groups are often reluctant to reside within the same community. Furthermore, as Cashin (2004) states, in daily voluntary settings, friendship and understanding between people is difficult to come by, hence it is difficult to believe that such social interaction could work in forced integrated neighbourhoods.

3.4.1.4 Quality architecture and urban design

New urbanism also promotes quality architecture and urban design. It intends to create a sense of place which places emphasis on not only visual appeal but also comfort. When places look good, people feel good. The community also begins to feel a sense of identity when unique architecture is implemented in their community. This principle builds on the diversity and mixed-use discussed above. By mixing residential, environmentally aesthetic and commercial areas, transportation costs are reduced as recreational and economical activities and services can be accessed without the need for a motor vehicle, which then has positive implications for the walkability and connectivity principles (Steuteville, 2000; Haas, 2012; Scheepers, 2014).

3.4.1.5 Traditional neighbourhood structure

The traditional neighbourhood structure is promoted in new urbanism. The traditional neighbourhood structure consists of a visible centre and edge, with public space at the centre. It stresses the importance of quality public realms. These public realms should contain a range of uses and densities which interlink with the mixed-use principle discussed earlier (Du Plessis, 2007). The highest densities are located at the town centres with lower densities towards the edges. There are increased amounts of open spaces for residents to enjoy, which gives them a sense of belonging and makes room for public interaction (Haas, 2012; Scheepers, 2014, Serrins, 2014).

3.4.1.6 Increased density

The principle of increased densities is also recommended by new urbanism. Buildings are dense with residences, shops and services being close to one another, within walking distance. The increased density principle expands on the walkability principle as walking would be encouraged and people would therefore be able to access all opportunities without being prejudiced for not having transportation fees or their own vehicles (Steuteville, 2000; Ng, 2011). There have been suggestions that public facilities such as schools should be located on the edges of neighbourhoods which allows them to service more than one neighbourhood (Louw, 2012, Lajeunesse, 2016).

3.4.1.7 Smart transport

The smart transport principle recommended by new urbanism also elaborates on the walkability and connectivity principle. Smart transport refers to a network of trains of high quality which connects cities, towns and neighbourhoods. The new urbanism design is pedestrian-friendly which encourages the use of bicycles, rollerblades and walking (Haas, 2012). This form of travel brings people together and people consequently get to know and learn about one another and form meaningful relationships (Scheepers, 2014).

3.4.1.8 Environmental sustainability

The concept of environmental sustainability is another principle outlined in new urbanism. When developing housing and creating neighbourhoods, the impact that the development has on the environment must be considered (Du Plessis, 2007). It is pivotal in new urbanism that development should consider and apply eco-friendly technologies, consider energy efficient options, use building materials which are locally produced and reduce the use of vehicles.

3.4.1.9 Quality of life

The ninth principle is that new urbanism promotes good quality of life. The principles of new urbanism, when applied holistically, ultimately increase the quality of life of all residents. New urbanism principles intend to create a place which uplifts, enriches and inspires the human spirit. It not only focuses on the development itself but also the aura that it creates and the manner in which it affects people's lives (Haas, 2012; Louw, 2012).

South African housing development practitioners should consider the principles of new urbanism when designing and planning low-income housing development. It is however important to note

that new urbanism is generally more of a neighborhood planning approach rather than a low-income housing development project approach. Therefore if a housing project is planned as an infill in an area with existing public services and amenities, the possibility of achieving new urbanism principles are high.

This could potentially result in low-income housing developments comprising of higher densities and offering a range of compatible activities and mixed land-uses close together, in accessible locations. The mixed land-use promoted by new urbanism creates local jobs, which in turn promotes the economy, reduces urban fragmentation, provides closer public services and supports mixed communities.

Furthermore according to UN-Habitat (2014) a good social mix provides the basis for healthy social networks, which is the driving force of city life. Hence low-income housing developments would be spatially integrated with socio-economic integration being part and parcel of the process of creating integrated human settlements.

The success of new urbanism has been recorded in Switzerland, and in the United States. It had varying impacts in the United States with respect to how places of residence are produced today (Kim et al, 2008). Vanderbeek and Irazabalís, in their publication '*New Urbanism as a New Modernist Movement*' in 2007, confirm its impact in housing projects in the United States has had mixed results.

As a means to redevelop urban areas, new urbanism prioritizes design and planning. However residential areas with diverse populations would first need to build trust and to get acquainted with each other in order to understand similarities and differences to avoid disagreement with regards to planning and designing of their community. Moreover, even if a community is improved successfully under new urbanism principles, property values tend to increase exponentially. Therefore some of the original residents and businesses may be unable to afford to remain in that community (Shibley, 1998; Pyatok, 2000).

However Fulton (1995) states even though new urbanism may have some negative results, it is important to keep new urbanism in perspective. According to him, even in the event of new urbanism being executed to perfection, it cannot magically solve all urban problems. Furthermore Briggs (1997) adds that the impact of new urbanism is often misinterpreted. New urbanism is not

a platform which provides individuals with housing infrastructure or municipal services, nor can it assist with utility costs. It is rather a movement which outlines vital principles in order to integrate a variety of housing typologies together in a neighbourhood. Furthermore, while new urbanism is commendable in respect of integrating various housing typologies and costs, it does not necessary address all the other integration issues such as social integration problems.

3.4.2 New urbanism in South Africa

New urbanism principles have been applied in South Africa to attempt to overcome spatial integration issues in low-income housing development (Ellis, 2002; Kenworthy, 2008). Such attempts are seen in the greenfield and infill developments in Cape Town (Century City), Durban (Point Precinct), and Johannesburg (Melrose Arch) (Ofosu-Kwakye, 2009). Unfortunately the application of new urbanism principles in South African low-income housing projects did not provide a clear solution to spatial integration (Jenks et.al, 1996; Durack, 2001; Todes, 2000; Neuman, 2005).

For example, Melrose Arch, launched in February 2002 is an 18-hectare mixed-use development, located in Region 3, Sandton, Johannesburg (Du Plessis, 2007). Prior to the Melrose Arch development, the land used to be a public park. However the city's planning council recognized that it was not being used by the public hence it would be more feasible to develop the site (Mahomed, 2011). The objectives of the Melrose Arch precinct are to: integrate the residents with the surrounding areas and adjacent natural environment, create an easily accessible environment which promotes movement within and beyond the area, and to create an environment that is safe for residents and visitors (Van Dyk, 2005).

Melrose Arch is well-located in respect of access to urban opportunities. It is situated in close proximity to the Johannesburg CBD, Midrand, Pretoria and OR Tambo International Airport (Du Plessis, 2007). The development is also surrounded by an aesthetically pleasing environment. Various walking trails, parks and open green spaces, streams and nature reserves enclose the Melrose Arch region (Van Dyk, 2005).

In Melrose Arch, the walkability principle has been complied with as all basic facilities are within close proximity. However there is ample parking that has been developed which influences residents to use their vehicles rather than to walk. Furthermore, there are wide sidewalks which

allow many people to walk simultaneously and there are benches which are visible on the sidewalks. However there is not enough shade provided where the benches are situated. This prevents people from actually making use of these facilities (Du Plessis, 2007) In Melrose Arch, the housing built in accordance with new urbanism principles are focused on middle income groups and tend to not cater for low-income households. Majority of the housing built in Melrose Arch range between 1.5million rand to 8.5 million rand, which is contradictory to the principle of mixed-use housing.

The application of new urbanism development in international and local projects has encountered issues of affordability for low-income households in both urban and suburban settings. Critics such as Talen cited in Prater (2011) argue that there is a frequency of new urbanism developments being exclusive to the wealthy. In order to implement each and every one of the new urbanism principles in a project, sufficient capital is required. This makes it almost impossible to develop low-income housing in accordance with new urbanism principles. Given the housing backlog and budget constraints of the South African government, the new urbanism principles are difficult to implement in such a setting.

Despite the disappointment experienced in relation to the application of new urbanism principles in South Africa, it goes without saying that urban sustainability, mixed-use environments and transit-oriented developments (TOD) should not merely be precluded from further development (Marshall, 2003). New urbanism can be useful when attempting to create integrated communities. However, housing developers must bear in mind that these principles cannot solve all urban problems, but can to an extent, assist in achieving holistic integration in human settlements. Whilst each and every project may not achieve all nine new urbanism principles at one instance, the more principles that are achieved in a single project will result in a higher probability of spatial integration.

The circumstances of each project must be taken into consideration and the principles of locational theories and new urbanism may be applied partially or comprehensively, depending on the nature of each project.

Chapter three introduced the theoretical framework within which the research was contextualized. The relevant literature highlighted, analyzed and provided perspectives on the concepts of

‘location’ and ‘accessibility’ as these are core elements of spatial integration. Chapter three also outlined the neoliberal theory and locational theory as these two theories have, over the years influenced spatial integration within cities and provided a suitable context for understanding the data collected and its analysis. Furthermore the new urbanism movement discussed in this chapter provided a clearer understanding of the concept of spatial integration and how it could be achieved in different ways within South Africa.

CHAPTER FOUR: Conceptualizing Integration

South Africa's history of urban apartheid, its impact on city form and the manner in which it impoverished spatially marginalized people has played a pivotal role in any debates and policies on the restructuring of the city. One of the intentions of post-apartheid housing initiatives has been to make provision for low-income people to have access to housing in well-located areas, thus reclaiming access to urban opportunities that had been lost under the pre-apartheid and apartheid regimes. Hence the concept of integration and its implementation in low-income housing in the post-apartheid era was introduced. This chapter critically examines the concept of integration and its components in greater detail in order to establish if integration has been successfully applied in the South African context.

4.1 Defining integration

The concept of integration is complicated and varies depending on the context within which it is applied (Arnal, 1999). Integration is defined as the act of combining into an integral whole. The term is synonymous to acts such as inclusion, combination, unification, incorporation, amalgamation and harmony. The act of integration is used to refer to the joining and mixing of different people's ways of life, customs and habits. It essentially joins groups of people together to create an effective society (Farlex Inc, 2010). The concept of integration is broad and incorporates various inter-related aspects. For the purposes of this dissertation, emphasis is placed on spatial integration in terms of locational proximities to socio-economic opportunities, and public services and amenities normally provided by urban centres. The also study provides a brief outline of the various aspects of integration as these aspects are inter-related and cannot be seen in isolation.

4.1.1 Defining Spatial integration

Spatial integration expresses the various opportunities and their level of interaction that exists within and between areas. It indicates the level of connectivity that is available with respect to transport systems of different geographical scales. Having efficient administrative bodies in creating integrated cities positively influences the process of spatial integration (Grasland and Healy, 1999).

Khan and Thurman (2001) state that spatial integration of the poor and disadvantaged can be regarded as their ability to have access to economic, social and institutional opportunities afforded by the city. In order to redress historically disintegrated settlement patterns, the spatial, social, economic, physical and institutional aspects of development must be considered. Housing developers need to assess each project on a case by case basis and incorporate the various factors in the housing development in order to ensure holistic integration.

The spatial relationship which new housing development has to the city, its location with regards to transport networks, social interaction, employment opportunities and social facilities, is one of the most important aspects of integration (Charlton, 2003). Spatial integration aims to discard the negative factors of fragmentation and separation. This is done by forming integration between land uses, between new developments and old, and between different income groups (Royston, 2003).

Thus it can be seen from the above definitions and objectives that spatial integration is a complicated and multi-dimensional concept which requires various inter-related principles to be applied. Spatial integration does not merely entail placing people in cities which are prosperous. Rather, it can also be achieved in other ways such as bringing opportunities closer to people. Integrated human settlements can be achieved by providing opportunities of economic growth and transportation networks to residents. Residents would then be able to live and work in the same area.

4.2 Other relevant types of integration

In order to truly grasp the notion of spatial integration, one has to understand all the other categories of integration, as they are interlinking and often overlap in terms of implementation and outcome. Integration in low-income housing delivery projects is a multi-dimensional aspect and can be categorized as spatial integration (already discussed), economic integration, functional integration, social integration, integrated process of delivery and an integral response to needs (Charlton, 2003).

4.2.1 Economic integration

Economic segregation refers to the process whereby people are spatially segregated in accordance with their economic class. An economically integrated community consists of a neighborhood which accommodates a diversity of income groups. Beyond this, it also has economic activities

and opportunities which are on different scales. Provision for urban agriculture, small-scale trading, markets, entrepreneurial centers and commercial activity in close proximity to residents should be made to achieve an economically integrated community (Van Schalkwyk, 2012). Economic integration results in an increased level of employment opportunities and local buying power. Residents are able to generate their own income within their living spaces which ultimately results in a community that is economically viable (Nelson Mandela Bay Municipality, 2007).

4.2.2 Functional integration

Another aspect with respect to integration has to do with the nature and purpose of the development itself. The development should not be mono-functional or isolated. A fully functional residential area contains facilities and amenities and ultimately creates living and working areas which are interactive (Van Schalkwyk, 2012). Functional integration ensures that a range of services, opportunities and facilities are available and accessible to residents which influence the overall welfare of people. This includes, but is not limited to, integration of medical, education, agriculture, transportation and communication opportunities. An integrated approach is one which consists of proper co-ordination between the social and economic activities of people. Such co-ordination is highly dependent on location as location determines accessibility (Phadke, 2006).

Functional integration entails a development being multi-functional. The aim of functional integration is that development should cater for all dimensions of activity such as cultural, educational and economic activities which essentially creates an area that is a lively and interactive space. Functional integration results in a range of services and amenities being available and accessible to people resident in a community (Nelson Mandela Bay Municipality, 2007). There are many ways in which functional integration can be achieved, depending on the surrounding circumstances of each area of development. The implementation of mixed-use, higher densities, infilling, and the co-location of living, working, service and recreational opportunities can all contribute to development being functionally integrated (Van Schalkwyk, 2012).

Several benefits emerge as a result of the implementation of functional integration in low-income housing development. With functional integration incorporated in housing development, residents are able to access goods and services without the need to travel far distances, opportunities for the

generation of income within the local space are created, financial and environmental costs are decreased and efficient provision for infrastructure and other services are made (Nelson Mandela Bay Municipality, 2007).

4.2.3 Social integration

Social integration refers to the broad range of social relationships that exist and the extent to which individuals are able to participate in these relationships (Brissette et al, 2000). Phadke (2006) and Abbott (2001) state that social integration involves the facilitation of the creation of a vibrant, diverse population mix in a community which consists of all different population groups and considers the various cultures, ages, abilities and income groups of the population. These aspects must be taken into consideration during the planning and development of low-income housing.

Similarly to functional integration, there are various ways to achieve social integration. The provision of mixed-use housing, different land tenure options, variation of dwellings and financing options can all contribute to achieving social integration. Strategically locating business centres, markets and institutions and creating multi-purpose community centres can also contribute to achieving social integration in a community (Van Schalkwyk, 2012). There is an array of benefits that arise as a result of the implementation of social integration. These include enhanced social interactions between people, the creation of understanding and tolerance of one another, the overcoming of differences between different groups as well as the enhancing of human resources and capacities in the community (Phadke, 2006).

4.2.4 Integrated delivery processes

The sixth type of integration applies to the process of delivery. The involvement of all stakeholders in the delivery of low-income housing projects is vital. Each neighbourhood's unique historical and political background as well as its own meaning may however affect the ability or degree of involvement by stakeholders and their respective contributions and responsibilities in the delivery process (Charlton, 2003).

In order to achieve integrated outcomes, co-ordination in terms of directives, resources and targets in respect of housing projects are required from government officials. Absence of inter-

governmental partnerships may result in poorly aligned departmental budgets and spending, resulting in disintegrated mono-functional developments (Royston, 2003).

4.2.5 An integral response to beneficiary needs

Integration as an appropriate response to the needs of residents of low-income housing entails housing development being developed in accordance with the specific necessities of each of the beneficiaries. In other words, there is no one-size-fits-all approach. It is based on the notion that all people are different, encountering different problems, and therefore housing development should respond to those individual needs of the resident population (Charlton, 2003). In order to meet the varying needs of residents, beneficiaries should be part of the development process whereby their views are considered prior to the construction phase. It goes without saying that it would be highly unreasonable and unaffordable for each unit in a low-income housing project to be built differently depending on the individual needs of its various beneficiaries. However the holistic contribution of beneficiaries can be assessed to attempt to develop housing which would be beneficial and appropriate for its residents.

4.3 Integrated housing development

Various scholars have defined integration in respect to housing. Tonkin (2008) defines integrated development as a holistic development that addresses the needs of those who are intended to benefit from the development. This definition can be applied to the context of housing. Integrated housing development encompasses the various forms of integration already discussed. It therefore consists of a spatially and functionally integrated environment which makes provision for water and electricity services, road infrastructure, adequate housing, educational facilities, medical centres, shopping centres and recreational facilities (Ewing et al, 2003). Integrated housing development contributes to the diversity of a city's cultural mixture (Mzimela, 2013). It creates an environment which provides people with opportunities for personal growth, community solidarity and economic progression (Ofuso-Kwakye, 2009). Furthermore, McClinton and Zuberi (2006) state that local communities are afforded a sense of belonging wherein the concept of integrated housing development is applied.

South African local governments and municipalities are encouraged to create and implement development plans which are holistically integrated, consisting of transportation systems, housing

sector plans as well as basic infrastructure service delivery (Ethekwini Municipality, 2010). The integrated development approach should be implemented in low-income housing development as there is a need for the poor and previously marginalised households to be integrated socially, spatially and economically. Due to the high cost of urban land, there has been a tendency by government to push low-income housing to the outskirts of urban areas (Ethekwini Municipality, 2011). It is for this reason that local governments and municipalities should implement holistically integrated development plans in low-income housing development to ensure that low-income households are afforded urban opportunities and are ultimately integrated.

4.4 The integration dialogue

In the context of housing in South Africa, there have been various perspectives put forward by authors with respect to the need for and impact of spatial integration of low-income housing projects. Eckstein (1990) argues that people who reside closer to the city enjoy elevated economic opportunities and benefits as opposed to those in the peripheries. Even in the event of a decline of formal sector opportunities, those residing in the city are easily adaptable to the change in opportunities and have an advantage in competing in the informal sector. Dewar and Watson (1991), Harrison and Todes (2014), Venter (2012) and Litman (2019) support Eckstein's argument and state that as a result of the size and density of inner cities, the poor may benefit significantly from the central city as walking to economic opportunities is possible, which reduces transportation expenses. In the event of walking not being possible, there are various modes of public transport which are available and many of these modes of transport tend to converge on the city centre.

Mpantsha's (2000) work on Cato Manor, which is a low-income housing development project located approximately 7 kilometers away from the Durban city center in Kwa-Zulu Natal, shows that although people did not choose to settle in the area due to its good location, by residing there they benefitted significantly as they were no longer subjected to long travelling distances as well as transportation costs and travelling times were shortened. Furthermore, they were afforded better access to services and facilities due to being in close proximity to the city center.

Schoonraad (2000) however contradicts Mpantsha's view, based on research in Pretoria, and suggests that households in the larger sites on the periphery are flexible enough to accommodate

lifestyle changes, maintain social networks and expand income sources through economic activities such as, but not limited to sub-letting and urban agriculture. Schoonraad states that the daily living costs in areas which are centrally located are much higher than those of the periphery.

There are arguments by scholars such as Goldberg (1998) and Cashin (2004) who oppose integration, stating that people are merely assimilated and are forcefully detached from their original culture. In practice, the implementation of integration in South African post-apartheid policies, programmes and legislation have often involved the need for low-income households to accommodate and attempt to replicate the lifestyle of middle-class households in respect of interests, values, ideas, opinions, etc. As a result of implementing integration, the poor are ultimately expected to and sometimes forced to assimilate behaviours. Their identity is lost as they are expected to blend in with middle-class individuals and conform to the lifestyle of those that they are surrounded by (Bolt et al, 2010). Assimilation in this instance is not desirable and is sometimes not even possible. It is for this reason that the intention of integration is questioned and criticized by Goldberg and Cashin.

In South Africa, post-apartheid policies have created a relatively peaceful coexistence between the various race groups. As much as these policies have created peace between the various race groups, demographic mixing has tended to mask the lack of social interaction (Lemanski, 2006a). It is stated further by Lemanski (2006b) that physically desegregating groups of people does not directly lead to social interaction. According to Cashin (2004) in daily voluntary settings, friendship and understanding is difficult to come by and on that basis, it is hard to believe that such social interaction could work in forced integrated neighbourhoods. Regardless of the difficulties/challenges raised in achieving social interaction in forced integrated environments, Cashin and Lemanski stress that in order for people to grow and improve their welfare and to be truly integrated, social interaction is highly necessary (Lemanski, 2006b).

Despite the validity of arguments against the need for integration, it goes without saying that by creating spatially integrated housing developments, residents will have access to greater opportunities which are afforded by the city. Deluca and Rosenbaum (2010) state there are several authors who argue that integration is necessary. The rationale behind creating integrated human settlements is to effectively expand accessibility of low-income individuals to urban advantages. This essentially means that despite falling within the low-income bracket, people are still entitled

and have access to employment opportunities, basic services and amenities and social interaction thereby ultimately improving their quality of life. As a result of improving quality of lives, poverty and traces of inequality can be reduced. Once beneficiaries are able to gain employment in cities, they should gradually be able to afford the daily living costs. Given the various attempts by the South African government at some forms of integration, South African low-income housing development should place accessibility at the forefront and it should ultimately be the key objective for spatial transformation in low-income housing development.

4.5 Definition of accessibility

As previously stated, an integrated approach is one which consists of proper co-ordination between the social and economic activities of people and such co-ordination is highly dependent on location as location determines accessibility. Although distance and time costs, and location, along with other elements such as good quality public services and amenities such as schools, shops, health facilities, places of employment and recreation etc, are important aspects in determining well-located land for low-income households, one of the key detriments encountered in obtaining well-located land for the delivery of low-income housing is accessibility. Hence the concept of accessibility is looked into and discussed within the context of housing. For the purpose of this dissertation, accessibility is discussed in its specific reference to urban opportunities.

According to Watson (1999) cited in Herve (2009), current low-income households in South Africa have been a reproduction of the apartheid era spatial organisation as these low-income housing units continue to be built on the outskirts of urban areas with low levels of accessibility. In the context of delivery of low-income housing, accessibility refers to the meeting of the circulation needs of residents. In terms of accessibility, residents are entitled to mobility and have access to affordable public transportation, commercial and social facilities, services and employment opportunities. The lack of access to affordable transportation modes moreover hampers the mobility of the poor (Sokhela, 2006).

4.5.1 Assessing accessibility

In order to evaluate spatial integration, accessibility levels would need to be assessed. For example, if spatial integration of low-income housing projects in South Africa are to be a success, the highest level of accessibility would be required for the low-income households. However South African

built environment planners often misunderstand the role of accessibility and assess it poorly. Geurs & van Wee (2004) define interrelated components of accessibility which can be useful in assessing the highest level of accessibility.

The first component is the land-use component. This component consists of spatial distribution of destination and origin locations. Destination locations refer to activity sites that supply opportunities whilst origin locations refer to the sites from which the demand for opportunities originates. The land-use component looks at the interaction between both the destination and origin locations (Geurs and van Wee, 2004). In the context of South African low-income housing development, destination locations are seen as areas in close proximity to the CBD and origin locations are the areas in which low-income households generally exist, which are normally located on the urban periphery.

Therefore the land-use component looks at the nexus between both the areas close to the CBD and the outer periphery. The land-use component is thus important in this study as it shows how two areas interact and exist spatially in order for them to be spatially integrated. The second component is the transportation component. This entails describing the transportation system in terms of the negative aspects that individuals are faced with when travelling to and from destination and origin locations, using a specific transportation mode, travel time and cost, and the degree of difficulty that individuals experience in order to overcome distance between origin and destination locations.

The third aspect with regards to assessing accessibility is the temporal component. This component reflects on the availability of opportunities at different times of the day and the amount of time that people have to partake in certain activities. The final component is the individual component which describes an individual's socio-economic and demographic characteristics; their age, level of income, gender, level of education, health status and household characteristics, which may affect their ability to gain access to various transport modes and be entitled to spatially distributed opportunities (Geurs and van Wee, 2004). In this study, data was collected from various categories of resident's as the achievement of spatial integration varied amongst different individuals as a result of their personal socio-economic and demographic characteristics.

For low-income housing developments in South Africa to be spatially integrated, the four elements of accessibility need to be spearheaded in the design, planning and implementation stages of low-

income housing delivery. The land-use component should be implemented to ensure optimal interaction between both areas close to the CBD and on the outskirts. The transport component needs to be certain and user-friendly. While the temporal component should be transparent, for instance availability periods of activities and opportunities should be made available at all times. The individual component which focuses on the distribution of opportunities should encompass social characteristics in terms of household situations, economic characteristics in respect of income levels and travelling costs, and demographic characteristics, for example age and gender. This will ensure that low-income housing developments have the highest level of accessibility to urban opportunities.

Although the South African government has tried to incorporate the concept of spatial integration in low-income housing projects, the post-apartheid government has failed thus far. Many of these housing developments tend to be of bad physical quality and located on the outskirts of the city, repeating the spatial patterns of the apartheid era. The primary South African legislative frameworks, policy instruments and programmes that have attempted to address the lack of spatial integration in low-income housing are namely: the Reconstruction and Development Programme (RDP) of 1994, the Housing White paper of 1994, the Development and Facilitation Act (DFA) of 1995, Constitution of Republic of South Africa of 1996, Housing Act of 1997, Breaking New Ground (BNG) of 2004, Inclusionary Housing Policy (IHP) of 2007, National Housing code (2000, revised in 2009), the Integrated Residential Development Programme (IRDP) of 2009 and the Spatial Planning and Land Use Management Act (SPLUMA) no 16 of 2013. These policy instruments, programmes and initiatives are discussed in greater detail in the next chapter.

Chapter four provided an in-depth review of the relevant literature related to spatial integration with specific reference to low-income housing development. It critically defined the concept of integration and its practicality in the South African context and also unpacked the different forms of integration. The chapter then went on to explore arguments by various authors that are centered around housing developments which are located on the periphery of urban centres.

CHAPTER FIVE: South African housing policy, legislative instruments and programmes on spatial integration

Chapter three of the study discussed the concept of spatial integration and its origins, along with its importance in South African low-income housing. The objectives of housing policies and delivery mechanisms that function currently is directly due to repercussions of housing policies and strategies that were pursued prior to the year 1994 (Sabela, 2014). This chapter discusses the history of segregation and the various initiatives that have been undertaken by the post-apartheid government in order to create spatially integrated housing settlements. South Africa's history in respect of spatial disintegration dates far back to the early 1600s and can be broken down into three phases namely, the colonial city (pre- 1910), the segregation city (1910 - 1948) and the apartheid city (1948 – 1994) (Van de Merwe, 1998).

Prior to the colonial occupation of Southern Africa, there were complex political, economic and social structures which characterized locational and spatial organization of indigenous settlements. Elements of segregation arose during the period of Dutch rule between 1652 and 1806 and was progressively exacerbated as time passed by (Beinart and Dubow, 1995). Since the 1650's, there have been various significant events which have occurred that have disrupted the settlement patterns of local communities which are discussed below. These events resulted in large scale involuntary migrations of poor non-whites and marked the beginning of segregation and exclusion in South Africa (Strauss, 2017).

5.1 Colonial city (pre- 1910)

The beginning of colonialism created the basis for racially segregated urban development and aggravated the spatial displacement of black populations (Maylam, 1995). During the colonial period, physical demarcation and separation of black residential locations were a prominent feature which contributed to spatial control and segregation (Strauss, 2017). The locational restrictions enforced during this period resulted in overcrowding as well as substandard, appalling living conditions in the black neighborhoods.

Even though black people were displaced and moved to peripheral substandard neighborhoods, these areas were used by them for political contestation. The displaced black people attempted to undermine the colonial power and control spatial urban development. There were forced removals

of black communities who were evicted and relocated to areas beyond the urban boundary. The spatial displacement of Africans enabled whites to expand their commercial, industrial and residential developments. Municipalities were further able to limit and manage the presence of blacks in the urban areas as well as control the living conditions of their communities (Strauss, 2017).

During colonialism, industrialization, economic development, and rapid urbanization also enabled spatial modifications to urban settlement patterns. Foreign practices such as European planning models informed local town planning approaches which disregarded the economic, domestic, cultural and social needs of the black residential areas. These models just merely placed black people in poor substandard communities on the outskirts of cities, failing to consider the diverse housing needs of growing heterogeneous urban populations, which contributed to segregated development. As a result, racial together with spatial inequalities within residential areas were created (Hardoy, 1981; Van Wyk, 2012). In 1901, a spread of infectious diseases heightened racial tensions. The blacks were seen as a risk to the health and safety of the white people which further contributed to the forced removals of blacks from the urban areas (Mabin, 1991; Maylam, 1995).

5.2 The segregated city (1910 - 1948)

In the twentieth century, the segregation ideology was fully entrenched and refined (Beinart and Dubow, 1995). In this phase, social divisions took a rigid character and in 1910, the most severe racial discrimination was enforced by the white power, through various legislative acts being enacted to remove and restrict non-whites in all spheres (Schoor, 1951). In 1910, the Union of South Africa was proclaimed and the colonies of the Cape, Natal, Free State and Transvaal became provinces in the Union. The whites wished to curtail encroachment of non-whites into white areas and subsequently in 1913 the Natives Land Act was enacted to give effect to their intention. Section 1 of the Act created separate white and black reserves and prohibited any transaction of fixed property between the groups.

Section 2 of the Act established a commission for identifying and allocating designated areas to blacks and whites. Essentially, eighty per cent of land was allocated to and designated for whites whilst the remaining twenty per cent was allocated and designated for the majority non-white

group. There were provisions for non-whites to reside outside their designated area only in the event of their being employed by whites located in the designated white area (Tagg, 2012).

The primary effect of the Act was to limit ownership of fixed property by non-whites to areas which were specifically designated for their use. The Act did not recognise non-whites as permanent residents of areas designated for whites (Muller, 1981). Segregation in South Africa evolved spontaneously. There were social distances between whites and blacks, causing the city to become fragmented. However during the segregation period, cities were not completely segregated per se. There were a few mixed zones and scattered ethnic areas within neighbourhoods (Van De Merwe, 1998).

5.3 The apartheid city (1948 – 1994)

The transition from the segregation period to the apartheid period took place in 1945. The apartheid city was an elaboration and intensification of the segregation measures that were previously enforced by the ruling party (Beinart and Dubow, 1995). In analysing the transition from the segregation period to the apartheid era, one would note the elements of continuity. The earlier colonial and segregationist measures were merely elaborated and intensified in the apartheid era (Beinart and Dubow, 1995).

The apartheid city, can be referred to as an extreme example of social engineering which was practiced by the South African government prior to the year 1994 (Seekings, 2010). It was the ultimate paradigm for urban division and exclusion (Pieterse, 2009). During this period, there was parliamentary sovereignty in which the government unjustifiably used its powers to enact and retract laws in order to satisfy its personal goals. The apartheid city was more than a mere binary division between the 'whites' and 'blacks'. It in fact implemented statutory racial classification and consequently demarcated whites, blacks, indians and coloureds (Seekings, 2010). The apartheid city was fully regulated by the apartheid government which classified where people could reside and work according to their race. This was done by the implementation of discriminatory laws and regulations (Schoor, 1951).

Racial segregation did not only separate racial groups but it served the purpose of ensuring a clear racial hierarchy in which 'poor whites' would be elevated socially and economically, above all

those designated as ‘non-whites’. This resulted in the inequality taking a Caste-like form. Each caste comprised of its own set of classes. The racial classification determined the possible class positions which they were open to (Seekings, 2010).

Policies, laws and institutions were created to influence household mobility and racially discriminatory controls on land ownership, settlement, employment regulations and education systems (Turok, 2012). These policies attempted to limit access by South Africans classified as ‘Africans’ to cities, and to confine many of them to ‘homelands’, most of which were predominantly rural and with limited economic bases (Todes, 2003). As black urbanisation increased, the policies were amended and influx controls became more stringent with coercive implementation (Turok, 2012). Influx controls ultimately limited the growth of the African population in urban areas and also determined where they could live (Seekings, 2010).

During the 1980’s, there was a breakdown in the harsh anti-urban regime for various economic, political and social reasons. People began disregarding the influx controls which restrained urbanisation and this resulted in an increase in migration and informal settlements. Thousands of people avoided the police and began entering and residing in the cities. Many of the townships became ungovernable. There were rent and service boycotts by the township residents and infrastructure began to collapse. It was evident that the apartheid system was untenable and no longer worked. Since the apartheid restrictions became impossible to enforce, the urbanisation rate began to increase during the 1980s (Turok, 2012). The 1990s marked the beginning of negotiations over political change (Seekings, 2010). After a lengthy negotiation period between the National Party, African National Congress and other political organisations, based on moral grounds and the dysfunctionality in terms of socio-economic and spatial integration of black people, the apartheid government lost its power and South Africa’s first democratic election took place in 1994 (Van de Merwe).

The transition from an apartheid to a democratic South Africa was supposedly a guarantee that social and economical integration issues such as fragmented urban spaces would be revamped (Pieterse, 2009). Urban policy altered and one of the foci in the alteration related to the reforming of local government. The intention was to strengthen municipal capacity and develop funding systems in order to enable local government to play an active role in low-income housing delivery.

The main characteristic of human settlement planning was to address segregation in low-income housing development. This was to be achieved through free mass housing and service delivery (Tagg, 2012).

However, as a result of the impact of the apartheid city, the post-apartheid city contained separations of households based on race, income and culture. The formal, upmarket residential areas in the democratic era were primarily owned and occupied by whites. The degraded formal residential areas were occupied by low-income blacks and comprised of high levels of overcrowding. Informal settlements were inhabited by the very low-income blacks and were located on the periphery of urban areas. Further, the population densities on the peripheral part of the city are much higher than in the central white neighbourhoods in and around the CBD as a result of the inefficient, inverted density pattern of apartheid policies (Nell, 2007). The apartheid policies were the exact opposite to what Von Thunen proposed in his locational theory which suggested that closeness and shorter distances to the CBD as well as lower transportation costs are the underlying factors when determining the optimal location for low-income households.

Since the demise of apartheid, the housing landscape in South Africa has changed dramatically. It is imperative to examine past housing settlement policies as the formulation and implementation of current policy is dependent on and responds to the outcomes of policies that were pursued during the apartheid era. This chapter of the dissertation further provides an overview of the provision of housing during the apartheid era and how it impacted on contemporary low-income housing developments in South Africa.

The South African housing policy during the apartheid era was unique and was strongly centred on ethnic and racial segregation where the white population was separated from the non-whites. The non-whites consisted of black Africans, Indians and Asians, and Coloureds. Two laws which had the greatest impact on residential segregation and isolation include the Group Areas Act (No 40) of 1950 and the Prevention of Illegal Squatting Act 52 of 1951 (Smith, 2003). These laws are examined and discussed in the study because they were the two main pieces of legislation enforced during the apartheid era which determined residential location, the overall policy setting and the impact it had on living conditions and of life on certain sectors of the population.

5.3.1 Group Areas Act (No 40) of 1950

In 1950, the Group Areas Act was enacted and was one of the pillars of apartheid. It prescribed the racial composition of every residential area and was later on used as a justification for forcibly removing people who apparently lived in the so called ‘wrong areas’ (Turok, 2012). The primary aim of the Act was to make residential segregation a statutory requirement. It made provision for where specific racial groups were allowed to reside, work and own property. It ultimately placed control over the movement of non-whites into urban areas which effectively belonged to the whites.

Semi-urban townships were established by the government for the black, coloured and indian population groups. The government controlled and consolidated the existing population who resided in these townships. The reason for such establishment was to prevent any form of civil unrest. The apartheid government believed that by keeping the majority of non-whites divided and secluded with very low levels of interaction between them, it would weaken them and prohibit them from uniting, which unity could cause a threat to the white minority. Mass evictions took place, whereby population groups living in the ‘wrong’ areas were removed (Tagg, 2012). As a consequence of the Group Areas Act, the non-white population was forced into and restricted to land which was badly located and ultimately placed on the outskirts of cities (Witbooi, 2015). The well-located prosperous urban areas and city centres were reserved for white’s only (Mpantsha, 2000).

5.3.2 Prevention of Illegal Squatting Act 52 of 1951

In 1951 the Prevention of Illegal Squatting Act 52 of 1951 (‘PISA’) was enacted. This piece of legislation, according to Muller (2011: 54) aimed to “take vigorous and effective steps to care for the safety of ... as well as property and the peaceful lives of white people”. The scope of eviction was widened by the Act and essentially placed obligation on land owners to evict unlawful occupiers.

The Act prevented and controlled illegal squatting on both public and private land. People were restricted from entering and remaining on pieces of land without having a lawful reason. The Act not only gave authority to courts to order the eviction of squatters but also gave them the power to authorize that buildings and structures which were erected without the permission of the lawful

owners, be demolished. Magistrates and native commissioners were given the power to effect the removal of the squatters. The Act criminalized the action of any person obstructing the police or other designated authorities that executed the orders made by the court (Muller, 2011). As an outcome of PISA non-whites were restricted to isolated homelands which lacked basic services and amenities and were located on the urban periphery.

5.4 Apartheid and spatial integration in low-income housing settlements in South Africa

As a result of the apartheid spatial planning, there was a severe lack of or failure of economic and social development in the 'non-white' areas. There was fragmentation of not only neighbourhoods, but non-white families were also forcefully removed from their well-located homes and placed in badly located areas on the outskirts of cities which lacked infrastructure. The poor, who had been moved as a result of the apartheid legislation suffered severe prejudice, as they were subjected to travelling significant distances to and from their places of employment. They often did not have adequate public transportation and had to walk long distances to reach their destinations.

The apartheid housing legislation created distorted settlement patterns which were deeply rooted in social segregation and physical fragmentation. Part and parcel of this was the separate racially based local authorities, which were instructed to reflect and reinforce residential and socio-economic separation. Areas designated for non-whites were tightly regulated and were denied outright, any form of industrial, commercial and retail development. This in-turn limited their tax-base and forced people to shop in white areas. The separated and peripheral development of townships imposed high costs on residents with regards to their mobility (Turok, 2001).

The townships also lacked basic services and their infrastructure was not maintained. Income generation was strictly prohibited as there were laws preventing blacks from owning property or starting any kind of business. On the other hand, white municipalities had a significantly smaller population to attend to and much larger concentrations of economic activity and wealth to tax. These white areas consisted of high-quality educational facilities, well-developed transport infrastructures, high standards of public services, excellent housing conditions and were much more prosperous in terms of employment and recreational facilities and opportunities (Turok, 2001).

Dewar (1997) cited in Mpantsha (2000) suggests that the quality of the public spatial environment is the primary factor for determining the quality of an urban environment. If this argument is accepted, the environments that the apartheid government produced were unfailingly monotonous, sterile and non-supportive. Even in places where the shelter levels were high, the living spaces were significantly poor. The Development and Planning Commission and the Department of Land Affairs (1999) state that the planning system of the apartheid government is highly associated with fragmentary control systems. People-centred housing development and an environmental ethic were ignored and political ideology was the starting point for planning during the apartheid era.

According to Dewar and Watson (1991) the apartheid city was characterised by a sprawling and low-density form. They argue that in town planning, there is an assumption that by designing residential areas as physically separate and self-containing suburbs, a social community can be created. The practice of developing self-containing and detached areas which were regulated by racially based local authorities left a daunting legacy of unequal access to jobs, amenities and public services. While it has been 25 years since the fall of apartheid, the urban built form of cities in South Africa remain predominately unchanged due to the tough resilience of apartheid spatial planning (Mpantsha, 2000; Turok, 2012).

Undoubtedly, the apartheid planning system has engraved deep scars on South Africa's spatial structure and has also affected the lives of millions of individuals and households adversely (Turok, 2001). According to Franklin (2011) and Herve (2009) scholars are of the view that it will take numerous decades to make far-reaching changes to the dysfunctional urban structures and inequality that arose as a result of apartheid planning.

5.5 South African post-apartheid attempts of spatial integration in low-income housing

Since the turn of democracy, both built environment practitioners and legislation in South Africa have made 'restructuring' their top priority. The true challenge faced by them was the redevelopment, reconstruction and improvement of the South African city to one that was viable and enabled all citizens to engage with the qualities of a well-integrated city (Dewar in Housing Generator, 1997).

In the democratic South Africa, socio-spatial, racial, economical and institutional integration needed to be included in housing policies and legislation in order to promote an efficient and

integrated development. People that were previously disadvantaged as a result of the apartheid systems should now be integrated with the previously advantaged groups (Landman, 2004; Cooke, 2014).

The South African post-apartheid government has taken various initiatives to integrate and provide the previously disadvantaged with opportunities to acquire housing in well located areas (Todes, 2003; Huchzermeyer, 2011). The primary legislative and policy instruments as well as programmes related to low-income housing delivery in South Africa that intended to create integrated human settlements are discussed in chronological order. These are namely the Reconstruction and Development Programme (RDP) of 1994, Housing White Paper of 1994, Development and Facilitation Act (DFA) of 1995, Constitution of Republic of South Africa of 1996, Housing Act of 1997, Breaking New Ground (BNG) of 2004, Inclusionary Housing Policy (IHP) of 2007, the National Housing code (2000, revised in 2009), the Integrated Residential Development Programme (IRDP) of 2009 and the Spatial Planning and Land Use Management Act (SPLUMA) no 16 of 2013.

5.5.1 The Reconstruction and Development Programme of 1994

The Reconstruction and Development Programme (RDP) was the ANC's programme and election manifesto, which was drawn up in 1994. It set out a variety of objectives and emphasized two goals. It predominantly aimed to alleviate poverty and reconstruct the economy. It outlined that integrating growth with economic reconstruction and development should be a priority of the government (Lodge, 1999). One of the aims of the RDP was to assemble and gather communities as well as resources and use them to eradicate the spatial planning of the apartheid era (Mngadi, 2013).

Furthermore the programme aimed to create functionally integrated, efficient and equitable urban economies, as well as effective and democratic structures of urban governance and management. It further aimed to initiate a social environment which ultimately contributes to a better quality of life. The programme set to meet the basic needs of people and to open up previously suppressed economic and human potential in urban areas. It stated that land which is used for building housing must be suitably located in close proximity to economic opportunities and social amenities.

According to the RDP (1994) it is the role of the government to facilitate the access to such suitable land.

One of the initiatives taken up by the RDP was the delivery of free low-income housing for the poor. In an attempt to provide this, the Housing White Paper, implemented by the ANC-led government and in conjunction with the ANC's RDP principles resulted in the production of 'RDP housing units'. These housing units were basically governmental subsidized low-income starter houses. The reason why the RDP principles were overlaid into housing policy post-1994 was to ensure that the ANC's electoral manifesto objectives were met. According to research by the Social Housing Foundation (SHF) (2009), low-income settlements that are developed in well-located areas rather than on the urban periphery have substantial differences for the community. For example, although it financially costs more to build housing units closer to the CBD due to higher land prices, residents have access to urban centres which benefits the society as well as mobility costs being severely decreased.

However the locations of RDP housing units were dysfunctional as more often than not, RDP settlements were located on the outskirts of cities, on land previously zoned for township development, which reinforced apartheid spatial planning. Ultimately, RDP housing perpetuated segregation of the poor and did not contribute to integration (Charlton and Kihato, 2006). According to studies by Sokhela (2006) and the Centre for Housing Rights and Evictions (COHRE) (2008), there is a broad consensus that in majority of neighbourhoods in which RDP housing was situated, housing location failed to offer a range of amenities to its residents.

5.5.2 Housing White Paper of 1994

The White Paper on a New Housing Policy and Strategy for South Africa was adopted in 1994 by the ANC government. The White Paper emerged from the debates by the National Housing Forum (NHF) which was a multi-party non-governmental forum comprising of political groups, parastatal agencies, representatives of financial services, construction and insurance sectors and NGO's (Blake, 2007). The Housing white paper was heavily influenced by the broad principles of the ANC's RDP as the ANC was the ruling political party at the time and currently remains the ruling political party in South Africa. The Housing White Paper was predominantly focused on delivering low-income housing and aimed to create viable, inclusionary settlements where households could conveniently access opportunities, infrastructure and services.

The Housing White Paper sets out the framework for the housing policy and defines the key elements of the National Housing Policy (Landman, 2004). It prescribed that all South Africans be entitled to and have access to a permanent residential structure, water, sanitary facilities, waste disposal and domestic electricity supply, on a progressive basis. The housing vision of the South African Housing White Paper entailed the need to establish communities which are viable and socially and economically integrated. As part of the housing vision of the Housing White Paper, these communities were to be located in areas in which the residents have access to employment, economic, and social opportunities and have convenient access to facilities and amenities. The housing vision was a holistic approach in terms of viewing housing as more than shelter but rather one based on principles of equality, viability, sustainability and good governance when delivering housing units (Sabela, 2014).

One of the objectives of the Housing White Paper were to redress apartheid spatial planning techniques of developing low-income housing settlements on the outskirts of existing urban areas along with racial segregation and the spatial separation between employment and residential areas. The extent to which the above objective was met is discussed later in the chapter.

5.5.3 Development and Facilitation Act of 1995

The Development and Facilitation Act of 1995 (DFA) is a legislative mandate for integrated physical planning and development (Todes 2003). The DFA purportedly fast-tracks land development facilitation in the democratic era and acts as an interim measure to bridge the gap between the apartheid planning laws and new planning systems reflecting the needs of a democratic South Africa (Landman, 2004). One of the primary aims of the DFA is to expedite the release of land in order for development to take place, hence the DFA is implemented by the government as a tool to restructure urban development (Donaldson and Marais, 2002).

Revamping the spatial environment to address racial settlement patterns, promoting compact cities to prevent urban sprawl and encouraging mixed land-use and integrated land development as well as fostering the production of sustainable human settlements are three out of the five principles outlined in the DFA which are relevant to this study (Parnell et al, 2014). Through these principles, the DFA provides for an efficient, integrated and environmentally sustainable land development

which discourages illegal occupation and urban sprawl, and encourages public participation in low-income housing delivery (Ackerman, 2016). The DFA aims to create cities which are sustainable (Wendy Ovens and Associates, 2006). It is an approach to speed up the corrections on the shortcomings of the RDP. Local governments are consequently mandated to develop integrated planning systems, accelerate land development, as well as, improve the co-ordination within different spheres of government (Ackerman, 2016).

The DFA sets the stage for development to take place in an integrated manner. However as much as the DFA has good intentions, the application of the Act unfortunately presents many unintended consequences. Sokhela (2006) states that although the DFA and other South African housing initiatives have lofty intentions of bringing people out of isolated urban sections of the city with better access to services and amenities, low-income housing projects continue to be located in inaccessible areas without provision of facilities needed by the beneficiaries. The reason for this is because the Act makes provision for a development tribunal to set aside building regulations in housing construction. However in most cases, building regulations set by the tribunal are too high for low-income households to conform too and as a result of such a provision, the Act only suits large-scale developers and high-income households (Wendy Ovens and Associates 2006; Simphiwe, 2014).

5.5.4 Housing Act of 1997

The Housing Act was enacted in 1997 and gave effect to the Housing White Paper. It sets out the institutional framework for housing in South Africa. It is the cornerstone legislation for the facilitation of sustainable housing development procedures (Victor, 2009). Section 1 of the Act clearly defines housing development stating that it is the “establishment and maintenance of habitable, stable and sustainable public and private residential environments which ensures 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 permanent residential structures with secure tenure, ensuring internal and external privacy and providing adequate protection against the elements; and potable water, adequate sanitary facilities and domestic energy supply” (Republic of South Africa, 1997:4).

In order to meet the objective of integrated housing development under the Housing Act of 1997 the South African government 'rolled' out the delivery of subsidized low-income housing units. In addition to the poor quality of housing units that were provided by the government to reduce the housing backlog, low-income housing units were peripherally located. This did not benefit the households economically as their settlements were found far away from urban centres which is generally where economic opportunities are rife. The mono-functional manner in which the subsidized low-income housing units were deployed also had adverse effects on the quality of life of its residents as there were no social services, vegetation, schools, and clinics located nearby, which are essential aspects required to maintain a healthy life.

Furthermore residents who were employed in urban centres were burdened with high transportation costs. More often than not these residents had to leave their families and places of residences on the outskirts of cities and rent housing or set up shacks near their places of employment. Hence the poor location of the subsidized housing reinforced apartheid spatial planning which limited integration, and moreover preserved the increasing housing backlog in South Africa (Victor, 2009).

5.5.5 Breaking New Ground (BNG) of 2004

Between 2002 and 2003, the housing programmes in South Africa were reviewed as there continued to be numerous inadvertent consequences of prior housing programmes. Some of the persistent issues that pertained to previous housing initiatives which needed to be reviewed included poor quality of housing and the lack of spatial integration in low-income housing resulting in residential developments being located in peripheral areas (Tissington, 2011).

One of the ideas in the review was to lay the foundation for a new policy direction to redress the absence of spatial integration that prevailed in previous South African housing programmes. During the review process, research conducted by housing policy makers was centred around integrated housing development and sustainable human settlements. As a result of the policy review, the Breaking New Ground (BNG) Policy was formulated in 2004 and remains the operational policy for South Africa. One of the objectives of the BNG policy is to achieve a non-racial integrated society through the development of sustainable human settlements and quality housing (Department of Human Settlements, 2004). The BNG aims to create an urban form that is

compact by emphasizing high density, mixed land-use and the integration of land-use with transportation networks (Ackerman, 2016).

According to BNG (2004) cited in Tissington (2011: 66): “the dominant production of single houses on single plots in distant locations with initially weak socio-economic infrastructure is inflexible to local dynamics and changes in demand...the new human settlements plan moves away from the current commoditised focus of housing delivery towards more responsive mechanisms which addresses the multi-dimensional needs of sustainable human settlements”.

To fulfill the aim of an integrated community under the BNG policy the state provides BNG housing. It is a similar concept to that of RDP housing in the sense that it is a low-income fully subsidized government starter house. The main differences with regards to the housing units produced in the RDP era and the BNG era are the size of the actual units and the fact that RDP housing units were designed to primarily create shelter whereas BNG housing units, in theory are designed to create integrated human settlements (Jali, 2017). By means of numerous innovative and demand-driven housing programmes and projects the BNG policy aims to shift away from the focus of the quantity of houses delivered to the quality. The BNG policy also focuses on the process of low-income housing delivery in terms of planning and the long-term sustainability of the housing environment created (NDoH, 2008; National Treasury, 2009). Similar to the RDP, the BNG also aims to specifically include and integrate previously omitted groups into the city along with the benefits that city life offers. Ultimately the BNG aims to form sustainable human settlements by providing efficient cities, towns and regions that are spatially integrated.

Unfortunately policy implementation outcomes do not always achieve their original intention. Goebel (2007) states that BNG policy has inherited the challenges of apartheid spatial patterns and despite the lofty aims of the policy, it has to date, not sufficiently tackled previous public housing programmes’ absence of spatial integration. It should also be noted that although the BNG policy attempts to integrate the previously disadvantaged communities into sustainable settlements, these households are reluctant to relocate to other neighbourhoods (Department of Human Settlements, 2004).

Moreover, as much as the intention of the BNG is to provide a greater choice of tenure, location and affordability, thus far, this intention has not materialized (Gardner, 2009). According to Victor

(2009) the BNG implementation focuses mostly on social housing or ‘medium-density housing’ for enhancing mobility and advancing of urban integration. However social housing is a costly form of public housing in South Africa and these costs are incurred by benefactors. Ultimately despite the adoption of the BNG policy, low-income housing in South Africa continue to be located on the outskirts of existing urban areas with adverse impacts on households (McLean 2006).

5.5.6 Inclusionary Housing Policy of 2007

The Inclusionary Housing Policy (IHP) (2007) is an initiative that aims create more racially integrated and income inclusive residential environments in order to achieve balanced built environments (Department of Human Settlements, 2009). Creating incentives and making room for the private sector to provide accommodation opportunities for low-income and lower-middle income households in areas from which they are generally excluded due to the dynamics of the land market is the primary goal of the IHP. It also seeks to boost the supply of affordable rental and owner-occupier housing (Landman, 2004). Despite the enthusiasm of the inclusionary housing vision, the policy is not adopted at a national level (Harrison and Todes, 2014). This is mainly due to the resistance by the property sector to incorporate the lower income bracket of the economy (Klug et al, 2013).

Even though the policy is not adopted at national level, municipalities and local governments began to develop their own inclusionary housing policies and practices (Harrison and Todes, 2014). The inclusionary housing policy has been experimented with in Gauteng (Cosmo City) and the Western Cape (N2 Gateway Project). The initiatives that were taken by the Johannesburg municipality involved large-scale greenfield developments which were privately funded. One of the main intentions of the IHP is to create better integration of low-income households in South Africa and to pave a way for low-income groups to obtain access to employment opportunities in higher-income areas (Harrison and Todes, 2014). Despite the good intentions of the IHP, Klug et al (2013) states that the specific details of the IHP are not properly worked out.

Where mixed-income housing projects are implemented by local governments, the actual mix tends to be limited to only the lower end of the private market, this being the lower-income to the lower-middle income households (Harrison and Todes, 2014). Hence many residents are unable to afford the rental or owner-occupier housing that the IHP proposes, hence inclusionary housing

barely contributes to integrating low-income individuals in better locations of the city (Tissington, 2011).

One of the determinants for the successful integration of low-income households is whether or not the housing units are situated on well-located land. In terms of low-income housing delivery, location often plays a more important role than quality of housing units produced. A well-located housing unit has benefits to residents in terms of accessibility to urban opportunities as well as underpins social networks which improve quality of life (Trusler, 2009). Creditably, contemporary low-income housing projects implemented under the IHP in South Africa are generally well-located in terms of easy access to transportation modes and routes to places of employment. However they projects tend to be confined to mostly lower and lower-middle income areas and are also very limited in scale, reaching very small numbers of such households (Harrison and Todes, 2014).

5.5.7 National Housing Code of 2009

The National Housing Code which was first published in 2000 set out South African policy principles, guidelines and norms and standards that apply to National Housing Programmes (Tissington, 2011; Hogarth, 2015; Witbooi, 2015). The National Housing Code of 2000 set out a vision for the establishment and maintenance of habitable public and private residential environments. It aimed to ensure that households and communities in these residential environments were viable in terms of being located in areas where residents have convenient access to economic, educational and social opportunities (Department of Human Settlements, 2000).

According to the National Housing Code of 2000, the occupants of residential environments should, on a progressive basis, have convenient access to residential structures which are permanent with secure tenure, portable water, sanitary facilities and electricity supply (Mzolo, 2016). Between the years 2000 and 2009, the Housing code was amended approximately sixty-four times (Rensburg, 2011). One of the reasons for amending the initial housing code of 2000 was to accommodate the implementation of the BNG policy. The BNG policy proposes changes to several former housing programmes in the sense that they are either updated, removed or new aspects included.

The housing code of 2009 recognizes that contemporary housing provisions continue to disregard social and economic aspects which consequentially result in a lack of spatial integration, perpetuating apartheid planning and settlement patterns. In an attempt to integrate housing needs with social and economic needs, the housing code of 2009 aims to deliver mixed-income subsidized housing units in suitable locations (RSA, 2007; Mnisi 2011). The amendments of the Code introduced eight new national housing programmes, one of which was the Integrated Residential Development Programme (Rensburg, 2011).

5.5.8 Integrated Residential Development Programme 2009

For the purpose of the study, the IRDP is the key focus area. According to the IRDP (2009) cited in Tissington (2011) South African housing programmes primarily focus on the development of subsidized housing. However these housing programmes fail as the strategies and especially the procedures adopted for their execution are incompatible with lower income groups. Therefore the objective of housing programmes which is to provide sufficient scope for area-wide settlement planning is not achieved. This results in housing initiatives that fail to integrate different housing typologies, price ranges and commercial and social amenities.

According to the IRDP (2009) cited in Tissington (2011) South African housing programmes primarily aim to provide sufficient scope for area wide settlement planning through the development of subsidized housing. However these housing programmes have failed in planning and implementing projects with such aims. Hence the housing programme fails to integrate different housing typologies, price ranges and commercial and social amenities.

To this end, the IRDP was introduced to facilitate the development of housing in well-located areas which provide residents with convenient access to urban amenities and create social cohesion (CLC and SERI, 2013). The IRDP is used as a tool to plan and develop integrated human settlements that comprise of various land-uses such as social and rental housing as well as commercial and institutional development. Over and above various land-uses, the IRDP also comprises of integrated human settlements that include various housing typologies and price categories (Tisington, 2010).

The IRDP provides for the acquisition of land and the servicing of several land-uses such as recreational and commercial stands, as well as low, middle and high-income group residential

stands. Local planning and a needs assessment of beneficiaries are used as a basis when determining the particular income group mix and land-use (DoHs, 2007; Witbooi, 2015).

The IRDP also provides for phased area-wide planning and construction of integrated housing projects. There are two phases involved in the planning and development of the projects. The first phase encompasses planning, acquiring land, establishing a township and providing serviced stands such as residential, commercial and business, comprising of various price ranges. In addition to being holistically integrated, this is meant to ensure that a diversity of potential beneficiaries are included in the project (Tissington, 2010). The second phase provides for housing construction for qualifying low-income beneficiaries and the sale of stands to persons who for various reasons do not qualify for subsidies (Tissington, 2011; Tagg, 2012).

The long history of segregation has made the implementation of the IRDP rather difficult. Since the colonial era there have been numerous attempts by the South African post-apartheid government to amend the spatial order of communities which were produced prior to the 1994. Despite governmental attempts, public housing programmes and projects continue to marginalise the poor, hence the introduction of the IRDP.

5.5.9 Spatial Planning and Land-use Management Act (SPLUMA) no 16 of 2013

The SPLUMA is another legislation promulgated by the South African post-apartheid government to address the lack of spatial integration of low-income households. The Act became operational in 2015 with the objective of providing the different spheres of government with a framework concerning the establishment of land-use management systems.

Some of the aims of the Act directed at redressing past imbalances with respect to spatial integration include: equity and inclusion of low-income groups in urban areas and awareness of the role of housing in creating functional and efficient human habitats (Van Wyk and Oranje, 2014). By addressing the abovementioned aims of the SPLUMA, low-income housing settlements are planned on well-located land rather than on the outskirts of urban areas. Spatial fragmentation and segregation of poor households, racial inequality of citizens as well as unsustainable settlement patterns which are widely recognised phenomena in South Africa are dealt with accordingly (Shonani, 2015).

Through land-use schemes which are legal documents that illustrate or zone various land-use rights of a particular jurisdiction, SPLUMA promotes economic growth by zoning specific areas for business and commercial uses. SPLUMA also promotes inclusion via flexible land-use schemes to incorporate various zoning land-use rights in order to meet the numerous preferential needs of inhabitants of a particular area. The Act also promotes efficient land development in terms of minimal impact on public health, the environment and natural resources (Denoon-Stevens, 2014).

However, while SPLUMA has many promising innovations in the context of spatial integration of South African low-income housing, it is in fact based on single land-use zoning as a land-management tool. Nel (2015) states that according to contemporary spatial planners, land-use zoning has been widely criticised for being exclusionary and rigid, segregating both land-uses and people. Furthermore restricting neighbouring land-uses to almost identical or same land-uses simply recreates mono-functional areas similar to those of the apartheid townships. Besides the mono-functional area created under single-land use schemes, occupants of the particular area are often required to commute greater distances from their place of residence to places of work or recreation thus imposing high transportation costs on residents. Zoning is therefore contrary to the goals of SPLUMA with regards to spatial integration and efficiency.

5.6 International examples to housing and spatial integration

It would be nonsensical to think that the peripheral location of low-income housing is a problem that is only to be found in South Africa. While cities in the developing world differ in terms of their colonial history, topography and cultural context, as well as in their wealth and economic base, they all seem to share rapid growth, widespread poverty, and the issue of poor location of low-income housing settlements (Harris and Wahba, 2002). It is for this reason that the research examines international initiatives of spatial integration of low-income housing and analyses two examples which are notably, the Jesuítas housing project in Rio Janeiro and the Shivaji Park housing project in India.

The Jesuítas and the Shivaji Park housing projects informed the study by providing an insight into the different experiences of spatial integration of low-income housing development. The two

international examples further contributed to the study by highlighting the various approaches used to create settlements that are spatially, economically, functionally and socially integrated.

5.6.1 My house, My life programme: The Jesuítas development, in Santa Cruz, Rio de Janeiro

In 2009 Lula da Silva, the then President of Brazil, initiated one of the largest public housing programs in Brazil called the Programa Minha Casa Minha Vida (PMCMV) (My house, My life programme). The programme has an integrated approach to housing and economic development. The objective of the programme is to kickstart the production and acquisition of low-income housing units for the population of Brazil. To achieve this, the programme mobilizes the private sector to construct new homes for low-income people as well as design flexible subsidiaries for potential beneficiaries to obtain new homes (UN-Habitat, 2013).

As much as the intention of the programme is credible, the location of settlements constructed as part of the My House, My Life programme has been criticized by many scholars. Research done in 2012 by Ferreira found that the housing units provided under the programme are often located on the outskirts of urban areas throughout Brazil. The location of housing units is disadvantageous to the residents as they do not experience the same opportunities offered to people who reside in close proximity to urban centers. In other words, public services and facilities and infrastructure in general which are normally provided by urban centers are inaccessible to occupants of the My House, My Life housing programme (Biderman *et al*, 2018).

Not only are housing units built in isolation, but majority of projects are constructed in the West zone of Rio de Janeiro which is where the poorest in household income and lowest possible chance for opportunities in respect of economic integration is situated. The Jesuítas housing development project which was completed in 2012 is a prime example of the isolated pattern in which low-income housing units are produced under the My House, My Life programme. The project is located in the West Zone of Rio de Janeiro as the area has the cheapest land in the city. The housing project is constructed on a site that encompasses green field plantations with conventional and unconventional structures varying from industrial plants and quarries to residential plots. The Jesuítas housing project contains six complexes with identical four-storey buildings and apartments.

As discussed earlier in the chapter, location often plays a more important role than quality of housing units produced. Due to the isolated location of the housing project, residents are forced to spend a considerably longer time commuting to and from places of employment. Costs of transportation as well as the modes of transport required to reach a specific destination increased. Also very important to note was that walking to and from places were heavily reduced while the reliance on motor vehicle usage grew. The reason for the reduction in walking is due to a lack of destinations that are accessible on foot. Furthermore opportunities for social integration of households within the housing project are absent and residents of the project felt a great deal of separation and loneliness as economic, social and recreational opportunities provided by the city are extremely distant to their homes.

It can be said that the Jesuítas housing project shows resemblance to South African housing low-income housing projects in respect of delivering a vast amount of low-income housing units to the poor, albeit failing to spatially integrate the households into the city. The projects' location is problematic to most of the beneficiaries as accessibility to essential facilities such as jobs by the occupants is difficult. Furthermore even services and amenities in surrounding areas are not sufficient enough to meet the daily, occasional or even sporadic-use needs of the occupants of the Jesuítas housing project (Nadal and Linka, 2018). The results of the Jesuítas housing project has proved that in order for the IRDP to incorporate the various forms of integration, the approach used by the Jesuítas housing project to integrate housing should be discouraged and well-located housing units in respect of close proximity to public services and amenities should be one of the leading factors considered when planning integrated housing development.

5.6.2 Shivaji Park housing complex, Alwar in India

The Shivaji Park housing project in Alwar was introduced in 1981 and completed in 1983. The project was executed through the sole public sector organization responsible for housing development in the district of Alwar, the Urban Improvement Trust (UIT) (Schilderman, 2004).

As much as this is a sites and services project, the Shivaji Park housing project indirectly consists of many characteristics of an integrated development approach. As mentioned the location of public sector housing units has been greatly criticised throughout this study due to the fact that they are commonly found outside or at the periphery of the cities/towns. The Shivaji Park project

site was strategically selected by the UIT due to its convenience in terms of accessibility to the city centre. Hence the project provided an ideal opportunity to test the argument that low-income households should be located nearby to the CBD.

Unlike many other public housing projects developed in India whereby the location of the residential units are located on the urban periphery due to the availability of cheap land, the Shivaji park housing project is located just 3 kms away and 4 to 6 kms away from the UIT and educational institutions respectively. As well as retail and wholesale marketing centers are in close proximity to residents of the housing project. Many services and amenities are easily accessible from these places. Furthermore, just outside the housing complex there is a row of shops owned by the residents themselves which provide basic amenities to the other residents of the housing complex. The roads are well maintained and the site comprises of six open spaces for residents to socialise along with regular supplies of water, electricity, waste removals and other basic services (Lall, 2002).

Ultimately the close location of the Shivaji Park housing complex to the city center benefits most of the residents as their travelling distances are cut down from an average of 15 kms to an average of 4 kms. Within the CBD there are ample job opportunities and schools available. This has a positive impact on households because not only does the good location save costs, time and energy when traveling to places of employment but also allows households to conduct family responsibilities in a shorter time than before.

Due to the beneficial location of the project in respect of access to employment opportunities, many household incomes were also improved. This in turn resulted in some occupants of the housing project undertaking improvements to their homes by adding more bedrooms, bathrooms and in some cases, even floors (Schilderman, 2004). The literature used by the numerous authors in the study such as Dewar (1997), Royston (2003), Huchzermeyer (2010), Tissington (2011), and Mzolo (2016) among many others explaining the important role that accessibility to urban opportunities plays in contributing to the success of spatially integrated housing projects in South Africa has been evident throughout the study and the Shivaji Park housing project is a clear example of the said literature in practice.

From the two different international examples discussed, it is evident that in the delivery of low-income housing, spatial integration strategies that have been implemented thus far have both pros and cons. For South Africa, housing practitioners can take lessons from the Shivaji Park and the Jesuítas housing projects. As evidenced in the two international examples, well-located land that provides access to urban opportunities is one of the most important factors regarding the spatial integration of low-income households. The reason for the success in the Shivaji Park housing project is due to the advantageous location of the projects' housing units. Beneficiaries of the project have easy access to the CBD. With respect to the Jesuítas housing project, the inability for residents to easily access urban areas renders them spatially disintegrated and separated. Housing practitioners can apply the successful concept of accessibility to urban opportunities that exists in the Shivaji Park housing project while learning about the weaknesses in the Jesuítas housing project and using it as a deterrent factor. This would provide for holistic low-income housing delivery initiatives where spatial integration is addressed and sustainable human settlements are achieved.

The chapter began by analyzing the historical developments in South Africa with respect to spatial integration in low-income housing. It is evident that segregation, exclusion and marginalization have been the dominating factors preventing integration since the early 1600's. This continued to intensify up until 1994 when South Africa became a democratic country. The result of colonialist, segregationist and apartheid housing practices left the South African city fragmented. Non-whites were pushed to the outskirts of cities whilst whites lived in prosperous urban areas.

The South African post-apartheid government was left with the daunting task of integrating low-income households in the city. The democratic government attempted to promote equality for all citizens and implemented their initiatives using legislation, regulations and programmes. Despite the numerous attempts by the South African government to create integrated human settlements, there is still an ever-present lack of spatial integration in housing projects. South African housing practitioners can review experiences of spatial integration in international housing practices and innovate around such ideas to ensure that future South African low-income housing developments are spatially integrated which in turn constitutes to creating sustainable human settlements.

Chapter five highlighted the relevant pre-1994 and democratic South African housing legislative instruments, policies and programmes that have impacted on the past, present and future housing

developments in respect of spatial integration. The chapter also drew on Brazilian and Indian techniques in developing housing developments that are spatially integrated as the issue of peripherally located low-income housing exists globally. The different locational practices of integration provided various techniques that may be applied in South Africa in order to bring about a greater change in spatial integration in housing developments in South Africa.

Chapter SIX: Data presentation and analysis

Chapter 4 provided a historical background to spatial integration in South Africa and the various initiatives that were taken both locally and internationally to create integrated human settlements. One of the most recent attempts of spatial integration of low-income households in South Africa is the IRDP which has been implemented since 2009. This chapter seeks to uncover whether the IRDP has successfully addressed spatial integration in South African low-income housing. The Cornubia phase 1A housing project was is as a case study to determine the success or failure of the implementation of spatial integration.

6.1 Background to the Cornubia housing programme

The objective of the Cornubia housing programme is to integrate previously disadvantaged South African households in the city. With the intention of achieving the objective of integration, the Cornubia Housing Project collectively proposes 15 000 fully subsidised housing units that comprises of mixed-income, mixed-used development which combines residential, commercial, industrial, social and open spaces in order to create sustainable human settlements that are spatially integrated.

The entire Cornubia project is planned to be implemented in five phases and is expected to be completed over a period of approximately 20 years. To date, only phase 1A has been completed while phase 1B is still under construction. For the purposes of the study, phase 1A housing project was purposely selected as a case study due to the fact that IRDP together with the BNG principles for an integrated community were applied in its planning and implementation and it therefore presents an appropriate setting to examine the extent to which spatial integration objectives have been achieved in practice.

Phase 1A of the project set out to provide 482 semi-detached housing units and was completed in 2014. The units were assigned to low-income households from various informal settlements in the eThekweni municipality area and beneficiaries were given freehold tenure. The Cornubia phase 1A housing programme in terms of the IRDP under the National Housing Code 2009, set out to steer development towards existing economic opportunities and provide easy access to transport facilities, health care facilities, education facilities, and employment centres.

6.2 Interpreting the success or failure of spatial integration in Cornubia phase 1A

In order to establish whether or not the IRDP is a successful strategy of spatial integration in South African low-income housing, the Cornubia phase 1A facilities, in respect of location, access and threshold norms were carefully compared to CSIR planning standards and the results are as follows:

Table 2: Facilities location, access and threshold norms

CSIR FACILITY TYPE	CSIR AVERAGE THRESHOLD POPULATION	ESTIMATED CORNUBIA 1A POPULATION	AVERAGE TRAVEL DISTANCE OBSERVED BY RESEACHER (KM)	TRAVEL DISTANCE (KM) FROM CORNUBIA 1A OBSERVED BY RESEARCHER
SPATIAL INTEGRATION				
EDUCATION				
Primary School (small)	1 000 - 2 199	2000 to 2400	10 km's one way	20 to 300m one way (in Cornubia 1A)
Secondary School (small)	2500	2000 to 2400	10 km's one way	6.5 Km's one way
Grade R Class at Primary School	1 class of 20 per 1000 people	2000 to 2400	5 km - (2 km preferred)	20 to 300m one way (in Cornubia 1A)
TRANSPORT FACILITIES				
Taxi pick up points	Less than 500 passengers per day, or less than 100 passengers in peak hour (8-9 am)	2000 to 2400	400m one way For taxi services to function efficiently, pick up points need to be located at 800m intervals.	300 to 390mone way (in Cornubia 1A)
CIVIC SERVICES				
Police Station	1 station per 60 000 people. A SAPS Contact Point may be established where threshold is smaller	2000 to 2400	SAPS Contact Points could either be established in areas that do not warrant a fully-fledged station or in areas that are further than 24 km's from a police station.	Nearest police station is located in Phoenix which is 7 km's from Cornubia (one way)
Shops	Variable	2000 to 2400	100 to 300m one way Location and number of shops vary according to the nature of the area and the level of competition.	10 to 250m one way (in Cornubia 1A)
ECONOMIC INTERGRATION				
POSSIBLE PLACES OF EMPLOYMENT				
CIBE				1.5 Km's one way
Cornubia Mall			While there is no standard or requirement for travelling distances between places of economic prospects and residential areas the Development Facilitation Act No 67 of 1995 stipulates that employment and housing opportunities should be integrated with each other.	6 Km's one way
Gateway Mall	Variable	2000 to 2400		8 Km's one way
Phoenix				7 Km's one way
Umhlanga				13 Km's one way
SOCIAL INTEGRATION				
WORSHIP CENTRES				
Church	3000 to 6000	2000 to 2400	Depends on demand; Generally, 2 km's one way	Household living rooms and classrooms converted into praying areas in Cornubia 1A
Mosque				3km's one way
RECREATION PROVISION (SPORTS AND PARKS)				
Neighbourhood Park	0.3 hectors per 1000 people	2000 to 2400	1 km one way	5 to 60m one way (in Cornubia 1A)
FUNCTIONAL INTEGRATION				
HEALTH FACILITIES				
Mobile/Periodic Health Clinic	Less than 5000 people	2000 to 2400	5 Km's one way	Depending where service is stationed on site

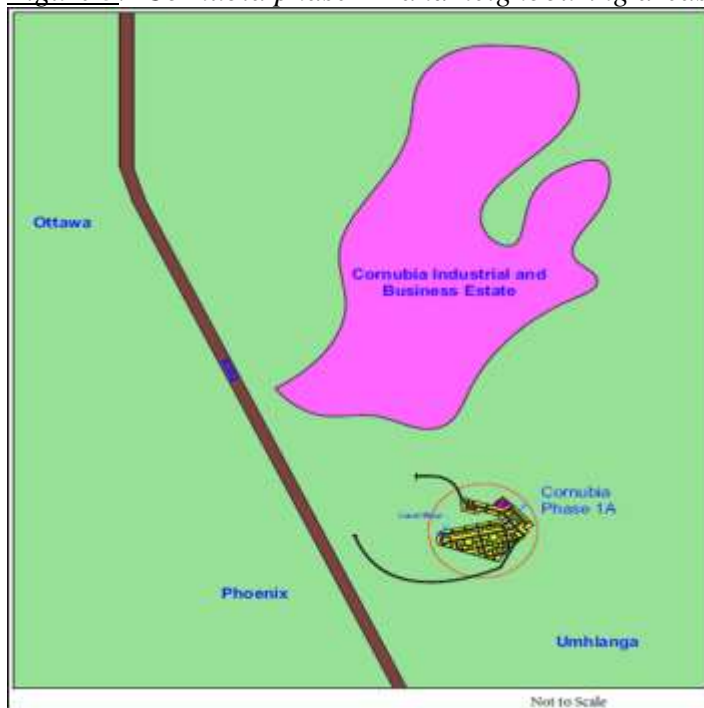
Source: CSIR (2015), adapted by researcher

6.2.1 Spatial integration

One of the leading objectives for the Cornubia phase 1A housing project is to counteract previous apartheid government segregatory land-use patterns. To achieve this, residential units were to be spatially, economically, socially and functionally integrated, which would in turn provide beneficiaries with access to important services and facilities that are normally provided in city centres. During the interview Mr Bheki Shongwe, the planning and land-use executive at Tongaat Hulett Developments (THD) defined integrated development as development that is spatially integrated and which have more than one use.

Prior to the development of Cornubia phase 1A, the site was used as a buffer strip to create a separation between the surrounding areas namely Waterloo, Phoenix, Verulam, Mt Edgecombe and Umhlanga. The separation of these areas typifies the lack of spatial integration in South African low-income housing projects. According to Mr Kamalin Gounden, a town planning specialist in the IYER Urban Design firm, the Cornubia site provided an ideal opportunity to bring these areas together, in other words improve the physical integration between neighbouring surrounding communities (see figure 1 which illustrates the Cornubia phase 1A project and adjacent areas). The roads in Cornubia connect to Umhlanga, Waterloo, Phoenix and Dube Trade Port North of the King Shaka International Airport. The N2/M41, R102 road and bridge towards Ottwa-Blackburn Link are the major roads which pass through Cornubia.

Figure 3: Cornubia phase 1A and neighbouring areas



Source: Site visit (2018)

Mr Shongwe added that the Cornubia phase 1A housing project site was purposely selected due to the convenient serviceability of the site and municipal ownership. The site is owned by the eThekweni Municipality and is easily serviced due to its close proximity to the built areas of Phoenix and Ottawa. Basically providing services to Cornubia phase 1A was not a difficult task as municipal bulk services such as energy, water and sanitation, and roads from Phoenix and Ottawa were simply extended to the adjacent Cornubia phase 1A area. This was further reiterated by the forty-nine beneficiaries as they mentioned that they all have electricity and water and sanitation facilities in their houses.

Asked if and how spatial integration principles have been applied to the layout of Cornubia phase 1A, Mr. Gounden asserted that a compact urban environment was applied in Cornubia. One of the key design principles applied in the phase 1A housing project was that of accessibility. According to Mr. Gounden, there was a need to facilitate access and convenience to essential services and amenities to beneficiaries of the units. In order to facilitate connectivity and spatial integration to surrounding areas, Cornubia phase 1A contained a series of roads which not only connected residents of surrounding areas but also extended access to employment opportunities to the residents of Cornubia phase 1A by providing direct transportation routes to surrounding areas where jobs are rife.

In addition, the town planner added that there was also emphasis placed on the connections between blocks of resident's houses. The layout in figure 2 demonstrates that the housing project made provision for internal routes which are used by taxis yet placed priority on pedestrian friendly routes. This was done through the insertion of walkways and pathways within the Cornubia phase 1A site (see figure 3). Mr Gounden went on to say "we tried to ensure densification and aimed to create a courtyard development to ensure a community type of approach. We further tried to move away from a normal suburban type layout township development which has a single building on a single plot".

Figure 4: Layout plan of Cornubia phase 1A,



Source: IYER (2011), adapted by researcher

Figure 5: Pedestrian walkways



Source: Site visit (2018)

6.2.1.1 Primary and secondary education

One of the indices for successful spatial integration was whether residents had access to educational facilities. There is one primary school that was planned for as part of the project which is available for children in Cornubia phase 1A. The school is known as Solomon Mahlangu primary school and has been operational since 2015. The school is currently being run from temporary prefab 'container' structures. Parents indicated that the classrooms were often overcrowded and sometimes up to forty children were seated in each classroom. However in terms of the CSIR guideline for a school the size of Solomon Mahlangu, class sizes should be up to 40 learners at a time. Moreover the school is located approximately 20 - 300 metres away from resident's houses which meets the 10 km travelling distance as set out by CSIR.

There were twenty-five respondents who participated in the beneficiary household questionnaire who indicated that there were minors residing with them at the household. Nine out of twenty-five respondents indicated that the child/ children are currently attending the Solomon Mahlangu primary school. Six respondents indicated that the minor children attended an educational facility outside the area of Cornubia whilst ten respondents indicated that the minor child did not attend any educational facility at all.

All forty-nine respondents also said that there are no secondary schools located in Cornubia. Those that wish to complete their secondary education have to travel to Phoenix or Verulam. As a result, many students drop out of school once their primary education is completed. According to planning standards set by the CSIR (2015) at least one secondary school should be constructed for a community that contains 2500 people. In this case, the establishment of a secondary school is not justifiable by the population threshold of Cornubia phase 1A which constitutes of 482 dwelling units with an average is 2000 to 2400 people.

In keeping with the guidelines by CSIR, the average travel distance to secondary schools is 10 km's one way. Although there is no secondary school located within the area, the closest school located to Cornubia phase 1A is approximately 6.5 km's which does adhere to the CSIR guideline of a ten km travelling distance to secondary schools. Therefore it can be said that Cornubia phase 1A planners were aware that the distance to a high school would not be an issue for the Cornubia phase 1A residents due to the fact that they do have easy access and are in close proximity to primary and secondary schools.

6.2.1.2 Transportation facilities

Access to transportation services as mentioned earlier in the study, is another element that should be considering regarding the successfulness of spatial integration. When asked about transport facilities, residents pointed out that there are no buses available and the only form of public transport accessible to them is taxis. Forty-five out of forty-nine respondents indicated that they use taxis as their primary transportation mode. Four respondents indicated that they use a private car to travel.

The taxis are available for residents from Monday to Sunday between the hours of 05h00 to 19h00. According to residents Racheal Bullisamy, Nontokozo Stolisa and others, the taxis are easily available to them and the taxi ranks are located within close proximity to their residential units. More precisely the taxi pick up points are located between 30 to 390m away from

resident's households which meets the 400m travelling distance specified in the CSIR planning guideline. The taxi route connects residents to all surrounding areas such as but not limited to Umhlanga, Waterloo, Phoenix, Dube Trade Port, Verulam and Durban Central and costs approximately R10-00 per trip and R20-00 for a return trip. This is evidence that residents of Cornubia phase 1A have easy access to public transportation services in the form of taxis. These taxis travel to various neighbouring areas and the cost of using a taxi to commute is not expensive. It can be said that the mobility of residents in the housing project is good as they can commute to various areas throughout the day, every day.

6.2.1.3 Police station

The easy accessibility and availability of a police station was also considered as an element to achieve spatial integration in the study. When asked about police stations, residents were all in agreement that there is no police station located in the Cornubia area. Residents are required to travel to Phoenix or Verulam which is approximately 10-15 minutes away by use of a motor vehicle from Cornubia phase 1A in order to access a police station. In accordance with the CSIR guideline of 2015 the threshold population of Cornubia phase 1A does not warrant a fully-fledged police station. The CSIR guideline quotes "one police station per 60 000 people. If the threshold is smaller than the 1:60 000 ratio, a SAPS Contact Point may be established". Furthermore in areas beyond 24 km's away from a police station, a SAPS Contact Point may be established.

Residents did however indicate that the crime level within Cornubia phase 1A is very low. Residents feel safe and do not require police assistance frequently. There are police patrol vehicles that drive within the area to ensure the safety of residents. Thirty-eight residents claimed that they were aware of only two incidents that have occurred in the past 3 years, whereby residents were robbed of their cell phones whilst waiting for a taxi. There have been no reports of any other criminal activities since then. Residents feel safe within the Cornubia phase 1A area. Although there is no actual police station in the area, the presence of patrol vehicles is ever present within the area. This is evidence that spatial integration has taken place as neighbouring areas have extended their services to the Cornubia phase 1A project site.

6.2.1.4 Shops

As seen from the layout (page 76, figure 2), there are three local shops within the area. According to CSIR guideline local tuck-shops should be situated 100 to 300 meters one way from households. In Cornubia phase 1A, tuck-shops are located 10 to 250 meters away from

residents which does adhere to the CSIR guideline in terms of average travel distance to shops. All forty-nine residents indicated that they purchase their daily necessary goods from the local tuck-shops located within the Cornubia phase 1A area. However they had to travel to Cornubia Mall, Gateway, Phoenix or Verulam in order to purchase other monthly groceries and clothing items.

One 51-year-old female, Penny Adams, travelled to Durban CBD twice a month in order to purchase goods such as rice, flour, meat, clothing items, etc. The cost of travelling to Durban Central Business District (CBD) amounts to a sum of R14-00 for a one-way trip and R28-00 for a round trip. Due to her age and ill health, she is assisted by her nephew who accompanies her to the CBD to carry the goods to and from the taxi rank. This results in her having to pay a sum of R56-00 for a round trip for both her nephew and herself.

It can be said that in terms of purchasing daily essential goods, residents have easy access to local tuck shops located within the area. However the tuck shops are small and do not offer a wide range of products. Residents are still obliged to travel outside the area to access bigger retail stores for goods. According to CSIR guideline, the location of shops is influenced by the nature of the area in respect of density and community size. In Cornubia phase 1A the population size is not big enough to sustain a fully-fledged shopping centre within the housing project area itself. Although residents have to commute out of Cornubia to access bigger retail stores, they are still partially integrated into the city as they are located in close proximity to areas such as Phoenix, Umhlanga and the Cornubia mall which are areas that do offer services in terms of larger retail outlets.

6.2.2 Economic integration

During the two interviews, the researcher inquired how the Cornubia phase 1A housing project addresses economic integration as access to economic opportunities plays a pivotal role in the success of an integrated low-income housing project. Mr Shongwe stated that the location of Cornubia phase 1A is strategically planned. Strategic meaning that not only could municipal bulk services from adjacent areas of Phoenix and Ottawa be provided conveniently to housing units but also located on a site which ensures residents have access to employment opportunities within Cornubia and surrounding areas, eliminating the need for residents to travel far distances to places of possible employment (see figure 1). In Mr Shongwe's view gaining employment close to places of residence reduces travel costs and assists residents by

allowing them to use a bigger portion of their money to pay for essential services such as water, electricity and school fees.

The suggestion of providing jobs close to places of residence by Mr Shongwe does have validity as one resident, Florence Ndlovu indicated that the close proximity of the Cornubia Mall has recently assisted many residents in securing employment close to home thereby cutting travelling costs to and from work. She herself has been employed as a cleaner at the Cornubia mall and is glad for the phase 1A housing development being close to her place of employment. Prior to the mall being built, she was unemployed and struggled to take care of her family. She commented “I am very happy and grateful for the job that I have been given”.

As stated by THD, the ultimate vision for the Cornubia development is to create a human settlement that is integrated and which creates accessibility to economic opportunities to its residents. In order to address economic integration Mr Gounden stated the Cornubia Industrial and Business Estate (CIBE) which is located approximately 1.5 kms away from Cornubia phase 1A provides access to many employment opportunities to residents of Cornubia phase 1A due to its close proximity to the housing development. Mr Gounden noted that the CIBE is a business park that includes light industrial warehousing, assembly, service, distribution, logistics, office and retail zones which provide employment opportunities to residents of Cornubia as it is located within walking distance.

Unfortunately only five out of forty-nine residents are employed within the area while twenty-three residents are employed in nearby areas such as Phoenix, Ottawa, Umhlanga, the Gateway and Cornubia mall. Although most residents do not work within the area itself, they did however benefit from being in close proximity to areas that are thriving with both skilled and unskilled job opportunities. For example, the Gateway and Cornubia mall both need a work force and a threshold in order to operate efficiently which Cornubia phase 1A residents are able to provide. This is a mutually beneficial situation as these commercial and retail industries require staff and personnel to function while occupants of Cornubia phase 1A need employment.

During the observation exercise of the Cornubia phase 1A area, routes to various surrounding areas were measured via the use of a motor vehicle from point A to point B. More specifically the average travel distance from Cornubia phase 1A to Cornubia Mall and Gateway Mall is 1.5km's, 6km's and 8km's one way respectively. Furthermore the average travel distance from

the phase 1A housing project to the areas of Phoenix and Umhlanga are 7km's and 13km's one way respectively. In accordance with the CSIR (2015) guideline there is no standard for average traveling distances from residential areas to places of possible economic opportunities. However the Development Facilitation Act No 67 of 1995 stipulates that employment and housing opportunities should be integrated with each other, which in the case of Cornubia phase 1A, has been partially achieved.

All forty-nine residents were in agreement that as much as the surrounding areas of Cornubia phase 1A do offer economic opportunities, there are currently not enough employment opportunities available within Cornubia itself. One male resident stated that apart from the Cornubia Mall, there are industries and businesses located nearby Cornubia phase 1A. However, employment opportunities at those businesses are not available to phase 1A occupants. According to him the reason for this is because the low-standard of education of Cornubia residents, together with the lack of skills on the part of the residents disqualifies them from the appointments. In his questionnaire, he stated that he was refused employment by businesses in the area on three occasions and that "residents in Cornubia phase 1A do not meet the requirements to get those jobs. When we apply for the jobs, the companies turn us down and only employ people from other areas who are educated".

Mr Shongwe acknowledged the lack of skills sets possessed by residents and explained that for example, a survey completed in 2016 indicated that 70 per cent of the youth population in Cornubia phase 1A were poorly educated without having matriculated. However he added that the Cornubia Housing Programme does not merely provide housing units to the disadvantaged but it further addresses skill shortages and employment opportunities through what is called the Socio-economic and Innovative Programme (SIP). The programme was created by the Tongaat Hulett Development and is aimed to ease access to employment opportunities by providing business support and economic education. In order to create such economic opportunities one of the initiatives is the Youth Development Programme which focuses on educating people and harnessing skills.

One 56-year-old male resident, Loius Sissing stated that the Tongaat Hulett SIP project co-ordinators conducted business support meetings with the Cornubia phase 1A occupants at their homes. The aim of the meetings was to create awareness on the subject of entrepreneurial skills and to educate residents on how to open and run businesses by teaching them business skills. In terms of the SIP, six out of forty-nine residents indicated that they had attended the SIP

meetings which provided them with the opportunity and knowledge on how to use their housing unit to conduct small-scale businesses. These small-scale businesses allow them to earn a basic income and live a comfortable life. Through the SIP meetings Loius Sissing was taught how to use his yard to grow aloe plants. These aloe plants together with other ingredients are used to make herbal medication. He sells the herbal medication from home to the residents of Cornubia and is satisfied with his customer base (see figure 4).

Figure 6: Aloe plants



Source: Site visit (2018)

As seen from the layout (figure 2), there are three tuck-shops located within Cornubia phase 1A which are all run from the homes of the residents. According to these shop owners, by attending the SIP meetings, they were provided with information and skills needed to run small-scale businesses, which in turn provides these residents with an opportunity to generate income. In circumstances whereby Cornubia phase 1A residents do not benefit from the close proximity to jobs in surrounding areas, they still can opt to start a business to gain an income. Although the Cornubia phase 1A project has only partially achieved economic integration, there are signs shown by Florence, Loius and the three local shop owners that the housing development is making progress.

6.2.3 Social integration

Social integration plays an important part in the success of spatial integration in South African low-income housing. Mr Gounden, in his interview insisted that social integration was considered when developing Cornubia phase 1A. He stated that “we (meaning Mr Gounden and his team of urban planners) tried to integrate different race, age and gender profiles to ensure a diverse community. We want the people who stay in these low-income housing to feel some sort of dignity...to be proud of where they come from”. In terms of demographics the Cornubia phase 1A housing project does consist of people of various races, gender and ages. Mr Shongwe stated that this diversity in population was achieved by considering beneficiaries

from different areas of eThekweni and backgrounds in respect of racial origins and social class during the housing allocation process. For example, the housing allocation for Cornubia Phase 1A comprised of applications from people of disadvantaged areas such as informal settlements.

Mr Shongwe stated further that although cognisance was taken of each category of the population during the planning and housing allocation process, a post-occupant survey in 2016 showed that approximately 70% of the population in Cornubia phase 1A consisted of youth, which comprises of people between the ages of 15 and 35 years old. The results of the post-occupant survey revealed the reason why the youth constitute to the bulk of the population in Cornubia phase 1A is because the older people prefer to stay in their native areas where their roots are. These areas are generally rural or on the urban periphery. Mr Shongwe argued that older people move back to their home because the cost of living is lower than in urban areas. Other reasons for the elder people wanting to reside in their native areas are because the restrictions placed on practicing their cultural activities are lower outside the city, they are closer to their family members and have better family support, and they feel a greater sense of belonging in their native areas.

To further promote social integration in Cornubia phase 1A, Mr Shongwe stated that he and his team at THD planned for many passive and active open spaces to be allocated for the residents to meet and socialise. Passive open spaces in this regard refer to open spaces reserved for parks and gardens, etc, whereas active open spaces relate to areas reserved for activities such as outdoor sports, car parks etc. When THD attempted using certain pieces of land for active open spaces, there were environmental departments such as the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA) which regulated and prohibited the use of the land as active open spaces. EDTEA characterised these specific pieces of land as floodplains and wetland areas, hence they are seen as potentially undevelopable land or environmentally sensitive areas.

Despite the setback from EDTEA, residents still frequently make use of the open spaces between residential blocks that have been developed on site (see figure 5). According to Mr Shongwe, although not all open spaces were approved by EDTEA in the plan for Cornubia phase 1A, the housing project still has a sufficient number of open spaces to cater for residents. Generally weekends are when most residents meet in the open spaces to talk to each other.

Figure 7: Open areas between residential blocks,



Source: site visit (2018)

Besides the dispute of providing open spaces between THD and EDTEA, Mr Shongwe also pointed out that the not-in-my-backyard (NIMBY) syndrome was experienced as the residents of Umhlanga opposed the low-income development being located near their residence. In his opinion, changing people's perceptions is a difficult thing to do. It's a sensitive matter and often unresolvable. He stated further that "we keep trying to change adjacent property owner's perceptions of the Cornubia housing project by showing them what's actually transpiring with regards to the development of the housing project". Basically THD frequently presents adjacent property owners with progress reports and layout plans of future development in order to prove that Cornubia is not merely a low-income settlement. Rather it is mixed-use development incorporating residential, commercial and environmental opportunities to low, middle and high-income households. Furthermore pictures are also shown to adjacent property owner's illustrating the aesthetically pleasing environment created in Cornubia phase 1A which comprises of soft open spaces (see figure 6) such as gardens and trees. Ultimately one cannot change a person's perception as each individual has his or hers own views and beliefs.

Figure 8: Cornubia phase 1A housing units and green front yard spaces

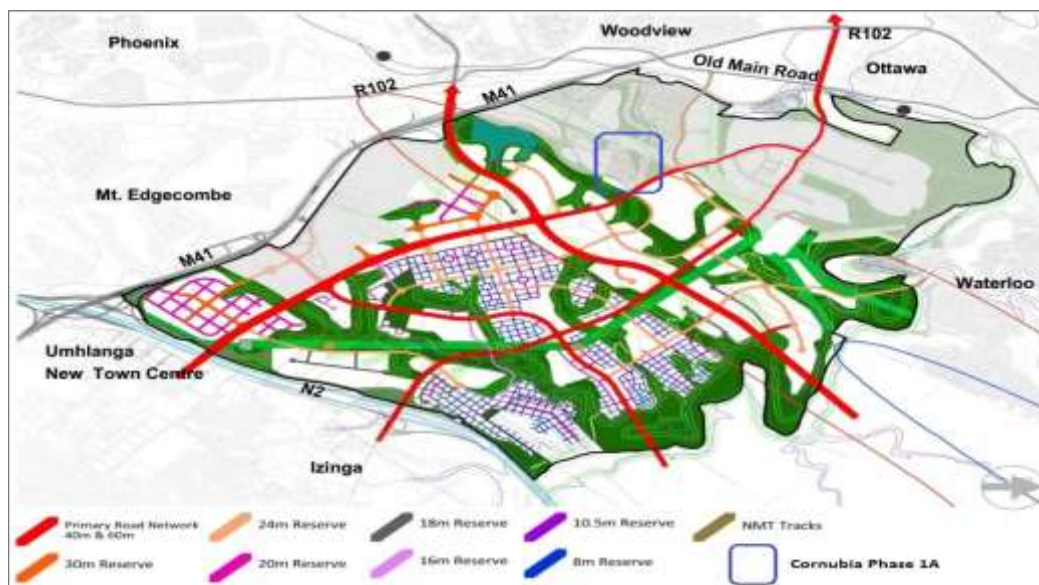




Source: Site visit (2018)

According to Mr Gounden, the idea for the promotion of social integration was further implemented through the use of transportation linkages which integrated not only the residents of Cornubia with one another but with surrounding areas as well. These linkages were established via a 40m reserve with proposed routes running North, South and East and West. As well as a secondary level internal access route facilitated by a series of 24m wide internal collector routes (see figure 7). These routes link the various neighbourhoods making social integration possible. He believes that these transportation linkages improve mobility of occupants which then provide residents with greater access to social facilities and amenities, such as, but not limited to, places of worship and recreation thus ultimately increasing social integration in Cornubia phase 1A.

Figure 9: Transport linkages



Source: IYER (2014)

Through the observation exercise, the researcher noted that roads linked to Cornubia phase 1A were well-defined, safe and easily accessible via motor vehicle use. All forty-nine residents were in agreement that roads leading to and from Cornubia phase 1A were easily accessible and allowed them to commute swiftly to various places without any difficulty. One resident stated that she often travels via taxi to phoenix to visit her sister and experiences no difficulty in reaching her destination as the routes to neighbouring areas are simple and fast. She, along with the other forty-eight residents are happy with the way the roads have been developed as it is easy to move within the area as well as through it.

6.2.3.1 Worship centres

One of the indices with regards to the success of social integration is access to places of worship. Forty-five out of forty-nine residents surveyed are Christian. All Christian residents indicated that there are provisions made by the Cornubia phase 1A community for church services to be conducted on a weekly basis. Church services are held at the Solomon Mahlangu Primary school on Sundays. The services are held in all classrooms and at different times of the day to ensure that all residents are accommodated. One male resident, Thabo Zulu, stated that as much as provision is made for church services to be held at the school, the sizes of the classrooms are not adequate. He stated “we need a hall or building that will accommodate all residents. Right now there are 50 to 60 people squashed into one classroom during the services. People cannot be turned away due to the lack of space as we all gather there to worship God”.

Three out of forty-nine residents surveyed are Muslim. There are no mosques available in Cornubia phase 1A or within Cornubia itself. Another male occupant of the housing development, Zaid Motinall, stated that he has to travel to a mosque in Phoenix to engage in his religious practices, which is approximately 3kms away from his home. According to CSIR guideline (2015) a population threshold of 3000 to 6000 people is required for the establishment of a place of worship. In lower-income areas such as Cornubia phase 1A, no specific site is needed and religious leaders may reorganise and convert the worship site as required.

Also the CSIR guideline recommends sharing the worship centre with other buildings such as schools or halls. Furthermore the average travel distance to places of worship varies depending on the demand from end-users. In most cases, the travel distance is generally a maximum of 2kms one way. In the case of Cornubia phase 1A, the construction of a mosque is not feasible as there is not an adequate demand for the service in the vicinity.

Zaid also mentioned that even though the housing project does not cater for a mosque there are no interferences by his neighbours or restrictions by officials placed on him when practising his religion. This view was also expressed by a Hindu, Prakash Ramnath, who recently had a death in his family and a tent was put up outside his residence to conduct the funeral service. There were no objections from any of the neighbouring residents. He stated “we all respect each other’s beliefs and accommodate each other during such times”. This is evidence that the residents of Cornubia phase 1A all accept and have a good relationship with one another regardless of religious backgrounds. From the researcher’s observations there were no signs of discrimination against any age, gender or culture and all occupants surveyed seemed to be socially integrated into their Cornubia phase 1A community.

6.2.3.2 Places of recreation

As part of the social integration theme in Cornubia phase 1A, residents were asked whether there are any recreational places available in Cornubia phase 1A. All forty-nine residents indicated that there are various open spaces within Cornubia phase 1A that are designated for recreational purposes for minor children. The open spaces are located between the residential blocks and comprise of equipment such as swings and slides (see figure 8).

Figure 10: Play areas for children



Source: Site visit (2018)

According to Sthabile Gumede, children play in these open areas on a daily basis. She stated “unfortunately, these open spaces are not fenced nor is it maintained. The grass is very long which often attract snakes, making the area dangerous for children to play (see figure 9). Nevertheless, the areas are used by majority of the children from the area”. All forty-nine residents also agreed that apart from play areas for children there are no outdoor places designated for adults to perform any recreational activities within Cornubia phase 1A.

Figure 11: Open green areas



Source: Site visit (2018)

Paul Govender and Sipho Mkize stated that they usually socialise with other residents when they walk to the tuck shop or meet on the street. Three respondents labelled the area as “boring” and stated that there are no activities for adults to part-take in unless they are willing to travel out of Cornubia phase 1A.

In the event of residents engaging in sports, for example kicking a football, it was on the streets in the area as there are no sports grounds located within Cornubia phase 1A. This is dangerous as vehicles are constantly traveling along these roads. There are no suitable locations within the area that would be conducive to any form of sporting activity or even cultural activities such as an open-air area for live performances of dancing, singing and arts. One female resident, Yolanda Ndlovu, on the other hand stated that even though there are no recreational places in Cornubia phase 1A, she often goes to the Cornubia mall, which is located approximately 6 kms one way from Cornubia phase 1A, where she meets her friends and watches movies. She is of the opinion that the mall is located in close enough proximity to her home and is conveniently accessible.

Despite the fact that there are no recreational places available within Cornubia phase 1A for adults, the location of the housing project does provide adult residents with an opportunity to perform recreational activities in nearby areas. This is demonstrated by the relatively close distance of the Cornubia mall. Mr Shongwe pointed out that the close location of the Cornubia mall and the name of the mall itself are prime indicators that the Cornubia mall is intended to serve not only the general public but specially to serve the residents of Cornubia phase 1A and indeed all five forthcoming phases of the Cornubia project as well. In addition to recreational activities provided by the Cornubia mall, residents also have easy access to a variety of other recreational places, including, but not limited to, numerous beaches on the Umhlanga coast,

the Gateway mall, the Crescent shopping centre, as well as restaurants and cafés in Phoenix and Umhlanga which are all nearby to the Cornubia phase 1A area.

6.2.3.3 Interaction among residents of Cornubia phase 1A

All forty-nine residents indicated that they have knowledge of who their neighbours are and socialise with one another regularly. The houses are constructed in such a manner that allows residents to easily speak with one another. There are no high fences or walls preventing interaction between residents. One respondent stated that there are a few residents who have constructed fences around their houses for security purposes but this does not prevent residents from talking to each other.

Forty-six out of forty-nine residents said that they were able to identify more than 30 residents by name whilst the remaining three people could identify other residents by face recognition. During observation exercises of the Cornubia phase 1A area, it was noted that residents communicate easily with one another. One female resident, Zenthola Tenza stated that all the residents respect and support each other in times of need. On numerous occasions Mrs. Tenza offered emotional assistance to neighbours and likewise received support when she was in need. Mrs Tenza stated additionally that on Saturdays and Sundays more than half of the residents are outdoors talking, laughing, playing and in general, socializing with each other. Unfortunately, other than inside the homes of residents, people can only gather, spend time together and be physically active on the streets.

6.2.4 Functional integration

The final aspect addressed in the study which contributes to the successfulness of spatial integration in the Cornubia phase 1A low-income housing project pertained to functional integration. Speaking in his interview, Mr Shongwe described functional integration in housing as housing development that consists of various land-uses such as residential, commercial and economical. According to him, to achieve functional integration, housing development should encompass a variety of easily accessible services and amenities that are needed by residents to ensure a good quality of life such as educational, medical, cultural, and economic facilities.

When asked how was functional integration incorporated into the Cornubia phase 1A housing project, Mr Shongwe was very forthright in saying that functional integration has only partially occurred in Cornubia phase 1A. However he was optimistic that the needs and circumstances of the prospective beneficiaries in relation to necessary services and amenities that contribute

to functional integration, were taken into consideration as THD together with eThekweni municipality brought people closer to employment opportunities as well as integrated social facilities within the area. He further stated that in order to achieve functional integration in Cornubia phase 1A one of the key design drivers was to create a “sense of community, having a liveable housing environment”. A perfect example that demonstrates the spatial, economic, social and functional integration of Cornubia phase 1A is the development of the Cornubia mall which was completed in 2018.

The Cornubia mall is located 6 kms away from Cornubia phase 1A and is easily accessible to all residents. The Cornubia mall is a convenient place for residents to purchase their necessary goods and take part in recreational and social activities. Furthermore, public transport to and from Cornubia phase 1A to the Cornubia mall is easily available via taxis for the most part of the day, every day. Mr Shongwe also mentioned that during the planning phase of Cornubia phase 1A, the intention was to promote functional integration and move away from the previous RDP housing structure of the house and layout of the settlement which was monotonous.

From the layout of Cornubia phase 1A (see figure 2) it can be said that by applying a courtyard structure with open spaces in the design of the housing development along with the provision for access to services and facilities such as shops, an education facility and a mobile clinic to be available to the residents of Cornubia phase 1A, Tongaat Hulett Developments’ (THD) attempt to create a balance between urban development and open spaces in order to functionally integrate residents has been partially successful. The reason why residents are not entirely functionally integrated is due to the limited opportunities to services and facilities in the Cornubia phase 1A area itself. Although not all essential amenities are included in the housing project, most residents are in close proximity to surrounding areas that do offer additional services and facilities.

6.2.4.1 Health facilities

With regards to the provision and availability of a health facility, the land-use executive and the town planner have a different opinion from that of the residents. On the one hand all forty-nine residents during the beneficiary household survey indicated that no major health facilities located are in the Cornubia Area. The only medical facility that specifically services the Cornubia phase 1A residents is a mobile clinic. However it is only available to occupants twice a month.

On the other hand both Mr Shongwe and Mr Gounden argued that the reason for the establishment of a mobile clinic and not a permanently stationed facility is because it is not feasible for the local municipality or private sector companies to build a fully serviced clinic or hospital for 482 housing units due to the population threshold being well below the guidelines. Therefore a mobile clinic was proposed to ensure that residents have access to medical treatment at least twice a month. According to standards set by the 2015 report '*CSIR Guidelines for the provision of Social Facilities in South African settlements*', the population threshold required for a permanently stationed health-care facility is 5000 people or more, which at this moment in time, falls below the average population threshold in Cornubia phase 1A.

There were thirty-five out of forty-nine residents who indicated that they have knowledge of the mobile clinic service and that they have made use of the service. However one male resident, Sifiso Khuzwayo stated “we know that there is a mobile clinic that comes but we don’t know exactly when it is going to come. It comes on different days and times. Sometimes it doesn’t come at all”. Majority of the residents are extremely dissatisfied with the health service and indicated that they travel to Phoenix or Verulam which is approximately 10 to 15 minutes away via use of a motor vehicle to obtain medical treatment. The dissatisfaction of residents with regards to the health service in Cornubia phase 1A was further reiterated by a 48-year-old female resident, Alexina Nkwanyana. She stated that as much as there is a mobile clinic that is available twice a month, there are no medical facilities located nearby for emergencies.

From the observation exercise, it can be said that the closest health facility whose services have been extended to accommodate Cornubia phase 1A residents is a clinic in the Blackburn Settlement. The Blackburn settlement is an informal settlement which is located adjacently to Cornubia phase 1A and more specifically situated approximately 4 kms one way from the housing project. Even though the mobile clinic does service the Cornubia phase 1A residents every two weeks, the inconsistency with regards to the operational schedule of the mobile clinic prevents residents from determining its availability times. Furthermore the frequency of the health service is highly insufficient for a population the size of Cornubia phase 1A. Despite phase 1A residents not being totally functionally integrated, both Mr Gounden and Mr Shongwe are confident that this is because the Cornubia development project is still in its infancy stages. Mr Shongwe stated that “the Cornubia site is currently under construction and it will soon be a fully developed area with all basic facilities and amenities of its own”.

As mentioned previously, housing practitioners and urban developers should not assume that access to basic facilities and amenities alone would present a housing project's functional integration. It is important to note that the housing project also needs to respond to the needs of its residents. This, as mentioned in chapter three entails housing development being developed in accordance with the specific necessities of each of the beneficiaries. In other words, there is no one-size-fits-all approach. In order to meet the varying needs of residents, beneficiaries should be part of the development process whereby their views are considered prior to the construction phase. Hence the researcher questioned interviewees and participants of the household beneficiary survey concerning the participation of residents in the planning and development of the Cornubia phase 1A housing project.

6.2.4.2 Household beneficiary participation in Cornubia phase 1A

Mr Shongwe was unaware of any consultations between the residents of Cornubia phase 1A during the planning stages. He stated that THD was solely involved in the conceptual planning of the housing project and besides the household income bracket, THD was unaware of who the actual beneficiaries were going to be.

Nevertheless according to the town planner, multiple awareness meetings were held between IYER and community members regarding the development of Cornubia phase 1A. The reason for these awareness meetings by IYER were to engage with the public in order to share information regarding the proposed Cornubia phase 1A housing development and all meetings were documented in the Environmental Impact Assessment (EIA) report. Mr Gounden claimed that "during the meetings between IYER and community members, the overall framework plan and miniature architectural models were presented to prospective residents of Cornubia phase 1A". These awareness meetings were held with potential beneficiaries in various communities such as, but not limited to, Blackburn settlement, Ottawa, and Phoenix with the intention of showing them what the actual houses would look like. The awareness meetings offered opportunities for potential residents to listen to and understand the proposed plan of Cornubia as well as to express their opinions on the development of phase 1A.

Contrary to Mr Gounden, residents had mixed opinions with regards to the occurrence of awareness meetings. Two residents, Ayanda Magubane and Lindiwe Ngcobo stated that there were monthly meetings held with the beneficiaries. They confirmed that the framework plan and a miniature architectural model of the units were shown to the beneficiaries during the

meetings between IYER and themselves. Furthermore, progress reports on the development of the project were also provided by means of a presentation in those meetings.

There were thirteen out of forty-nine residents who indicated that they had no knowledge of any public meetings or consultations with respect to the developments of the housing. One resident stated that “we heard that houses were going to be built so we went to the Councillor and put our names on the waiting list. We were contacted when the houses were built and were told that our applications were successful. We were happy as we were given shelter”. According to three other residents, beneficiaries were denied any requests for special provisions, in accordance with their specific needs, as the units being built were all identical in nature. The three residents further mentioned that the meetings were intended for officials to merely inform occupants of the planning and implementation of the housing project. There was no input from residents such as an open discussion, where they could have provided insight in the design of the new settlement.

With this said, one should understand that IYER was given a mandate by eThekweni municipality to provide 482 free housing units. The design of the housing units was restricted to 50 square metre attached row housing around a common courtyard with pedestrian links to various spaces within the site. Hence IYER could not propose a mix of housing typologies and styles, rather the housing units needed to be uniform in respect of physical design and structure as well as colour.

The data gathered from the household beneficiary questionnaire shows that the Cornubia phase 1A community members had a difference of opinion among themselves and from Mr Gounden with regards to the occurrence of awareness meetings during the planning and developing of Cornubia phase 1A. With the differences in opinions, the question of whether the housing units and layout plan of the settlement meets the needs of residents in terms of design, location and accessibility to services and amenities became even more important to probe from occupants. All forty-nine residents agreed that the Cornubia phase 1A housing project meets their personal needs. According to the occupants, they are extremely satisfied with the size, quality and location of their housing units and are grateful to have been given a house to stay in. Therefore it can be said that although residents were not given an opportunity to actively contribute to the development of the Cornubia phase 1A, IYER still managed to take into account the various needs of residents that ultimately influences housing satisfaction such as the size, type and

location of the dwelling unit as well as the layout plan in respect of accessibility to public facilities.

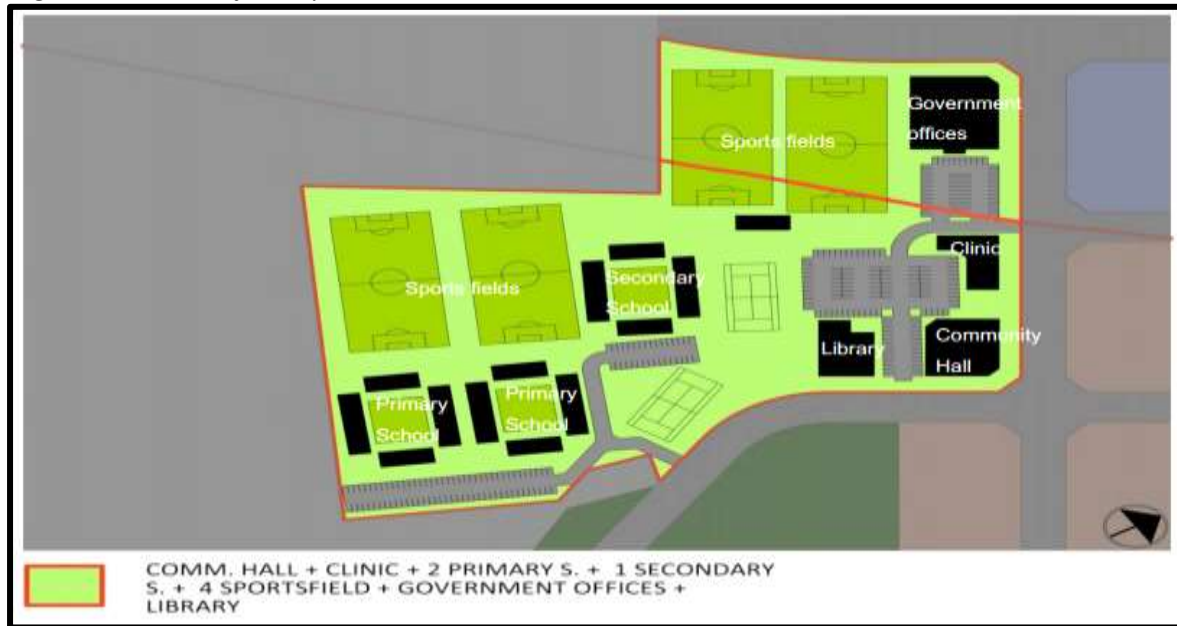
During the beneficiary household questionnaire residents were also asked specific gender related questions because spatial integration is a diverse and interlinking concept which is also influenced by the sex of an individual. For example, as mentioned in chapter one, the personal needs and realities of men and women are inherently different. From the observation exercise, the Cornubia housing project offered the same access to opportunities for both male and female residents. For example, accessibility and availability to local shops, open green spaces, employment opportunities in surrounding areas and essential services such as electricity and water provided by the Cornubia phase 1A housing project are indeed the same for both female and male residents.

The equal access to opportunities provided by the Cornuiba phase 1A housing project was further reiterated by all twenty-five female residents who also felt that they were no more susceptible to crime than men in the Cornubia phase 1A area. One female resident stated that she did not experience any locational advantage or disadvantage opportunity as a female residing in the housing project. Therefore it can be said that within the Cornuba phase 1A housing project, there were no signs of discrimination based on gender and that the housing project partially spatially integrates all residents, regardless of gender.

6.3 Future development prospects in Cornubia

Lastly, Mr Gounden maintained that one of the goals of the overall Cornubia project is to develop a mixed-use and mixed-income development and as a result, social facility clusters are planned to be developed for in the future for the entire Cornubia area (see figure 10). Cluster planning basically involves the groupings of similar public services with one another. One of the benefits of social facility clusters is that residents are able access different services and facilities in one location. By converging facilities, residents are able to save money on traveling costs and scarce land is used more efficiently (Lee, 2009; SALGA, 2018). As a result of cluster planning, more amenities such as open green spaces, clinics and schools will be developed in the Cornubia area which will offer Cornubia phase 1A residents additional services and facilities in close proximity which ultimately contributes positively to spatial integration in the Cornubia housing development in general, and specifically in phase 1A.

Figure 12: Social facility cluster



Source: IYER (2014)

Furthermore both Mr Shongwe and Mr Gounden claim that collectively, by the end of the 20 year period upon completion of all five phases, Cornubia is foreseen to be a fully developed area with its own services, facilities and amenities. It would be a place that incorporates residential, commercial social and environmental development into one mega-project. Ultimately counteracting previous segregatory and fragmentary urban patterns and creating human settlements that are properly spatially, economically socially and functionally integrated.

6.4 Summary of findings

The objective of the study is to evaluate the extent to which the IRDP is addressing spatial integration in South African low-income housing. To evaluate the abovementioned objective of the study, the Cornubia phase 1A housing project was carefully chosen as a case study due to the fact that IRDP principles were applied in its planning and implementation. Information collected from Mr Shongwe and Mr Gounden by means of face-to-face semi-structured interviews provided the researcher with detailed and precise information regarding the conceptualization, planning and design of the Cornubia phase 1A housing project. Information obtained from the forty-nine beneficiary household questionnaires provided the researcher with diverse information regarding their expectations and daily experiences in terms of being holistically integrated as envisaged in the Cornubia framework plan and in the IRDP.

The Cornubia Housing Programme set out to steer development towards existing economic opportunities and provide easy access to services and amenities such as, but not limited to, transport networks, health care facilities, education facilities, and employment centres to the residents of Cornubia phase 1A.

To evaluate easy access of the abovementioned services and facilities in Cornubia phase 1A, the CSIR guidelines in the report '*CSIR Guidelines for the provision of Social Facilities in South African settlements of 2015*' was used as a benchmark. The results, in terms of access proximities to services and facilities, shows that the Cornubia phase 1A housing project meets most of the criteria set by the CSIR. More specifically the average travel distance one way from Cornubia phase 1A to Solomon Mahlangu primary school is 200 to 300 meters, 6.5 kms to a secondary school, 30 to 390 meters to a taxi pick up point, 7 kms to a police station, 10 to 250 meters to either of the three local tuck shops, 1.5 km to CIBE, 6 kms to Cornubia mall, 8 kms to Gateway mall, 7 kms to Phoenix, 13 kms to Umhlanga, 3 kms to a mosque, and 5 to 10 meters to open green spaces.

From the outcomes of the interviews and household beneficiary questionnaires it is evident that the Cornubia phase 1A housing project has been partially successful in spatially integrating residents by providing development that has easy access to transport facilities, health care facilities, education facilities, and employment centres. This is in line with the objectives of the IRDP which is to develop spatially, economically, socially and functionally inclusive human settlements. The findings have also shown that the IRDP has potential to address spatial integration in South African low-income households. The reason for only partial integration in Cornubia phase 1A is due to threshold ranges.

Currently phase 1A constitutes of 482 housing units with an average of 2000 to 2400 occupants. According to CSIR (2015) guidelines, a population threshold of 2000 to 2400 people does not permit large-scale self-sustaining services and facilities in an area for obvious feasibility issues. However Mr Shongwe concluded that phase 1A is only one phase out of a five phase multi-million rand development project. For example, he stated that phase 1B has since been planned and almost completed following phase 1A. The development of phase 1B also consists of its own amenities such as schools, shops, clinics, and open green spaces. Ultimately phase 1B services will be extended to accommodate phase 1A residents which will provide them with additional access to services and facilities.

The sixth chapter presented and analysed the findings obtained from the household beneficiary questionnaires, observations and the interviews with the key informants involved in the development of the Cornubia phase 1A housing project. Based on the findings it can be said that the Cornubia phase 1A housing project has partially created spatially integrated human settlements in accordance with the objectives of the IRDP.

CHAPTER SEVEN: Conclusions and Recommendations

The aim of the study is to determine whether the IRDP has successfully redressed the lack of spatial integration of low-income housing settlements in South Africa. In order to determine this, literature consisting of the neoliberalism, locational theories and new urbanism were analyzed as these were the most influential theories that effected spatial integration since the 1800s. With the purpose of establishing whether spatial integration has been successfully applied to South African low-income housing programmes, the study critically examined the concept of integration together with its different forms and components.

The study also observed the historical developments of segregation as the lack of integration stemmed from the early 1600's. Furthermore South African pre and post-apartheid housing policies, legislations and programmes that impacted on spatial integration were reviewed in the study. The case study analysed in the research was the Cornubia phase 1A housing project in Durban, South Africa. In order to understand international experiences of spatial integration initiatives in low-income housing projects, the study further analysed two examples; namely the My house, My life programme in Rio de Janeiro and Shivaji Park housing complex in India.

7.1 Conclusions

The study has traced South Africa's history in respect of spatial disintegration far back to the early 1600s and is broken down into three phases namely, the colonial city (pre- 1910), the segregation city (1910 - 1948) and the apartheid city (1948 – 1994) (Van de Merwe, 1998). The result of the colonial, segregation and apartheid city was the production of distorted settlement patterns that were deeply rooted in social segregation and physical fragmentation which restricted poor households to areas on the outskirts of city centers. Since the turn of democracy, both South African planners and legislation have made 'restructuring' their top priority. However, the provision of low-income housing in South Africa is not solely about delivering housing for the poor but also about where the housing is being located (Tonkin, 2008).

The study has shown that attempts by the South African post-apartheid government in providing spatially integrated low-income housing developments have failed. Contemporary low-income housing developments in South Africa require greater integration elements in order to produce sustainable human settlements. The IRDP recognizes the need for spatial integration in low-income housing and while there is no universal integration approach to housing

development, the IRDP is used as a South African tool to develop flexible integration models by defining principles, conditions and key factors required for spatial integration initiatives in housing delivery.

To gain a broader understanding of spatial integration practices of low-income housing, the study examined the Jesuítas and Shivaji Park housing project. The findings obtained from the two international examples prove that in the delivery of low-income housing, well-located land that provides access to urban opportunities is one of the most important factors regarding the spatial integration of low-income households. The reason for the success in the Shivaji Park housing project is due to the advantageous location of the projects' housing units. Beneficiaries of the project have easy access to the CBD. With respect to the Jesuítas housing project, the inability for residents to easily access urban areas renders them spatially disintegrated and separated.

The hypothesis of the study which was that the IRDP has the potential to address spatial integration if it is used to package low-income housing developments that holistically incorporate transport networks, economic opportunities, social interaction and accessibility to basic services and facilities in the development of low-income housing is proven correct and this is evidenced by the findings of the Cornubia phase 1A housing project case study.

Via face-to-face semi-structured interviews with key informants, survey of residents and numerous observations of the case study area, the following conclusions were made:

The Cornubia phase 1A housing project is located in close proximity to many surrounding developed urban neighbourhoods. Thus, residents of Cornubia phase 1A do have easy access and are in close proximity to many essential public amenities. The phase 1A housing project does not cater for each and every individual's service and facility needs due to the fact that not all residential preferences to services and facilities can possibly be located in one place. However the Cornubia phase 1A housing project does provide convenient and reliable transportation routes to surrounding areas to improve access to additional services and facilities, which in the absence of actually providing essential services and facilities is the best alternative. The convenient and reliable transportation routes allow for taxi services to be located within the vicinity of phase 1A which is available from Monday to Sunday.

Ultimately the phase 1A housing project only partially spatially integrates residents. The reason for partial spatial integration in Cornubia phase 1A is due to threshold ranges whereby the total population residing in the project does not validate large-scale self-sustaining services and facilities due to feasibility issues. Although the development of Cornubia phase 1A is still in its infancy and does not offer many economic and social services that urban neighbourhoods normally consist of, the phase 1A housing project is well integrated and connected to the surrounding areas of Waterloo, Phoenix, Verulam, Mt Edgecombe and Umhlanga. As evidenced in the Cornubia phase 1A case study, the accomplishment of the IRDP is relatively commendable in respect of spatially integrating low-income housing development in South Africa. However the IRDP has room for improvement and this can only be achieved if South African built environment practitioners have a better understanding of the IRDP.

7.2 Recommendations

While the IRDP has been operational since 2009, very little data exists on the feedback of IRDP housing projects. For example how many people remain integrated in the urban fabric 5 or 6 years after completion of the IRDP housing project? In the few IRDP housing projects that have had a post-occupancy review, the focus was generally on the number of physical housing units delivered rather than monitoring the achievement of spatial, economic, social and functional integration along with the provision of public services and facilities. Hence there needs to be a clear and precise framework for IRDP housing project monitoring and evaluation after the project has been completed.

Emphasizing mass low-income housing delivery does little in contributing to spatial integration of human settlements. To create spatially integrated human settlements, the main focus of a housing settlement needs to be altered. Instead of prioritizing the construction of mass low-income housing units, the IRDP should make provision for services and facilities to be developed first. Basically, opportunities and amenities that residents require such as places of employments, schools, clinics, shops etc should be provided first, as accessibility to public services and amenities, as evidenced in the study, are the building blocks to constructing integrated human settlements. Once services and facilities are operational and accessible by end-users, people will find a way to make the area habitable and housing will sort itself out.

To further improve the performance of the IRDP, the guidelines used in selecting land for development needs to be more stringent. For example, IRDP housing projects should primarily

be located in well-developed areas that already comprise of essential services and amenities. In most cases, a housing project can not cater for each and every individual residential need. Therefore by an IRDP housing project being in close proximity to well-developed areas, beneficiaries will be provided with opportunities to access additional services and facilities.

7.3 Suggested areas for further research

The study has indeed shown that the absence of spatial integration in South African low-income housing is a rich arena for research and analysis. There may be a need to carry out further research to enrich the study of spatial integration of low-income housing because this study was limited to only one area of the IRDP implementation, which was Cornubia, in Durban. It is therefore suggested that further research on different IRDP cases be undertaken. Assessments or studies should also be carried out on the post-occupancy of residents in current IRDP housing projects in order to determine the achievement of spatial integration of low-income housing projects. Also a study to determine the total land extent required in order to create the best possible spatial integration pattern for a region should be taken up.

The dynamics that have hindered spatial integration in low-income housing programmes in South Africa cannot be quickly identified and easily addressed, if this was the case, it would have already happened. Although new spatial integration policies, programmes and legislations have been designed and implemented in South Africa, they have not been to date, totally successful. This is because spatial integration is a complex concept with several inter-linking components that need to be carefully monitored at each stage of implementation. Acknowledgment of this is the first step to addressing the lack of spatial integration in low-income housing development in South Africa.

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APPENDICES

8.1 Appendix 1:

Interview schedule 1: Mr. Bheki Shongwe - Planning and land use executive for Tongaat Hullet Developments

Questions:

Section 1: Introductory questions

- 1) How did Tongaat Hullett Developments become involved in the conceptualization of the Cornubia phase 1A housing project?
- 2) What role did Tongaat Hullet Developments play in the conceptualization of the Cornubia phase 1A housing project?
- 3) What was your specific role in the Cornubia phase 1A housing project?
- 4) What is your understanding of an integrated development?
- 5) How can an integrated development be achieved?
- 6) What was the intention behind planning a project such as Cornubia phase 1A in terms of integration and accessibility?
- 7) What were the primary policy frameworks that formed the basis of the Cornubia phase 1A housing project and how were they incorporated into the project?
- 8) How were the objectives of the IRDP in respect of spatial integration interpreted in the Cornubia phase 1A housing project?

Section 2: Spatial integration

Spatial integration is a process whereby the boundaries of areas are removed. It indicates the level of connectivity and the interaction level that exist within and between areas.

- 1) How were past spatial imbalances such as segregation and marginalization redressed in the Cornubia phase 1A housing project?
- 2) In your view, what elements must a housing project have in order to be considered spatially integrating?
- 3) How are these elements achieved in the Cornubia Phase 1A housing project?
- 4) Is there a specific reason as to why Cornubia phase 1A is located where it is?

- 5) If so, explain why?
- 6) If not, was where to locate the project taken into consideration in the planning of the project?
- 7) If so, how?
- 8) If not, why?
- 9) Would you say Cornubia phase 1A is well located?
- 10) If yes, why?
- 11) If not, why?
- 12) As a private company, what was your interest in a potentially 'spatially integrating' project such as Cornubia Phase 1A?
- 13) Was there a specific land use scheme adopted for the Cornubia phase 1A housing project?
- 14) If so, describe the land use scheme that was adopted?
- 15) In your view, was spatial integration comprehensively covered in the conceptualization and planning stages of Cornubia phase 1A?
- 16) If no, what else in retrospect, could have been done to ensure that spatial integration was fully incorporated in the project?

Section 3: Social integration

Social integration involves the facilitation of the creation of a vibrant, diverse population mix in a community which consists of all different population groups and considers the various cultures, ages, and abilities of the population.

- 1) What is your understanding of social integration?
- 2) What elements must a housing project have in order to be considered socially integrating?
- 3) Does the Cornubia phase 1A housing project comprise of the above elements?
- 4) Does Cornubia Phase 1A housing project provide the opportunity for residents to interact with one another?
- 5) If yes, how?
- 6) If not why? Was this aspect taken into consideration at all in its planning?
- 7) If so, how?

- 8) If not, why?
- 9) Does Cornubia Phase 1A housing project consist of people from different race groups and cultures?
- 10) If so, was this deliberately planned?
- 11) If no, why?
- 12) What approach was used in determining social facility requirements for the Cornubia phase 1A housing project?
- 13) Can you name and describe the social facilities that were regarded as vital in the Cornubia phase 1A housing project, and why these are the ones that were regarded so?
- 14) At the conceptualization and planning stages, was provision made for the following, and if so, briefly explain how:
 - 14.1) Schools including crèches;
 - 14.2) Religious sites (for churches, temples and mosques);
 - 14.3) Community halls;
 - 14.4) Parks;
 - 14.5) Local neighbourhood shopping opportunities;
 - 14.6) Libraries;
 - 14.7) Police stations;
 - 14.8) Clinics;
 - 14.9) Taxi and bus ranks;
 - 14.10) any other social facilities.

Section 4: Economic integration

Economic integration refers to the process whereby people of different economic classes are spatially integrated and results in neighborhoods that accommodate a diversity of income groups.

- 1) What is your understanding of economic integration?
- 2) What elements must a housing project have in order to be considered economically integrating?
- 3) Does Cornubia Phase 1A housing project offer a range of economic opportunities to its residents?
- 4) If yes, what are these economic opportunities?
- 5) How were the above economic opportunities made available to residents of Cornubia Phase 1A?

Section 5: Functional integration

Functional integration entails a development being multi-functional. The aim of functional integration is that development should cater for all dimensions of activity such as cultural, educational, economic activities and essentially create an area which is a lively and interactive space.

- 1) What is your understanding of the concept of functional integration?
- 2) What elements must a housing project have to be considered functionally integrating?
- 3) In your view, is the Cornubia Phase 1A housing project functionally integrated?
- 4) If yes, how?
- 5) If no, why?
- 6) Did the planning of Cornubia Phase 1A housing project comprise of the involvement of various stakeholders?
- 7) If yes, who were the various stakeholders?
- 8) What were their roles?
- 9) Is there a balance between open space and housing in the Cornubia Phase 1A housing project?
- 10) Can you describe the movement routes that were proposed for Cornubia phase 1A housing project?
- 11) Were the personal needs and circumstances of future residents of the Cornubia Phase 1A housing considered in the conceptualization and planning stages?
- 12) If yes, how?
- 13) Were the residents of Cornubia phase 1A housing in any way involved in the conceptualization and planning stages?
- 14) If so, describe the nature and extent of their contributions?
- 15) If no, explain why?

Section 6: Concluding questions

- 1) What were the major challenges faced in incorporating holistic integration in the Cornubia phase 1A housing project?

- 2) What strategies were employed to overcome the challenges of achieving holistic integration in the Cornubia phase 1A housing project?
- 3) Were these strategies able to overcome the challenges?
- 4) If so, how?
- 5) If not, why?
- 6) In your view, how successful has Cornubia phase 1A been in creating 482 spatially integrated houses?
- 7) Why?
- 8) In your view, could Cornubia phase 1A achieve spatial integration goals on its own or would such an achievement only be expected and achieved upon completion of the entire project?
- 9) In light of the Cornubia experience, what can be done to improve spatial integration in similar future housing projects?

8.2 Appendix 2:

Interview schedule 2: Mr. Kamalen Gounden - Town Planner at IYER urban design Studio, in charge of Cornubia phase 1A

Questions:

Section 1: Introductory questions

- 1) What was the role of IYER urban design studio with respect to the Cornubia housing project?
- 2) What was your 'brief' with respect to spatial integration of Cornubia housing project?
- 3) Is there a specific reason as to why Cornubia phase 1A is located where it is?
- 4) If so, explain why?
- 5) If not, was where to locate the project taken into consideration in the planning of the project?
- 6) If so, how?
- 7) If not, why?

Section 2: Spatial integration

Spatial integration is a process whereby the boundaries of areas are removed. It indicates the level of connectivity and the interaction level that exist within and between areas.

- 1) What is your understanding of spatial integration?
- 2) How did the layout of Cornubia Phase 1A housing project enable the incorporation of spatial integration?
- 3) What principles and ideas were followed to achieve spatial integration in the planning of Cornubia phase 1A housing project?
- 4) How were these principles and ideas incorporated into the Cornubia Phase 1A housing project?
- 5) Describe the spatial design adopted in the Cornubia phase 1A housing project?
- 6) What is your understanding of mixed land use?
- 7) Was this concept incorporated within the Cornubia phase 1A housing project?
- 8) If so, how was the mixed land use concept applied in the Cornubia phase 1A housing project?

- 9) Would you say Cornubia phase 1A is well located?
- 10) If yes, why?
- 11) If not, why?
- 12) Do you think that spatial integration could have been achieved better than it actually was in Cornubia phase 1A?
- 13) If so, what could have been done differently or additionally?

Section 3: Social integration

Social integration involves the facilitation of the creation of a vibrant, diverse population mix in a community which consists of all different population groups and considers the various cultures, ages, and abilities of the population.

- 1) What is your understanding of social integration?
- 2) How did the layout design of Cornubia Phase 1A allow for and promote social integration?
- 3) In order to ensure that people are able to spend time outdoors and interact with each other on a regular basis, open spaces are vital. Does the layout design make room for open spaces in Cornubia Phase 1A?
- 4) If yes, in your view, are these open spaces utilized by residents of Cornubia phase 1A and members of surrounding communities as envisaged?
- 5) If no, why?
- 6) Apart from open spaces, what other initiatives were taken to provide social interaction opportunities for residents of Cornubia phase 1A?
- 7) Can you name and describe the social facilities that were regarded as vital in the Cornubia phase 1A housing project?
- 8) Was provision made for the following, and if so, briefly explain how:
 - 8.1) Schools including crèches;
 - 8.2) Religious sites (for churches, temples and mosques);
 - 8.3) Community halls;
 - 8.4) Parks;
 - 8.5) Local neighbourhood shopping opportunities;
 - 8.6) Libraries;
 - 8.7) Police stations;
 - 8.8) Clinics;
 - 8.9) Taxi and bus ranks;

8.10) any other social facilities.

- 9) Does the layout design specifically cater for social interaction between children?
- 10) If yes, explain how?
- 11) If no, explain why?
- 12) What was done to ensure that these facilities were safe and secure for children to use?

Section 4: Economic integration

Economic integration refers to the process whereby people of different economic classes are spatially integrated and results in neighborhoods that accommodate a diversity of income groups.

- 1) What is your understanding of economic integration?
- 2) In your view, what elements must a housing project have in order to be considered economically integrating?
- 3) Collectively, does the Cornubia Phase 1A housing project accommodate and promote economic integration?
- 4) How did the design of Cornubia Phase 1A promote economic opportunities and economic integration?
- 5) Was provision made for economic opportunities for beneficiaries during the planning and designing phase?
- 6) If yes, explain how?
- 7) If no, why?

Section 5: Functional integration

Functional integration entails a development being multi-functional. The aim of functional integration is that development should cater for all dimensions of activity such as cultural, educational, economic activities and essentially create an area which is a lively and interactive space.

- 1) What elements must a housing project have to be considered functionally integrating?
- 2) Does the Cornubia Phase 1A housing project accommodate and promote functional integration?
- 3) If yes, how?
- 4) Were residents consulted with regards to the development of Cornubia phase 1A?
- 5) How were the residents consulted?

- 6) How many residents were consulted?
- 7) How often were the residents consulted?
- 8) What were the residents consulted about?
- 9) Why were they consulted about this?
- 10) Was their participation consistent throughout the phase 1A housing project?
- 11) Were the residents selected before the construction of Cornubia phase 1A?
- 12) If the residents were selected after the construction of Cornubia phase 1A, then who did you consult with?
- 13) What can be done to increase participation from residents with regards to the planning and development of their dwellings?
- 14) How are the resident's needs catered for in the design of Cornubia phase 1A housing project?
- 15) Apart from public consultation, what other initiatives were taken to ensure that the Cornubia phase 1A housing met the personal needs of its residents (for example what was done to ensure that accessibility to basic services were convenient for minor children and disabled persons)

Section 6: Concluding questions

- 1) What initiatives were taken by you and your team to create a holistically integrated human settlement in Cornubia phase 1A?
- 2) What were the major challenges faced in incorporating holistic integration in the Cornubia phase 1A housing project?
- 3) What strategies were employed to overcome the challenges of achieving holistic integration in the Cornubia phase 1A housing project?
- 4) Were these strategies able to overcome the challenges?
- 5) If so, how?
- 6) If not, why?
- 7) Please explain why?
- 8) In your view, how successful has Cornubia phase 1A been in creating 482 spatially integrated houses? Explain?

- 9) In your view, could Cornubia phase 1A achieve spatial integration goals on its own or would such an achievement only be expected and achieved upon completion of the entire project?
- 10) From the Cornubia experience, what in your view can be done to contribute to the improvement of spatial integration in similar future low-income housing projects?

8.3 Appendix 3:

Beneficiary Household Questionnaire: Residents of Cornubia phase 1A

Respondent number:

Name (optional):

Questions:

Section 1: General information

1) What is your age?

15 to 35 years (youth)	
60 years and over (old age)	

2) What is your gender?

Male	
Female	

3) Are you the head of this household?

Yes	
No	

4) Do you have a disability?

Yes	
No	

5) What is your race?

African	
White	
Indian /Asian	
Coloured	
Other	

6) What is your highest standard of education?

.....

7) How many people reside in your household?

.....

- 8) Please state the age and employment status of each person resident in your household.

Age	Employment status

- 9) Are you currently employed?

Yes	
No	

- 10) If yes, what is the name of the company or firm that you are employed at?

.....

- 11) Where is your company or firm located?

.....

- 12) How do you travel to and from work?

.....

- 13) How long does it take to travel to work (minutes)?

.....

- 14) What are your working hours?

.....

- 15) Do you run any small-scale business?

Yes	
No	

- 16) If yes, where is your business located?

.....

- 17) If yes, what type of business do you run?

.....

- 18) Do you manufacture your own goods or are these goods purchased and resold?

.....

- 19) If purchased, where do you purchase or obtain your business goods?

20) How long does it take you to travel to obtain the goods?

21) Were you previously employed prior to moving into Cornubia phase 1A?

Yes	
No	

22) If yes, where were you employed and for how long?

23) Did you have to leave your previous place of employment as a result of moving into Cornubia phase 1A?

Yes	
No	

24) If yes, why?

25) Where did you reside prior to moving into Cornubia phase 1A?

Name of the place or settlement.....
Area.....

26) For how long have you been resident at Cornubia phase 1A?

Section 2: Spatial integration

1) Are any of the services or facilities listed below located within the Cornubia Phase 1A housing project?

	Located within Cornubia Phase 1A (yes/no)	If yes, how many?
Places of Employment		
School		
Shops		
Police Station		
Medical care		
Recreation		
Place of worship		

2) Do you have to travel outside Cornubia phase 1A in order to access the services or facilities below? Give reasons for your answer.

	Yes/No	Why
Employment		
School or university		
Shops		
Police Station		
Clinics/Hospital		
Recreation		
Place of worship		

- 3) As a resident of Cornubia phase 1A, how long do you have to travel (minutes) to places of:

Employment	
School or university	
Shops	
Police Station	
Clinics	
Recreation	
Place of worship	

- 4) What challenges do you face on a daily basis with regard to travelling?

.....

- 5) How do you feel about the location of your house? (i.e. Are you satisfied with where your house is situated and the opportunities and facilities available within the location)

.....

Section 3: Social integration

- 1) Does the Cornubia phase 1A comprise of the following groups of people?

Race	Yes	No
African		
Indian		
White		
Coloured		
Other (Specify)		

- 2) Does the Cornubia phase 1A comprise of the following age groups of people?

Age (years)	Yes	No
0 to 14		
15 to 24		
25 to 54		
55 to 64		
65 and over		

3) Do you know the other residents of Cornubia phase 1A personally or only by face recognition?

.....

4) Approximately how many residents of Cornubia phase 1A can you identify by name?

.....

5) Do you meet or interact with other residents in the Cornubia phase 1A community?

Yes	
No	

6) If yes, how often do you meet or interact?

.....

7) If yes, which are the common places that you meet or interact with other residents of Cornubia and surrounding areas?

.....

8) Are the building structures of Cornubia phase 1A situated in a manner that allows for communication and interaction between residents?

Yes	
No	

9) Are the residents of Cornubia phase 1A able to socialize with the residents of surrounding areas?

Yes	
No	

10) If no, explain why?

.....

Section 4: Economic integration

1) What is your monthly income bracket?

R0 to R3500-00	
R3500-00 to R7000-00	
R7000-00 to R10 000-00	
Above R10 000-00	

2) If you are unemployed, please specify your source of income?

.....

3) How much does a one way trip cost (Rands) to travel to places of:

Employment	
School or university	
Shops	
Police Station	
Clinics	
Recreation	
Place of worship	

4) Do you use public transport?

Yes	
No	

5) If yes, what transport models do you use?

Taxis	
Buses	
Trains	

6) Is the above transport system easily available to you?

Yes	
No	

7) If no, why?

.....

8) During what time/s are these transport systems accessible and available for you to use?

.....

9) Are these times suitable to you?

Yes	
No	

10) If no, please explain why.

.....

11) What is your total monthly travelling expenditure (Rands) from Cornubia phase 1A to places of:

Employment	
School or university	
Shops	
Police Station	
Clinics	
Recreation	

Place of worship	
------------------	--

12) Does the location of your house afford you a range of economic opportunities such as:

	Yes	No
Urban agriculture		
Small-scale trading		
Business support (business education)		
Other		

13) If yes, explain how you have used these opportunities to earn an income?

.....

Section 5: Functional integration

1) As a resident of Cornubia phase 1A, are you able to practice your cultural beliefs, activities and heritage?

Yes	
No	

2) If no, why?

.....

3) Are there any outdoor open spaces in the Cornubia phase 1A housing project that specifically allow you to interact with other residents?

Yes	
No	

4) If yes, what are these spaces?

.....

5) If yes, how many of these spaces are located within the Cornubia phase 1A housing project?

.....

6) If yes, are the outdoor open spaces sufficient to cater for all the residents of Cornubia phase 1A?

Yes	
No	

7) If yes, are these open spaces safe environments?

Yes	
No	

8) If no, explain why.

.....

9) How did you find out about the Cornubia phase 1A housing project?

.....

10) Did you contribute in any way to the development of the Cornubia Phase 1A housing project?

Yes	
No	

11) If yes, at what stage did you start contributing to the development of the Cornubia phase 1A project?

.....

12) Give details of your contribution?

.....

13) Were you consulted by any housing officials during the development process?

Yes	
No	

14) Were meetings held with beneficiaries?

Yes	
No	

15) If yes, how often were these meetings held?

.....

16) If meetings were not held, how were you informed of the progress of the housing development?

.....

17) Were your personal needs and circumstances taken into consideration by the EThekweni municipality prior to being allocated a house?

Yes	
No	

18) If yes, how?

.....

19) If not, which needs would you have liked to be taken into consideration and why?

Section 6: Race-related questions

A) Only applicable to African residents

- 1) Does your household comprise of people from more than one race group?

Yes	
No	

- 2) If yes, please specify the different race groups present in your household.
-

- 3) Are there people from different race groups resident in Cornubia phase 1A?

Yes	
No	

- 4) Would you say that there is an even population percentage of each race group resident in Cornubia phase 1A?

Yes	
No	

- 5) If no, which would you say is the most predominant race group resident in Cornubia phase 1A?
-

- 6) Which in your view is the least predominant race group resident in Cornubia phase 1A?
-

- 7) Do the mixed race groups in Cornubia phase 1A socialize or interact with each other?

Yes	
No	

- 8) Are there any difficulties to socialize or interact between the different race groups in Cornubia phase 1A?

Yes	
No	

- 9) If yes, what are these difficulties?
-

10) If yes, what could be changed to ensure that these difficulties are reduced?

.....

11) As an African person, what are the strengths of being a resident of Cornubia phase 1A?

.....

12) As an African person, what are the weaknesses or constraints / limitations of being a resident of Cornubia phase 1A?

.....

13) Are there any restrictions placed on you in terms of practicing your cultural beliefs in Cornubia phase 1A?

Yes	
No	

14) If yes, what are they?

.....

15) As an African person, what facilities do you require in order to live a comfortable life?

.....

16) Why?

.....

17) Are the above facilities available to you in Cornubia phase 1A?

.....

18) If yes, can access to these facilities be improved in any way?

.....

19) With regards to housing development, what are your needs as an African resident?

.....

20) Do you believe Cornubia phase 1A caters for African residential needs?

Yes	
No	

21) Please explain your answer?

.....

B) Only applicable to Indian and Asian residents.

1) Does your household comprise of people from more than one race group?

Yes	
-----	--

No	
----	--

- 2) If yes, please specify the different race groups present in your household.

.....

- 3) Are there people from different race groups resident in Cornubia phase 1A?

Yes	
No	

- 4) Would you say that there is an even population percentage of each race group resident in Cornubia phase 1A?

Yes	
No	

- 5) If no, which would you say is the most predominant race group resident in Cornubia phase 1A?

.....

- 6) Which in your view is the least predominant race group resident in Cornubia phase 1A?

.....

- 7) Do the mixed race groups in Cornubia phase 1A socialize or interact with each other?

Yes	
No	

- 8) Are there any difficulties to socialize or interact between the different race groups in Cornubia phase 1A?

Yes	
No	

- 9) If yes, what are these difficulties?

.....

- 10) If yes, what could be changed to ensure that these difficulties are reduced?

.....

- 11) As an Indian or Asian person, what are the strengths of being a resident of Cornubia phase 1A?

.....

- 12) As an Indian or Asian person, what are the weaknesses or constraints / limitations of being a resident of Cornubia phase 1A?

.....

13) Are there any restrictions placed on you in terms of practicing your cultural beliefs in Cornubia phase 1A?

Yes	
No	

14) If yes, what are they?

.....

15) As an Indian or Asian person, what facilities do you require in order to live a comfortable life?

.....

16) Why?

.....

17) Are the above facilities available to you in Cornubia phase 1A?

.....

18) If yes, can access to these facilities be improved in any way?

.....

19) With regards to housing development, what are your needs as an Indian or Asian resident?

.....

20) Do you believe Cornubia phase 1A caters for Indian and Asian residential needs?

Yes	
No	

21) Please explain your answer?

.....

C) Only applicable to White residents

1) Does your household comprise of people from more than one race group?

Yes	
No	

2) If yes, please specify the different race groups present in your household.

.....

3) Are there people from different race groups resident in Cornubia phase 1A?

Yes	
No	

- 4) Would you say that there is an even population percentage of each race group resident in Cornubia phase 1A?

Yes	
No	

- 5) If no, which would you say is the most predominant race group resident in Cornubia phase 1A?
-

- 6) Which in your view is the least predominant race group resident in Cornubia phase 1A?
-

- 7) Do the mixed race groups in Cornubia phase 1A socialize or interact with each other?

Yes	
No	

- 8) Are there any difficulties to socialize or interact between the different race groups in Cornubia phase 1A?

Yes	
No	

- 9) If yes, what are these difficulties?
-

- 10) If yes, what could be changed to ensure that these difficulties are reduced?
-

- 11) As a White person, what are the strengths of being a resident of Cornubia phase 1A?
-

- 12) As a White person, what are the weaknesses or constraints / limitations of being a resident of Cornubia phase 1A?
-

- 13) Are there any restrictions placed on you in terms of practicing your cultural beliefs in Cornubia phase 1A?

Yes	
No	

- 14) If yes, what are they?
-

- 15) As a White person, what facilities do you require in order to live a comfortable life?
-

16) Why?

.....

17) Are the above facilities available to you in Cornubia phase 1A?

.....

18) If yes, can access to these facilities be improved in any way?

.....

19) With regards to housing development, what are your needs as a White resident?

.....

20) Do you believe Cornubia phase 1A caters for White residential needs?

Yes	
No	

21) Please explain your answer?

.....

D) Only applicable to Coloured residents.

1) Does your household comprise of people from more than one race group?

Yes	
No	

2) If yes, please specify the different race groups present in your household.

.....

3) Are there people from different race groups resident in Cornubia phase 1A?

Yes	
No	

4) Would you say that there is an even population percentage of each race group resident in Cornubia phase 1A?

Yes	
No	

5) If no, which would you say is the most predominant race group resident in Cornubia phase 1A?

.....

6) Which in your view is the least predominant race group resident in Cornubia phase 1A?

.....

7) Do the mixed race groups in Cornubia phase 1A socialize or interact with each other?

Yes	
No	

8) Are there any difficulties to socialize or interact between the different race groups in Cornubia phase 1A?

Yes	
No	

9) If yes, what are these difficulties?

.....

10) If yes, what could be changed to ensure that these difficulties are reduced?

.....

11) As a Coloured person, what are the strengths of being a resident of Cornubia phase 1A?

.....

12) As a Coloured person, what are the weaknesses or constraints / limitations of being a resident of Cornubia phase 1A?

.....

13) Are there any restrictions placed on you in terms of practicing your cultural beliefs in Cornubia phase 1A?

Yes	
No	

14) If yes, what are they?

.....

15) As a Coloured person, what facilities do you require in order to live a comfortable life?

.....

16) Why?

.....

17) Are the above facilities available to you in Cornubia phase 1A?

.....

18) If yes, can access to these facilities be improved in any way?

.....

19) With regards to housing development, what are your needs as a Coloured resident?

.....

20) Do you believe Cornubia phase 1A caters for Coloured residential needs?

Yes	
No	

21) Please explain your answer?

.....

Section 7: Gender-related questions

A) Only applicable to female residents.

1) As a female, what are some of your daily responsibilities?

.....

2) Are you required to travel in order to complete your daily tasks?

.....

3) What difficulties do you face on a daily basis when completing your responsibilities?

.....

4) What can be done to improve or assist you in completing your daily tasks?

.....

5) Have you been a victim of a crime within Cornubia phase 1A?

Yes	
No	

6) In your view, are women in Cornubia phase 1A more susceptible to crime than men?

Yes	
No	

7) If yes, why?

.....

8) Do you feel safe residing in Cornubia phase 1A?

Yes	
No	

9) Please state reasons for your answer?

.....

10) With regards to housing development, what are your needs as a female resident?

.....

11) As a female, what facilities do you require in order to live a comfortable life?

.....

12) Why?

.....

13) Does Cornubia phase 1A provide the above needs and facilities to you?

Yes	
No	

14) If yes, how?

.....

15) As a female, what are the strengths of being a resident of Cornubia phase 1A?

.....

16) As a female, what are the weaknesses or constraints / limitations of being a resident of Cornubia phase 1A?

.....

17) Do you believe that Cornubia phase 1A is a suitable environment for females?

Yes	
No	

18) Please explain your answer?

.....

B) Only applicable to male residents.

1) As a male, what are some of your daily responsibilities?

.....

2) Are you required to travel in order to complete your daily tasks?

.....

3) What difficulties do you face on a daily basis when completing your responsibilities?

.....

4) What can be done to improve or assist you in completing your daily tasks?

.....

5) Have you been a victim of a crime within Cornubia phase 1A?

Yes	
No	

6) In your view, are women in Cornubia phase 1A more susceptible to crime than men?

Yes	
No	

7) If yes, why?

.....

8) Do you feel safe residing in Cornubia phase 1A?

Yes	
No	

9) Please state reasons for your answer?

.....

10) With regards to housing development, what are your needs as a male resident?

.....

11) As a male, what facilities do you require in order to live a comfortable life?

.....

12) Why?

.....

13) Does Cornubia phase 1A provide the above needs and facilities to you?

Yes	
No	

14) If yes, how?

.....

15) As a male, what are the strengths of being a resident of Cornubia phase 1A?

.....

16) As a male, what are the weaknesses or constraints / limitations of being a resident of Cornubia phase 1A?

.....

17) Do you believe that Cornubia phase 1A is a suitable environment for males?

Yes	
No	

18) Please explain your answer?

.....

Section 8: Age-related questions

A) Only applicable to youth residents (ages between 18 to 35 years old)

1) Does the Cornubia phase 1A housing site comprise of residents of different age groups?

Yes	
No	

2) Which age group would you say is the most predominant group in Cornubia phase 1A

15 to 35 years (youth)	
60 years and over (old age)	

3) From your experience, do the different age groups communicate and interact often in Cornubia phase 1A?

Yes	
No	

4) Given your age, what are your specific needs when it comes to a housing development?

.....

5) What facilities and amenities do you consider to be vital in a housing development?

.....

6) Are these facilities and amenities available to you in the Cornubia phase 1A housing settlement?

Yes	
No	

7) If yes, specify which ones are available?

.....

8) What recreational activities do you take part in?

.....

9) Are your recreational activities located within the Cornubia phase 1A housing development?

Yes	
No	

10) If no, where are they located and how difficult is it to access them?

.....

11) As a person aged between 18 to 35, what are the strengths of living in Cornubia phase 1A?

.....

12) As a person aged between 18 to 35, what are the weaknesses or constraints / limitations of living in Cornubia phase 1A?

.....

13) Are there any places of gathering (such as a social meeting club) present in Cornubia phase 1A?

.....

14) Are you a member of such club/ gathering?

Yes	
No	

15) If not, why?

.....

16) Do you believe that Cornubia phase 1A is a suitable environment for the youth?

Yes	
No	

17) Please explain your answer.

.....

B) Only applicable to older age residents (age 60 and above)

1) Does the Cornubia phase 1A housing site comprise of residents of different age groups?

Yes	
No	

2) Which age group would you say is the most predominant group in Cornubia phase 1A

15 to 35 years (youth)	
60 years and over (old age)	

- 3) From your experience, do the different age groups communicate and interact often in Cornubia phase 1A?

Yes	
No	

- 4) Given your age (60 years and over), what are your specific needs when it comes to a housing development?
-

- 5) What facilities and amenities do you consider to be vital in a housing development?
-

- 6) Are these facilities and amenities available to you in the Cornubia phase 1A housing settlement?

Yes	
No	

- 7) If yes, specify which ones are available?
-

- 8) What recreational activities do you take part in?
-

- 9) Are your recreational activities located within the Cornubia phase 1A housing development?

Yes	
No	

- 10) If no, where are they located and how difficult is it to access them?
-

- 11) As a person who is 60 years and over, what are the strengths of living in Cornubia phase 1A?
-

- 12) As a person who is 60 years and over, what are the weaknesses or constraints / limitations of living in Cornubia phase 1A?
-

- 13) Are there any places of gathering (such as a senior citizens club) present in Cornubia phase 1A?
-

- 14) Are you a member of such club/ gathering?

Yes	
No	

15) If not, why?

.....

16) Do you believe that Cornubia phase 1A is a suitable environment for pensioners or old age residents?

Yes	
No	

17) Please explain your answer.

.....

Section 9: Minor children

Applicable only if household comprises of minor children (under age 18)

1) How many minor children are resident at your household?

.....

2) Specify their age and your relation to the minor child/ children?

Age	Relation

3) Do the minor child / children attend a care or educational facility?

Yes	
No	

4) If yes, please specify the name, type and area of the facility attended by the minor child/ children.

Name of facility	Type of facility (eg. School, crèche, etc.)	Area

- 5) Is there a play area for children located within the Cornubia phase 1A housing project?

Yes	
No	

- 6) If yes, does the play area allow the children to interact with one another?

Yes	
No	

- 7) Are these play areas maintained on a regular basis?

Yes	
No	

- 8) Are these play areas used frequently by the children of Cornubia phase 1A?

Yes	
No	

- 9) If no, can you explain why?

.....

- 10) Are there any other facilities that have been incorporated in the Cornubia Phase 1A project which allow children to socialize with each other?

Yes	
No	

- 11) If yes, what are they?

.....

Section 10: Concluding questions

- 1) As a resident of Cornubia phase 1A, do you feel like you have access to services and infrastructure such as:

A) Employment

Yes	
No	

B) School or university

Yes	
No	

C) Shops

Yes	
No	

D) Police Station

Yes	
No	

E) Clinics/health centres

Yes	
No	

F) Places of recreation

Yes	
No	

G) Places of worship

Yes	
No	

2) What recommendations would you make for the improvement of the Cornubia housing phase 1A project in terms of access to:

A) Employment

.....

B) School or university

.....

C) Shops

.....

D) Police station

.....

E) Clinics

F) Places of recreation

G) Places of recreation

8.4 Appendix 4: Researchers observations

Accessibility and/or availability of:	Difficult	Easy	Questions considered by researcher during observations	Notes/comments
Economic opportunities such as vendors and places of employment availabilities			<p>Visibility and frequency of small scale businesses, vendors, trading, industrial activity, agricultural/ farming?</p> <p>Are there different routes and transportation networks available for residents to conduct business or travel to places of employment?</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
Public transport modes such as taxi's, buses and railway stations			<p>Are there visible transport modes available to residents?</p> <p>Is there a wide range of convenient transport modes available or are commuters subjected to using a specific mode of transport?</p> <p>Are these transport networks used frequently by residents?</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
				<p>.....</p> <p>.....</p>

Diversity of population and visibility of social interaction between the different groups			Is there a balanced level of gender groups and race equity?	.....
			Do the different race groups communicate with each other frequently?	.....
			Are there barriers to social interaction between the various race groups?	.....
Public services and amenities:				.....
Schools			Are residential units well located in terms of access to public services and amenities?	.....
Library				.....
Shops				.....
Police stations				.....
Hospitals/Clinics				.....
Places of recreation				.....
Municipality				.....
Courts				.....
Petrol stations				.....
Parks				.....
Places of worship				.....
			

8.5 Appendix 5

Informed consent form



INFORMED CONSENT FORM

June 2017

Greetings

My name is Shaheel Sunil Singh (211 535 459) a Master of Housing student from the University of Kwa Zulu Natal, currently doing research in low-income housing entitled: "An evaluation of the Integrated Residential Development Programme (IRDP) as a strategy of spatial integration of low-income housing projects. A study of Cornubia, Durban, South Africa". The research is supervised by Dr. P. Adebayo in the School of Built Environment and Development Studies.

You are being invited to participate in a study that entails the spatial integration of Cornubia phase 1A housing project. Your participation in the study will involve answering a questionnaire or a face-to-face interview. The purpose of this study is to evaluate the extent of the IRDP principles in the Cornubia phase 1A housing project as a strategy of spatial integration. Thereafter, the study will make recommendations as to how to improve the programmes implementation. Your contribution to the study will be highly appreciated.

If you choose to participate in the study it is expected to last approximately 45 minutes to an hour. No harm will be implicated as this study will not benefit or worsen housing conditions of respondents. The participants are merely contributing to the researcher fulfilling the requirements for his degree.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (HSS/0718/016M).

In the event of any problems or concerns/questions you may contact the researcher at : 211535459@stu.ukzn.ac.za or the UKZN Humanities and Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

Kwa Zulu Natal, South Africa.

Tell: 27 31 2604557-Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Please note participation in the study is voluntary and you may withdraw at any time during the questionnaire or interview process. If you choose to participate your name will not be used in the research. Should you refuse the offer to participate, you will not incur penalty or loss of treatment or any benefit as well. All data collected from respondents will be stored by the researcher for confidentiality and disposed off once the research reaches completion, the participant may request the complete study if requested.

CONSENT

I have been informed about the study entitled “An evaluation of the Integrated Residential Development Programme (IRDP) as a strategy of spatial integration of low-income housing projects. A study of Cornubia, Durban, South Africa” by Shaheel Sunil Singh.

I understand the purpose and produces of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/ concerns or queries related to the study, I understand that I may contact the researcher at 211535459@stu.ukzn.ac.za / 083 414 2685.

If I have any questions or concerns about my rights as a study participant or if I am concerned about an aspect of the study or the researcher then I may contact:

HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

Kwa Zulu Natal, South Africa.

Tell: 27 31 2604557-Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

I hereby provide consent to:

Audio - record my interview/ focus group discussion	YES/NO
Video - record my interview/ focus group discussion	YES/NO
Use of my photographs for research purpose	YES/NO

.....
Signature of Participant	Date

.....
Signature of witness	Date
