

**IMPLICATIONS OF HOUSING TRANSFORMATION ON THE SENSE OF PLACE
IN CHAMBOLI MINE HOUSING AREA OF COPPERBELT PROVINCE, ZAMBIA**

By

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DECLARATION

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I therefore bare the absolute responsibility for the contents of this dissertation.

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CERTIFICATE OF APPROVAL

This dissertation by Collins Mwaba is approved as a partial fulfilment of the requirements for the award of Master of Science Degree in Spatial Planning of the University of Zambia.

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ABSTRACT

Housing transformation is one of the techniques of providing affordable housing to low income groups. However, studies have shown that different types of housing transformation affect the character of settlements and subsequently sense of place. This study therefore investigated the implications of housing transformation on the sense of place in Chamboli mine housing area in Kitwe, Zambia. The study was undertaken in order to help equip local authorities and planners with skills to promote health, wellbeing, quality urban environments, competitiveness and sustainability in transforming settlements. A total of 50 households randomly selected were surveyed and 4 key informants (2 from the local authority, former ZCCM Housing Officer and the Area Councillor) were interviewed. Structured questionnaires were used in the survey and an interview guide was used to interview the 4 key informants. The collected data from the survey was analysed using descriptive statistics while qualitative data from in-depth interviews was analysed using content analysis. The study revealed that housing transformation impacts on the sense of place both positively and negatively depending on the nature of transformation. Housing transformation through changing land uses in the study area is promoting mixed use developments thereby enhancing sense of place. Further, the study revealed that housing transformation through extensions and modifications is promoting aesthetics, safety and vitality on the public realm thereby enhancing sense of place. On the other hand housing transformation through erection of solid boundary fences is reducing social interactions among residents and sense of place. It is recommended that urban design principles be incorporated into the current planning and building standards and regulations in order to promote quality and distinctive urban environments. This will promote sense of place in transforming settlements.

KEY WORDS: Sense of Place, Housing Transformation, Genius-loci, Existential

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ACRONYMS

CBD	Central Business District
CSO	Central Statistics Office
DHI	Department of Housing and Infrastructure
DPPH	Department of Physical Planning and Housing
GIS	Geographical Information System
MMD	Movement for Multiparty Democracy
NARC	National Association of Regional Council
NHA	National Housing Authority
SOP	Sense of Place
TCPA	Town and Country Planning Association
UK	United Kingdom
ZCCM	Zambia Consolidated Copper Mines

CHAPTER ONE: INTRODUCTION

Today, cities are the main growth centres of economies, as well as growth centres of populations. According to the United Nations Department of Economic and Social Affairs /Population Division (2012), the world population living in urban areas is projected to gain by 2.6 billion people, passing from 3.6 billion in 2011 to 6.3 billion by 2050. In Sub-Saharan Africa, it is estimated that cities in this region will have to accommodate more than 300 million new residents by 2030 (Giddings, 2007). The rapid increase in urban population in developing countries is as a result of natural growth and rural urban migration. This increase in urban population has increased demand for affordable, quality and adequate housing in most cities of developing countries. Many governments in rapidly urbanising developing countries are failing to meet the increasing demand for housing (Nguluma, 2003). This has led to increased cases of encroachments on public and private land and housing transformations. These transformations according to Nguluma (2003) are done through extensions and modifications of existing housing units. These initiatives according to Tipple (2000) are termed as self-help initiatives.

Pattison et al (2011) argue that the self-help technique is an effective approach that is capable of providing affordable and adequate housing to the low income groups. He further states that the technique contributes to additional supply of housing to tackle homelessness and meet urban housing needs. Additionally, self-help housing provides opportunities to gain construction skills through on-site experiences for local people. Tipple (2000) asserts that the poor have the skills and commitment to build their houses in an affordable manner and may incrementally be improved upon with the improvement of their financial status. He further states that these improvements are unregulated and tradesmen are engaged to do the actual construction works with owners acting as project managers. This means that housing transformations in most developing countries are user initiated and they are done haphazardly.

Despite the benefits of self-help housing, other scholars have argued that the approach mainly focuses on the use value of housing for individuals while the wider economic context is not taken into consideration (Burgess, 1982). Self-help is seen as promoting unpaid labour leading to exploitation. The World Bank and the United Nations have adopted the self-help concept as a response to addressing housing problems in non-industrialized countries through

financing squatter settlements upgrading programmes and promotion of sites and service developments (Terekegn, 2000).

Despite all the efforts being made, most governments in the Global South have failed to meet the housing demand in urban areas. According to Giddings (2007) the efforts by African governments and international donors to provide housing to all income groups have not produced the intended results. This coupled with the unequal distribution of land for housing developments have contributed to the high housing deficit in developing countries. This situation has led to the rapid growth and expansion of squatter settlements and increased cases of housing transformations. In Zambia for instance, the urban housing deficit has continued to rise because of urbanization. In 1996, the housing backlog in the country stood at approximately 846,000 units. To clear this backlog, the 1996 housing policy proposed a building rate of 110,000 housing units per year between 1996 and 2006 (GRZ,1996). However, this target was not met. The UN-Habitat (2012) report on Zambia urban housing sector profile estimates that Zambia needs to build 1.3 million dwelling units between 2011 and 2030. This entails that one dwelling house should be built every two minutes for 19 years of working days. The housing backlog has continued to increase especially in Lusaka and Copperbelt provinces of Zambia.

The sale of houses by the Zambian government to sitting tenants coupled with the high housing deficit in the study area triggered the transformation of housing units. According to Nguluma (2003), housing transformation in developing countries is done to increase indoor spaces to accommodate the increasing family sizes, desire to have modern houses and for rental income. Nguluma (2003) further argues that the main actors in the transformation process include homeowners and tradesmen. The process is initiated by homeowners who act as project managers. The actual construction works are done by tradesmen.

It is however, important to note that despite increasing indoor spaces, housing transformations affect the key physical design features and lived experiences of residents that foster sense of place (Nguluma, 2003). According to Paradis (2000), the concept of sense of place is often ambiguous and highly contested. Due to its inter-disciplinary nature, there is no universal definition of sense of place. However, in this study 'Sense Of Place, SOP' was taken to mean 'a continuous process in which individuals experience spaces on both an interpretative level as well as an existential level when the environment accommodates

certain forms of social interaction based on the physical design of the neighbourhood' (Beidler, 2007). This therefore means that factors that affect sense of place in this study were investigated from the interpretative and existential perspectives. From the interpretative perspective, new urbanists believe that the physical design of a settlement can foster a sense of place. They argue that a pedestrian oriented and mixed land-use developments can foster sense of place among residents (Beidler, 2007). This claim has however triggered a lot of research among urban planners and geographers. The findings have produced contradictory reports and no consensus regarding the validity of this social claim has been reached. Despite the contradictory reports on the new urbanism's claim, this study assumed that physical design features of a settlement and lived experiences of residents are capable of altering or fostering a sense of place. This study therefore, intended to identify the physical design elements and residents' lived experiences that alter or foster a sense of place from the residents' and key informant's (municipal officials, area councilor and former Zambia Consolidated Copper Mines (ZCCM) housing officer) perspectives and analyze the implications of housing transformation on the sense of place in Kitwe's Chamboli mine housing area.

Due to policy and legal limitations among others, housing transformation in the study area is unregulated and is done haphazardly. This situation is likely to change the character of the settlement as well as residents' lived experiences and subsequently sense of place. In her study on housing transformation and spatial qualities in Dar-es-Salaam, Nguluma (2003) asserts that unregulated extensions and modifications of Swahili housing units affect the outdoor spatial qualities especially the semi-private space. On the other hand, results in Beidler's (2007) study revealed that housing transformation meets the changing social and economic needs of residents thereby fostering a sense of place. This means that housing transformation can as well foster sense of place if properly done.

Despite sense of place having benefits such as increasing the property values and promoting good health, wellbeing as well as necessary for ensuring sustainable development of settlements, no research that I could find has been conducted in any mine housing area in Zambia to examine how housing transformation is done and its resultant impacts on the physical design elements and lived experiences of residents that influence a sense of place.

1.1 Problem Statement

Following the sale of houses by the government of the Republic of Zambia to sitting tenants in the study area, homeowners have been transforming their structures for various reasons. Literature has shown that homeowners in developing countries transform their houses in order to increase indoor spaces to accommodate the increasing family sizes, provide more rooms for home based economic activities and the desire to own modern houses (Nguluma, 2003; Turner, 2000). However, most of these transformations are unregulated and are in most cases user initiated. In the study area for instance, the Kitwe City Council Planning Authority rarely controls housing transformations for various reasons including legal and policy limitations. Accordingly, housing transformations in the study area are unregulated and are done haphazardly. This situation is likely to change the character of the study area in terms of design features and lived experiences of residents thereby fostering or reducing a sense of place. Reduced sense of place is likely to affect the liveability and environmental sustainability of the study area.

Despite sense of place being a cornerstone for achieving a liveable settlement, there is a knowledge gap on the implications of housing transformation on the sense of place in Zambia. The key physical design elements as well as lived experiences of residents that foster sense of place in the study area are not known. Given this knowledge gap, it is difficult for urban planners and municipal managers to address issues of liveability, quality urban environments, fulfilment, sustainable housing and environmental sustainability in Chamboli mine housing area. Hence, this study is an attempt to address this problem.

1.2 Aim of the Study

To establish how housing transformation has affected sense of place in Chamboli Mine Housing Area.

1.2.1 Objectives

1. To examine the nature of housing transformation in the study area.
2. To analyse the factors that residents and key informants feel contribute to sense of place.
3. To examine changes taking place on factors that contribute to sense of place during housing transformation
4. To establish the implications of different types of housing transformation on the sense of place

1.2.2 Research Questions

1. What types of housing transformations are taking place in the study area?
2. How has housing transformation taken place?
3. Who are the main actors involved in the housing transformation process?
4. What factors enhance sense of place in the study area?
5. What changes are being made to the factors that contribute to sense of place during housing transformation?
6. What are the implications of different types of housing transformation on the sense of place?

1.3 Significance of the Study

The results of this study will increase the body of knowledge in improving the capacity of local authorities and other policy makers to protect and enhance qualities that contribute to sense of place in the study area. Furthermore, the study will unveil the physical design features and lived experiences that enhance sense of place in the study area thereby contributing to the creation of sustainable housing and liveable urban spaces. Additionally, this study will recommend policy alternatives to relevant institutions such as Local Authorities (LA), National Housing Authority (NHA) and Department of Housing and Infrastructure (DHI) in order to achieve well-coordinated and quality housing transformations. Therefore, the study is significant because it will equip local authorities and planners with skills to promote health, wellbeing, quality urban environments, competitiveness and sustainability when transforming settlements.

1.4 Structure of the Dissertation

This dissertation has four chapters. Chapter one introduces the topic and brings out the aim and objectives of the study. Chapter two is a detailed review of relevant literature on housing transformations and sense of place. Chapter two also presents the conceptual framework that underpinned the study. Chapter three presents the methods of data collection, sample size, sampling methods as well as methods of data analysis. Chapter four presents findings and discussions. The last chapter concludes the study and provides recommendations.

CHAPTER TWO: CONCEPTUAL/THEORETICAL FRAMEWORK AND LITERATURE REVIEW

This chapter reviews literature on housing transformation and sense of place. It reviews relevant literature on different types of housing transformation as well as the concept of sense of place.

2.1 Housing Transformation

Transformation is synonymous to alteration, adjustment, modification, change and improvement. According to Tipple (1991), housing transformation is the alteration or extension of a dwelling house through construction activities using locally available building material and technology. Popkin et al (2012), on the other hand, defines housing transformation as the rearrangement of internal furniture, painting a room and structural amendments. In this study, housing transformation was, therefore, taken to mean the extension and modification of existing dwelling units with a view of improving either quality or quantity of structures including their immediate environment. Housing extensions involve addition of extra rooms to existing residential dwelling units to provide space for the increasing family sizes and rental income among others. Housing modifications, on the other hand, involve changing the uses of land from residential to other uses such as commercial. This type of housing transformation promotes mixed use developments which fosters environmental sustainability and vitality on the public , among others.

2.2 Causes of housing transformation

In this study, the housing adjustment theory was used to discuss the causes of housing transformation. Tipple (2000) states that in industrialised countries, people have a choice of whether to move or stay in the house and make changes. He argues that there are two reasons that cause housing transformation, namely, housing stress and shock. Housing stress is the gap between consumption, the demand and preferences, which grows gradually but with increasing intensity over time while housing shock involves the arrival of new children, on the job promotion or a change to a better job, which usually increase housing stress (Tipple, 2000).

Mirmoghhtadaee (2009) argues that people judge their housing conditions based on family and cultural values because settlements are designed to meet the needs, social norms and lifestyle of the locals. Therefore, when the condition of a housing unit cannot meet the needs, social norms and lifestyle of the people, a housing deficit occurs. This situation leads to housing stress, shock and eventually adjustment of the existing unit. It is, however, important

to note that the housing adjustment theory is largely based on developed countries where the housing market is well developed. The theory may be useful to consider in developing countries but a relevant question worth examining in relation to this theoretical account is: What are the causes of user initiated housing transformations in the study area?

Having looked at the causes of housing transformation using housing adjustment theory, it is important to review literature on the nature of housing transformation in both developed and developing countries.

2.3 Nature of Housing Transformation

In this study the nature of housing transformation was investigated from two perspectives namely, the types of housing transformation as well as the process of housing transformation. In what follows, the types and process of housing transformation are examined based on existing literature.

2.3.1 Types of Housing Transformation

The type of housing transformation is highly dependent on the purpose of the transformation. In his study on understanding transformation of public housing in Egypt, Salama (1998) identified two types of housing transformations namely interior and exterior transformations. According to him interior transformation involves various undertakings such as changes in the use of indoor spaces, modification of interior walls in order to increase or reduce room sizes, changing the positions of doors and windows, using curtains to separate space for privacy reasons and making provision for extra storage space. This type of housing transformation is done in order to increase indoor spaces as well as the desire to own modern houses by homeowners. Exterior transformation, on the other , involves incorporating exposed balconies into indoor spaces, making new windows, addition of extra rooms to existing structures and appropriating public open space for room extensions (Salama, 1998). This type of housing transformation also endeavours to create more space for indoor activities for families. In some cases the purpose of transformation is also to provide spaces for home based economic activities.

Nguluma (2003) in her study entitled housing themselves: transformations, modernisation and spatial qualities in informal settlements in Dar-es-Salaam, identified six different types of housing transformation. They include horizontal transformation which includes addition of extra rooms to the existing dwellings, demolition of existing houses and replacing them by new structures, replacing mud and pole structures, building new concrete blocks structures

beside old mud and pole houses. Other types include interior transformations and vertical extensions whereby rooms are added vertically to accommodate additional functions. There are many factors motivating such housing transformations. According to Nguluma (2003) a combination of economic, social-cultural and a great desire to own modern houses are factors that trigger housing transformations in developing countries.

It was in the interest of this study to examine the different types of housing transformations in Chamboli mine housing area and establish the implications of such transformations on the sense of place. This was important because most studies on housing transformations and sense of place have been done in public housing areas and informal settlements leaving a knowledge gap on how different types of housing transformation are affecting sense of place in mine housing areas.

2.3.2 Process of Housing Transformation

The housing transformation processes differ between developing and developed countries. This is largely dependent on the actors involved in the process and the type of housing being transformed. In developed countries, housing transformations are in most cases initiated by governments and private developers. Transformations are mostly done through demolitions of existing structures and replacing them with new ones which are in most cases high rise and mixed use (TCPA, 2007). Huge sums of money are invested in such projects and developments are in conformity with the existing planning laws, regulations and standards. In other words, housing transformations in developed nations are done through urban renewal projects, land readjustments, land consolidations, sustainable extensions and demolition of old infrastructure to build new ones.

On the other hand housing transformations in developing countries are in most cases user initiated and are done incrementally. In his study on user initiated transformations of government built housing in developing countries, Tipple, (2000), asserts that housing transformation in public housing areas of developing countries starts with the owner engaging tradesmen or contractors with recommendation from friends, family members, church members and neighbours. He further asserts that tradesmen are the main actors in the transformation process and not contractors. This is so because the terms of payments set by tradesmen are more flexible than those set by contractors. The study further revealed that tradesmen usually work with assistants and labourers who are paid on daily basis. Despite the fact that no building plans are prepared to guide the transformation process, the extent and

nature of extension or modification is agreed upon between the owner and the tradesman. Tipple (2000), further argues that no planning permission or building permits in most cases are granted to developers. This is so because some housing units being transformed are in areas where legislations concerning planning permission do not apply. In areas where such legislation apply, the process of obtaining planning permission is bureaucratic and the transaction costs are unreasonably high thereby discouraging developers or housing transformers from obtaining planning permission from relevant planning authorities (Wanjohi, 2007). Therefore, most transformations are illegal and are done haphazardly. Homeowners in most cases act as project managers.

The discussed process of housing transformation involves public housing and informal settlements in developing countries. It is not clear, however, whether the same process applies in Chamboli mine housing area, hence the need for this study.

Since the aim of this study was to explore the implications of housing transformation on the sense of place, it is important that literature on the sense of place is reviewed. In what follows different models of sense of place are reviewed.

2.4 Understanding Sense of Place

Sense of place has over the years become a topic of academic interest in the fields of urban planning, geography, social sciences and urban design. This has led to different understanding and interpretation of the concept by different scholars and theorists. In fact, the concept of sense of place is often ambiguous and highly contested (Paradis, 2000).

According to Sancar (1994) the investigation of place can be categorised into three epistemological camps, namely, place interpretation otherwise known as *genius loci*, social construction of place and place perception. Sense of place has been investigated from each of these camps. Therefore, these three epistemological understandings provide a useful means of organizing the diverse understandings of the concept of sense of place. In what follows the three epistemological understandings or models of sense of place are discussed in detail.

2.4.1 The Genius Loci-Place interpretation Model

In the Roman tradition, a *genius locus* was the protective spirit of a place. It was often depicted as a snake or a small supernatural being like a fairy or elf (Stuip, 2009). In modern times, the concept is used to refer to the location's distinctive atmosphere, or a "spirit of place", rather than necessarily a protective spirit (Vitori, 2006). It is focussed on the

interpretation of the physical environment. Stuij (2009) argues that sense of place, defined as *genius loci*, represents a combination of the topography of the earth's surface, the cosmological lighting, buildings and the symbolic and existential meanings in the cultural landscape. This model therefore asserts that sense of place develops based on the physical features existing in the local landscape.

Within this model, sense of place has also been conceptualised as living in harmony with the environment and sustainable housing. Vitori (2006) states that most of today's houses are passive envelopes supported by the consumption of energy to protect the inhabitants against the energies and elements of nature. He recommends constructing houses that live with nature and not against it. He further argues that sustainable housing is an important component of sense of place. This is so because housing is responsible for 50 percent of the world's energy use (Vitori, 2006).

These understandings of sense of place are biased towards an aesthetic and spatial quality tied to the physical environment of a settlement. They do not take into consideration social activities. The interpretation of the physical environment is central to this perspective because the '*genius loci*' is understood as instilled in the meanings evoked by the setting itself. Further, the identification of key features that constitute sense of place is an assumption that people in different settlements value features in the local environment in the same way.

2.4.2 The Existential Model

This understanding of sense of place developed from Tuan (1971) and Relph (1970)'s critiquing of positivistic research as an inappropriate approach for studying people and place relationships. Researchers working within this model emphasise the importance of lived experience of the people as opposed to only distinctive environmental qualities in their understanding of sense of place (Beidler, 2007).

Beidler (2007) categorises this model into two camps, namely, the first person phenomenological approach and existential approach. These two camps differ mostly in terms of methodological approaches. The first camp relied on either personal reflections or first-hand experiences to understand and explain sense of place whilst the second camp emphasises lived experience.

Within the first person phenomenological approach, Jackson (1994), identifies three qualities that foster a sense of place. They include the lively awareness of a familiar environment, ritual repetition that reinforces the conception of place, and a sense of fellowship based on a shared experience. The approach contends that sense of place is socially constructed and that it does not only rely on the distinctive features of an area's landscape. Jackson (1994) argues that sense of place is something we ourselves create in the course of time.

The existential phenomenological approach, on the other hand, investigates specific experiences of individuals and groups involved in actual situations. Therefore this approach unlike the first one does not focus on the experience of the researcher but endeavours to balance the researcher's own interpretations with that of the participants. Within this approach, Page (2005), defines sense of place as an intention, a social imprint, and an ethereal concept.

The first component of sense of place as defined by Page (2005) entails that the construction of sense of place is influenced by language, symbols and imagery as it is expressed on maps, plans and presentation with the intent to implement the design without deviation onto the landscape. It intends to improve the quality of people's lives and strengthen society while at the same time increasing efficiency. The second component requires an understanding of man's connectedness to place. Under this component Page (2005) explains sense of place as the human relationship with a place that involves personal, kinship and communal ties in which experiences and attachments to place author histories. It is believed that while a design can foster a sense of place, it is humans who internalize and interpret it. The last component of Page's definition of sense of place looks at human agency and stewardship over places as key factors that lead to knowledge for the person and *genius loci* for the place.

This understanding of sense of place has been explained by Stedman (2003) in an experiential model. The idea is simply that our experiences with a certain physical landscape create a lens through which humans attribute meanings to a place.

2.4.3 The Meaning-Mediated Model - Place Perception

Under this positivistic model, sense of place is understood as a multidimensional construct encompassing several human environment relationships. These relationships have been categorised into three domains which have been studied individually. They include cognitive,

affective and conative domains (Beidler, 2007). The variables for the three domains include place identity, place attachment and place dependence respectively. Therefore, this model understands sense of place as a multidimensional attitude towards a spatial setting (Jorgensen and Stedman, 2006).

The ‘meaning-mediated’ model is an extension of the genius loci model whereas, the physical environment is believed to provoke symbolic meanings of the landscape which, in turn, influences the affective dimensions of a sense of place (Stedman, 2003). The distinction between this model and conceptions of “genius loci” is the inclusion of a cognitive perspective, representative of Kevin Lynch’s work (Lynch, 1960). However, unlike Lynch, Stedman is not concerned with the orientation aspects of environmental cognition. Rather, the author is concerned with defining which meaning-related aspects affect an individual’s sense of place.

Based on my philosophical understanding of reality and Beidler’s (2007) assertion that interpretative and existential models can co-exist in one settlement, the two models influence my current understanding of the concept of sense of place. This study however, did not attempt to test any one of the discussed epistemological understanding of sense of place. The study rather investigated the implications of housing transformations on the sense of place based on the interpretive and existential understanding of sense of place. In what follows, the existing literature on design features that enhance sense of place is reviewed.

2.5 Design Features that contribute to Sense of Place

There has been a lot of debate in the academic literature on the design features that contribute to a sense of place. In his urban design newsletter, Corrie (2011) lists comfortable green spaces and landscape, safety, multiple modes of transport, safe and adequate public spaces and designs that promote social interaction and business opportunities as some of the key design features that contribute to a sense of place. This entails that sense of place is fostered through physical design features that promote social interactions among residents and business opportunities. In other words, according to Corrie (2011) sense of place is fostered through the interpretation of the physical environment and lived experiences of residents. Furthermore, the Victoria Transport Policy Institute Report (2014) suggests that sense of place increases with design features that promote liveability. Therefore, the tenets of liveability are key in fostering quality urban environments and sense of place. The National

Association of Regional Councils (NARC) (2012) identifies a set of qualities that contribute to liveability. They include the quality of the natural and built environments, affordability, access to social infrastructure and availability of transport options. Further, the Partnership for Sustainable Communities in the United States of America identifies more transportation options, equitable and affordable housing, enhanced economic competitiveness, supporting existing communities, coordination of policies and investments and valuing communities and neighbourhoods as the key principles of liveability (NARC, 2012). Additionally, in his presentation on liveable communities, Kingsland (2009) recommended the state of physical structures, natural features, service provision and social cohesion as key principles of liveability. In other words, the Victoria Transport Policy Institute recommends that factors that enhance sense of place should incorporate social, environmental and economic issues. Further, Behrens and Watson (2009) assert that sense of place is not fostered through the enforcement of standardised planning laws and regulations. They argue that sense of place is created through embracing and seeking to promote uniqueness of settlements in terms of vibrant, enriching and efficient urban environments. This means that compliance to planning standards and regulations when planning for settlements will not automatically foster a sense of place, instead promoting the unique character of settlements through plans that respond to the local context and promote social ties and economic opportunities is key in preserving and fostering a sense of place. Additionally, the Commission for Architecture and the Built Environment (2007), argues that the flexibility of housing units to accommodate adaptation is key in fostering a sense of place.

The new urbanism concept, on the other hand, argues that a pedestrian oriented, mixed land-use pattern based on a traditional sensibility, can foster social interaction among residents, a sense of community and enhance sense of place (Beidler, 2007). According to the new urbanists, the interpretation of the physical environment is key in fostering a sense of place. However, the stated design features promote social interaction as well. On the other hand, a group of natural resource scientists/rural sociologists in their study on people's sense of place recommend that physical features and social ties have equal influence on the participants' sense of place (Eisenhauer et al. 2000). Additionally, Beidler's (2007) findings in his study entitled, sense of place and new urbanism: towards a holistic understanding of place and form, revealed that the characteristics of the physical environment as well as lived experiences of residents can foster a sense of place. This means that sense of place can co-exist in one settlement.

Despite the above social claims triggering academic research among researchers, the findings have produced conflicting reports and no consensus regarding the validity of these social claims have been reached. Therefore, in trying to understand the implications of housing transformation on the sense of place, this study took the characteristics of the physical environment (interpretative model) and lived experiences of residents (existential model) as key factors that influence sense of place.

2.6 Housing Transformation and Sense of Place

Housing transformation in developed countries is mostly done through urban renewal projects. Literature has shown that the approaches that have been used in America, Canada and Britain to transform housing units have been land consolidation and land readjustments (Woolrych, 2011). These transformations are done mostly in public housing and low income areas to improve the social, economic, cultural and physical environments of such areas. In most cases such transformations promote mixed use developments and densifications in order to promote environmental sustainability as well as quality and liveable settlements. Further, literature has shown that both the public and private sectors play important roles in urban renewal processes (Woolrych, 2011). These processes are done with strict adherence to existing planning laws and regulations. It must however, be noted that these processes have impacted on communities in terms of sense of place either positively or negatively depending on the approaches taken by relevant authorities. For instance, the British government in 2001 used the area based regeneration approach to improve the housing infrastructure in the low income East Manchester area. This approach was aligned to two strands of UK policy that dictated regeneration practice for more than a decade: (i) Urban renaissance agenda which has been traditionally design-led, focussing on the physical, aesthetic and economic regeneration of inner city areas and (ii) the Neighbourhood renewal agenda which has focused on tackling social exclusion and promoting sustainable and cohesive communities (Woolrych, 2011). This approach fostered an interpretative and existential sense of place. In what follows, the author conducts a case review on the implications of housing transformation on the sense of place in selected areas of cities in developed countries.

2.6.1 Case Review: Lindfield East

Lindfield is located 10km north west of Sydney's Central Business District (CBD). The area was historically a timber farming community. The well where the farmers used to take their cattle is still visible outside the local library and offers a sense of connection to its past for residents (Heather, 2008). The Australian government selected the area for land consolidation

in an attempt to improve the physical, environmental and social conditions of the area. Before the implementation of the project, the area contained a mix of period and contemporary homes, ranging from majestic Victorian and Federation homes, Californian bungalows, classic older style apartments and contemporary town houses and apartments. The older housing typologies provided a direct visual link with the history of the area and helped in illustrating its foundation and formation. The settlement had various open spaces such as the Swain Gardens. Parks also catered for the diversity of sporting clubs including soccer, cricket, tennis and rugby and endorsed a sense of place. The area had adequate spaces that encouraged social interaction thereby contributing to a sense of place.

According to Heather (2008) the character of the settlement was changed because of land consolidation. The project had seen the construction of high rise residential units. Some pieces of land had been re-zoned to allow further urban consolidation to occur. The addition of multi-unit buildings impacted on the existing low-density suburb. Housing transformation through urban consolidation, therefore transformed the settlement into a new era affecting the sense of place. The study undertaken by Heather (2008) revealed that the sense of place in this settlement reduced because of housing transformation. About 50 households were surveyed and 89% indicated that urban consolidation changed the character of the settlement, hence reducing sense of place (Heather, 2008).

The discussed case above has shown that extensions or modifications of existing structures change the physical design features of settlements thereby affecting the character of the built environment. This case has also shown that a change in the character of the built environment affects sense of place.

2.7 Housing Transformation and Sense of Place in Developing Countries

Many countries in sub-Saharan Africa have large stocks of low cost housing units which, for various reasons, are in poor physical conditions and/or do not conform to the expectations and needs of occupants (Tipple, 2000). Most of these houses were owned by institutions and later sold to occupants. Further, due to the failure of the formal housing system to provide affordable housing to all income groups, most countries in Sub-Sahara Africa have large numbers of informal settlements. In trying to meet their expectations and changing social and economic needs, most families in developing countries are transforming their houses. Unlike in developed countries, most of these transformations are done illegally. This situation has

affected the character of most settlements in developing countries. Mirmoghtadaee (2009) asserts that the early 20th century saw a change in architecture in many developing countries, as the traditional architectural style was replaced by the modern style. This change occurred so rapidly that it represented replacement rather than adaptation. Thus, local architectural forms, which had responded to the physical and cultural requirements of the people for thousands of years, were neglected completely, thereby affecting the sense of place. In what follows is a case study review of housing transformation in Hanna Nassif.

2.7.1 Case Review: Hanna Nassif, Tanzania

Hanna Nassif is an informal settlement located in Dar-es-salaam. Dar-es-salaam has over the years been experiencing urbanisation leading to increased demand for housing. However, since the government has failed to provide housing to all income groups, the city has been experiencing an increase in the number of informal settlements. House owners in Hanna Nassif informal settlement are transforming their houses for various reasons. Nguluma (2003) in her study entitled transformations, modernisation and spatial qualities in informal settlements in Dar-es -salaam discovered that people in Hanna Nassif settlement are extending houses to increase rental income, desire to own modern houses and the need to accommodate increasing family sizes. She notes that the transformation of housing units in the settlement has affected the character of the settlement as outdoor spaces have been reduced thereby reducing social interactions among residents. She further argues that erection of solid boundary wall fences have created barriers between private, semi-public and public spaces leading to reduced social interactions among residents. According to her, outdoor spaces in the settlement are used for cooking, recreation by children and are considered as centres of communication and socialisation among residents. She therefore concludes that housing transformation in the settlement has affected spatial qualities, hence reducing sense of place.

In Zambia, the nature of housing form and type is influenced by the social matrix (political, economic and religious organisations) of the community (Mutale, 2003). Given the dynamic nature of society, housing is being transformed with the changing social, political and economic environment.

Mutale (2003) in his thesis on the management of urban development in Zambia argues that the design of housing units in mine townships were tailored to promote a lifestyle similar to village life. The most important factor in this lifestyle was social interaction which enhances

a sense of place. For instance, Wusakili Township was designed to promote social interaction through the promotion of communal places such as areas of convenience. Further, houses were small and their physical proximity meant that for someone to reach one's house, it was unavoidable to cross a neighbour's yard (Epstein, 1992). The communal facilities were meeting places for women and became focal points of interaction. Social interaction promoted through the design of adequate public spaces was key in enhancing sense of place.

The sale of mine houses by the Movement for Multiparty Democracy (MMD) government to sitting tenants in the 1990s led to increased cases of housing transformation. However, no published study that the author could find has been undertaken to determine the implications of such transformations on the sense of place. It is not known whether the extensions and modifications of housing units are changing the lived experiences of residents and settlement character, hence the need for this study.

2.8 Conceptual Framework

The conceptual framework for this study was derived from two models namely interpretative (genius loci) and existential models. This framework was adopted from the findings in a study entitled, sense of place and new urbanism: towards a holistic understanding of place and form by Beidler (2007). The results of the study revealed that both interpretative and existential models are capable of co-existing within the same settlement. The study further indicated that since the two models are capable of co-existing, multiple senses of place in terms of variable and diverse meanings of place may exist within a settlement. Beidler (2007) concluded that sense of place is a continuous process in which individuals experience spaces on both an interpretative level as well as an existential level when the environment accommodates certain forms of social interaction based on the physical design of the neighbourhood. Further, a team of natural resource scientists and rural sociologists in their study conducted on residents' sense of place with a focus on public land, found that physical features and social ties had equal influence on the residents' sense of place (Eisenhauer et al. 2000). Stedman (2003) in his study on sense of place in a lake resort region of northern Wisconsin describes similar results. He establishes that characteristics of the physical environment affected the symbolic meanings of place, which in turn influenced individuals' sense of place. These studies emphasise the importance of including both the interpretative and existential models in studying the development or preservation of sense of place. Therefore, the implications of housing transformation on the sense of place was studied within the interpretative and existential models.

The conceptual model presented in figure 2.0 outlines that sense of place can be experienced by residents from two perspectives namely interpretative and existential perspectives.

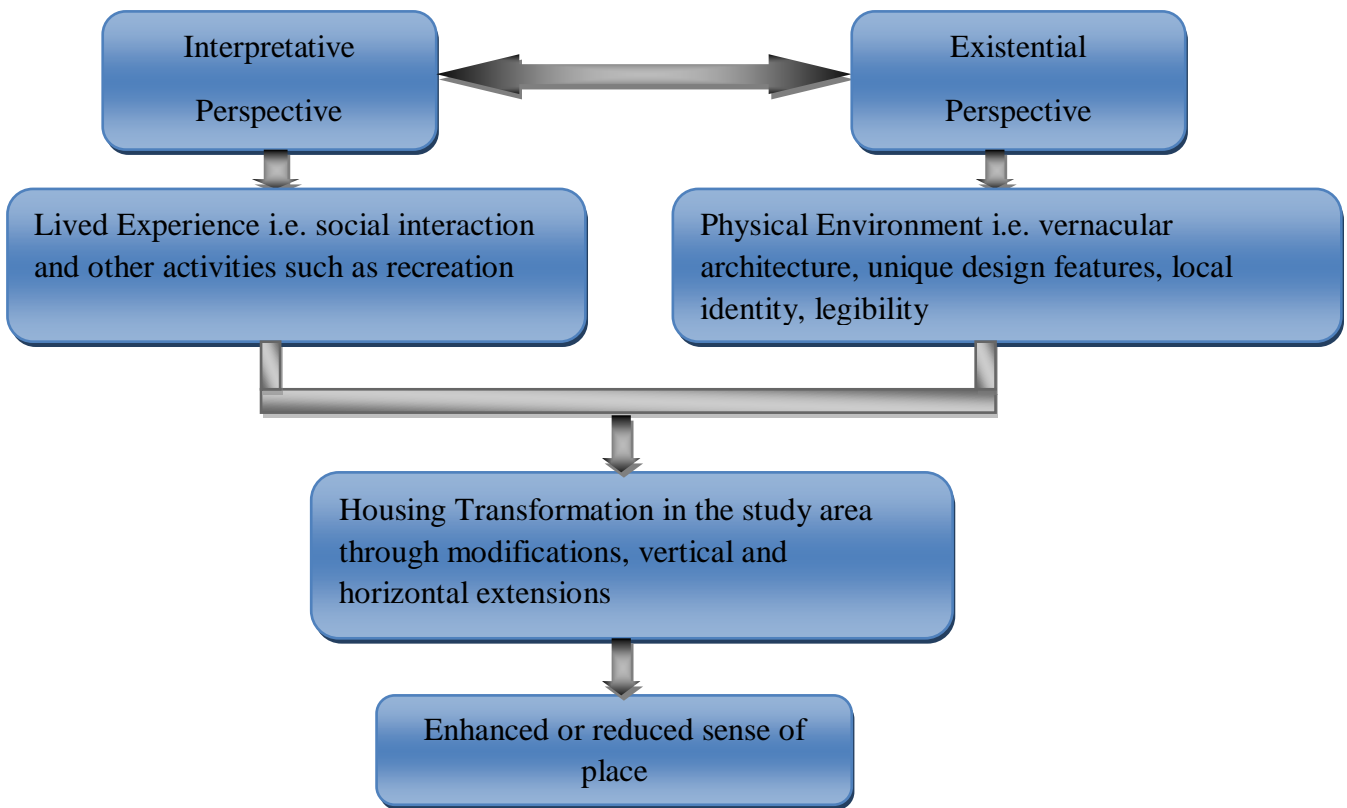


Figure 2.0: Conceptual Model

Source: Modified from Beidler, 2007

Interpretative perspective suggests that sense of place is as a result of unique characteristics derived from the physical environment and activities in a settlement. Schultz (1980) recommends that topography of the earth's surface, the cosmological light conditions, buildings and the symbolic and existential are essential in enhancing or preserving sense of place. Further Hester (1993) asserts that preserving or maintaining the local vernacular and unique features play a key role in developing and preserving sense of place. Within this framework, the transformation of housing units in the study area need to preserve the local vernacular or unique features of the buildings and the neighbourhood layout if sense of place is to be preserved. The interpretative perspective therefore takes the state of the physical environment as key in developing or preserving sense of place. Social activities are not considered under this model. Since the interpretative model focuses on how the residents and non-residents interpret the physical environment in terms of buildings, local landscape and

others features, this study used both residents and non-residents as respondents to examine the implications of housing transformation on the sense of place.

Figure 2.0 indicates that the two perspectives can co-exist in a neighbourhood. One of the significant limitations of the interpretative model is the non-consideration of social activities in assessing a sense of place. Therefore, since this framework used the two models, the existential approach covered up the limitations of the interpretative model as it reinforces the importance of lived experiences as opposed to purely environmental qualities. The existential model can be categorised into two groups, namely, the first person approach and the existential approach. These two approaches differ in methodological approaches (Biedler, 2007). The first person approach uses personal reflections or first-hand experiences to examine the qualities of sense of place. In this case, key informants were used to describe sense of place as a result of housing transformation. The existential approach, on the other hand, favours a social construction perspective evaluated in terms of experiences by the local residents (Biedler, 2007). This involved conducting a mini survey of heads of households to describe sense of place in terms of lived experience.

According to figure 2.0, housing transformation is likely to enhance or reduce a sense of place. Therefore, this conceptual framework was used to study the implications of housing transformations on the sense of place from the interpretative and existential perspectives.

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter describes how the research was conducted and the methods that were used to collect and analyse data in order to achieve the research objectives.

3.1 The Study Area

The study area (figure 3.0) is a mine housing township located in the mining town of Kitwe. It is approximately 243 hectares in size. It has a population of 22,054 with 3,598 households (CSO, 2012). The settlement consists of low cost housing units which were built in the 1940s. The main employers in the area are the mines owned by Mopani and Konkola Copper Mines. Contractors and suppliers to the two mines also provide employment to the locals. Other economic activities include small scale trading and farming.

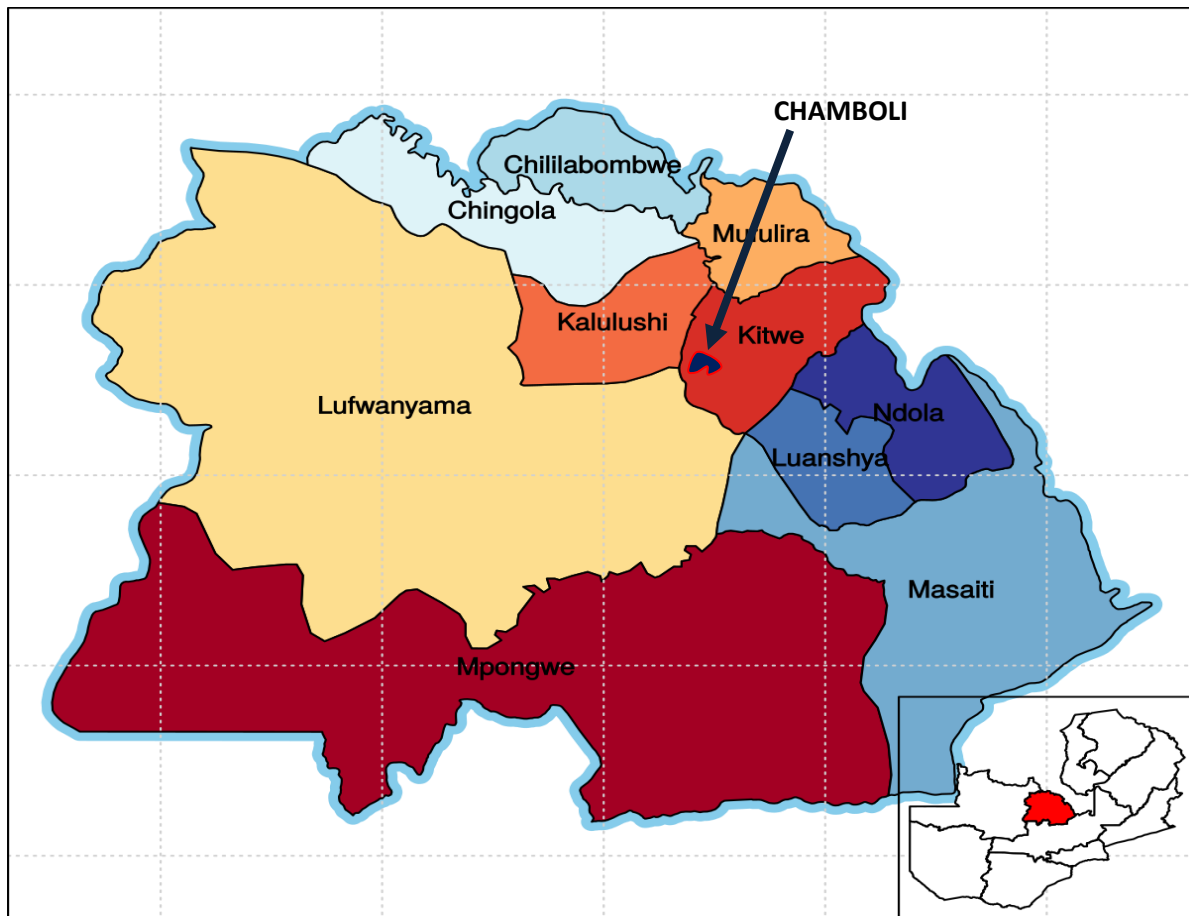


Figure 3.0: Location of the Study Area

Source: Adapted from DPPH Shape files, 2015

3.2 Research Design

To investigate the Implications of housing transformation on the sense of place, a case study approach was adopted. Case study is defined by Yin (1994:23) as “an empirical inquiry that seeks to understand a contemporary phenomenon in its real life context, especially when the boundaries between phenomenon and context are not evidently clear and in which multiple sources of evidence are used”. A case study approach is therefore an approach that involves focussing on a specific and bounded case (Baden and Major, 2013).

An in-depth study was needed to understand people's values and aspirations with regard to housing transformation and sense of place. Therefore, qualitative and quantitative approaches were used in this study. Qualitative study according to Baden and Major (2013) focuses on what people tell you, what they do and why they do what they do. Quantitative study on the other hand focuses on measurements and is characterised by structured and standardised data collection techniques. Quantitative data provided this study with essential statistics while qualitative data enriched the research discussion developing a better context for interpreting the results from statistical data.

3.2.1 Choice and justification of research strategy

The selection of a case study strategy was justified by the nature of the research problem, objectives and research questions. The focus of the study was on the implications of housing transformation on the sense of place. The appropriate questions were ‘how’ and ‘what’ is taking place in relation to housing transformation. The focus, therefore, was a combination of descriptive and exploratory accounts towards understanding the implications of housing transformation on the sense of place. The transformation process involves a chain of actions and actors. This study therefore was conducted in the real life context. The case study strategy is significant in a study of this nature, since it will bring to light the implications of housing transformation on the sense of place with the actors in the real life situation within their specific context of this study.

3.2.2 Selection of a case: Why Chamboli Township?

Chamboli Township was considered to be an ideal area for this study because the settlement is one of the mining townships experiencing a lot of housing transformations. Further, the area is easily accessible.

3.2.3 Quantitative and Qualitative Methods

In this study both quantitative and qualitative approaches were used. In the qualitative approach, in-depth interviews were conducted with four key informants namely Works Foreman, Building Inspector, Area Councillor and former Zambia Consolidated Copper Mines (ZCCM) Housing Officer. The quantitative approach on the other hand involved conducting a survey of 50 households. The heads of households were targeted.

Literature has shown that greater confidence is exhibited in research findings if the findings are derived from more than one method of investigation (Baden and Major, 2013). Therefore this study adopted both the qualitative and quantitative approaches.

3.2.4 Sampling Procedure

For key informants, a purposive sampling technique was used to select and locate the interviewees. According to Baden and Major (2013), purposive sampling involves a careful selection of members of the community in a study area who are likely to provide appropriate information. This study therefore selected key informants who had appropriate information on the subject under study. The Area Councillor, Building Inspector and Works Foreman from the local authority and former ZCCM Housing Officer for Chamboli Township were selected purposively. In-depth interviews were conducted on the selected key informants. The use of interviews captured the emotive responses that are essential in gaining a thorough perspective and understanding of the issue under study. The interview questions in the interview guide were designed to be innovative and open ended, allowing the respondent to express their views through extended answers.

For a mini-survey, 50 heads of households were selected through a simple random sampling technique. A list of transformed and transforming houses was collected from the local authority and used as a sampling frame. A mini-survey of household heads was used to collect quantitative data on the topic under study. Structured questionnaires with both open-ended and closed questions were administered on a sample of fifty (50) respondents chosen randomly. All the respondents were household heads residing in Chamboli mine housing area.

3.2.5 Sample Size

The size of the sample depends on the availability of resources and the nature of the study. According to Kumar (2006), to save time and resources, sample sizes in mini-surveys are kept small, usually between 25-70. Therefore, the sample size for the mini survey was 50 heads of

households. On the other hand, the sample size for in-depth interviews depended on the availability of respondents who are competent enough on the topic under study. Therefore, the sample size for the in-depth interviews was four key informants, namely Works Foreman and Building inspector from Kitwe City Council, Area councillor and Former ZCCM housing Officer.

3.3 Data Collection Methods

Both primary and secondary data collection methods were used. Primary data was collected through in-depth interviews, direct observations and mini-survey while secondary data was obtained through a review of relevant literature on the subject matter. Patton (2002) suggests that using more than one form of data collection methods increases credibility and quality by countering the concern that the study's findings are simply an artefact of a single method. In what follows data collection methods are discussed.

3.3.1 In-depth Interviews

In order to study the implications of housing transformation on the sense of place, in-depth interviews of key informants were conducted. The use of interviews captured the emotive responses that are essential in gaining a thorough perspective and understanding of the issue under study. The interview questions were designed to be innovative and open ended, allowing the respondent to express their views through extended answers.

3.3.2 Photographic Registration

Photographs were taken to express the nature of the area as well as the answers provided by the residents. The use of photographs portrayed the views of the respondents with regard to sense of place. Respondents were asked to comment on their lived experiences and physical design features that contribute to sense of place. Photographs provided a visual stimulus that was associated with the text.

3.3.3 Analysis of Satellite Imagery

Satellite imagery for Chamboli Township from 2004 to 2014 were analysed. The images were downloaded from the internet and merged using a software called Microsoft ice 14.4. The merged images were then geo-referenced and digitised using Geographical Information System (GIS) software called Arc Map. The images showed changes which have taken place in individual buildings and the distribution of houses which are the physical products of housing transformations.

3.3.4 Observation

Observations were also conducted in order to observe how housing transformation is being done and the changes the transformation has brought to the character of the study area as well as lived experiences of residents.

3.3.5 Mini-Survey

A mini-survey of household heads was used to collect quantitative data on the topic under study. Questionnaires with both open-ended and closed questions were administered on a sample of fifty (50) respondents chosen randomly. All the respondents were household heads residing in chamboli mine housing area.

3.4 Data Processing and Analysis

Collected data was processed and analysed using both qualitative and quantitative methods as follows.

3.4.1 Content Analysis

Content analysis is a research technique for systematically analyzing written communication such as books, essays, news articles, speeches, pamphlets and other written material (Baden and Major, 2013). Content analysis breaks down lengthy text material into more manageable units of data. In this study content analysis was used to analyse data from literature and in-depth interviews from key informant.

Sample text material selected for this study comprised: pieces of legislation, policy and project documents. These documents were reduced to a more manageable set of data through reading and categorizing. The units of analysis and categories were defined using research objectives as guides. In summary, content analysis for this study was undertaken in accordance with Bengtsson's (2016) four basic stages which are decontextualisation, recontextualisation, categorization and compilation.

3.4.2 Narrative Analysis

Narrative analysis was used to analyse data obtained through interviews with key informants in the study area. This technique was significant in putting together and re-ordering different research participants' points of views and perceptions in a narrative form. These views were presented in story form as key informants narrated their experiences on housing transformations and sense of place in the study area.

3.4 .3. Visual Analysis

This approach was used to analyse photographs as well as geo-referenced satellite images with a view of determining changes as a result of housing transformations in the study area. However, analysis of satellite images was only capable of analysing horizontal housing transformations.

3.4.4 Descriptive Statistics

Quantitative data collected from the mini-survey was coded before translating it into numbers deductively. Percentages and counts were used for the analysis of quantitative data using a computer software package called mini-tab.

3.5 Ethical Considerations

This study ensured that all the ethical considerations were handled with care. Respondents were assured of anonymity and confidentiality of the data collected from them, thereby protecting their privacy. Both key informants and heads of households were requested to consent voluntarily to be respondents.

CHAPTER FOUR: FINDINGS AND DISCUSSIONS

This chapter presents research findings and discussions on the implications of housing transformation on the sense of place in Chamboli mine housing area.

4.1 Housing categories in the study area

The study area was divided into two categories namely low cost and intermediate housing areas. The low cost housing area consists of H and J sections whilst the intermediate housing area consists of L, M, K and *Manew* sections.

H and J sections consist of the smallest plots (12m x 20m) and housing units in the settlement. Structures are arranged in a grid iron pattern with some streets being used for home based economic activities and recreation. Houses in these sections were ideally meant for smaller families. They consist of one bedroom, sitting room, kitchen and toilet and bathroom attached to the main house (refer to figure 4.0). Walls are made of concrete panels with asbestos sheets used as roofing materials (refer to figure 4.1).

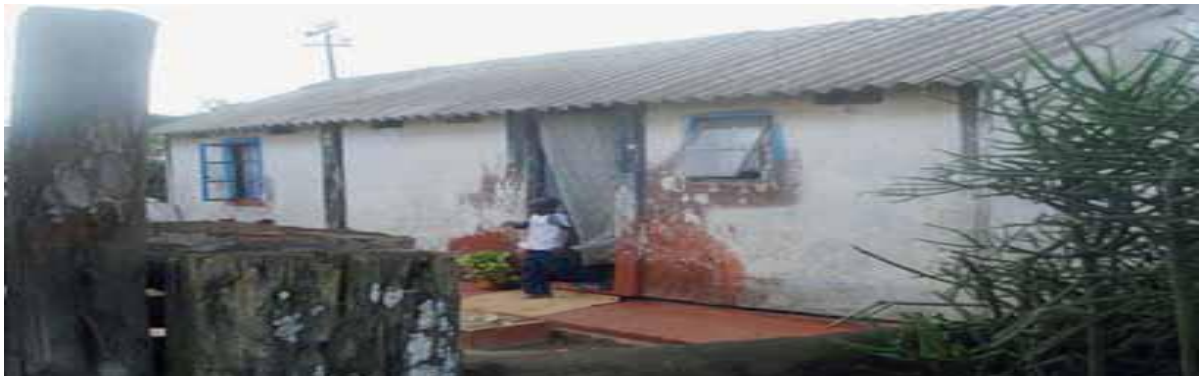


Figure 4.0: A low cost housing unit in J section

Source: Field Research, 2015

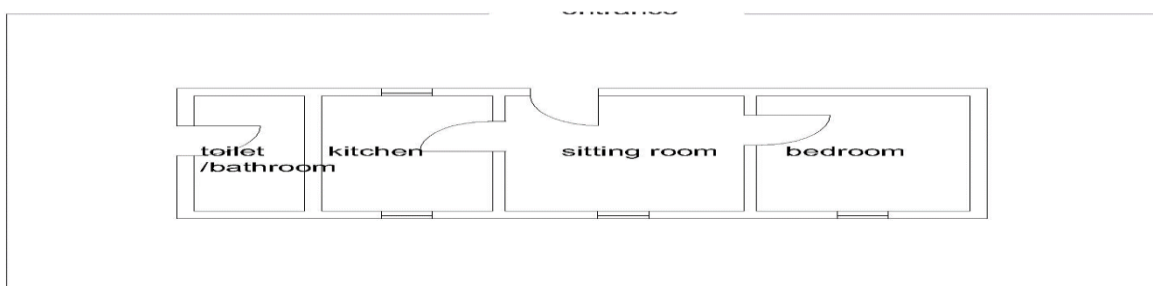


Figure 1.1: Floor Plan of houses in J and H sections

Source: Drawn by Author, 2015

Low cost housing units are located on the north western part of the settlement. Residents living in these houses range from miners, civil servants, business men and women to retired families. It was observed that some household activities such as cooking, washing plates, laundry and eating are conducted from outside the houses mainly because indoor spaces are too small to accommodate such activities.

L,M ,K ,P and *Manew* sections consist of housing units and plots (20m x 35m) which are a little bigger than those in H and J sections. Plots are also arranged in a grid iron pattern. Houses in these sections were ideally meant for bigger family sizes. The intermediate housing units consist of two bedrooms, sitting room, kitchen, toilet and bathroom (refer to figure 4.3). These housing units were categorised as intermediate because they fall in between low and medium cost housing categories. The walls and roofs of the units are made of concrete panels and asbestos sheets respectively(refer to figure 4.2). Residents in these sections consist of mine workers, civil servants, business men and women and retirees. Some household activities such as cooking, washing plates and laundry are also conducted on outdoor spaces.



Figure 4.2: An Intermediate Housing Unit in L Section

Source: Field Research, 2015

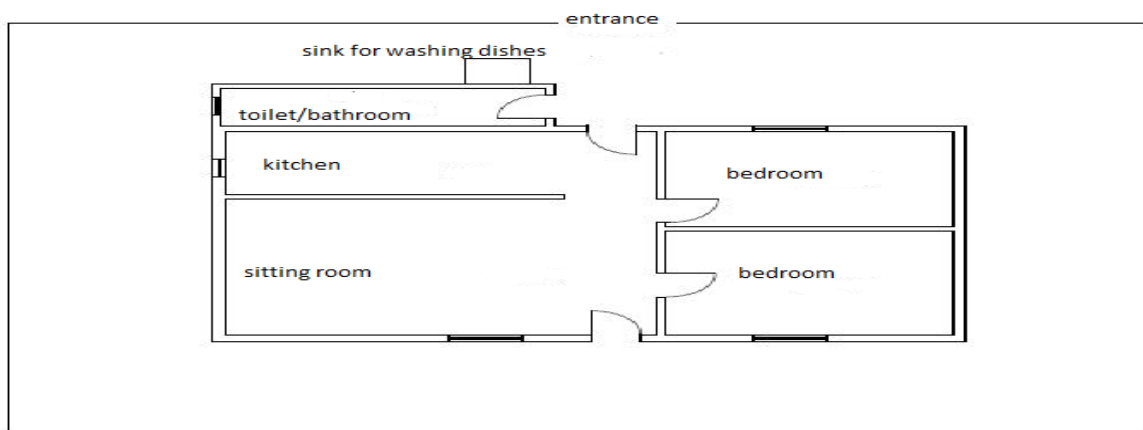


Figure 4.3: Floor Plan of an Intermediate Housing Unit in L Section

Source: Drawn by Author, 2015

4.2 Nature of Housing Transformation

The nature of housing transformation in the study was investigated from three perspectives namely; the types of housing transformation, the process of housing transformation and the actors involved in the housing transformation process.

4.2.1 Types of Housing Transformation

The survey of 50 households showed that there are 5 different types of housing transformations currently taking place in the study area. They include; horizontal transformation, demolition and replacement, interior transformation, erection of boundary wall fences and change of land use. Table 4.0 illustrates the different types of housing transformations taking place in the study area;

Table 4.0: Types of Housing Transformation

Type of transformation	Counts	(%)
Horizontal transformation	28	56
Demolition and replacement	1	2
Interior transformation	5	10
Erection of boundary wall fences (solid)	5	10
Erection of boundary wall fences (dwarf)	1	2
Change of land use	10	20
Total	50	100

Source: Field Research, 2015

4.2.1.1 Horizontal Transformation

The survey showed that 28 out of 50 households translating to 56% have transformed their structures horizontally. This is to say that horizontal transformations are the most common types of housing transformations being practiced in the study area. This type of transformation involves either extending the existing housing unit or building a new one next to the existing. However, out of 28 horizontal transformations, 20 translating to 71% involved the addition of new rooms to the existing housing units. The study further showed that there are three types of horizontal transformations taking place in the study area. They include front transformation, rear transformation and side transformations. Front transformations involve the extension or modification of housing frontages through the addition of extra rooms. Rear and sides transformations include the extension or modification of the rear and sides of housing units through addition of extra rooms. Added rooms are either rented out or used by home owners. In some cases these rooms are used for home based economic activities such as retail trading, hair dressing, carpentry and selling of food and beverages among others. This type of transformation is preferred because it is cheaper and spaces for new constructions are inadequate in most areas.

This finding was supported by all the four key informants who indicated that horizontal housing transformation is the most practiced type of housing transformation in the study area.

"Housing transformation through horizontal extensions is practiced by over 50% of residents in Chamboli. This type of transformation is common because it is cheaper, convenient and quick to implement. You don't need an engineer to implement this type of housing transformation" (Interview, Buildings Inspector, 20th March, 2015).

4.2.1.2 Demolition and Replacement

The second type of housing transformation involves the demolition of existing structures and replacing them with new ones. Of the 50 surveyed households, only 2% have transformed their houses by demolishing the existing structures and replacing them with new ones. The study showed that this type of housing transformation is rarely practiced because it is costly and time consuming. It requires occupiers to move to a different house because the existing structure has to be demolished to pave way for a new one. Additionally, the concrete panels used to construct most houses in the area pose a challenge to tradesmen because they are too strong to be demolished.

4.2.1.3 Interior Transformation

Interior transformation was also noted in the study area. About 10% of the surveyed residents have transformed their houses through interior transformation. This type of housing transformation involves demolition of some interior walls to increase indoor spaces for rooms considered important. This type of housing transformation is common in P section where there are small storage rooms. These storage rooms are converted or added to other important rooms through demolition of partition walls. Out of the 5 houses transformed through interior transformation, 3 were in P section. It was observed that home owners move from one room to another as the transformation is being done.

4.2.1.4 Boundary Wall Fences

This type of housing transformation in the study area is mostly done to enhance the security and privacy of residents. It involves the erection of either dwarf or solid boundary wall fences around housing units (refer to figure 4.4). It was however, observed that solid boundary wall fences are preferred to dwarf wall fences. Out of the 50 surveyed households, 10% have built solid boundary fences whilst 2% have built dwarf fences. This type of housing transformation was observed in all the sections in the study area.



Figure 4.4: Housing Transformation through erection of solid boundary wall fence

Source: Field Research, 2015

4.2.1.5 Change of Land uses

It was observed that some residents are converting their houses from residential to non-residential uses such as shops, boutiques, schools, salons, lodges among others (refer to figure 4.5). This type of housing transformation is therefore promoting mixed use developments which among others reduce walking distances to and from social and commercial facilities and amenities. The study showed that housing units are flexible enough

to accommodate non-residential uses. About 20% of the surveyed structures have been transformed through change of land uses.



Figure 4.5: A house in P section transformed into a private school

Source: Field Research,2015

The five different types of housing transformations taking place in the study area are consistent with other studies on housing transformation (e.g. Nguluma (2003); Tipple (2000)). However, two types of transformations in Nguluma's (2003) study do not occur in the study area. They include replacing mud and pole structures and vertical transformations. The first one does not occur in the study area because all structures are made of permanent building materials whilst the second one is mostly because of inadequate funds. According to the survey results, interviews and observations, the most common type of housing transformation in the study area is that of horizontal transformation. It involves the extension of existing housing units by adding extra rooms horizontally. This is done to increase indoor spaces to accommodate the increasing family sizes. The other motivating factor for extending housing units is that of creating more rooms for renting out. In some cases horizontal transformations are done to provide spaces for home based economic activities such as retail trading, carpentry and hair dressing. This practice is seen as one of the sources of income for the residents especially the unemployed and retired. In some cases this type of housing transformation is done to allow disabled persons easy access to and from housing units. It is done through the construction of ramps in front of housing units. The other type of housing transformation involves demolition of existing structures and replacing them with new ones. According to the survey results, this type of housing transformation is not common in the study area because it is considered costly.

Construction of boundary wall fences is another common type of housing transformation in the study area. The purpose of this type of housing transformation is to improve safety and privacy of residents. The most common type is the erection of solid wall fences. This type of transformation disconnects housing units from the public realm and reduces liveability in the settlement. Transformation of housing units in the study area is not limited to structural changes of the outer parts of the buildings only. Some changes are made inside housing units. Given the fact that in some cases changes are done step by step, over a long period of time, the use of indoor space involves occupiers shifting from one room to another. There are also situations where interior walls are demolished in order to increase the sizes of important rooms such as bedrooms and sitting rooms. Interior housing transformation also involves the extension of walls to achieve higher ceiling levels and the replacement of small windows with larger ones or demolition of partition walls to create bigger rooms. There are also other changes such as closing doors opening onto the corridor and creating a more convenient accessibility. These findings are consistent with other studies on housing transformation (e.g. Nguluma, 2003; Tipple, 2000).

Changing the uses of land is another type of housing transformation taking place in the study area. This type of transformation involves the incorporation of non-residential uses in residential areas. This type of housing transformation is promoting densification and mixed use developments. Non-residential uses such as schools, shops, salons among others are being incorporated into residential areas, thereby promoting vitality on the streets among others.

4.3 Process of Housing Transformation

Out of the 50 surveyed households, 48 translating to 96% of the respondents in the study area indicated that the housing transformation process is initiated and controlled by home owners whilst 4% stated that the process is initiated and controlled by tenants and the local authority respectively. The majority of the respondents (96%) stated that home owners initiate the ideas and engage tradesmen to do the actual construction works. Despite being required by the Public Health Act and other relevant legislation to obtain building permits or planning permission from the local planning authority to extend and modify structures, most home owners transform their structures without approvals from the local planning authority. The surveyed respondents stated that the local authority is too slow and expensive to facilitate housing transformations. Out of the 50 surveyed households only 2 (4%) of the residents

have planning permission from the local authority. The buildings inspector attributed the low compliance rate by residents to political interference from members of parliament, councillors and ruling party cadres and ignorance of the planning law by residents. He further stated that some residents have a negative belief that engaging the local authority in the housing transformation process is costly. He confirmed that housing transformations are in most cases initiated by home owners who then engage tradesmen to do the actual construction works. The Area Councillor, Works Foreman and the Former Housing Officer (ZCCM) also confirmed that very few residents engage the local authority during the housing transformation process.

"People think that it is too expensive to engage the council in the extension of their houses. Most transformations are done without obtaining planning permission from the planning authority. I think there is need to sensitise the residents on the need and importance of engaging the local authority in the extension of their houses"(Interview, Works Foreman, 19th March, 2015).

"The residents of mine areas are the most culprits when it comes to non-compliance in all areas. Very few residents are willing to submit their proposed extension plans to the council. I think there is a lot of lawlessness in Chamboli" (Interview, Buildings Inspector, 20th March, 2015).

These findings are in line with Tipple's (2000) arguments that housing transformation in developing countries is user initiated and that most housing transformers do not obtain planning permission from relevant planning authorities before transforming their houses. This means that most transformations are done outside the provisions of planning laws and regulations. Housing transformers opt to transform their houses without obtaining planning permission mainly because of the bureaucracy and high transaction costs that the formal system demands. Developers are required by the local authority to submit drawings done by professional Architects who in most cases charge high fees. Furthermore, developers are also required to pay scrutiny as well as inspection fees which are also on the higher side. Because of the stated reasons, it is cheaper and faster for the developers to transform their houses without involving the local authority. This is akin to Nguluma's (2003) assertion that housing transformation in developing countries is done outside the provisions of relevant legislation and tradesmen are the major actors in the transformation process. This finding therefore calls

for institutional, policy and legal changes to make planning authorities efficient, effective and user friendly to all income groups.

4.4 Actors in the Transformation Process

The majority of the respondents (96 %) indicated that home owners, tradesmen and labourers are the major actors in the housing transformation process. On the other hand, 4% stated that the local authority and tenants are the major actors in the process. Tradesmen include bricklayers, carpenters, plumbers and electricians. Table 4.1 shows the major actors in the housing transformation process in the study area;

Table 4.1: Actors in the transformation process

Actors	Count	%
Home owners, tradesmen and labourers	48	96
Local authority and tenants	2	4
Total	50	100

Source: Field Research, 2015

Key informants from the local authority stated that there are two main groups of tradesmen. The first one includes a group comprising bricklayers, carpenters, plumbers, electricians and labourers. The second group consists of bricklayers and labourers. However, they indicated that the second group is preferred to the first one because of flexibility in terms of payments for labour.

The major actors in the housing transformation process therefore include homeowners, tradesmen, labourers and sometimes the local authority.

4.4.1 The Role of Home Owners

The study showed that home owners come up with the ideas of transforming houses. They plan the transformation process and engage tradesmen to do sketch plans for them. In other words, home owners act as project managers in the transformation process. They engage tradesmen to do the actual construction works. Tradesmen are engaged by home owners through recommendations from friends, neighbours, relatives and church members.

Therefore, the financing and procurement of building materials is the sole responsibility of home owners.

"Home owners initiate and fund the extension of housing units. They come up with the idea of extending their houses and engage bricklayers who implement the ideas"(Interview, Former Housing Officer, 18th March, 2015).

4.4.2 The Role of Tradesmen

Tradesmen are the executors or implementers of the transformations. The majority of the respondents (96%) and all key informants indicated that tradesmen help in the designs of transformations through sketching of ideas initiated by home owners. They stated that tradesmen do the actual construction works and recommend the type and quantity of materials needed for the transformation of houses. They further indicated that tradesmen help in the orientation of the transformations and in defining building lines. This finding was supported by all key informants.

"Brick layers are the key actors in the transformation process. They are the local Architects and Quantity Surveyors. They prepare sketches for extensions and quantify the materials needed for the extension" (Interview, Works foreman, 19th March, 2015).

4.4.3 The Role of Labourers

The survey showed that labourers are among the major actors in the housing transformation process. According to all key informants contracts to do housing transformations are given to tradesmen who in turn engage their preferred labourers. Labourers do manual works such as digging foundation trenches, mixing concrete, making mortar and fetching water among others. They are paid daily by tradesmen. These labourers are the ones who become tradesmen as years go on.

4.4.4 The Role of the Local Authority

The local authority is supposed to play a key role in the transformation process since it has the mandate to control all developments on land in the study area. However, 96% of the surveyed residents indicated that they are not willing to engage the local authority in the transformation process because it is costly and the authority is too slow to approve the plans. Further, respondents indicated that the building and planning standards set by the local authority are too high and rigid to be followed. This finding was supported by the area councillor and the former housing officer. However, key informants from the local authority

indicated that residents do not comply with the requirements of the law because of political interference from members of parliament, councillors and ruling party cadres, ignorance of the law and fear of a false belief that the scrutiny, inspection and consideration fees for planning permission are extremely high.

This study therefore established that the process of housing transformation in the study area is initiated and controlled by home owners whilst tradesmen and labourers do the actual construction works. The local authority is rarely consulted because of the bureaucracy, political interference and high transaction costs (scrutiny, consideration and inspection fees).

These findings are consistent with Nguluma's (2003) argument that the key actors in the housing transformation process in most developing countries are the home owners, tradesmen and labourers. Town Planners, Architects and Quantity Surveyors within the local authority and in the private sector are rarely involved in the housing transformation process. This is so because of bureaucracy, high and rigid building standards and high transaction costs that the local authority demands. Further, professionals in the private sector also charge high fees making it difficult for low income groups to engage them to do professional works for them. However, the local authority argues that the only reason why transformers do not comply with the law is political interference and the fear of the unknown. This is not true because if the regulations and standards were user friendly to all income groups, transaction costs were affordable and processing of applications were reasonably faster, residents would be willing to submit plans to the authority. The regulations and standards are too rigid to facilitate housing transformations. There is therefore need to revise the current planning laws and regulations so that the provisions of the laws are fair to all income groups. The process of revising the current law and regulations should be as participatory as possible.

This section has presented and discussed the nature of housing transformation in terms of the types of housing transformation, the process as well as the actors involved in the transformation process. The study has revealed that there are 5 types of housing transformations currently taking place in the study area with the homeowners, tradesmen, labourers and sometimes the local authority being the key actors in the housing transformation process. The transformation process is initiated by homeowners and tradesmen do the actual construction works. Based on these findings, it can be said that objective one that sought to examine the nature of housing transformation has been achieved.

Further, the research questions on the types of housing transformation, the process as well as the actors under objective one have been ably answered.

4.5 Character of the Settlement

The literature review chapter revealed that the sense of place concept is equivocal and highly contested. Therefore, in this study questions in the interview guide and questionnaire were phrased in such a way that it was easy for residents and key informants to understand the concept.

The majority of the respondents (90%) stated that Chamboli Mine Housing Area feels like a unique place whilst 10% of the surveyed residents stated that the study area does not feel like a unique place. The respondents attributed the unique character of the settlement to high social interaction among residents and distinctive physical design features of the settlement.

"This settlement is unique because people here live as a family. They are like one big family living in different houses. Most local services are within walkable distances and it is easy to move around the settlement both on foot and by car" (former ZCCM housing officer, 15th March, 2015).

This was confirmed by the Buildings Inspector and Works Foreman from the local authority and the Area Councillor. The four key informants indicated that the study area has a unique character because of social interactions among residents and the physical design features in terms of the settlement layout. They stated that social interactions and the unique physical design features of the settlement have created a strong bond between residents and the study area.

"I would confidently say that Chamboli is not like any other settlement because of the way people interact with each other. There is a strong social network among residents because of the way the settlement is designed. The layout is in such a way that people are able to meet their neighbours in the mornings, afternoons and evenings whether they like it or not. People meet and interact on a daily basis because of proximity of houses to each other and transparent boundaries. Residents interact as they cook, wash and do other household chores on outdoor spaces. This has made the relationship between residents and the place strong" (Interview, Buildings Inspector, 20th March, 2015).

"The settlement is unique because of the good layout of roads, shops and other facilities. The layout also promotes social interaction among residents" (Interview, Area Councillor, 18th March, 2015).

These findings indicate that the study area has a unique character in terms of design features of the settlement and lived experiences of residents. The settlement was designed to encourage social interactions and accommodate other social and commercial activities to take place. This has increased the affective bond between residents and the settlement hence sense of place. These findings are consistent with Mutale's (2003) assertion that mine housing areas on the copper belt were designed based on the village life as most workers in the mines were drawn from villages. The study area was designed to promote social interaction among residents. A village set up in Zambia includes small houses and most of the activities such as cooking, washing among others are conducted from outside. Outdoor spaces act as extensions to small housing units. This arrangement promotes social interaction among residents. Further, the settlement has a unique character because of the unique design features based on the local culture and history. The settlement is legible, safe, designed to human scale, convenient and orderly.

4.6 Factors that contribute to sense of place.

When asked about the factors that contribute to sense of place, 80% of the respondents stated that the physical design features and social interactions among residents in the study area are key in fostering sense of place. On the other hand 5% of the surveyed residents indicated that social interaction only is key in fostering a sense of place. Additionally 5% of the respondents stated that physical design features of the settlement only are key in fostering a sense of place. Table 4.2 summarises the results of the survey.

Table 4.2: Factors that contribute to sense of place

Factors that contribute to sense of place	Counts	%
Social interactions only	5	10
Physical design features only	5	10
Both social interaction and physical design features	40	80
Total	50	100

Source: Field Research, 2015

The surveyed households indicated that social interaction in terms of unplanned contacts with neighbours and physical design features of the settlement are key factors that contribute to sense of place. Design features that contribute to sense of place in the study area include settlement layout, connection between private, semi-public and public spaces (refer to figures 4.6 and 4.7), orderliness, convenience and proximity of houses to local amenities and services. Additionally, the study revealed that common setbacks, safety and security, legibility, flexibility of houses to allow for adaptation and safe environment for everyone to play, walk and cycle are key design features that contribute or foster a sense of place.



Figure 4.6: Connection between private, semi-public and public spaces

Source: Field Research, 2015



Figure 4.7: Connection between private, semi-public and public spaces

Source: Field Research,2015

The above pictures show that private, semi-public and public spaces are connected in the study area. There are no barriers that separate the three spaces. The boundaries between semi-public spaces and public spaces in the study area are defined by transparent features such as flowers. This arrangement has increased unplanned social interactions among residents in the three spaces thereby fostering a sense of place. Furthermore, because of transparent boundaries and proximity of houses to each other, residents cannot avoid to bump into their neighbours on a daily basis thereby promoting social interaction and sense of place.

"This place is different from other places because of the way people interact. Whether someone likes it or not, they always bump into their neighbours every day. This experience has made residents fall in love with this settlement. Also the proximity of houses to the roads, bus stations, market, shops and schools among other services has made residents like this place. Most importantly the settlement is safe for kids to play" (Interview, former ZCCM housing officer, 15th March, 2015).



Figure 4.8: Children playing on one of the streets in K section

Source: Field Research, 2015

These findings were supported by the Buildings Inspector and Works Foreman from Kitwe City Council, former housing officer (ZCCM) and the Area Councillor. They indicated that the two sections are unique areas because of high social interactions among residents and the physical design of the settlement in terms of the street and housing layout.

‘The way residents in the two areas interact is extremely unique. I would say that this interaction has created social capital in the area. Further, the layout is convenient and there is orderly development in most parts of the settlement. This has increased the bond between people and the settlement’ (Interview, Buildings Inspector, 20th March, 2015).

Therefore social interaction in the form of unplanned contacts among residents and physical design features of the settlement are key in fostering sense of place in the study area. This means that the study area has two types of sense of place namely; interpretative and existential sense of place. The settlement was designed to promote village life as the settlers were Africans drawn from different parts of the country. Proximity of houses to each other promotes interactions within neighbourhoods especially that most household chores are done from outside. Semi-private spaces or residential third places act as extensions to housing units.

These findings resonate with the conceptual model discussed in chapter two. The model outlines that sense of place can be experienced by residents from two perspectives namely the interpretative and existential perspectives. This means that sense of place can co-exist in one

settlement. These findings are also in line with Stedman's (2003) claim that the physical design features of the settlement and social ties among residents are key factors that foster and preserve sense of place. This is to say that particular attention should be paid to both the physical design features of the settlement and social cohesion among residents as planners plan for new settlements and consider applications for housing transformations. Interpretative perspective suggests that sense of place is as a result of unique characteristics derived from the physical environment and activities in a settlement. This is akin to the new urbanism concept which argues that the physical design of the settlement can foster a sense of community and enhance a sense of place. In what follows the physical design features that contributes to sense of place in the study area are discussed in detail.

4.6.1 Settlement layout

The study area has a grid iron pattern. The design is in such a way that some local services and facilities are close to housing units. The most important thing is that there is a connection between the public realm and private spaces. Private spaces include housing units whilst the public realm includes spaces such as streets and roads. This connection has increased social interactions among residents and hence a sense of place.

4.6.2 Beauty

Aesthetics play an important role in fostering sense of place. This is so because beauty in terms of the layout of the settlement and building designs promote the affective bond between place and people. This is to say that the grid iron pattern of the settlement and unique architectural design of housing units in the settlement promote beauty and creates a sense of community thereby promoting sense of place.

The finding that the visual and aesthetic character of the settlement is key in fostering sense of place is similar to Beidler's (2007) assertion. He asserts that the aesthetic and visual character of a settlement are key in fostering and preserving a sense of place. Therefore, good looking buildings ensure that the settlement reinforces local character and identity, creates a sense of place and add visual interest to their surroundings. This is to say that buildings that are good looking, with elevations that are well ordered and visually balanced, elements such as plan, form, shape, size, texture, massing and details are resolved into a composition that is visually coherent and pleasing to the eye and have a human scale are key in fostering a sense of place.

4.6.3 Convenience and Orderliness

According to all the four key informants, convenience and orderliness are among the factors that contribute to sense of place. The study revealed that the settlement layout clearly defines spaces and most services and facilities are closer to the residents. Buildings are built in an orderly manner with common setbacks and orientations. All housing units, social and economic facilities are easily accessible by both motorised and non motorised transport. This is to say that there is convenience and orderliness in the study area and this has contributed to fostering sense of place.

This finding is similar to Beidler's (2007) finding that sense of place is fostered through orderliness and convenience of the settlement layout. Convenience involves, among others, ease of accessibility by residents to housing units and other local facilities and services. Housing units and other social and economic facilities should be accessed by residents whether walking, cycling or driving. Further, orderly developments reduce nuisance and strengthens people's relation with the settlement. An orderly developed settlement promotes public health, security and safety. It reinforces the local character of the settlement, sense of community and a sense of place.

4.6.4 Legibility

The linear nature of the study area ensures good legibility along main routes and streets. The settlement is developed in a grid iron pattern with some selected streets having distinctive landmarks such as the famous Chamboli market, Mogadishu stadium, churches, schools and shops which provide architectural landmarks aiding and assisting legibility. Further, the architectural design of housing units and other structures ensure a distinct identity and image. This is further reinforced through the history of the settlement which has influenced the pattern and form of development. The settlement developed as a mining area whose inhabitants were drawn from villages. The settlement was therefore designed to promote a village life which is characterised by high social interactions among settlers. The settlement therefore has unique developments that provide high quality landmarks to aid legibility.

4.6.5 Proximity of houses

Structures in the study area are close to each other. This was deliberately done by the designers of the settlement to promote social interaction. The design principle of the settlement was based on the village life because the settlers were drawn from villages. The colonisers endeavoured to maintain the village life which promotes social interaction among

residents. Further, the design layout was such that some of the household activities such as cooking, laundry and others were to be done outside to promote social interaction. The proximity of houses therefore ensures that residents always get in contact with their neighbours almost on a daily basis as it is difficult for someone to leave his/her house without bumping into their neighbours. The plots were made deliberately small to promote social interaction among residents. This has contributed to fostering sense of place in the study area.

This finding is in line with Mutale's (2003) finding that housing units in mine townships of the Copperbelt province of Zambia were tailored to promote a lifestyle similar to village life. He argues that the most important factor in this lifestyle is social interaction which enhances sense of community and subsequently sense of place.

4.6.7 Safety and Security

According to all the key informants, safety and security are key factors that contribute to fostering sense of place.

"The most important thing in any settlement is the safety of residents especially women and children. Here in Chamboli it is safe for everyone to move around. Children are free to play on the streets without their parents worrying. This state of affairs has contributed to sense of place" (Interview, Area Councillor, 18th March, 2015).

Safety and security of residents play a pivotal role in fostering a sense of place. This is so because a safe environment allows people and children to walk, play, work and interact freely. It allows residents to interact with each other and the physical environment freely thereby creating a sense of community and subsequently sense of place.

The finding that safety in the settlement has contributed to fostering a sense of place is akin to Corrie's (2011) assertion. He asserts that safety gives people a sense of security and hence sense of place. Safety in the settlement is enhanced by the close proximity of houses, building frontages and windows facing the streets (eyes on the street) and the connection between private and public spaces among others. These issues among others promote vitality in the public realm thereby promoting natural surveillance which is key in promoting sense of place. Further, most streets in the settlement do not experience heavy traffic. This has made streets safe for non-motorised transport. People are able to move around the settlement safely, whether they are on foot, cycling or driving and whether they are able-bodied or disabled.

The settlement has direct and convenient routes for pedestrians and cyclists to local facilities and services. Parents and guardians allow their children to cycle and play on the streets because it is easy to monitor them as most streets are overlooked by house frontages and there is less traffic on the streets. Because of natural surveillance, residents are safe to move on the streets during the day and at night as confirmed by one resident who stated that it is safer to move on the streets in the study area than in other settlements such as Wusakile and Ndeke townships.

4.6.8 Flexibility of houses to allow for adaptation

According to all the key informants flexibility of houses to allow for adaptation, personalisation, conversation or extension is among the key physical design features that contribute to fostering a sense of place. The rapid population increase, advancement in technology, globalisation and modernisation among other factors have led to changes in the social, environmental and housing needs of the residents in the study area. This means that housing units which were designed in the 1940s cannot meet the changing needs of residents today. Therefore, the flexibility of housing units in the study area to accommodate changes to meet the changing needs of residents is key in strengthening the bond between residents and the settlement. Some structures in the study area are being converted to accommodate home based economic activities because most residents are out of employment hence the need to engage in income generating activities for survival. Further, the increasing population in the study area has increased market for retail products among others. This has encouraged most residents to transform their structures to accommodate home based economic activities such as retail trading. Further, the liberalisation of the education sector after the 1990s led to the mushrooming of private learning institutions. Since housing units and the settlement layout are designed to be flexible enough to accommodate modification for other uses, some houses have been converted to learning institutions ranging from primary schools to colleges and universities. This has brought social services closer to the residents, thereby fostering a sense of place.

These findings are in line with Heather, 2008's assertion that the flexibility of structures and settlements to accommodate adaptation and modification are key factors in fostering sense of place. Heather, 2008 further argues that the socio-economic and environmental needs of people change due to globalisation and modernisation among others. He therefore asserts that settlements and structures should be designed in such a way that they are flexible enough to

accommodate change. Furthermore, the findings of this study are in line with the Commission for Architecture and the Built Environment's (2007) assertion that the social, economic and environmental needs of people in any settlement change over time. He therefore recommends that public authorities in collaboration with the private sector should conduct urban renewals projects meant to meet the changing needs of residents. He further argues that settlement designs as well as housing units should have an element of flexibility to allow for adaptation or modification.

The study revealed that both the physical design features of the settlement and lived experiences in terms of social interactions are key in fostering a sense of place. In the study area social interactions among residents mainly as a result of the connections between housing units and public spaces and proximity of houses are key in fostering sense of place. Semi-public spaces act as extensions to existing housing units thereby promoting social contacts as these spaces are used for cooking, eating, washing dishes and home based economic activities. This means that experiences of social interaction in form of unplanned contacts are interpreted as essential experiences that foster existential sense of place. Specifically, this finding suggests that social interaction is responsible in explaining how individual residents construct sense of place. This finding therefore suggests that sense of place is fostered through daily routines of residents interacting with each other. Seemingly, social interaction among residents is a fundamental part of what a community is. Without social interaction, people would not have shared history, values, culture and goals. Shared values, history, goals and culture enable people to identify themselves with the settlement, hence fostering and preserving sense of place. This is to say that social interaction among residents is a key factor in preserving and fostering an existential sense of place in the study area.

These findings are in line with the existential perspective of sense of place as argued by Tuan (1971) and Relph (1970). The two authors emphasis that lived experiences of residents are key in fostering a sense of place. Further, Beidler (2007) asserts that social interaction is key in fostering existential sense of place.

Akin to these findings that both the physical design of the settlement and lived experiences are key in fostering sense of place is Corrie's (2011) argument that comfortable green spaces and landscape, multiple modes of transport, safe and adequate public spaces and designs that

promote social interaction and business opportunities are key in fostering sense of place. Seemingly, these findings are in line with Eisenhauer et al's, 2000; Beidler's, 2007) assertions that both social interaction and the interpretation of the physical environment are key in fostering sense of place. This means that both the social and physical aspects in a settlement are key in fostering sense of place. Therefore, planners should ensure that settlements are designed in such a way that they promote unique and aesthetic designs and social interactions among residents.

This section has highlighted the findings on the factors that contribute to sense of place. Both the lived experiences in terms of social interactions among residents as well as physical design features are key factors that contribute to enhancing a sense of place. Physical design features as well as social interactions create an affective bond between residents and the study area. Physical design features promote uniqueness, beauty, convenience, orderliness, legibility and safety and security. This therefore, means that objective two that sought to analyse the factors that contribute to sense of place has been achieved. With regard to the research question under objective two, the factors that contribute to sense of place are social interactions among residents as well as physical design features of the settlement.

4.7 Changes being made to Factors that contribute to Sense of Place during housing transformation

The study showed that housing transformation in the study area is affecting factors that contribute to sense of place in a number of ways. According to the survey results, housing transformation is affecting lived experiences in terms of social interactions among residents and physical design features in terms of convenience, safety and security and aesthetics. Table 4.3 summarises the findings of the survey;

Table 1.3: changes being made to factors that contribute to sense of place during housing transformation

Physical design features/lived experiences	Count	%
Social interactions only	2	4
Convenience only	2	4
Safety and security only	2	4
Aesthetics only	2	4
Social interaction, convenience, safety and security and aesthetics	40	80
Housing transformation does not affect design features and lived experiences	2	4
Total	50	100

Source: Field Research, 2015

According to the survey results 40 translating to 80% of the respondents stated that housing transformation is affecting both the design features of the settlement and lived experiences of residents. According to the survey results, housing transformation is affecting a combination of social interaction among residents, convenience, safety and security and aesthetics. It was observed that the above listed factors that contribute to sense of place are being affected by different types of housing transformation in the study area.

4.7.1 Social Interactions

One of the forms of housing transformation in the study area is the construction of solid boundary wall fences. This study showed that this type of housing transformation is negatively affecting social interactions among residents. This is so because solid boundary wall fences are creating barriers between private and public spaces. Private spaces are slowly being disconnected from public spaces thereby reducing social interactions among residents. Figures 4.9 and 4.10 below show examples of transformed houses through the construction of solid boundary wall fences.



Figure 4.9: A solid wall fence in H section

Source: Field Research, 2015

It was observed that the erection of solid boundary wall fences is affecting the relationship between private spaces and public spaces. Initially, plot boundaries are defined by flowers which allow people on the streets or roads (public spaces) to interact with people in front of their residential units. The construction of solid boundary wall fences is reducing contacts between people on the streets and those inside their yards. Residents in third residential spaces (refer to figure 4.11) where most household activities are done can no longer interact with their neighbours because of boundary wall fences. Solid boundary wall fences are therefore creating gated communities which are slowly reducing social interactions among residents. These results are in line with Beidler's (2007) argument that erection of solid boundary fences reduce social interactions among residents. According to Beidler (2007) housing transformation through the construction of solid boundary fences affects how people relate with space and each other. He contends that this type of housing transformation is reducing vitality on the public realm.

"Housing transformation through erection of solid boundary wall fences is changing how Chamboli residents interact with each other. Very soon we will have a situation where neighbours will not be knowing each other." (Interview, Works Foreman, 19th March, 2015).



Figure 4.10: Housing transformation through erection of a boundary wall fence

Source: Field Research, 2015



Figure 4.11: Residential third space being used for household chores

Source: Field Research, 2015

Furthermore, housing transformations through extensions of existing houses are increasing indoor spaces and reducing outdoor spaces (residential third places/semi-public spaces), making it difficult for residents to interact with their neighbours as most household activities are now done from inside their houses. This is to say that housing transformations through extensions are increasing indoor spaces (private spaces) whilst reducing outdoor spaces or residential third spaces where most household activities are done. It is on these spaces where social interactions take place. Figure 4.12 shows housing transformation through horizontal extension.

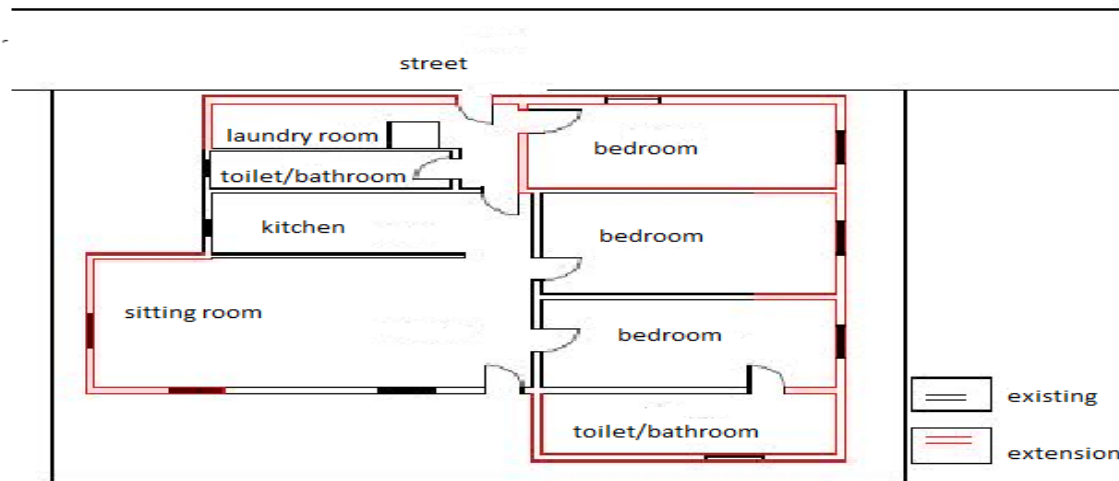


Figure 4.12: A transformed house in L section

Source: Drawn by Author, 2015

These findings were confirmed by all key informants who indicated that most transformations are increasing indoor spaces (private spaces) in order to accommodate increasing family sizes at the expense of outdoor spaces. Outdoor spaces are used for recreation, cooking, washing dishes, eating and laundry and it is on these spaces that residents interact from. This therefore means that housing transformation is slowly reducing social interactions among residents in the study area.

Further, housing transformation through modifications of existing houses to provide spaces for home based economic activities is changing the uses of land from purely residential to mixed use. The observed economic activities include salons, schools, barbershops, hardware shops, rest houses and grocery shops among others. It was observed that these changes are increasing social interactions among residents as some of these spaces are being used as meeting places (refer to figure 4.13) thereby promoting human interaction among residents.



Figure 4.13: A grocery shop in P section being used as a meeting place by residents

Source: Field Research, 2015

4.7.2 Convenience/proximity to services

As stated earlier, convenience is among the factors that is being affected by housing transformations. The survey results revealed that housing transformation through changing of land uses is affecting social interactions, convenience, safety and security and aesthetics. This was according to 80% of the respondents. It was observed that housing transformation through the incorporation of non-residential uses in residential areas is promoting convenience. Most social and economic facilities are getting closer to the residents because of housing transformation through change of land uses. This means that walking distances to and from such facilities are reducing thereby promoting convenience in the settlement. A number of residents especially ladies were seen doing household chores whilst doing business in the settlement.

This finding was confirmed by the former housing officer (ZCCM) and the area councillor. They stated that housing transformations through the mixing of residential and non-residential uses are increasing convenience among residents as most social and commercial facilities and amenities are now within walking distances. However, key informants from the local authority indicated that this type of housing transformation which is promoting mixed use developments is against the planning and buildings regulations and standards. They stated that mixing residential and non-residential uses is slowly promoting disorderly development as most uses are not compatible.

"Housing transformation is slowly promoting disorderly developments. We now have shops, salons and other commercial buildings in residential areas. These uses are not compatible with residential uses."(Interview Buildings Inspector, 20th March, 2015).

4.7.3 Safety and Security

The design and layout of houses and the settlement are key in promoting safety and security. Buildings were designed in such a way that they overlook the streets thereby providing natural surveillance. Studies have shown that natural surveillance is key in enhancing security and safety in any settlement. According to 80% of the surveyed respondent, safety and security is among the four factors being affected by housing transformation. This finding was supported by the area councillor and the ZCCM former housing officer who stated that housing transformation through incorporation of non-residential uses such as shops (refer to figure 4.14) are enhancing the security and safety of residents in the study area because most non-residential uses are promoting human interactions and natural surveillance. In other words housing transformation through the conversion of land uses from purely residential to mixed use is enhancing security and safety in the settlement by creating more life on the streets and roads.

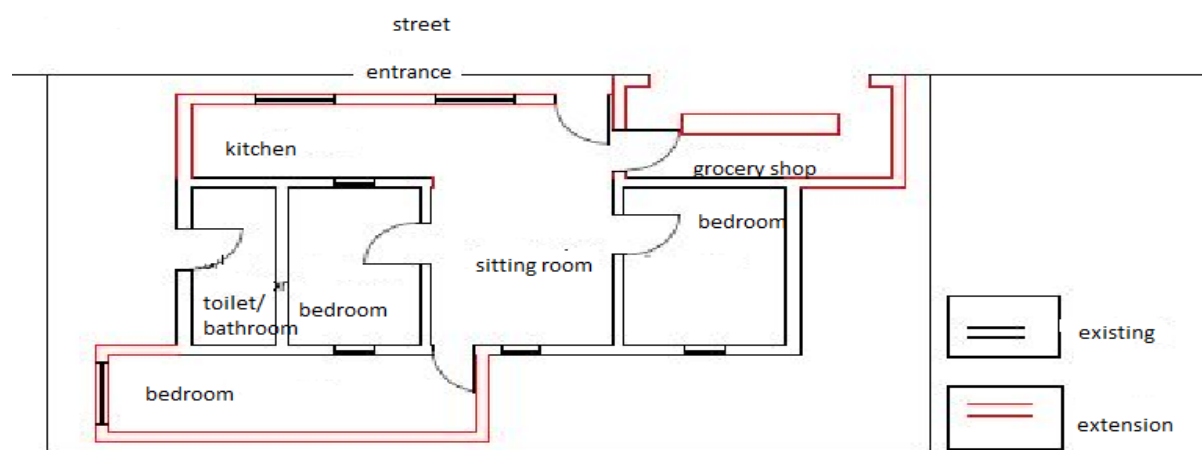


Figure 4.14: A transformed house with a shop in J section

Source: Drawn by Author, 2015

However, the two key informants from the local authority stated that the mixing of residential and non-residential uses as a result of housing transformation is slowly causing disorderliness in the study area.

"Mixing residential and non-residential uses in settlements is against the provisions of the Town and Country Planning Act cap 283 of the laws of Zambia. Therefore, this practice is totally illegal and it is likely to promote disorderly developments in the study area" (Interview, Buildings Inspector, 20th March, 2015).

4.7.4 Aesthetics

According to 80% of the surveyed residents, aesthetics is among the factors that is being affected by housing transformation in the study area. This finding was supported by two key informants namely, the Former Housing Officer and the Area Councillor. The two key informants indicated that housing transformation through extensions and modifications of housing units are adding beauty to the settlement.

"Extensions and modifications of housing units are in most cases modernising the settlement. We now have big and beautiful *Nigerian* houses. For me the government through the Ministry of Local Government and Housing should promote housing transformation" (Interview, Area Councillor, 18th March, 2015).

"Housing extensions and modifications are beautifying the settlement. We now have good and quality designs because of housing extensions and modifications. Existing houses were built a long time ago, hence they are no longer beautiful in this era. Therefore, housing extensions and modifications are adding beauty to the settlement." (Interview, Former Housing Officer, 18th March, 2015).

"The transformation of most houses in Chamboli is changing the beauty of the settlement. We now have modern houses designed according to users' needs." (Interview, Resident, 14th March, 2015).

Housing transformation through horizontal extensions and modifications in the study area is slowly promoting aesthetics. Because of housing transformation the settlement has variety in terms of designs of housing units. Furthermore, the types of building materials being used during housing transformations are adding beauty to the structures (refer to figure 4.15). Housing transformation therefore, is slowly breaking monotony in terms of designs and building materials of housing units in the study thereby enhancing aesthetics.



Figure 4.15: A transformed house in M section

Source: Field Research, 2015

However, the two key informants from the local authority expressed different views from the residents, Former Housing Officer and the Area Councillor. They indicated that since most housing transformations are done illegally, there is a danger of transforming a planned settlement into an informal one. They stated that most transformations are encroaching on service lines and they are done haphazardly as transformers do not follow the building regulations. Further, they stated that housing transformation is slowly affecting convenience, orderliness, public health, beauty and safety in the settlement.

"Because of political interference from the Area Councillor, it is difficult for us to control and guide housing transformers. This has led to haphazard housing transformations which are affecting the beauty and public health of the settlement. If the situation continues we are going to have a shanty compound in a planned area" (Interview, Buildings Inspector, 20th March, 2015).

These findings therefore indicated that the construction of solid boundary wall fences is affecting social interaction among residents negatively. However, in terms of design features, the Area Councillor, Former Hoffer and 80% of the surveyed residents believe that housing transformation is beautifying the settlement, promoting convenience and enhancing safety and security. On the contrary key informants from the local authority believe that housing transformation is slowly transforming a well-planned settlement into an informal one because of lack of compliance to planning and building regulations by residents as they transform their structures. These findings indicate that housing transformation is affecting both the physical design features of the settlement and lived experiences of residents. The study reveals that the changes being made to the factors that contribute to sense of place are helping residents' meet their social and economic needs. However, housing transformation through

the erection of solid boundary fences is reducing social interactions among residents. Despite the fact that residents do not obtain planning permission from the local authority, housing transformation is promoting convenience, beauty and safety and security. This is to say that adherence to rigid planning laws and standards is not a prerequisite for promoting convenience, orderliness, beauty and safety in settlements. What is important is that housing designs and settlement layouts should be able to accommodate modifications in order to meet the changing social and economic needs of residents.

The findings that housing transformation through erection of solid and opaque boundary wall fences reduce social interaction among residents is consistent with Nguluma's (2003) assertion. Erection of solid boundary wall fences is reducing the relationship between housing units and the public realm such as streets and residential third spaces thereby reducing social interactions among residents. Additionally, most housing units in the study area were designed to overlook the streets. This arrangement promotes safety especially at night and creates active frontages, an identity and a sense of ownership and care for the public realm. However, housing transformation through erection of solid boundary wall fences is creating a barrier between private spaces and the public realm thereby reducing sense of ownership and care for the public realm and safety.

The change of land uses from single use to mixed uses according to all interviewed residents, the Area Councillor and Former Housing Officer is increasing social interactions, improving safety and promoting convenience. This is so because change of land uses from purely residential to mixed uses creates more life on the street, promotes natural surveillance and brings social and economic services and facilities closer to the people. Further, residents are able to build 'modern' houses of their choices thereby beautifying the settlement. However, the local authority believes that housing transformation through change of land uses is slowly creating disorderly development in the settlement. This is so because of the rigid building and planning regulations that the current planning law provides. However, merely enforcing building standards and regulations cannot transform mere space into place. This is to say that quality urban environments can be achieved by not only adhering to planning laws and regulations but also taking into consideration the changing social and economic needs of residents. This is in line with Behrens and Watson's (2009) argument that the creation of sense of place is not dependant on standardised planning and building laws and regulations. This is to say that the enforcement of planning laws and regulations will not automatically

foster a sense of place. Therefore relevant local authorities should look beyond adherence to planning and building standards and endeavour to create unique places with quality urban environments and local identity.

This study has shown that different types of housing transformations are changing factors that contribute to sense of place. Changes being made to factors that contribute to sense of place as a result of housing transformation include; lived experiences such as social interactions among residents as well as design features in terms of convenience, aesthetics as well as safety and security. These findings therefore indicate that objective number three that sought to examine changes being made to factors that contribute to sense of place as a result of housing transformation has been achieved. The research question has also been answered as the changes being made have been highlighted.

4.8 Implications of different types of housing transformation on the sense of place

This study showed that the different types of housing transformations have positive and negative implications on the sense of place. Table 4.4 summarises the findings of the survey on residents in the study area.

Table 4.4: Implications of changes on factors that contribute to sense of place on sense of place

Type of housing Transformation	Implications on Sense of Place		Total
	Fosters sense of place	Reduces sense of place	
Construction of solid boundary wall fences	10%	90%	100%
Change of land use	80%	20%	100%
Horizontal Transformation	85%	15%	100%
Interior Transformation	90%	10%	100%
Demolition and replacement	100%	0%	100%

Source: Field Research, 2015

4.8.1 Construction of Solid Boundary Wall Fences and Sense of Place

The former ZCCM Housing Officer, the Area Councillor and 45 translating to 90% of the surveyed respondents indicated that housing transformations through construction of solid

boundary wall fences are reducing social interactions among residents thereby reducing a sense of place. This finding was supported by the two key informants namely; the works foreman and buildings inspector from the local authority. It was further observed that housing transformations through construction of solid boundary wall fences are affecting the safety of residents on the public realm because natural surveillance (eyes on the street) is negatively being affected. This is so because streets which are not overlooked by buildings feel unsafe especially at night. This situation is slowly affecting sense of place as safety and high social interactions according to Nguluma (2003) are key in fostering a sense of place. Nguluma (2003) argues that solid boundary wall fences disconnect housing units from the public realm thereby reducing a sense of place. This is true because solid fences reduce social interaction among residents, make the streets unsafe especially at night and reduces vitality on the public realm. If a street feels unsafe regardless of whether a crime has ever been committed there or not, then people are less likely to use it. The less people use a street, the more it becomes unsafe, which in turn further discourages people from using it. This affects the overall civility, sociability and sense of place.

4.8.2 Change of Land use and Sense of Place

On the other hand, 80% of the surveyed residents, the Former ZCCM Housing Officer and the Area Councillor indicated that change of land uses through the construction of grocery shops, saloons, schools and other social and commercial facilities in residential areas are promoting social interactions as some of these facilities are being used as meeting places by residents. Furthermore, they stated that construction of such facilities in residential areas are bringing social and commercial services closer to the people. They cited the conversion of some houses from residential to learning institutions as a positive direction in bringing such a service closer to their houses. Additionally, housing transformation through the conversion of housing units to commercial and social facilities are promoting safety and security, livening the streets, promoting human interactions and promoting home based economic activities. This is promoting sense of place in the study area.

The Former ZCCM Housing Officer and the Area Councillor revealed that housing transformation through change of land uses and extensions of housing units is beautifying the settlement, hence fostering a sense of place. Further, 80% of the surveyed residents stated that aesthetics is among the four factors that is being fostered by housing transformation. This is in line with Woolrych's (2011) argument that housing transformation improves the social,

economic, cultural and the aesthetics of settlements. Further, Beidler (2007) suggests that housing transformation improves the visual and aesthetic quality of the area and promotes variety which is a spice of life. This means that attractive settlements strengthen people's perception about a place. This is true because the nature of housing transformation taking place is not replacing the vernacular architecture of the structures but rather it is adapting the structures to meet the changing aesthetic needs of the residents. The settlement is still unique in terms of form and character. The local architectural form is still responding to the physical and cultural requirements of the residents. If anything, housing transformations through change of land use and extensions are spicing up the unique character of the settlement, hence fostering and preserving a sense of place.

"Previously all my kids used to go to Highland private school in Nkana East. We were even thinking of shifting from this place because there were no private schools nearby. Just imaging driving my kids about 8 kilometres every day. It was costly, dangerous and time consuming. But now with the coming of Ketani Mabo private school ,my kids are able to walk to and from school as the school is a few metres from my house" (Interview, Former ZCCM Housing Officer, 15th March, 2015).

"My people are now able to access schools, shops, saloons and other facilities without walking or driving long distances. This has made this place attractive to other people. We are now seeing residents from Riverside, Ndeke and other places shifting to Chamboli" (Interview, Area Councillor, 18th March, 2015).

It is clear from these findings that housing transformation through the erection of solid boundary wall fences is reducing social interactions among residents and consequently sense of place. On the other hand, housing transformation through change of land use is promoting mixed use developments. Mixed use developments promote convenience, social interactions, safety and security, variety and vitality on the public realm. All these factors are key in promoting a sense of place. These findings are in line with Beidler's (2007) assertion that construction of solid wall fences reduces sense of place whilst change of land uses promote sense of place.

Furthermore the finding that housing transformation through change of land uses from single residential use to mixed use is fostering sense of place is consistent with the new urbanist's claim that mixed use developments bring social and economic facilities and services closer to

the people and promote vitality on the public realm thereby fostering a sense of place (Beidler, 2007). Mixed use developments are enhancing safety and security in the settlement through the promotion of natural surveillance. Natural surveillance is most effective where dwelling types and land uses are mixed, as this increases the likelihood that buildings will be occupied at different times of the day. Additionally, since crime relies on concealment, maximising natural surveillance can help to deter crime. This is so because mixed use developments make the streets busy and crime is obviously much less likely to occur in busy places than in quiet and secluded areas. This environment being created by housing transformation through the promotion of mixed use developments is undoubtedly fostering and preserving a sense of place. Further, most transformed houses have bigger windows facing the streets. This arrangement is also promoting natural surveillance, hence sense of place.

On the contrary Heather (2008) argues that housing transformation through change of land use to promote mixed use developments reduces sense of place. Heather's (2008) argument is that rezoning or change of land use is promoting densification which is negatively changing the character of the settlement, hence affecting sense of place. He asserts that mixed use developments and densification lead to an influx of people with different cultures and social beliefs from other settlements. This according to him influences the lived experiences of residents leading to reduced sense of place. He argues that mixed use developments and densification increases the population which later increases the market for goods and services. This scenario according to him will attract big retail traders who would force the local retail traders to close due to competition. This according to him reduces a sense of place as most employees in the big retail shops will be employed from outside the community, hence reducing social cohesion and sense of place. He therefore, prefers small shops owned by the known locals as this promotes social cohesion and sense of place. On the contrary, the results of this study have shown that densification and mixed use developments promote social interactions and bring vitality on the streets thereby promoting sense of place. Further, housing transformation through change of land use is increasing the population of the study area. The increase in population is attracting commercial developments due to increasing market for retail products. Residents are seeing the marketability of operating within the settlement. This is important as densification and mixed use developments promote vitality on the streets and hence sense of place.

4.8.3 Horizontal Housing Transformation and Sense of Place

In terms of horizontal transformations, 85% of the surveyed respondents, the Former ZCCM Housing Officer and the Area Councillor indicated that the different types of fancy designs coming up as a result of horizontal housing transformations are adding beauty to the area. Furthermore, it was observed that housing transformations through extensions are slowly bringing diversity in terms of housing designs in the study area. The respondents indicated that with changes in lifestyles and needs they need bigger and modern houses. This is to say that housing transformation is slowly meeting their changing lifestyles and needs. Furthermore, the respondents stated that housing transformation through extensions of residential units has made it possible for residents to use their houses and surroundings for economic activities.

Additionally, most housing transformations through the extension of existing houses are minimising set back distances in the study area. According to the buildings regulations, the setback distance is supposed to be above 7 metres. However, most transformed houses have setback distances less than 7 meters. According to key informants from the local authority this situation is illegal and unacceptable. However, reduced setback distances increases the ability of buildings to interact with the public realm such as streets and roads. The increased interaction between buildings and the public realm such as streets and roads increases social interactions among residents, hence sense of place.

These findings are pointing to fact that housing transformation through horizontal extensions is promoting sense of place. This is so because the extensions are meeting the changing needs and lifestyle of the residents. Nguluma (2003) argues that meeting the needs and lifestyle of the people is key in fostering a sense of place. Due to horizontal extensions residents are able to own modern houses, use their houses to get rental income as well as promoting home based economic activities. All these factors contribute to fostering a sense of place.

4.8.4 Interior Transformations and Sense of Place

In terms of interior transformations, 90% of the surveyed residents stated that this type of transformation is beautifying interior spaces as well as providing spaces for increasing family sizes thereby fostering a sense of place. This is to say that interior housing transformation is meeting the changing needs of the residents. This finding was supported by the Former ZCCM Housing Officer and the Area Councillor. Further this finding is in line with

Nguluma's (2003) argument that interior housing transformation promotes beauty and sense of place.

"Interior transformations are increasing sizes of interior rooms as well as beautifying interior spaces. These houses were built way back. The interior designs are old fashioned. Therefore, the transformation of interior spaces is modernising the structures thereby increasing the bond between residents and their houses" (Interview, former ZCCM housing officer, 15th March, 2015).

4.8.5 Demolition and Replacement and Sense of Place

All the respondents revealed that housing transformation through demolition and replacement meets the changing social and economic needs of residents hence enhancing a sense of place. This practice however is not common in the study area due to cost implications attached to it. Nguluma (2003) asserts that this type of housing transformation promotes a sense of place as it meets the social and economic needs of residents. Through this type of housing transformation people are able to own modern and bigger houses thereby meeting their needs and changing lifestyles. This contributes to promoting a sense of place.

About 80% of the respondents indicated that housing transformation through change of land use fosters sense of place in the study area. However, according to the Buildings Inspector from the local authority housing transformation through change of land use is promoting disorderly development and reducing sense of place. It was observed that changing land uses has brought a range of services and mix of uses ensuring that the local needs and requirements of residents are met. For example despite being a small area, Chamboli is a vibrant area, with a variety of local amenities including local stores ,pubs and restaurants, schools, health centres etc. Further, this study argues against the claim by the local authority that extensions and modifications of housing units is creating disorderly development and reducing a sense of place. This is so because the current planning and buildings regulations are too rigid to meet the changing social and economic needs of the residents. The regulations should move beyond more traditional physical or land use planning, to a more concern for the types of places being created. This means emphasising on how a place functions, the way it feels and its identity. This involves shaping the role of the public realm within an overall network and then guiding the scale, form and land use of different buildings in relation to that network, in order to create more efficient, understandable and distinctive settlements thereby enhancing sense of place. In other words both the physical and social aspects of a place are

key in creating settlements that foster a sense of place. This is akin to Behrens and Watson (2009) assertion that sense of place is not fostered through the enforcement of standardised planning laws and regulations. They argue that sense of place is created through embracing and seeking to promote uniqueness of settlements in terms of vibrant, enriching and efficient built environments.

This study has revealed that different types of housing transformations have different implications on the sense of place in the study area. Changes being made on factors that contribute to sense of place are having both positive and negative implications on the sense of place in the study area. Construction of boundary wall fences for instance reduce social interactions among residents and sense of place. On the other hand horizontal transformation, change of land use, interior transformation as well as demolition and replacement help in fostering a sense of place. This is to say that housing transformations have both positive and negative implications on the sense of place in the study area. Based on these facts, it can be said that objective four which sought to establish the implications of changes on factors that contribute to sense of place on sense of place have been achieved. The research question under the same objective has also been answered ably.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

The nature of housing transformation in the study area points to the fact that the current planning laws, standards and regulations are not user friendly to the developers especially the low income groups. Residents opt to transform their structures without obtaining planning permission from the local authority because of bureaucracy, high transaction costs and rigid planning laws, standards and regulations. This state of affairs has an implication on the quality of the urban environment and subsequently sense of place despite the fact that most of the types of housing transformations being practiced in the study area foster sense of place. Further, since most transformations are done illegally and informally, there is a likelihood that the settlement will become an informal one. Since most housing transformations are fostering a sense of place as well as providing affordable housing to the low income groups, it is important for the relevant authorities to reduce bureaucracy, transaction costs involved in the application process and revise the current planning laws, standards and regulations. Despite being informal, housing transformation is meeting the changing social and economic needs of the residents thereby reducing housing shock and stroke among residents in the study area. This study has successfully achieved the first objective which sought to establish the nature of housing transformation in the study area. It highlighted the different types of housing transformations being practiced in the study area, the process as well as the actors involved in the transformation process thereby answering the first three research questions in line with objective one.

This study has shown that physical as well as social factors are key in contributing to sense of place in the study area. This implies that sense of place can co-exist in one settlement. Unique design features as well as social interactions among residents are key factors that contribute to sense of place. This therefore follows that existential and interpretative factors contribute to fostering a sense of place. Therefore, both physical and social factors play an important role in creating quality urban environments and fostering sense of place. Relevant authorities need to pay particular attention to the unique physical design features of settlements and lived experiences as they consider applications for housing transformations as well as new developments. The factors that contribute to sense of place have been highlighted in this study hence answering research question number four and achieving objective number two which sought to examine factors that contribute to sense of place.

Housing transformation in the study area is affecting both physical design features and social factors that contribute to sense of place. This means that the existential and interpretative

factors that contribute to sense of place change as a result of housing transformation. It is therefore important for relevant authorities to maintain the types of housing transformations that are having a positive impact on factors that contribute to sense of place. On the other hand, housing transformation such as erection of solid boundary wall fences should be discouraged as they negatively impact on social interactions among residents in the study area. Housing transformations should therefore be regulated in order to maintain the types that have positive impacts on the factors that contribute to sense of place. Since the changes being made to factors that contribute to sense of place have been highlighted in this study, objective number has been achieved. This means that research question number five has been ably answered.

The implications of different types of housing transformations on the sense of place are both positive and negative. There is therefore need by the local authority to put in place measures that will promote the types of transformations that foster sense of place in the study area. This can be done by coming up with bylaws specifically to deal with the different types of transformations taking place in the study area. On the positive side, housing transformation is meeting the changing social and economic needs and aspirations of residents thereby fostering a sense of place. The positive aspect of housing transformation should therefore be promoted if residents are to meet their changing social and economic needs and aspirations. The implications of different types of housing transformation on the sense of place have been explored in this study. This therefore, means that objective number four has been achieved and research question number six has been answered.

Since there is little effort by the Zambian government to meet the increasing housing demand for the low income groups in urban areas besides housing transformations and the informal development sector, it is undisputable that the process of housing transformation will continue beyond the foreseeable future. There is therefore an urgent need for a positive response to maintain the potentials and deal with the shortcomings of housing transformation. The following recommendations will therefore help in fostering and maintaining a sense of place as the settlement undergoes housing transformation;

5.1 Let the Local Authority be the main Actors in the transformation process

The local authority should work with communities and other stakeholders to identify key local issues, housing needs, community assets and provide social and community development skills to its residents. This is important because a socially functional society enhances a sense of place. Further, Planners need to take an active role engaging themselves with community groups. This is likely to build a better relationship and trust between planners and residents. Improved relationship and trust between the local authority and residents means improved compliance rates, collaboration, mutual learning and understanding between the two parties. This arrangement will also enable planners understand what 'place' means to existing residents and their changing needs in terms of housing, social and economic issues. This is likely to foster sustainable housing transformations that foster and preserve a sense of place.

It is further recommended that the local authority should promote enquiry by design process in planning. This process is a collaborative and interactive undertaking which requires stakeholders to establish principles and develop plans. It provides an opportunity for an interactive forum to examine and debate ideas to do with quality of urban environments. It provides a framework for residents' involvement, resulting in them having a greater sense of understanding and ownership of planning principles and standards. This is likely to promote housing transformations that meet the needs and aspirations of residents, hence enhancing a sense of place.

5.2 Encourage Residents to Formalise the Process of Housing Transformation

This can be achieved by creating a unit that will be specifically processing applications for housing transformations. This will speed up the process of processing applications for housing transformations, thereby encouraging residents to formalise the process. The unit should be given authority to approve applications in principle and report to the council for ratification. The unit should comprise of professionals from the local authority and the private sector, community members, councillors and community based organisations. Further, processing of applications for change of land uses should be decentralised to respective local planning authorities. Furthermore, scrutiny fees and other development charges should be reduced to affordable rates. This will reduce bureaucracy and transaction costs in processing applications for housing transformations, thereby encouraging residents to apply for planning permission before transforming their structures.

Furthermore, there is need to reconcile the current building and planning regulations and standards with the changing needs and aspirations of communities. It must be however emphasised that the process of revising the standards and regulations should be inclusive. All key stakeholders especially community members should take part in coming up with flexible, relevant, realistic and inclusive planning standards and regulations. This will improve the compliance rate in terms of housing transformations as well as new developments. This will lead to improved quality of the urban environment in new and transforming settlements and foster sense of place.

5.3 Promote urban design principles that enhance sense of place

In order to create settlements with high sense of place, there is need for relevant authorities to promote urban design principles as they prepare plans and consider applications for planning permission. This is important because urban design moves beyond more traditional land use planning to a more concern for the types of places being created either through housing transformations or new developments. It looks at how places function, the way they feel and their identity. It must however, be emphasised that the urban design principles should be contextualised. The following are the recommended design principles that should be promoted by relevant authorities;

5.3.1 Promote the erection of transparent and dwarf boundary fences

This study has revealed that housing transformations through the erection of solid boundary wall fences are reducing social interactions among residents, hence reducing sense of place. It is therefore recommended that dwarf and transparent boundary fences should be promoted instead of solid opaque wall fences in order to maintain and sustain a sense of place in the study area. The promotion of transparent boundary fences in the study area will make positive contributions to the street scene and enhances chances for people to interact with each other. Further, transparent fences allow neighbours to watch out for each other's security and well-being, hence promoting safety and sense of place.

Additionally, using flowers and trees as boundary fences is another way of enhancing sense of place in the settlement. This is so because apart from being transparent and promoting social interactions among residents, flowers have a natural look and inject diversity and colour as they change with the seasons. Further, defining boundaries with plants and flowers (living fences) is a good way of accommodating greenery. Since this is the most common type of fencing in the settlement, it is recommended that relevant authorities should encourage residents not to abandon this type of fencing as they transform their houses.

5.3.2 Responding to Context

Housing transformations and new developments do not occur in a vacuum. Every new addition to the physical environment through housing transformation or new developments has an impact upon the way a place looks, feels and functions. It is therefore important to emphasize the need to take into account the specific context of settlements during housing transformation. This will require understanding settlements position within the wider context or region. Furthermore, the history of the settlement should be established. Other key issues to consider include; the streets and spaces that connect the dots; its ecology or natural environment; its sense of community and culture, including involving the community in the design process; and its distinctive and recognisable places. These tenets of urban design will help new and transforming settlements in creating distinctive, interesting and beautiful places. Therefore, all new and transforming structures and settlements should respond to the context of the settlement to reinforce local identity and a sense of place.

5.3.3 Creating a legible or understandable urban form

The affective bond between residents and place is dependent on the ability by residents to understand it. Settlements that are easy to find the way around and have a clear structure are easily accessible. This helps residents and visitors feel attached to the settlement.

5.3.4 Promote Densification and Mixed Use Developments

The traditional planning approaches in Zambia focus on designing settlements which promote building lower density settlements, promoting motorised transport, segregating different land uses and prioritising private rather than public spaces. This approach has affected the potential for human social interaction and the opportunity to exchange goods, expertise and ideas. It is therefore important for relevant authorities to emphasise the need for mixed use developments in order to promote liveable settlements which enhance social interactions and vitality on the public realm. The higher density nature of development and the integration of residential and non- residential uses helps in creating an environment which is conducive to walking at the local level and the use of public transport at the larger scale, thereby reducing the environmental impact of motorised transport. Not only does this approach reduce environmental impact but it also enhances vitality through creating more life on the streets thereby fostering a sense of place. Therefore, the local authority should promote high density and mixed use developments as they plan and consider applications for planning permission. However, it must be emphasised that only land uses that are compatible to each other should be mixed to reduce nuisance in settlements.

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LIST OF APPENDICES

Appendix 1: Questionnaire

General Information

The house is: Owner occupied Owner and Tenants occupied Tenants occupied only

Owner's name:.....

Person interviewed:.....

House no:

Sex: male female

Occupation.....

Miner

Civil servant

Business man/woman

Retired

Others (specify).....

Type of Residential Area Low Cost Medium Cos Intermediate medium cost High Cost

Status of the house transformed not transformed

Housing Transformation Process

What reasons prompted you to carry out housing transformation? Increase in family size

Improve beauty desire to own a modern house incorporate home based economic activities

Others (specify).....

How did you carry out the transformation?Did it myself engaged tradesmen engaged the council engaged a contractor others (specify).....

Did you seek professional advice from the local authority? yes no

Who were the actors in the whole process of transformation? Owner Architects Contractors cal AuthorityTradesmen

Others (specify).....

What were their roles in the transformation process? financing building designing

Others (specify).....

Physical design features and lived experiences that enhance sense of place

What characteristics/factors attracted you to this place? eauty availability of social and

commercial services social interaction among residents

Others (specify).....

Does this neighborhood feel like a unique place, or perhaps just another settlement? unique
like any other settlement

What factors make it feel unique? design of houses the way people interact access to
services settlement layout

Others (specify).....

How often do u interact or get in contact with your neighbors? daily
weekly monthly do not interact with my neighbors

Which experiences and/or activities do you believe are the most important in making this
place feel like a unique neighborhood, as opposed to just another settlement? recreation
social interaction physical design features

Others (specify).....

How do the stated experiences make the place feel unique? promote local identity promote
beauty promote safety promote sense of belonging

Others specify.....

What physical factors in the design of this neighborhood do you believe allow such
experiences to happen? settlement layout design of structures proximity of houses

Others specify.....

Changes being made to design features and lived experiences as a result of housing transformation

What changes are being made to the physical design features as a result of housing
transformation? aesthetics safety and security

Others specify.....

How are these changes being made? through erection of boundary wall fences through
extensions through change of land uses through interior transformations

Others specify.....

What changes are being made to the activities or lived experiences as a result of housing
transformation? social interaction convenience

Others specify.....

How are these changes being made? through erection of boundary wall fences through
extensions through change of land uses through interior transformations

Others specify.....

Implications of changes in physical design features and lived experiences on the sense of place

How have the identified types of housing transformation affected the unique physical design features of the settlement?

1. Construction of boundary wall fences.....
2. Change of land use.....
3. Extensions.....
4. Interior transformation.....
5. Demolition and replacement.....

How have the identified types of housing transformation affected the activities/lived experiences of the residents?

1. Construction of boundary wall fences.....
2. Change of land use.....
3. Extensions.....
4. Interior transformation.....
5. Demolition and replacement.....

How has the identified types of housing transformation affected sense of place?

1. Construction of boundary wall fences a) has reduced sense of place b) has increased sense of place
2. Change of land use a) has reduced sense of place b) has increased sense of place
3. Extensions a) has reduced sense of place b) has increased sense of place
4. Interior Transformation a) has reduced sense of place b) has increased sense of place
5. Demolition and replacement a) has reduced sense of place b) has increased sense of place

Appendix 2: Interview Schedule – Municipal Officials

Person interviewed:.....

Position:

Sex:.....

Qualification:.....

What do you think prompts developers to transform their houses?

How is housing transformation done in the study area?

What do you think are the actors involved in the transformation process?

Does the local authority provide any technical assistance to transformers of housing units?

Do developers seek professional advice before transforming there structures?

In your own opinion do you think there is sense of place in the study area?

What are all the important physical features (or characteristics) and activities that enhance sense of place in the study area?

What changes are being made to the physical design features and activities that enhance sense of place?

How has housing transformation affected the physical design features of the settlement?

How has housing transformation affected the activities/lived experiences of the residents?

How has housing transformations affected sense of place?

Appendix 3: Interview Schedule – Former ZCCM Housing Officer

Person interviewed:.....

Position:

Sex:.....

Qualification:.....

What do you think prompts developers to transform their houses?

How is housing transformation done in the study area?

What do you think are the actors involved in the transformation process?

What role does your institution play in the housing transformation process?

In your own opinion do you think there is sense of place in the study area?

What are all the important physical features (or characteristics) and activities that enhance sense of place in the study area?

What changes are being made to the physical design features and activities that enhance sense of place?

How has housing transformation affected the physical design features of the settlement?

How has housing transformation affected the activities/lived experiences of the residents?

How has housing transformations affected sense of place?

Appendix 4: Interview Schedule – Area Councilor

Person interviewed:.....

Sex:.....

What do you think prompts developers to transform their houses?

How is housing transformation done in the study area?

What do you think are the actors involved in the transformation process?

What role do you play in the housing transformation process?

In your own opinion do you think there is sense of place in the study area?

What are all the important physical features (or characteristics) and activities that enhance sense of place in the study area?

What changes are being made to the physical design features and activities that enhance sense of place?

How has housing transformation affected the physical design features of the settlement?

How has housing transformation affected the activities/lived experiences of the residents?

How has housing transformations affected sense of place?

Appendix 5: Observation Guide

Name of Owner:

House No.:

Type of residential Area: Low cost Medium cost

Status of the structure: Transformed Not Transformed

Type of Transformation: Vertical Horizontal Others

Actors involved in the transformation process:

Unique design features and lived experiences

Physical design changes as a result of transformation:

Changes in lived experiences as a result of transformation:

Implications of housing transformations on unique design features and lived experiences.