AN ASSESSMENT OF RESIDENTIAL NEIGHBOURHOOD SATISFACTION:
A CASE OF BAHATI ESTATE, EASTLANDS, NAIROBI, KENYA

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DECLARATION

This Planning Research Project is my original work and has not been presented for a degree in any other university

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This Planning Development Project has been submitted for examination with my approval as the University supervisor

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DEDICATION

To the glory and honor of God: for his sufficient grace. To my wonderful mum, for her continuous support and my loving brother.
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The successful completion of this research project has taken the input of many, to whom I am eternally grateful. First and foremost, I would like to acknowledge God, for awarding me the strength, perseverance and above all, the tenacity throughout this research period. With Him, all is possible

I would like to extend my sincere gratitude to my supervisor, Dr. Munyua Mwaura for the valuable advice, guidance, patience and support he has given me in the writing of this research project report right from the preliminary stages to its final completion.

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ABSTRACT

Various studies in low-income residential neighbourhoods in the old public rental housing estates in Eastlands, Nairobi have been carried out on improving residents’ environments by addressing their user needs and re-planning them using certain urban renewal frameworks. There has however been inadequate research on residential neighbourhood satisfaction. This study explores the potential of filling a gap in knowledge on residential neighbourhood satisfaction in general; and particularly examines the current level of residential neighbourhood satisfaction as perceived by the dwellers. The study explores factors that influence residential neighbourhood satisfaction by focusing on determinants such as structural attributes and quality of housing units, neighbourhood facilities, services and social amenities, locational attributes of residential neighbourhood and the social environment. The study further explores potential ways of improving the residential neighbourhood from the perspective of the dwellers.

The methodological argument of the Research Project is that, contrary to conventional conceptions, resident satisfaction cannot be measured on the basis of subjects’ response to their housing unit, but must take into consideration the neighbourhood facilities, locational aspects and the social environment. The research methodology centers around the administering of a survey questionnaires to 2 subjects randomly selected from 26 stratified clusters of housing units in Bahati; totaling to 52 subjects. The number included 22 males and 30 females. The age range of the sample group was between 15 and 70.

The findings indicated general dissatisfaction which explains the design problems that the architects and planners ought to have focused on the production of spaces and built environment for user satisfaction; for enhanced residential neighbourhood satisfaction. The study concluded and recommended that the integrated approach of urban renewal would be best suited to enhance Neighbourhood Satisfaction in Bahati Estate as well as other low income residential environments in Eastlands, Nairobi.
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ACRONYMS AND ABBREVIATIONS

**RNS**: Residential Neighbourhood Satisfaction

**NCC**: Nairobi City County

**UNCHS**: United Nations Centre for Human Settlements (Habitat)

**CBD**: Central Business District

**CDF**: Constituency Development Fund

**NUC**: Neighbourhood Unit Concept
1 CHAPTER ONE: INTRODUCTION

1.1 Introduction and Background to the Problem
The provision of satisfactory housing that meets government prescribed standards of quality and users’ needs, expectations and aspirations has always been the goal of every public housing programme in every country (Ibem, 2013). In fact, most persons assumed that the colonial powers rarely did much that was worthwhile to house the people they colonized. Though this assumption was broadly correct, some colonial governments built a good deal of housing especially in the latter years of colonial rule (Harris & Hay, 2007). However, the success of public housing programmes does not solely depend on merely provision of housing units, but also on other factors that affect the needs of residents. The failure of many of these housing projects can be attributed to the lack of knowledge on the determinants of residential satisfaction.

It is in this respect that housing evaluation was established by the relevant housing developers and stakeholders to provide the necessary information to improve the design and development of future housing projects (Preiser, 1989). In order to evaluate the performance of housing, it was important to develop a suitable indicator. Amongst the various indicators developed, the concept of satisfaction has become the most widely used to assess the performance of housing (Adriaanse, 2007; Kellek & Berkoz, 2006; Paris & Kangari, 2005).

Residential satisfaction reflects the degree to which individuals’ housing needs are fulfilled (Salleh, 2008). According to Ibem (2013), residential satisfaction refers to the degree of contentment experienced by a household with reference to the current housing situation, and it is a non-economic and normative quality evaluation approach to assess the quality of housing units. Households judge their housing conditions based on the actual housing situation and housing norms, and they are likely to express a high level of satisfaction with housing if the households’ current housing situation meets the norms. On the other hand, incongruence between housing situation and norms may result in a housing deficit, which in turn gives rise to housing dissatisfaction (Morris & Winter, 1975). The satisfaction with the neighbourhood has also been noted to be an important factor of housing satisfaction. It includes neighbourhood facilities, such
as schools, clinics, shops, community halls, etc. A number of studies in developing countries have analyzed three main components of the variables: dwelling units, facilities and services and neighbourhood as a basis for evaluating residential neighbourhood satisfaction (Adriaanse, 2007; Kellekc & Berkoz, 2006; Paris & Kangari, 2005).

The determinants of housing satisfaction often assist to illustrate and explain why some households are more likely to be satisfied as compared to others. Many researchers have developed housing satisfaction models and found different assortment of determinants to be significant to housing satisfaction ranging from housing, demographic, to socio-economic variables. These determinants play a vital role in the assessment of the satisfaction level either at individual level or residential neighbourhood level or both. Among the main ones land tenure is known to provide a greater sense of control over housing units (Kaitilla, 1993; Lu, 2002). It also provides a feeling of security and personal achievement thus, higher self-esteem among the residents (Rohe & Stegman, 1994; Rohe, Van Zandt, & McCarthy, 2001). It is therefore qualified as one of the key factors to consider as it has a huge impact on the satisfaction level.

In addition to the housing determinants, households’ socioeconomic and demographic variables ought to be keenly taken into consideration in evaluating housing satisfaction. Previous studies have identified a number of important demographic determinants, such as age, educational attainment and life cycle changes. Among the individual and household characteristics, age shows a positive effect (Baum et al., 2010; Chapman & Lombard, 2006; Lu, 1999; Oswald et al., 2003; Pinquart & Burmedi, 2004). It is argued that older people tend to be more satisfied with their dwelling than do younger people, ceteris paribus.

The housing characteristics feature the structural, locational and neighbourhood attributes of housing as well. The structural attributes are a significant factor affecting residential neighbourhood satisfaction. These attributes include objective physical characteristics of housing such as kitchen space, laundry and washing areas, size of living area and dining area, morphological configuration of residence hall, number and levels of sockets, number of bedrooms and bathrooms, and other aspects of housing such as housing quality, privacy (the social densities), housing services provided by developers such as garbage disposal and safety,
and brightness and ventilation of the house (Baum, Arthurson, & Rickson, 2010; Elsinga & Hoekstra, 2005; Hipp, 2010; Parkes et al., 2002). Location of housing is also an important factor contributing to housing satisfaction among households. Favorable locational attributes generally refer to accessibility to central business district, local amenities such as shopping centers, schools and transportation centers (Gibson, 2007; Potter & Cantarero, 2006; Tan, 2011). Thus, housing development should strive to provide quality self-containing housing within a functional residential development in the location where households can find a place within the neighborhood to work and to fulfill recreation needs so as to respond to the satisfaction level of the residents. The neighborhood social environmental conditions such as upkeep, pollution and crime are also found to be important for the assessment of households’ surroundings (Chapman & Lombard, 2006; Cook, 1988; Gibson, 2007; Hipp, 2010).

1.2 Research Problem
This research sets out to explore and assess residential neighbourhood satisfaction of public rental housing in a developing country context. The research particularly aims to make an assessment of the structural, locational and neighbourhood attributes of old public rental housing. In developing countries such as Kenya old public rental housing estates typologies were built during the colonial and pre-independence periods (Harris & Hay, 2007). Previous research on these old public rental housing estates shows that some of the locational and neighbourhood attributes satisfy the residents. However, the social and demographic changes over the years including other economic as well as institutional changes show that the public rental housing estates in Eastlands, Nairobi may no longer be satisfying the existing population (Mwaura, 2002; Shihembetsa, et al 1989).

In Bahati Estate, Eastlands, for instance, the inadequate satisfaction of housing may be attributable to the structural attributes of the dwelling units, which are now obsolete and outdated. The dwelling units are characterized by single roomed units sized 14 and 18m² each and are provided with a cooking space and a chimney. While these could be argued to be below the required national standards for low cost housing i.e. 40m² (National Housing Policy, 2008), the dwelling units are inadequate for the residents particularly because of space constraint for family setups. This could be premised from the perspective of the dwelling units having
surpassed their carrying capacity since they were originally planned for one or two bachelor
users but are now used by entire families in totally unprecedented ways (Kibue & Craven, 2000).
The dissatisfaction from the perspective of the current residents could thus be emanating from
the disharmonious configuration and inadequate articulation of the inside and outdoor activities
especially for family set-ups.

In addition, the structural attributes could be a source of dissatisfaction for the residents because
of the disconnect between the habitable dwelling rooms and the ablution blocks, which are
communal and inconveniently located outdoors. Residents’ dissatisfaction could result from the
perspective of accessibility to the ablution blocks since they are completely detached from the
dwelling rooms, which is likely to be a source of insecurity particularly for women and children.
The communal use could equally promote poor sanitation and enhance the spread of
communicable diseases. Furthermore, the neighbourhood support facilities have also experienced
wear and tear and a large strain on infrastructure due to the increase of the resident population.
Public open spaces in particular are characterized by heaps of uncollected solid waste, derelict
land with overgrowth of bushes especially in the open areas. Infrastructure services have also
been run down over the years, which is manifested in the form of blockage of drainage paths and
over-flowing of raw sewage on open spaces leading to an unpleasant neighbourhood that lacks
aesthetic value. While it may be argued that the old public rental housing units were constructed
before the establishment of the current housing policy and that the main criteria for the provision
of the dwelling units was to offer bed spaces to the African bachelor workers, it is worth noting
that the planners did not take into consideration future population growth and community
diversity (Shihembesta, et al 1989). The level of dissatisfaction could thus be argued from the
viewpoint of the dwelling units inadequately serving the current residents’ population size
coupled by the diversity of the community who originate from different ethnic and cultural
backgrounds.

While the structural attributes are a source of dissatisfaction for the residents there are
neighbourhood attributes that could be considered to be source of satisfaction for the current
dwellers. This is because the old public housing estates, which were planned on the
neighbourhood unit concept were provided with vital facilities and social amenities such as
schools, health facilities which cater for the social and economic needs of the residents. The old
public rental housing estates in Eastlands, for instance, have substantial amounts of open spaces, which residents have used to extend themselves and accommodate spaces for growing households and for sub-letting. The open spaces are further utilized for urban agriculture practices which satisfy residents’ supply of food at individual and household levels. The green open spaces further play a vital role in boosting households’ livelihoods since they have been used to accommodate informal shops. Informal economic activities have also been set up along the primary arterials, secondary feeder roads and tertiary pedestrian paths.

Whereas the extensions of buildings on open spaces are a positive attribute that satisfy the residents’ social and economic needs they are also a point of dissatisfaction from the perspective of the accruing social environment. To illustrate, a deteriorating social environment may be considered to be attributable to the insecurity and social maladjustments resulting to an environment whose quality can only be described as undesirable and substandard (Mwaura, 2002). This is a common phenomenon in most, if not all, public rental housing estates especially because of the extended building structures and informal shops on access routes that create conducive environment for crime scenes and occasional mugging by desperate residents. It can therefore be assumed, that the ensuing crime and disorder as well as maladjustments affect residents’ perceptions of safety, which would likely have an impact on satisfaction with the neighbourhood.

The locational context of the estate could be considered to be one that is attributable to a high level of residential satisfaction among the residents. This is because it is in very close proximity to the Central Business District and the Industrial Area which provides them with ample livelihood and employment opportunities (Shihembesta, et al 1989). The estate is also bordered by the Nairobi River which may also be a positive influence to the residential satisfaction mainly because of the aesthetic value it brings to the area. In contrast, the close proximity to the river presents a level of dissatisfaction especially because of the nature of the river as it polluted and emits an awful odour which can be very uncomfortable for the residents (Shihembesta, et al 1989). A major point of concern is that the estate has also been earmarked by the County Government of Nairobi for redevelopment which will negatively impact on the resident as they will be forced to vacate and look for other areas, which may prove to be quite tedious.
The Nairobi City County (NCC), who is the main landowner in Eastlands, is mandated with the constant general maintenance of the entire neighbourhoods inclusive of Bahati (Mwaura, 2002). Over the years the institution has been bedeviled with numerous problems leading to inadequate, inefficient and ineffective capacity to manage the housing units (Mwaura, 2002). The current situation indicates a debilitating residential environment with dilapidated physical structures coupled by a restrictive framework of maintenance (Mwaura, 2002). The lack of security of tenure for the tenants effectively denies them the basic housing and property-ownership right and regular maintenance of the living environments (Mwaura, 2002). It is reasonable to believe that housing satisfaction might be expected to rise with the provision of land tenure so as to allow the right to property-ownership. With this in mind, it can therefore be concluded that homeowners are more likely to maintain and improve their properties at a higher rate thus the condition and overall appearance of their houses which reflects their social status and general residential neighbourhood satisfaction.

1.2 Purpose of the Study
The main purpose of this study is to assess residential neighbourhood satisfaction in old low income public rental housing with respect to dwelling units, neighbourhood support services and public facilities as well as the social environment. A subsidiary purpose of the study is to propose suitable planning interventions as potential ways of improving the housing situation and residential neighbourhood satisfaction of dwellers. The study employs the case study method to assess residential neighbourhood satisfaction in Bahati Estate, Eastlands, Nairobi. While studies on user needs and urban renewal frameworks have been carried out in Eastlands there has been inadequate research on residential neighbourhood satisfaction in the old public rental housing estates in Eastlands, Nairobi. By using the case study of Bahati Estate this study explores the potential of filling a gap in knowledge on residential neighbourhood satisfaction in general; and particularly examines the current level of residential neighbourhood satisfaction as perceived by the dwellers. The study further explores potential ways of improving the residential neighbourhood from the perspective of the dwellers.
1.2.1 Research Questions
This study raises a number of questions that will be addressed throughout the research, the main ones being:

a) What are the levels of satisfaction as perceived by the residents with respect to the dwelling units, neighbourhood support services and public facilities as well as the social environment?

b) What are the determining factors that can enhance residential neighbourhood satisfaction levels of the residents?

1.2.2 Objectives of the Study
The main objective of this research is to assess residential neighbourhood satisfaction with respect to dwelling units, neighbourhood support services and public facilities as well as the social environment in Bahati Estate, Nairobi. The specific objectives of the research are:

1) To understand the factors to consider in residential neighbourhood satisfaction

2) To examine the prevailing housing situation in Bahati Estate

3) To examine the current level of residential neighbourhood satisfaction as perceived by the dwellers in Bahati Estate

4) To assess the factors that can enhance the level of residential neighbourhood satisfaction for the dwellers in Bahati Estate

5) To propose suitable planning interventions as potential ways of improving the housing situation and residential neighbourhood satisfaction of dwellers in Bahati Estate

1.3 Justification and Significance of the Study
Residential satisfaction has been a major and popular research topic. Studies on residential satisfaction serve various vital roles, including the assessment of residents’ present housing conditions, needs and preferences (Kaitilla, 1993; Salleh, 2008) and their quality of life (Caldieron, 2011; Galster & Hesser, 1981; Lee & Park, 2010); the level of success or failure of housing projects (Liu, 2003; Mohit & Nazyddah, 2011) and project quality (Lara & Bekker, 2012). It also helps in improving our understanding of housing adjustment and mobility behaviors of residents (Fang, 2006; Lu, 1998).
It can therefore be inferred that even though those who conduct research on residential satisfaction have different rationales and objectives, studies on residential satisfaction promote better understanding of the key sources of satisfaction or dissatisfaction among residents, factors that influence their satisfaction levels and how they are most likely to react in the event that they felt dissatisfied with their housing conditions. According to Fang (2006), this information is important in informing housing policy and planning interventions. It acts as a guide to policy makers to monitor the implementation of housing policies and possibly make the necessary improvements. It is in this respect, that this study is designed to illustrate some of the persistent housing problems of the old public rental housing estates and possibly give insights towards suitable planning interventions as potential ways of improving the housing situation and residential neighbourhood satisfaction of dwellers in Bahati Estate as well as inform and provide guidance to the formulation of future housing policies and public rental housing schemes for low-income groups in Kenya.

1.4 Assumptions and Limitations of the Study
One of the limitations of this study is to correlate the residents’ socio-economic attributes with the levels of satisfaction of the dwelling units’ conditions, the neighbourhood facilities and services and their social environment. An assumption made by this research is therefore that the residents’ socio-economic attributes and housing characteristics have a significant influence on the levels of satisfaction with their housing conditions, neighbourhood facilities and services and their social environment.

Another limitation that this study is likely to encounter is to cover the entire scope of perceptions of residential neighbourhood satisfaction from the perspective of all the dwellers of Bahati Estate. An assumption of the study is thus that the sample size identified through scientific methods will capture the broad perceptions of the dwellers of Bahati Estate with respect to their satisfaction of the dwelling units, the neighbourhood facilities and services and the social environment. The findings of the research will thus be validated and generalized and will particularly be considered to be representative of all the views of the residents of Bahati Estate and for low-income urban residents in general.
1.5 Definition of Key Terms and Concepts

Residential Neighbourhood Satisfaction is defined as the emotional response to a person’s dwelling; the positive or negative feeling that the occupants have for where they reside. Residential satisfaction has been used as a measure to examine the success of housing development projects. Resident satisfaction has been in use since the early 1960s as the basis for optimizing the architectural design of large housing developments, where feedback was collected from residents on housing projects with regard to resident’s views on the physical features of proposed housing developments and then feeding those views back into the design process (Francescato et al 1979).

Housing generally refers to the social problem of ensuring that members of society have a home to live in, whether this is a house, or some other kind of dwelling, lodging, or shelter (www.dictionary.com).

Neighbourhood unit is an integrated, and planned urban area related to the larger community of which it is a part, and it consists of residential districts, a school or schools, shopping facilities, religious buildings, open spaces, and perhaps a degree of service industry (Whittick, A, 1974).

Residential neighbourhood is a homogeneous urban or suburban area of predominantly residential population property, which has grown up, or more usually has been created in order to provide ease of access to essential facilities that provide a balanced and identifiable community (Abbott, 1987).

Urban Renewal is the physical change, or change in the use of intensity of use of land and buildings, that is the inevitable outcome of the action of economic and social forces upon urban areas (Couch, 1990). However, Gibson and Langstaff (1982) consider urban renewal to be the redevelopment or rehabilitation of the older parts of urban centres predominantly incorporating the improvement of housing environmental conditions and for the poor, their social services and infrastructure needs including economic regeneration and employment provision through State and local authority intervention, increasingly with the participation of residents.

Stakeholders, in an urban residential context, are seen largely as all the pro-active participants constituting the overall institutional framework of an urban residential area who have stakes in the management and planning of urban residential development. They include a network of
policy makers, technical experts and professionals at the national (arms of the central government, parastatal organizations) and local governments, including others drawn from local and external support agencies (professional, research and donor institutions), increasingly with the involvement of the private sector, civil society and neighbourhood organizations (religious-based organizations, community-based organizations and NGOs), community leaders and representatives and households (UNCHS, 2000).

**Sustainable urban development:** the maximization of economic efficiency in the use of development resources including goods and services provided by the natural environment, while maintaining natural resources stock at or above present level. It is also the maximization of social equity in the distribution of development benefits and cost with particular emphasis on the needs of the low-income groups and avoidance of unnecessary foreclosure of future development options (Farr, 2008).

**Community participation** is the voluntary involvement of people, who are already on site, in making and implementing all decisions directly affecting their lives; and the activities undertaken by low-income households, with or without outside assistance, to improve their living conditions UNCHS (1991). In the context of low-income residential neighbourhoods, it can be defined as the voluntary and democratic involvement of beneficiaries, in contributing to the execution of a project, in sharing the benefits derived there from and in making decisions with respect to setting goals, formulating the project and preparing and implementing the plans (UNCHS, 1985).
1.6 Research Setting and Methodology
This study adopts a qualitative methodological approach in assessing residential neighbourhood satisfaction in a low-income environment. The study employs the case study method to examine residential neighbourhood satisfaction in Bahati Estate, Nairobi. The sampling procedure, the needs and sources of data and the methods of data collection are discussed, next.

1.6.1 Choice of Study Area
Bahati estate is centrally located within the County of Nairobi. It is situated about 2.5 kilometres east of the main Central Business District and is approximately 0.9 kilometres north of the main Industrial Area which is close proximate walking distance for most residents in the active working age groups. It is part of the eastern division of Nairobi. Bahati is bordered on the western side by Shauri Moyo Estate, southern side by Makongeni and Mbotela Estates and eastern part by Uhuru Estate, most of which are public rental housing estates.

In order to understand residential neighbourhood satisfaction level within public rental housing estates, Bahati estate was strategically chosen as it is one of the inner city neighborhoods identified for redevelopment by the County Government of Nairobi to cater for the growing demand for housing for low income urban residents. Having been built at a different time to cater for different users as identified by the colonial government this residential environment is now inadequate for the current population. The County Government of Nairobi is equally dissatisfied with the neighbourhood and there are other rationalities driving the government to demolish the old public rental housing estates. However, the residential neighbourhoods are still serving certain useful functions to the current dwellers who may be having different perceptions from that of the government. It was therefore selected in order to identify the range of residents’ responses to both positive and negative aspects of their residential environment so as to determine their satisfaction levels.

The target population of this research is all the residents and institutions that have stakes in the low income residential neighbourhood of Bahati. In identifying their roles and responsibilities the research will draw random samples from the accessible population from the detailed study area. The units of observation include; households, housing units, community facilities, neighbourhood and support infrastructure and their social environment.
In order to collect data to help determine the residential neighbourhood satisfaction in public housing, the socio-economic characteristics of the residents were investigated for an in-depth study. These parameters included age, gender, education levels, and incomes e.t.c. In addition the investigation included attributes such as behaviour patterns of the residents, their ability to participate in housing provision processes, the use of indoor/outdoor spaces, needs as far as communal facilities and utilities are concerned, house typology and standards and the building materials. Additionally, the study intends to establish appropriate distances to public facilities in the neighbourhood as determined by the residents themselves. The units of observation within the institutional framework comprise of households, the chief and the community elders and leaders.

1.6.2 Data Needs and Sources
The main secondary and primary data needed for the research project was guided by the research objectives. The first research objective was to understand the factors to consider in residential neighbourhood satisfaction. In order to understand residential neighbourhood satisfaction, an in-depth desk research was carried out so as to acquire secondary data to gain full comprehension on the concept. The data includes, the definitional and conceptual issues, the determinants of residential satisfaction and the residents’ needs in public rental housing. The source of this desk research was mainly from literature review derived from journal articles on residential neighbourhood satisfaction and from previous research and government documents on public rental housing in Nairobi, Kenya. Secondary data was availed through relevant pertinent literature on residential neighbourhood satisfaction in order to offer retrospective information on the topic. This data type was obtained through literature review of existing publications relevant to the topic of residential neighbourhood satisfaction. This aided in the understanding of residential neighbourhood satisfaction and established what has been previously uncovered by other researchers on the topic or in the same study area. The secondary data on residential neighbourhood satisfaction and public rental housing was sourced from journals, internet sources, government publications, unpublished theses, articles, maps and other sources. The theoretical perspectives on residential neighbourhood satisfaction were relevant in prying into
the causal problems on the various aspects of housing that made it justifiable for either satisfaction or dissatisfaction levels by the residents.

The second research objective was to examine the prevailing housing situation in Bahati Estate. The data needs include the historical background of the estate, the changing socio-economic, tenancy and demographic trends of the residents, the housing typologies and building materials, the neighborhood and its support infrastructure, conditions of house units, neighbourhood and its support infrastructure, resident community as well as occupancy nature and rate. Secondary data was obtained by reviewing previous research and government documents on Bahati Estate while primary data was collected by interviewing the community leaders as well as detailed Focus Group Discussions and administering household questionnaires to the residents. Historical documentation on Nairobi and specifically that of the residential component is useful in providing background information on the origins of Eastlands. The changes that have taken place on the time scale were important in situating the housing estates within the historical context of when they were developed, the developers' target population and the needs at that time. The conditions of the built and unbuilt structures of the dwelling units, neighbourhood facilities and services and the social environment were examined through a physical survey and an observation checklist was used to guide this process.

The third objective was to examine the current level of residential neighbourhood satisfaction as perceived by the dwellers in Bahati Estate. The data needs were concerned with the adequacy and condition of housing versus the residents as well as the condition and accessibility of the infrastructural facilities within the estate and how it related to either satisfaction or dissatisfaction. The primary data required included finding out the number of people per household, the number of households per unit; characteristics of the residents: age, place of work, education level, reason for staying in Bahati Estate and efficiency of land use. Against those attributes, the residents were expected to describe their satisfaction/dissatisfaction levels. The main source of this primary data was from field socio-economic surveys, mainly by observation and administering household questionnaires. The households helped to unveil their interaction with the residential neighbourhood and the conditions within the estate including their reactions to the dilapidated state of the same. Primary data was collected from the study area in
order to provide empirical evidence of the existing status and the immediate problems, felt needs and satisfaction levels as perceived by the dwellers. The aspects to be examined included the existing physical and environmental situation, the housing and community facilities, the infrastructure services, the social, the cultural, the political and the socio-economic situation of the local community. An examination of the institutional framework of the internal and external environment of the study area was useful in identifying the levels of residential neighbourhood satisfaction of all the key stakeholders that have potential stakes in Bahati Estate. This included the households, the community elders and leaders, the neighbourhood and civil society groups and other external support agencies that have potential stakes in the residential neighbourhood.

The fourth research objective was to assess the factors that can enhance the level of residential neighbourhood satisfaction for the dwellers in Bahati Estate. For a better understanding of factors that enhanced the level of residential neighbourhood satisfaction, an in-depth desk research was carried out so as to acquire pertinent secondary data. In order to gain a fuller comprehension primary data complemented the information as the residents were expected to give their perceptions on how the dwelling units, neighbourhood facilities and services as well as the social environment may be improved.

Lastly, the fifth research objective was to propose suitable planning interventions as potential ways of improving the housing situation and residential neighbourhood satisfaction of dwellers in Bahati Estate. The synthesis of the secondary and primary data in the above objectives aided in the formulation of potential ways of improving the housing situation and residential neighbourhood satisfaction of dwellers in Bahati Estate.

1.6.3 Data Collection Methods
The study took a qualitative approach in the collection of primary and secondary data that were necessary in answering the main research questions and in achieving the objectives of the study. Secondary data collection included a literature review in order to build on what has already been done by others on residential neighbourhood satisfaction and in the area of study of Bahati Estate and Eastlands in general. The study relied on documentary data on Nairobi from various sources. The main source of information was the Nairobi City County and the National Housing
Corporation. The main techniques employed in collecting primary data included administering household questionnaires, carrying out interviews, conducting focus group discussions and conducting a physical survey through observations of daily activity patterns and using mapping, photography and sketches.

**Household Questionnaires**
This consisted of a series of questions and other prompts for the purpose of gathering information from the household respondents. The questionnaires were presented to the respondents and answered in written form. Structured questions were used in preparing closed and open-ended questions for the survey. To avoid bias resulting from questionnaire design, the questions were constructed in such a way that they were direct, simple and familiar to the respondents. The level of satisfaction of housing was measured on a five-point Likert scale ranging from “1” for very unsatisfied, “2” for unsatisfied, “3” for neutral, “4” for satisfied and “5” for very satisfied. Open-ended and unstructured questions were however be used to probe for more qualitative data for in-depth analysis of the residential neighbourhood satisfaction from the perspective of the residents.

After designing and before administering the questionnaires, a pilot test was carried out with a small number of respondents. This was done in order to reveal possible problems that may not have been anticipated during the development of the field survey tools. The results from the pilot study were then incorporated in the final questionnaire to improve it.

**Interview Schedules and Focus Group Discussions**
Interview schedules were prepared for the key informants and stakeholders involved in the daily operations of the estate. A set of questions on residential neighbourhood satisfaction or dissatisfaction were asked by the interviewer to elicit information from the respondents. These included the local (community) leaders and the policy makers which in this case were the City County of Nairobi. A group of the residents comprised of the community leaders and residents from the respective houses will be assembled at one of the community leader’s residence. An informative discussion was intended to evolve on issues related to the existing conditions of the facilities in the estate, the maintenance in place as well as future plans for elevating the estate.
Observation, Mapping, Photography and Sketching
This involved the systematic selection, observation and recording of the characteristics that can be depicted from the site. A checklist was used as the tool to aid in the observation in order to complement the other field survey instruments. Maps were employed to establish the spatial distribution of land uses in Bahati estate. Photographs and sketches of the area were taken to facilitate the analysis of the physical layout of the houses and other structures within the neighborhood.

1.6.4 Sampling Procedure
For this study, cluster sampling was employed since the area is designed on the neighbourhood unit concept. Moreover, due to financial resources, time constraints and the wide geographical area it was found prudent to further select the sample size of the accessible population through cluster sampling. The sample size was derived from the spatial unit represented by Bahati residential neighborhood. The sample frame constituted all the physical, environmental, social, cultural, economic and institutional framework aspects that characterize public rental residential neighbourhood. This was observed from the study area in order to come up with the satisfaction levels of the residents.

26 clusters numbered A to Z were used as a representative of the entire study area. The selection of households to be interviewed was done through simple random sampling, a technique which gives an equal chance to each household to be included in the sample (Mugenda, 1999). In each of the clusters two dwelling units was identified through simple random sampling. For this study a sample size representative of 2 dwelling units per cluster was used based on the assumption that using a small range of sample size would give the same results and take less time and resources to carry out the field work as the residents were tenants living in the same type of housing unit and paying the same amount of rent. It was thus more likely they would have the same perception on the levels of residential neighbourhood satisfaction within the estate. A total number of 52 households was interviewed.
1.6.5 Techniques of Data Analysis and Presentation

Data analysis entailed the use of appropriate methods to synthesize data to answer the research questions. This is therefore the aspect that seeks to make meaning of the data collected. At the end of the fieldwork all data collected from the structured questionnaires was entered, coded, cleaned and analyzed using the Statistical Package for Social Science (SPSS). The analysis of both the qualitative and quantitative data collected was presented using simple frequency distribution and analytical tables. The analysis of the qualitative data collected was presented by the use of maps, plans, sketches, illustrations and photographs.

Sketches and photographs were equally used to illustrate data, which had been discussed in descriptive analysis. The in-depth interviews, reviews of policies and regulations dealing with residential neighbourhood satisfaction in public rental estate especially in Bahati was analyzed and organized as well. The overall information and findings were finally interpreted and synthesized to facilitate the writing and composition of this research project. All the gathered
information was synthesized and presented using simple tables, sketches, pie charts, bar graphs, maps and photographs into an integrated planning research project.

1.7 Structure and Organization of the Report
The scope of this study was limited to the research on the urban spatial unit defined by Eastlands whose selection through random sampling did not therefore not require any attempt at making an overall evaluation of all low-income residential neighbourhoods. They were considered to portray similar characteristics and the results shall thus allow for generalizations. The study employed the case study method to assess residential neighbourhood satisfaction in Bahati Estate, Eastlands, Nairobi.

The study was conducted in Bahati Estate located between Heshima Road off Jogoo Road, First Avenue Road and Nairobi River. The study assessed residential neighbourhood satisfaction in old low income public rental housing with respect to dwelling units, neighbourhood support services and public facilities as well as the social environment with a subsidiary purpose of the study being to propose suitable planning interventions as potential ways of improving the housing situation and residential neighbourhood satisfaction of dwellers. The study reviewed related and comparative case studies from other cities and countries in the form of best practices. It collected information on all the stated aspects both at the household and community level. It further covered administrative and policy aspects with respect to the respective institutions and stakeholders who are the custodians of the estate.

This study is organized and structured in six chapters. Chapter 1 deals with the introduction of the study by offering retrospective information and global perspectives on Residential Neighbourhood Satisfaction. In stating the research problem, it highlights the urban problems in the low-income residential neighbourhoods especially the public housing estates in Eastlands and illuminates various arguments and assumptions with respect to either satisfaction or dissatisfaction levels. The second part of the chapter outlines the research methodology applied to guide the study, indicating the definition of the study area, the units of observation, the data needs and their sources, the methods of data collection and the techniques of data analysis and eventual presentation.
Chapter 2 offers preliminary information on residential neighbourhood satisfaction, definitional and conceptual issues, determinants of residential neighbourhood satisfaction and potential ways of improving residential neighbourhood satisfaction in public rental housing by focusing on the concepts of an ideal residential neighbourhood and housing policy initiatives and incentives for low-income urban residents. Finally, a conceptual framework was developed which guided the researcher on the conceptualization of the overall study.

Chapter 3 commences by offering a situational analysis of Bahati Estate. It first gives a historical evolution of the estate. It presents the land use patterns, locational setting as well as the administrative aspects within the estate. It further describes the nature of the problem (changes that have occurred over time and the current status) in Bahati Estate with respect to dwelling units, neighbourhood support services and public facilities as well as the social environment.

Chapter 4 investigates the third research objective on residents’ perception of residential neighbourhood satisfaction in Bahati estate. The detailed in-depth analysis of the primary data aims to outline the residents’ perceptions of residential neighbourhood satisfaction based on the determinants such as the structural attributes of the housing units, the neighbourhood community facilities and infrastructure services as well as the social environment.

Chapter 5 outlines the overall framework for improving the residential neighbourhood satisfaction in low income residential environments in Eastlands, Nairobi. The first section deals with the responses of the residents on how to Enhance Residential Neighbourhood Satisfaction in Bahati Estate and more so in Eastlands, Nairobi. The remainder section envisions the future of Eastlands by illuminating on the various approaches that are plausible scenarios applicable in carrying out urban renewal as a possible instrument for enhancing residential neighbourhood satisfaction. Finally, chapter 6 makes a synthesis of the findings, draws recommendations and conclusions and outlines the areas for further research.
1.8 Conclusion
This section discussed the focus of the research: the examination of residential satisfaction and the various determinants (the structural, locational, neighbourhood and social environment attributes of housing) in order to determine the extent of their relationship. The objectives and methodology that informed the study are also addressed discussing the approaches used to understand community and how their perceptions can be captured.

Before understanding residential satisfaction and its relationship to structural, locational, neighbourhood and social environment attributes of housing, an understanding of community needs to be determined. Therefore, the next chapter on literature review provides background information on community research on residential satisfaction and highlights briefly the ideal residential neighbourhood and examines the potential ways of improving the existing situation.
2 CHAPTER TWO: RESIDENTIAL NEIGHBOURHOOD SATISFACTION

2.1 Definitional and Conceptual Issues
Research on housing has gone beyond the study of the physical, structural and functional features of one’s territorial core called ‘house’ (Hayward, 1977; Lawrence, 1987). Increasing interest is now shown towards the study of how people think of their housing and how it affects their lives. Therefore, measuring the housing quality has become an important tool and local governments in, for instance the UK and USA, conduct regular tenant satisfaction surveys to ensure that households are satisfied with the provided housing and its services (Varady & Carrozza, 2000: 799).

2.1.1 The Concept of Residential Satisfaction
Residential satisfaction is a complex, multidimensional concept that is conceptualized in many different ways but is generally analyzed by assessing satisfaction with dwelling design (i.e. internal and exterior design features, age, size, structure, functionality, aesthetic feelings (Lu 1999, Phillips et al. 2005), satisfaction with neighbourhood (i.e. services, facilities, attractiveness, green space, safety) (Sirgy and Cornwell 2002, Lovejoy et al. 2010), and satisfaction with neighbours (i.e. social interactions) (Amerigo and Aragones 1997, Adriaanse 2007).

The theoretical underpinnings on residential satisfaction are based upon the idea that residential satisfaction measures the difference between households’ actual and desired/aspired housing and neighbourhood situations (Galster, 1987). Households usually make their judgments about residential conditions based on their needs and aspirations. Satisfaction with households’ housing conditions indicates the absence of any complaints and a high degree of congruence between actual and desired situations. On the other hand, incongruence between housing needs and aspirations may lead to dissatisfaction. Rossi (1955) postulates that changing housing needs and aspirations occur as households progress through their life cycle stages leading to residential dissatisfaction at some stage and they respond to this dissatisfaction through out-migration. Hence, migration is viewed as a process of adjustment with the essential purpose of increasing one’s place utility or level of residential satisfaction (Wolpert, 1966).
Morris and Winter (1975, 1978) introduced the idea of “housing deficit” and conceptualized housing satisfaction as a dynamic process. In their housing adjustment model of residential mobility, they theorized that households judge their housing conditions according to two types of norms, personal or cultural which may not coincide. An incongruity between the actual housing satisfaction and housing norms results in a housing deficit, which in turn gives rise to residential dissatisfaction, leading to some form of housing adjustments which may be either in situ such as revising their housing needs and aspirations in order to reconcile the incongruity, or improve their housing conditions through remodeling, or else they may move to another place and bring their housing into conformity with their aspirations or needs. However, both migration and in situ adjustments require that the households should have enough information about alternative adaptation opportunities and financial resources.

The concept of residential satisfaction comes from the idea that satisfaction levels reflect the gap between one’s reality and expectations (Campbell, Converse, & Rodgers, 1976). Such conceptualization of satisfaction essentially treats satisfaction as a function of how much (and how good) one can acquire and how close his or her perceived situation is to his or her aspiried-to level. This definition helps explain both the existence of a strong correlation between one’s material wellbeing and his or her perceived feelings and the lack of absolute correspondence between the two. This concept has been introduced into residential studies to measure the degree to which residential environment can meet the needs of its inhabitants and further the attainment of their goals (Francescato, 2002; Galster & Hesser, 1981; Giles-Corti & Donovan, 2002).

Residential satisfaction is the perception of the gap between residents’ residential reality and expectation, and defined as a function of how much one acquires to one's level of aspiration (Campbell, Converse, & Rodgers, 1976). To assess and measure the residential satisfaction involves several influencing factors: objective residential environment, subjective residential environment, residents' characteristics and housing allocation institution (Yang, 2008). The next section seeks to outline the working definition of residential neighbourhood satisfaction for this study.
2.1.2 Definition of Residential Neighbourhood Satisfaction

Residential neighbourhood satisfaction is defined as the feeling of contentment when one has or achieves what one needs or desires in a house (Galster, 1987). It is an important indicator that planners, architects, developers, and policymakers use in a number of ways (Galster, 1987). It has been used as a key predictor of an individual’s perceptions of general “quality of life”, an indicator of incipient residential mobility and hence has altered housing demands and affected neighbourhood change, an impromptu evaluative measure for judging the success of developments constructed by private and public sectors, and an assessment tool of residents’ perceptions of inadequacies in their current housing environment in order to improve the status quo (Djebuarni & Al-Abed, 2000).

Francescato et al (1979) defined residential neighbourhood satisfaction as the emotional response to a person’s dwelling; the positive or negative feeling that the occupants have for where they reside. Residential neighbourhood satisfaction has been used as a measure to examine the success housing development projects. Resident neighbourhood satisfaction has been in use since the early 1960s as the basis for optimizing the architectural design of large housing developments, where feedback was collected from residents on housing projects with regard to resident’s views on the physical features of proposed housing developments and then feeding those views back into the design process. The method of choice for assessing residential neighbourhood satisfaction today uses structured surveys followed by statistical correlation of variables (Furbey & Goodchild, 1986). From the 1980s to present day, residential neighbourhood satisfaction has been a key tool to assess and improve the performance of housing developers, and key government policies related to housing (Amerigo & Aragones, 1997).

Studies of residential neighbourhood satisfaction are basically of two types; those that consider residential neighbourhood satisfaction as a predictor of behaviour (intention to stay/move from existing housing), or residential neighbourhood satisfaction as a criterion of housing quality (Weidemann and Anderson 1985). Studies based on residential neighbourhood satisfaction as a predictor of behaviour assumes that satisfaction with existing housing determines behaviour of the resident in terms of making changes to the housing unit or the decision to move to another housing unit. The basis of this assumption is that differences in the existing housing and the actual housing needs and preferences of the dwellers will result in either making changes to
existing housing or move to a housing unit that meets their actual housing needs and preferences. Studies that employ residential neighbourhood satisfaction as a measure of housing quality use housing unit features, services and facilities provided in housing area and the housing environment to determine the degree to which a person is satisfied with the existing housing unit (Amerigo & Aragones, 1990).

Existing literature suggests that residential neighbourhood satisfaction is a function of a whole series of factors related to the occupant’s dwelling, services within the dwelling area, relationship with neighbours and the location of the dwelling unit. For instance, Morris (1978) found that satisfaction depends on a whole system of beliefs and opinions that the occupant entertains in respect to the housing unit and which are not connected with its physical characteristics. Other researchers such as Galster (1987) measured housing well-being using a composite sum of satisfaction with dwelling unit features, for instance the number of rooms per family and the possession of a private bathroom and kitchen. On the other hand Clarke (2008) identified dwelling types, property size, internal and outdoor space, kitchens and bathrooms, neighbourhood parking and external appearance as factors important to today’s households. Varady and Carrozza (2000) stress that housing satisfaction is related to satisfaction with dwelling unit (i.e. physical aspects and personal preferences), satisfaction with services provided, and satisfaction with the neighbourhood and area, which also covers the location specific aspects. This is the working definition that this research adopts for the assessment of residential neighbourhood satisfaction in Bahati Estate, Eastlands, Nairobi. The broader determinants are discussed, next.

2.2 Determinants of Residential Neighbourhood Satisfaction
Most empirical studies on residential satisfaction have used either one or a combination of the theoretical frameworks that have been stated above. A host of variables representing housing and neighbourhood characteristics, individuals’ socio-demographic attributes as well as their perceptions of housing and neighbourhood conditions have been analyzed in previous studies (Lu, 1999). However, the effects of these variables as determinants of residential satisfaction or dissatisfaction tend to vary by housing types, tenure, countries and cultures. Further studies are required until a general theory of residential neighbourhood satisfaction emerges.
Based on research carried out in Brazil by Pina & Kowaltowski et al (2005), the main factors related to housing satisfaction included communal services such as roads, sewer system, and basic utilities within the housing area. He and Zhao (2006) studied the real estate market in Beijing and found that housing demand is highly influenced by proximity to transportation and public facilities rather than merely based on physical factors. Physical aspects of the housing area such as common areas, ventilation and lighting, and orientation of windows within the housing areas also contribute towards overall housing satisfaction. Toscano and Amestoy (2008), in their study examined housing satisfaction on the basis of individual and household attributes, housing characteristics, and social interactions with one's residential neighbourhood. Similarly Chin-Chun (1981) used the same factors to study housing satisfaction in Taichung, Taiwan; satisfaction with physical space, location, neighbours, and the environment.

Jiboye (2009) studied the residential satisfaction with public housing in Lagos, Nigeria, by assessing the levels of residential satisfaction of public housing tenants in Lagos using three major housing components; dwelling unit features, management of housing units and the housing area environment, and found that the level of residential satisfaction varies and is dependent on the physical features of the dwelling unit, housing area management and environmental features, with high levels of satisfaction for physical features and housing area environment but lower satisfaction level for the management of the housing unit and areas. Russell (2008) found that subsidized renters in the US report higher satisfaction with their housing than similarly situated non-subsidized renters.

The preceding review of existing literature and studies on residential satisfaction highlighted that physical characteristics of housing, the neighbourhood environment and the public facilities provided determine the level of residential satisfaction, however, these may vary by the type of housing, the locale, the community, the cultural backgrounds as well as the nationality. This suggests that studies to determine the residential satisfaction of housing types is specific to the housing area, type of housing provided, community, housing policies and the country itself.
2.2.1 Structural attributes and Quality of Housing Units

The structural attributes are a significant factor affecting residential neighbourhood satisfaction. These attributes include objective physical characteristics of housing such as kitchen space, laundry and washing areas, size of living area and dining area, morphological configuration of residence hall, number and levels of sockets, number of bedrooms and bathrooms, and other aspects of housing such as housing quality, privacy (the social densities), housing services provided by developers such as garbage disposal and safety, and brightness and ventilation of the house (Baum, Arthurson, & Rickson, 2010; Elsinga & Hoekstra, 2005; Hipp, 2010; Parkes et al., 2002).

Housing characteristics is the basic spatial scale of objective residential environment. Residents have high satisfaction with larger-sized and better forms housing. Chen, Zhang, and Yang (2013) analyzed Chinese residential survey data from Dalian and found that people are more satisfied with larger housing. Mohit, Ibrahim, and Rashid (2010) investigated inhabitants of public housing in Kuala Lumpur, Malaysia and found that housing features, especially housing unit size, correlate positively with residential neighbourhood satisfaction. Ukoha and Beamish (1996) observed that residents in Abuja, Nigeria are dissatisfied with types of housing structure, building features and housing condition. They investigated housing satisfaction amongst the residents of public housing in the Federal Capital Territory-Abuja, and found out that they were satisfied with the neighbourhood facilities but dissatisfied with the physical and spatial characteristics of buildings and the general management of the housing estates.

Although many agree that both residence and context are important for satisfaction, some researchers have compared the two, and asked whether the dwelling or neighborhood is a stronger predictor of people’s residential satisfaction especially for the elderly people. This has yielded mixed results. Lawton (1982) argued that the home has the strongest impact, although the neighbourhood is a major contributor which sometimes equals the home in importance. Additional support for this idea was obtained in a sample of aging people (60 and older) living in Hong-Kong, where residential satisfaction was determined more by the perceived interior environment than the perceived exterior one, even though both had significant impacts (Phillips et al., 2005). In the study of elders living in family housing in Spain (Rojo-Perez et al., 2001), researchers observed that the primary predictor of residential satisfaction was satisfaction with
home-related attributes (i.e. comfort, size, distribution and degree of light and insulation) and not neighborhood features, although those were important.

Studies in public housing units on users’ satisfaction showed that residents are dissatisfied with most of their accommodation (Kaitilla, 1993; Ukoha and Beamish, 1997). Kaitilla's (1993) study in particular reported the findings of an investigation of urban households' satisfaction with public housing in West Taraka, one of the low-income housing suburbs in the city of Lae. The results of the study suggested that the occupiers were significantly dissatisfied with their houses. Aspects of dissatisfaction referred to are; the size of houses, number of rooms and living/dining areas, lack of storage space, poorly laid out and badly designed kitchen, toilets and bathroom facilities. Residents expressed dissatisfaction with their overall housing situation; they were dissatisfied with structure types, building features, housing conditions, and housing management.

2.2.2 Satisfaction with Neighbourhood Facilities, Services and Social Amenities
The neighborhood conditions such as neighborhood upkeep, pollution, and crime are also found to be important for the assessment of households’ surroundings (Chapman & Lombard, 2006; Cook, 1988; Gibson, 2007; Hipp, 2010). Within this concept, several studies have been carried on residents' satisfaction with residential facilities. For instance in Nigeria, (Ilesanmi, 2010; Jiboye, 2009; Olatubara & Fatoye, 2007) investigation showed that the residents in public housing in Lagos (the former federal capital of Nigeria) were most satisfied with housing unit characteristics and least satisfied with the layout of the estates, access to public facilities and services. Jiboye (2009) also corroborated the finding by Ukoha and Beamish (1997) highlighted above by noting that the residents of public housing in Lagos were also dissatisfied with management of the housing estates.

Elsewhere in Malaysia, Mohit et al. (2010) also revealed that residents in newly constructed public low-cost housing in Kuala Lumpur were moderately satisfied with their housing conditions, but were most and least satisfied with housing unit support services. Another study in South Korea by Ha (2008) on satisfaction with social housing estate showed that the residents were satisfied with neighbourhood amenities (health clinics, stores, banks, post office, etc.) but
highly dissatisfied with parking facilities and landscape architecture. The findings of research of Fatoye and Odusami (2009) in Nigeria on the evaluation of housing performance based on occupiers’ satisfaction approach showed that the occupiers were most satisfied with criteria under design such as the number of rooms in their houses, the ceiling height, the location of different rooms, and nearness to religion (worship) location. They were least satisfied with the criteria under the subsystems of estate layout and site location, and access to local facilities and city-wide services such as nearness of house to fire-fighting stations. The study recommended an improvement in the provision and maintenance of housing essential facilities.

Further, Mohit et al. (2010) provided an assessment of residential satisfaction of newly designed public low-cost housing dwellers of Kuala Lumpur, Malaysia, with forty-five variables grouped into five components – dwelling unit features, dwelling unit support services, public facilities, social environment and neighbourhood facilities. Findings from the study indicated that residents were moderately satisfied with dwelling unit support services, followed by public and neighbourhood facilities than dwelling unit features and social environment, which have higher percentage of respondents with low level of satisfaction. Also, residential satisfaction index has high positive correlations with dwelling unit features, social environment, support services and public facilities, and low positive correlation with neighbourhood facilities and socio-economic attributes of the residents such as age, family size, working wives, previous residence are negatively correlated with residential satisfaction, whereas residents’ race, employment type, floor level and length of residency are positively correlated with residential satisfaction. The study by Ibem (2011) on the evaluation of public housing in Ogun State revealed that most of the residents perceived high levels of adequacy and dissatisfaction with the housing. However, majority of the residents were satisfied with life in the housing estates.

It is worth mentioning, that researchers (Chapman & Lombard, 2006; Cook, 1988; Gibson, 2007; Hipp, 2010) have established that the presence of semi–public places or civic places in neighborhoods mitigates the sense of loss of control over one’s environment and makes for higher satisfaction with social relations and for sense of community (Amerigo & Aragones, 1990).
2.2.3 Locational Attributes of Residential Neighbourhood

Significantly, location of housing is an essential factor contributing to housing satisfaction among households. Favorable locational attributes generally refer to accessibility to the central business district, local amenities such as shopping centers, schools and transportation centers (Gibson, 2007; Potter & Cantarero, 2006; Tan, 2011). Thus, housing development should strive to provide quality self-containing housing within a functional residential development in the location where households can find a place within the neighborhood to work and to fulfill recreational needs so as to respond to the satisfaction level of the residents.

For many, residential satisfaction is strongly related to location, public transport, services, and familiarity with area, social networks and cost of living. As people age, isolation becomes a growing problem and access and mobility become increasingly critical. Affordable and reliable transportation options are essential for older people. Public transport allows elderly to live independently, access medical and social services, contact society, friends and relatives and provides them with the feeling of belonging to the community. Therefore residential areas need good public transport for residential satisfaction for the older people. Good and accessible shopping centres provide older adults with a place to walk, to meet others and to stay active.

Heavy traffic and inadequate pedestrian infrastructure restrict older people of movements in the neighbourhood. The physical environment of the neighbourhood encourages walking for exercise and pleasures. Adequate public transport is essential in the large community and to be independent in one’s neighbourhood.

2.2.4 Attributes of the Social Environment

Additional research has emphasized the importance of neighborhood context in residential satisfaction (e.g., Bonaiuto et al., 1999). This would include amenities such as green spaces, environmental health or pollution, upkeep and cleanliness, pace of life, as well as the social milieu. Considerable research shows that social and physical contexts are related to older adults’ satisfaction with their immediate residence, supporting the view that satisfaction with the dwelling should not be separated from its broader neighborhood or community context (Altman,
Lawton, & Wohlwill, 1984; Carp & Christensen, 1986; Phillips, Siu, Yeh, & Cheng, 2005; Rojo-Perez et al., 2001).

In terms of the physical environment, we draw on research that considers multiple features of the physical environment, including urban design, architectural features, cleanliness, safety from traffic and crime, air quality and low pollution, as well as green areas, such as parks and natural areas (Apparicio, 2006; Bonaiuto, 2004). For example, in a large sample of elderly people (65-84 years old) living in family housing in Madrid, participants were concerned about exterior features of their residences, such as the conditions of the street, congestion in car-parking areas, road-works, and building location (Rojo-Perez et al., 2001). A sample of elderly U.S. citizens found that objective measures of housing and neighborhood characteristics such as safety, cleanliness, quiet, privacy, and proximity to services were closely related to residential satisfaction (Carp & Christensen, 1986).

A broad literature review suggested that neighborhood aesthetics such as well-maintained homes and good air quality were important bases for elders’ environmental and general satisfaction (Kahana, Lovegreen, Kahana, & Kahana, 2003). Neighborhood safety may be particularly salient to elders because of their increasing frailty.

Undeniably, Kahana et al.’s (2003) review suggested neighborhood safety was an important predictor of satisfaction for the elderly perhaps because of their greater vulnerability to crime and traffic dangers as well as their greater awareness of these dangers. Access to green areas such as parks and natural areas is often found to be related to elders’ residential satisfaction. Among elderly French women aging in place, residential satisfaction has been positively related to proximity to green areas (Arrif & Rioux, 2008; Rioux, 2007). Similarly, in Spanish samples, Rojo-Perez and colleagues found that access to urban parks and green areas was a predictor, albeit weak, of aging people’s residential satisfaction (Rojo-Perez, Fernandez- Mayoralas, & Pozo, 2000). Kahana et al.’s (2003) review also indicated greenery such as trees was an important basis of elders’ residential satisfaction.

Residential satisfaction is complex to measure and has many determinants to be researched. There is much research conducted about residential satisfaction and the factors and effects as
depicted above. In conclusion, studies in residential satisfaction must include both space and the users of the space. The planning must be creative and design elements lead to greater satisfaction. The aim should not be simply to make a physical product; the aim should be the suitableness of the product to human life.

### 2.3 Potential Ways of Improving Residential Neighbourhood Satisfaction

#### 2.3.1 The Concept of an Ideal Residential Neighbourhood

A good neighbourhood is one where people can easily satisfy daily needs whilst feeling safe as they do so. The most successful neighbourhoods are well connected to employment centres or places people spend their leisure time. They are places where people can live at any stage of their lives regardless of physical ability or social status. Successful neighbourhoods also tend to have a wide variety of things to do within them and have a strong connection to the area in which they sit be it historical, cultural or visual.

The following criteria are designed to promote thinking about how a housing development will lead to a successful neighbourhood.

![Development's Response to its Surrounding](image)

**Figure 2.1 Master Plan for increased density of Development in Sligo**

A master plan for increased density of development in a historic part of Sligo. Historic plot widths and shapes, traditional building lines and appropriate height limits are used to set parameters for new development which respect the surrounding area.

Source: Urban Design Manual, 2009
Any new development should improve on the existing situation, and at the same time be sensitive to its context. How well a site’s context is understood by the designers of a scheme of residential neighbourhoods will perhaps be the most important determinant of how successful the scheme will ultimately be. The development should be seen to have evolved naturally as part of its surroundings. Where there is increase in density; appropriate increases in density should respect the form of buildings and landscape around the site’s edges and the amenity enjoyed by neighbouring users. It is noteworthy to consider the form, architecture and landscaping and ensure that they have been informed by the development's place and time. The development should positively contribute to the character and identity of the neighbourhood and make appropriate responses to the nature of specific boundary conditions.

**Figure 2.2 Overshadowing effect avoided in new tall buildings**

This site section across the boundary of a new development shows how topography is utilized to achieve an increase in building height without significantly impacting on existing buildings. Overshadowing is avoided and privacy is protected.

Where there are existing buildings, newer ones should connect gracefully and if the massing is more intense, show respect for the existing by graduating the change in steps. A new development has to make the most positive contribution possible to its neighbourhood or landscape. The aim of those planning for, designing or building schemes should be to ensure that the development in some way improves on or enhances the existing situation. A scheme should
also be able to identify ways in which the development can add quality to the locality, whether through protection of site features, new amenity, economic confidence or civic pride.

**Figure 2.3 Killorglin; Provision of a new amenity space to enhance civic qualities**

This scheme provides a new amenity space which enhances the civic qualities of the town Killorglin, Co. Kerry, in which it is situated by setting buildings back to provide a new, contemporary civic space.

Source: Urban Design Manual, 2009

**An ideal residential environment to LIVE**

For a residential development to be considered inclusive, it should include provision for housing of different types, sizes and tenures. Providing this choice will enable people from different backgrounds to benefit from the opportunity afforded by the development, and will help to create a balanced, sustainable community. On larger developments, the overall mix should be selected to create a mixed neighbourhood that can support a variety of people through all stages of their lives. On smaller infill developments, the mix of housing should ensure that, taken with the existing homes, the overall mix in the neighbourhood is conducive to maintaining a healthy balanced community.
The housing scheme should be a benefit to the whole community. As well as ensuring all public areas are designed for inclusive access, a proportion of the dwellings should be designed so that they can be adapted to suit peoples’ changing access needs.

When a variety of housing is available, it provides affordable and attractive choices for all the people who make up a community, including families, empty nesters, single parent families, childless couples, seniors on fixed income, and one-person households of various ages. Housing choices allow residents to live in a community throughout their life, and let people of varying income levels choose to live near their work, favourite schools, and other amenities. Each Neighbourhood should be designed and managed to complement and enhance the performance of surrounding land uses, including adjacent neighbourhoods and the region as a whole.

Financial incentives and other policies should be established to help ensure that the design features of buildings, parcels and whole neighbourhoods supports regional targets for infrastructure loading and ecological carrying capacity. The deficiencies and scarcities in one neighbourhood are intentionally remedied during the design of neighboring sites. The pace and scale of new development is controlled to avoid dislocating existing businesses and services.

An ideal residential environment to WORK

It is important that an assessment of existing uses in the locality be carried out and consideration given to how those existing uses will be affected by the development; what new supporting uses and facilities may be required to support the new development and how these will be provided. Opportunities have to be taken to provide shops, facilities and services that complement those already available in the neighbourhood in order to boost the existing business environment and maybe provide employment opportunities especially to the residents.

Homes should be close to basic community services, places of employment, and amenities. The connectedness of street layouts and pathways will provide easy and safe access to all points within the neighbourhood. Public spaces will tend to be alive day and evening especially if SMEs are established within the area. This will not only activate the space but will also create
employment opportunities and boost individual and household incomes. It is worth noting that if the mix land use approach is established, will eventually contribute to a strong property tax base.

**An ideal residential environment for INVESTMENT**

A successful neighbourhood will be one that houses a wide range of people from differing social and income groups. In this way people are able to live in the same neighbourhood through all stages of their life, should they so choose.

Mixed communities can be created by providing a range of unit types and tenures. Mixed tenure developments should be ‘tenure blind’ meaning that affordable units should be physically indistinguishable from that built for sale or rent at market prices.

A neighbourhood with a good mix of unit types will feature both flats and houses of varying sizes. Both tenure mix and housing types should be underpinned by a good understanding of both the existing social mix in the neighbourhood and the sale ability of different types of housing provided.

**An ideal residential environment for RECREATION**

Successful neighbourhoods ought to be well connected to places, facilities and amenities that help to support a good quality of life. Such places should include high quality open space and landscapes, leisure opportunities, shops – both for convenience and comparing goods - schools, places of worship, health centres and places of employment.

When choosing which area to live in, most people will choose a neighbourhood that permits easy or close access to the places that they need or like to visit on a regular basis. So the quality and sustainability of a neighbourhood can be measured by both how well it is connected to important amenities, and how pleasant, convenient and safe those links are to use.

Uses such as health centres, nurseries and schools should be sited in locations that are accessible from all parts of the development – and surrounding areas - by safe, secure and pleasant walking routes.

A development that is well connected to a good range of facilities within walking distance may be able to demonstrate that there is no need for any non-residential uses within the development site. Conversely, a well-connected development may be able to attract people to facilities and
amenities on the site if it is located near areas that are currently poorly served by such supporting uses.

2.3.2 Improving the Objective Attributes of the Residential Environment
Planners and designers have thought of the neighborhood setting as a fixed, controllable, and image able physical area. This view was consistent with the concepts in American planning history. Ebenezer Howard (1898) based his design of the Garden City on the neighborhood units (or wards), which were relatively self-sufficient units that merged.

**Figure 2.4 Garden City Model on neighbourhood units**

While Howard’s idea focused in the suburbs, Clarence Perry (1929) attempted it in the city (Figure 2.4). His neighborhood unit was a self-contained residential area bounded by major streets, with shopping districts in periphery and community center and an elementary school located at the center of the neighborhood unit. In 1966, Clarence Stein altered Perry’s ideal concept in Radburn’s design (Figure 2.5).
It had an elementary school at the center and park spaces flowed through the neighborhood, but it was larger than Perry’s concept and introduced the residential street design with cul-de-sac to eliminate through traffic. The concepts of neighborhood as a basic land development unit was disused in the post-World War II era in the United States. At that time, the massive suburbs developed. Since 2000, New Urbanists (Congress for the New Urbanism, 2000) have called for traditional neighborhood development (TND) and transit-oriented development (TOD) models. They propose a neighborhood unit with a center and a balanced mix of activities; and they gave priority to the creation of public space.

The residential environment includes physical dimensions other than the neighborhood, such as the dwelling and the neighbors (Amerigo, 2002; Canter & Rees, 1982); and the community environment includes the social aspects as well as the physical ones (Marans & Rodgers, 1975). Because the present study centers on the physical characteristics of the neighborhood associated with overall neighbourhood satisfaction, this study examines “neighbourhood satisfaction.”
Research has pointed out the complex characteristics of neighborhood satisfaction (Amerigo & Aragones, 1997; Francescato, 2002; Marans & Rodgers, 1975; Marans & Spreckelmeyer, 1981; Weidemann & Anderson, 1985). It has identified aesthetics, or pleasingness to the eye, as one of the most important factors in neighborhood satisfaction (Francescato et al., 1979; Kaplan, 1985, 2001; Kearney, 2006; Langdon, 1988, 1997; Sirgy & Cornwell, 2002). Social and personal characteristics such as neighborhood cohesion, or network, were other factors associated with neighborhood satisfaction (Alvi et al., 2001; Brower, 2003; B. Brown & Perkins, 2001; Bruin & Cook, 1997; Chapman & Lombard, 2006; Galster, 1987; Hur & Morrow-Jones, 2008; Lipsetz, 2001; Morrow Jones, et al., 2005; Okun, 1993; Robinson et al., 2003; St. John & Clark, 1984; Talen & Shah, 2007; Westaway, 2007).

Researchers agree that a neighborhood should comprise a walkable distance (the distance that a person could pleasantly walk, a 3MPH pace in 5 minutes). However, the actual walkable distance considered has varied from a quarter-mile to one mile from center to edge (Calthorpe, 1993; Choi et al., 1994; Colabianchi et al., 2007; Congress for the New Urbanism, 2000; Hoehner et al., 2005; Hur & Chin, 1996; Jago, Baranowski, Zakeri, & Harris, 2005; Lund, 2003; Perry, 1939; Pikora et al., 2002; Stein, 1966; Talen & Shah, 2007; Western Australian Planning Commission, 2000).

2.3.3 Housing Policy Initiatives and Incentives for Low-income Urban Residents

Much of the literature reviewing opportunities for promoting affordable housing for low-income urban residents through the planning system arises from the US (Calavita & Mallach 2010; Meltzer & Schuetz 2010; Schuetz, Meltzer et al. 2011). There is also a trajectory of work from the UK, where there is traditionally a symbiotic relationship between planning and housing provision within an overarching social welfare context (Monk, Crook et al. 2005; Whitehead 2007; Crook, Burgess et al. 2010). Other contributions refer to models developed in Ireland (Norris 2006) Europe (Milligan 2003; Gilbert 2009) and the Asia-Pacific (Chiu 2007).

Across this work, a set of specific policy arguments for justifying planning intervention for housing outcomes has been distilled (Gurran, Milligan et al. 2008). Many of these policy arguments are particularly relevant to pursuing affordable housing through urban renewal
processes. Firstly, there is the need to minimize and offset the impact of planning and residential development processes on the availability of existing low-cost housing (Stone 2006a). Secondly, there is the need for planning systems to facilitate greater housing diversity, through spatial strategy and through design regulation, to achieve spatial equity and to support economic prosperity. Thirdly, there is potential to leverage more subsidized housing stock for low income people, in preferred locations, by making affordable housing inclusion a requirement of development (though construction costs and reasonable land acquisition may be met through government incentives and subsidy). Finally there is need to recognize the opportunity to recapture some of the gain associated with planning decisions, or to create additional gain through incentives, and to apply this profit to achieving public objectives such as dedicated new affordable housing supply.

Against these positive reasons for establishing particular planning settings to secure affordable housing during development processes, it is often argued that the planning system itself exacerbates housing affordability problems (Glaeser et al. 2005). Industry advocates in particular claim that additional regulatory burdens, even to secure affordable homes, will have a negative overall impact on supply and affordability (RDC 2007).

It is important to note that much of the international literature on planning for affordable housing is silent on the specific sources of funding for affordable housing development and the interaction between the availability of particular funding sources and the leverage gained through the planning system. These funding sources differ both between and within jurisdictions, often varying by site and development context. They may range from the availability of capital funds for new social housing construction, to financial incentives for institutional investment in affordable rental housing developments, and the dedication of government land for housing development. Funding arrangements also depend on the type and mix of affordable housing delivered, with lower cost home ownership products sometimes able to be delivered without additional subsidy, depending on the local housing market. For a fuller comparative discussion of the interplay between planning mechanisms for affordable housing inclusion, and different government funding arrangements and housing assistance settings, see Gurran et al. (2008).
Planning for affordable housing identified a five-fold taxonomy for promoting affordable housing through planning system intervention (Gurran et al. 2008):

- Housing supply levers, designed to generate new housing development opportunities by releasing sites for residential development
- Barrier reduction strategies to overcome barriers to developing affordable or diverse homes
- Preserving and offsetting the loss of low-cost housing
- Incentives to encourage new affordable housing to be built by the private sector (with or without subsidy)
- Levers for securing dedicated affordable housing in new development.

These are summarized as a taxonomy of planning measures for affordable housing, focusing particularly on measures reported in the wider research and literature as being applied in urban renewal contexts. Against each measure the potential impact on affordable housing delivery is indicated, with ‘direct’ impacts denoting that the measure procures dedicated affordable housing; and ‘indirect’ impacts associated with wider housing market outcomes.

2.4 Urban renewal as an Instrument for Enhancing Residential Neighbourhood Satisfaction

Urban Renewal is a very influential force for urban change. The complexity of the process may not be satisfactorily embodied in a simple definition. Nonetheless, it is defined by Gibson and Langstaff (1982) as being the redevelopment or rehabilitation of the older parts of urban centers predominantly incorporating the improvement of housing and environmental conditions, and for the poor, their social services and infrastructure needs including economic regeneration and employment provision through state and local authority intervention, increasingly, with the participation of residents. The fundamental objective of urban renewal is the application of several principles in the revitalization of any or all portions of the urban structure which are not fulfilling the functions for which they were designed (Miller, 1959 in Broudehoux, 1994).

Historically, as more populations continue to occupy the aging urban centres, their residential neighbourhoods continue to become larger and older, inevitably leading to more and more
renewal of the urban fabric as a result of either overcrowding, dilapidation and deterioration of the physical fabric or a strain on infrastructure services and facilities among other factors.

2.4.1 Potentials of Urban Renewal
The possible scenarios, regarded as the visions of the future of public rental estates, are tentative approaches towards restructuring these residential neighbourhoods possibly enhancing the residential neighbourhood satisfaction levels. They range from ‘nil’ interventions to very drastic, revolutionary and radical measures of total redevelopment. All the approaches are viewed as alternative policy intervention measures.

A need for re-planning and improvement of the residential neighbourhood may therefore be considered in order to enhance the residential neighbourhood satisfaction levels.

Alternatives of Urban Renewal to Bahati Estate

The possible scenarios below, are tentative alternatives for the renewal towards restructuring old public rental estates and possibly enhancing the residential neighbourhood satisfaction level.

Alternative I: 'Nil' Intervention

This alternative does not identify the problems of the residential neighbourhoods. As an achievable scenario, it assumes that the present socio-economic, physical and environmental shortcomings are acceptable to the local community. It assumes that an impasse exists making them to do nothing about the existing situation or that a feasible financial framework is absent to revitalize the residential neighbourhood. This alternative will satisfy the older age groups who have stayed in the housing units for a long duration and in doing so, has made them consider the area as home and therefore would prefer if there were no interventions and improvements because of the sentimental feeling.

For this reason, no serious measures will be undertaken. The status quo will, therefore, be allowed to remain upon any planning intervention measures. The residential neighbourhoods go on to remain extremely low-density but still highly overcrowded island with very close proximity to the Central Business District. This then present a paradox between underutilized prime land in an inner city low-income residential neighbourhood and shortage of affordable residential land for the rapidly growing population of the urban poor.
The social environment will persistently degenerate as a result of intense overcrowding both within the housing units and the tangential ultra-dense overgrowth expressed in terms of total built-up area per unit hectare. The spontaneous development of semi-permanent structures will be met by simultaneous diminishing supply and under-provision of basic social and community facilities, infrastructure services such as water supply and storm water drainage, sanitation facilities and adequate solid waste management. The entire urban poor population in these residential neighbourhoods will be prone to periodic infections, chronic diseases and parasitic infestations. This spontaneity of development mainly due to tenants' extensions and transformations of the housing units will be a true reflection that the existing housing units do not meet the needs of the diverse households' socio-cultural backgrounds with ethnic heterogeneity. The continued increase in household sizes, for example, will continue to be reflected in the inflexibility of their housing units' planning and design dimensions, which will undermine the importance of culture and residents' housing needs in housing development programmes resulting into low satisfaction levels among the residents.

**Alternative II: Rehabilitation and Densification Approach**

Neighborhood satisfaction is predicted by the physical measures, perception and evaluation of the attributes of the residential environment. Perception and evaluation of the attributes of this environment is also predicted by physical measures of the attributes of the residential environment. The rehabilitation and densification approach may have a symbiotic relationship with neighbourhood satisfaction.

This approach recognizes the problems, felt needs and shortcomings of the residential neighbourhoods in the estate. However, only a systematic refurbishment of the housing units and limited improvements of the social and community facilities and infrastructure services and facilities will be envisaged. In the long-term period, the maintenance of the entire built and natural environment and subsequent densification of the open spaces will substantially improve and reduce the need or urgency for total redevelopment.
For instance, in the estate; the rehabilitation option confirms that the physical fabric of all the buildings is generally in a structurally sound condition but have only deteriorated because of age and neglected maintenance. The existing housing stock is recognized as a valuable resource. It needs to be preserved by adapting the dilapidated houses and/or community facilities and infrastructure services to present-day life and acceptable standards by providing modern facilities. The neighbourhood unit concept applied will be conserved. The value of this old neighbourhood, in terms of its unique architectural features and historical significance, respectively, effectively enabling a unique urban identity, will prevail.

However the limitation of this approach will be that it will not take into account the wider problem of uneconomic under-utilization of the prime land in the face of pressing demand for low-cost housing by the rapidly growing segment of the citywide population in the low-income bracket. Increased housing demand can nonetheless be realized in the densification of the open spaces but without affecting the existing housing units. Sub-optimal land utilization will still prevail leading to decreased satisfaction levels among the residents as the results suggested this as a ways in which neighborhood satisfaction may be improved or enhanced.

Preservation and conservation will enable the sense of continuity of place necessary for the maintenance of the urban continuum. The preservation of the old buildings, open spaces and neighbourhood unit concept applied will be conserved and eventually taken advantage of by recognizing its potential contribution to the development of the tourism industry as a stimulant to the local economy and the maintenance of the city’s vitality. This will probably lead, eventually, to the gazettement of the estate as a conservation site. The rationale for this conservation approach will be underpinned by the fact that this residential neighbourhood is the only remaining trace of the origin of the city.

Reasonably, rehabilitation will involve the renovation, the repair and the restoration, partially or completely, of all existing elements of buildings and infrastructure services and facilities in a bid to give them a new lease of life. The refurbished infrastructure services and facilities will be relevant in lubricating socio-economic development since it will lead to better vehicular and pedestrian circulation networks, re-planning of the water and sewerage reticulation systems,
improvement in sanitation and solid waste management and the provision of electricity and street lights to areas where they are absent. The existing clinics, health centres, schools, social halls, shopping centres, vehicular roads and pedestrian paths, etc, will be upgraded to a satisfactory and appreciable standard through a face-lift to emerge with a clean, safe and healthy living environment.

However densification of the existing open spaces will increase the capacities of the community facilities. It is noteworthy, the above approach may go a long way in the enhancement of residential neighbourhood satisfaction levels of the residents as it will be improving their living conditions and perhaps give them a sense of identity and belonging.

**Alternative III: Redevelopment Approach**

Redevelopment will be a more radical approach. It will assume that the estate, in part or in whole, is old and in a seriously dilapidated condition. It will assume that the living and social conditions are completely degenerated and that the physical fabric has no preservation value. It will further assume that the existing arrangement of the built fabric does not allow for maximum utilization of the land. In such a case, total demolition and reconstruction will be considered to be the most feasible solution and the only fundamental planning instrument for urban renewal through re-planning and restructuring.

To any landowner, redevelopment will not only enable them to achieve the social objectives of housing more people but it will also represent both maximum profit through the sale of new housing units, and maximum use of land through maximum development of full plot coverage and maximum plinth area. It will have the advantages of attracting higher income groups and commercial activities to the residential neighbourhoods, meaning economic regeneration through increased revenue bases. Redevelopment will be a desirable way of supplying mass housing to meet the needs of the high population growth rate of Nairobi as it will lead to higher population densities and improved community facilities and infrastructure services. These diverse urban aspects will be highly satisfactory ways of revitalizing, modernizing and regenerating Bahati Estate and other old public rental estates in Eastlands Nairobi.
The redevelopment, however, will lead to the destruction of all the sites, buildings and structures with desirable architectural features and with cultural and historical interest. It will quickly lead to the demolition of the badly needed housing units and community facilities already serving very useful functions. The existing households will be completely deprived of valuable housing resources. This will demand re-housing of the households on the redevelopment site or relocation to another site while reconstruction of new housing units is being carried out. If redevelopment is undertaken without offering alternative accommodation there will be likelihood for these households to seek for affordable housing in informal settlements. This will certainly lose the focus for the social objectives of achieving ample supply of housing particularly to low-income groups.

Redevelopment will, however, lead to maximum optimization of the open spaces and the entire land including a rational re-planning of the vehicular and pedestrian circulation networks. The redevelopment plan will include broad land use planning frameworks with a coordinated policy guideline for both public and private development activities including a complete redesign and improvement of the road pattern and pedestrian traffic networks with far-reaching implications on neighboring areas and the entire city at large.

**Alternative IV: Integrated Approach**

The integrated approach is viewed from the wider perspective involving the renovation of the existing built and natural environment by recognizing what will realistically be conserved, simultaneously with the densification of open spaces combined with the reconstruction of the buildings, in part or in whole, where it will be beyond the reach of feasible rehabilitation. It will recognize the combination of rehabilitation, densification of open spaces, redevelopment and privatization as fundamental tools and complementary forces of change in urban renewal. It will therefore combine the best aspects of each individual approach. It will have the added advantage of allowing for the phasing of development by the systematic application of each approach. This will allow for flexible project implementation effectively enabling the preservation of the traditionally built and natural environment while achieving respectable densities in both the infill and the new buildings.
The integrated approach enables the existing households to be retained in their own housing units while at the same time improving the quality of life of their total residential neighbourhood. The social and community facilities and infrastructure services will equally continue to function and deliver the required urban services without adverse disruptions as detailed out earlier. Within the integrated approach the existing housing stock will be improved by provision of extra living spaces, mainly to the single room housing units whose household sizes are dissatisfied with the inadequacy of the existing habitable spaces.

The densification programme will realize the stepping-up of housing stock through the intensive use of the existing open spaces and the application of higher plot ratios to accommodate medium walk-up apartments. This will be followed up by the increase of the capacities of the social and community facilities to ensure that the additional population is adequately serviced and provided for. This will involve the increase of capacities of all religious, educational and health facilities, the social halls, police stations, post offices, recreation and sports facilities and the provision of a cemetery as a public utility. Ample care will need to ensure that the ground coverage regulations do not compromise the total loss of open spaces. The maintenance of landscaping elements will require the objectives of a functional healthy mix to be achieved by the blend of the built with the natural environment.

The integrated approach will bring in the advantages of attracting upper income groups who will rent the infill and new buildings at quasi market values. These economic market rents will be useful in cross-subsidizing the rehabilitation exercise and make the increased rents bearable to the old tenants, effectively enhancing the viability of the integrated approach model. Notwithstanding, since none of the housing units will be sold in the open market, the landowners will continue to bear the burden of maintenance and management of both the old and the new structures.
2.5 Case Study of Residential Neighbourhood Satisfaction

2.5.1 Case Study of Clay City Estate, Nairobi, Kenya
Taking a case study of Claycity estate, Kasarani in Nairobi city, close observation and analysis of the development scheme of Claycity estate reveals that the initial planned developments were not executed. This amounted to Claycity Developers Limited ignoring the planning and architectural guidelines for estate development.

Claycity estate is 500m from the main Thika Highway, and lies about 13km from the centre of the city of Nairobi. It is bordered by Wilma estate to the west, Clayworks estate to the north, Kasarani Division headquarters and industrial area to the south and Mwiki estate to the east border.

Map 2.1 Clay City Estate, Nairobi


The estate has an area of 37 acres and was bought from Claywork Company by Claycity Developers Limited. The land is bisected by a valley with good drainage. The sizes of both residential and commercial plots were 10.67 x 24.00m on average with a plot coverage of 35% and plot ratio of 60%. This planning practice ensured that the premises complied with the requirements of building code that relate to natural ventilation and lighting (Republic of Kenya, 1974). The blocks of flats are mostly four storeys having four units of varied sizes. The maisonettes and bungalows were of four bedrooms and helpers’ quarters. Most of the flats are of one or two bedrooms. All the flats and shops are rented.
The shops are located along the main road, and they occupy the ground floor. The range of the shops identified within the Claycity estate included gas suppliers (1), hardware (12), mini supermarkets (2), bars (3), photocopy center (1), Coca-Cola stockist (1), furniture shop (1), medical clinic (1), butcheries (3), groceries (5), snooker centres (2), barber cum hair salons (4), restaurants (3), café (1), Bata Shoe shop (1), boutiques (4), and cereals shop (1). The shops provide varied goods and services.

**Variations in the development plans and conditions in sale agreement**

An analysis of the development scheme revealed that there was a deviation and variation in the initial development plans. The initial development scheme was to be comprised of a primary school, church, a nursery school, 9 plots for flat development, 69 plots for shop premises, 195 plots for the construction of Maisonette, and 92 plots for bungalows. In the sub-division plan, a total of 368 plots were planned in this initial scheme.

The revised development plan provided for a total of 424 plots comprised of two nursery schools, 69 plots for flats cum shops, 261 plots for Maisonette and 92 plots for bungalows. There were no plots set aside for the provision of social facilities such as schools and church. These revisions were done with the aim of increasing the number of residential and commercial plots for sale over and above what was originally envisaged. Basically, the number of plots for the construction of Maisonette and flats/shops drastically increased from the original 195 to 261 and from 9 to 69, respectively. This has affected the quality of urban life within the neighbourhood. For instance, the parking of cars along the road has caused a lot of congestion.

**Variations in the purchase price of the plots**

Most buyers are still upset by the new ownership conditions. For example, the developers continue asking for more money, which was not included in the Sale Agreement for the development of infrastructural services. The provisional price for the residential plots was US$2015, which was payable within a period of 120 days. However, each individual buyer has to date paid US$3115, representing an increase of 55% above the originally agreed sum.
The variations in both the development plans and conditions in the sale agreement that were later introduced by the developer for the residential estate caused a lot of dissatisfaction among the local residents. All the respondents pointed out that after buying the building plots, they felt cheated by the Claycity Developers Limited. Occasionally, some land buyers sold their plots either undeveloped or with partial developments.

The development initiatives of residents of Claycity estate

As a result of the identified shortcomings of the Claycity Developers Limited, the area residents decided to undertake improvements to the quality of their residential neighbourhood. The residents’ action should be understood in the context of self-help and community based initiatives.

Even in other planned estates in Nairobi City County, the local authority has been unable to provide services that have wider implications for neighbourhood development. As in other areas, residents deal pragmatically with the issues at the local estate with very limited political assistance.

The focus has been to undo the mess that was left by the developers covering such areas like infrastructure, sewage, and land use conflicts between commercial and residential developments, parking zones, and provision of communal security. This inadequate situation in neighbourhood development had arisen from the fact that no clause in the contract had specified in explicit terms which services were to be provided and when they were to be provided. Indeed, there were no consultations between the developer and the plot owners about the standard level of infrastructure to be met in their provision.

The respondents had prioritized the improvements of infrastructure of the estate as follows: roads, sewerage, storm water drainage, estate cleanliness, security, parking zones, and finally landscaping of outdoor areas, in that order.

Provision of roads and security lighting

In order to improve on the provision of infrastructural facilities, the plot owners are involved in the grading of the feeder roads leading to their frontages. They have been collectively contributing money to undertake the task. In addition, the residents are also putting up external
security lighting at the gates of their premises and on the external walls of their buildings to be able to reduce crime levels and improve the security within the neighbourhood. Effective lighting increases visibility and exposes the potential offenders as it improves on the chance of identification and detection. Successful lighting, in addition, is a valuable amenity.

The residents have come to the realization that the quality of neighbourhood is determined by the communal lighting within the blocks of flats as well as the surrounding blocks and lighting on routes into and around the estate. The repair and maintenance of facilities has also been the responsibility of the plot owners.

**Provision of drainage and sewerage facilities**

The provision and management of both the sewers and drainage have been left to the residents. The residents have therefore resolved to buy the plots on the lower grounds for the provision of sewage disposal. To minimize the likely occurrence of flooding on the roads, the residents are undertaking installation of culverts for storm water drainage.

**Provision of adequate parking facilities**

Parking is a nagging problem that exists in the estate. There is a general lack of designated areas for public parking. Similarly, whoever is expected to control the provision of parking spaces within the commercial zone has not done so. The residents are therefore working on a proposal to buy some plots and convert them into a centralized parking zone. The lack of clear boundaries between public and private spaces within the Clay City estate has created a place with no sense of ownership and responsibility by plot owners. The spine road has heavy private pedestrian traffic. The children also use the road to ride their bicycles and as playground.

**Provision of security**

To improve on the general estate security, the residents agreed to employ 12 guards who patrol the whole estate from 6.00 p.m. to 6.00 a.m. Each household pays US$12.65 (Kenya Shillings 993.00) per month to meet the guards’ salaries, and maintenance and provision of uniforms (coats/hats), clubs, bows and whistles, arrows, torches and batteries. In addition, security meetings are conducted every last Sunday of the month.
Due to lack of social amenities, such as a primary school, church or nursery school, the residents hold their meetings on plots where owners have yet to construct structures. In some instances, the local police administrators are invited to the neighbourhood security meetings for guidance on security matters. They have offered to train the guards. The whole arrangement has been effective.

Recently, the Kasarani Police, a local Police Division Headquarters, wrote to the management of Clay City Developer Limited suggesting that they donate a plot for the purposes of a police post. This is clear evidence that the developer omitted this important social facility, which the residents are ready to remedy through the purchase of a plot within the estate for the construction of a police post. To ensure visibility, and hence improve on security within the estate, the neighbourhood members cut tall grass along the roads and near those plots, which have not been occupied.

**Satisfaction of the development of Clay City estate**

It was hypothesized that the development process determined the level of satisfaction of a housing project. The hypothesis was based on the assumption that an efficiently and progressively undertaken development process by a developer was likely to influence the level of satisfaction of house owners. The satisfaction of the respondents was seen as a measure of the level of meeting the expectations and desires of the development process through compliance with the conditions and obligations stipulated in the contractual agreement. It was therefore necessary to test whether the development of the Claycity estate has any influence on the level of satisfaction on the house owners.

The calculated value of chi-square with 1 degree of freedom, 6.14, exceeded the expected, or theoretical, value of 3.84. Therefore, the null hypothesis was accepted at 0.05 significance level. The findings showed that the development process stages were related to the level of satisfaction and hence the quality of urban life portrayed. It was evident that 67% of respondents were satisfied with the initial planning and design stages of the realized built-form. However, 73% of the respondents were dissatisfied with the delivery and implementation of the project. The reasons for dissatisfaction by respondents included late provision of infrastructure (or no provision), slow issuance of title deeds, change of social facility plots to residential plots, lack of
control of the building plans used by owners and unreasonable increases in the cost of the land after the initial payment.

2.5.2 Lessons Learnt on Residential Neighbourhood Satisfaction

To realize a satisfactory development, a private developer of a residential neighbourhood like Clay City ought to be equipped with land use planning techniques, or with consultants, to help in the development of the scheme. This is because there is always need to make informed decisions on efficient and optimum use of land in the interest of both the vendors and the public at large.

The application of a series of operational regulations, including zoning, density and sub division controls, which are aimed at creating uniformity in the development, enhancement of the quality of neighbourhood development, optimization of land uses and efficient use of infrastructure facilities, need to be appreciated. This can, however, be achieved through the existence of a transparent and effective local government system.

The potential role of local residents through their welfare organization in management of their neighbourhood ought to be recognized. This is significant because the respondents revealed that their organization controls and organizes estate security, roads, water and general cleanliness of the area. The level of maintenance as carried out by them determines the quality of public spaces within the estate. Because the public open spaces are associated with children’s play areas and car parking, small group parking spaces should be zoned for occupiers of the adjacent buildings.

There is, therefore, an urgent need to encourage and strengthen group based voluntary associations, governed by communal responsibilities with common objectives and goals that participate in development and management of their estate. There is need to create social contacts that are necessary to enhance urban life. Participatory planning of the neighbourhood, involving all the stakeholders such as developers, plot owners, and the implementing agencies, such as Nairobi City County, has to be emphasized in the realization of a well-functioning urban form. It has to be emphasized that social transformations is the core function of a neighbourhood design, and requires proper planning, administration and implementation of a development scheme.
2.6 Conceptual Framework
The conceptual model of this study is based on the notion that residential satisfaction is a composite construct of the indices of satisfaction which respondents perceive with dwelling unit features, dwelling unit support services, public facilities, social environment and neighbourhood facilities. According to Amerigo and Aragones (1997), objective attributes of the residential environment, once they have been evaluated by the individual become subjective giving rise to a certain degree of satisfaction. Subjective attributes are influenced by the subject’s socio-demographic and personal characteristics as well as his/her residential quality pattern, a normative element whereby the individual compares his/her real and ideal residential Environment.

This model demonstrates the elements composed by a resident to form residential satisfaction, and shows residential satisfaction to be a precursor to satisfaction with life in general. Objective attributes of the environment such as access to local services and housing quality, contribute to residential satisfaction via three potential pathways (Amerigo & Aragones, 1990). The first pathway shows a link between objective attributes of residential environment and residential satisfaction which indicate its direct role in forming residential satisfaction. The second pathway shows that objective attributes become subjective after they have been evaluated by the person which gives rise to a degree of satisfaction (Amerigo & Aragones, 1997). Hence, the subjective attributes (i.e., ones' perception of public safety or perception of access to amenities) are influenced by personal characteristics such as a person's” socio demographic background, age and income level and the perception of their real and ideal residential environment (Amerigo & Aragones, 1997).

If a person experiences residential satisfaction they then work at maintaining or increasing congruence with that environment (Amerigo & Aragones, 1997). The third pathway shows the formation of residential satisfaction when objective attributes are filtered through personal characteristics of the individual. The degree to which the environment meets the needs associated with these personal characteristics leads to the direct calculation of residential satisfaction.
Figure 2.6 Conceptual Framework of the Project

Objective Attributes of Residential Environment
- Dwelling unit features – living area, dining space, bedroom spaces, toilet, bathroom, etc.
- Dwelling unit support services – corridor, staircase, lift, cleanliness of drains, street lighting, garbage collection, etc.
- Public facilities – OS/play area, parking, prayer hall, perimeter roads, pedestrian walkways, etc.
- Social environment – noise, accident, safety, security control, community relations.
- Neighbourhood facilities – distances to town centre, work place, school, hospital, shopping centre, bus stations, etc.

Subjective Attributes of Residential Environment
- Satisfaction / dissatisfaction with dwelling unit features
- Satisfaction / dissatisfaction with dwelling unit support services
- Satisfaction / dissatisfaction with public facilities
- Satisfaction / dissatisfaction with social environment
- Satisfaction / dissatisfaction with neighbourhood facilities

Household characteristics - age, education, family size, income, length of stay, etc.

Respondents' impression based on individual / family norms and values

Source: Author, 2016
2.7 Conclusion
This chapter; a review of literature provides background information on community research on residential satisfaction and showed that the determinants of residential neighbourhood satisfaction are; the structural attributes and quality of Housing Units, the neighbourhood facilities, services and social amenities, the locational attributes of the residential neighbourhood and finally the social environment and its complex relationship to resident design initiative and tasks to be undertaken regarding the task of the designer and planner which most likely would lead to either satisfaction or dissatisfaction. The next section, Situational Analysis will thus begin to discuss the objective determinants of residential satisfaction in the estate.
3 CHAPTER THREE: SITUATIONAL ANALYSIS OF BAHATI ESTATE

3.1 Historical Background
Bahati was built in 1951 specifically to cater for the African native population that was increasing in Nairobi during the colonial rule. The scheme was meant for African employees who were earning Kshs 950 (Tyson, 1953). The first residents who settled in Bahati were squatters relocated from the neighbouring Pumwani area. This was to create room for clearing this squatter settlement since it was supposedly harboring political dissidents. These people were mostly from the Kikuyu ethnic group from the Central province\(^1\). The government was in favor of the mushrooming of the squatter settlements in the city but at the same time it did not commit itself to providing adequate housing for the African workers.

Upon the declaration of a state of emergency in 1952 by the colonial government, residents especially of the Kikuyu tribe were forcefully moved and camped in Bahati because of their involvement in political activities. This led to the majority of the residents of Bahati to belong to one ethnic group - the Kikuyu who were in the forefront of the freedom struggle\(^2\). Stringent measures were taken to regulate their entry into and exit out of the Bahati camp. As a result, Bahati was not seen as a residential area by the residents but as a kind of a detention camp. The image of Bahati to the residents changed from a good new residential area to a feared one because of the restrictions on the movement of the residents by the then colonial government.

3.2 Locational Context
Bahati is an estate in Nairobi, the capital city of Kenya within Pumwani division and Kamukunji constituency. It is situated about 2.5 kilometres east of the main central business district. Bahati is bordered on the western, southern, and eastern part by several public rental estates. There are two secondary schools bordering it to the south. On the northern part, Nairobi River separates it from a privately owned housing estate. The main industrial area runs parallel to the main trunk road; Jogoo Road which serves most of the eastern part of Nairobi. The nearest industries are less than a kilometre away.

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\(^1\) Bahati Estate Officer, 2016

\(^2\) Bahati Estate Officer, 2016
Map 3.1 - LOCATIONAL CONTEXT

Source: Author, 2016
Bahati Residential area

Bahati public rental housing estate rests on a total area measuring approximately 5 hectares and is delineated by Bahati Crescent, Kitui Road and Kahawa lane. One of the major features is the Nairobi River which separates Bahati from privately owned properties to the North. This river is earmarked as a recreation feature to be developed by the City County and alongside it, a transport system possibly run a tram to be provided in order to ease congestion on Jogoo Road.

3.3 Physical Environmental Characteristics

Nairobi County has its topography falling from the edge of Rift Valley in the west at an elevation of 2300m to 1500m to the east of the main central business district with itself being 1700m (Morgan, 1967). The study area is located on gently sloping ground thus most of the infrastructure facilities and services can be easily maintained. Nairobi River lies to the south of the study area.

The County of Nairobi, from whom climatic data of Eastlands has been extracted, has a bimodal rainfall pattern. The two maxima occur in March-April (long rains) and November – December (short rains). The mean annual rainfall is 1049 mm out of which 50 per cent falls in the long rains. The maximum mean monthly temperature is 27.7°C, for the month of February with the minimum being 10.1°C for the month of July. The temperatures never exceed 30 °C (Morgan, 1967; Otieno, 1991). These climatic features are characteristic of a highland region and are conducive for the existence and ample growth of human settlements.

The residential location of Eastlands experiences environmental conflicts largely arising from the close proximity to the hub of the Industrial Area, which makes it prone to air pollution. The industries emit several noxious gases, fumes and smoke. Eastlands experiences noise pollution arising from the busy vehicular movement on Jogoo, Likoni, Lusaka and Landhies roads; trains on the railway lines in the south and aircraft operating from Eastleigh Air Base. The Nairobi River, which defines the northern edge of Eastlands, is highly polluted due to deposition of solid and liquid wastes from industrial, commercial and residential outputs.
3.4 Socio-demographics Profile
The following section analyzes the demographic and socio-economic profile of the residents of the residential neighbourhoods. It investigates the population trends in terms of the initial target group, the changes that have occurred over time and the current status of the households.

3.4.1 Population Growth and Household Composition
Figure 3.1 illustrates the average household size in Bahati. It is quite clear from this demographic data on population growth, total number of households and their average sizes, that the initial African male bachelors have been overshot by a population more than three times its target group. The initial housing units, which are mainly single rooms with shared communal facilities, are now occupied by an average household size of 5 members.

![Figure 3.1 - Household Sizes in Bahati Estate](image)

**Source:** Field Survey, 2015

3.4.2 Demographic Structure
Figure 3.2 below shows the ethnic backgrounds of residents in Bahati Estate. The results indicate that the demographic structure of the residents is analyzed based on the origins and ethnic backgrounds of the residents including the durations that they have lived in Nairobi. The pie chart indicates the ethnic backgrounds of the respondents.
The results show that the population in this neighbourhood is heterogeneous. The main groups are Kikuyus, Luhyas, Kisiis and Kambas. The predominance of the Kikuyus can be attributed to their efforts and being in the forefront in the freedom struggle. The Luhyas and the Kambas including the other minority groups (Kisiis and Kalenjins) infiltrated the area later. The regional backgrounds of the respondents are confirmed by their places of birth. Data also shows that the majority of the respondents have lived in Nairobi for relatively long periods. The table 3.3 below illustrates the following:

Source: Field survey; 2016
The minority groups of the respondents have lived in Nairobi between 0-10 years (26 per cent). The older generations who constitute majority of the respondents have lived in Nairobi for longer periods of 11-20 years (40 per cent), 21-30 years (12 per cent), 31-40 years (20 per cent) and 41-45 years (2 per cent). These results depict that the majority groups of respondents are long-term residents of Nairobi rather than recent migrants to the city which implies they have sentimental attachments to their housing units and maybe some consider Nairobi as their home.

In regards to urban mobility trends, the results indicate a substantial number (70 per cent) have in-migrated from a rural area while 20 per cent of these respondents have lived in another estate within Nairobi before moving to Bahati residential neighbourhood. In addition, an estimate of about 10 per cent of them are actually born and raised here in Bahati as well. These results demonstrate inter-urban dynamic migration patterns of the respondents.

### 3.4.3 Tenancy History

The table below illustrates the different reasons advanced for moving to Bahati residential neighbourhoods.

**Figure 3.4 Reasons for Migration into Bahati Estate**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>48</td>
</tr>
<tr>
<td>Cheap rent</td>
<td>11</td>
</tr>
<tr>
<td>Influence from Relatives</td>
<td>12</td>
</tr>
<tr>
<td>Marriage</td>
<td>20</td>
</tr>
<tr>
<td>Education</td>
<td>3</td>
</tr>
<tr>
<td>Born in the estate</td>
<td>6</td>
</tr>
</tbody>
</table>

*Source: field survey; 2015*
The majority of the residents indicate that they have moved to Bahati either for the purpose of joining their spouses, relatives and for marriage reasons (20 per cent) or for the purposes of employment (48 per cent). However others have chosen to move to Bahati for the opportunities that may lead to higher satisfaction levels are apparently inherent such as lower/cheap rents (11 per cent). About 6 per cent of these respondents have actually been born in this residential neighbourhood.

**Tenancy History of the Respondents**

The tenancy history of the respondents indicates that 2, 25 and 52 per cent either took over from a previous tenant, or were the original, second tenants and third tenants respectively. About 22 per cent indicate that they share with another tenant; meaning that there is more than one household within a single housing unit. It is also important to note that majority of the respondents, do not pay rent for their housing units (67 percent) while a mere 33 percent pays rent to the City County and maybe to the main tenants who have sublet to other residents.

**Plate 3.1 - Nairobi City County Rent Payment Receipt**

![Rent Receipt]

This is among the main reason why many residents have chosen to remain in Bahati, cheap rent for only 570 Kshs for a single room unit, a factor which has contributed to higher neighbourhood satisfaction levels.

**Source: field survey; 2015**

**Preferences of the residents to their housing units**

According to the field survey, a substantial number will prefer to continue to stay (32 per cent) or to pass on the housing unit to a relative (50 per cent). However, around 6 per cent of the respondents prefer to hand over or transfer the house back to the Nairobi City County and a mere
12 per cent may prefer to sell to a new tenant. We can therefore infer from the latter situations that the aforementioned sentimental attachments to the housing units, the close-knit community structure and the values associated with the inherent opportunities afforded by the residential neighbourhood will certainly need to be maintained to avoid potential social and economic disruptions.

3.4.4 Household Characteristics
This section will analyze the household characteristics in terms of their sizes, the age and sex distribution of the respondents their marital status, levels of education and types of occupation.

Figure 3.5 Average household size in Bahati

![Average Household Size Chart]

Source: field survey; 2015

According to the social survey, 45 per cent of the households have between 1 and 3 members indicating an appropriate density for the predominant single-room housing units. However, 40 per cent have over 5 household members indicating a range between medium to very high housing densities. This reveals the extreme overcrowding in the housing units. This prevailing status of overcrowding in the housing units is a clear indication that the planning and design of the housing units does not consider the flexibility of increasing their sizes by addition of extra sleeping spaces as a response to larger households. These demographic changes manifested in the gradual enlargement of households has obvious social and psychological implications where adult parents are compelled to share the single rooms with mixed sexes constituting their mature sons and daughters. The coping strategy for these households is to construct semi-permanent
structures i.e. extensions adjacent to the housing units. Within the housing units the households have sub-divided the single rooms with curtain partitions.

**Sex distribution**

The entire study area yields an over-representation of female respondents. This contrasts with the 57 per cent female to male sex proportion in the study area. The interpretation of these results should not be misconstrued to mean that the majority of the tenants are females. It is, instead, intended to be understood that women are more available for interviews during daytime. However it is found prudent to make recommendations that during the re-planning of the area provision must be made for home-based economic enterprises for the females, especially the housewives who will integrate these activities with their household chores which may lead to higher satisfaction levels especially among the women.

![Figure 3.6 Gender of the respondents](image)

**Figure 3.6 Gender of the respondents**

Source: field survey; 2015
The results of the household survey indicate that 53 per cent of the respondents are married, while 15 per cent are single, 4 per cent of the respondents are separated while 20 per cent are either widowed or were widowers 5 per cent divorced.

**Figure 3.8 Education levels of the household heads in Bahati**

Source: field survey; 2015
The low levels of formal education background among the household heads underpin these results since about 98 per cent have not attained education levels higher than secondary education. This reinforces the fact that they are more likely to be employed in the low-paying sub-sectors within the private informal sectors. The informal sector economic activities such as small and micro-enterprises in this category are one of the most easy entry points since the level of education required is low and generally unskilled. The inadequacy of any formal education and the access to only the primary and secondary of level education are presumed as the possible causes for both unemployment and self-employment within the category of household heads within the economically active age group of 15-65 years.

According to the social survey, results indicate that about 80 per cent of the residents’ employment areas are situated in the Central Business District, the Industrial Area, the neighbouring estate or commercial areas and within the residential neighbourhood. The abovementioned location of employment areas within the residential neighbourhood will go a long way in reducing the distances, costs and inconveniences of travel. Use of non-motorized transport systems, such as walking short distances to work, will additionally improve their safety, health, efficiency and comfort levels may respond positively to the satisfaction level of the residents.
3.5 **Spatial Analysis**
This section aims at assessing the adequacy and condition of the housing units in order to investigate further into the existing situation of this residential neighbourhood.

3.5.1 **Housing Units**
Bahati estate was modeled on the Neighbourhood Unit concept which was launched in the Nairobi Master Plan in 1948 by Thornton white from South Africa (Shihembetsa; 1989) whereby the housing blocks were organized around a central courtyard. In every courtyard, shared facilities provided included toilets, showers and a water tap. The courtyard became the central activity area for all the residents because of these facilities. The wash area became a socializing area where residents met and interacted while doing their chores.

Bahati public rental housing estate consists of 1965 single room row housing units. The housing units are grouped into courtyards formed by unit blocks. The figure 3.9 below illustrates the general layout of the entire estate.
Figure 3.10 Housing Units and Courtyard Design in Bahati

Source: Field survey; 2015
There are mainly three types of unit blocks i.e. four, six and eight housing units. The housing units are single room units of two particular types; the rectangular and the L-shaped type. The units vary in size between 14.0m² and 18.4m². Each unit is provided with a cooking space and a chimney. The L-shaped form is the bigger type with the cooking alcove and chimney located in the smaller part of the room. The structures are built out of solid natural quarry stones, the floor is concrete with cement screed finish while the roof is clay tiles and asbestos on a timber structure. The openings i.e. the windows and doors are timber shutters.

The housing units are provided with two doors, one facing the streets or pedestrian path and the other facing the courtyard. The criteria used to provide two entrance doors for a single room unit can only be postulated as fire safety hazard. However, the doors facing the streets remain closed due to several reasons such as; the size of the unit is too small to have openings on both sides which increases circulation area thus reducing living space, the courtyard is the main activity area as a result strangers may find it difficult to walk into the courtyard if they are not going to a specific housing unit thus making it safer and finally the courtyard is perceived as a civic/public space; as a design criteria, the entrances facing the courtyard created a sense of security as opposed to those facing the street.

**Figure 3.11 Section of cluster of Housing units**   **Plate 3.2 Housing Unit Model in Bahati**

![Section of cluster of Housing units](image1)

![Housing Unit Model in Bahati](image2)

*Source: Field survey; 2015*
3.5.2 Social Community Facilities
This sub-section illuminates the existing nature of the social and community facilities in the residential neighborhood.

Education Facilities
Within Bahati estate, there exists two neighbouring secondary schools that are easily accessible by foot from the estate i.e. Huruma Girls High School and Aquinas Boys High School. These are provincial public schools which will be of more access to the general population. Also present is one nursery school known as St. Mary Immaculate Sisters and Nursery School and two primary schools i.e. Morrison Primary School and Bahati Primary School.

Community facilities
The community facilities present within Bahati estate are a social hall where the community members meet and interact as well as have estate meetings but recently it was converted into a children's home after the Chief relocated to Makadara. The social hall currently serves as a home for the street children.

The estate is also served by one dispensary and one health centre i.e. Bahati Health Centre which may be viewed as inadequate as compared to the general population within the estate and the neighbouring communities. The area lacks a maternity clinic which has the forced the Catholic Church to provide those services as the residents had to travel quite a distance to access those services which at times led to the patients succumbing to death.

There are several churches of different denominations which cater to the diverse religious needs of the residents and the neighbouring estates. However, the area lacks a mosque which forces the Muslim residents to travel quite a distance in order to access their spiritual fulfillment.

There are two zones of commercial facilities situated to the east and western ends of the estate. The western part has 18 shops serving different trades whereas on the eastern part, there are 11 shops also providing different types of services to the residents of Bahati.

The open recreation areas (playgrounds) are also present for different sport activities such as net ball, volley ball and basketball. However, there is no provision of a football field and the necessary facilities like goal posts and nets.
3.5.3 Transportation and Infrastructure services
This sub-section includes the identification of vehicular and pedestrian circulation, electricity and street lights provisions, the adequacy and condition of water, sewerage and storm water drainage services, the management of solid waste and the adequacy of fire-fighting facilities.

Transportation
The road network in Bahati estate is 6.1 Km and is all of tarmac standard. The road network provides access to all the unit blocks and housing units. The existing road network is quite satisfactory which implies that there is a good circulation of both vehicles and pedestrians in the estate. There is only one common point of entry and exit from the estate for vehicular movement; which is through Jogoo road, pass by City Stadium Stage (on the left), at the roundabout, one takes the first exit onto First Avenue Eastleigh and turn right onto Heshima Road.

![Figure 3.12 Existing Vehicular Transportation Networks in Bahati](image)

Source; Author, 2016 adapted from Google Earth

The estate can easily be accessed by public transport mainly through public service vehicles especially those that apply the Eastlands route through Jogoo road. Some even cut through Heshima road as illustrated in the figure below.
This figure below illustrates a matatu at the main bus stage of Bahati estate which serves the entire estate as Heshima Road cuts through the estate. Also in the same figure, as depicted there is no provision of NMT, junctions and pedestrian paths and crossing paths; the bicycles and vehicles use the same route, which increases the chances of accidents.

**Figure 3.13 Public Transport Usage in Bahati**  **Figure 3.14 30m high mast light in the estate**

**Electricity and Streetlights Provision**
The condition and adequacy of streetlight may be perceived as fair as the street lights and flood lights were recently installed by the Makadara CDF Project as illustrated in the figure 3.13 below at the central point of the estate. However, within the courtyard and housing blocks there is no lighting.

**Water and Sewerage Services**
The adequacy and condition of piped water supply to the housing units is fairly of poor condition. The actual problem is that the single-room housing units do not have individual piped water supply connections and mainly rely on communal water taps or the shared kitchen points and/or ablution blocks. This means that they do not have individual water storage tanks. The
relatively low pressure to the water points exacerbates this problem. This is especially the case during the days’ peak periods when the velocity of the flow of the water is lowest.

The inadequacy of water supply and the erratic nature in its frequency has led to extremely unhygienic and unsanitary conditions in the shared communal toilets. The high levels of insecurity due to the absence of streetlights have instilled fear among the women and children causing them to be afraid to fetch water or use the toilets at night.

Storm Water Drainage
The estate is fairly served with sewer and drainage channels. There is a satisfactory network of sanitary lanes which connects to the municipal main. There also exists both concrete (stone pitched) and earth drains which connects to the municipal drain located along Park Road. However, the sewer and drainage channels are in poor conditions. Most of the sewers lines (sanitary lanes) are blocked due to vegetation overgrowth, over-siltation, the mushrooming of informal economic activities’ semi-permanent structures (Kiosks) erected over the channels including their inadequate maintenance. The blockage of these sanitary lanes can also be associated with the increased capacity of the generated sewage as the sanitary lanes were constructed to hold a certain amount of sewage generated by the target population of 2,080. This situation often leads to blockage and flooding during the rainy seasons. The figure 3.14 below illustrates some of the blocked storm water drains in the estate.

*Figure 3.15 Blocked storm water drains in the estate*

*Source: Field survey, 2016*
Solid Waste Management

The condition and adequacy of solid waste management in these residential neighbourhoods can be fairly rated as either average or good. This is attributed to the local arrangements whereby community-based organizations formed by local youth groups have been contracted to provide the service. The households pay fees ranging between Kshs. 20= and Kshs.50= on a monthly basis and are supplied with plastic paper bags in which to store the solid waste awaiting collection at various designated collection points.

However, the housing units near the river, dump their garbage in a big pile adjacent to the river which pollutes the environment and has led to the loss of aesthetics in the area hence un-conducive living environment for the area residents.

Figure 3.16 Poor solid waste management in Bahati

Source: Field survey, 2016
Fire-fighting Facilities
The service provision of fire-fighting facilities in this residential neighbourhood can be rated as bad or very poor because they depend on the only available NCC-provided service located in the Central Business District. The entire city residents growing population, rely upon this facility which has over-stretched its efficiency and effectiveness which goes against the NCC planning standards, which stipulates that a fire-fighting sub-station needs to support a catchment resident population of 100,000 people (UNCHS, 1999).

3.4.4 Local social environment
References to the social environment by the respondents were related to its suitability for rearing children and moral behaviour of people who lived in the area. Residents had complaints about their residential environment as a social milieu. Problems associated with drunkenness resulted from the illegal brewing of cheap but very strong traditional alcohol. In addition, the youth were accused of involvement in the taking of drugs. These habits were seen by the residents to be anti-social as those involved in lawlessness. In the discussions, residents made references to the social life in their neighbourhood by referring to some of the unpleasant activities taking place.

Community ties
Residents were asked to state how many people they regarded as family friends in their residential environment. This inquiry was to establish the type of relationship that exists between the residents in Bahati. Family friends were defined as those who the members of the family can go for whichever help that is needed. This friendship also reflected trust among the friendly families. It was established that most of the residents many general friends in the neighbourhood. These are the people they could talk about general things as well as personal problems.

Over 80 percent of the respondents had 1 to 10 friends in the estate while about 2 percent had over 10 friends. However, the definition of a friend in this context may have to be taken with caution because not all the respondents could interpret this concept clearly. What the findings show, is that there is at least some positive relationships between the residents.
Community and social activities
Respondents were asked whether they are involved in any community activities. It was found that 24 percent were involved in some of activity that brought people together. The activities include recreational, religious gatherings and self-help based groups. However, it is evident that community activities are not strong in Bahati despite the fact that there are things like security problems which require community efforts. This contradicts the friendship pattern that showed 80 percent of the residents had their friends in the estate. Investigations to find out why most people were not involved in community and social activities showed that people have different feelings/preferences towards some of the community organizations. Some residents said they did not have time to spare for such activities. Others said they had not heard of any organization in Bahati while the rest did not see the value of such organizations. This concludes that there is weak community cohesion in Bahati.

Institutional Framework
An investigation of the institutional set up of both the internal and external environments of the study area is relevant in identifying whether broad-based stakeholders exist for the day to day operations within the estate. Focus group discussions and relevant interview schedules with the various stakeholders are useful in identifying their roles and responsibilities within the estate.

Households
The tenure systems of Bahati is noted to be quite diverse and heterogeneous. In Bahati, the NCC predominantly subsidizes the rents. The resident tenants make their rental payments directly to the Nairobi City County to cover both the house rent and the water bill. The very low rent amounts compel the tenants to transfer the housing units to their relatives and in some cases to friends. Others charge monthly rent through sub-tenancy hence making them to be non-resident tenants. The latter case of sub-tenancy is noted in the case of main tenants who have retired to their rural homes or in the case of households who need to boost their incomes. Others have simply erected a semi-permanent space with iron sheets and have had it sub-let-in order to boost their household incomes. These semi-permanent structures have equally been converted by the tenants into spaces where small-scale economic activities are carried out.
Landowners
The landlords are the next actors with a major stake in the residential neighbourhoods since they are the owners of the land. The landowners are normally driven by profit as their primary objective. Redevelopment as a tool of urban renewal will step up their revenue base. However, there is a definite concern for achieving social objectives of subsidizing and/or providing housing to the low-income population.

The Local Administration and Community leaders
These community leaders constitute the main entry point to the study area. They play the role of providing key information on the historical trend of the residential area, the main problems experienced, the inadequate and poor conditions of the general situation of the residential neighbourhoods, the aspirations of the community, the tentative solutions to problems and the need for their support to an urban renewal proposal.

The role of these leaders will be to influence decisions upon the local community either to support or oppose the urban renewal proposal. However the results of the focus group discussion indicate that they will support urban renewal. They are presumed to represent and act in the wider public interest. They play the role of providing a vital leverage between the government and the local community. At the same time, they act as the mouthpiece of both the government and the local community that they represent.

During the social survey, the leaders expressed the inability by the households to afford the new housing units, which will render the programme irrelevant to their felt needs hence leading to effects of gentrification. The leaders expressed the need to involve the entire local community structure in the entire planning process of the urban renewal programme in order for them to voice their problems, felt needs and concerns.

3.6 Conclusion
This section made an attempt to discuss the objective determinants of the residential satisfaction within the estate. The next chapter goes on to review the subjective determinants and possibly illuminate on the in-depth responses from the residents.
4 CHAPTER FOUR: RESIDENTS' PERCEPTIONS OF RESIDENTIAL NEIGHBOURHOOD SATISFACTION

4.1 Introduction
In chapter 2 a review of literature showed that the determinants of residential neighbourhood satisfaction are: the structural attributes and quality of Housing Units, the neighbourhood facilities, services and social amenities, the locational attributes of the residential neighbourhood and finally the social environment of the estate. The factors that carried impact on resident design initiative and tasks to be undertaken regarding the task of the designer and planner which most likely would lead to dissatisfaction were discussed on the basis of the literature offered. This chapter offers field survey data analysis and results including reflections on the factors reviewed in Chapter two. This section will therefore use the subject evaluation of the respondents to further explore the impacts of the various determinants on residential satisfaction.

4.2 Residents' Perceptions on Structural Attributes and Quality of Housing Units
The structural attributes are a significant factor affecting residential neighbourhood satisfaction both positively and negatively. As already cited in Chapter two, the structural attributes include objective physical characteristics of housing such as kitchen space, laundry and washing areas, size of living area and dining area, morphological configuration of residence hall, number and levels of sockets, number of bedrooms and bathrooms, and other aspects of housing such as housing quality, privacy (the social densities), housing services provided by developers such as garbage disposal and safety, and brightness and ventilation of the house (Baum, Arthurson, & Rickson, 2010; Elsinga & Hoekstra, 2005; Hipp, 2010; Parkes et al., 2002). The questionnaires administered sought to find out from the residents about their levels of satisfaction or dissatisfaction of the housing units and finally what they like or disliked, which are discussed next.

Generally the physical condition of the housing unit structures is still solid, strong and sound. Residents were asked to identify the aspects they liked about their dwelling units, they came up with the following. Issues directly related to design such as provision of presence of the courtyard, front and backyards, space for extensions as were the highest ranked (20%, 11% and 10% respectively) mainly because this space allowed the residents to complement their incomes by carrying out farming activities in the courtyard for supplementing their
subsistence and keeping of animals (cows, sheep and goats) as well as poultry. The front and backyard are also instrumental in supplementing the indoor space of the housing unit, a feature which the residents are quite satisfied with. Rent amount was also a feature that the residents seemed quite satisfied with but rent is not a design issue but an economic one.

Table 4.1 Residents perceptions on Structural Attribute and Quality of Housing

<table>
<thead>
<tr>
<th>Structural Attribute and Quality of Housing</th>
<th>Satisfaction %</th>
<th>Dissatisfaction %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence size and functionality</td>
<td>8</td>
<td>92</td>
</tr>
<tr>
<td>Degree of privacy</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>Residence Acoustic Quality</td>
<td>6</td>
<td>94</td>
</tr>
<tr>
<td>Building Elements</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>Detached Communal Ablution blocks</td>
<td>22</td>
<td>78</td>
</tr>
</tbody>
</table>

Source: Field survey, 2016

❖ **House Size and Functionality**

Residents talked about their size of their housing units as being too small. The results indicate that about 92 per cent of the households are dissatisfied with their housing unit size and its functionality as illustrated in the table 4.1 above. This is mainly because of extreme overcrowding, with household sizes ranging between 4 and 10 persons of different sexes as has been previously illustrated. Their accommodation in the numerous single-room housing units certainly has certainly led to social and cultural maladjustments. The dissatisfaction of house unit size and space utilization arises from the fact that the initial housing units are not designed for occupation by family units. This makes the households to demand for changes within their housing units to improve their satisfaction levels.

Besides the small space, most of the courtyard houses do not have adequately equipped kitchen alcove and the detached communal ablution blocks. In this circumstance, most of the residents needed to share water taps and other facilities, and therefore the utility bills with their neighbors. In addition, many of the dwellings were lacking in maintenance and in a derelict condition with some sort of deficiencies such as unsafe structures, leaky roofs, and so on.

The dissatisfaction in the functionality of the housing unit can be attributed to existing condition as is now wanting. The housing units are decrepit with poorly maintained roofs leaking, dirty plastered walls, floors are worn out and others even cracked. Some even lack ceilings, the electrical fixtures such as cables and wires, cables and sockets are rusted and
worn out, the doors and windows are now decayed. The ablution blocks are also derelict with tile breaking and falling off, the water closets have rusted and are worn out while others are even blocked. Moreover, the washing area inconveniently located outside poses a security risk especially for the women at night because the courtyard is not well lit. Other than that, most of the taps are now faulty and don’t operate adequately forcing the women to travel quite a distance in order to access water and store in water bottles in the house.

❖ Degree of privacy

Many residents talked of the problems of lack of privacy among the members of the households due to the small house unit size; a factor of great dissatisfaction among the residents. The residents complained that there is no privacy both visual and auditory especially during the night when everyone has to go to bed, there is little that they can do. Also in regard to traditions and culture, it is simply wrong for the sharing of a single room among the household members. The table 4.1 above illustrates the satisfaction levels of the residents in respect to degree of privacy within the housing unit. Majority of the respondents, 75 per cent, are dissatisfied with, while the latter are satisfied mainly because they have a smaller household size compared to the rest.

❖ Residence acoustic quality

The study has revealed that majority of the households are dissatisfied with the residence's acoustic quality. Approximately, 94 per cent are dissatisfied with the acoustic quality which can be attributed to the lack of a kitchen within the housing unit, the lack of ventilation in the housing units. Another possible cause may be during the night, the inconveniently detached ablution blocks force the residents to use paper bags/ buckets to dispose their human waste within the house and dispose of in the morning.

❖ Building elements and their conditions

The investigation from the households on the condition of the various building elements reveals the levels of maintenance and the degree of dilapidation. This is analyzed in the following discussion on the conditions of floors, walls, windows, doors, ceilings and roofs with regards to the residents' satisfaction levels.

The conditions of the floors in the housing units are reported by the respondents to be inadequate and are generally dissatisfied as they are worn out and require re-screeding. The
condition of walling either requires repainting or re-plastering as they are inadequate. The residents are dissatisfied with the conditions of the walls if they are not improved. It will be prudent to tentatively conclude that the existing housing units’ floor and walls are therefore structurally sound and only need improvement through renovation. The condition of the doors in the housing units is reported to require replacement and repainting while the windows are regarded to be of unsatisfactory levels and need urgent repair and others require replacement. In addition, the window apertures provided in the housing units require improvement of cross-ventilation in order to reduce stuffiness and step up the quality of the air in circulation.

The ceilings’ are of poor standards and the residents regard them as very unsatisfactory as some housing units lack ceilings and those that do, are worn out whereas the roofing appears to affect the condition of the ceiling. This is because the roofs are both leaking and require to be repaired or have broken tiles, which require to be replaced. The condition of the ceiling and the roofing thus demand to be addressed along the same criterion of rehabilitation and renovation, bearing in mind that the buildings are structurally sound

These study findings indicate that majority of the residents 85 per cent are either very unsatisfied or unsatisfied with the electrical fixtures in the housing units, as the sockets are limited and those present are faulty and worn out. The location also is not conducive because there is quite a distance from the socket and the electronics. This deterioration of the physical fabric of the housing units is partly attributed to the mismanagement and inadequacy of regular maintenance of the house, shared communal facilities and the external environment by both the tenants and the landowners or the providers of housing.

In a nutshell there are various issues the residents mentioned design issues that they are dissatisfied with. This included the size of housing unit and the detached communal bathrooms and toilets which most of the residents were dissatisfied with. Other design issues mentioned were related to construction which included un-plastered walls, lack of ceilings, lack of sanitary fixtures; wash basins and water closets. Also maintenance of the housing units which included sealing the leaking roofs, painting the rooms and repairing the floors were outstanding negative aspects. The problem of double tenancy whereby two or even three households have tenancy rights to the same housing units was also pointed.
Figure 4.1 Situational Analysis of Structural Attribute of Housing Units

**SITUATIONAL ANALYSIS OF STRUCTURAL ATTRIBUTES OF HOUSING UNITS AND THEIR QUALITY OF LIFE**

Detached ablution blocks shared by over 10 households and poses a security risk

Derelict Detached Ablution blocks with leaking roofs and tiles breaking and falling off

Poor condition of the toilets with worn out floors and rusted water closets

Worn out bathrooms and faulty showers and taps

Communal Washing area just beside the ablution blocks poses an unhealthy risk for residents

Erected extensions to compliment indoor spaces and supplement household income

Source: Author, 2016
4.3 Residents' Perceptions on Neighbourhood Facilities, Services and Social Amenities

Researchers agree that a good neighborhood should comprise a walkable distance (the distance that a person could pleasantly walk, a 3MPH pace in 5 minutes). However, the actual walkable distance considered has varied from a quarter-mile to one mile from center to edge (Calthorpe, 1993; Choi et al., 1994). The neighborhood conditions will include the layout of the estates, access to public facilities and social amenities (health clinics, stores, banks, post office, etc), neighborhood upkeep, pollution, crime and management of the housing estate. All these features play a vital role in determining the satisfaction levels of the residents especially in Bahati estate.

This section analyzes those features in relation to their satisfaction levels.

By and large, among the aspects that the majority (25 per cent) of the residents like about neighbourhood facilities and services is spacious environment within the estate when they were asked to identify the aspects they liked about their neighbourhood facilities. Within courtyards, residents have put a range of activities on this space such as gardening, drying clothes, children play area, cooking area, parking area, keeping of animals and birds, kiosks and also dumping grounds for uncollected garbage. It has been argued that the low income people are able to turn any space whether good or bad into a useful and productive one. Residents have taken advantage of the big open spaces to supplement their incomes hence increased satisfaction levels. The estate has a satisfactory vegetation cover as more than 60% of the land is on vegetation. This explains why bulk of the respondents indicated that the vegetation cover was sufficient. Some revealed that, it was the vegetation cover that retained them in the estate as it was hard to find a similar estate in the city especially in Eastlands, Nairobi. The figure below illustrates the levels of satisfaction of the different elements as perceived by the residents.
Table 4.2 Residents Perceptions on Neighbourhood Facilities and Services

<table>
<thead>
<tr>
<th>Elements</th>
<th>Satisfaction %</th>
<th>Dissatisfaction %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicular roads and pedestrian paths</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Storm Water Drainage</td>
<td>31</td>
<td>69</td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td>8</td>
<td>92</td>
</tr>
<tr>
<td>Water and sewerage services</td>
<td>73</td>
<td>27</td>
</tr>
<tr>
<td>Firefighting facilities</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Education facilities</td>
<td>98</td>
<td>2</td>
</tr>
<tr>
<td>Dispensary and Health Facilities</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>Shopping Facilities</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>Religious Facilities</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>Maternity Clinics</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>Recreational and Sports facilities</td>
<td>22</td>
<td>78</td>
</tr>
<tr>
<td>Social Hall</td>
<td>14</td>
<td>86</td>
</tr>
<tr>
<td>Market centres</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>Police Post</td>
<td>22</td>
<td>78</td>
</tr>
<tr>
<td>Post Office</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Cemetery</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field survey, 2016

Transportation and pedestrian paths

The respondents (80 per cent) in the neighbourhood confirmed that the conditions of the vehicular roads to their housing units or to their estate are of unsatisfactory levels as illustrated in the table 4.2 above. The residents recognize that these badly conditioned roads require being re-carpeted and the potholes filled-in. A similar problem is noted for the pedestrian footpaths which respondents indicate are in very poor condition and require to be regulated because they are scattered all over. They are also very muddy during the rainy season.
The road conditions are quite alarming, as presented by the illustrations below; most of the roads within the estate are just patches of tarmac characterized by numerous potholes which hold water during the rainy season. The residents recognize that these badly conditioned roads require being re-carpeted and the potholes filled-in.

Plate 4.1 Poor Condition of the existing roads in the estate

Source: Field survey, 2016

- **Storm Water Drainage**
The condition of the storm water drainage channels is cited by approximately 74 per cent of the respondents to be of either unsatisfactory or very unsatisfactory levels. The storm water drainage channels have now experienced the following issues; vegetation overgrowth, over-siltation, the mushrooming of informal economic activities’ semi-permanent structures (Kiosks) erected over the channels including their inadequate maintenance which has led to blockage and flooding during the rainy seasons.

- **Solid Waste Management**
The state of this service is not satisfactory according to the social survey, as solid waste lies almost everywhere in the estate. Certain sections of the estates for example the lanes and pedestrian paths within the estate are used as solid waste collection points as well as dumping sites. These poor waste management practices in the estate have exhausted the aesthetics and hygienic conditions of the estate as it has become less appealing and more prone to health problems. The bad odor that emanates from these disposal sites especially during the rainy season compounds the problem of poor aesthetics. Majority of the residents complain that they had to make local arrangements whereby community-based organizations formed by
local youth groups were contracted to provide the service of garbage collection. An aspect which the residents find very unsatisfactory is the Nairobi City County as solid waste collection and its management is one of its key responsibilities.

- **Water and sewerage services**
The results from the field study indicate that the estate is fairly served with sewer and drainage channels. There is a satisfactory network of sanitary lanes which connects to the municipal main located along Murang’a Road. However, the sewer and drainage channels are in poor conditions.

The residents complained that most of the sewers lines (sanitary lanes) are blocked with solid waste as some of the residents who evade paying the solid waste management fee dispose their solid waste in the manholes within the estate. The blockage of these sanitary lanes could also be assumed to be associated with the increased capacity of the generated sewage.

- **Education facilities**
Results from the field survey indicate that majority of the residents (98 per cent) are satisfied with the education facilities within the estate while the latter 2 per cent are neutral about the situation. There are two neighbouring secondary schools that are easily accessible by foot from the estate i.e. Huruma Girls High School and Aquinas Boys High School. Also present is one nursery school known as St. Mary Immaculate Sisters and Nursery School and two primary schools i.e. Morrison Primary School and Bahati Primary School.

- **Dispensary and Health Facilities**
About 85 per cent of the respondents are satisfied by the adequacy, condition and proximity of dispensaries and clinics as they are in good condition. However, these health facilities noted by the latter to have insufficient, inefficient and ineffective medical personnel with low morale and with inadequate provision of medical drugs. The private sector tries to fills this gap; a situation which renders low satisfaction levels to the residents as it is relatively expensive.

- **Shopping Facilities**
Field survey results indicate that majority of the residents (74 per cent) are satisfied with the shopping facilities within Bahati Estate. This because the area has two shopping centres on the western and eastern end of the estate which house several shops and kiosks. In addition to that, present within the courtyard are small kiosks which play a key role in the daily basic buys as they are nearer to the housing units.
Religious Facilities
The estate is well served with various religious facilities of different denominations, an aspect that satisfies majority of the residents an estimate of 82 per cent. The latter however, complained that they are not represented i.e. the Muslims as the area lacks a mosque forcing them to travel quite a distance to reach the nearest mosque.

Maternity Clinics
Results indicate that this facility is absent in Bahati estate, a feature that dissatisfies majority 71 per cent of the residents. This has forced the Catholic Church, Bahati Cathedral to step in to provide this service in Bahati estate for expectant women which is still not sufficient for that population.

Recreational and Sports Facilities
About 78.9 per cent of the respondents are dissatisfied with the absence of specific sports facilities within the residential neighbourhood especially for the young children and grownups. It is also important to note that several respondents consider that the existing bars and restaurants at the shopping centres are provided by the private sector constitute their impression of recreation facilities. This does not augur well for the family units who instead seek these services outside the environs of the residential neighbourhoods rendering low satisfaction levels among the residents.

Social Hall
The adequacy of the social hall provided by the City County is unquestionable in terms of capacity. The social hall was in fact converted recently to a home shelter for the street children; situations which lead to low satisfaction levels among the residents and the condition of the social hall also indicate very low levels of maintenance and overall physical fabric decay.

Market Centres
The level of satisfaction for market centres is rated by about 86 per cent of the respondents as to be dissatisfactory. The main service providers are private formal and informal sector entrepreneurs. The absence of a formal market facility has resulted in the mushrooming of informal sector’s economic activities whose location and sitting is generally unplanned. The residents are forced to seek this service from retail markets such as Uhuru Market, Jericho Market and Wakulima Market.
Police Station, Post Office and Cemetery
The adequacy and condition of the police station at Bahati is rated by about 88.4 per cent of the respondents to be of unsatisfactory levels as there is only one police post in the entire area. The facility functions and capacity have been overstretched and have led to inefficient and ineffective management to the local residents.

In regards to the post office, this facility is absent in Bahati estate, a feature that dissatisfies majority 90 per cent of the residents are either unsatisfied or very unsatisfied about this feature as well as the cemetery.

Fire-fighting Facilities
The service provision of fire-fighting facilities in these residential neighbourhoods is rated by about 100 per cent of the respondents as either unsatisfied or very unsatisfied. This is because they depend on the only available NCC-provided service located in the Central Business District. The entire city residents growing population, who also rely upon this facility has over-stretched its efficiency and effectiveness.
Figure 4.2 Situational Analysis of Neighbourhood Facilities, Infrastructure and services

Situational Analysis of Neighbourhood Facilities and Infrastructure and locational

- Bahati Shopping Centre
- SMEs in the estate
- Commercial activities along the roadside
- Social hall which was converted to children's home
- 30M high mast floodlights
- Poor access roads in the estate
- Basketball, netball and volleyball pitches
- Religious facilities in the estate
- Poor solid waste management
- Public transport access to the estate
- The Great Nairobi River

Source: Field survey, 2016
4.4 Locational Attributes of the Residential Neighbourhood; Residents' perceptions

The table 4.3 below illustrates the perceptions of the residents in regard to the locational attribute of the estate.

<table>
<thead>
<tr>
<th>Locational Attribute of the estate</th>
<th>Satisfaction %</th>
<th>Dissatisfaction %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of the estate</td>
<td>97</td>
<td>3</td>
</tr>
<tr>
<td>Proximity to Nairobi River</td>
<td>57</td>
<td>43</td>
</tr>
<tr>
<td>Public transport Access to the estate</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>Distance to Convenience Stores and markets</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>Cleanliness of Public Areas</td>
<td>22</td>
<td>78</td>
</tr>
<tr>
<td>Automobile Parking Spaces</td>
<td>36</td>
<td>64</td>
</tr>
<tr>
<td>Disaster Management</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>Maintenance, Repair services</td>
<td>8</td>
<td>92</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2016

- **Location of the estate**
  A greater part 96 per cent of the respondents are satisfied with the location of the estate mainly because of its strategic position and its proximity to the main areas of employment; CBD and Industrial Area and the main trunk road Jogoo Road runs parallel the estate. For low income residents with small units, Bahati is viable place to live for the following reasons. It is an ideal place to run family-owned shops and other informal businesses such as a stand fixing bikes, which would provide extra income. The living costs in the estate are low: both rent and the corresponding utility fees are rather low with a small unit, and good accessibility to jobs and public facilities saved their transportation costs as well. As shown above, majority of the residents are either retired or unemployed, thus, gaining extra money from family-owned shops (and/or other informal businesses) and saving living expenses will be crucial to them.

- **Proximity to Nairobi River**
  In the answer to the question of satisfaction with Proximity to Nairobi River there was found a nearly a large difference among the percentages. 57 per cent said they were satisfied with the proximity of the river because of its aesthetic quality. However, the latter 40 per cent
pointed out they were quite dissatisfied with the river's foul smell and its dirty nature and garbage that hovering around the area.

**Public Transport Access to the Estate**
The study findings indicate that 90 per cent of the respondents utilize public transport and non-motorized transport as their household regular mode of transport to work or to town and are with satisfied with the services offered. These results of high reliance on public transport are attributed to the busy transportation edge along Jogoo Road compelling residents to commute to their places of work or to town while the non-motorized transport is due to their close proximity to the central business district, employment areas in the industrial area and provision of social and community facilities in the neighbouring residential areas.

**Distance to Convenience Stores/Markets**
The level of satisfaction for market centres is rated by about 84 per cent of the respondents as either to be unsatisfied. The main service providers are private formal and informal sector entrepreneurs. The absence of a formal market facility has resulted in the mushrooming of informal sector's economic activities whose location and siting is generally unplanned. The residents are forced to seek this service from retail markets such as Uhuru Market, Jericho Market and Wakulima Market. While the latter, 15 per cent indicate that majority they are satisfied with the shopping facilities within Bahati Estate. This because the area has two shopping centres on the western and eastern end of the estate which house several shops and kiosks. In addition to that, present within the courtyard are small kiosks which play a key role in the daily basic buys as they are nearer to the housing units. Most of the small neighborhood grocery stores and markets, restaurants and other daily utility shops are within walking distance.

**Cleanliness of Public Areas**
Results from the field survey indicate that majority of the residents are either unsatisfied or very unsatisfied with the condition and adequacy of solid waste management in the estate forcing local arrangements to be made by community-based organizations formed by local youth groups to provide the service at a fee at the end of each month.
Automobile Parking Spaces
One of the most important problems in Bahati Estate is the automobile parking problem. The results readily indicate the existence of a problem with a percentage of 90 per cent indicating dissatisfaction concerning automobile park facilities. Different from the above results, 5.8 per cent indicate neutral satisfaction as they lack a personal vehicle.

Disaster Management Facilities
Residents in Bahati Estate expressed dissatisfaction with disaster management facilities in the estate at 97 per cent while the latter a neutral situation at 2 per cent.

Maintenance, Repair Services in the Estate
Results indicate that 92 per cent of the residents are very unsatisfied with the maintenance, repair services in the estate as they are not allowed to undertake any kind of maintenance services on the structures because the city county holds the title to that property.

Social environment
Relations with Neighbours
In the answer to the question of satisfaction with Relations with neighbours it was found 82 per cent are very satisfied. Mainly because, for many residents their families had lived there for generations, the neighborhood is cozy and filled with memories, to which they feel strongly attached. They enjoy the lifestyle in courtyards: chatting with neighbors casually, playing games under the trees, roaming around in the morning and evening, hearing the voices of the traveling peddlers and watching children playing in the courtyards. So rich and real is the life outside in courtyards. Closing the door, the life inside in courtyards, on the other hand, could be quiet, peaceful, or even secluded (courtyard houses offer privacy from others) for some households who owned the whole courtyard house.

The residents like the life here for another reason, that is, the relationships between neighbors were different. As mentioned above, the courts served as the living room, many courtyards are shared by several families, and most of the residents need to use public facilities situated within the courtyards. All these featured built environments which underpinned rich social interactions among neighbors. In addition, many residents in similar social status have lived here for generations with very low level of mobility.
Years of common residence has created common values to maintain a friendly spirit and help each other readily in everyday life and whenever emergencies occurred. Therefore, not only did people feel friendly and safe in the neighborhood, but the social support networks helps them get through pressures and difficulties, because, for many of them, neighbors were not just neighbors, they were friends, and for some, extended family members.
5.1 Introduction
The purpose of this chapter is to outline the overall framework for improving the residential
eighbourhood satisfaction in low income residential environments in Eastlands, Nairobi. It
is split into two sections. The first section deals with the responses of the residents on how to
Enhance Residential Neighbourhood Satisfaction in Bahati Estate and more so in Eastlands,
Nairobi. The remainder section envisions the future of Eastlands by illuminating on the
various approaches that are plausible scenarios applicable in carrying out urban renewal as a
possible instrument for enhancing residential neighbourhood satisfaction.

5.2 Dwellers’ Perceptions of Enhancing Residential Neighbourhood Satisfac
This section outlines the responses from the residents on possible ways to improve the
housing situation in Bahati Estate and possible alternatives to enhance neighbourhood
satisfaction based on the main determinants. The residents of Bahati were asked to describe
the type of residential environment they would like to live in or rather what aspects of their
current residential environment would they like improved in order to enhance their
satisfaction levels. The most important setting was the housing unit which according to the
majority of the residents is inadequate presently. The structural attributes of the housing unit
as well included the size, materials and the technology.

The size of the housing unit was the major aspect of dissatisfaction by the residents in their
present residential area. They complained of overcrowding in one room, lack of privacy and
incompatibility of activities taking place at certain times. This was an expression of need for
more rooms to cater for the number of people per household and the various activities taking
place within a household. Majority of the residents felt that the size of a housing unit with at
least three to four rooms were sufficient for their households and would elevate their
satisfaction levels. A kitchen and toilet/shower facilities must be provided in the preference
as an addition to the rooms; a situation which renders maximum residential neighbourhood
satisfaction. Therefore, the construction of high rise, high density developments will suit as
an intervention to address the problems of inefficiency of space use and inadequate housing
facilities as a larger population will be accommodated per unit area. This construction will
also ensure that the vertical space has been optimally utilized leaving part of the horizontal
space for greenery and quality open spaces. The housing typologies to be established should
additionally allow for flexibility and variety in their planning and design dimensions to accommodate subletting (by designing houses with servant quarters which can be rented out by the main occupant), elasticity of household sizes and home-based economic enterprises. This will reflect the dynamic social, cultural backgrounds and economic demands of the circumstances of low-middle-income households.

The residents mentioned that the existing infrastructural and service facilities require some improvement to transform their conditions to reasonable standards if their satisfaction levels were to be enhanced. The vehicular roads need some widening for them to be able to accommodate the high traffic flow that will be generated by the high density as well as paving to improve their conditions. The capacity of the sewer and drainage channels need to be expanded for them to meet both the current and future demands. Street lights should be installed along the roads and in the courtyards to ensure security at night for the residents.

The Nairobi City County should provide a proper maintenance of the infrastructural facilities and the physical environment within the estate. They ought to regularly clean up the drainage channels, initiate a proper solid waste management system and ensure a routine landscaping of the vegetation. The institution should adopt an initiative of upgrading the individual dwelling units by re-painting the walls, windows and doors to make them more appealing and effectively carry out its power of development control in the estate as well as reinforcing the standards. The NCC should come up with a means to integrate recreational facilities for all age groups from adults, to the youth and finally to the children in the estate. This will lead to higher satisfaction levels among the residents because a good residential neighbourhood should at least combine those two aspects.

5.3 Urban renewal as an Instrument for Enhancing Residential Neighbourhood Satisfaction

Urban Renewal is a very influential force for urban change. The complexity of the process may not be satisfactorily embodied in a simple definition. Nonetheless, it is defined by Gibson and Langstaff (1982) as being the redevelopment or rehabilitation of the older parts of urban centers predominantly incorporating the improvement of housing and environmental conditions, and for the poor, their social services and infrastructure needs including economic regeneration and employment provision through state and local authority intervention, increasingly, with the participation of residents. The fundamental objective of urban renewal
is the application of several principles in the revitalization of any or all portions of the urban structure which are not fulfilling the functions for which they were designed (Miller, 1959 in Broudehoux, 1994).

Historically, as more populations continue to occupy the aging urban centres, their residential neighbourhoods continue to become larger and older, inevitably leading to more and more renewal of the urban fabric as a result of either overcrowding, dilapidation and deterioration of the physical fabric or a strain on infrastructure services and facilities among other factors.

5.3.1 Potentials of Urban Renewal
The possible scenarios, regarded as the visions of the future of public rental estates in Nairobi, Kenya, are tentative approaches towards restructuring these residential neighbourhoods possibly enhancing the residential neighbourhood satisfaction levels. They range from ‘nil’ interventions to very drastic, revolutionary and radical measures of total redevelopment. All the approaches are viewed as alternative policy intervention measures.

The response from the field survey towards urban renewal indicates that about 86 per cent of the respondents will support the process. As indicated in the previous sections majority of the residents are appalled and dissatisfied with the prevailing conditions and inadequacies of their residential neighbourhoods. A need for re-planning and improvement of the residential neighbourhood may therefore be considered in order to enhance the residential neighbourhood satisfaction levels.

With regards to the forthcoming fears among the households, diverse reasons were expressed towards the any form of urban renewal programme. About 17 per cent of the respondents specify that they fear being evicted by the NCC without a rationalized and effective relocation agenda. Whereas the rehousing of the households will ease the problem, say in a redevelopment proposal, it will lead to the social disruption of the closely-knit community structure, bearing in mind that the duration lived by the tenants is fairly long. Another 21 per cent of the respondents indicate that they will be unable to afford any new housing units, which may be proposed in the urban renewal programme which implies that the needs and concerns of the users will not be addressed; which is one of the key aims to enhance the resident’s satisfaction levels. This may probably lead to gentrification with the subsequent displacement of the current households by higher income groups eventually causing the low-income group to seek for rehousing arrangements in informal settlements. A situation which
majority of the residents 40 per cent are quite skeptical about the entire urban renewal situation. This is supported by about 15 per cent of the respondents who fear that the NCC may abuse the proposal for urban renewal as a ploy or trick to sell the existing land and houses or even the completed units (in a case of redevelopment) to the elite, the influential politicians or the wealthy people.

The residents, however, cite various facilities and conditions within the neighbourhood that they prefer to be conserved and/or preserved in an urban renewal undertaking. Majority of the residents expressed more than one good aspect of their residential neighbourhoods without any order of preference. The households regard the low rents, which include the unrestricted and un-metered water consumption, as an aspect worth maintaining. However, this will need to be considered from the point of view of how sustainable it will eventually be in terms of increased costs of management and maintenance borne by the landowners; the NCC and possibly the option of sharing the costs of servicing and maintenance of such facilities could equally be explored. The close proximity of the residential units to social and community facilities such as the commercial facilities, the public transport network and employment areas in industrial area and the central business district are equally cited as aspects that are worth maintaining as they appeared to be the aspects the residents are most satisfied about. If the locational attribute is maintained in the urban renewal program, it will most certainly elevate the residential neighbourhood satisfaction standards.

The enormous support towards the intervention measures is guided by the potential benefits that are associated with an urban renewal programme. Among the reasons cited by about 26 per cent of the respondents is the improvement and rehabilitation of the physical fabric and infrastructure services and facilities leading to an aesthetically pleasing physical environment characterized by refurbished buildings, improved sanitary facilities at household and community levels, better vehicular tarmac roads and paved pedestrian footpaths, the provision of electricity and street lights throughout the entire residential neighbourhoods, improved solid waste management, among other potential benefits. A situation depicting the enhancement of neighbourhood satisfaction levels of the residents.

With housing as an investment, the households regard the issuance of security of tenure for land and/or housing as a positive step towards property ownership, social stability and possibly enhanced residential satisfaction. This will be addressed within the realms of either
privatization or in a feasible land tenure system. It will alleviate their relegation to being tenants, in some of the cases, for a whole lifetime. In order to avoid losing ownership, it has been found out that the households in public rental schemes have developed the coping strategy of progressively transferring ownership to immediate family members, relatives and/or sub-letting the units.

5.3.2 Alternatives of Urban Renewal to Bahati Estate
The possible scenarios below, are tentative alternatives for the renewal towards restructuring Bahati Estate and other old public rental estates and possibly enhancing the residential neighbourhood satisfaction level.

Alternative I: 'Nil' Intervention
This alternative does not identify the problems of the residential neighbourhoods. As an achievable scenario, it assumes that the present socio-economic, physical and environmental shortcomings are acceptable to the local community. It assumes that an impasse exists making them to do nothing about the existing situation or that a feasible financial framework is absent to revitalize the residential neighbourhood. This alternative will satisfy the older age groups who have stayed in the housing units for a long duration and in doing so, has made them consider the area as home and therefore would prefer if there were no interventions and improvements because of the sentimental feeling.

For this reason, no serious measures will be undertaken. The status quo will, therefore, be allowed to remain upon any planning intervention measures. The residential neighbourhoods go on to remain extremely low-density but still highly overcrowded island with very close proximity to the Central Business District and the Industrial Area within the short-term period. While there are no green fields available in the area to allow for new constructions, present in Bahati is underutilized prime land with close proximity to the CBD. This is the dilemma the NCC is tasked with.

The social environment will persistently degenerate as a result of intense overcrowding both within the housing units and the tangential ultra-dense overgrowth expressed in terms of total built-up area per unit hectare. The spontaneous development of semi-permanent structures will be met by simultaneous diminishing supply and under-provision of basic social and community facilities, infrastructure services such as water supply and storm water drainage,
sanitation facilities and adequate solid waste management. The entire urban poor population in these residential neighbourhoods will be prone to periodic infections, chronic diseases and parasitic infestations, which are the main characteristics of unplanned settlements leading to low satisfaction levels among majority of the residents as they would prefer a better environment and living standards.

The spontaneity of development mainly due to tenants' extensions and transformations of the housing units will be a true reflection that the existing housing units do not meet the needs of the diverse households' socio-cultural backgrounds with ethnic heterogeneity. The continued increase in household sizes, for example, will continue to be reflected in the inflexibility of their housing units' planning and design dimensions, which will undermine the importance of culture and residents' housing needs in housing development programmes resulting into low satisfaction levels among the residents.

**Alternative II: Rehabilitation and Densification Approach**

Neighborhood satisfaction is predicted by the physical measures, perception and evaluation of the attributes of the residential environment. Perception and evaluation of the attributes of this environment is also predicted by physical measures of the attributes of the residential environment. The rehabilitation and densification approach may have a symbiotic relationship with neighbourhood satisfaction.

This approach recognizes the problems, felt needs and shortcomings of the residential neighbourhoods in the estate. However, only a systematic refurbishment of the housing units and limited improvements of the social and community facilities and infrastructure services and facilities will be envisaged. In the long-term period, the maintenance of the entire built and natural environment and subsequent densification of the open spaces will substantially improve and reduce the need or urgency for total redevelopment.

For instance, in the estate; the rehabilitation option confirms that the physical fabric of all the buildings is generally in a structurally sound condition but have only deteriorated because of age and neglected maintenance. The existing housing stock is recognized as a valuable resource. It needs to be preserved by adapting the dilapidated houses and/or community facilities and infrastructure services to present-day life and acceptable standards by providing modern facilities. The neighbourhood unit concept applied will be conserved. The value of
this old neighbourhood, in terms of its unique architectural features and historical significance, respectively, effectively enabling a unique urban identity, will prevail.

Preservation and conservation will enable the sense of continuity of place necessary for the maintenance of the urban continuum. The preservation of the old buildings, open spaces and neighbourhood unit concept applied will be conserved and eventually taken advantage of by recognizing its potential contribution to the development of the tourism industry as a stimulant to the local economy and the maintenance of the city’s vitality. This will probably lead, eventually, to the gazettement of the estate as a conservation site. The rationale for this conservation approach will be underpinned by the fact that this residential neighbourhood is the only remaining trace of the origin of the city of Nairobi.

Reasonably, rehabilitation will involve the renovation, the repair and the restoration, partially or completely, of all existing elements of buildings and infrastructure services and facilities in a bid to give them a new lease of life. The refurbished infrastructure services and facilities will be relevant in lubricating socio-economic development since it will lead to better vehicular and pedestrian circulation networks, re-planning of the water and sewerage reticulation systems, improvement in sanitation and solid waste management and the provision of electricity and street lights to areas where they are absent. The existing clinics, health centres, schools, social halls, shopping centres, vehicular roads and pedestrian paths, etc., will be upgraded to a satisfactory and appreciable standard through a face-lift to emerge with a clean, safe and healthy living environment.

However densification of the existing open spaces will increase the capacities of the community facilities. It is noteworthy, the above approach may go a long way in the enhancement of residential neighbourhood satisfaction levels of the residents as it will be improving their living conditions and perhaps give them a sense of identity and belonging.

**Alternative III: Redevelopment Approach**

Redevelopment will be a more radical approach. It will assume that Bahati Estate, in part or in whole, is old and in a seriously dilapidated condition. It will assume that the living and social conditions are completely degenerated and that the physical fabric has no preservation value. It will further assume that the existing arrangement of the built fabric does not allow for maximum utilization of the land. In such a case, total demolition and reconstruction will
be considered to be the most feasible solution and the only fundamental planning instrument for urban renewal through re-planning and restructuring.

To the NCC the landowner, redevelopment will not only enable them to achieve the social objectives of housing more people but it will also represent both maximum profit through the sale of new housing units, and maximum use of land through maximum development of full plot coverage and maximum plinth area. It will have the advantages of attracting higher income groups and commercial activities to the residential neighbourhoods, meaning economic regeneration through increased revenue bases. Redevelopment will be a desirable way of supplying mass housing to meet the needs of the high population growth rate of Nairobi as it will lead to higher population densities and improved community facilities and infrastructure services. These diverse urban aspects will be highly satisfactory ways of revitalizing, modernizing and regenerating Bahati Estate and other old public rental estates in Eastlands Nairobi.

The redevelopment of the estate, however, will lead to the destruction of all the sites, buildings and structures with desirable architectural features and with cultural and historical interest. It will quickly lead to the demolition of the badly needed housing units and community facilities already serving very useful functions. The existing households will be completely deprived of valuable housing resources. Redevelopment will, however, lead to maximum optimization of the open spaces and the entire land including a rational re-planning of the vehicular and pedestrian circulation networks.

The Nairobi River may also be assumed to be of unsatisfactory conditions as majority of the residents complained about the foul smell especially the housing units near the river calling for river redevelopment. The first step may be to protect the ecosystem is to clean up the river. This includes hard technology which will begin filtering the pollutants out of the water from the factories. The next step will be to begin building the filtration buffer zone along key areas of the river, starting near the city and work towards the south. It may be important to plan zoning early for wildlife and wetland reserves so plants and animals have plenty of time to adapt and grow. After this the commencement of Protection, connection and expansion of the existing water lotus and fish harvesting zones should begin. By connecting these zones there will be greater access to visitors. It will also ensure vital components in the cleaning
process remain safe. Optimized aquaponics can be implemented for fish and plant farming while purifying the water.

Enlarged natural areas between green corridor and river can then be established. These intermediate spaces function as large long-term water filtration and storage systems. Additionally, they encourage local animal and plant populations to return to the environment. The midpoint of these corridors will be developed for relaxation, leisure, information, and food. The system will provide room for plants and animals to live between the points accessible to humans. Paths for walking, biking, relaxation, and observation meander through the corridor. This is intended to introduce the visitor, or traveler, to the different components of the system and surrounding area.

By dividing the ecosystem development into subsequent phases, the system will have time to develop at a natural pace. Plants need time to mature and animals need time to feel comfortable in their new location, and water needs time to be filtered. Phasing should be done in accordance with village urbanization. First allowing transportation to happen, then developing the areas.

It is important to create specialized zoning plans along the waterfront. This will ensure no unwanted expansion could take the area over. It is also important to enforce laws that protect these zoning plans. In this way when new interest is needed for revenue the parks and corridor are already lush with plants and not barren. This will increase the value of property and attract investors. Once the plant, animal and fish life ecosystem spaces have been established and revenue is flowing into the city, a department will need to be formed to maintain and monitor the health of these areas. This includes monitoring stations along the river for water pollution, excursions into wildlife zones to monitor breeding and animal activity, and observation of wet land facilities for proper circulation and cleanliness.

**Alternative IV: Integrated Approach**
The integrated approach is viewed from the wider perspective involving the renovation of the existing built and natural environment by recognizing what will realistically be conserved, simultaneously with the densification of open spaces combined with the reconstruction of the buildings, in part or in whole, where it will be beyond the reach of feasible rehabilitation. It will recognize the combination of rehabilitation, densification of open spaces, redevelopment
and privatization as fundamental tools and complementary forces of change in urban renewal. It will therefore combine the best aspects of each individual approach. It will have the added advantage of allowing for the phasing of development by the systematic application of each approach. This will allow for flexible project implementation effectively enabling the preservation of the traditionally built and natural environment while achieving respectable densities in both the infill and the new buildings.

The integrated approach enables the existing households to be retained in their own housing units while at the same time improving the quality of life of their total residential neighbourhood. The social and community facilities and infrastructure services will equally continue to function and deliver the required urban services without adverse disruptions as detailed out earlier. Within the integrated approach the existing housing stock will be improved by provision of extra living spaces, mainly to the single room housing units whose household sizes are dissatisfied with the inadequacy of the existing habitable spaces.

The densification programme will realize the stepping-up of housing stock through the intensive use of the existing open spaces and the application of higher plot ratios to accommodate medium walk-up apartments. This will be followed up by the increase of the capacities of the social and community facilities to ensure that the additional population is adequately serviced and provided for. This will involve the increase of capacities of all religious, educational and health facilities, the social halls, police stations, post offices, recreation and sports facilities and the provision of a cemetery as a public utility. Ample care will need to ensure that the ground coverage regulations do not compromise the total loss of open spaces. The maintenance of landscaping elements will require the objectives of a functional healthy mix to be achieved by the blend of the built with the natural environment.

In a bid to alleviate poverty through economic regeneration, the residential neighbourhood will be restructured and re-planned to accommodate socio-economic activities by encouraging mixed-use development of transportation, residential, commercial and industrial land uses. Spatially providing for housing, which is integrated with home-based economic enterprises, cottage industries and other light industrial activities, small and micro-enterprise informal economic activities will have the overall effect of increasing income and employment opportunities for these low-income households especially the vulnerable groups such as the women, retrenches and school dropouts.
Mixed-use development of the residential neighbourhoods will have profound effects of increasing the access of essential services and products to the existing informal economic activities through an effective upgrading policy. The overall integrated approach will ensure cross-sectoral coordination, and will result in the creation of a rich residential environment through the integration of new infill buildings within the existing neighbourhoods. It will allow for the development of a new form of contemporary architecture with local characteristics, enriching the appearance of the old while maintaining its identity. The transportation system will also be rationalized in the re-planning exercise to realize the inter-linkage between the three residential neighbourhoods through provision of an efficient and effective vehicular and pedestrian circulation system.

The integrated approach will bring in the advantages of attracting upper income groups who will rent the infill and new buildings at quasi market values. These economic market rents will be useful in cross-subsidizing the rehabilitation exercise and make the increased rents bearable to the old tenants, effectively enhancing the viability of the integrated approach model. Notwithstanding, since none of the housing units will be sold in the open market, the landowners (NCC) will continue to bear the burden of maintenance and management of both the old and the new structures. A need to evaluate the privatization approach hence becomes useful to find out the possible implications.

5.3.3 Evaluation of the Renewal Alternatives

Urban neighbourhood renewal can assume a number of approaches as already indicated above. All these alternatives have their pros and cons. Before settling for a particular approach, it is therefore advisable to carry out a critical analysis of each approach’s merits and demerits so as to identify the best approach for the situation. The figure below illustrates the summarized options in a common matrix. This analysis involves the evaluation of the physical and environmental implications against their social, cultural, political and economic impact by way of indicating both the potentials and the limitations of each approach. Where appropriate, illustrations of cases of either success or failure in Kenya and other developing countries are cited for comparative analysis. The ranking system of the options has been carried out with regard to their suitability and sustainability by making an assessment of the socio-economic and financial costs, physical and environmental benefits and political and
cultural impacts ranging from 1 to 5 representing from best to worst.

### Table 5.1 Evaluation of the Renewal Alternatives

<table>
<thead>
<tr>
<th>URBAN RENEWAL ALTERNATIVES</th>
<th>MERITS</th>
<th>DEMERITS</th>
<th>Ranks</th>
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<tbody>
<tr>
<td>Partial Redevelopment</td>
<td>Presents an opportunity for a participatory approach to the process by involving and empowering the locals in the event. Opportunities for locally available jobs through the new construction process. Ecological gains as the high density development will curb the diversion of greenery to illegal extensions allowing for quality greenery to thrive. Promotion of transportation conservation through an emphasis on pedestrianization and therefore minimizing the need for private car mobility.</td>
<td>Loss of the estate physical design and architectural value/heritage through demolition of the original physical fabric of the estate. Generally involves the relocation of the original population to another part of the urban area. Contributes to loss of employment for the original residents as resettlement areas are usually located further from their original area. It destroys the functioning social system through the scattering of families &amp; friends</td>
<td>3</td>
</tr>
<tr>
<td>Preservation and Conservation</td>
<td>Old buildings have intrinsic value, i.e. buildings of a certain era tend to be built with higher quality materials such as rare hardwood and wood from old-growth and extinct forests. Old building attract people; whether the feeling is patriotic, homely or reassuring, older architecture tends to fit the bill. Preservation creates reminders of a city's culture and complexity which maintains a sense of permanency and heritage. Old buildings are a big fortune for architects designs as they are able to create more unique and distinct buildings.</td>
<td>Dilapidated buildings which have lost their economic value occupy space which can be used optimally in terms of land use.</td>
<td>2</td>
</tr>
<tr>
<td>Waterfront Redevelopment</td>
<td>Improve the aesthetic quality of the area Ability to create new public open spaces Encourages a balance of wildlife, open space and development Increases real estate investment and maximizes development.</td>
<td>Time consuming and quite expensive as it involves several procedures and the general maintenance is quite tasking. Interferes with the biodiversity of the existing creatures within the river.</td>
<td>3</td>
</tr>
</tbody>
</table>
Rehabilitation and Upgrading

The preservation of existing housing stock may not be a plausible idea. With the acute shortage of housing in the city, it leads to conservation of structurally sound buildings, materials, and cost of construction. It results in the preservation of civic and cultural heritage. It incorporates community participation initiatives. Tourism potential benefits: if the rehabilitation process is properly carried out, the estate can be transformed into a tourism attraction site.

<table>
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<tr>
<th>MERITS</th>
<th>DEMERITS</th>
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<tbody>
<tr>
<td>Intergrated Approach</td>
<td>Its complex and time-consuming process, which is more difficult to implement than redevelopment. It is sometimes resisted by developers, who see it as an infringement on free enterprise and a barrier to large-scale redevelopment. Often, the old houses are so dilapidated and have lost their original character making the attempt to upgrade them quite tasking. The introduction of new infrastructure to old and dense neighborhoods can be very difficult.</td>
</tr>
<tr>
<td>It allows for flexible project implementation, which can preserve the traditional urban environment while achieving respectable densities. It respects the social order of the community by re-housing the majority of the original residents on the site and invites mass participation. It results in the creation of rich environments through the integration of new buildings within the existing neighborhoods. It allows for the development of a new form of contemporary architecture with local characteristics, enriching the appearance of the old city while maintaining identity.</td>
<td>For many developers and local authorities, the integrated approach remains a time-consuming process, less profitable than redevelopment, especially when the objective is to supply mass housing.</td>
</tr>
</tbody>
</table>

Source: Author, 2016

5.3.4 Choice of Preferred Alternative
Considering all these scenarios, this study thus recommends the integrated approach as the preferred policy option in Bahati Estate and other low income residential environments towards the renewal and enhancement of neighbourhood satisfaction of Eastlands. The study recommends that the integrated approach reflect the sub-optimal and uneconomic utilization of prime land with very close proximity to the CBD. The study recommends for the stepping-up of housing units, infrastructure and community facilities to respond to the rapid
urbanization processes in Nairobi manifested in the pressing demand for low-cost housing by the citywide population in the low-income bracket.

The study recommends that the integrated approach recognize the diverse dynamic demographic changes at neighbourhood level manifested in overcrowding in housing units, social maladjustments and in the erection of incongruous developments in the form of semi-permanent structures. The study recommends that the integrated approach be sensitive to the dynamic migration patterns, the interwoven system of tenancies and the relatively long periods of stay in these residential neighbourhoods. The study makes further recommendations that the integrated approach respond to the socio-economic realities of the residents by allowing for the spatial integration of housing, transportation, commercial and light-industrial land Uses in mixed-use developments that will also economically regenerate these low income neighbourhoods effectively redressing urban poverty levels.

The study recommends that the housing typologies additionally allow for flexibility and variety in their planning and design dimensions to accommodate subletting, elasticity of household sizes and home-based economic enterprises. This will reflect the dynamic social, cultural backgrounds and economic demands of the circumstances of low-income households. This study recommends that these new prototypes envisage being affordable and replicable in other urban centres in Kenya at large.

This study recommends the integrated approach, among other alternative strategies, because it allows for the combination of rehabilitation, densification of open spaces, redevelopment including the Nairobi river redevelopment and privatization as fundamental tools and complementary forces of change in urban renewal. It seeks to combine the best aspects of each individual approach. The integrated approach has the added advantage of allowing for the phasing of development by the systematic application of each approach. This will allow for flexible project implementation effectively enabling the preservation of the traditionally built and natural environment while achieving respectable densities in both the infill and the new buildings in virtually the whole of Eastlands.
CHAPTER SIX: RECOMMENDATIONS AND CONCLUSIONS

6.1 A Synthesis of the Research Findings
This research set out to explore and assess residential neighbourhood satisfaction of public rental housing in a developing country context. The research particularly aimed to make an assessment of the structural, locational and neighbourhood attributes of old public rental housing. In developing countries such as Kenya old public rental housing estates typologies were built during the colonial and pre-independence periods (Harris & Hay, 2007). Previous research on these old public rental housing estates shows that some of the locational and neighbourhood attributes satisfy the residents. However, the social and demographic changes over the years including other economic as well as institutional changes show that the public rental housing estates in Eastlands, Nairobi may no longer be satisfying the existing population (Mwaura, 2002; Shihembetsa, et al 1989).

The overall result is that people are dissatisfied to live in Bahati Estate. The aim of the research was sought to these findings.

The sizes of underutilized land are in the form of open spaces and circulation networks which indicate that there are many options for optimal use of the urban land. A spot check on the floor space index for the estate illustrates that the estate's total areas (M$^2$) vs the floor space (M$^2$) is 39900 vs. 5220 indicating that 87 percent is unbuilt open space. This form of open spaces attribute to higher satisfaction levels of the residents mainly because this space has a complimentary function i.e. to boost their incomes by carrying out farming activities and supplementing their subsistence as well as increasing their indoor space. However the presence these of un-utilized land and numerous open spaces presents an opportunity of erecting high rise developments as a response to optimal and economic land utilization and increase both the building and population densities in a bid to accommodate more residents. This is seconded by majority of the residents in the social survey roughly (55 per cent) expressed their preference towards high rise apartments with more than 4 floors & lifts as the type of development they would desire especially on the under-utilized spaces.

The concept of housing densities has been noted to impact on people's quality of life either positively or negatively. For instance, in Bahati Estate a low density development; the current land use intensities are very low in terms of the total built up area as compared to the population densities in terms of person per hectare and the high degree of overcrowding in terms of household sizes per housing unit surpassing the carrying capacity. The study found
out that this has led to reduced quality of life and thus immense Residential Neighbourhood Dissatisfaction especially among the residents. The actual population densities in Eastlands are low, particularly when they are compared with the high densities stipulated in the Nairobi City County planning standards and regulations and the actual current trends in other low-income residential neighbourhoods in Nairobi. This is unmatched by the unprecedented levels of overcrowding existing in the housing units of these low-income residential neighbourhoods; more so, in Bahati Estate.

The housing facilities are in a decrepit condition, an aspect that has been brought forth by their long existence as well as the poor maintenance provided. Most of the buildings are characterized by ugly walls, oxidized iron sheet roofs and unkempt windows and doors. The poor housing conditions that residents complained of include: unsafe structures, such as crumbling walls and rotting wood beams; leaky roofs that let rain water drips inside in summer whenever there was a heavy downpour; old wood windows and doors with low energy efficiency and bad soundproofing. The lacking timely maintenance by the NCC is due to the high costs of level maintenance which the institution could not cover and the residents' lack of security of tenure prohibits them to do some DIY repair works to keep their homes livable.

The traditional courtyard houses also posed modern problems as the courtyard houses did not have adequately equipped kitchens, most of which were in shabby extensions. Most courtyard houses also lacked bathrooms, which meant residents had to use detached public toilets 8-10 households.

The housing units are predominated by single rooms currently housing families with more than 55 per cent of them having household sizes of more than four members. Residents talked about their size of their housing units as being too small. The dissatisfaction of house unit size and space utilization arises from the fact that the initial housing units are not designed for occupation by family units. This makes the households to demand for changes within their housing units to improve their satisfaction levels.

These demographic changes manifested in the gradual enlargement of households have been found out to cause social mal-adjustments and psychological implications. This is because adult parents are compelled to share the single rooms with mixed sexes constituting their mature sons and daughters which is a factor of extreme dissatisfaction by majority of the residents, an estimate of 98 per cent. The residents complained about the lack of privacy both
visual and auditory especially during the night and in regard to traditions and culture, it is goes against the culture of the communities reducing the quality of life. The study found out that the households have adapted coping strategies by internally partitioning the rooms with curtains. Externally, the households have also undertaken alterations and other transformations through the erection of semi-permanent structures that sometimes double up as opportunities for sub-letting and increasing unit space as a response to enhancing satisfaction levels.

The study has revealed that majority of the households are dissatisfied with the existing infrastructural facilities, approximately 76 per cent. Due to the increment in population facilitated by the informal extensions put up by the residents has further overstretched the capacity of existing infrastructural facilities like water pipes, drainage channels and sewer lines. The sewer and drainage channels have now become dysfunctional a phenomenon that can be attributed to the increased capacity of waste water currently generated, vegetation overgrowth, over-siltation and finally the mushrooming of informal economic activities’ semi-permanent structures (Kiosks) erected over the channels, There is also increased water demand that can’t be catered for by the capacity of the existing water pipes. This has resulted to occasional water shortages in the area as a result of pipe bursts, blocked drainage and sewer lines among other problems.

The infrastructural facilities in the area are in a poor state. The respondents in the residential neighbourhood indicate that the condition of the vehicular roads to their housing units or to their estate are either very unsatisfied (80 per cent) or unsatisfied (7 per cent) with the vehicular conditions and pedestrian paths. The vehicular roads and pedestrian paths are poorly paved and maintained; characterized by potholes and appear like patches of tarmac. The residents recognize that these badly conditioned roads require to be re-carpeted and the potholes filled-in. A similar problem is noted for the pedestrian footpaths to the housing unit.

Some changes in the land use have manifested especially the emerging of small and micro-enterprise economic activities along the major road spines and internal transportation channels. This study has established that these land-use spatial changes demonstrate the inadequacy of employment areas and income-generating enterprises. These activities normally play the role of boosting household incomes as a necessary input towards socio-economic development and poverty alleviation. The residents have taken advantage of the big open spaces to supplement their incomes by putting up gardening, drying clothes, keeping
of animals and birds within the courtyards, retails and jua kali kiosks along the roads hence increased productivity and enhanced residential satisfaction levels.

The state of solid waste management; a service which should be provided by the NCC is not satisfactory according to the social survey. Solid waste lies almost everywhere in the estate. Certain sections of the estates for example the lanes and pedestrian paths within the estate are used as solid waste collection points as well as dumping sites. These poor waste management practices in the estate have exhausted the aesthetics and hygienic conditions of the estate as it has become less appealing and more prone to health problems. The bad odor that emanates from these disposal sites especially during the rainy season compounds the problem of poor aesthetics. Majority of the resident complain that they had to make local arrangements whereby community-based organizations formed by local youth groups were contracted to provide the service of garbage collection. An aspect which the residents find very unsatisfactory as the Nairobi City County is foregoing one of its key responsibilities.

The NCC has also been reluctant in exercising its roles and responsibilities in the daily operations of the estate with respect to maintenance leading to general dissatisfaction among the residents, 100 per cent of the residents confirmed it. This laxity has seen what was once a pleasant estate, with functioning infrastructural facilities become decayed with dilapidated housing and infrastructural facilities. As already aforementioned, most of the residential buildings are characterized by ugly walls, oxidized iron sheet roofs and unkempt windows and doors. The infrastructural facilities like sewer lines and storm water drains are dysfunctional. The vehicular and pedestrian paths are in bad condition with numerous potholes and unkempt vegetation. A situation which has led to total reduction of quality of life and violation of the basic human rights.

6.2 Recommendations

From the findings, the problems presented in the estate which include: un-utilized land and numerous open spaces, low density single use developments, sprouting of informal economic activities, increased number of occupants per dwelling unit, inadequate housing facilities, overstretch of the existing infrastructural facilities as well as derelict housing and infrastructure require to be properly tackled. As aforementioned, the policy approach chosen should holistically address these problems. Moreover, the study objectives aimed at recommending a policy option of improving the estate in view of current and future demands. Out of the examined alternatives, the study suggests ways of enhancing neighbourhood
satisfaction and recommends the integrated approach towards renewal as the preferred policy option in Bahati Estate other low income residential environments.

6.2.1 An Integrated Urban Renewal Approach for Enhancing Residential Neighbourhood Satisfaction

This study recommends the integrated approach, among other alternative strategies, because it allows for the combination of rehabilitation, densification of open spaces, redevelopment including the Nairobi river redevelopment as fundamental tools and complementary forces of change in urban renewal. It seeks to combine the best aspects of each individual approach. The integrated approach has the added advantage of allowing for the phasing of development by the systematic application of each approach. This will allow for flexible project implementation effectively enabling the preservation of the traditionally built and natural environment while achieving respectable densities in both the infill and the new buildings in virtually the whole of Bahati Estate.

The preferred alternative will entail the following strategies:

**Preservation and conservation of a section of the housing units and courtyards**

This will include the preservation and conservation of a particular section of the estate preferably a cluster of the courtyards. This will enable the sense of continuity of place and trace the historical journey of the Nairobi Estates. The preservation of the old structures, open spaces and the old patterns of the estate can be taken advantage of by the Nairobi City County especially by recognizing its potential contribution to the development of the tourism industry as a stimulant to the local economy and the maintenance of the city’s vitality through the preservation of the estate. The residents supported this proposal immensely as it will enable the sense of continuity of place and trace the historical journey of Bahati Estate. It will also create a sense of identity for the estate.

**Partial Redevelopment of the Estate**

Having assessed the neighbourhood satisfaction levels and current situation in Bahati estate, it was considered that the use of land in the estate is not sustainable. It comprises of low density, single use developments and large unused spaces of idle land. The policy makers, NCC in agreement with the estate owners considers the estate ripe for redevelopment. This will entail total demolition and reconstruction of the estate. The study found out that 86 per cent of the respondents supported the redevelopment in the area citing their biggest fears of
this approach would be gentrification and eviction by the NCC with no relocation agenda. However, the resident recognized that with this approach their satisfaction levels will be enhanced.

**Nairobi River redevelopment**
The study revealed that majority are satisfied with the close proximity to the Nairobi River for various reasons. The major one being is the acoustics and aesthetic quality that comes with the close proximity and the economic opportunities it brings as it allows the residents to put up tree seedlings and sell off. However, the proximity to the river has led to low satisfaction levels due to its foul smell and the residents proposed that the river should be redeveloped to improve the quality of life. The first step is to clean up the river. This includes hard technology which will begin filtering the pollutants out of the water from the factories and also ensure vital components in the cleaning process remain safe. Optimized aquaponics can be implemented for fish and plant farming while purifying the water.

**Provision of a Mixed Land Use Structure**
From the field survey, the communities proposed mixed land use for different reasons. The majority saw it as an excellent way to incorporate a mix of housing types on a small scale while enhancing traditional town character while the rest viewed it primarily as a vehicle for revitalizing struggling areas like Bahati and spurring economic development in the local area.

Mixed land uses within the estate will facilitate both residential and economic use with the establishment of different housing types, office spaces and social functions all in one. The spatial integration of housing, transportation and commercial land uses in mixed-use developments will also economically regenerate the estate. This will largely address the creation of employment opportunities for the unemployed proportion of the population and in turn address the problem of haphazard sprouting of commercial facilities. The residents also recognized mixed land use structure had potential benefits that may enhance their satisfaction levels as well as improve the quality of life among them being the provision of more housing opportunities and choices, the possible increase affordable housing opportunities, allows for high quality design by providing both greater flexibility and more control of the housing units and finally reduces auto dependency, roadway congestion, and air pollution by co-locating multiple destinations.
Construction of High Rise, High Density Developments

The construction of high rise, high density developments will suit as an intervention to address the problems of inefficiency of space use and inadequate housing facilities as a larger population will be accommodated per unit area. The returns from the existing structures do not correspond to the current land value either. This construction will also ensure that the vertical space has been optimally utilized leaving part of the horizontal space for greenery and quality open spaces. More than half of the respondent, roughly 52 per cent support the construction of apartments with more than four floors to cater to the overcrowding of households in the housing units and increased satisfaction levels. High-rises are usually not consistent with the social and economic lifestyles of low-income groups but the negative effects of high density can be mitigated by the design, layout, open spaces, traffic and community facilities of both external and personal spaces. For external space, with a fixed density, people will have a sensation of less crowdedness if there is more open space, less traffic congestion and more community facilities. High density maximizes the effectiveness of public transport while minimizing the distance between the sites of day-to-day activities. Moreover, it is cheaper to provide and maintain services like water, sewer, electricity and other utilities per capita in denser neighborhoods than in dispersed communities.

Provision of a Range of Housing Types and Choices

The housing typologies to be established should additionally allow for flexibility and variety in their planning and design dimensions to accommodate subletting (by designing houses with servant quarters which can be rented out by the main occupant), elasticity of household sizes and home-based economic enterprises. In order to create a sustainable, resilient community, the estate must attract a diverse population in terms of age, income-level, families and singles, etc. and having a diverse housing stock is a crucial element in supporting a diverse community. It is important to examine what each generation of residents view as the ideal housing option and offer a range of opportunities that will appeal to everyone.

A diverse housing stock would offer upper floor apartments in mixed-use buildings, townhomes, apartments, duplexes, and various sized single-family homes which does not segregate low income residents. Rather than developing large clusters of low-income housing project, the addition of small amounts of affordable housing options into the neighborhood should be encouraged.
Sometimes “affordable” is directly related to the size of the residence. Perhaps duplexes resembling the surrounding structures could be scattered throughout the neighbourhood.

**Construction of a riverfront park adjacent to Nairobi River**
The study revealed that the establishment of a riverfront park will lead to higher satisfaction levels among the resident which will encompass enlarged natural areas between green corridor and river. The creation of this riverfront park will create opportunities for relaxation, recreational and leisure purpose that will lead to improved quality of life and hence increased satisfaction levels. The establishment of a riverfront park adjacent to the Nairobi River can be justified with the following reasons. The park could be a space for interaction for the residents and surrounding neighbours. It will create employment opportunities with the semi-permanent shops which serve the people in the park and the tree nurseries which can be established in the park. The presence of the park adjacent to the river will activate the space and therefore play an important role in managing crime in the area.

**Establishment of public/civic space**
Within the park, a public statue can be established preferably one of African bachelor as the estate was initially established for the purpose of detaining African squatters. With the establishment of the statue it will foster and create a sense of identity of the estate and a sense of belonging for the residents.

**Rehabilitation and Upgrade of Infrastructure and Service Facilities**
According to the field survey, the respondents roughly 45 per cent indicated that they would prefer an upgrade with minor adjustments. The rehabilitation process will entail the renovation, the repair and the restoration, partly or wholly, of all existing elements of buildings and infrastructure services and facilities in the estate in order to give them a new lease of life. This will lead to better vehicular and pedestrian circulation networks, re-planning of the water and sewerage reticulation systems, improvement in sanitation and solid waste management and the provision of electricity and street lights to areas where they are absent. The existing clinics, health centres, schools, social halls, shopping centres, vehicular roads and pedestrian paths, etc, will be upgraded to a satisfactory and appreciable standard through a face-lift to emerge with a clean, safe and healthy living environment.
Efficient and Effective Maintenance of the Housing, Infrastructural Facilities and the Physical Environment

The NCC should provide a proper maintenance of the infrastructural facilities and the physical environment within the estate. They ought to regularly clean up the drainage channels, initiate a proper solid waste management system and ensure a routine landscaping of the vegetation. The area residents should adopt an initiative of upgrading the individual dwelling units by re-painting the walls, windows and doors to make them more appealing. The resident have been making local arrangements whereby community-based organizations formed by local youth groups were contracted to provide the service of garbage collection and maintain the open spaces by cutting the grass and collecting litter. The NCC should effectively carry out its power of development control and reinforce the rules and standards in the estate.

Ensure Participation of All Stakeholders

Past experience worldwide has revealed that stakeholder participation at all levels of the planning is an important factor for the success of any programme. A strong emphasis should be put on the public, private and community participation. Thus, the involvement of the resident community, along with the policy makers and technical experts, during the entire decision-making process is crucial. This will provide a broad framework for plan implementation through the organization and management structure of the institutional arrangements. It will also enable the harnessing, stimulation and mobilization of the natural, material, financial and human resources needed for the plan implementation.

6.2.2 Timeframe of Strategies/Interventions

The following is the duration of the strategies/interventions and their duration of implementation below.
### Figure 6.1 Recommendation alternatives implementation duration

<table>
<thead>
<tr>
<th>Strategies/Interventions</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preservation and conservation of a section of the housing units and courtyards</td>
<td>Long term</td>
</tr>
<tr>
<td>Redevelopment of the Estate</td>
<td>Long term</td>
</tr>
<tr>
<td>Nairobi River redevelopment</td>
<td>Short term</td>
</tr>
<tr>
<td>Provision of a Mixed Land Use Structure</td>
<td>Long term</td>
</tr>
<tr>
<td>Construction of High Rise, High Density Developments</td>
<td>Long term</td>
</tr>
<tr>
<td>Provision of a Range of Housing Types and Choices</td>
<td>Long term</td>
</tr>
<tr>
<td>Construction of a riverfront park adjacent to Nairobi River</td>
<td>Long term</td>
</tr>
<tr>
<td>Establishment of public/civic space</td>
<td>Long term</td>
</tr>
<tr>
<td>Rehabilitation and Upgrade of Infrastructure and Service Facilities</td>
<td>Short term</td>
</tr>
<tr>
<td>Efficient and Effective Maintenance of the Housing, Infrastructural Facilities and the Physical Environment</td>
<td>Short term</td>
</tr>
<tr>
<td>Ensure Participation of All Stakeholders</td>
<td>Short term</td>
</tr>
</tbody>
</table>

Source: Author, 2016

### 6.3 Conclusion

This study has provided valuable insights into the nature of the low-income residential neighbourhoods in Eastlands, Nairobi and the level of neighbourhood satisfaction of the residents. This has established an agenda for investigating its urban future and in turn the rationale for urban renewal. The study has confirmed that urban renewal can be a possible instrument for enhancing Residential Neighbourhood Satisfaction (RNS). It has emerged with a broad framework of plausible scenarios, which would form a platform for debate on the formidable approach to pursue in undertaking internal spatial restructuring of the residential neighbourhoods.
6.4 Areas for Further Research
Based on the study, further research may need to shift the focus to pursuing an integrated approach to enhance Neighbourhood Satisfaction in Bahati Estate. More importantly to consider all phases of how the integrated approach may improve and enhance RNS.

In addition, future research may need to develop an ideal residential neighbourhood from the perspectives of the residents and possibly how the development of the projects needs to proceed.
**Bibliography/ References**


Appendices

8.1 Appendix (i)

UNIVERSITY OF NAIROBI
DEPARTMENT OF URBAN AND REGIONAL PLANNING
BACHELOR OF ARTS (PLANNING) – II
RESEARCH PROJECT

RESIDENTIAL NEIGHBOURHOOD SATISFACTION IN PUBLIC RENTAL HOUSING: A CASE OF
BAHATI ESTATE, EASTLANDS, NAIROBI

CLUSTER OF STUDY: ___________________________ DATE: ____________________________

HOUSEHOLD QUESTIONNAIRE

Respondent’s Characteristics

Name of Respondent ___________________________ Place of Birth __________________________

1. Age
   (1) 24 and under (2) 25–34 (3) 35–44 (4) 45-54 (5) 55–64 (6) 65+

2. Gender
   (1) Male (2) Female

3. Ethnic Background ____________________________

4. Marital Status
   (1) Married (2) Single (3) Separated (4) Widowed (5) Divorced

5. Education Level
   (1) No Education (2) Primary (3) Secondary (4) College (5) Other ___

Demographic Trends – Urban Mobility Trends

6. How long have you been living in Nairobi? ____________________________

7. Have you been living here ever since you moved to Nairobi? (1) Yes (2) No

8. Where did you come from before occupying this house?
   (1) Rural area ______ (2) Estate within Nairobi ______ (3) other (specify) ______

9. Why did you move here? ____________________________

10. How long have you lived in Bahati ____________________________

11. Why did you prefer to live in Bahati? ____________________________

Tenancy trends

10. Are you the original occupant of this house or you took over from a previous tenant?
   (1) Original (2) Second tenant (3) Third tenant (4) Share with another tenant (5) Other __

11. What do you intend to do to this housing unit after you retire?
   (1) Transfer back to NCC (2) sell to new tenant (3) Pass on to relative (4) Continue to stay

12. How many persons live in this house? (1) 1 (2) 2 (3) 3 (4) 4 (5) 5 (6) 5 +
13. Household Characteristics

<table>
<thead>
<tr>
<th>STAYING IN THE HOUSING UNIT</th>
<th>INCOME STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GENDER</td>
</tr>
<tr>
<td>MOTHER</td>
<td></td>
</tr>
<tr>
<td>FATHER</td>
<td></td>
</tr>
<tr>
<td>SIBLINGS</td>
<td></td>
</tr>
</tbody>
</table>

(1) Informal self-employed (unlicensed
(2) Formal self-employed (licensed)
(3) Formal employment
(4) Not employed (18-55 years)
(5) Other (specify)______________________

14. Do you have any other occupation? (1) Yes (2) No (b) Location ____ (c) Income____

15. How many rooms are in this housing unit? (1) ...........

16. Is any part of the housing unit sub-let? (1) Yes (2) No ____ If yes, for how much?____

17. About the residential unit:

a. The level of satisfaction in the residential unit will be measured on a five-point Likert scale;

(1) very unsatisfied (2) unsatisfied (3) neutral (4) satisfied (5) very satisfied

<table>
<thead>
<tr>
<th>Aspect/Element of Residence Description</th>
<th>Level</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residence functionality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-Ventilation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical fixtures; number of sockets and location</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Water
Sewer
Residence’s acoustic quality
Degree of privacy
Sanitary fixtures (wash basins, water closet, etc)

b. What is it that you like and/or you do not like about this dwelling unit/residential unit?

LIKE

DO NOT LIKE

c. Among the aspects that you like and/or do not like what is it that you would like improved in your dwelling unit/residential unit?

18. About the residential neighborhood support services:

a. How satisfied are you by the adequacy of and condition of these services? (1) very unsatisfied (2) unsatisfied (3) neutral (4) satisfied (5) very satisfied

<table>
<thead>
<tr>
<th>Unit Support services adequacy and condition</th>
<th>Level</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass, Flowers, Trees, Fences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicular road conditions to your unit/estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian paths to your unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streets/Security lights to your unit/estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piping water supply to your unit/estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewer line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity to your unit/estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm water drainage disposal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire fighting facilities to your</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b. What is it that you like and/or you do not like about this residential neighborhood support services?

LIKE

______________________________________________________________________

DO NOT LIKE

______________________________________________________________________

c. Among the aspects that you like and/or do not like what is it that you would like improved among the residential neighborhood support services?

______________________________________________________________________

19. About the public/communal facilities:

a. How satisfied are you by the adequacy of and condition of facilities within the estate or within immediate neighbourhood? (1) very unsatisfied (2) unsatisfied (3) neutral (4) satisfied (5) very satisfied

<table>
<thead>
<tr>
<th>Facility</th>
<th>Level</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery, Primary, Secondary schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Centre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternity clinics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social hall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open spaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police Station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cemetery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b. What is it that you like and/or you do not like about this residential neighborhood public/communal facilities?

**LIKE**

**DO NOT LIKE**

c. Among the aspects that you like and/or do not like what is it that you would like improved among the residential neighborhood public/communal facilities?

---

19. About the neighborhood facilities:

a. How satisfied are you by the adequacy of and condition of facilities within the estate or within immediate neighbourhood? (1) very unsatisfied (2) unsatisfied (3) neutral (4) satisfied (5) very satisfied

<table>
<thead>
<tr>
<th>Facility/conditions</th>
<th>Rank</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of the estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity to Nairobi river</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public transport access to the estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to CBD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to work places</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to convenience stores/markets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanliness of public areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automobile parking spaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disaster management in the estate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance, repair services in the estate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. What is it that you like and/or you do not like about this residential neighbourhood facilities?

**LIKE**

**DO NOT LIKE**
c. Among the aspects that you like and/or do not like what is it that you would like improved among the residential neighbourhood facilities?

___________________________________________________________________________________________________

20. About the Social Environment

<table>
<thead>
<tr>
<th>Facility/conditions</th>
<th>Rank</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security at home and in public areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relations with neighbours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership in a community based organization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. What is it that you like and/or you do not like about this residential neighbourhood social environment?

LIKE

____________________________________________________________________________________________________________

DO NOT LIKE

_________________________________________________________________________________

 c. Among the aspects that you like and/or do not like what is it that you would like improved in the residential neighbourhood social environment?

_______________________________________________________________________________

_____________________________

ENHANCING RESIDENTIAL NEIGHBOURHOOD SATISFACTION IN URBAN RENEWAL

21. Would you support or oppose an urban renewal programme in this area that is geared towards improving the residential neighborhood?

(1) Support (2) Opposed

22. What are your fears about the urban renewal programme?

(1) Lack of involvement and total exclusion of beneficiaries in the decision-making process

(2) Gentrification – displacement by higher income group

(3) Eviction by Nairobi City Council with no relocation agenda

(4) Ploy or trick by Nairobi City Council to Sell the existing land and houses or the completed units to the elite, politicians, wealthy people with the exclusion of current tenants

(5) Inability to afford new housing units, therefore programme would not respond to the needs of the users,

(6) Other (specify) ____________________________

23. Which of the adequate facilities and conditions would you prefer to be maintained?


24. What kind of redevelopment do you desire?

(1) Units to remain as they are with no alteration at all

(2) Upgrading with minor adjustments - minor alterations and additions to existing housing units and community facilities, infrastructure and services without affecting the current residents.

(3) Densification – in-filling the existing open-space pockets to accommodate more people

(4) Demolition of all units and reconstruction of new housing units consisting of Bungalows – front and back yards /Semi-detached/row housing Maisonette

(5) Apartments – not more than 4 floors -More than 4 floors & lifts

(6) Conservation of all desirable urban architecture

(7) Privatization – selling the houses and the land to us the residents and us improving the houses and facilities to our satisfaction

25. What potential benefits would you like fulfilled for yourself and the estate in the urban renewal programme?

(1) Security of tenure for land and/or housing

(2) Improved social and cultural conditions by improving the quality of life

(3) Improved economic conditions –more employment areas and higher per-capita-incomes

(4) Aesthetically pleasing physical environment –New or improved buildings / Solid waste management

(5) Improved infrastructure and services – better vehicular tarmac, better pedestrian footpaths, Streetlights provision

(6) Direct representation of tenants in decision-making towards factors and issues that affect our lives

(7) A stakeholder partnership approach to the solution of urban planning tasks
RESIDENTIAL NEIGHBOURHOOD SATISFACTION IN PUBLIC RENTAL HOUSING: A CASE OF BAHATI ESTATE, EASTLANDS, NAIROBI

AREA OF STUDY: __________________________ DATE: __________________________

(Interviews & Focus Group Discussion)

History Of The Estate

1. How long have you lived here? What was the year of construction of this residential environment? Who were the developers?

2. How did the name of the Estate originate? Who were the first inhabitants? Were they from one or different ethnic background(s)?

3. What income group was the estate meant for? What were their main occupations?

4. Does this original target group generally continue to reside here?

5. What is the total number of housing units? And what are the typologies? How many rooms and of what category?

6. What specific and critical events have taken place over time in the life of this housing estate? How has population and customs changed over time?

Perceptions of Residential Neighbourhood Satisfaction in the estate

7. How do you generally perceive the residential unit in terms of adequacy and condition and how would like it improved?

8. How do you generally perceive the residential neighbourhood support services in terms of adequacy and condition and how would like it improved?

9. How do you generally perceive the public/communal facilities in terms of adequacy and condition and how would like it improved?

10. How do you generally perceive the neighbourhood facilities in terms of adequacy and condition and how would like it improved?

11. How do you generally perceive the social environment in terms of adequacy and condition and how would like it improved?
12. What are the main constraints and problems that residents of this housing estate face?

13. What are the main opportunities that the residents of this housing estate face?

Enhancing Residential Neighbourhood Satisfaction in Urban Renewal

14. The Nairobi City County has earmarked this area for urban renewal. Are you aware about it?

15. Do you think it is a priority need for the residential area?

16. What is your view about the urban renewal programme in terms of any threats and suspicious? E.g. of say inability to afford the housing units, gentrification, eviction, lack of trust for Nairobi City Council intentions, grabbing of the land by the elite, etc.

17. What opportunities and benefits would you see would be achieved in the renewal programme for the residents?

E.g. of say social regeneration, income creation and employment generation, acquisition of security of tenure for the tenants, spacious and aesthetically pleasing housing units that meet the needs of users, Increased capacity of community facilities, health facilities, schools, social halls, churches, post office, police station, etc.
8.3 Appendix (iii)

TO WHOM IT MAY CONCERN

RE: OMANGI SHERLYNE NYABO - REG. NO. B65/55144/2012

This is to confirm that the above named is a student in the Department of Urban & Regional Planning, University of Nairobi.

As part of the continuous assessment culture in the Bachelor of Arts in Planning Programme our students are encouraged to acquire some experience through training in the field of Urban and Regional.

We wish to request you to allow her collect data from your institution/households for her research project whose research topic is "Residential Neighbourhood Satisfaction in Public Rental Estates in Nairobi" (case of Immorl Estate, Eastlands).

DR. NARAKIA MWANGI MKP FKIP
CHAIRMAN DEPARTMENT OF URBAN & REGIONAL PLANNING

[Stamp]