

These theses is submitted to the Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) and to the School of Graduate Studies of Addis Ababa University in fulfillment of all requirements for the degree of Masters Science in Environmental Planning and Landscape Design.).

Title of Thesis: ***Assessment on the perceived needs of condominium residents on the functional uses and values of neighborhood open spaces***: The case of Jemo one condominium site, Addis Ababa

Author: **Eyerusalem Getnet**

Date: **January ,2016**

Approved by Board of Examiners:

Mulugeta Maru(Msc) _____

Advisor Signature Date

Ato Ezana Yoseph (MSc) _____

External Examiner Signature Date

HAddis Rebbi (MSc) _____

Internal Examiner Signature Date

Chair Person Signature Date

Declaration

I, the undersigned, declare that this thesis is my own and original work and has not been presented for a degree in any other university, and that all sources of material used for the thesis have been duly acknowledged, following the scientific guidelines of the Institute.

Student`s Name: **EyerusalemGetnet**

Signature: _____

Confirmation

The thesis can be submitted for examination with my approval as an Institute`s advisor.

Advisor`s Name: **Mulugeta Maru**

Signature: _____

Contents

Acknowledgment.....	ix
Abstract.....	x
1. Chapter One: Introduction.....	1
1.1 Background to the study	1
1.2 Problem statement	2
1.3 Research objective.....	4
1.3.1 General objective.....	4
1.3.2 Specific objectives	4
1.4 Research question	5
1.5 Relevance of the study.....	5
1.6 Scope of the research	5
1.7 Limitation of the study	6
1.8 Organization of the paper.....	6
2. Chapter Two: Research Methodology.....	8
2.1 Choice of method	8
2.2 Selection of case study area	9
2.3 Data types and their sources.....	9
2.4 Sampling methods and determination of sample sizes	10
2.4.1 Sampling method.....	10
2.4.2 Sample sizes	11
2.5 Data collection methods and techniques.....	11
2.6 Data analysis Technique.....	12

3. Chapter Three: Literature Review on Open Space in Neighborhood and Perception	14
3.1 Introduction	14
3.2 Definitions of key words	14
3.2.1 Types and functions of open space	15
3.2.2 Benefits of open space	17
3.3 Valuing open space.....	20
3.4 People’s perception towards open space.....	21
3.5 The perception need of urban green space on Guangzhou residence.....	22
3.6 Open Space Plan and Design	23
3.6.1 Open space design considerations.....	24
3.6.2 Open space management	26
4. Chapter Four: Contextual Background and Description of the Study Area	28
4.1 Contextual Background.....	28
4.1.1 Historical open space development in Addis Ababa.....	28
4.1.2 Current open space conditions in Addis Ababa	30
4.2 Description of the Study Area.....	31
4.2.1 Introduction.....	31
4.2.2 Location and accessibility	31
4.2.3 Existing situation of open spaces in the study area	33
5. Chapter Five: Discussion and presentation of results	36
5.1 Introduction	36
5.2 The current functional use of the open space	37
5.3 Adequacy of open spaces for every one	40

5.4	Accessibility and inclusiveness of open spaces	41
5.5	Social interaction and cohesion.....	42
5.6	Meaning and importance of the open space for the dwellers	43
5.7	Open space as a recreational space	44
5.8	Sense of belongingness	45
5.9	Frequency of use of open spaces	45
5.10	Dwellers suggestion for change	46
5.11	Summary of major findings and discussions	47
5.12	Major problems	49
6.	Chapter Six: Conclusion, Recommendation and Design Proposal	51
6.1	Conclusions.....	51
6.2	Recommendation	51
6.3	Proposed open space design typology	53
6.4	Proposed plantation	62
7.	Bibliography	66
	Annex 1- Household questionnaire	I

List of tables

Table 1 : <i>typology of open space</i>	16
Table 2: <i>Age classifications of participants</i>	36
Table 3: <i>Percentage of people using the activities on the open space</i>	37

List of Figure

Figure 1: <i>Sampling map of Jemo I condominium site</i>	11
Figure 2: <i>Pictures showing human dimensions in various activities</i>	25
Figure 3: <i>General Examples of seating</i>	26
Figure 4: <i>Saturday market at Arada 1920</i>	29
Figure 5: <i>celebration of Meskel</i>	29
Figure 6: <i>Horse racing at Jalmeda</i>	30
Figure 7: <i>location and access map of Jemo condominium site</i>	32
Figure 8: <i>Map of Jemo I condominium</i>	33
Figure 9: <i>picture showing neighborhoods green walk corridor on jemo design map taken by parking</i>	34
Figure 10: <i>GIS extracted map out of the current Google map to compare the existing open green corridor with the intended planed</i>	35
Figure 11: <i>cloth draying on the open space</i>	38
Figure 12: <i>showing kids playing on the parking space</i>	39
Figure 13: <i>showing kids playing on the open space and parking area</i>	40
Figure 14: <i>showing kids playing restricted while cloths are drying</i>	42
Figure 15: <i>Number of residents who believe that the open space is important for supporting social interaction and cohesion</i>	43

<i>Figure 16 : Number of people who perceive the open space as a recreational area</i>	44
<i>Figure 17: How often the people use the open space</i>	45
<i>Figure 18: When people use the space</i>	46
<i>Figure 19: picture showing one open space cluster location from jemo residential design</i>	54
<i>Figure 20: Conceptual diagram</i>	55
<i>Figure 21: Plan showing residential building surrounding area</i>	56
<i>Figure 22: 3D picture showing residential building surrounding area</i>	56
<i>Figure 23: Walk ways</i>	57
<i>Figure 24: Map showing sitting are for the adults</i>	57
<i>Figure 25: 3D picture of sitting area</i>	57
<i>Figure 26: 3D picture showing multi- purpose meadow</i>	58
<i>Figure 27 3D picture showing kids play ground</i>	58
<i>Figure 28: 3D picture showing working area</i>	59
<i>Figure 29: 3D picture showing youth court</i>	59
<i>Figure 30: 3D picture of Landscaping elements</i>	60
<i>Figure 31: suggested communal open space design typology</i>	61
<i>Figure 32: plantation species in the study area</i>	62
<i>Figure 36: plantation species in the study area</i>	63
<i>Figure 36: plantation species in the study area</i>	63
<i>Figure 36: plantation species in the study area</i>	64
<i>Figure 36: plantation species in the study area</i>	64
<i>Figure 37: Plantation map</i>	65

Acknowledgment

First of all, I would like to thank my almighty God who has given me the courage and stamina to start this paper and pursue it to the end. I also want to extend my gratitude to my advisor Mulugeta Maru for his valuable insights and overall guidance in the course of the study with motivational, supporting attitude and brotherly approach.

Further, my deep sense of gratitude to Nifasilk Lafto sub city, Addis Ababa for their cooperation in providing necessary data.

I would also thank the institution EiABC for providing the chance to carry on this course program and my faculty members for their comment and advice during the course of the project.

Finally, my deepest appreciation and genuine gratefulness goes to my dearest husband Maciye for his support and encouragement to finish this thesis. I want to say "thank you" to all of my friends, family and all those who have helped me through this paper work. Without your support and encouragement this would not have been possible to happen.

Abstract

Open spaces in the neighborhood are vital aspects of urban planning and design in environmental and social dimension of living condition. In the planning and designing process of open space, identifying the community's interest towards the open space is important to determine the functional use and value of the space to meet the society's need.

This research investigates the functional use and values of neighborhood open space and perceptions of condominium communities so as to evaluate the effectiveness of the provided open space among the neighborhood. The study focus on gathering the community perceived needs towards open space and how they would prefer it to be by taking Jemo I condominium residential site as a case study. The case study is selected because most of the residents are relocated to this condominium site from deteriorate slum settlement and residents who use a rental house from all over the country which create the social diversification in terms of age, income status, and living background. Due to this the site is selected to carryon this study.

To go through this study, a descriptive methodology is followed. Representative households were selected using simple random sampling to participate on structured questionnaire for this paper. Out of the total buildings clustered with open space 10% of the buildings are selected and among those 20% of one bed room, two bed room and three bed room households are selected. Inputs data for this study were collected using interview, questionnaire and site survey techniques to gather information about the functional use of the open space, community's common perception of the space, accessibility and adequacy of the space and the space supporting the social affairs.

Base on the findings and discussions it is understood that the space usage is dominated by household work related actives which weakness significance of the open spaces for interaction and recreation, Poor management of open space for the enhancement, activities overlapping to each other, Community perception towards open space influenced by the current limited function of the open space and Difficulties of implementing planned open space and integrating landscape design to the neighborhood plan.

Therefore, the recommendations in addition with the design typology proposed address the issues that reflect the perception of condominium community in Jemo I Addis Ababa.

Key words: *neighborhood; open space; condominium; perception*

1. Chapter One: Introduction

1.1 Background to the study

The city, Addis Ababa has to fulfill its national role as the seat of the federal government and as the economic, social and cultural center of our country. Addis Ababa is also expected to fulfill the demands of an international city as a diplomatic center of African Union. The major vision of the structural plan of Addis Abba is to make sure that the national vision of the city becomes a middle income country, Africans diplomatic capital and internationally competitive city (Addis Ababa and the surrounding Oromia special zone Integrated development plan (2014-2038) 2013). Nevertheless; it is observed that much attention is given for the development of the built environment on the coast of damaging the green space due to the rapid urbanization in Addis Ababa (Leulseged Kasa et al 2011). Urban open spaces and greeneries are not well managed relative to the development and the process of urbanization (Moll 2003). The overall built environment and current open space situation affects the experience of residents in using the neighborhood open space. Most of the time the provided open spaces are just available within the site as left over spaces, and they are not well intended in the design stage as space in supporting all the people's social and day to day activities according to their perception based on study.

Different meanings and functions of neighborhood open spaces make it possible to establish connections between a space and an individual as a user and also in reality; people usually connect with their physical and social environment, In addition the users are more attracted to open spaces when the environment succeed in becoming an important part of their everyday life and meets their needs and expectations (JURKOVIĆ 2014). Neighborhood open space has the potential of posing positive influence in the environmental, health, economic and social aspects. Vital role that opens space play is in providing space for the expression of diversity, both personal and cultural; The social and cultural values of open space include attitudes towards nature and the desire for contact with it (Thompson 2002).Open space are main

components of city with quality life. Urban open space and greenways can be ways to mitigate the ills of the modern city by offering opportunities to go out, walk and practice sport activities. Living close to urban open space can reduce health problems, both physiological and psychological (Maller 2002).

“Condominium housing is a name given to the form of housing tenure where each resident household owns their individual unit, but equally shares ownership and responsibility for the communal areas and facilities of the building, such as hallways, heating system and elevators. There is no individual ownership over plots of land. All of the land on a condominium site is owned by all homeowners. “

(Habitat 2011)

The housing problem improvement is happening through the provision of affordable housing in the grand housing program since its launch in 2004 (Kalkidan Wondaferew and Tewedaj Eshetu 2011). Housing and living environment have been the major urban challenges of Addis Ababa city. Old villages of the city used to have a deteriorated image of living environment. The process of changing this fact has been started through neighborhood development with a provision of condominium housing by redeveloping the deteriorated settlement. In relation to the current open space problem of the city the open space condition with in this neighborhood is important to investigate in order to see greener neighborhood serving the community.

This paper assesses the current operation and the community perception towards the open space. After identifying how the condominium communities use and give value to the open space it forwards a designing insight, design typology by providing solutions to enhance quality of the open area in the way of addressing the community need.

1.2 Problem statement

There are different type of green spaces that could be available in the neighborhood. In the book *The Neighborhood Model: Building Block for the Development Areas*, the following are categorized as types of green space. The Close, The Eyebrow, The Pocket Park, The Plaza, The Green, The Square, The Meadow, The School Yard, The Commons, Recreational play field, The Green belt and The Greenway. These types are

options are in order, from the most natural to the most formal, from large to small, from active to passive.

All can play a role in establishing the public realm of a neighborhood. In fact, a mixture of types may be appropriate to serve different functions within the Neighborhood and the Development Area (county(va) 2010). In Addis Ababa, open and green spaces are severely inadequate. The green coverage is drastically decreasing as open and green areas are invaded by the construction of buildings. The city lacks sufficient places for children, adolescents and adults to play and recreate in a healthy environment (forum 2007). It is observed that much attention is given for the development of the built environment on the cost of damaging the green space. There for there is not much type of green space available in the neighborhood.

The usefulness of the space can be indicated by the activeness of the area. It is observed that the green space is not active during the night and mostly in the days too, which means that the need of the community is not fully addressed by the current conditions of the green space. In most cases the green spaces are like vacant left over spaces which are not entitled for any use without a proper management and design for public use. Sometimes it is observed that the open space are fenced all around and not accessible for the residents too.

A consideration of experience, perception and use of open space by neighborhood community is important for successful user friendly spatial planning. In order to address users' experience and values, usually these facts are not directly visible and planners often neglect these and consequently the space might not suit users' needs and requirements (JURKOVIČ 2014).

As the late city Mayer Kuma Demeksa stated on the magazine of recent master plan release, the development processes taking place in the city were not adequately guided by proper urban planning and implementation strategies, hence have failed to smoothen the progress of the improvement of quality of urban life and cause of discontent and resentment for many citizens (Addis Ababa and the surrounding Oromia special zone

Integrated development plan (2014-2038) 2013). It is observed that the green spaces were not given full attention in the implementation process even they were on the design,

Certain responsible party is acting less when it comes to the green areas implementation, because after the construction of the buildings and road is completed the space designated for the green space is not green yet. Instead it is serving as dumping space for construction leftovers and even taken over for parking.

If green spaces are well managed, research has shown that communities use their local spaces more, have better relationships with their local councils and take some pride in the area where they live in (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011). A lack of well managed open space will undermine the neighborhood appearance, and discourage a positive impression in adding a value as a place to live in (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011).The current condition of the green space gives the community less pride and sense of belongingness which is indicated by the people having less interaction with in the space. Therefore it is important to understand the community perception of the green space and how they are utilizing it for the achievement of a better useable and functional green space.

1.3 Research objective

1.3.1 General objective

The principal objective of this study is to assess the community perception towards the open space and enhance quality of the open area provided in the way of addressing their need.

1.3.2 Specific objectives

- Identify the types of open spaces available in the Jemo I condominium site.

- Identify the current perception and uses of the open areas by the condominium community.
- Identify the major factors affecting the open space not to perform up to the Jemo I condominium community perception with a full potential.
- To provide an insight of planning/design recommendations

1.4 Research question

- What types of open spaces are available in Jemo I condominium?
- How does the condominium community perceive and value the open space?
- What are the motivations and constraints of the green space to meet the communities' perceived need?
- What change should be done for the improvement of the open space with the community perceived need?

1.5 Relevance of the study

Assessing the use of the current open space will help to know the effectiveness of the provided open spaces. If the current operation is less, setting out the problem is essential for the improvement of the open spaces. Since the open space is provided for the community, its usage should consider the specific social value that can be addressed by the space, by giving value to the communities historical, cultural and age difference. The result from this study will help the coming condominium open spaces to consider the factors that affect them in relation to the people's perception in relation to the functional use and value, from which it is possible to develop a full strategy for the proper maintenance of the open spaces.

1.6 Scope of the research

The thematic focus of this study is on the usage and performance of the open space provided in the condominium residential space. It focuses on the types of open space and existing current usage of the open areas among the residents, how the

community values and need the open space and what their attitude is towards the current condition. How open spaces should be provided based on only their physical experience by excluding the psychological aspect.

The physical scope of this research is geographically bounded in Addis Ababa specifically in Jemo I condominium residential area. Within the condominium site excluding the built open space the open green spaces are taken as a case study for this research.

1.7 Limitation of the study

The difficult bureaucratic system within governmental offices has been a great challenge for this research. To get the right information from the responsible person was difficult. The first challenge is that officials are not available very often and other problem is the information obtained from offices is not enough due to the office loss documentation system. Another limitation is the resident response; they get tired to go through the entire questionnaire and don't hit the target of the questions.

1.8 Organization of the paper

Chapter One: Introduction

This first chapter deals with what this research is all about with the over view of background study, relevance of the study, scope of research, research problem and objective and address the questions that will be answered in next chapters of the paper.

Chapter Two: Research methodology

This chapter describes the selected research method along with how the case study is selected. Data collection methods and analyzing techniques are discussed along with mentioning where the data was obtained with the description of sampling method and size.

Chapter Three: Literature review on open space in neighborhood and perception

This chapter gives literature reviews on issues that are relevant to open space types and benefits in neighborhood and community perception.

Chapter Four: contextual Background

This chapter describes the historical development and the current conditions of open spaces in Addis Ababa, giving an explanation of the case study areas.

Chapter Five: Discussion and Presentation of Results

This chapter elaborates the findings of the collected data and presents the analyzed data with a conclusion summary.

Chapter Six: conclusion, recommendation and design proposal

The last chapter concludes the entire paper and gives a recommendation on the improvement of open spaces and proposed design typology.

2. Chapter Two: Research Methodology

This research is a descriptive research to describing the current status of the green open space and the perceived needs of the condominium resident towards the space clearly and briefly. In order to achieve the research goal, a case study method is suitable for a detailed and rich exploration of contextual analysis of a selected condominium site and study the relation of the open space and the resident perception.

For the data collection and analysis both qualitative and quantitative research methods have been used.

2.1 Choice of method

The resident's perception study instrument was developed within an integrated multi-method process involving qualitative and quantitative research methods. A qualitative case study research method is used for in depth interviews and questioners along with personal observation. Quantitative research method facilitates to create a linkage between the theoretical aspect of the concept of open space with the actual practice based on literature review.

A case study may be understood as the intensive study of a single case where the purpose of that study is – at least in part – to shed light on a larger class of cases (Gerring 2007). The book architectural research methods identifies the five primary characteristics of the case study:(1) a focus on either single or multiple cases, studied in their real life contexts; (2) the capacity to explain causal links; (3) the importance of theory development in the research design phase; (4) a reliance on multiple sources of evidence, with data converging in a triangular fashion; and (5) the power to generalize to theory (Wang, Linda N.Groat & David 2013).

To undertake a research on the perception of community on the open spaces a certain part of the community area of Addis Ababa in Jemo I condominium residential site is taken as a case study. This area has been chosen to emphasize detailed contextual

analysis focusing on the answering of possible questions of how the condominium community perceive and value the available open space in the compound.

2.2 Selection of case study area

For this research the selected case study is Jemo I condominium residential area open green space. Almost five years have passed since the area has been established and within this time period the residential area has come to be very active with diversified social character. According to the integrated housing development study conducted by UN Habitats the condominium house are established due to the massive housing needs especially considering the high demand by the low-income sector of the population of Addis Ababa so as provide affordable housing (Roman Rollnik et al 2011).

Hence, Jemo one condominium site if one of the neighborhoods established to curb the housing problem and provide houses for people who are evicted due to urban renewal projects in Addis Ababa city.

Thus, the amalgamation of such people drawn from various areas of Addis Ababa has created social diversification in terms of age, income and life styles. This diversification makes the Jemo condominium residential area suitable for this research on the perception of community on the functional use and value of the green open space.

2.3 Data types and their sources

The research uses both primary and secondary data types.

Primary data are the first hand evidence gathered from observation on the value and function of open space, also interview with governmental office about the standards used for the open space to understand the functional use supporting the social cohesions which is one way to imply community perception. Collecting first hand information from the residence is another source of primary data.

Secondary data source are books, websites, maps, journals and other sources.

2.4 Sampling methods and determination of sample sizes

2.4.1 Sampling method

Simple Random sample is used to select participant from Jemo I condominium residential site. Representative resident for the questioners are randomly selected from the entire residential site. Of the total number of 332 condominium buildings available 10 percent which is 33 buildings were randomly picked from the site. As it is shown on the figure below the 33 buildings are randomly selected from different cluster which have different size of open space.

Four building typologies exist with different clustering arrangement and among those the total number of three bed room house are 1024, 2280 two bed room house and one bed room houses are 1632. For equal distribution of sample taking the average of three bed rooms are important, in order to understand how much of this bed room types are available on a single building. Therefore by dividing each of bed room types by the total number of buildings the result will be the average amount of bed room on the single building. By doing so the average number of three bed room house on a single building is 3, 7 two bed room houses and one bed room house are 5.

Among the selected 33 buildings considering the average number of bed room types taken for the sake of sampling are 20% of three bed room, 20% of two bed room and 20% of one bed room. Hence the total sample take from three bed room are 18, 46 from two bed room and 33 from one bed room.



Figure 1: Sampling map of Jemo I condominium site

Source: Google earth 2016

2.4.2 Sample sizes

The best answer to the question of sampling size is addressed by Yogehkumar Singh on the book called Fundamentals of Research Methodology and Statistics, to use as large a sample as possible is much more likely to be representative of the population, and also with a large sample the data are likely to be more accurate and precise. It was pointed out that the larger the sample, the smaller the standard error. Descriptive research typically uses larger samples; it is sometimes suggested that one should select 10-20 per cent of the accessible population for the sample (Singh 2006).

2.5 Data collection methods and techniques

The data is collected mainly to understand the community perception on the open spaces, how they value it and use it in their day to day activities including the social affairs. Data collection focuses on the different activities held on the open space, identifying possible constraints that make the resident not to use the open spaces, and

identifying the possible facilities available that enhance the functional use. Data collection was done through the following techniques

Interview: prepared for the professionals and the government body to understand and gather information if they have done a perception study on the open space and if they have standard of open space for design to analyze the functional use of open space in supporting the social needs like social affairs, kids play ground, recreation and the like.

Questionnaire: prepared for the community to understand their perception and value on open spaces in the neighborhood in order to meet the communities need by the intended plans. The questions are focused on assessing the current functional use of the space, possible constraints not to perform well and how the community value and perceive the space. The questionnaire covers four main parts in answering how the resident use the current open space, how they perceive and give value for the space, what constraints the space has not to perform up to resident's expectation, and what the resident believe should be changed to enhance the quality of the space, open space in the neighborhood.

Site observation: using base map of the case study area site observation is one of technique of collecting primary data by observing the current condition of the open space in the neighborhood and critically observing neighborhood design with what is implemented on the ground.

2.6 Data analysis Technique

Data analysis is focused on the objectives of the research and answering the research question using the gathered information from both primary and secondary data. Based on the frame of the research objective the information gathered from the questionnaire

is refined into categories to answer the people's attitude, functional use and value of open space.

The data found from the primary and the secondary sources was analyzed by using auto cad, GIS and Microsoft office, specifically Microsoft word and excel computer programs. Microsoft excel program is used to make a graph and to show results found during the questionnaire of the dwellers in percentage that helps to draw the best conclusion based on the facts.

3. Chapter Three: Literature Review on Open Space in Neighborhood and Perception

3.1 Introduction

The literature review incorporates the topics that can elaborate subject matters about the open space in the neighborhood level, people and open space relation and the community perception and how they value it.

Key words definition condominium, open space, neighborhood,

3.2 Definitions of key words

Perception:

Perception engages the gathering, organizing and making sense of information about the environment (Matthew Carmona , Tim Heath, Taner Oc and Steven Tiesdell 2007).

Condominium:

Merriam Webster defined the term condominium as *“individual ownership of a unit in a multiunit structure (as an apartment building) or on land owned in common (as a town house complex)”*

The origin of condominium in Addis Ababa was by the late city Mayor Arkebe Oqubay. His main goal was to build low-cost housing for the provision of affordable house therefore made proposal to the German Technical Corporation (GTZ).They responded by beginning the design of the pilot condominium housing project in the neighborhood of Bole Gerji (Habitat 2011)

Neighborhood:

Merriam defines neighborhood as a place or region where people live near one another: a section lived in by neighbors and usually having distinguishing characteristics.

Open space:

Open space is defined in the Town and Country Planning Act 1990(Section 336) as land laid out as a public garden, land for a public recreational purpose, or an empty land which is a burial ground however.

The author Hellen Wolley on her book called Urban Open Space a definition of open space by different authors are mentioned

Open space has also been described from a user's point of view as being an arena that allows for different types of activities encompassing necessary, optional and social activities (Gehl, 1987).

Open space can be defined as land and water in an urban area that is not covered by cars or buildings, or as any undeveloped land in an urban area (Gold, 1980).

Cranz (1982) argued that open spaces are wide-open areas that can be fluid to the extent that the city can flow into the park and the park can flow into the city.

3.2.1 Types and functions of open space

As from the definitions above an open space is understood as a space left open without a building constructed on it. Based on the cover material the space can be seen in two categories as soft and hard space. Soft space is covered by soils and plantations which are permeable, where the hard space finishing materials are non permeable materials.

The continuity between the hard open space and the soft open space is very necessary for the integration of different settings of social, economic and environmental development.

Hard open space are used for the purpose of movement like paved pedestrian way, parking, social functions include activities such as play, sport and recreation.

Hard open spaces are the ideal setting for gatherings like festivals or market places (Moughtin 1992), which function in parallel with the space as an agent for social interaction.

Local open spaces are classified by their size and function. If it the open space is larger in size in with in the neighborhood it Provides for court games, children’s play, sitting-out areas, nature conservation, landscape environment ; and playing fields. For small sized open space gardens, sitting-out areas, by old people and children, children’s playgrounds or other particularly valuable in areas of a specialist nature are in corporate (Llewelyn-Davies 2007). Depending on different criteria many schools and institutes have brought their classifications of open space, but for this paper the following table is developed from categorizations set out by English partnership housing cooperation.

Table 1 :typology of open space

Open space types	Character and functions
Greenway	A network of spaces encompassing cycle and foot path routes, but also acting as ‘wildlife corridors’ – enabling wildlife to travel through urban areas.
Meadow	A public space for informal recreation, located on the edge of a neighborhood. Often part of a flood plain comprising natural grasses and wildflowers.

Playing field	Open spaces formally laid out for active recreation, such as football or basketball. Management /ownership can be shared between schools, clubs and the wider community to ensure facilities are well used.
Allotments	A semi-public collection of gardening plots rented to Individuals by the local authority.
Communal garden	A semi-private space not accessible to the general public, usually located within the interior of a perimeter block, providing a centrally managed green space for residents.
Private garden	A private space located within the plot of an adjacent building or in a private plot of land.
Playground	A small area dedicated for child's play, that is fenced and located within close walking distance to nearby houses, overlooked by residents.
Courtyard	A private open space for vehicular parking and gardening

Source: (Llewelyn-Davies 2007)

3.2.2 Benefits of open space

According to the oxford definition benefits can be understood to be something that gives a positive advantage to a person. Helen Wooly, on her book called urban open space made the statement that the council of Europe in 1986 stated about the open space and its importance

Open space is an essential part of the urban heritage, a strong element in the architectural and aesthetic form of a city, plays an important educational role, is ecologically significant, is important for social interaction and in fostering community development and is supportive of economic objectives and activities. In particular it helps reduce the inherent tension and conflict in deprived parts of urban areas of Europe; it has an important role in providing for the recreational and leisure needs of a community and has an economic value in that of environmental enhancement

(woolley 2003)

Urban open space book by Hellen woolley describes the open space benefits in four major categories which are environmental, social, Health, and economic benefits. These four points are discussed in depth below:

Social benefits

Neighborhood open spaces have a variety of purposes for the society they serve; they unite residents of all ages in fun and productive outdoor activities and facilitate the growth of community unity and neighborhood revival (Olmos 2014). In the neighborhood open space benefits the social aspects serve as recreation, Children's play, a focus for the community or a cultural group and educational (woolley 2003).

Recreational place: open spaces serve the society as recreation spaces, recreation can be considered as passive and active recreation. Active recreation is usually taken to represent activities such as football, basket ball, volleyball and other games, whereas passive recreation is taken to present activities such as looking after Children, looking at views of nature or other, reading, resting or meeting friends (woolley 2003).

Children's play ground: children play spontaneously and the modern civilization interferes to this act by the cause of development. The provision of play ground space should not be at a far distance from where they live and

also have to take account of roads and traffic placement that may cut off children's access to the play ground (Hurtwood 1968).

Environmental benefits

Environmental benefits is related to climate and environmental amelioration, create opportunity for the wildlife habitats (woolley 2003). Air cooling and purifying the carbon contents in the atmosphere is the main environmental benefit of open spaces.

“A tree's ability to offset carbon emissions is determined by size, canopy cover, health, and age, but large trees can help lower carbon emissions in the atmosphere by 2-3%. An 80-foot beech tree has been shown to remove daily carbon dioxide amounts equivalent to that produced by two single-family dwellings.”

(Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011)

Health benefits

The evidence for the preventative health value of high quality green space is growing. The health benefits can be identified primarily as physical and mental health benefits, with the restorative effects that nature can have and the importance of near nature in daily life (woolley 2003).

Apart from the ability of urban green space to reduce pollution, and the build-up of the particulates that can aggravate respiratory diseases such as asthma and bronchitis, green space contributes significantly to stress reduction, the alleviation of depression and dementia (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011).

Economic benefits

Properties located in neighborhoods with open spaces and green area parks have been found to have higher re-sale price and homeowner's value. These spaces are important attributes when making decisions about residential location and housing choice (Jason Byrne and Neil Sipe 2010). This indicates that the existence of open space imposes a positive impression to the community of a place where they live and add economical value of the neighborhood. Green spaces in urban areas can provide opportunities for community involvement that can in turn help to develop a sense of self-esteem and enable individuals and communities to develop skills new to them creating an opportunity of employment (woolley 2003) . In addition the aesthetically high valued open spaces are a means of tourism.

3.3 Valuing open space

The word value indicates the monetary worth of something, a numerical quantity that is assigned of an equivalent return in good, service or money for exchange (Webster n.d.). From the word definition value open space can be understood as the fair exchange for the benefits gain from the open space.

Recognizing the provision of open space benefits is quite another to place a financial value on them in order to make important policy and planning decisions about zoning, restrictions on land use, government purchase of lands for parks (Virginia McConnell and Margaret Walls 1005)

Open spaces always have intangible values that may be planned for it. Some of the intangible values are as following;

- **“Scientific value** – *understanding nature and how it came to be.*
- **Aesthetic value** – *appreciating the beauty of a natural feature independent of its utility.*
- **Genetic diversity value** – *maintaining the capacity to adapt to environmental changes.*

- **Historic value** – *understanding ourselves by understanding our natural heritage.*
- **Cultural symbolization value** – *the contribution of geomorphic, faunal or floral features to our sense of identity.*
- **Character building value** – *the opportunity to test and learn one’s limits and abilities.*
- **Stability and spontaneity values** – *Nature is both constant and infinitely variable.*
- **Dialectical value** – *the value that derives from overcoming oppositional forces.*
- **Spiritual value** – *the deep introspection inspired by wild lands and sanctuaries“*

(Getnet 2014)

3.4 People’s perception towards open space

The book called “Responsive Environment” which is a manual for design clearly states that the design of a place affects the choices people can make, at many levels (Ian Bently et al 2008). The book lists points covering an important key issue in making places more responsive for people understanding and use of a place in this case an open space are the case. The following list clarifies this in detail:

- *“It affects where people can go, and where they cannot: the quality we shall call permeability.*
- *It affects the range of uses available to people: the quality we shall call variety*
- *It affects how easily people can understand what opportunities it offers: the quality we shall call legibility.*
- *It affects the degree to which people can use a given place for different purposes: the quality we shall call robustness.*

- *It affects whether the detailed appearance of the place makes people aware of the choices available: the quality we shall call visual appropriateness.*
- *It affects people's choice of sensory experiences: the quality we shall call richness.*
- *It affects the extent to which people can put their own stamp on a place: we shall call this personalization.”*

(Ian Bentley et al 2008)

Awareness and appreciation of environmental perception, and specifically the perception and experience of place is an important dimension of urban design (Matthew Carmona , Tim Heath, Taner Oc and Steven Tiesdell 2007). Perception engages the gathering, organizing and making sense of information about the environment. This process is made generally by two processes that gather and interpret environment which are 'sensation' and 'perception'. It is not clear where sensation ends and perception begins, in practice. Sensation refers to human sensory systems response to environmental motivation. The four most valuable senses in interpreting the environment are vision, hearing, smell and touch. By this people can have their own perception, understanding and sensation of the environment/ neighborhood/ they are living in.

3.5 The perception need of urban green space on Guangzhou residence

For the purpose of understanding how the perceived need assessment is carried on in other developing countries, china, Guangzhou is chosen for this paper. It was difficult finding a people centered study on open space in the developing countries but somehow since china is still developing country it could resemble for our country.

On October 2006 the university of Hong Kong, china done a study focusing on the exploration of people minds concerning on urban green space in city in south china

after the fast economic and social change brought expansion, redevelopment and restructuring to the city. The perception study was done by examines the following core points:

1. the people knowledge and perceived needs of environmental benefits
2. attitude toward green space condition and management;
3. expectation of landscape design; and
4. preference ranking of location of green space

Due to the less attention on the publicity of environmental functions together aggravating environmental problems in the city the community's concerns on the opens space benefits is limited specially community's awareness on the economical benefits of open space is very low. Visual-landscape contributions with strong preference for naturalistic design and recreational benefits were highlighted. In general Guangzhou residents were characterized by visual–scenic–recreation orientation and pragmatic–utilitarian perception of UGSs, (CHEN 2015)

Finally the research concluded by suggesting that it would be helpful if the latent affinity with nature could be blended with the conscious mind to nurture a more naturalistic approach to urban greening. To echo this strongly expressed community desire, future UGS policy could aim at preserving original natural components of green fields and converting brown fields into fine emulations of nature.

3.6 Open Space Plan and Design

It is now believed that sustainability indicators for urban development should include more parameters about public spaces and green open areas, as well as indexes reflecting citizens' satisfaction and perception of their living environments (Chiesura 2004).Based on the community perception and understanding, their reflection on the open space design would be satisfactory for the citizens. A research done on the

pocket park states pocket parks should be designed with the following criteria to ensure maximum safety for the community (Foundation 2009).

- Active, frequent use
- Regular maintenance
- Comfortable pedestrian traffic
- Opportunities for recreational activities
- Community groups and stewardship initiatives
- Formal or informal supervision
- Access to help if needed like telephones
- abundant lighting

Open space in the neighborhood as a recreational place should incorporate the following elements (Olmos 2014).

- Flowers or trees
- Seating for adults
- Play space and/or equipment for children
- Gazebos or similar shade structures
- Picnic tables
- Signage and security lighting

3.6.1 Open space design considerations

3.6.1.1 Pedestrian movements

The scale and form of a space will influence pedestrian behavior and the type of social communication that may occur within that space. Physical distances that bring people into close proximity, or separate them, are important design considerations. Settings for conducive *active* social communication, or those meant to allow a certain degree of privacy, require careful thought as to the degree of possible eye contact, and proper within the scale and layout of the setting (Charles W. Harris n.d.).

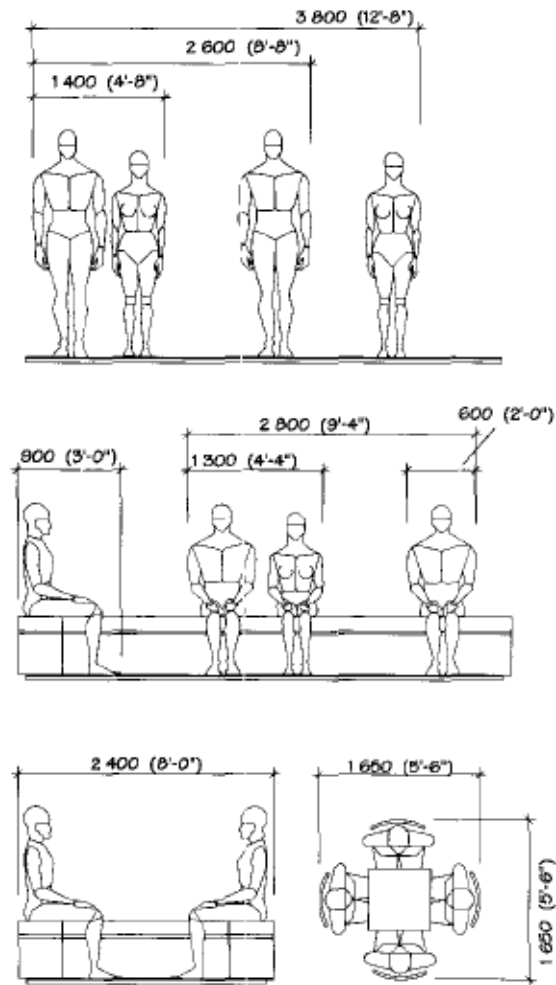


Figure 2: Pictures showing human dimensions in various activities

Source: (Charles W. Harris n.d.).

3.6.1.2 Standards for movements

Based on the standards obtained from a book called Time saver standards for landscape architecture the following stairs and ramp slopes are listed.

- Minimum width for stairways should be 1 500 mm for public spaces
- Ramp slopes should be no greater than 1:12 or 8.33 %. Curb cuts may be 1:8 or 12% if the run is less than 900 mm.
- Landings should be provided every 9 000 mm or less of ramp length. Heights between stair landings should be a maximum of 1 500 mm to allow an average adult standing on one landing to see the ground plane of the next higher landing.

- Seating walls are typically 400 to 450 mm (16 to 18 in) wide and between 350 and 450 mm (14 and 18 in) in height.

3.6.1.3 Sitting space

Arranging sitting spaces are very essential in landscape design. While designing a sitting space one should emphasize on comfort, simplicity of form, simplicity of detail, ease of maintenance, durability of finish, resistance of vandalism. Sitting spaces within the proposed public space must be along the street and at the sitting area.

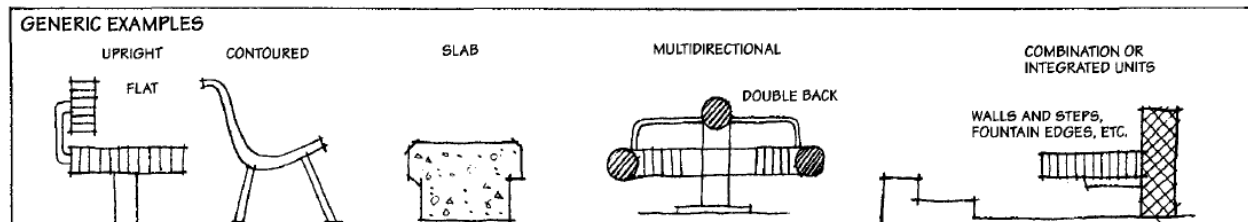


Figure 3: General Examples of seating

Source: (Charles W. Harris n.d.).

3.6.2 Open space management

The way spaces look and feel today and the ease with which they can be managed relates fundamentally to how they were designed in the first place. Furthermore, because every involvement in space has an impact upon its overall quality, the importance of design skills remains fundamental. Open space management activities are undertaken primarily by public-sector agencies, by voluntary bodies or community organizations, or by private-sector companies (Matthew Carmona et al 2008).

According to the book called the management dimensions of public space, the management of open space is conceptualized in to four linked points as discussed following:

The regulation of uses and conflicts between uses: The conflict between the use of open space and the use should be regulated formally through bylaws and informally through socially authorized practices and attitudes. Regulation sets out how open spaces should be used, sets a framework for solving conflicts between uses, determines rules of access and established acceptable and unacceptable behavior. After wards it is a vital dimension of open space management to consider how the regulation is adapted to changing societal needs.

The maintenance routines: Open spaces and the infrastructure, equipment and facilities vested in them need to be maintained in order to perform the functions that justify their existence. This action concerns ensuing that open spaces are usable, uncluttered, clean and safe, maintaining the surfaces of roads, street furniture, lighting, vegetation and facilities of all sorts and to removing anything that might spoil or offend the symbolism invested on the open space.

The new investments into and ongoing resourcing of open space: regulating uses and conflicts and physically maintaining public spaces requires resources, financial and material. This involves both ongoing revenue funding, for day to-day management tasks, and also significant capital funding from time to time when significant re-design and re-developments required.

The coordination of interventions in public space: because regulation, maintenance and resourcing are likely to involve directly or indirectly a wide range of people and organizations, there is a necessity for coordinating mechanisms to ensure that the agents in charge of those activities pull in the same direction.

4. Chapter Four: Contextual Background and Description of the Study Area

4.1 Contextual Background

4.1.1 Historical open space development in Addis Ababa

The executive summary of Integrated Development Plan for Ethiopian Renaissance on 2013 stated that, Addis Ababa has undergone many changes in terms of its size and demographics, its finance and economic structure, its physical and spatial organization, since its establishment in 1888 (Addis Ababa and the surrounding Oromia special zone Integrated development plan (2014-2038) 2013). While Menelik was off in a distant corner of the empire, his wife Taytu moved the camp from the hills down onto the current site of Addis Ababa. Upon his return, Menelik apparently became fond of the new location and in 1892 named the settlement, Addis Ababa, proclaiming it the new and permanent capital of the Ethiopian Empire (Njeru 2006).

The development of urban open space of the city at that time took the same development trend as the city. It grew at three different cores. The functions of the spaces differed accordingly as well. A big open space was situated at the *Arada* market core of the city. This was known as a large open market and was used for market purpose mainly. Other than that, the market place was known as the only public space. This was because the rest of the land was divided between the church and government officials and each land except the market had an owner. Since the market place belonged to all, many public activities took place on it (Tesfaye 2011).



Figure 4: Saturday market at Arada 1920

Source Mikiays, 2011



Figure 5: celebration of Meskel

Source Mikiays, 2011

Another open space was at *Janmeda*. This was a place close to the palace. It was a wide space used for the purpose of horse riding and other games which were practiced by royal families as well. The other significant purpose of the space was the

celebration of the famous religious festival of “*Timket*”. This festival celebrated the baptism of Jesus Christ.



Figure 6: Horse racing at Jalmeda

Source Mikiays, 2011

Generally, the development of open spaces in Addis Ababa started from the natural landscape which was used for purposes like market area, festival area and political activities, during the different periods of the monarchy. As planning was introduced to the city, these places were more planned and were divided in to functions accordingly. As the city grew wider southwards and as foreign planners came in with different ideas, there were local green areas, district and city level green areas. Integrated with these were also open spaces. These spaces were used in different ways according to their locations and context.

4.1.2 Current open space conditions in Addis Ababa

Addis Ababa is one of the counties on the road of fast urbanization mainly due to the reason that cities are magnets for Population migration, engines of economic development, and centers of information and global connections. The rapid urbanization of Addis-Ababa makes the natural environment worse by influencing and deteriorating the urban open green areas (Mpofu 2013). Urban green areas have been consumed by industrial, commercial, residential and infrastructural developments and in addition by illegal settlements. The extreme influence on the open space in the city is destroying the aesthetic value of its landscape, and decreases the ability of green areas to perform

their basic ecological, social and economic function. Currently because of explosive urban growth, the number of areas available for new development in Addis Ababa is rapidly decreasing, this causes the decrease of available space that will contribute to greater social challenge (Fasil Giorghis et al 2009)

At the local neighborhood level, open spaces are available for playground and social activities. These places are not yet designed or planned. Some of them are left out spaces between residential houses and the ones which are distinguished as urban open spaces are not managed well. Most of these places are being either sold for private investors or used as housing plots for real estates and condominiums. (Tesfaye, Urban Open Space Use in Addis Ababa: 2011)

4.2 Description of the Study Area

4.2.1 Introduction

As time goes by and the population number increase the city growth increased horizontally and housing scarcity for the community came into reality. Due to this fact, since the late 1970s housing cooperatives have also provided an avenue for home ownership. This delivery method was established in 1978, through Proclamation No. The massive housing needs are unlikely to be met by the small scale housing cooperative, government, and upgrading approaches prevailing from the late 1970s until the mid 2000s, especially considering the high demand by the low-income sector of the population for affordable housing (Habitat 2011). Jemo condominium project was accomplished by the year 2003 EC. It incorporates around 6, 640 people with four housing typology including studio, one bed room, two bed room and three bed room.

4.2.2 Location and accessibility

The study area is located at the south western part of Addis Ababa in the Nifassilk Lafto sub-city.



Figure 7: location and access map of Jemo condominium site

Source: Google earth,2015

The site covers 763148.7439m² with it 332 condominium buildings being included. It has been almost five years since people started to live on this site. Due to this a lot of activities are observed in the site which is more or less an active and livable site.

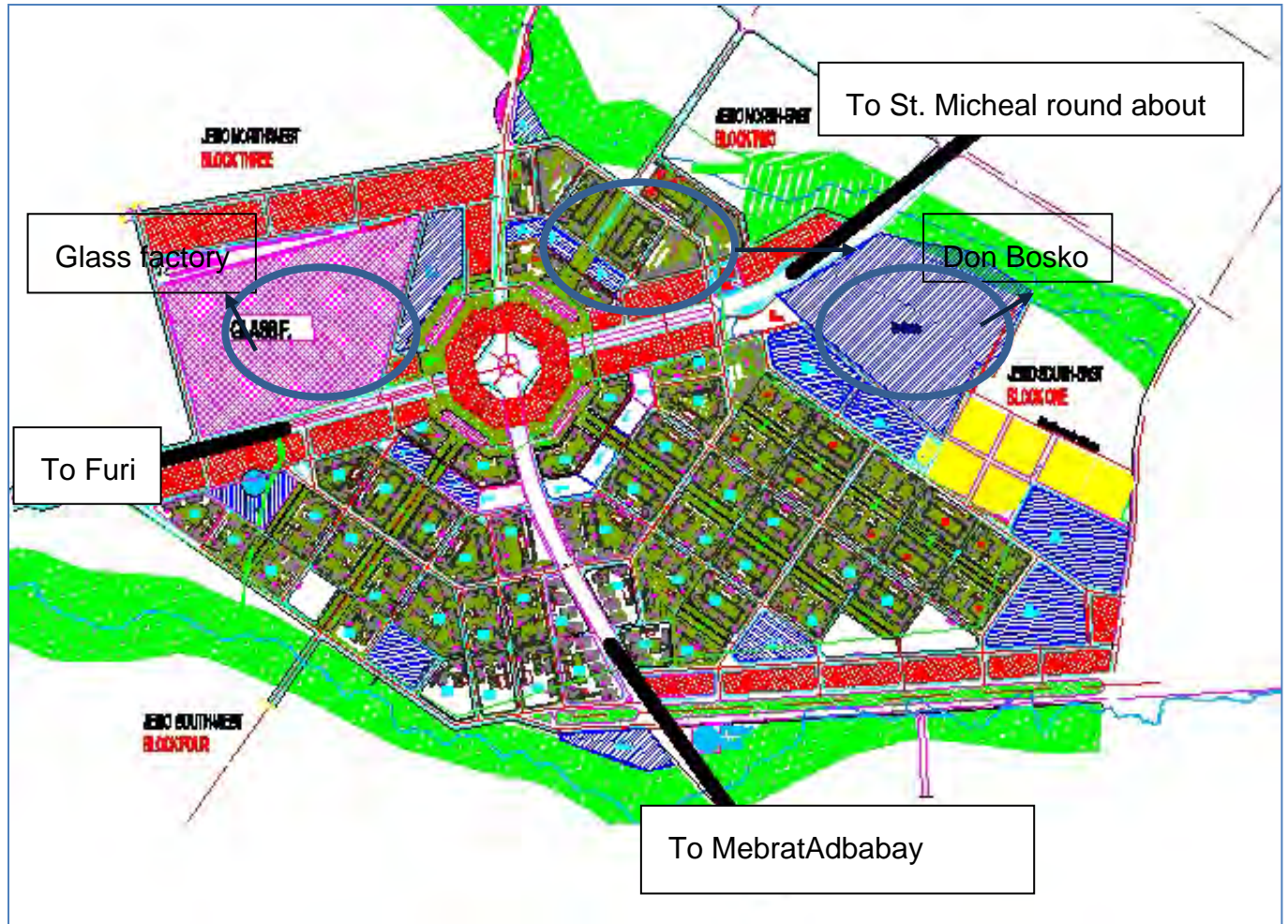


Figure 8: Map of Jemo I condominium

Source: Addis Ababa city plan office

4.2.3 Existing situation of open spaces in the study area

Open space available in the site are common play ground clustered with the buildings which are soft open space and circulation hard open space area paved with asphalt and coble stone materials. As it is shown on the figures below on the map of Jemo I condominium design open space provide are visible but when it is compared to the design with the implemented which is visible on the extracted GIS map from Google earth 2016, some open space areas are neglected in the implementation process. On the design it is observed that long corridor neighborhoods green walk way is available as shown in the figure below. On the actual ground these spaces which were

delegated for the green corridors are functioning as bare land, parking lots and some are taken by the plots.

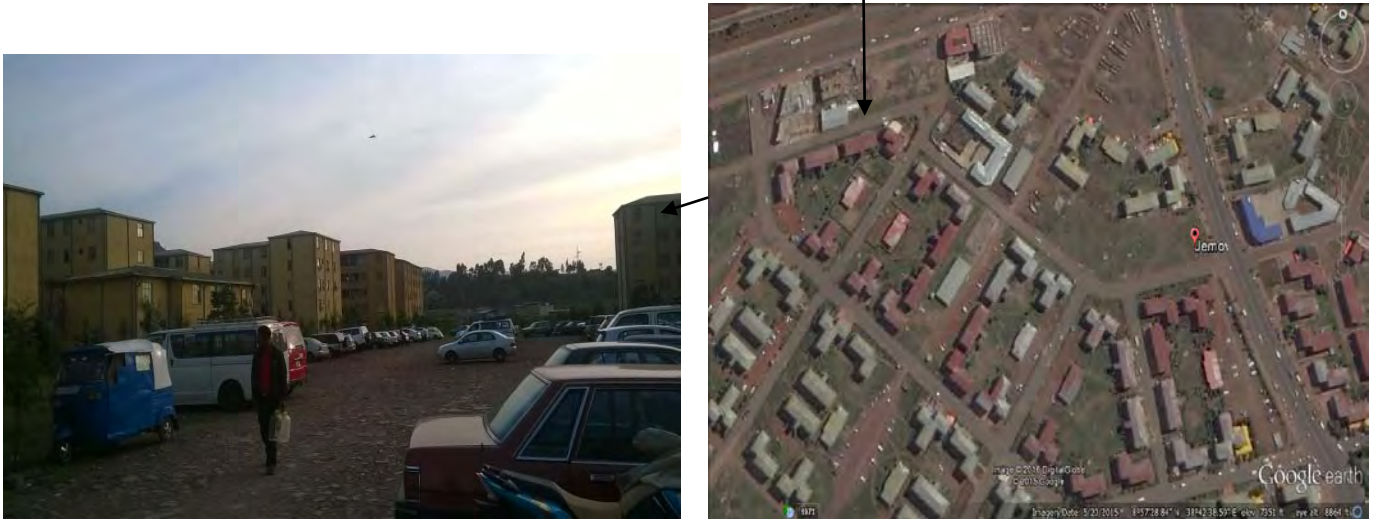
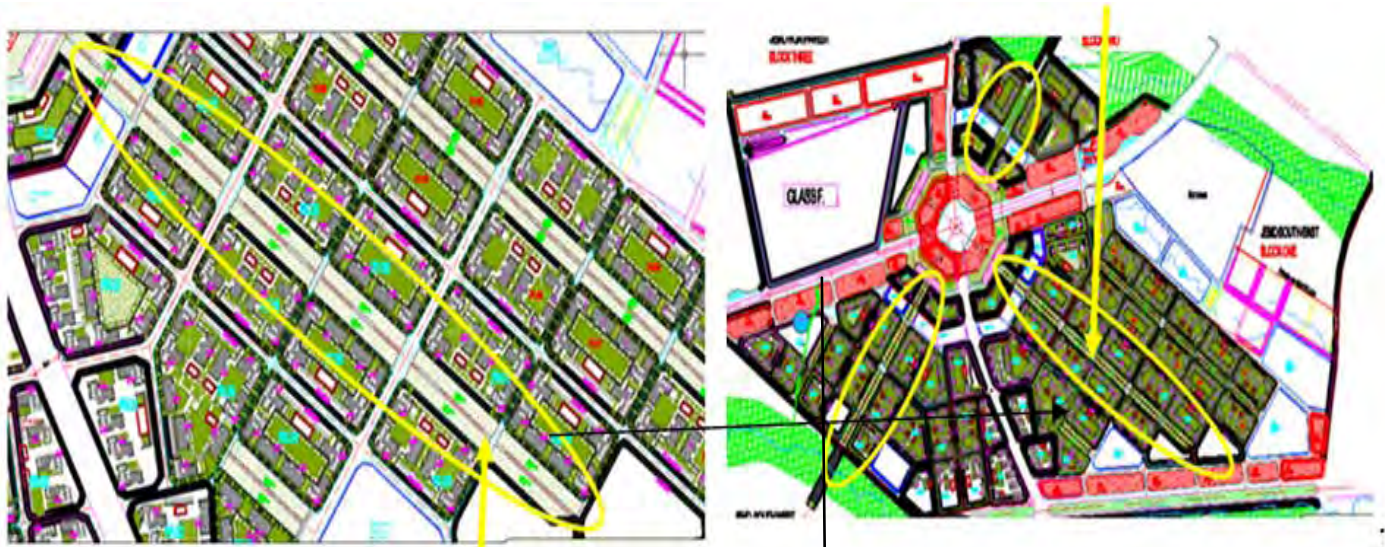


Figure 9: picture showing neighborhoods green walk corridor on jemo design map taken by parking
Source; Addis Ababa city plan office, Google earth, site picture



Figure 10: GIS extracted map out of the current Google map to compare the existing open green corridor with the intended planned

The plants and trees which are found in green spaces play an important role in improving air quality and reducing pollutants (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011). There are different types of trees with different ability of maintaining the ecological situation, but in Jemo I condominium residential are cespacia and gravioula are the commonly observed tree types, most of them are given by the agency of beautification green park development. Trees naturally absorb carbon dioxide through photosynthesis, acting as a natural carbon sink. The ability of a tree to offset carbon emissions is indicated by its size, canopy cover, health and age. But large trees can help to lower carbon emissions (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011).

5. Chapter Five: Discussion and presentation of results

5.1 Introduction

The findings are the result of the interview and questionnaire with the dwellers. Of the total number of participants 45% were male and the rest 55% were female. The United Nations study classifies the age group as infancy, youth, young adult, middle adulthood, adulthood to retirement age, under >1, 1-14, 15-24, 25-44, 45-64, 65+ age groups accordingly (D. O. Office 1982).

For the conducting purpose of this research a modification of the above age group is done purposively so that the age group under youth category are age gap from 13-25, adults are from 26-49 and elders are taken to be above 50. Age groups under 12 are considered as kids but they did not directly participate in this study but found their usage of the space from their guardians.

Table 2: Age classifications of participants

Age	Age gap	No of people within the age range	Percentage
kids	<12	-	
youth	13-25	25	23.4%
Adults	26-49	71	66.4%
Elders	>50	11	10.3%
total		107	100.1%

Source: by the author, 2015

Kids use the space for the purpose of playing and running around while elders use it for working and social meeting. 19% of participants responded that the youth are not observed using the space for spending time with their peer groups.

Based on the table above 66.4% of the study participants are adults while 10.3% are elders above 50 years of age. The proportion of youths considered in this study is about 23.4%.

5.2 The current functional use of the open space

At this current status, the open spaces in the neighborhood are functioning as spaces for drying cloth and crops, recreational, play ground, parking, traditional Cooking and social meeting. Among these activities, the dwellers stated that they use the spaces for two or more activities, except 30% of people who said that they do not use the space for any activities at all due to their perception of the space as being not functional for use.

The dominant functions can be identified in order, by the number of people who use the space for the functions, as it is shown on the table below.

Table 3: Percentage of people using the activities on the open space

Function types	number of people who use the space for the function	percentage
Drying cloth and crops	64	59.8%
Social meeting	32	30%
none	32	30%

parking	24	22.4%
Play ground	24	22.4%
Recreational	31	29%
Traditional Cooking	9	8.4%

Source: by the author, 2015

Drying cloth and crops:

Cloth washing is an apparent practice in every household in the world and its one aspect of household sanitation in Jemo I condominium site. They also attested that family members dry their crops to produce meals for their family members. It has been raised by all participants of the paper that cloth washing is carried out in the communal facility provided by the government while they use the existing idle open space to dry their clothes and crops.

Hence, the proportion of the respondents who testified the current use of the open space for drying cloth and crops accounts for about 60%.



Figure 11: cloth draying on the open space

Source: by author filed photograph, 2015

Social meeting: under this activity category formal and informal meetings are considered. While scheduled community meetings like “EDIR” meeting are considered to be formal, unscheduled meetings among the same age friend are taken as informal meetings. 30% of dwellers mentioned that they enjoy meeting people and chatting to each other on the open space.

Parking: 22.4% of participant use the space to park their cars and motorcycles. The activities over lap on the space while vehicles are parked and cloths are drying on the open space kids will not have a space to play there. The residents suggested that the activities should have a designated space to perform freely.



Figure 12: showing kids playing on the parking space

Source: by author filed photograph, 2015

Play ground: the space functioned as a play ground for kids, as 22.4% of participant dwellers said that sometimes the youth are observed using the space for a football game.



Figure 13: showing kids playing on the open space and parking area

Source: by author filed photograph, 2015

Recreational: people who use the space for recreational purpose are 29%. The activities that the dwellers mentioned as recreations are sport actives like walking, sitting in silence, listening to music and taking rest and chatting with people during a coffee ceremony.

Traditional Cooking: mainly female participants mentioned that they use the space for traditional cooking activities on the occasional days.

5.3 Adequacy of open spaces for every one

More than half of the participant residents perceive the space as adequate for the users if the management is well functioning. 46% of the participant residents observe the size of the space is not proportional to the number of the residents and different activities. The Addis Ababa structural plan components stated that Green areas of different standards (Neighborhood-city level) should be provided and developed according to the norms and standards provided in the Social Facilities component, and set a standard about 12-25 % of a plot area should be open for greenery and natural open space so that rain water should percolate to the ground, decrease water discharge and reduce runoff (A. A. office 2002). In case of Jemol the total area of the

condominium site is 72 hectare where as the green space coverage is 16 hectare. Hence, the proportion is good according to the standard.

5.4 Accessibility and inclusiveness of open spaces

Almost half of participants which are 53% perceive the space as inclusive for every age group and accessible for the users. In percentage the difference is almost similar. The reason for those who said it's not, is related with the size of the space that it cannot accommodate all activities at the sometimes. For instance, if cloth and cops are there for drying purpose kids would not be able to play on the ground. The open space is not properly distributed though out the site. Open spaces around some buildings are very small in size, especially those adjacent to the main road. The space is not inclusive and accessible for the elder age group. For example if they want to sit they may not be able to use the green ground due to the fact of less physical flexibility based on age. The lack of land escaping elements restricts the residents from using the space, especially for the disabled non paved walk ways and uncomfortable steep ways are physically challenging.

Another point that can label the open space as accessible for everyone is when it is distributed fairly throughout the site serving the residents equally. According to the norms and standers of Addis Ababa one person should be provided 0.5-1m sq./person green space. For the total number of 36,080 populations 16.73hectar of green area coverage on the site is more than enough. But the spatial distribution of the open space is not evenly done throughout the site.



Figure 14: showing kids playing restricted while cloths are drying

Source: by author filed photograph, 2015

5.5 Social interaction and cohesion

Large amount of participants said that they don't use the space for social affairs yet, only 39% of them said that they use the space for social interaction. The current condition of the open space which has a lack of sitting area and cleanness is the reason for people not to use the space for social interaction. Since the space is still serving the community more or less, 75% of the participants perceive the space as good space for supporting social interaction, while 9% said it is bad.

The current status of the open space is more or less good when it's service is ranked as important for supporting social interaction and cohesion. The participants who said that the service is good said that since it is still serving the community and addressing the social interaction, it is doing good but it is not very well furnished with full facilities like sitting area and clean greenery that can enhance the social interaction.

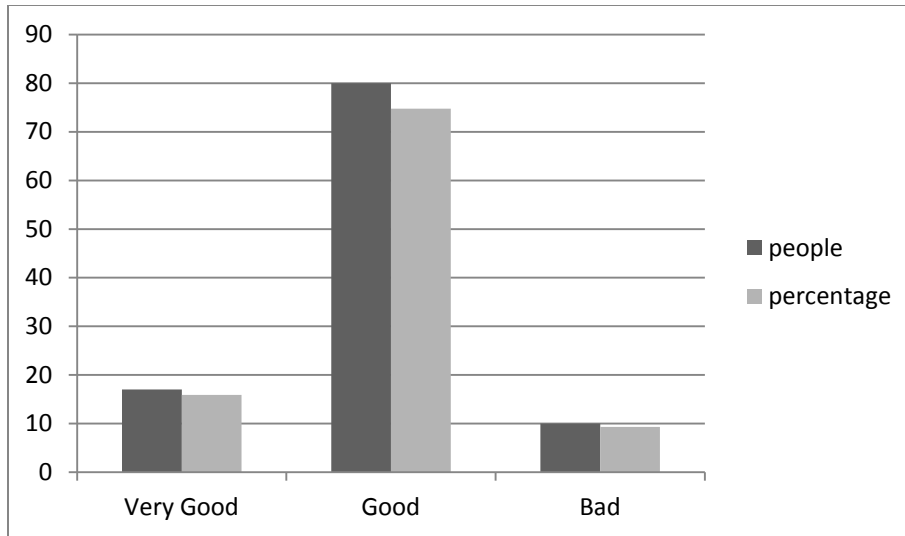


Figure 15: Number of residents who believe that the open space is important for supporting social interaction and cohesion

Source: by author 2015

5.6 Meaning and importance of the open space for the dwellers

Among all of the participants only one person says the open space is not important for me, but the rest understand the importance of the open space for the residents themselves as well as for the neighborhood. As compared to their former area of residence /neighborhood/ they said that they perceive it is important. The dwellers answer the question about what the open space mean for them in two ways besides to those who said that it doesn't mean anything for them. One way of their answer is they just simply describe or perceive it as the functions they use it for and the other way of their description is how they wanted it to be. Among the answers the followings are some of them.

- It's just an entrance way to the building/walk way/
- It's a space for social meeting
- Parking space
- Cloth drying space

- Another working space

Their other expression is related to the perception of the actual current use of the space. Among the answers the following are some of them

- Great recreational space with different plantation garden
- In addition to recreation income generation

5.7 Open space as a recreational space

The current condition is not fit for the purpose of recreating. Soft open spaces are not provided with well greenery well and the hard open spaces area not well paved and are full of dust. 53 presents of the participants perceive the space as bad recreational space.

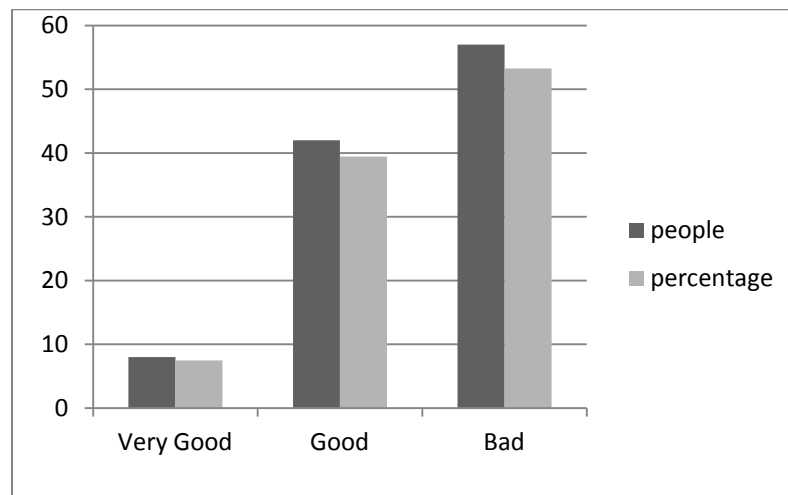


Figure 16: Number of people who perceive the open space as a recreational area

Source: by author 2015

5.8 Sense of belongingness

Since they are part of the living environment which they call home they said that they feel a sense of belongingness and participate in cleaning activity. 65 % of the participants share a sense of belongingness feel responsible and intervene with the committee's decision on open space management. Those who do not feel to have a sense of belongingness blame the committee's for the open space management.

5.9 Frequency of use of open spaces

The dwellers use the open spaces at different time intervals and gaps between days. 31.8 percents of the participants use the space for daily actives like drying cloths and kids playing after school. 25.1% use the space ones in a week, 5.6% ones in a month, 23.4 ones in a year occasionally and 14% do not use the space at any time.

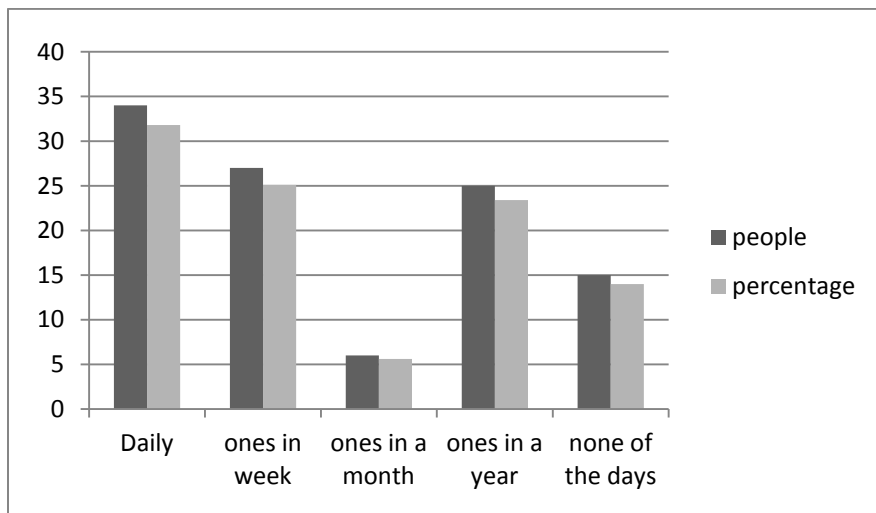


Figure 17: How often the people use the open space

Source: by author 2015

From the above graph, with the exclusion of people who use the space daily and those who do not use it at all, the following graph shows when they use the space. 7.5% use the space on week days, 28.9% on weekends and 17.7% use the space occasionally.

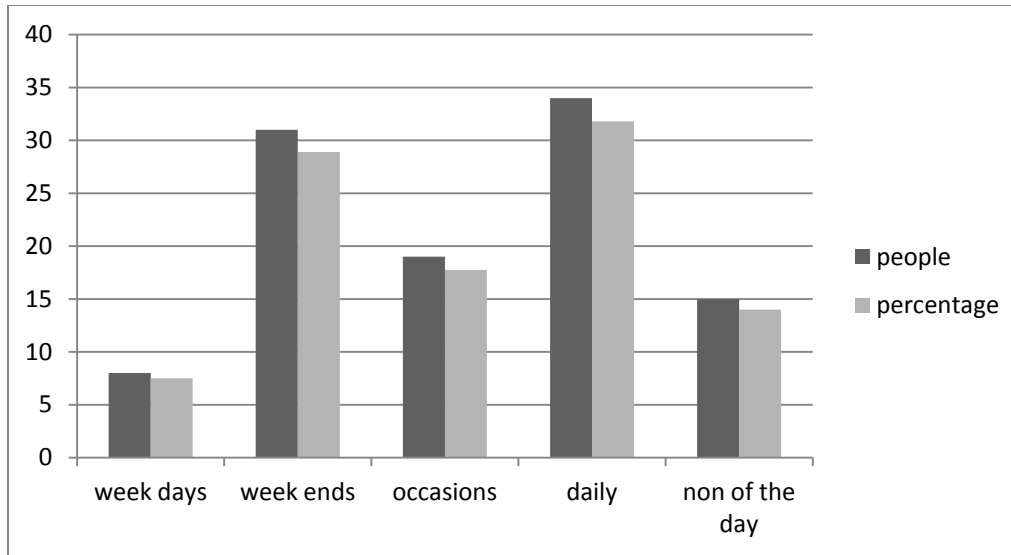


Figure 18: When people use the space

Source: by author 2015

5.10 Dwellers suggestion for change

In conclusion of the interview the dwellers mention their suggestion with regard to addressing the things to be improved. The reason they mention for the poor performance of the open space is that there is no responsible body for the enhancement and control of the open spaces and blame the committee for the poor management of the open space. Some suggestions forwarded by the dwellers were,

- Facilities like light and furniture
- Sport center like basketball court and football field availability
- Additional wall ways so that people would not pass through the greenery
- Every activities having their own delegated space
- If it's possible increasing the size of the open space so that they can have room for all activities
- Proper access roads functional for car movement
- Clean environment
- Different plantation types
- Improving the hard open spaces pavement.

5.11 Summary of major findings and discussions

Awareness and appreciation of environmental perception, and specifically the perception and experience of a place is an important dimension of urban design (Matthew Carmona , Tim Heath, Taner Oc and Steven Tiesdell 2007).Hence focusing on the people's perception towards creating a neighborhood open space helps the residents to experience the sense of a place. The result discussion of this research is focused on points that could be an input in designing more effective and appealing neighborhood open spaces. The center of discussion is designed by answering how the open space functions, how they initiate and support socialization, how to make them recreational and relaxation spots and what the issues are raised and how they need to be improved. The major findings are listed and discussed.

- **Type of activities that open space provoke**

Currently the Purpose that the open spaces in the neighborhood are serving the community are for activities related to socializing, household work, kids playing, parking, and the dominant activity taking place on the space is household work. 60% of the participants use the space for drying cloth and crop. 30% use the space for socializing and relaxing. But the existing condition does not provoke these activities fully especially for relaxation, socialization, enjoying nature and recreational purpose. The spaces are not clean, green, have no sitting furniture's, have no lighting at night, and do not enough tree shades. Only 31% of the participants use the space for socializing purpose.

- **Adequacy and accessibility of space :**

More than half of the participant residents perceive the space as adequate for the users if the management is functioning well, by this it is understood that they do not feel suffocated, but if everyone wants to use the space at the same time it's difficult For example kids cannot play while clothes are there for drying

purpose. The green grounds are fenced around to prevent movement and kids running on the grass. This makes it less accessible for everyone to use the space.

- **Meaning of open space for the community/ common perception:**

Gathering Communities' definition of open space helps to highlight what sort of purpose participants believed it should serve for and to also determine a common definition of open spaces. Their definition of space is based on the current function and their perception of what an open space should be. Among the long definitions they gave the major ones are phrased in to following statements.

- It's just an entrance way to the building/walk way/
- It's a space for social meeting
- Parking space
- A recreational place to adore nature
- Cloth drying space
- Another working space
- Income generator

- **Relation between their perception and the use of space:**

The community described the open space based on its current function. The majority of participants' perception is influenced by the current operation of space.

- **Supporting Social affairs and interaction**

The current status of the open space is more or less good when its service is ranked as important for supporting social interaction and cohesion. 75% of participants believe it is important for socializing though the facilities are not complete.

- **Motivations to use the open space**

People are interested to see the open space in the way it addresses their needs. Therefore, they were asked what things they prefer to be change. So they mentioned things to be improved so that they could be motivated to use the space. Things that could motivate them to use the spaces are the following.

- Facilities like light and furniture
- Sport facilities like basketball court and football field availability
- Additional walk ways so that people would not pass through the greenery
- Every activities have their own delegated space
- If it's possible increasing the size of the open spaces so that they can have room for all activities
- Proper access roads functional for car movement
- Clean environment
- Different plantation types
- Improving the hard open spaces pavement.

Over all through these answers it is possible to determine that in general the concept of open spaces are perceived as open land integrating nature with supporting social activity. And their utility and performance affect how they are perceived. They are perceived as something good that improve the aesthetic appeal of a neighborhood.

5.12 Major problems

- 60% of participants use the open space for house hold activities and drying, which weaken the significance of the open spaces for interaction and recreation.
- The most usual users' of the open spaces are women and kids, though the open spaces are good for social interaction. Due to the situation being not inviting the youth don't usually use the open spaces.

- Poor management of open space for the enhancement. Hard open spaces still don't have a proper pavement and green spaces are not maintained to be green. Instead spaces are left with dusts and garages.
- Nonexistence of landscaping elements in the open spaces point out the spaces as being left over spaces and under optimized by the condominium community. Except for the irregularly and the same type of planted trees there is no landscaping element in the open spaces at all.
- The activities do not have a designated spatial space so that one doesn't overlap with the other.
- Community perception towards open space is influenced by the current limited function of the open space.
- Difficulties of implementing planned open space and integrating landscape design in to the neighborhood development.

6. Chapter Six: Conclusion, Recommendation and Design Proposal

6.1 Conclusions

In general conclusion, this study indicates that the condominium community' of Jemol have a positive attitude and give emphasis to the importance of open space to for them and their family. The current operation of the neighborhood open spaces forced the condominium residents to perceive the space more as a functional space for a household activity work than perceiving it as a recreational space. The image and attractiveness of places that people live in strongly influence the people's perceptions of them. A lack of well managed open space will undermine the neighborhood appearance, and discourage a positive impression in adding value to the place to live in (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011).

Considering the value of open space in three parameters which are environmental, social and economic benefits, the environmental value of the Jemol condominium neighborhood open space is less in terms of incorporating different types of plantation that could be of help in cooling the air and in protecting ground soil, in addition to the decorative horticultural values. The open space is more or less good in supporting the social value; the communities' use the space for any social affairs. Their activity is restricted by the current less operation of the open space with no landscaping elements like furniture and lack of proper pavement for the hard and greener soft open spaces. If green spaces are well managed, research has shown that communities use their local spaces more and obtain some pride in the area where they live (Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives 2011). The open space in the jemo I condominium site is functioning as a place for drying cloth and crops. So it is giving economic value for the community.

6.2 Recommendation

Besides assessing the condominium community's perception towards open spaces identifying the major factors affecting the full open space performance is needed and

suggestions need to be made to improve their weaknesses and enhance the strong potential of the open spaces. In addressing the major problems of the current open space in the neighborhood, the suggested points taken in to account for design and open space management are the following.

Suitable planning aspects should be considered

- Participating the community at the beginning stage of the planning process
- Planning even spatial distribution of open spaces by considering similar size.
- Incorporating Landscape design and elements to make the open space more functional and recreational.
- Proper Space arrangement for every activity taking place in the open space
- Providing a playground for kids and youth, green ways to provoke a jogging walking exercise
- Incorporating Different plantation within the green area
- maximizing the awareness of the people about environmental health and social benefits of open space so that they can be beneficiaries and so that they can participate in the planning and management of the open spaces

Suitable management aspect should be considered

According to the office of greening and beautification of the sub city, such pocket open space are left for the committee management set by the society after they support them with few plantations. Therefore managing the open space is the committee task.

- For the enhancement of the open spaces proper management of the committee is needed by adapting suitable landscape design and implementation.
- After setting the suitable landscape design with functional elements incremental designing strategies should come following the design, by considering the financial restriction instead of dropping it all.
- Regulating the usage of open space with it intended plan or design

- There must be a responsible community organization for the maintenance management along with financial and material ongoing revenue funding,

6.3 Proposed open space design typology

It is now believed that sustainability indicators for urban development should include more parameters about public spaces and green open areas, as well as indexes reflecting citizens' satisfaction and perception of their living environments (Chiesura 2004). Based on information gathered from the community it is possible to determine what could meet their satisfaction and how the open space could be adjusted to serve their needs so that the space would be people friendly and active.

The design aspect considers segregating the activities for the comfort of the users and incorporates children's playground and small play court to include the youth. In Addis Ababa norms and standards of structural plan mention that a small kebele level tennis ground should be 9x18 meter so it could be a small play ground for the neighborhood. And another activity that should be segregated is the household working space like drying cloth. It should be provided with properly managed wires and hard surface pavement also throughout the space. There must be proper sitting furniture.

This proposed open space design typology is done by selecting one type of open space cluster which covered most of the site. The rest of the open space cluster arrangement with the building is not fixed; it varies on the available space left after arranging this open space cluster which is selected for this design typology. Applying the proposed design typology for the open space cluster with different type shuffling and prioritizing the functions is important. The activities with different functioning elements are listed as the following:

- Walk ways
- Parking
- Working area
- Sitting area for the adults

- Kids play ground
- Youth play court

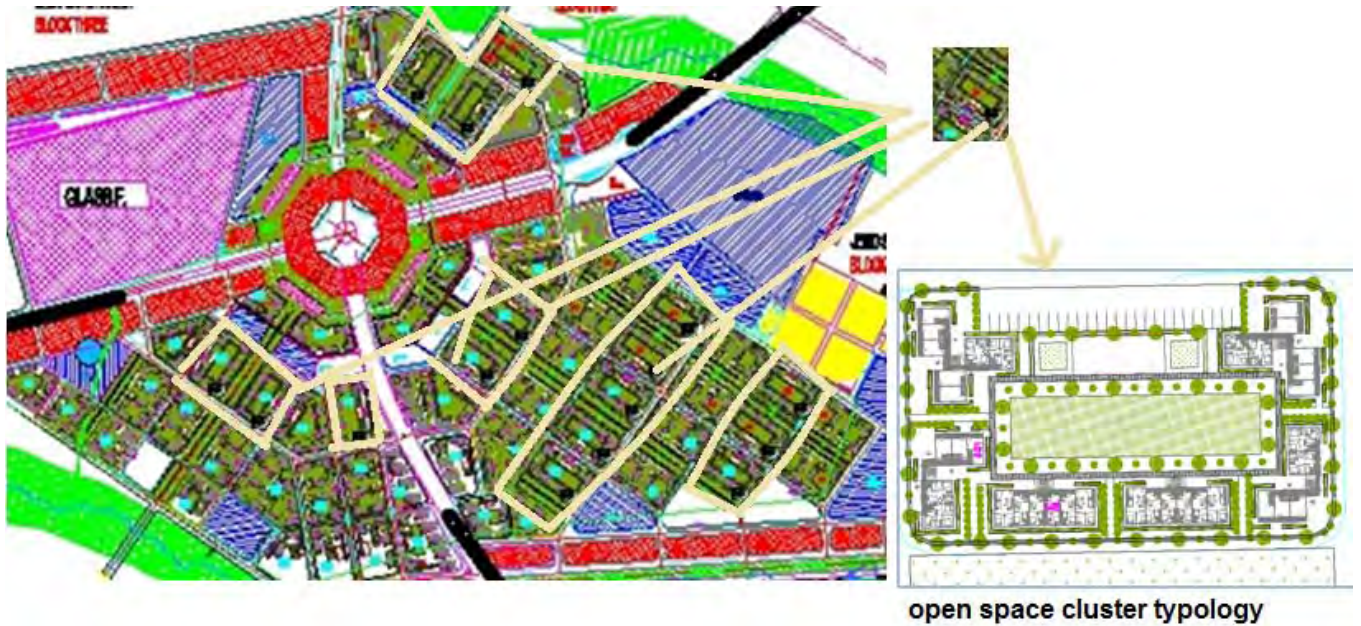


Figure 19: picture showing one open space cluster location from jemo residential design

Source: by author,2015

6.3.1.1 Conceptual development of design diagram

To create environmentally sound and scenic packet open space incorporating the social and environmental aspects that will indirectly contribute for the sustainable development of the city in large scale is imperative. Since a certain space is provided as open space to serve the community it should serve its intended purpose and address the users need very well with proper provision of space allocating main activities. Green area has to be covered with plantations and the hard space has to be paved and give an attractive visual and add aesthetic value for the neighborhood and be accessible for the residents. .

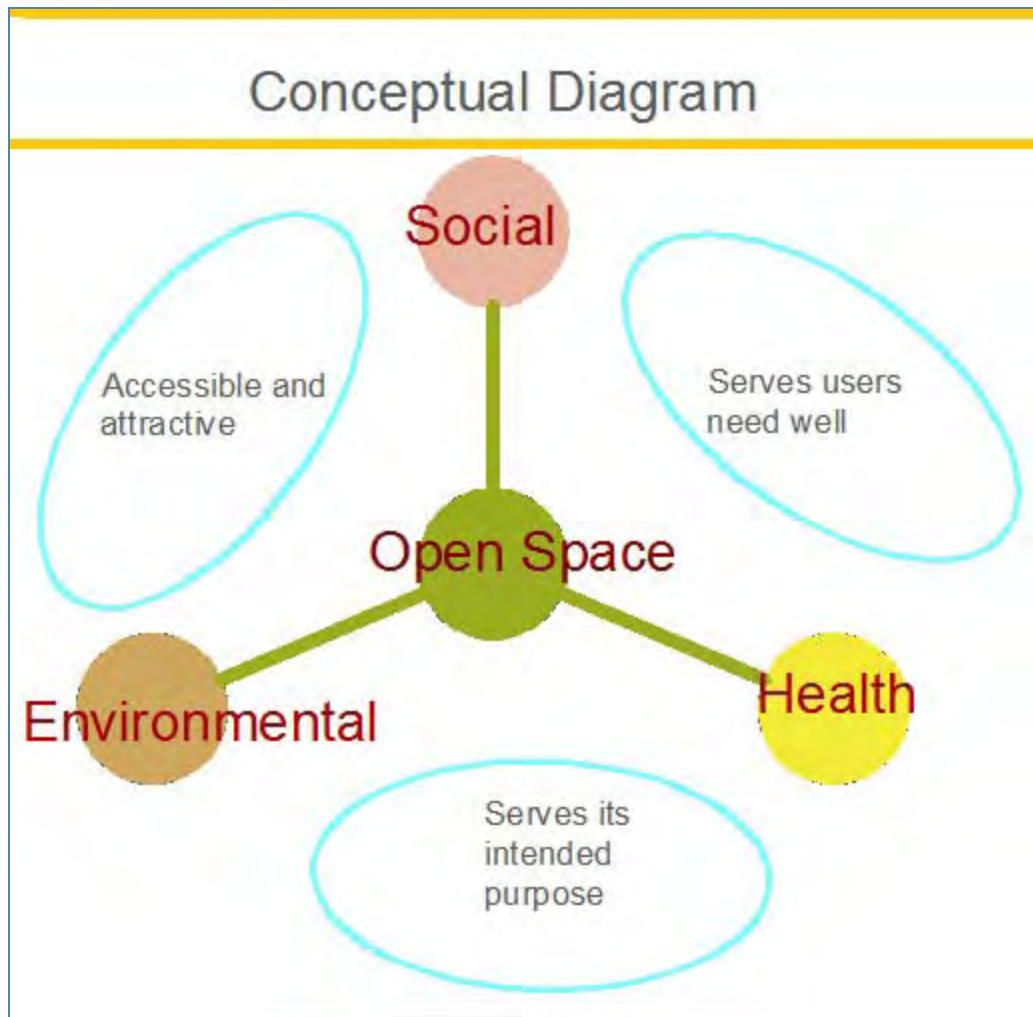


Figure 20: Conceptual diagram

Source: by author, 2015

6.3.1.2 Open space design typology

1. Green and paved area surrounding the building

The space immediately adjacent to the residential building should be a paved hard surface supporting the ditch system collecting the rain water from the roof of the building. The space next to the hard surface should be covered with shrubs and plantation for visual break and privacy of house on the ground of the building. Areas near the buildings and the entire border of the block should be fenced with plantations to make the walk way of the neighborhoods guided

with green environment that could appeal to the aesthetic value of the place and become suitable for walking and jogging along the street.

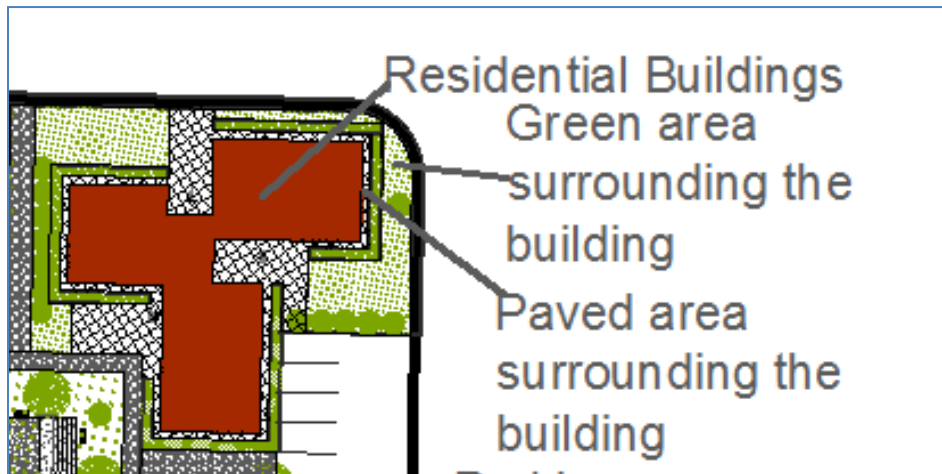


Figure 21: Plan showing residential building surrounding area

Source: by author,2015



Figure 22: 3D picture showing residential building surrounding area

Source: by author,2015

2. Walk ways

Walk ways should be paved with materials that permit water percolation to support underground water and to ensure a sustainable neighborhood with a ditch structure at its side.

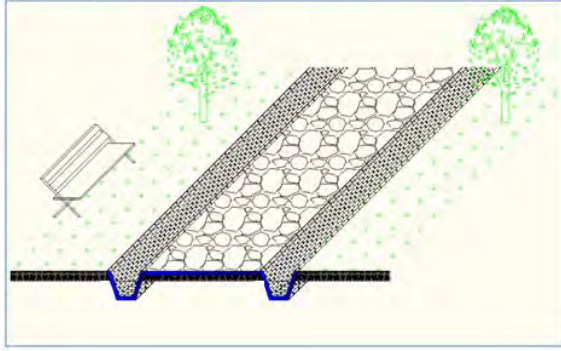


Figure 23: Walk ways

Source: by author, 2015

3. Sitting and relaxing area

Open space should provide a shaded sitting area for the adults to facilitate a social interaction.

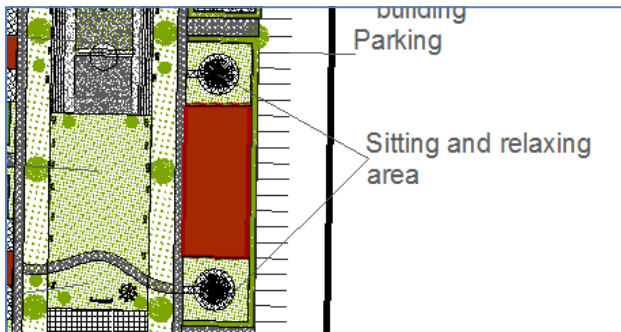


Figure 24: Map showing sitting are for the adults

Source: by author,2015



Figure 25: 3D picture of sitting area

Source: by author, 2015

4. Multi-purpose meadow

At the middle of the area and the activities covers 366m² areas. It can accommodate activities like sitting and relaxing, and also allow putting up of a tent in time of wedding and mourning (Lekiso).



Figure 26: 3D picture showing multi- purpose meadow

Source: by author, 2015

5. Children play ground

Children play ground covers about 102m²; it can accommodate kids playing equipments like seesaw and sliding down. There can also be place filled with sand so that they can play with it.

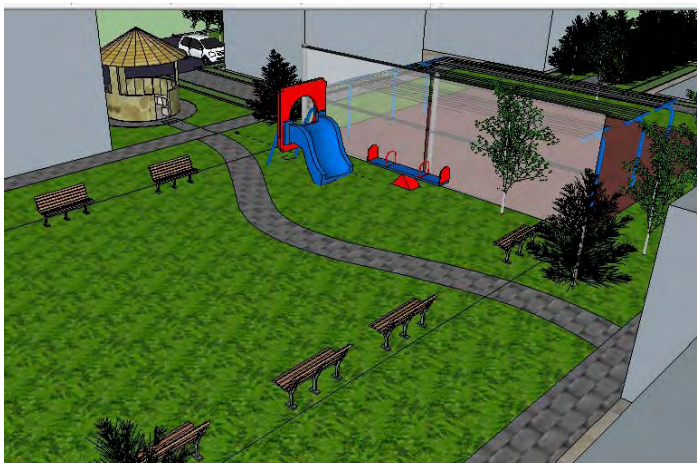


Figure 27: 3D picture showing kids play ground

Source: by author, 2015

6. Working area

Working area covers 255m² areas; it is intended for the household activities carried out door like drying cloth and crops.

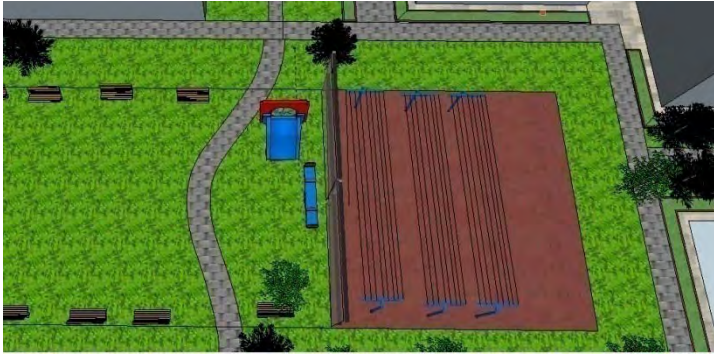


Figure 28: 3D picture showing working area

Source: by author, 2015

7. Youth play ground

Play court covers 287m² areas, it is important to make the open space inclusive for all age group by including play ground for the youth , a place where they can hangout and socialize. The court size is 9x18 standard for the tennis court at the kebele level based on Addis Ababa norms and standard, based on youth interest they can use the space to play basket and volleyball.

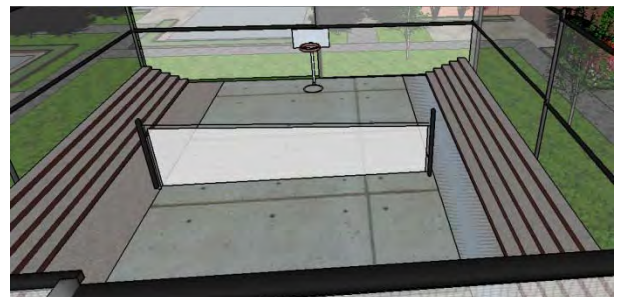
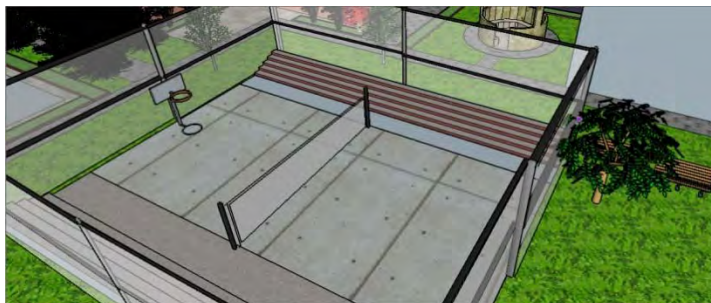


Figure 29: 3D picture showing youth court

Source: by author, 2015

8. Landscaping elements



Street bench, by the side and around the street

Street lights along the street to give the space brighter image at the night

Garbage cans on the side of street are necessary in order to keep the place clean



Figure 30:3D picture of landscaping elements

Source: by author, 2015

Open Space Design Typology

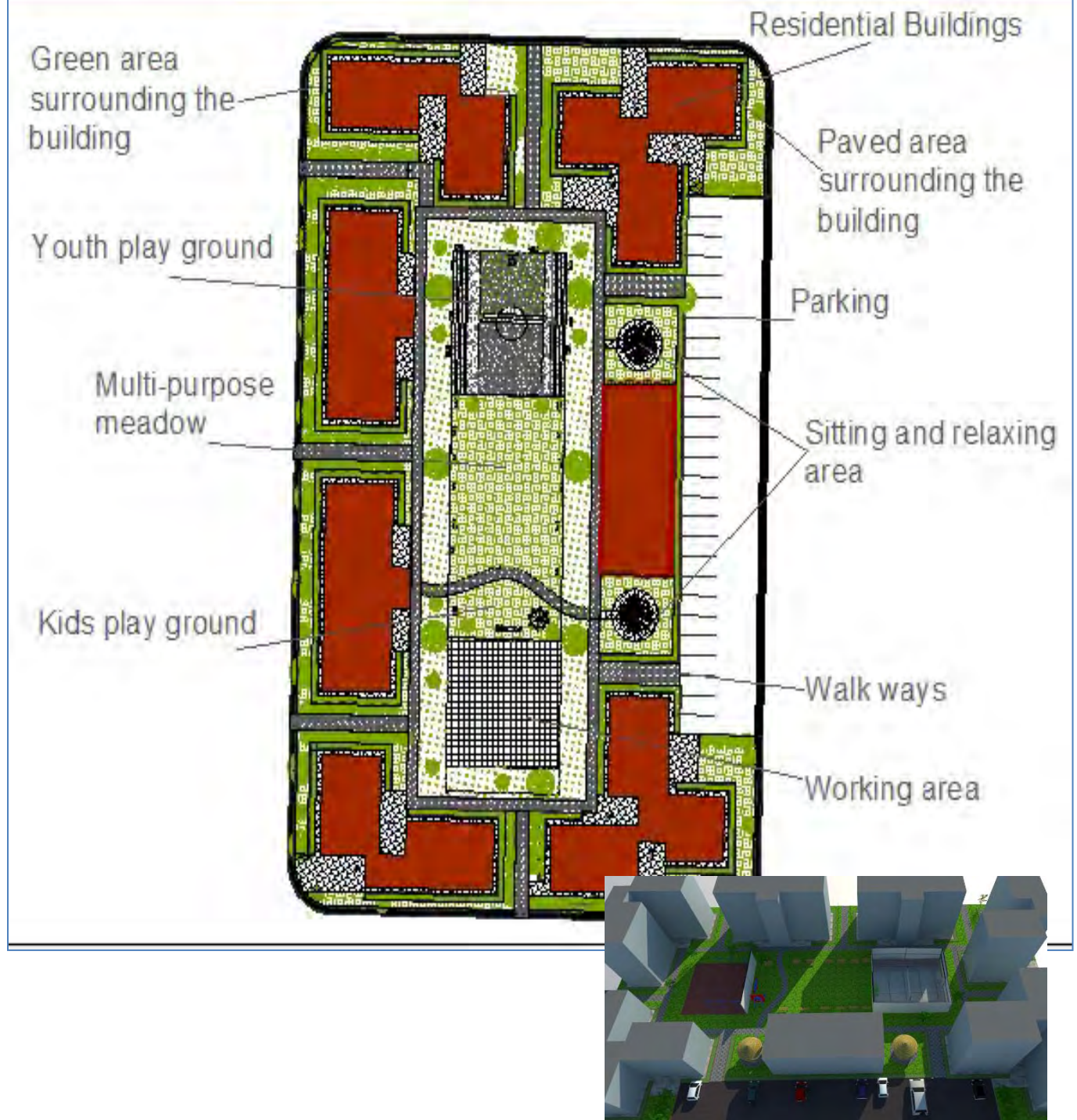


Figure 31: *suggested communal open space design typology*

Source: *by author,2015*

6.4 Proposed plantation

Plantation is important elements of landscaping, the following indigenous plants suggested for the site in order to create a variety of visual. This plant are found from the book called Useful Trees and Shrubs for Ethiopia, by Swedish International Development Authors, 1993

Ficussycomorus

Indigenous

Common name: *Bamba, Shola*

Ecology: Found along rivers and lake margins, in woodlands and wooded grasslands, evergreen bush lands, forest edges and forest clearings in Moist and Wet WeynaDega zones in most regions of the country.

Spacing: 1.500m-2.700m

Character: A large semi-deciduous spreading tree to 25 m, sometimes with stem buttresses and the base commonly spreading over the ground.

Description: BARK: Distinctive yellow to cream-brown, smooth



Figure 32: plantation species in the study area

Rhusglutinosa

Indigenous

Common name: Embus

Ecology: A shrub or tree found in semi-arid conditions in lowland and highland woodlands of Moist and Wet WeynaDega and Dega zones,

Spacing:1,500-3,300m.

Characteristics: A spreading or upright shrub or tree ~10 m. The trunk may reach 25 cm diameter. This species is named for the new shoots which exude a shiny, sticky liquid (glutinous).

Description: Red-brown becoming dark grey.

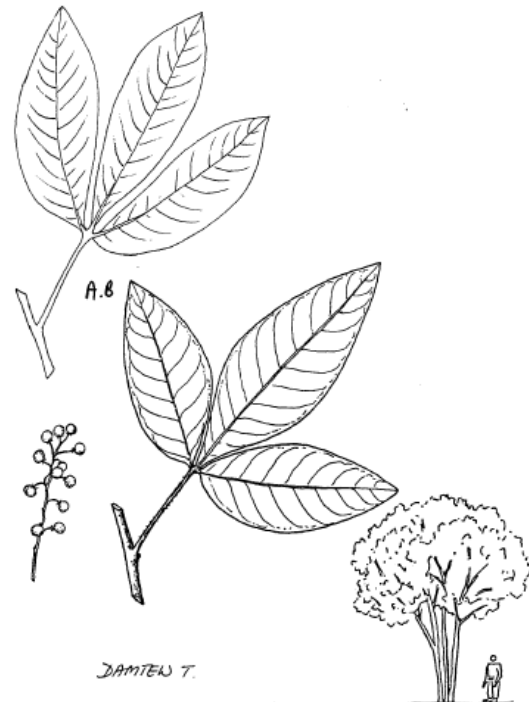


Figure 33: plantation species in the study area

Salix subserrata

Indigenous

common name: Ahaya, Wonzadmik

Ecology: A small tree occurring along river and stream banks. It grows in woodlands as well as in lower and upper highland forests with Schefflera. It is found in Moist and Wet Kolla, WeynaDega, and Dega zones

Spacing; 1,250-2,850 m.

Characteristics: An evergreen shrubby tree 2-10 m, its shape often distorted by floods.



Figure 34: plantation species in the study area

Description: Young twigs hairy, then smooth, reddish. Bark grey-brown, grooved.

Ornamental

Sesbaniasesban

Indigenous

Common name: Girangire

Ecology: One of many useful African *Sesbaniaspp.* which survive water logging and fix nitrogen. It is found at the margin of fresh-water lakes and seasonal ponds. Some types tolerate acid and saline soils. Easy to establish even in waterlogged soil and dry eroded soil. It performs well in Moist and Wet Kolla and WeynaDega zones.

Characteristics: A deciduous, short-lived shrub or tree to 8 m. **Description:** Red-brown, young shoots hairy.

Pinuspatula

common name: Pachula

Ecology:Probably the most widely planted pine in tropical Africa. It is tolerant of most soils and will grow in grassland. It grows best with good water supplies but can also survive adverse conditions. It Does well in Moist and Wet WeynaDega zones.

Characteristics : An evergreen tree to 35 m with light green, weeping foliage and a long straight trunk; branches more or less horizontal, turning up at the tips.

Description : Grey to dark brown, fairly smooth, papery red-brown on young branches.

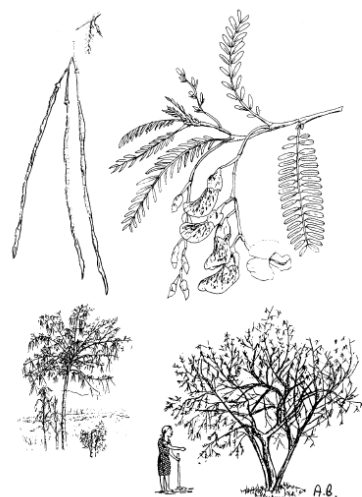


Figure 35: plantation species in the study area

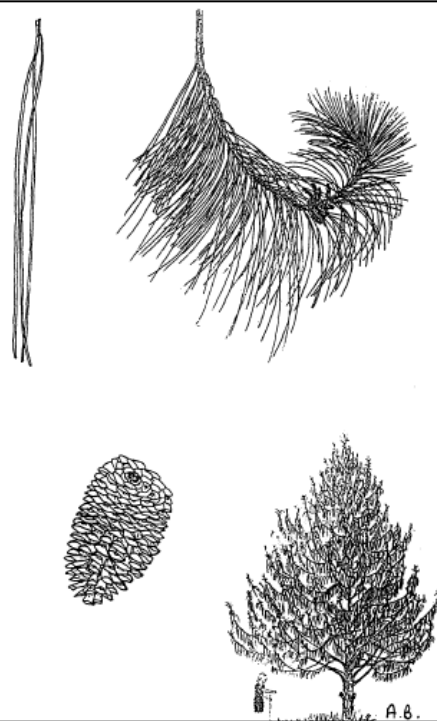


Figure 36: plantation species in the study area

Plantation map

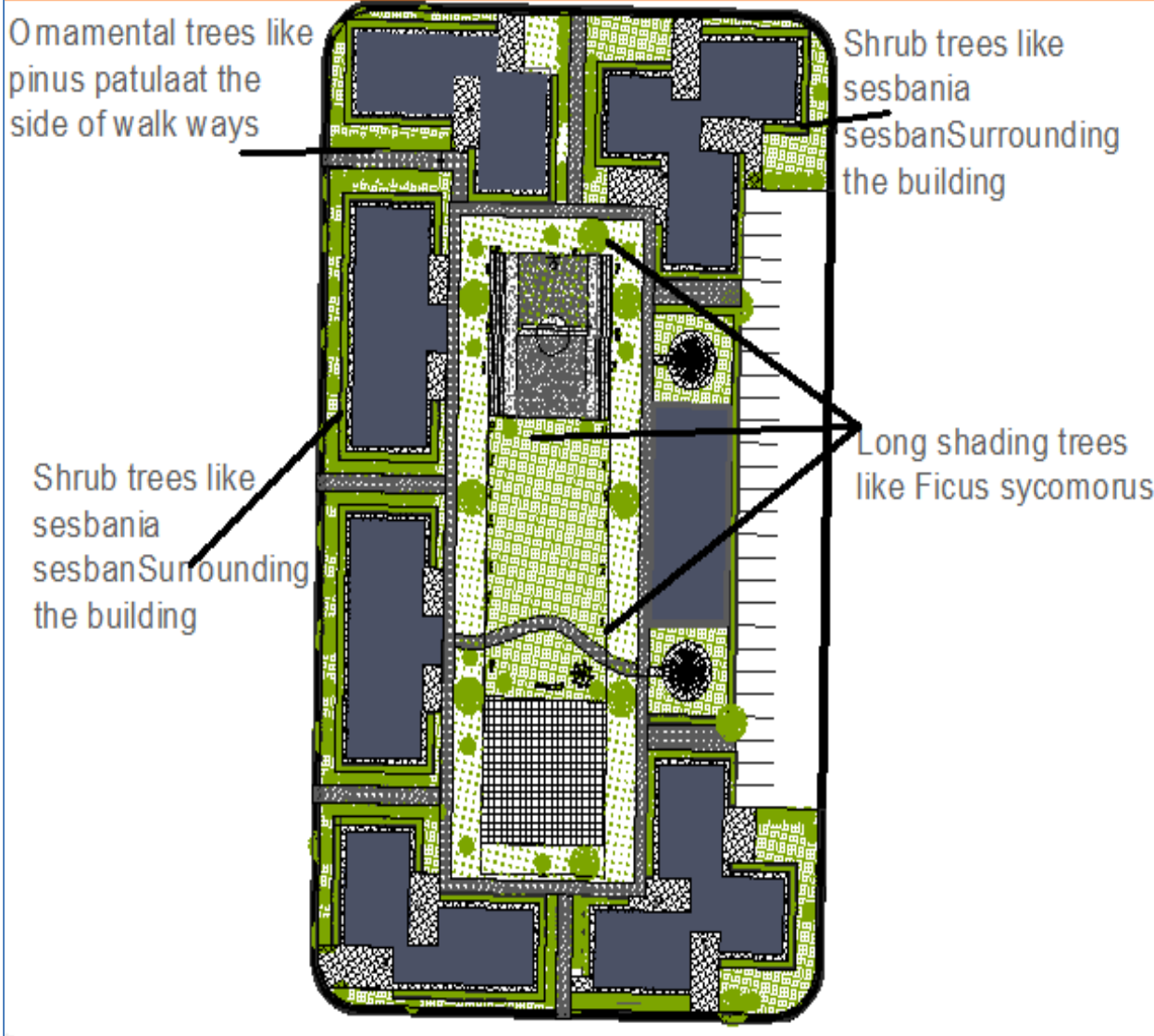


Figure 37: Plantation map

Source: by author,2015

7. Bibliography

"Addis Ababa and the surrounding Oromia special zone Integrated development plan (2014-2038)." 2013.

Charles W. Harris, Nicolas T. dines. *Time saver standards for landscape architecture*.

CHEN, WENDY Y. "Perception and Attitude of Residents Toward Urban Green Spaces in Guangzhou (China)." *Research Gate* , 2015.

Chiesura, Anna. "The Role of Urban Parks for the Sustainable city." *ELSEVIER*, 2004.

county(va), Aibemarle. "the neighborhood model: building block for the development areas." 2010.

Fasil Giorghis et al, Marc Angeli and Dirik Heble. *Cities of Change Addis Ababa: Transformation Strategis for Urban Territories in the 21th century* . Addis Ababa, 2009.

forum, Green. "Environment for Survival:taking shocks of Ethiopia's Environment." *Green forum proceedings number 1*. Addis Ababa., 2007.

Gerring, John. *case study reseach*. Boston: Cambridge university press, 2007.

Getnet, Anteneh. "SUSTAINABILITY AND OPEN SPACE : the spatial sustainability of open spaces in new Condominium Neighborhoods of Addis Ababa." *etd.aau.edu.et/handle/123456789/8082*. 2014.

Habitat, UN. "Condominium Housing in Ethiopia:The Integrated Housing." 2011.

Hurtwood, Lady Allen. *Planning for Play*. London: Thames and Hudson, 1968.

Ian Bently et al, Alan Alcock, Paul Murrain, Sue McGlynn, Graham Smith. *Responsive Environment*. 2008.

Jason Byrne and Neil Sipe. *Green and open space planning for urban*. 2010.

JURKOVIČ, Nataša BRATINA. "Perception, experience and the use of public urban." *Urbani izziv*, volume 25, no. 1, 2014, 2014.

Kalkidan Wondaferew and Tewedaj Eshetu. <http://www.ethiopianarchitects.org/17-condominium-housing-past-present-a-future>. december 2011.

Leulseged Kasa et al, Gete Zeleke, Dawit Alemu, Fitsum Hagos and Andreas Heinemann. "IMPACT OF URBANIZATION OF ADDIS ABEBA CITY ON PERI-URBAN ENVIRONMENT AND LIVELIHOODS." 2011.

Llewelyn-Davies. *urban design compendium*. London: English Partnerships the Housing Corporation, 2007.

Maller. *Diversity, Health values from Ecosystems-Convention on Biological*. 2002.

Matthew Carmona , Tim Heath, Taner Oc and Steven Tiesdell. *Public Places, Urban Space*. Great Britain: Architectural press, 2007.

Matthew Carmona et al, Claudio de Magalhães, Leo Hammond. *Public Space:The manegment dimensions*. London, 2008.

Moll, Gary. "urban open spaces:gate ways to urban sustainability." 2003.

Moughtin, Cliff. "Urban Design:Street and Square." 89. 1992.

Mpofu, Thomas P. Z. "Environmental challenges of urbanization: A case study for open green space management." 2013.

office, Addis Ababa Municipal. "Norms and standards." Addis Ababa, 2002.

office, Department of international economic and social affairs statistical. "provisional guidlines on standard internayional age classifications." 1982.

Roman Rollnik et al, Matthew French and Ellen Daltrop. *Condominium Housing in Ethiopia: The Integrated Housing*. Addis Ababa: United Nations Human Settlements program (UN-HABITA), 2011.

Singh, Yogesh Kumar. *fundamental of research methodology and statistics*. New Delhi: New Age international(p).Ltd.publisher, 2006.

Tesfaye, Mikiyas. "Urban Open Space Use in Addis Ababa:." 2011.

Tesfaye, Mikiyas. *URBAN OPEN SPACE USE IN ADDIS ABABA:*. Addis Ababa: SLU, Swedish University of Agricultural Sciences, Alnarp, 2011.

Thompson, Catharine Ward. "Urban open space in the 21st century." 2002.

"Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives." 2011.

Virginia McConnell and Margaret Walls. "the value of open space: Evidence from studies of Nonmarket Benefits ." 1005.

Wang, Linda N.Groat & David. *Architectural research methods*. Hoboken and New Jersey: John Wiley and sons, Inc., 2013.

woolley, hellen. *Urban Open Space*. London and New York: spon press, 2003.

Web Based Reference

Foundation, Kronkosky Charitable.
"http://www.kronkosky.org/research/Research_Briefs/Pocket%20Parks%20November%
202011.pdf." May 20, 2009. (accessed 2014).

Getnet, Anteneh. "SUSTAINABILITY AND OPEN SPACE : the spatial sustainability of
open spaces in new Condominium Neighborhoods of Addis Ababa."
etd.aau.edu.et/handle/123456789/8082. 2014.

Kalkidan Wondaferew and Tewedaj Eshetu. *http://www.ethiopianarchitects.org/17-
condominium-housing-past-present-a-future*. december 2011.

Njeru, Purity. *the african executive*. July 18th, 2006.
*http://www.africanexecutive.com/article.php?section_id=10%20&&%20article_id=%208
18*.

Olmos, M. "Pocket park development standard." *http://www.ci.visalia.ca.us
/civica/filebank/blobdload.asp?BlobID=4542*. July 1, 2014.

Webster, Merriam. "http://www.merriam-webster.com/dictionary/value."

Annex 1- Household questionnaire

General synopsis

This questionnaire is prepared as an input for master's research on **Perceptions of condominium community on the functional use and value of neighborhood open spaces: The case of Jemo condominium site**

Open space can be defined as land and water in an urban area that is not covered by cars or buildings, or as any undeveloped land in an urban area (Gold, 1980). From the user's point of view, open space has been described as being an arena that allows for different types of activities encompassing necessary, optional and social activities (Gehl, 1987). For the purpose of answering all questions both paved and non paved open space must be considered. The questioner covers four main parts in answering how the resident use the current open space, how do they perceive and give value for the space?, what constraints does the space has not to perform with resident expectation? And what the resident believe things should be changed to enhance the quality of the space. Open space in the neighborhood

Under taking this study is important to gather resident perception and attitude towards the provided open space, since the space is provided for the use of the people it is important to understand how they want it to be and how they use it in order to meet people expectation. Also accessing the use of the current open space will help to know the effectiveness of the provided open spaces. If the current operation is less, setting out the problem is essential for the improvement of the open spaces.

Therefore, your support and willingness in responding the questions would be very important for the success of this study. I assure you that the information that you are going to give would be kept in secrete.

Questionnaire survey on the perception of condominium community on the functional use and value of the open space

1. House number _____

2. Age _____

3. Sex

a. Female

b. male

4. For what purposes currently do you use the outdoor open spaces in the condominium site?

5. Do you use the outdoor space for sitting and relaxation purpose?

a. Yes

b. no

6. If yes what type of relaxation do you exercise?

7. Do you think that the available open spaces are adequate for the neighborhood?

a. Yes

b. no

If "No" provide Justification,

8. If you take any physical exercise, which open space do you use?

a. compound green area

b. neighborhood green area

c. recreational centers in the city outside the village

d. other

9. It is observed that in some part of the open space are taken over by parking lots. What is your perception to the fact that the open space coverage decreasing in the compound?

10. Do you think that the open space in the compound is available for every one living in the neighborhood

a. Yes

b. no

11. Do you think the open spaces can be used by kids, elders, youth, male and women?

a. Yes

b. no

12. If you do for what purpose does each social group use the open space for?

a. Kids _____

b. Elders _____

c. Youth _____

d. Male/ women _____

13. Do you use the open space for social interaction, what type of social interactions do you have in the space?

a. Yes

b. no

14. How do you observe the current open spaces in the way of supporting the social affairs and interaction?

a. very good

b. good

c. bad

15. What does the open space mean to you?

16. What is your perception on the value of the open space in the neighborhood

17. Do you think that this open space has been important to you, your families and the neighborhood

- a. Yes
- b. no

18. How do you observe the current open space as a recreational spot?

- a. very good
- b. good
- c. bad

19. Do you feel a sense of belongingness towards the open spaces in the compound?

- a. Yes
- b. no

20. How do you value open space for supporting social cohesion?

- a) Important
- b) Less important
- c) Not important

21. How many times do you use the open space?

- a. Every day
- b. Ones a week
- c. Ones in a month
- d. Ones in a year

22. On what time do you use the open space?

- a. day in the week
- b. week ends
- c. on holidays

23. Are there facilities available that enhance the functional use of open spaces?

- a. Yes
- b. no

If yes mention them

24. Regardless of the current condition of the open space how do you imagine this open space should look like?

25. What would you prefer to be changed or added that could improve the space quality?
