

An-Najah National University

Faculty of Graduate Studies

**Guidelines for increasing social interaction in high
residential buildings by modifying physical
environment: Case Study of Rafidia, Nablus**

By

Alaa Sadi Mahmoud Qawasmi

Supervisor

Dr. Muhammad Ata Yousof

Co-Supervisor

Dr. Zahraa Zawawi

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This Thesis was defended Successfully on 4/11/2018, and Approved by:

Defense Committee Members

Signature

1. Dr. Muhammad Ata Yousof / Supervisor



2. Dr. Zahraa Zawawi/Co-Supervisor



3. Dr. Moain Alqasem/ External Examiner



4. Dr. Eman Alamad / Internal Examiner



Dedication

To the one who grabbed my hand along the way and never let go ... opened my soul, eyes and heart to the world... David, my husband.

To the one who has never hesitated to give his unlimited support and celebrate all my steps in life... Saadi, my father.

To the truly inspired teacher.. Dr. Zahraa, my supervisor.

To the life time friends ... Liza, Fnn, Tasneem.

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I would like to thank those who helped me with their wise guidance and patience, especially my supervisors Dr. Zahraa for her outstanding efforts and Dr. Muhammad as well.

I would like to expand my gratitude to my parents, my husbands' family ... also my friends (Liza, Tasneem, Bayan, Dina, and many others) or the actual support they conducted in every chance they got to help.

الإقرار

أنا الموقعة أدناه مقدمة الرسالة التي تحمل العنوان:

Guidelines for increasing social interaction in high residential buildings by modifying physical environment: Case Study of Rafidia, Nablus

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Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name:

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Signature:

التوقيع:

Date:

التاريخ:

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Abstract

The development of Nablus city has faced challenges caused by the implications of previous administrations over the last century. It resulted with Land scarcity and fragmented territorials, which encouraged Vertical expansion and emergence of high buildings to cope up with population growth. Physical environment of high buildings change was accompanied by changes in social interaction and activities amongst people.

Thus, driven by the belief of capability of architecture to shape our life and change behavior of people through design, this research is conducted by the importance of understanding how does urban environment of high rise residential buildings relate to people interaction in these buildings and its context. It analyze the current urban form of the Nablus city generally, and investigate how physical environment relates to social interaction amongst residents of high residential buildings in Rafidia, Nablus.

The study has developed guidelines of possible modifications of existing high residential buildings and its urban context that would encourage people interaction. As well as recommendation for new buildings to help planners, architects, urban developers and policy makers to improve their

vision and plans as well as designs to achieve more compatible urban areas and high buildings with people and their everyday life.

Chapter One

Introduction

1.1 Introduction

The development of Palestinian cities has been characterized by various administrations over the last few centuries (Ottoman Empire, British mandate, Jordanian role, Israeli occupation, and Palestinian authority). The implications of previous administrations planning policies, such as Ottoman laws on land ownership regulation and British building codes, have been a challenge to urban development. However, the Israeli occupation and the political conflict resulted with problems that created fragmented territorial and geographical division on the land. As well as the lack of master plans for Nablus and all Palestinian cities, which Israelis have long benefited by adapting their structural plans that some have not changed or been replaced until today (*Abdelhamid, 2006*). This provided an opportunity to plunder more land to expand colonies, increasing the scarcity of land and reducing the amount of land available for construction. Also, Rapid urbanization and urban population growth have resulted in land scarcity and pressure on infrastructure.

In 1994, the Oslo agreement was signed by Palestinian liberation organization (PLO) and Israelis, which imposed a new administrative organization on the land and divided it into Areas A, B and C¹, where the Palestinian Authority began to regain control of parts of the West Bank and Gaza during transitional periods. But by the time the second Intifada broke out in 2000, the process had stalled (*Abu hijleh and khille, 2001*). Therefore, most of the areas that have not been transferred to Palestinians were classified as C, which prevented any expansion of cities and created fragmented urban fabric.

All of these challenges, along with outdated regulations and weak implementation authority, have played a major role in determining the current urban structure of Palestinian cities and hindered the proper and organized expansion and development (*Shaheen, 2013*) (*Abdelhamid, 2006*), and *Nablus wasn't far from that*. As a result, Political, demographic, economic and administrative issues has generally been one of the main factors resulted the urban form of Nablus and shaped it on the broad scale, in terms of physical environment such as street networks, housing types and building heights (*Dempsey et al. 2010*). Vertical expansion combined with the emergence of new types of buildings has affected and changed the characteristics of urban form of Nablus through the last decades. It

¹Land control wa classified into three categories according to the Oslo peace agreement signed in 1994: (A) Areas: Palestinians have political and security control and are responsible for planning and development issues in these areas. (B) Areas: Israelis have political and security control while Palestinians are only responsible for planning and development. (C) Areas: Palestinians have no political and security control and are not responsible for planning and development issues. (*Abdelhamid, 2006*)

enhanced the transition from one or two stories traditional buildings into more than 5 stories buildings, especially in residential use, where nowadays high rise residential buildings dominated the housing type.

High rise buildings has no clear statement or definition, it varies according to different terms. It could be a structure higher than seven stories, while others consider it as buildings that exceed the maximum reach of firefighting equipment's (*Craighead,2009*), or any structure where evacuation is majorly impacted by height (*Ibrahim, 2007*).

These buildings had its imprint on many aspects in the city; however social dimension is the main concern of this study. And despite the problems that high buildings contributed to as a solution, like adapting higher density of resident's on small land, the implication of high buildings extended to the social behavior of residents. researchers through their study of man – environment relationship such as Gehl (*2011*), Krier (*2011*) and Gifford (*2007*) found that this type of buildings influence residents social behavior negatively.

Accordingly, the noticeable change of urban form and emergence of high building was accompanied by changes in social interaction and activities amongst people in Nablus. This research is interested in analyzing the current urban form of the Nablus city relation to the social connections of high residential buildings residents to reveal the aspects of interrelationship between this pattern of buildings and social behavior.

1.2 Problem statement

According to Palestinian Central Bureau of Statistic (39.9%) of Palestinian families by 2000 lived in apartments in high buildings, while the numbering creased by 2015 up to (53.7%). Nablus has been no longer far from this transformation in housing preference with more than half of families became residents of high building in 2015. The growth in the number of high-rise residential buildings throughout Palestine, and in Nablus in particular, indicates a variety of motivations. The desire of people to live in apartments dedicated to land scarcity, which is the result of Israeli policies of lands pillage and administrative division to areas A, B, and C by Oslo accords in 1993. In addition, the unstable economic situation that has affected land value and increase prices. Also because few families own usable land for construction, so it's a way to keep family close to each other in the same building but separated apartments. And most important, the economic factor with the low cost of construction comparing to individual housing on new land (*Abu Saleh, 1998*).

Consequently, the demand on apartments in high buildings will keep increasing. On one hand, vertical expansion of residential buildings benefited people and investors by declining the pressure on land, so it worked as a decent solution for some time. On the other hand, it resulted with lack of public spaces and common spaces which had many negative social consequences, such as lack of social interaction and poor relationships amongst residents and neighbors, in addition to weak social

cohesion that encourages people isolation from each other because of distance between apartments and buildings (*Gang, 2015*). These are significant detriments of high buildings effect.

Therefore, driven by the belief of capability of architecture to shape our life and change behavior of people through design, this research is conducted by the importance of understanding how does urban environment generally and high rise residential buildings specifically, relate to people interaction in these buildings and its context, and how does it affect it? And to develop guidelines that aims to help planners, architects, urban developers and policy makers to improve their vision and plans as well as designs to achieve more compatible urban areas and high buildings with people and their everyday life.

1.3 Objectives

1. Analyze and trace the development and emergence of high buildings and its driving forces in Nablus through different periods.
2. Investigate how physical environment relates to social interaction amongst residents of high residential buildings in Rafidia, Nablus.
3. Develop guidelines of possible modifications of existing high residential buildings and its urban context that would encourage people interaction.

1.4 Research questions

1. What are the urban transformations faced Nablus city as a result of the political, economic and social changes that contributed to the appearance of high residential buildings?
2. What's the relation of the physical environment to high buildings resident's interaction in Rafidia, Nablus?
3. How to increase social interaction by modifying the physical environment of high residential buildings?

1.5 Hypothesis

Based on the above objectives and questions, the study assumes that changes in the physical environment have impact on social interaction. First, urban form transformation and building form changes over the past century leading to change in social interaction in Nablus. Second, physical environment is related to interaction and contact between the neighbors in the high building itself and other buildings around it. Finally, improving the physical environment and urban context of high buildings promote active social life among the inhabitants, and any change or alteration in the physical environment changes the social behavior of residents.

1.6 Methodology

The research is contingent to both collecting data and case study to test the previous hypothesis. Qualitative methods are considered in collecting variety of data, such as photos, maps and reports from different resources such as Nablus municipality, master's students and urban developers that illustrate the change of urban form, building typology and growth of high residential buildings in Nablus city. Case study was considered to understand the physical environment and assess social interaction through observations and semi-structure interviews.

1.6.1 Case study

Case study is selected to be Nablus city, Rafidia particularly. It has witnessed a rapid change in urban form and high spread of high residential buildings and recently its skyline is defined by vertical expansion of housing. The city headed towards high buildings after the growth of urbanization movement from rural and the increase of peoples need of housing that was restricted by the nature of topography. The position of Nablus in between two mountains limited any development into that direction. Because of that and other limitations, high buildings were a common solution for land scarcity in the city and opened new areas of growth. Rafidia was chosen for the rapid and significant transformation in the urban structure and land use, where the change of building typology is interesting more than other areas in the city, as well the dominance of high residential buildings in the area.

1.6.2 Sample design

a. The sample introduced in this research is block number 6 and 8 of Rafidia blocks, see (figure 1) as interviews and field work was limited to this specific locations regarding to the large area of Rafidia. Buildings of the sample were targeted towards 20 high residential building that are more than 5 stories, 3 family buildings, which residents are all from the same family, and 2 detached old houses that are one story and owned by families lived there for 20 years at least.

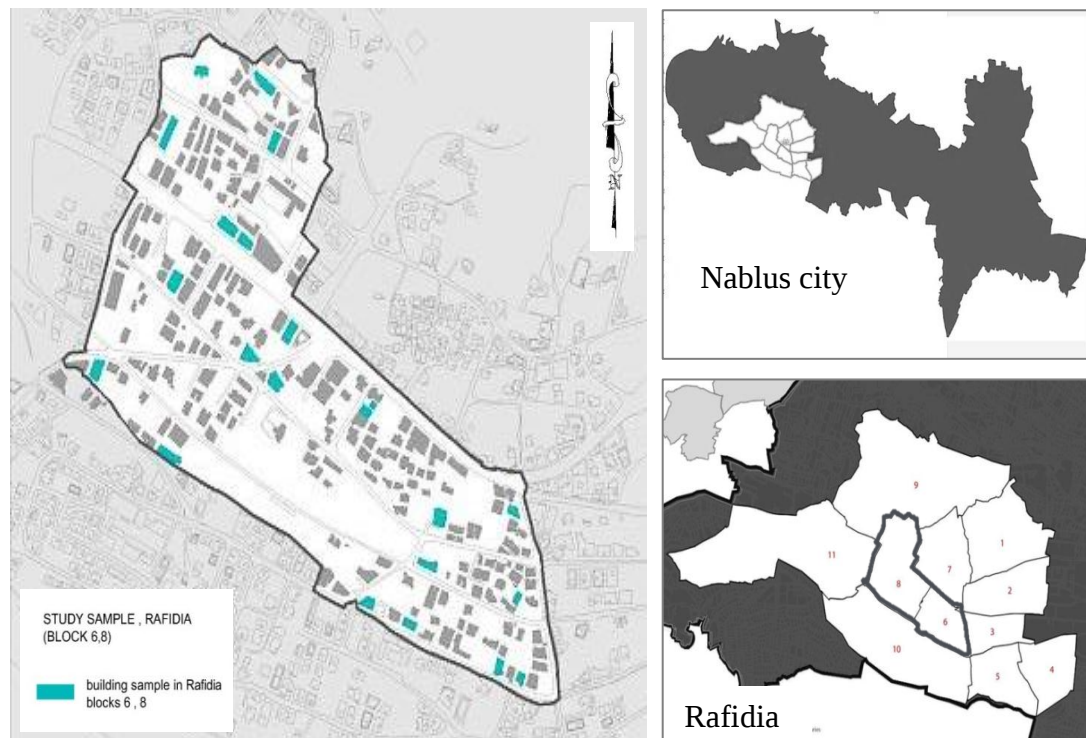


Figure 1: map of case study area shows its location in Rafidia and the sample of buildings. source: researcher based on Nablus municipality maps, 2017.

b. The choice of sample considered the condition of building and age, it included:

1. Buildings that were built over 20 years ago, some reserved in a good situation while others lack of services and left without maintenance.
2. Buildings that were built in late 90s and early 21 century, most of it was physically fine and in a good condition.
3. New buildings that were built in the last 10 years. Some are still not fully reside and has empty apartments.
4. In addition to observations by the researcher, those are defined by regular time to record the changes of social behavior of individuals and groups in the same area. These observations were recorded during two periods; March and June 2017, through different days of the week as regular work days and weekends, also it were recorded through various periods of the day.

semi-structured interviews to assess social changes in the lives of residents in high-rise residential buildings, by ranking their relationship with neighbors and surrounding environment and measure their satisfaction with current form of building and neighborhood. In addition to broader scale of interviews with high building owners, urban developers, decision makers who can influence the change of building regulations such as municipality engineer, engineer association chief.

1.6.3 Restriction and challenges

1. The impossibility of interviewing high buildings owners or provide some plans of these buildings to analyze and study.
2. The researcher was introduced to new program “space syntax”, so it was time consuming to self-learning how to use it and understand its theoretical framework, also the faults and bugs in this program that impeded producing some analysis of large maps.
3. Unavailable information or maps needed such as statistics of density and population number of Rafidia recently and old maps that expose the location of old buildings that currently demolished and replaced by high buildings.

1.6.4 Research resources

1. Library material: books, published papers, master thesis.
2. Electronic resources: e-books and websites.
3. Formal and informal resources: includes all the maps, plans, statistics, reports, photos and information collected from authorized sources.
4. Researcher resources such as all maps produced in the field work, data of observations, interviews and computerized analysis.

1.7 Research structure

1. *Introduction:* Introduction of the study, statement of the problem, research objectives, questions and methodology. Also the structure and resources.

2. *Literature review:* General overview on the previous studies related to the research of man -environment relationship and urban form impact on social behavior that discuss similar topics and pursue the different perspectives of other researchers in the same field. In addition to a theoretical background of space syntax analysis and framework.

3. *Nablus urban transformation and emergence of high-rise buildings:* This chapter introduces general information and cultural attributes of Nablus city, as history, topography and demography. And mainly discuss the city evolution and urban development through different periods with in the last century, and in each period, it illustrates the continuous expansion of borders, urban changes and land use. Then explore the historical development of High-rise in Nablus, the key factors and driving forces.

4. *Physical environment relation to social interaction in Rafidia, Nablus:* investigate the impact of these buildings in the study area of Rafidia by analyzing the morphological changes then measure the quality of physical environment and relate it to the level of social interaction amongst residents of high buildings.

5. Conclusion and recommendations: Presenting conclusion and summaries findings based on discussions that related to the impact of urban configuration and high rise buildings social impact. And Suggest Recommendation and guidelines concerns with high building and urban context design considering the improvement of social dimension and increase residents interaction. In addition to recommendation to develop this research as well as future studies that concerned with the same topic.

Chapter Two

Literature review

2.1 Introduction

The involvement of architecture and human dates back to ancient times until the ancient Mesopotamian and Egyptians, where they developed the methods of construction and the establishment of architectural landmarks and complexes. It reflected extensive cultural output, such as the temples of the Greeks and the Roman structures. The civilizations that came after have resumed the development of architecture, represented by Renaissance, Gothic and others architecture and urban production.

More recently, architecture has emerged with its tremendous technical advance, allowing for constructions that the ancient people could never have imagined, through the period of the industrial revolution (*Gifford, 2007*). However, this progress was accompanied by a limited understanding of the relationship between man and the built environment.

Cities nowadays have become scarcely distinct areas with no clear or defined boundaries, where they are extending and sprawling and connecting in the light of urbanization and globalization. Although the perception of the city has changed in different terms as it conceived more as a network of connections or spatial organization, yet, the physical environment have been vital to the social experience of people and city future vision (*Tonkiss, 2013*).

“There is no doubt whatever about the influence of architecture and structure upon human character and action. We make our buildings and afterwards they make us. They regulate the course of our lives.”

Winston Churchill, addressing the English Architectural Association, 1924

2.2 History of physical Environment relation with human

The human relationship with physical environment is ancient as far as the beginning of human existence. And has developed over time following up building construction progress and people interaction with it. However it hasn't been the subject of a qualitative study or specific scientific course, it was defined academically only during the second half of the twentieth century (*Gifford, 2007*). By 1960, human- environment relationship has been evolved as a science, where architecture and social studies has combined in one discipline to understand the influence of each end on the other (*Gifford, 2007*). Individual studies in the field have converted into organized efforts in books, conferences and journals such as journal of social issues.

studying the mutual impact of physical environment and human is fundamental procedure in design and planning processes, whether by tracing environmental determinism, as any change in the form would lead to changes in behavior, increase satisfaction, privacy and security and so on (*Rapoport, 1977*), or by going the other direction that believe in the role of urban form in shaping community and people behavior but not to determine or prohibit certain set of behavior (*Knox, Pinch, 2006*). *Rapoport (1977)* in

his book “human aspect of urban form” summarized the different approaches and theories in design and planning. His study aimed to explore how people experience city and their perception while interact with its physical components, and the mechanism that links both. He provided a general framework of two way- interaction of human and physical environment, how the latter influence people, and the way people can shape their own environment. Although his approach was theoretical, that based on a variety of other studies and not supported with observations or statistics, but it has developed a base to launch several detailed studies.

This section discusses the most significant and different approaches that studied the human relationship to the physical environment that have emerged through different periods , starting from determinism approach, Possibilism and Probabilism approach, Chicago School and urbanism, in addition to the latest trends concerned with physical environment relation to social behavior such as modernism and humanism.

2.2.1 Determinism

The determinism theory, which geographers and biologists improved in the 18th century, privileges the environment as a key factor and primary guidance in determining the man- environment relationship (*Dempsey, 2009*) and it suggest that this relationship is a one way practice (*Carmona et al., 2003*). The logic of this theory presents the controlling role on human settlements and social behavior (*Dempsey, 2009*).

Based on the conviction and belief that behavior is adjustable through the physical environment, urban researchers adapted determinism to define the influence of physical environment on human behavior, as well as urban designers. For example, they attempted to prevent some criminal behaviors through modifying their design and shape more appropriate environment (*Fekadu, 2014*).

Despite the persistence of this theory for a long period, some weakness and fatal failure prohibited it's prevail any longer. First, researchers failed to prove that human response to the same environments is similar, and ignored the fact that people are incapable to adjust their environment (*Judkins, 2008*). For instance, Le Corbusier designed residential units (containers) in city of Bordeks, France using the principles of modern technology, which gave him more possibilities to create complementary between closed and open spaces. However, many of people there abandoned the units, while some others adjusted and changed the place according to their needs, like painting walls with different colors and cancelled the wide opening of windows for privacy (*Boudon, 1969*).

Secondly, determinists exaggerated the influence of environment on human action and underestimated other factors (*Frank, 1984*) such as ascribing the emergence and demolish of some civilizations to change of climate (*Dempsey, 2009*). Thirdly, the theory failed in the assumption of humans as a passive element in the relationship of environment with behavior, where people are only being influenced directly from

environment with no recognition of their choice or objectives (*Frank, 1984*).

2.2.2 Possibilism and Probabilism

On the contrary to determinism theory, there are other assumptions of environment and human relationship as a two way process. Humans are capable to change their physical environment and imply their influence as environment change them (*Carmona et al., 2003*). Thus built environment still affect human behavior but not necessary as a dominant factor. These concepts of more balanced relationship are defined by the level of choice and freedom of people in the space, where environmental possibilism enable people to choose within the available opportunities of the physical environment, and Probabilism deal more with a particular built environment where “some choices have more choices are likely than others” (*Carmona et al., 2003*).

Probabilism is the substitute for theorists who consider that this theory proposes some space for human to manipulate the environment and shape it using some tools like technology, traditions and culture (*Fekadu, 2014*). Also it encourages the capability of designers to create more possibilities and choices with in places instead of making it, where people can define their preferences while using the environment rather than determined.

Figure (2) illustrates the range of how physical environment or built up area design relate to social interaction and residents behavior. “Sliding scale” Coleman (1985) described, as the quality of built environment and design influence residents. Lang categorized this relation on scale of two ends of opportunistic and deterministic, as the latter approach proposed that social behavior and consequences are determined by the physical environment design, causing positive change in social life and increase people interaction. While opportunistic proposed that social interaction opportunities are provided by certain designs, hence that it doesn’t mean to cause the interaction to happen. In the middle of these two ends located equivocal approach, where no effect suggested from design on social behavior of residents.

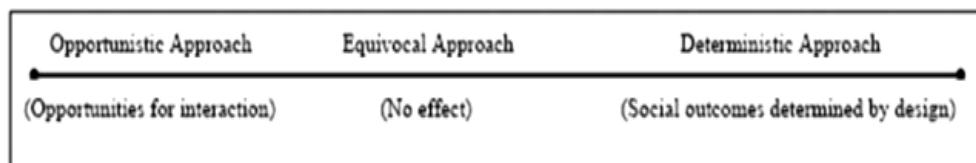


Figure 2: continuum illustrate physical environment design effects on people behavior.
Source: Coleman (1985) .

2.2.3 Chicago school

Chicago school was one of pioneers to study the general approach of architecture psychology through city social ecology in 1920s and most of modern studies related to psychology of architecture accredited to this school (Knox, pinch, 2006). The social researchers devoted themselves to investigate and study urban problems and illnesses of daily life of Chicago

and stated theories to embody these issues evidently in order to influence politicians and policy makers of applying reforms in the environment (Hunter, 1980). The reform process was called as a response of negative implications on urban and social life of industrialization and growing urbanization at that time. Chicago school key leader and theorist, Robert Park, believed that new and different environment and population was produced by urbanization that changed the way of life as well (Knox, pinch, 2006).

Park and other scientists improved and embraced some influential ideas in urban sociology, however leaned towards deterministic approach. The most distinctive principle was considering the city as a “social organism” where development is ruled by competition amongst individuals’ activities and groups arrangement to survive like other communities of animals and plants, Where segregation, dominance and struggle are the process where society formation and organization should transpire though these natural procedures (Knox, pinch, 2006).

Despite the revolutionary ideas of social ecology developed by urban theorists Chicago school, various critiques were directed to the theory as it is based on biological correlation, also critiques to the structure of theory as it consider an extreme belief of the role of competition in ordering social organization, and exclude the culture and other factors, while concentrating on natural attributes to explain people behavior (Knox, pinch, 2006). And

some accused those scientists to exaggerate the consequences of urbanization caused by industrial movement like the social disorder.

2.2.4 Urbanism

Later on, a controversial and significant theory of urbanism diverged from the ecology school of Chicago by Louis Wirth. His statement of urbanism as a way of life adhered similar approach of deterministic ideas regarding to people behavior in groups or individuals (*Wirth, 1938*). Urbanism believe that the increase of population size, density and diversity produced by large urbanization are the main factors affecting people behavior as individuals adapt more isolated and impersonal relations within the large and varied physical and social experience. Consequently, it leads to nervous behavior, anxiety and generate the feeling of unsupported in hard times because of loss of personal connections.

The heritage of urbanism was recreated in 1993 by the movement of new urbanism. The establishment of new urbanism congress committed to “create buildings, neighborhoods, and regions that provide a high quality of life for all residents, while protecting the natural environment” (*Song and Knaap, 2003*). *New urbanism seeks to achieve convenient life quality and encourage social interaction through architecture and urban design by defining some principles, such as high density or compact urban, neighborhoods with mixed use functions, more reliability on public transportation, open spaces and friendly pedestrian roads. Thus, the difficulties face this movement that it is based on urban design, which is*

challenging to quantify, also lack of tools for analysis, which makes it poorly appropriate for formal development and government plans (Song and Knaap, 2003).

2.2.5 Modernism and humanism

New approaches emerged in 20th century, especially after WW1, such as modernism which had significant contribution to change the physical environment by directing cities growth more towards vertical expansion. Modernism believed in separations of functions in the city, as well as maximizing the economic benefit by lowering land use and increasing the size and mass of buildings, which encouraged the emergence of high rise buildings. The latter type of buildings occupied different activities such as residential, commercial and offices, and it was recommended for its high achievement of sunlight and ventilation.

Thus, Critiques were directed towards modernism as it ignore the community and people needs through planning and architecture. Humanism movement has emerged as a respond of such ignorance of human in designing cities, neighborhoods and buildings. Jane Jacobs, alexander Christopher and Lewis Mumford tried to introduce more human considering viewpoint by suggesting compressed urban fabric and denser of population and activities to improve social relation. Moreover, post modernism arose as an extension of modernism performance criticism in social aspect.

Eventually, the influence of physical environment on human can't be denied or ignored, however and unlike what determinists' value, it's not the only determinant of human behavior and social environment. The research tend to lean more towards the Probabilism theory, as Gifford believe that many influences attribute to human behavior. It's ambiguous approach and hard to refer it to a single factor, where physical environment is one of them and has a major role but not the only determinant.

After demonstrating the controversial correlation of man – environment and defined its approaches, based on the believe of the possibilities that physical environment can provide to people while using spaces and their ability to choose amongst several opportunities, the next section discusses the features of urban form and its spatial characteristics that affect human behavior, the qualities of built environment, as well as social outcomes of different organization.

2.3 physical environment relation to human behavior determinants

Clearly, it has always been recognized that the designed physical environment is directly related to the way people practice their lives. The study of this effect has recently developed in several respects, where researchers analyzed this relationship and understood its constituents and factors affecting them. One of the most important findings was the determinants of the physical environment that affect urban formation and accordingly the behavior of people, where urban configuration allows the gathering of people or prevent it. These determinants are defined as urban

density, spatial layout and urban context, nearness and physical distance, as well as height. It define the type of physical environment and specify its quality that influence social interaction.

2.3.1 Density

As for the recent development towards more compacted and dense fabric cities have become distinct places without any clear boundaries while sprawling with modern buildings and high mobility circulation (*Tonkiss, 2013*). Leon Krier (*2009*) described it well in his book, the architecture of community, “our modern world is deeply wounded by abstract, oversized, and awkward structures that will never gain our affection.”

Density is a significant determinant of spatial and social environment. Based on the framework of Wirth of urban growth and expansion of population regarding to urbanization process, the debate and discussion raises over the new crowded urban life in cities and the benefits of densification against negative implications on social life.

Variety of claims stands against high density and promotes the impression of adverse impact on social behavior of people. Some studies point to high levels of stress, anxiety, and decline of social interaction in dense and compacted areas as well as lack of privacy as a result of high urban density (*Tonkiss, 2013*). However, Raman (*2010*) argues that these studies conclusions are imprecise and mostly questionable regards to their

perception, where the majority neglects urban form and building layout, although it is significant in the urban experience.

Moreover, the development of high density sometimes associated with other social issues and problems as higher levels of crime and bad reputation areas and neighborhoods that struggle with poverty and bad quality of urban environment (*Lindsay et al. 2010*).

Although in the historical context, the idea of density was associated with more positive phenomena, the high density of urban communities after industrial revolution in the cities was considered a positive indicator of productivity, economic development, environment conservation, cultural diversity and social cohesion. Some cities as New York and London witnessed great progress of densification policies, but after a century higher densities inverted into negatively affecting urban and social environment (*Tonkiss, 2013*).

One of most influential arguments of density related to Jane Jacobs in her book “The Death and Life of Great American Cities (1961), as she advocated dense layout and mixed use being crucial for vibrant neighborhoods, acknowledging the significant relation between design of urban areas and people behavior. Her argument of successful functions in city can be achieved by people concentration around different functions and Christopher alexander (1965) supported her approach of mixed use to stimulate social interaction, where the variety of uses encourage people

movement to reach different spaces that provide them more opportunities to interact on the sidewalks for example.

The implied assumption of both that dense and mixed urban form provides better life for community. Dempsey's work also supports that mixed uses of land and high density of residential areas are significant features characterize good quality of physical environment, in addition to legibility, permeability, and accessibility (*Dempsey, 2008*).

The dense urban form is associated with size and quality of open and public spaces as part of physical environment, where the quality of environment is vital for Gehl (2011). he suggested that high quality of outdoor spaces and open areas is more inevitable for people to practice different activities as sitting, playing and walking, while physical environment with small spaces and poor quality would invite only "necessary activities" as the compulsory things in everyday life, the way in which it affects the need and amount to be in the street and outdoor, and subsequently the opportunity to contact with more people. Jacobs (1962) also believe that the right design of streets, public spaces and sidewalks will bring better behavior, where well designed environment encourage more civilized community and improve human nature.

Though, density itself is not sufficient indicator to evaluate the efficiency of urban form and social experience of people in the city, additional physical characteristics need to be issued (*Rapoport, 1975*),

where people interaction is affected by the spatial layout, urban configuration and design of buildings as well as height.

2.3.2 Spatial layout and urban context

Gehl (2011) approached the acceptable density with in certain area by two factors, the possibility of people interaction from home or with in half kilometer walk, and the ability to reach other facilities and important services by walking and without need to use car. Thus richness of social experience and social interaction is related to the distance, but also to the assembling of function and its placement.

Many researchers indicated that influence of spatial layout on shaping physical structure is probable, the way in which it affects social behavior, such as Festinger et al. (1950) and Raman (2006). They pointed to the role of urban features arrangement in defining physical distance and proximity between people that subsequently determines accessibility. So that spatial arrangement and composition of urban features could provide or barricade the opportunities of people encounter (Hillier and Hanson, 1984) (Lawhon, 2009), the way in which visual and acoustic experience resulted from the urban form can determine the interaction possibilities (Gehl, 2011).

For example, Raman (2010) concluded in his work on six neighborhoods with variety of built environment and density that neighborhoods with low density of built up area and spatially simple arranged recorded high interaction but more informal and weak amongst

residents, However the social network was stronger and more in-depth in neighborhoods categorized with high density of building and more compound spatial layout.

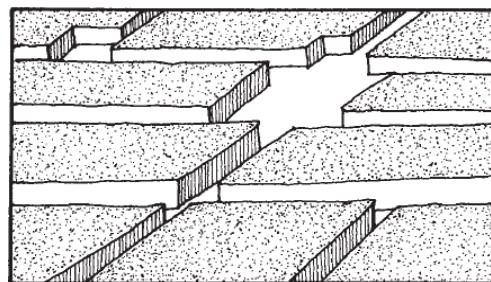
Some studies showed that children tend to play and spend more time in the spaces where more events and things are likely to occur such as streets, front entrances surrounding, and parking rather than using designed playground especially if its location isolate them from other activities like backyards (*Gehl, 2011*). While previously mentioned researchers tried to use spatial layout and configuration as a base of studying social interaction, Physical proximity does not necessary result with greater social interaction (*Gutman, 1966*). Generally it shortens distance between units and make it denser, but is it enough to encourage people meetings and interaction?

2.3.3 Nearness / physical distance

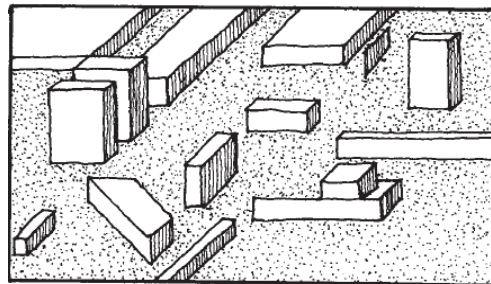
Gans (1968) admitted the relationship between propinquity and socializing and friendship level amongst residents, however, he responded to the idea of proximity that it could be essential in social interaction as long as some variables are constant such as community homogeneity. While Martinson denied the physical effect, and stood for individuals personality that indicate social life of people not buildings arrangement or physical distances (*Lawhon, 2009*). Nearness, as different researches described it and acknowledged is an indicator in understanding social interaction and cohesion. The term could be related to physical or social proximity. Physical distance is intimately connected to social distance.

In 1966, Gutman has brought attention to the importance of considering typology of buildings and its structure in determining the social behavior desired. He identified the distinction between two terms: physical distance and functional distance. The latter concept has been developed later by social scientists into social distance, which could be declared and measured by people's relationship and their ability to interact with others.

Proximity and physical distance are also connected to the size of space. The spatial dimension of modern urban elements is somehow oversized, where new developments such as large parks, high mobility and wide streets network increase the physical distance between functions, spaces, and people accordingly, see (figure 3).



Traditional City Form



Modern City Form

Figure 3: traditional and modern city form model (levy, 1999)

As over dimensioned areas or buildings are dispersed, people get separate from activities and from each other. The orientation of buildings is essential as well, when buildings or spaces entrances are directed away from each other it contributes to larger physical and social distance. Gehl (2011) believes that the assembling of buildings of different functions around small spaces, like spaces in old cities, rather than separate them by spacious areas or interrupt neighborhoods with wide streets is more humanely comfortable and would bring people to the outdoors more, see (figure 4).

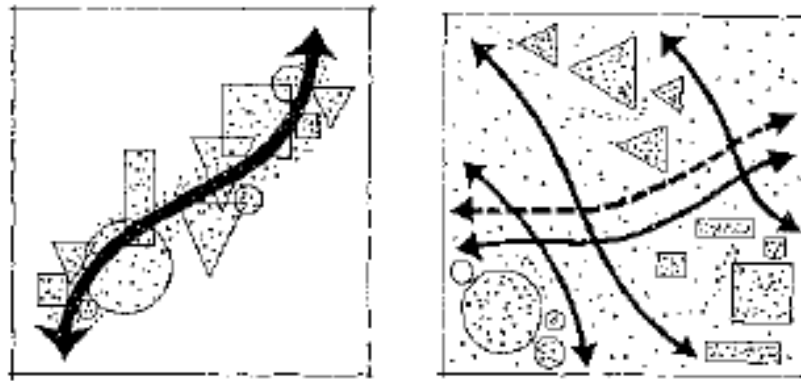


Figure 4: integration and segregation of functions in urban context (Gehl, 2011) .

2.3.4 Height

Modern dense and compact urban fabric is also characterized by vertical expansion and high buildings. While the rise was confined to the monumental buildings and monuments in the old cities, the modern urban form is dominated by high buildings of various uses, in order to cope with growing population growth, urbanization, high cost and land scarcity (Smith and Coull, 1991).

The issue of height and high buildings has always been in the context of debate on many aspects including social aspects. On the contrary to the belief that high buildings generate high social interaction between people, due to the high number of residents, several studies have shown that living in high-rise buildings can lead to adverse results and social isolation.

Gifford (2007) points out that population high density of the high building contributes to increasing the opportunity to meet others in the elevator or the lobby of the building, but the formed relationships are superficial and do not lead to permanent contact or friendship. it is difficult for people to deal with such a large number, so they prefer not to have any relations as a form of withdrawal. A large-scale study in Canada has shown that the composition of mixed population in high buildings is one of the reasons that prevent people from getting to know each other. Most of residents prefer to perform social relations and friendship at work or school rather than neighbors (Dawson, 2003).

High buildings generate less humanly environment, where neighbors enjoy less personal relationship with their neighbors (Gifford, 2007) (Mouratidi, 2017). Krier (2009) explained that such inappropriate environment is caused by the increase of building block area on the cost of social and public spaces. Residents of these high buildings share less space and physical distance than single detached houses. Accordingly, decline of social connection is caused by increase of distance (Glaeser and Sacerdote, 2000).

On one hand, Faning (1967) has confirmed that in his study by comparing two groups of people in the same community, one has lived in apartments, while the other in detached family houses. He found that flats with its small spaces available comparing to houses resulted with increase of social isolation. On the other hand, Glaeser and Sacerdote (2000) argue that all these determinants of high buildings and small distance between residents enforce them to go out of the apartments and spend time in public spaces or go to event. Although he emphasized by survey that residents of high buildings tend to socialize more than normally expected, he only questioned study sample about inaccurate indicators, like how often they spend the night out, go to events and church. While he ignored the type of close socializing amongst residents in the same floor, building or neighborhood.

Moreover, High buildings cause limitation in the vision field comparing to low ones, where disproportionate heights block the scenery and what's behind, only few first floors level are reachable for street users. This means less contact of buildings residents with people down in public areas or side walk, and the latters have less visual communication with people in high floors because it's out of reach (Gehl, 2011) , see (figure 5).

Also Raman (2010) described it as spatial segregation to those who live in high levels that social isolation. Women are the most affected of living in high buildings. Psychological strain is the highest amongst women who live in high buildings compared to other different housing types such as row houses and walk-up apartments (Gillis, 1977). The limitations that assigned to high buildings such as difficulties in watching children, distance from street activities, small spaces shared with neighbors, affect women ability of socializing and interact with others around.

Children are influenced negatively by living in high buildings too. Different studies referred to the restricted interaction, lack of shared activities, and the difficulty of supervision outside the building (*Gifford, 2007*). Those who are in upper floors mostly spend the time inside apartment instead playing outside, as they have no direct access between playground and home, which might not be very secure, and makes it hard for parents to watch them. Some apartments with balconies or terraces provide a replacement for playground, however it also decline children contact with surrounding spaces and neighbors (*Mahdavinejad, Sadraie, and Sadraie, 2014*).

Gang (*2015*), discussed the critiques of other researchers and allegation of tall buildings negative implication on social connectivity and its contribution to people isolation. She argues that tall buildings themselves and its structure are blocking people from social life, and its effect is larger than the entire design of social spaces that surrounds high buildings. Indeed, tall buildings design itself is still important, nevertheless the context and urban design of surrounding has more leading role and it will direct the building design. Beside, creating social friendly buildings only without vibrant urban context won't encourage balanced environment.

Gehl (*2011*) summarized the methods related to urban features arrangement and how to manage it to achieve high or low social interaction as shown in (figure 6).

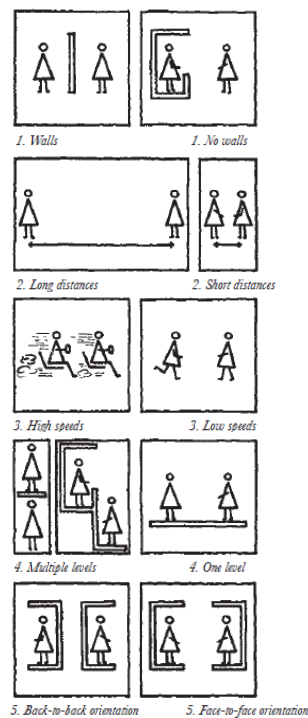


Figure 6: illustrate different way that physical arrangement can promote or prevent people interaction. (Gehl, 2011).

To encourage more interaction between people there are five means of planning and design to consider; to reduce physical barriers such as walls, avoid long distances cause by scattered buildings and wide streets, enhance lower speed to encourage pedestrian use, manage multi levels buildings properly to avoid complete separation, and consider the orientation of buildings or entrances to be more towards open spaces or other neighbors.

“If the possibilities and limitations related to the senses are summarized, it appears that there are five different means with which architects and planners either can promote or prevent isolation and contact.” Gehl (2011), life between buildings, P. 72

Moreover, Rapoport approved a set of requirements for urban configuration, the most important of which is to provide an access system that takes into account the harmony, direction and visual contrast, so that each unit of life is consistent with each other but vary with its surroundings clearly, and taking into account that the entry points are clear in all major traffic paths, Population density and proportionality should be observed. The urban environment must also enjoy consistency in visual vocabulary and architectural style.

The argument of urban researchers, who doubt that productive or successful changes in human behavior could occur in the modern compacted urban form, is defended by some examples; as small open spaces and parks might invite undesirable people and strangers, and more nosy or curious neighbors would step close to front spaces of next houses (*Carmona et al., 2003*). This hesitation of stimulating socially active physical environment based on the risks rather than considering the major social profits is a pessimistic approach and would lead to higher isolation amongst people and generate “anti-social “environment.

2.4 Analyzing physical environment

In order to assess the quality of the physical environment using the previous determinants mentioned, and whether it stimulates social interaction or inhibits certain activities among people, there is a need to analyze and measure the physical characteristics of the urban form. This requires analytical tool to study these physical attributes, shape, and

transformation of urban area. Also to understand the spatial structure and components. This section illustrates urban form analysis based on urban morphology theories, describing its main features, significance and criteria.

2.4.1 Urban morphology definition and emergence

The city is the result of the integration and accumulation of individuals and groups and the subsequent behavior and business, both small and large, and these people are governed by a culture and traditions formed by the social and economic forces (*Moudon, 1997*). With the expansion of the urban fabric and the dramatic changes in the cities, there was a need to study the evolution and transformation of these cities.

Urban morphology has emerged in the second part of nineteenth century as a study concerned with built form of the city and interested in transformation rules of city over time (*Levy, 1999*). Michael Conzen (*2012*) summarized its purpose as “seeking to explain the layout and spatial composition of urban structures and open spaces, their material character and symbolic meaning, in light of the forces that have created, expanded, diversified, and transformed them” (*Kropf and Malfroy, 2013*).

Urban form has been the focus of researches during the last century of many fields such as planning, architecture and geography. The latter have had a head start in developing the analysis of urban form and its formation as a field of knowledge, beginning with Schlüter in 1899 and M.R.G Conzen in 1968 (*Whitehand, 2007*) (*Oliveira, 2016*). Scholars from different fields and countries were contributing to urban morphology in its

early stages, from England, France and Italy (*Gauthiez, 2004*). It has started with the Italian architect Muratori contribution on architectural typology as well as Caniggia who considered building type the essence of urban form. However, town plan was the main source of data for urban studies, especially for Conzen. M.R.G Conzen was a German geographer born 1907 and immigrated to England before WW2 (*Moudon, 1997*). He played a revolutionary role in developing morphological discipline.

2.4.2 Conzen role and morphological studies

Conzen work investigate townscape as a mixture that combine town plan, pattern of buildings fabric and land use pattern. He had several contributions through his work on the city of Alnwick and Whitby in England, where he published detailed town plan analysis of Alnwick in 1960. The analysis of the town so far is the basis of the theories of the morphology of the city, its formation, and means of understanding the current structure (*Oliveira, 2016*). He mapped typology of buildings and translated the difference in types by different colors, as well as presenting buildings height by changing color depth (*Whitehand, 2007*).

Conzen believes that each period the city culturally experienced have had its impression on landscape and produce distinctive morphology. Each morphological period, as he described it, should express the town plan and building fabric and have some unity regards physical form (*Conzen, 1960*). The former represent the topographical arrangement of the built environment (streets, plots, buildings) (*Oliveira, 2016*), and its unique

relation to each other in different parts of the city, which can be referred to as plan unit (*Conzen, 1960*). While building fabric concerns more with block plan and the footprint of building on the ground.

Eventually, by demonstrating the history of human relationship to physical environment the researcher has developed more in depth understanding of the factors affect this relationship and its determinants. This will be adapted later in the study and considered as guidelines of approaching the physical environment of Nablus and express the social influences of high buildings emergence. Then Conzenian approach of morphological analysis considered the most appropriate methods of analysis that serve the objectives of this study, as it is based on tracking the development of physical shape of the city and the process of social and economic development.

2.5 Conclusion

This chapter discussed literature reviews related to the relationship between the physical environment and social behavior. The research also included a study of the factors concerned with the characteristics of the urban environment that affect how people interact with each other within this environment. These characteristics are considered as the reference to the analysis of the physical environment of the study area in Nablus, its quality, and its correlation with the level of social interaction of high buildings residents. The following chapter will discuss in general the development of the city of Nablus and the factors that influenced its urban

formation, and directed its expansion vertically, as well as emergence of high buildings and its driving forces.

Chapter Three

Nablus urban transformation and emergence of high-rise buildings

3.1 Nablus: General Information

Nablus is 500 meters above sea level, and many valleys descend to the east and west, such as Wadi Tufah and Wadi Badthan. The city extends between the mountains Eibaal to the north and Jarzeem to the south (*Abu Hajar, 2003*), which forced it to expand linearly on an area of 4 km², see (figure 7). It expands 8.5km from east to west and only 3.5-6 km from north to south (*Faqih, 2012*).

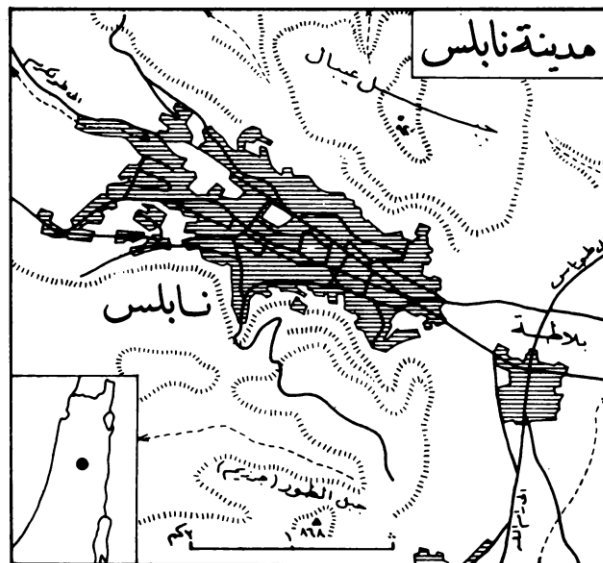


Figure 7: Nablus city map. Source: Palestinian encyclopedia, 1984.

3.1.1 History

The city is one of the oldest in the world dated back to 4000 BC. The Canaanites established the ancient city on Mount Jarzeem and called it "Shakeem", meaning the shoulder or the high city. It maintained its importance during the Late Bronze Age and the Iron Age, as it belonged to the northern kingdom of Palestine, which was controlled by the Assyrians in 722 B.C (*Abu Hajar, 2003*). During Roman rule, Shakeem was destroyed but Roman Emperor Vespasian later rebuilt it and called it "Villa faniapol " (*Palestinian Encyclopedia Organization, 1984*). When Muslims came, they changed the name and the city became known since then as "Nablus". In the Ottoman period the city became a regional center, and even after the mid-sixties of the last century, it maintained its status as a center of the province (*WAFA, 2017*).

3.1.2 Topography

Old Nablus was established on a long valley opened from both sides and expanded between Eibaal to the north and Jarzeem to the south. However, the modern city stretches and spreads its buildings on these two mountains (*Palestinian Encyclopedia Organization, 1984*). Nablus has a different topographical character than other Palestinian cities.

It is known with the Jebel and Jarzeem Mountains as shown in (figure 8), where the slopes are more than 40%, and the Old City has spread in the valley between them but the present city has stretched over

them. Nablus Valley, which spreads to the east to Askar camp, is located on land with convenient slopes of less than 10%. While the western part of the valley has a 20% slope but is still comfortable (*Nablus Municipality, 2017*).

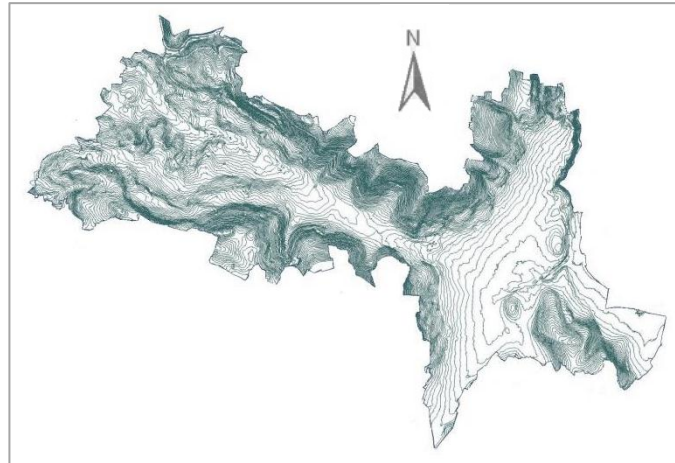


Figure 8: Nablus city topography map. Source: Nablus municipality, 2017.

The mountain Eibaal rises 940m while Jarzeem raises 870m above sea level. The land and surrounding areas of the two mountains are low, either in the long valley (1,220m) encircled by the surrounding plains or in areas where the land height reaches 400 meters, such as Huwwara and Askar. This clear difference between the highlands, which range from more than 900m to 400m above sea level, is easy to notice by city visitors from only 5 km away (*Encyclopedia Palestine, 2017*). This nature of topography that differs from high mountains with hard slopes to plain areas has given the near villages a defensive location on the hilltops, and large sedimentary farms in the valleys. But it also blocked the expansion of the city and caused many problems.

Topography has a significant impact on the spread of buildings, trends in development and land use, which can be seen in the direction of construction on the main road arteries that go with the lands of appropriate inclination. It means preference for the flat sites in general for the residential areas in particular. This is one of the factors that contributed to the formation of the city linearly and to maintain this extension for a long period, where the heights of buildings did not exceed several floors maximum, and one or two floors at residential ones. In recent decades, however, high-rise buildings have emerged in high-priority areas due to the scarcity of land and the acute shortage of low-lying lands.

3.1.3 Demography

The total population of Nablus Governorate for 2015 is about 380,961 people, the number of males is 193,567 and the number of females is 187,394 according to the Palestinian Central Bureau of Statistics. By 2007, the city total population was 154,571. The percentage of males to females was almost equal with 77,777 male and 76,763 female. 37,327 housing unit were registered with 37,746 household living in the city (*PCBS, 2017*). While the population of the city, including the surrounding camps, was about 170,069 people. The total population of the camps, which includes Askar, Balata and EinBeit al-Maa, is about 33,446 (*Nablus Municipality, 2017*).

The growth in the population of the city, is due to several factors, including the natural increase in births and migration from the countryside to the city, as well as the wars that have passed and caused the emigration of people and the disruption of demographic distribution. However, the growth rate of the population varied during the last century according to different factors depending on the period of time and events that the city experienced during it. See (figure 9), which shows the changes of population of Nablus city during different times through the last century. That escalated increase in the population was combined with increase in demand in residential units and land prices.

Year	Population
1894	9.000
1911	21.072
1931	17.468
1945	23.250
1961	45.773
1966	53.000
1967	44.000
1980	60.000
1987	106.900
1997	126.472
2007	132.780
2010	133.715
2015	170.096

Figure 9: Nablus city population change. Source: (*Palestinian Encyclopedia Organization, 1984*) (*PCBS, 2017*)

3.2 City evolution and urban development

The city of Nablus has a distinguished history that is closely linked to the history of Palestine, as its urban continuity is the most important characteristic. Despite the destruction, damage and political conflicts of the past, it has continued to renew and develop its structure and enhance its status.

The rule of Palestine was followed by different civilizations, many of which took the city of Nablus as a station where they settled and grew according to the circumstances. Each civilization has established its various facilities such as forts, markets, places of worship and others in proportion to its needs and culture. And some of them still exist as evidence of the fingerprint of those civilizations, which reflects the importance of the city in terms of components, location and ability to keep abreast of developments.

Based on the fact that cities are results of economic, social and political changes and development that societies experience, which are also a reflection of the way society organizes itself, it's not possible to study the current situation of cities without its historical, political and socio-economic development (*Knox and Pinch, 2006*).

3.2.1 Historical development

The historical factors have a great role that cannot be ignored in the evolution and development of the cities which have been formed, built and grown through time. This historical basis for the cities development is important for understanding the urban growth of cities and under what circumstances they have expanded or died.

3.2.1.1 Canaanite- Shakeem

The city dates back to 4500 B.C. (*Abu Hajar, 2003*), where Canaanites built the city of Nablus on the ruins of a settler dating back to the Stone Age. Evidences were found in some locations like Beesan, Tal alfariaa and Jericho. They called the city “Shakeem” which means high land. The old village of Shakeem is Balatah village nowadays that located 1.5 km to the east of Nablus. The Canaanite’s city was strategically important and fortified with a wall surrounded by a wall that has built in the 18th century B.C. (*Abu Hajar, 2003*) (*Palestinian Encyclopedia Organization, 1984*).

The location of Shakeem has given Canaanites a strategic location and contributed in forming and preparing the site for a significant role in the area (*Abu Hajar, 2003*), see figure (10) Canaanites chose to sit the city in between Eibaal and Jarzeem rather than the top of these mountains, while considering topographical issues, the latter could be more beneficial for defending themselves from attacks (*Dabbagh, 1988*). However,

establishing the city in the valley provided them more access to water springs and fertile land for agriculture, also building materials like stones and wood, which saved them time and effort of transferring it to the high peaks (*Dabbagh, 1988*)(*Omran, 2008*).

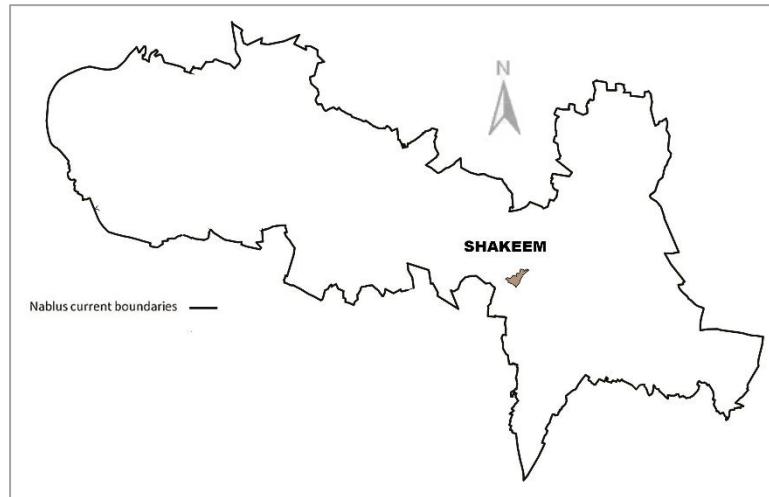


Figure 10: location of Canaanite Shakeem. Source: researcher, based on Nablus municipality maps, 2017

The Old city of Nablus was started on the edges of Jarzeem Mountain with suitable slopes about 10% but city expansion was impeded to the south by high slopes of Jarzeem Mountain, and to the north after that by high slopes of Eibaal Mountain. So the city extended and spread to the east and west where most of the lands are plains (*Nablus Municipality*).

After that, the city witnessed several civilizations and people that affected its growth through different ages. Some civilizations ignored the importance of the city and destroyed it such as Egyptians about 1800 B.C (*Palestinian Encyclopedia Organization, 1984*). An era of development and growth was when Hebrews came to Shakeem and claimed it as their

capital under the rule of Yerbiam bin Nabatt. That lasted for only a certain time before Hebrews weakens and get divided, establishing two kingdoms in Palestine. One was established in Sabastieh, the capital of the Jews' northern kingdom, which has declined the role of Nablus and later got destroyed by Assyrians (*Abu Hajar, 2003*) (*Dabbagh, 1988*).

3.2.1.2 Roman (63 B.C – 638 D.C)

Romans had a significant role of city history. In 63 B.C they have occupied Shakeem and destroyed it. However, few years later they moved its stones and rebuilt it to the west from Shakeem and called the new city Neapolis (*Palestinian Encyclopedia Organization, 1984*), see (figure 11). Some studies refer the reason of moving the city location to planning and environmental reasons, where the old position didn't meet the needs of establishing a Roman city. On one hand, Shakeem was covered with a thick layer of drifting soil, which impede the accessibility of bedrock surface to build foundations or needs a lot of excavations (*Kalboneh, 1992*). Besides that, Shakeem site was covered with ruins after destroying the city which makes removing it a long hard process. On the other hand, the new location of Neapolis had many supplies like water springs and exposed rocks to build on (*Abu Hajar, 2003*).



Figure 11: location of roman Neapolis. Source: researcher, based on Nablus municipality maps, 2017

Romans had an active urban movement in Nablus as well as most of the cities they ruled and controlled. They were an advanced civilization compared with other old, which was reflected in those cities and urban activity. Amphitheater, theaters, racetrack, tiled public squares, and concrete use represent the importance of the city. Also, one of the reasons for the great status of Nablus for the Romans was the long period they dominated, although it was not always a continuous period (*Omran, 2008*).

3.2.1.3 Islamic period (638 D.C- 1917)

Nablus joined the Islamic lands in the early stages of 638 AD, when Amr Ibn al-Aas opened the city under the rule of Abu Bakr (*Palestinian Encyclopedia Organization, 1984*). The city was quiet and well-designed at the time, with the mosque in the middle and the tiled streets around. It was also covered with olive trees, as Maqdisi described it in 1099 (*Abu Hajar,*

2003). Christian crusaders invaded the city and stayed there for more than a century, however, in 1187 Muslims took over and restored it (*Kalboneh, 1992*). Only two years later after the city was restored by Muslims, it was hit by a catastrophic earthquake. Most of the buildings were destroyed and nearly 30,000 people were killed (*Abu Hajar, 2003*).

The city witnessed significant changes in its physical structure and urban form during the period in which the Ottomans ruled (402 years), which were mostly periods of chaos and political turmoil accompanied by heavy taxes and poor economic conditions (*Omran, 2008*). Thus, urban activity was confined to the heart of the old city (*Abu Hajar, 2003*). Municipality focus was on the physical aspects of planning such as buildings and road networks, but it did not fully represent the need of people at the time, with limited access to resources and a high central government policy (*Abd Alhamid, 2005*).

However, the last periods of the Ottoman era were characterized by stability accompanied by an urban expansion, where Nablus Municipality, Postal Center and National Hospital were established. Moreover, the city was connected to the Hejaz railway line which resulted development of transportation between Nablus and the other urban centers in Palestine. Subsequently urban development was directed towards areas where roads were built outside the Old City, especially Faisal street area (*Kalboneh, 1992*).

Influence of Islamic rule on the city and its planning was clear, despite the Roman type that was first established as a linear city expands from east to west. At the beginning of Islamic city formation, most of buildings were gathered around the mosque, followed by residential areas but without any open spaces for people. Later on gardens and plazas were created in the middle of residential areas (*Kalboneh, 1992*).

3.2.1.4 British Mandate (1917 – 1948)

Until 1917, Nablus consisted of old city and many significant buildings that spread over the valley such as soap factories, group of castles, like Qaser abdalhadi and Toqan , the national hospital, masjid al Naser and al Kabeer, Khan al Wakaleh and the Kaskarteen building (*Nablus Municipality, 2017*), see (figure 12). The population increased with stability that prevailed during the British Mandate becoming 17,468 people in 1931. This resulted in the growth of urban movement outside the Old City and construction of new neighborhoods especially after the 1927 earthquake (*Palestinian Encyclopedia Organization, 1984*) as well as development of transportation system and establishing streets for vehicles.



Figure 12 : general picture of Nablus in 1896. Source: palesine-studies.org.

During this period, British policies were reflected on the urban areas of Nablus. Mainly, urban extension was affected by these events and procedures (*Abd Alhamid, 2005*), where slow and cautious expansion towards the mountain slopes of Eibaal and Jarzeem where the concentration of the British in these areas is less, therefore people have turned towards them (*Omran, 2008*). Moreover, city started to grow outside the old city after the earthquake in 1927, where a big part of the city was destroyed and it forced a lot of people to go out of the old city and start building out of its borders (*Palestinian encyclopedia organization, 1984*).

Nablus had its first master plan in 1944 at British mandate period, see (figure 13). Many changes and expansions happened over time on the plan. Land use has changed with the transformation of city's master plan. In this plan most of the land was classified as (Residential A) (*Nablus municipality, 2017*). Also, since the beginning of British mandate it has

forced changes on building style into more modern type by modifying rules and regulations, where houses and villas surrounded by gardens and walls were established out of the old city on the outskirts (*B'ara, 2007*). Perhaps the most important factors that led to the coup in the architectural style are the laws imposed by the Mandatory government, especially the law of setbacks. This led to the separation of buildings and the abolition of overlap in some parts of buildings as well as was familiar with the old city. Overall, these transformations during the British period contributed to the modern form of the city and its current shape.

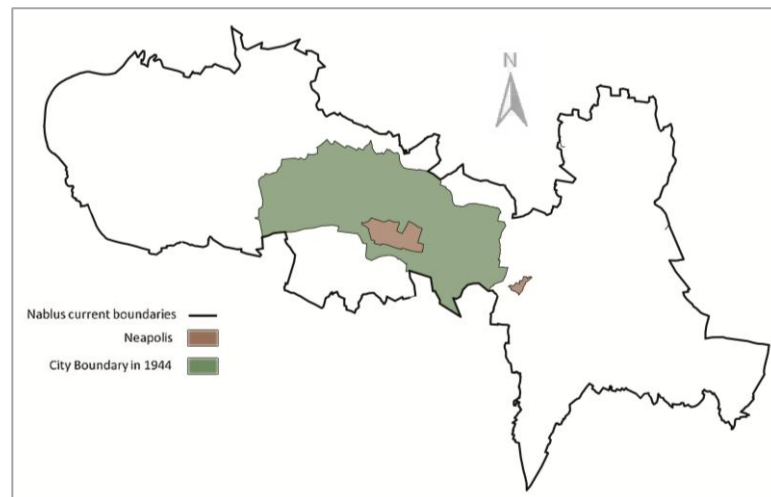


Figure 13: Nablus city expansion in 1944. Source: researcher, based on Nablus municipality maps, 2017

3.2.1.5 Jordanian role (1948 – 1967)

By the end of British Mandate in 1948, Palestine was divided into three administrative parts where Israel overtaking 70% of land. West bank was under Jordanian rule and Gaza joined Egypt (*Abd Alhamid, 2005*). Nablus had connections with Amman in this period which resulted with

some development and expansion towards the east. Also, like other cities in the West Bank, Nablus experienced a large growth in its population and buildings after 1948 because of the influx of people of other cities after the Nakba, which increased the demand for buildings and thus the rise of land prices and houses. Their number reached 45,773 in 1961 (*Palestinian Encyclopedia Organization, 1984*) (*Nablus Municipality, 2017*). The Palestinian refugees were concentrated in three main locations around the city of Nablus, which later formed three camps, one in the West, Ein Beit al-Maa, and two in the east, Balata and Askar (*Faraj, 2001*).

The Jordanian rule continued until 1967. The growth of city in this period has increasingly extended into the east mostly towards along the road to Amman because of population, economic development and urbanization (*Nablus Municipality, 2017*). The construction movement in Nablus specifically was quickly activated and urbanization spread over the slopes of the Eibaal and Jarzeem Mountains peaks, and New Nablus neighborhood appeared with its modern buildings and streets (*Palestinian Encyclopedia Organization, 1984*).

In 1961, a general plan was drawn up for the city of Nablus and it was limited to land use (*Khalil, 2005*). The master plan was expanded twice as shown in (figure 14); the first time in 1963 from the eastern and western sides of the city to include refugee camps and some villages, and the second time was in 1964 from the west (*Kon, 1995*).

However, this expansion lacks regulation as the Jordanian government has continued to use the structural plans prepared by the British (*Abd Alhamid, 2005*), which resulted with some problems and obstacles in city development, such as the great overlap between the responsibilities of various authorities, the complex procedures for building permits, and the punishments of the violators by demolition or high fines. Structural plans also failed to take into consideration needs of the city, with expansion areas stretched on sharply sloping land, although 26 percent of the land was state property (*Omran,2008*) (*Kon, 1995*).

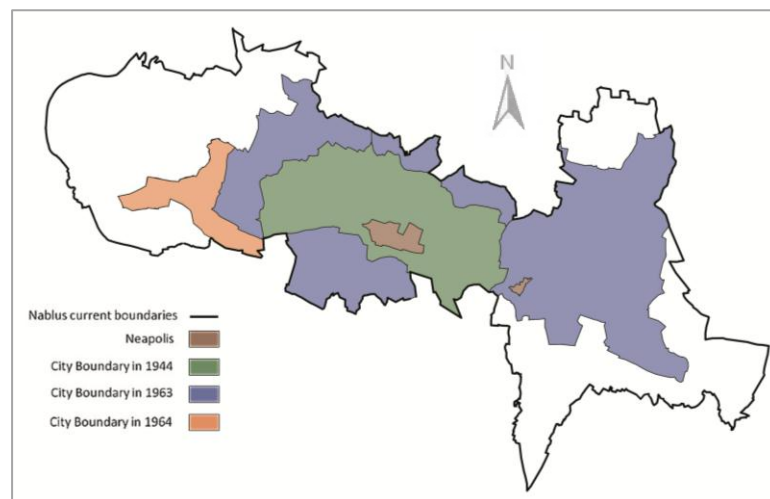


Figure 14: Nablus city expansion in 1964. Source: researcher, based on Nablus municipality maps, 2017

3.2.1.6 Israeli occupation (1967- 1994)

In 1967, the Israeli army occupied most of the West Bank, including Nablus. That year, the population declined to 44,000 as a result of compulsory displacement of people to the east bank and the departure of

others to work in the Gulf States. However, the number of people returned to increase after, and has reached 60,000 in 1980 due to natural growth rate of 3%, as well as internal migration from the countryside to the city (*Palestinian Encyclopedia Organization, 1984*).

Following the occupation of the West Bank in 1967, Israel took over the land and used various methods to do so by forcibly appropriating land as state land, confiscation of land for military purposes, and land expropriated for public purposes (*kun, 1995*). Israeli occupation took over large parts of the city, limiting its expansion and growth, and forcing the municipality to reduce the land classified as (Residential A), and to convert them into (Residential B) and (Residential C) lands, in order to accommodate the increasing population density and keep up with rising demand for housing (*Nablus municipality, 2017*). The expropriation of land has led to higher prices and limited horizontal expansion (*Atiani and Naser, 2004*).

One of the obvious negative effects of this period is the spread of unlicensed buildings that do not conform to the old city pattern or its height, because there is no licensing authority or a regular plan that takes into account the development of the city. As a result, many of the complications and problems that Nablus continues to suffer are due to the consequences of the Israeli administration during this period, such as random building, heights and non-consideration of setbacks and land use (*Nablus municipality, 2017*).

Early 80s was marked by establishing new whole neighborhoods beside high buildings, such as Doctors housing project and Engineers housing. After that, urban development rapidly increased towards rough topography in different areas, which urgent opening of new streets and road network beside public stairs. That was parallel with increase of commercial centers especially in the city center, Rafidia and Jerusalem Street. The largest and most genuine change was in 1987, where the city area has noticeably increased, see (figure 15). The city's master plan was issued and continued to be prepared according to the British and Jordanian laws. However, this plan did not take into account of the demographic, social and economic changes in the region; they were limited and incapable of meeting future needs without any scientific criteria (*Khalil, 2005*).

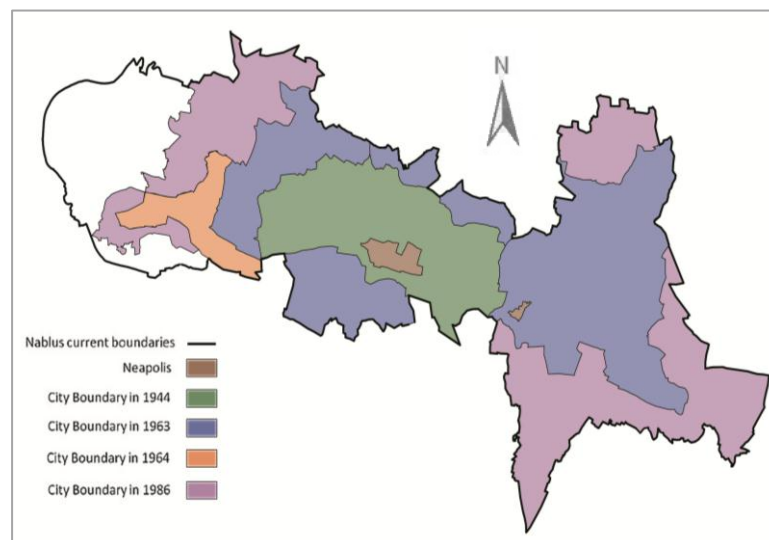


Figure 15: Nablus city expansion IN 1986. Source: researcher, based on Nablus municipality maps, 2017ion in 1986

3.2.1.7 Palestinian authority (1994- now)

In 1994, the Palestine Liberation Organization (PLO) signed Oslo agreement to transfer administrative authority of parts of Palestine from Israelis to them through transitional phases (*Abd Alhamid, 2005*). However, many of Oslo clauses the agreement was a subject to concessions on land, rights, and many vague or deferred clauses that did not benefit the Palestinians. For instance, the Accord gives the Israelis control over 60% of the West Bank and 40% of Gaza Strip (*Abd Alhamid, 2005*). And despite that Palestinian Authority entered the cities of the West Bank and the Gaza Strip, where it began to set up its institutions and formulate its structures and laws, the reforms that accompanied it were limited and small according to the terms of the agreement that limited the transfer of land to the Palestinians through transitional stages (*Abu Hijleh and Salem, 2001*).

The impact of this period extended to all political, economic, social and urban aspects in Palestinian cities including Nablus. The city was divided into Area A, B, and C based on Oslo accords, and the majority of its land was included in Area A (*Itma, 2014*), see (figure 16). Until 2000, when the Second Palestinian Intifada began, the Palestinians adopted the pre-1967 regulation and building laws, most of which were linked to Jordan and had similar levels of planning and system. However, the Ministry of Local Government established a new system and organization in 1996 for local committees that deal with land within and outside the boundaries of the organization (*Abd Alhamid, 2005*).

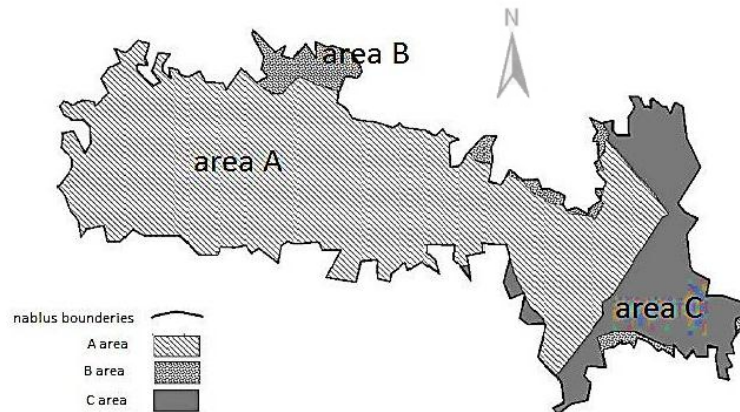


Figure 16: Nablus city according to Oslo accords Source: researcher, based on Nablus municipality maps, 2017

Nablus, like all West Bank cities, suffered from the deterioration of the economy, but its urban movement was active until before the Second Intifada in 2000. The municipality, through its own efforts, collected donations and assistance to finance the construction of roads, which contributed to the arrival of construction to larger areas and expand the municipal boundaries (*Abu Hijleh and Salem, 2001*), see **(figure 17)**. Yet, in the light of the continuous population increase in the city of Nablus, a new structural plan was issued for the city in 2001. It was a respond of the urgent need to provide land for all uses of residential, industrial, commercial and services. Also, provide a convenient road network with the natural topography of Nablus (*Faqih, 2012*).

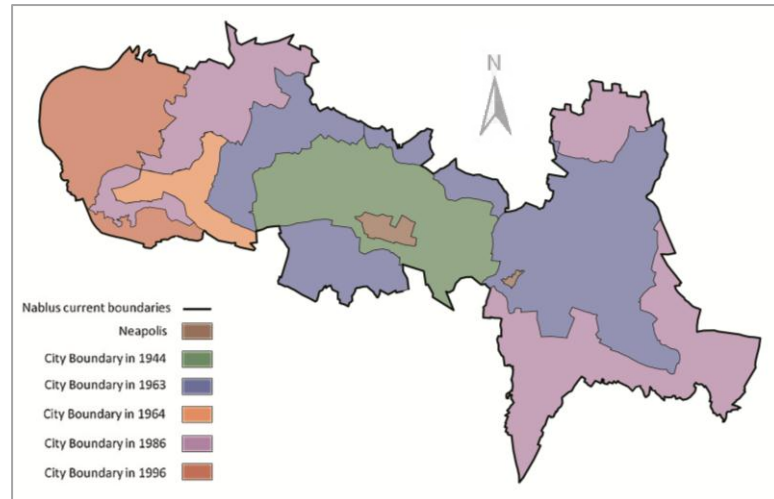


Figure17: Nablus city expansion in 1996. Source: researcher, based on Nablus municipality maps, 2017.

In 2010, the new structural planning took into consideration covering city's needs for the year 2015, bearing in mind that the area of the old town of 232 dunum has reached saturation level, and the population density is 60 people per dunum. Therefore, the plan included a program to restore and preserve the ancient heritage and buildings of the old town (*Khalil, 2005*). Furthermore, the plan operated developing housing areas, trade, industry, agriculture, health, environment, public safety, sewage networks, parks, road network, and other public utilities like clubs, school buildings, cultural and educational buildings (*Nablus municipality, 2017*).

The rapid increase in the city's population coupled with the large urbanization movement has led to an increase in demand for housing. This increase in population density was accompanied by random construction in some neighborhoods, which led to a change in the classification of some

areas and allow the increase of buildings height and vertical expansion in an attempt to fill the need for housing (*Dawoud, 2003*). Also the lack of land and its high prices play an important role in determining and guiding urban expansion in urban communities as a necessary element in the construction process, and the recent trends lead to the construction of multi-story buildings because of the high prices of land.

Ultimately; the problems of planning in Palestine, such as lack of clear distribution of responsibilities among decision makers, lack of financial strength for the implementation of projects and schemes and updated laws and regulations (*Shaheen, 2013*), *in addition to the economic and political changes that* accompanied the entry of the Palestinian Authority and the urban prosperity that has come with it (*Nablus municipality, 2017*), *have had a significant impact on the land use, especially the residential use. The change of residential use area through different master plans,* and land scarcity, and the difficult nature of Nablus have *affected the type of residential buildings* enforced the vertical expansion of the city through high buildings to cope with population growth.

3.3 High-rise Residential building developments in Nablus

Residential use is considered one of the most important uses in Nablus. Based on maps and analysis conducted in 2016, residential use in Nablus city was 54.12%, where it dominates other uses in the city and takes

a place as the primary function (*Halabi, 2003*). The city has eight residential neighborhoods; Rafidia, AlMakhfieh, Ras Alain, old city, Al Dhahya, Al Masaken, North Mountain, and city center (*Dawoud, 2003*). However, these areas and districts differ in the size of residential use compared to other uses, some of which are largely occupied by residential buildings like Al Makhfieh, while other areas such as city center have low rate of residence (*Omran, 2008*).

Over the past century, many important changes have taken place in residential use, such as residence type and its location in the city, where high rise buildings spread in different areas in Nablus and sometimes replacing the tradition type of housing. The following section reviews the changes and development of housing type and the emergence of high residential buildings.

3.3.1 Historical background of high-rise residential buildings

The change over housing type in Nablus dates back to the British mandate time, as the traditional type of houses dominated before that. During the Ottoman period, around 5000 houses in six neighborhoods in the old city of Nablus formed the main residential area (*Palestinian Encyclopedia Organization, 1984*). These residential neighborhoods consisted of clustered form of courtyard houses that shaped “Housh” and each belongs to one extended family of a father and his sons and their families in each room (*B’arah, 2017*).

The city maintained this type of residential building construction within the limits of the Old City until the entry of the British mandate. The laws and regulations were passed by the latter led to expansion outside the boundaries of the Old City and establishment of individual buildings and villas in various parts of the city (*Palestinian Encyclopedia Organization, 1984*) (*Itma, 2014*). These types of building continued to spread until the early 60s, when multistoried buildings of four floors appeared. This was a result of advanced construction technology and the low demand for housing in that period according to the high cost of construction as a result of land scarcity and economic deterioration (*Dawoud, 2003*).

The tendency towards high buildings at the beginning was weak. About 8% of the high-rise residential buildings were built between 1960 and 1975; but the proportion of people who went to this type of housing did not exceed 6%, whether it's rented or owned apartments. As for the neighborhoods and areas that have seen increasing demand for construction of high buildings for housing, it was the highest in the old city, then Ras Al Ain and Al Masaken, while the trend was less in other areas such as Al Makhfieh and Rafidia (*Dawoud, 2003*).

In the 1980s, there were many changes in the orientation of the population, whether in area of residence or type of housing. The construction of 20% of high residential buildings dates back to the 80s, where this type of building started to be clearly noticed in the city as new housing projects were constructed (*Dawoud, 2003*). Also, the sprawl

towards the high topography areas forced the high buildings type because it was necessary to adapt more compact and dense urban form to deal with land scarcity (*Nablus Municipality, 2017*). While greater construction accelerated in the second half of the 80s until 1995 due to the same reasons of the lack of land available for construction and its high prices, in addition to the urban development accompanied the entry of PA (*Dawoud, 2003*).

During the 1990s, most of residential neighborhoods of the city witnessed an increase in high building construction by more than 60%, however it reached in Al Makhfieh up to 96%, while Rafidia, Al Dhahya and Northern Mountain increased to more than 80%.

Until before 2000, the number of apartments in high buildings owned was more than double of rented buildings, where many of the young couples borrowed from banks in order to own an apartment for the long term, and some residents sold their old houses in neighborhoods that became overcrowded and accepted to buy an apartment in better areas. But After the Palestinian Second Intifada (2000-2005) construction and investment in high residential buildings has declined because of the political and economic conditions discussed in the previous chapter. Between 1995 and 2003, the percentage of high-rise residential buildings constructed was only 10% of all buildings in Nablus since 1960 (*Dawoud, 2003*).

Recently residential apartments in high-rise buildings have become the predominant preference in Nablus, where the use of high building types for residence in 2011 reached 53.7% compared to other types of houses such as detached houses, villas and others (*PCBS, 2017*). This means that the vertical trend forms about half the size of the city's construction. The municipality engineer declared that the possibility of building detached houses in Nablus is almost impossible. The city is no longer like other Palestinian cities where houses are spread in different areas of the city, instead high buildings have replaced it intensively.

It is clear from the previous percentages that the prevailing trend of housing in the high buildings has moved steadily during half a century of development in Nablus. The following section discusses the main factors and drivers that led to the change of housing type and the dominance of high buildings.

3.3.2 Key factors of development and change

The following factors are the most significant in the emergence of high rise residential buildings in Nablus, and played an important role in shaping the built environment that enforced high residential buildings.

3.3.2.1 Planning schemes and building regulation

The municipality represents the regulatory body of the city as it has a direct influence on shaping urban form through its policies and executive authority. And its role and control can be implied by master plans and land use, which is the main tool that municipality use to lead the change around the city. It could result with improvements in the urban environment or decline of its efficiency.

In the case of Nablus municipality, land use change was critical in the aspect of residential use. In fact, the change of land use that municipality applied such as increasing the area of residential by reducing the area of residential A, and convert some land use from commercial into local commercial, allowed to increase the height of building and resulted in neighborhoods with random heights, high buildings next to villas or one story houses. Moreover, the lack of preparation and not providing proper infrastructure to accommodate this type of building has created more problems.

However, municipality plans were not the only factors that controlled of the density and type of residential use in different areas, where people's desire and preferring some areas over another contracted in many occasions with municipality vision (*Omran, 2008*). People in Nablus tended to prefer some districts for residence away from commercial areas specifically. But that resulted with imbalance of building density around

the city and it contradicted sometimes with municipality plans of expansion direction or land use in some areas.

In an interview with Muhammad Al Shunnar, chief of Engineers association in Nablus, he explained that the municipality has opened the way for building high as a need to face challenging reality, but it was chaotic and an unrestrained process. Al Shunnar continued that if the administration of municipality has developed some systems and restrictions such as setbacks and opens spaces, it would have helped create a better environment for residents and avoided all current problems.

The distance between buildings is mostly controlled by setbacks, where the municipality regulations impose setbacks as 3m from the side, 4m from the front and 5m from the back in residential B areas. But the efficiency of this system decline in the case of high buildings, where the increase of height brings more problems related to privacy and ventilation. People who live in high Buildings that are close to each other by the minimum setbacks are suffering from lack of day light in their apartments, either because it's blocked by the next high building or windows is always closed to keep privacy from the opposite building. Whether its high buildings neighboring or high building next to detached house, the same problems of blocking sunlight and lack of privacy exist, see (figure 18).



Figure 18: some buildings aligned close to each other and block sunlight. Source: researcher.

However, Nablus municipality had a system and regulation to keep abreast of urban issues such as building height and city development in. Then again in 2007, the city had the first regulatory system based on well-designed engineering principles to control the construction of heights and slopes 1996 (*Nablus municipality, 2017*).

3.3.2.2 Land prices

The political and economic situation in Nablus is playing a leading role in the regulations and decision making related to building and urban development. One of the particular important issues in planning and building organization is the absence of cadastral map of Nablus, which weakens the ability to control the land use because of lack of information about parcels ownership. Also, the inability to produce the maps necessary for the production of structural and urban plans (*WAFA, 2017*).

Consequently, the buildings with different uses and heights spread randomly without permission or license.

In the absence of sufficient land for construction, another obstacle to the organization of high buildings, particularly in crowded areas, is parcel size. Qasrawi², Nablus municipality engineer, explained that regulations in Nablus allow classifying only 600 square meters of land for construction. This is small even without considering setbacks, where the maximum setback according to Palestinian code is 5 meters from the back. Therefore, in order to create more space between the buildings, there is a need to increase setbacks, but the left area on land with the small size of parcels won't be suitable for building.

Moreover, land scarcity which resulted from many factors such as land confiscation by Israelis or land administrative division through Oslo, caused steadily increases in land prices, which enforce vertical building to use available land more effectively. Technically, as municipality engineer claimed, it's impossible to avoid building high and multiple stories buildings for residual use specifically, where land prices are highly increasing, and it has reached 5000 JD for each meter square in downtown and 400,000 JD per dunum in further areas (*Qasrawi, 2017*).

² Interview with municipality engineer, Azzam Qasrawi, on 9 Sep 2017.

Prices vary based on many factors such as location, proximity to the city center and main roads. Land in the western part of Nablus generally records higher prices than the eastern part. The highest prices in Nablus are located near the city center, then the area surrounding Najah University and Rafidia, then al Makhfieh and al Junaid, and at last al Masaken and Sahel Asker (*Omran, 2008*).

3.3.2.3 Socio- economic changes

The Palestinian society was a traditional farming community in the early 20th century. This had a direct impact on the family, where social relations and neighbors relations were limited, as some families deprived their members of education and participation in life (*WAFA, 2018*). The family type at the most was extended family that characterized by large size and this was of economic importance, where the size of the family itself was a role model everyone is competing to achieve in order to increase the productivity and benefit the family (*Dawoud, 2003*).

This situation prevailed in most Palestinian cities, including Nablus. However, with the beginning of 70s, the Palestinian society underwent radical and qualitative changes through time in various areas of social, economic and cultural life (*WAFA, 2018*). These developments were reflected in different aspects of life, such as the increase in female education and economic independence of the family, as well as the ease of movement, and the availability of transport between the rural communities

and city, which has contributed mainly to the transfer of rural people to the city and the contact with different cultures that created a proper environment for change (*Dawoud, 2003*).

In the early 1990s, the entry of Palestinian Authority (PA) resulted with social, cultural, political and economic changes. The economic situation has been a major challenge for the Palestinian territories under the Oslo conditions. Paris Agreement, the economic annex to the Oslo Accords, which caused much damage to the Palestinian economy, entrenches Israel's economic policy and gives it full control over the local market (*Majdalani, 2017*). Even with the entry of the Palestinian Authority and its attempt to establish an independent economy, the restrictions imposed by this agreement have prevented this and have accompanied poor economic consequences for the Palestinian cities (*Abu Hijleh and Salem, 2001*).

It also witnessed a new turning point in democratic life, legislative elections and the establishment of political parties (*Khalil and Salem, 2009*). These new cultural conditions enabled the family to interact with the institutions of society, which influenced the structure of the family and contributed to significant changes at the social level (*WAFA, 2018*). The traditional family structure has weakened and it's no longer possible that extended family can live together or close to each other like the traditional system.

The nuclear family in Nablus, according to 1997 statistics, accounted for 85.6 percent of all households. And this has a direct reflection on the increase in demand for housing units, as the separation of the large family to another multiple and smaller families means the need for more housing, this was the biggest trend towards high residential buildings (*Abu Saleh, 1998*).

This issue of change of family pattern and its impact on social life is one the main concerns of people in Nablus, where many has clarified that breaking big family into nuclear small families live far from each other has enforced people to be careful with their new surrounding of strangers. People need time to build trust and open up for neighbors when they live in high buildings especially with the big number of apartments and different backgrounds.

The neoliberal economic and social policies in Palestine have produced many social transformations. Such as poverty, unemployment, and changes in the labor force, in addition to the creation of new social elites including the bourgeoisie, and the proliferation of civil society organizations and their projects. Moreover, grow dependence on international aid and the spread of nepotism and bureaucracy in PA institutions (*Khalil and Salem, 2009*).

The previous factors played its role and challenges in the emergence of high residential buildings on different levels such as planning and policies, regulations and laws, economy and social aspects. Despite all these issues, demand on apartments in high buildings continues growing, so why people continue choose this type of residence? And is it a matter of choice and preferences or its forced by other stimulations?

3.3.3 Driving forces of living in high buildings

Despite the consequences of living in high buildings, urban issues combined with its design and urban context, and the influence on resident's life, the demand for apartments still increasing. Therefore, it's essential to question the major reasons that encourage people to choose this type of building and whether it was a preferred or somehow forced by different drives. The reasons can be summarized based on their significance, according to people in the sample, as follows:

- High cost of construction and land ownership:

It's the first and most common reason among people that separates them from their dream to live in a detached house or even owning an apartment at least. Land scarcity has caused a rise in land prices for construction, resulting in an increase in the total cost of construction. Currently, buying land and building a house is expensive and out of the reach of the majority in Nablus in general. The city is no longer like other Palestinian cities where it is still possible to build a low rise building.

- Financial problems:

The economic situation that has accompanied political changes, especially in the past two decades, has created a difficult situation for many Palestinians. Some families lived in detached houses for a long time, but they had to move into apartments in high buildings and sell their houses, either because the family was expanding so they needed more than one place, or they had a difficult financial situation that it was more affordable to move to an apartment. Living in apartments was very common among low-income families, but at present it is more prevalent at all levels of society.

As an area with such amenities as tranquility, accessibility and services, Rafidia mostly attracts a certain type of population with high social standards, especially as prices are more expensive there. According to statistics, the monthly income of families there is one of the highest in the city, which is 980 JD (*Omran, 2008*).

- Better work and education:

As part of the urbanization movement in many Palestinian cities during the second half of the last century, many families moved from their homes in villages to live in Nablus. They were trying to get better jobs or be closer to their work that they already have in the city and stop commuting long distances or staying away from their families for a long time. Also, some people see the city as a better environment for their

children's future, where they can join better schools and universities and get a more appropriate education. Sometimes changing the husband's workplace is the reason why the family is leaving the village to live in an apartment in the city.

- Family Expansion:

As mentioned earlier in this chapter, the Palestinian cities including Nablus experienced social changes that basically affected family as a nuclear of community. That was characterized by breaking of extended family into small separated ones, replacing the big house with apartments in high buildings. That appears clearly in the demography of Rafidia as a modern part of the city, where people preferences were directed towards it.

In some cases when the house is very small while the family grows up and the children get married, it is easier and more efficient to move to a large apartment or two apartments using the price of selling the small house. Also, some couples prefer to move from away from family house seeking for more privacy, where apartments in high buildings are the most common and affordable option in this case.

The previous causes were the most common among the people interviewed in Rafidia. But there are other minor reasons behind the reality of living in high buildings. For example, some people answered the question "Why do you live in an apartment?" that there are no other options. Given the current situation with increasing poverty and rising

prices, new couples find themselves forced to adapt with this choice, either by renting an apartment or applying for a loan from bank to buy an apartment. This type of housing is most accessible to low-income families as well.

After demonstrating the urban development at the beginning of this chapter, and review the general aspect of high buildings emergence in Nablus and its most significant factors, in addition to the various motivations that led the population to move towards this type of buildings, the latter part of this chapter selects a specific area of the city to adapt the study and deepen the understanding of the physical environment. Rafidia is chosen as a case study, and the next section introduce a brief historical background of the area and development of high buildings there.

3.4 Case study : Rafidia, Nablus

Rafidia is one of Nablus main neighborhoods that located to the west of the city, as shown in (figure 19), and was chosen for several reasons that made it proper for study's objectives. First, Rafidia is a residential area dominated by residential use and high-rise buildings of more than 7 floors. Secondly, the rapid urban development that Rafidia witnessed recently, as well as it comprehends an old and modern urban fabric that gives the study the opportunity to compare the two types and to observe the development of the housing from traditional to high rise buildings pattern and its impact on people.

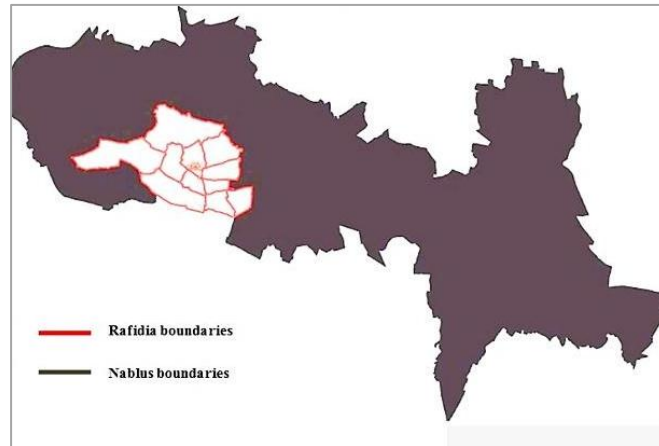


Figure 19: Rafidia location in Nablus city. Source: researcher based on Nablus municipality map, 2016.

3.4.1 Rafidia urban change and high buildings development

3.4.1.1 The village (before 1963)

Rafidia was once a small village surrounded by walls with a gate, and it sustained the same location currently. It kept slight growing and small population through ottoman time as its people worked in farming (*Abu Hajar, 2003*). During the British mandate period, Rafidia was categorized as a rural area, which is not included in Nablus municipality boundaries, with a population of about 500 only. Until early 60s, Rafidia was generally described as spacious areas of farms and trees with few houses in the old city and other few scattered detached houses on some lands, see (figure 20), however residential use was the dominant on the land use (*Nablus municipality, 2017*).



Figure 20: built up area of Rafidia 1942. Source: urban morphology class 2016, An najah university Researchers.

3.4.1.2 period between (1963- 1993)

With Rafidia joining Nablus municipality boundaries, more attention has been given to the roads and infrastructure. The master plan of Nablus expanded in 1963 to the east and west to include many rural areas with area of 18400 dunum, such as Rafidia. However, only some blocks of Rafidia were joined, while the rest of 11 blocks that formed Rafidia were all included in municipality borders by 1966 (*Dawoud, 2003*), see (figure 21). Later on, the development of streets network and infrastructure to the west contributed to the growth of building movement towards Rafidia (*Khalil,*

2005) and connected the area more to the urban fabric of the city. This growth caused the up rise of more varied uses like commercial buildings especially on the sides of main street, or mixed use buildings, see (figure 22).

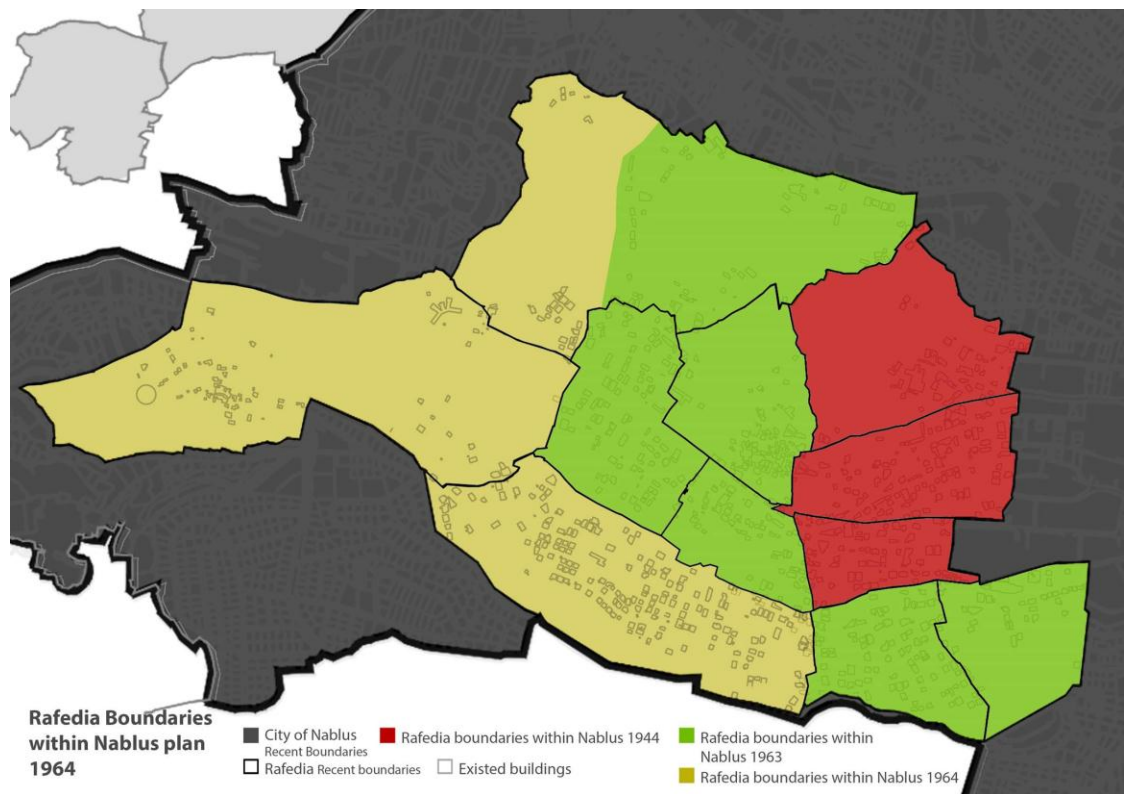


Figure 21: Rafidia boundaries within Nablus plan 1964 Source: urban morphology class 2016, An najah university

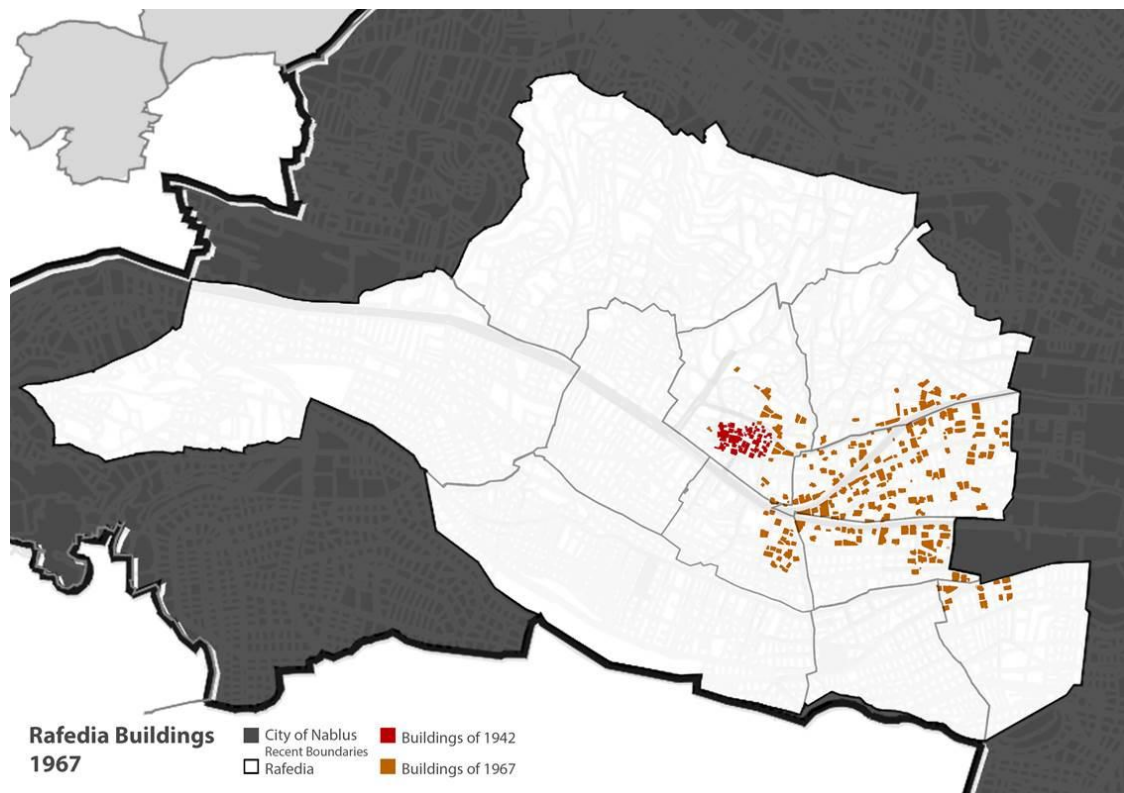


Figure 22: Rafidia built up area 1967. Source: urban morphology class 2016, An najah university

Moreover, this period was the beginning of vertical expansion and the rise of high buildings in the area without supervision and regulation, and the heights were unevenly combined with each other. But this did not have a significant impact on the urban composition by then, due to the relatively low density of the building compared to the current situation, where the population of Rafidia recorded by 1961 was 922 and the change was slight until 1982 with 1200 person (*Abu Hajar, 2003*).

However, 80s witnessed the emergence of different type of buildings, where multistoried buildings have spread over the agricultural land. 15% of high buildings in Rafidia nowadays date back to the period between 60s and 80s. After that, between 80s and 90s was the beginning of urban boom in the area as shown in (figure 23), where more houses, villas, and high buildings appeared, and 60% of high buildings were constructed (Dawoud, 2003).

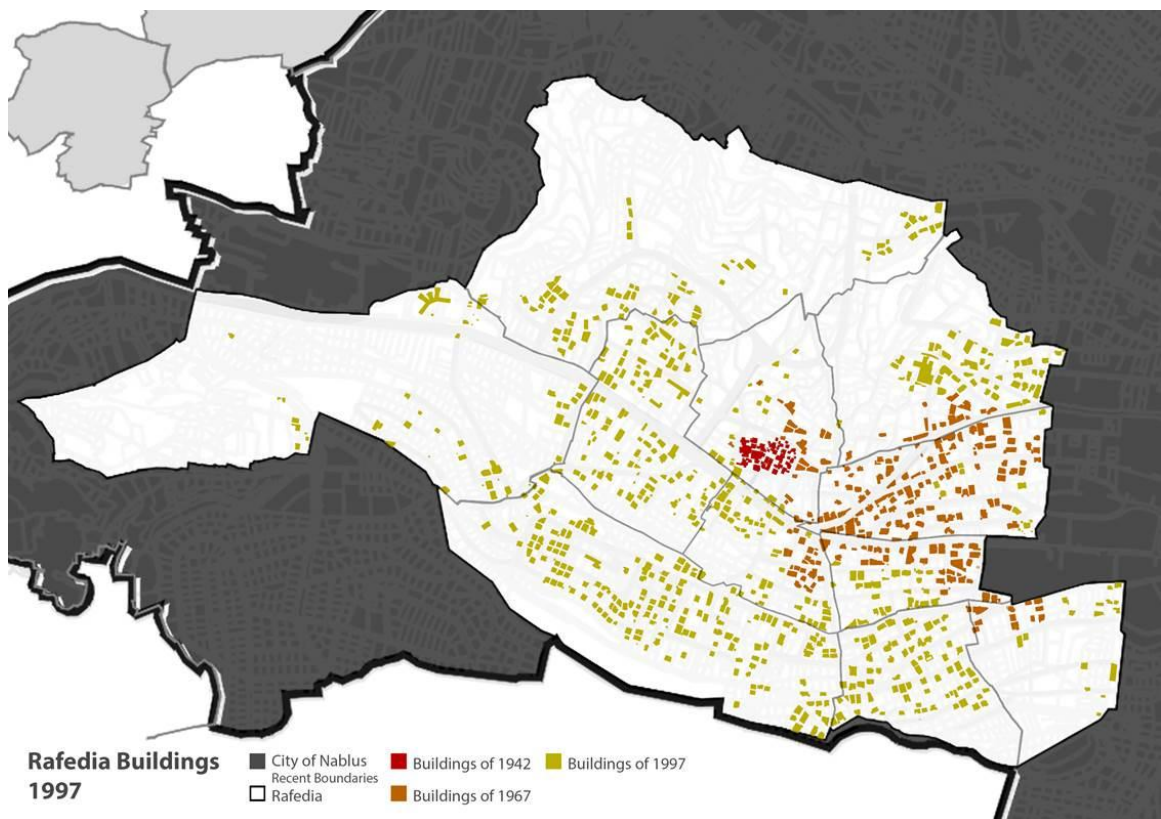


Figure 23: Rafidia built up area 1997. Source: urban morphology class 2016, An najah university

In light of the political changes of this period and the absence of structural plans and appropriate planning laws, most of the expansion was random and unthought-of, contributing to the creation of a structured environment of an unorganized nature. There was no regulation of uses so that residential and commercial uses were mixed.

3.4.2 Period between (1994- 2018)

By following the most important events of this period, the entry of the Palestinian Authority by signing Oslo accords is considered the most influential on the development of Palestinian cities as mentioned before. The impact was evident on the urban composition of Nablus city, where economic development has been accompanied by many urban and social changes. In addition to the political circumstances and division of land into A, B, and C that resulted of limited access to land and land scarcity. The latter issue impeded a natural horizontal expansion of the city, which forced the vertical direction and helped the emergence of high buildings.

Moreover, topography was a natural barricade in the face of the expansion that was moving towards the mountains and high slopes on both sides of the Nablus plain, making it difficult to pave the ground for construction and excavation of the mountains to create areas suitable for construction. This limitation of topography made it more economically beneficial to go towards multistoried building type, where larger number of units produced on the small area of land that needs less excavation. During

the second part of the 90s, building spread in most of Rafidia, particularly in the west, south and center, and along the main street as shown in (figure 24).



Figure 24: Rafidia Arial photo 1997. Source: The Integrated Spatial Information System of the Ministry of Local Government (GeoMOLG), 2017Source: urban morphology class 2016, An najah university

Most of the development was in the residential sector due to the classification of land for residential use. As pressure on land increased due to large urbanization and high prices, vertical expansion increased and high buildings were overshadowed, where regulations allowed 7 floors buildings in this area after some changes in land use.

In 2006, the new campus of An Najah national university was opened close to Rafidia (on bait Wazan blocks), which had a significant role to attract people like employees and their families, students, and others to the area. This means higher demand on residential buildings, where developers started to pay more attention for investing there and establishing

high buildings to keep up with population increase. The demand increased vastly on apartments in Rafidia; accordingly prices increased 106% in 2006 from 1980 (*Omran, 2008*). By 2015, buildings covered most parts of Rafidia and built up area density increased, see (figure 25, 26).

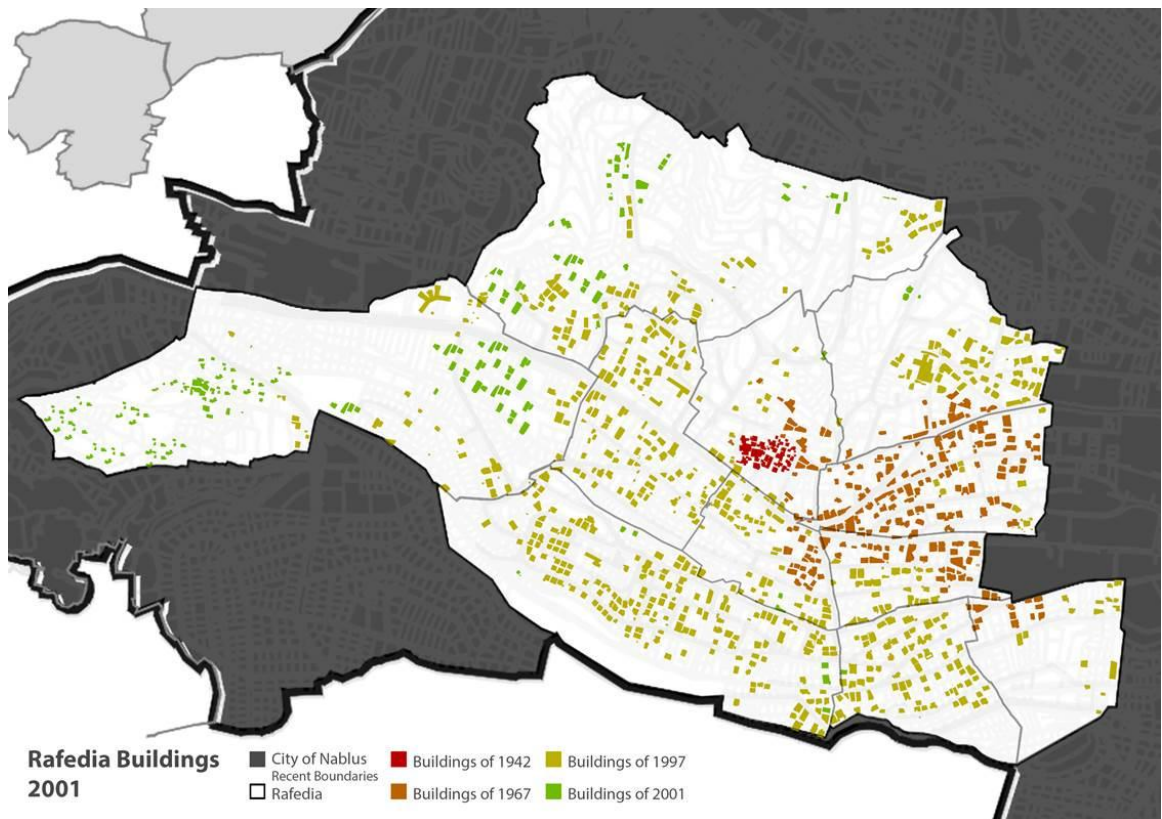


Figure 25: Rafidia built up area 2001. Source: urban morphology class 2016, An najah university.

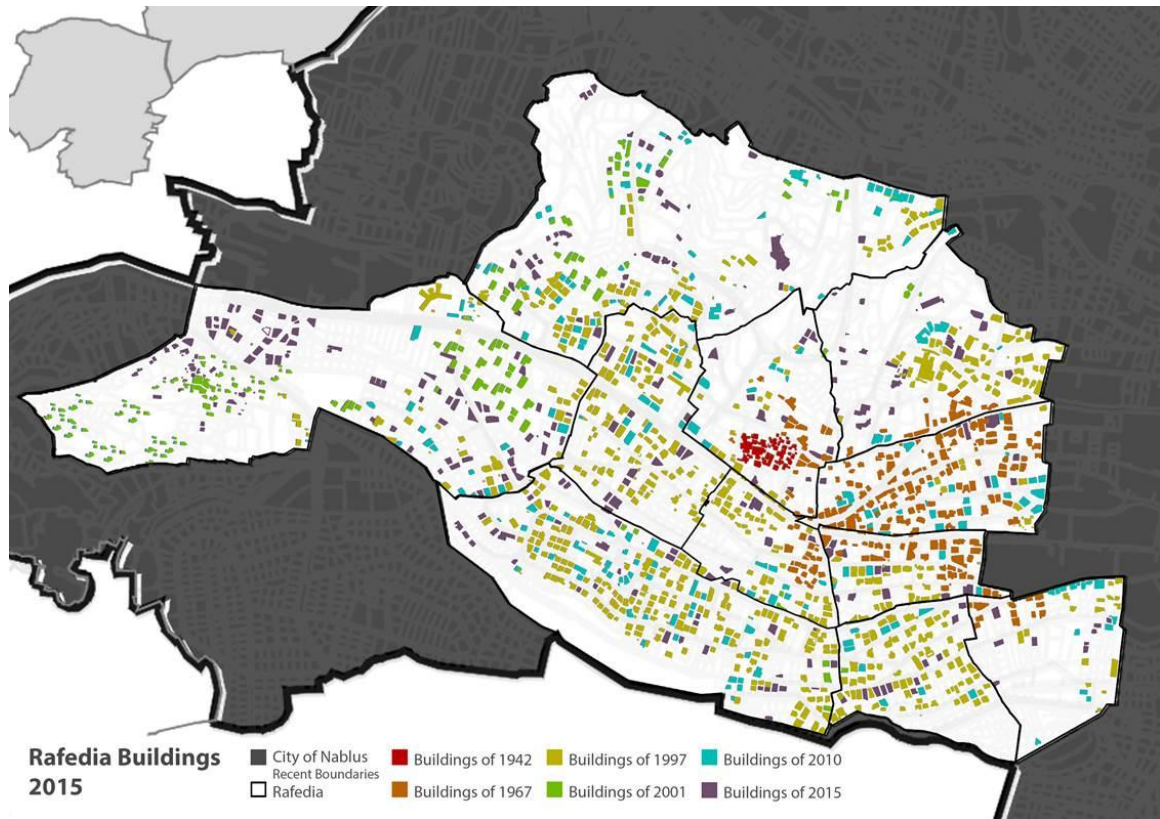


Figure 26: Rafidia built up area 2015. Source: urban morphology class 2016, An najah university

Chapter Four

Physical environment of high residential buildings relation to social interaction in Rafidia, Nablus.

4.1 Introduction

After reviewing the urban changes in the city of Nablus and the city's growth and development, land use change, and the emergence of high residential buildings as an increasingly dominant type of buildings in Nablus, this chapter study and assess the impact of these buildings and vertical expansion on resident's social interaction.

In order to analyze physical environment changes and context that high residential buildings emerged with in, urban morphology theories mentioned in the second chapter will be conducted on study area of Rafidia, in Nablus, using Cozen method of analysis specifically. As well as evaluation of the social consequences and problems of high residential buildings related to changes in form. And finally address the main issues and problems of this type of buildings on different scales.

To understand the effect of high buildings, it's significant to study the urban context where these buildings are allocated within and has influenced its growth. Gang (2015) assured the role of urban context in creation of social cohesive high buildings, and that updating the physical environment analysis and design would inform us more whether urban context isolate residents or bring them together.

4.2 The changing landscape of Rafidia

4.2.1 morphological analysis

The analysis of current town plan of Rafidia requires to study Streets, plots and buildings as the main features of plan unit that Conzen have developed, where it deal with each element of plan unit and its relation to the same category, such as streets and their arrangement with in street system, as well as other elements (*Conzen, 1960*).

4.2.1.1 Land use

The change was noticed in the master plan of 2001 to 2011, as some of the land transformed from residential B into local commercial that allows 7 floors and roof instead of 4, also residential A area declined (*Qasrawi, 2017*), see (figure 27,28). Nowadays, Rafidia consists of 11 blocks on area of 3,021,978m². The uses of land vary in Rafidia, see (figure 29) as the residential use dominates the uses with 48.72% of the total area based in 2015, and it's known for health and entertaining services, and the spread of commercial zones with 5.71% on the sides of Main Street particularly.

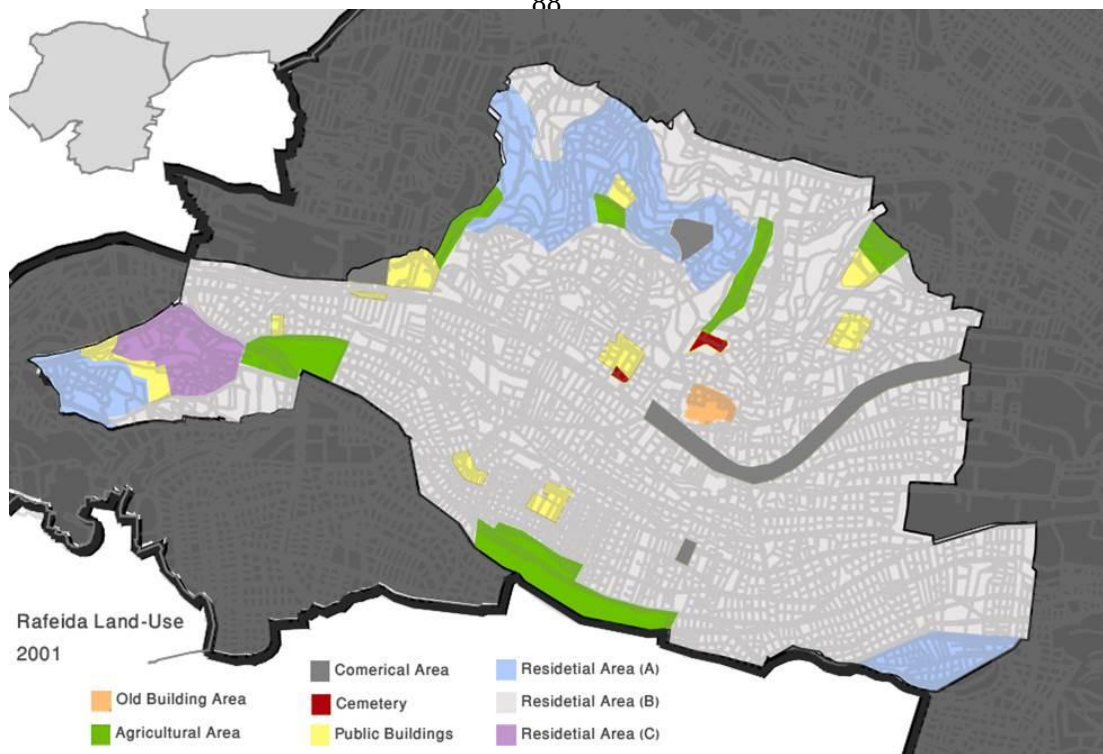


Figure 27: Rafidia land use plan 2001. Source: urban morphology class 2016, An najah university.

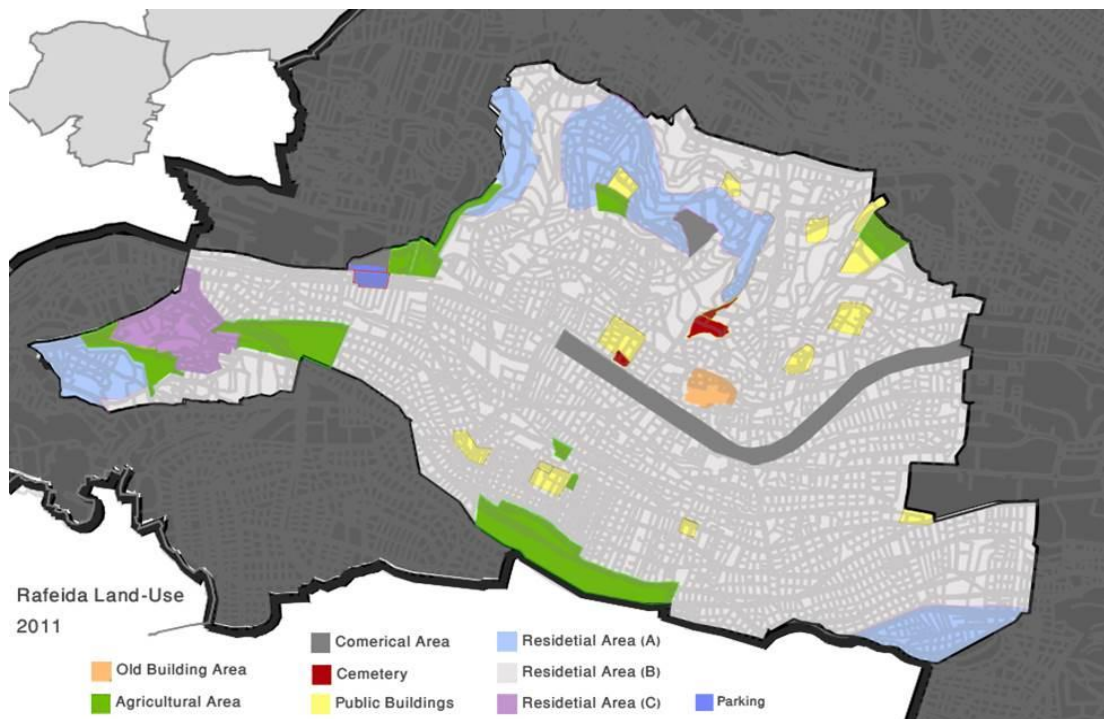


Figure 28: Rafidia land use plan 2011. Source: urban morphology class 2016, An najah university



Figure 29: Rafidia land use 2015. Source: urban morphology class 2016, An najah university.

The Industrial use in Rafidia is very low and doesn't exceed 1.43%, which make Rafidia desirable for living purposes. While the agriculture use represents 28.20% of land, which is considered to be high despite the general shortage of agriculture use in the city with only 1.86% of the city total area. That refers to the origin of Rafidia as a village where people mainly worked in farming, availability of water from springs, and land fertility. In addition to the high use of land for tourism purposes that increased the area of open spaces up to 27.41%.

4.2.1.2 Street pattern

As streets are the most stable and durable element, they are the least affected by urban transformations compared to other elements such as buildings or plots (*Boeing, 2017*), which in turn gives them more control over other elements. This is clear in the network of Rafidia Streets that evolved over the years, where the development was based on the main streets that cross the area all the way from east to west. Road network have spread along with the expansion of the Rafidia boundaries to provide access to new blocks and buildings, and more types emerged as well as the change of streets hierarchy and improving accessibility, see (figure 30).

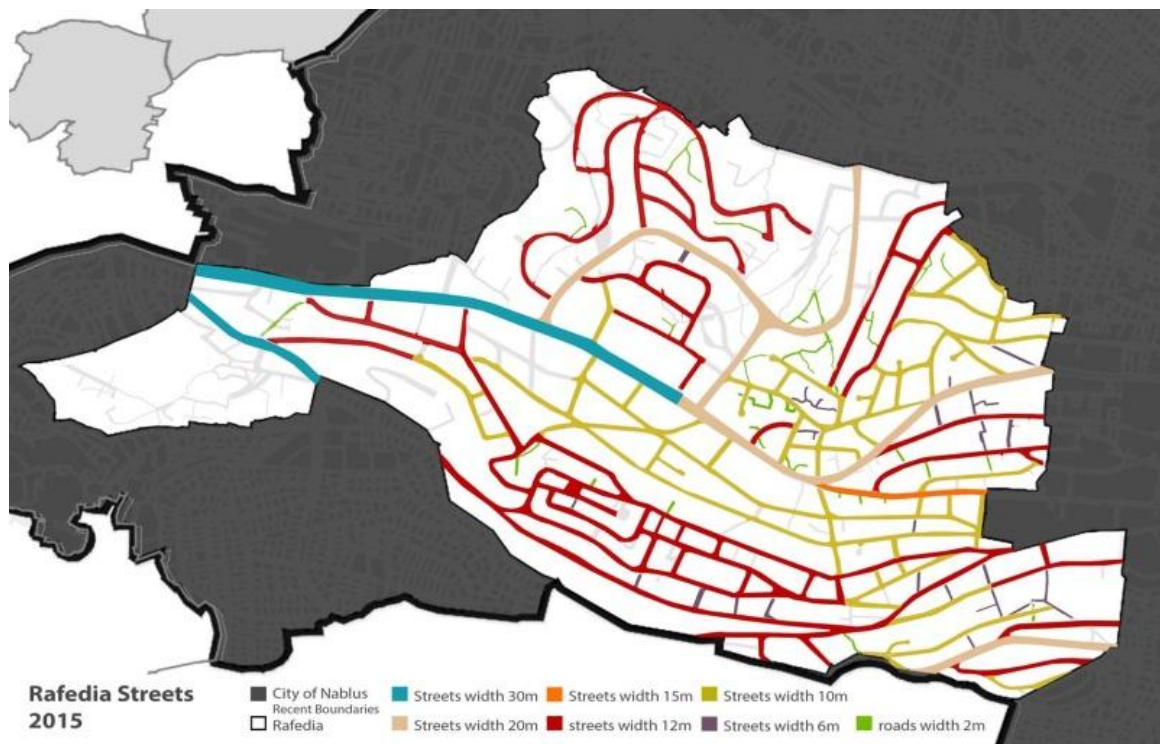


Figure 30: map of street system based on width and type in Rafidia in 2015. Source: urban morphology class 2016, An najah university

Street system varies in the area and includes three different types based on change in plan unit. First, the old center of Rafidia, which has traditional plan unit characterized by narrow alleys, irregular shapes of streets and open spaces. This street system is known for small roads branches from the main road to provide access between buildings and blocks, and mostly it doesn't connect to other roads and has dead end, see (figure 31.a). Second, the areas along the main street and surround the old center represent transitional plan unit with more regular shapes of streets and organic road network that follows the mountain topography the most, the width of such streets increased comparing to traditional type and followed more gradual arrangement, see (figure 31.b). Third, modern plan unit developed to the south and west of Rafidia, the streets in this area have a continuous and linked network of streets, with more unified widths and organized shapes, see (figure 31.c). However, its continuity interrupts the buildings accumulation and creates smaller blocks separated by wide distances.



Figure 31: a. streets in traditional plan unit b. streets in transitional plan unit c. streets in modern plan unit. Source: urban morphology class 2016, An najah university

4.2.1.3 Plot pattern

As the expansion of Rafidia continued out of old village, the pattern of plan unit has changed. The development of the arterial main street of Rafidia and commercial uses produced new plots that are more rectangular and unified, aligned as a series of plots with the short rib towards the main street to achieve more economic benefit.

The plot size and shape started to be more unified and organized in the transitional plan units, but still it was a complex of plot pattern, as the difference is obvious between old parcels within the old center blocks of Rafidia and the new parcels that were included in the newly developed blocks to the east and west. Hence that during the process of urban laws and building regulations development, some old parcels was incorporated in order to create regular forms and sizes and increase the viability of land, see (figure 32).



Figure 32: map of different blocks in Rafidia shows the plot cycle through traditional, transitional and modern plan unit (from left to right in order). Source: urban morphology class 2016, An najah university

4.2.1.4 Blocks plan (buildings)

The form of building in Rafidia is mostly irregular and follows different patterns of plan and architecture type, which can be referred to different factors such as change of typology. Although it's noticed in the recent development of residential projects that building plans assume more regular shapes as well as its plots, but it's no longer an expression of a certain type. This reflects the modern orientation of individuality in building form and absence of typology.



Figure 33: map shows blocks plan in traditional plan unit, Rafidia. Source: researcher based on Nablus municipality maps 2017.

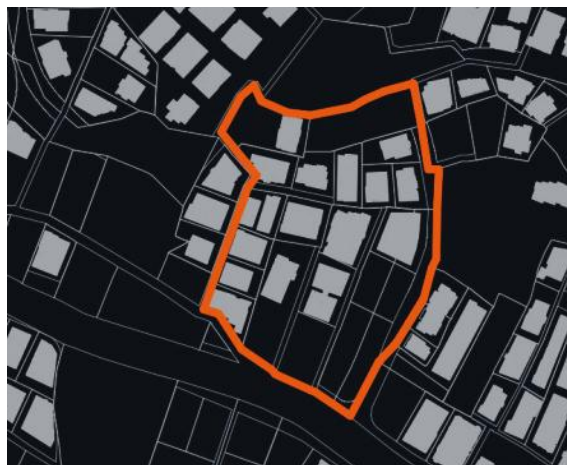


Figure 34: map shows blocks plan in transitional plan unit, Rafidia. Source: researcher based on Nablus municipality maps, 2017.

The type of buildings in traditional plan unit in Old area of Rafidia formed in the traditional Housh system or a complex of many houses sharing some walls, where Buildings are aligned close to each other randomly separated by small allays but as a whole they form a high dense unit of neighborhood, see (figure 33). This continuity in the urban fabric slowly disappeared in transitional plan unit and buildings were scattered and not assembled or gathered, see (figure 34). However, the form of buildings itself changed into less complex but more plain shapes away from the traditional forms and reached higher floors.



Figure 35: map shows blocks plan in modern plan unit, Rafidia. Source: researcher based on Nablus municipality maps, 2017.

The recent development of building type is obvious in the modern plan unit as every series of high buildings aligned in a block, its boundaries distinct by wide streets. Each building stands separately in the center of plot and mostly each block contain double series of plots, as shown in (figure 35). It is clear that the creation of a network of wide, open, and

mostly unfinished streets has helped to dismantle the continuity of the plot series or blocks, thus creating individual and isolated buildings on these plots.

Despite the regular forms of plots and more organized block plans, where double lined plots are the most common form, the formation of buildings in the neighborhood or area no longer seeks to achieve harmony and balance between buildings, (figure 36) illustrates the different building types in the area that mostly are irregular and vary in shape. This singularity and irregularity can be observed in Rafidia through the new plan unit, which shows the relationship of the buildings to each other and with the surrounding space and the radical changes in the physical structure. The block plans are no longer responding to the plot shape and the relationship between them has weakened, where the continuity of plan in the traditional buildings transformed into point blocks.

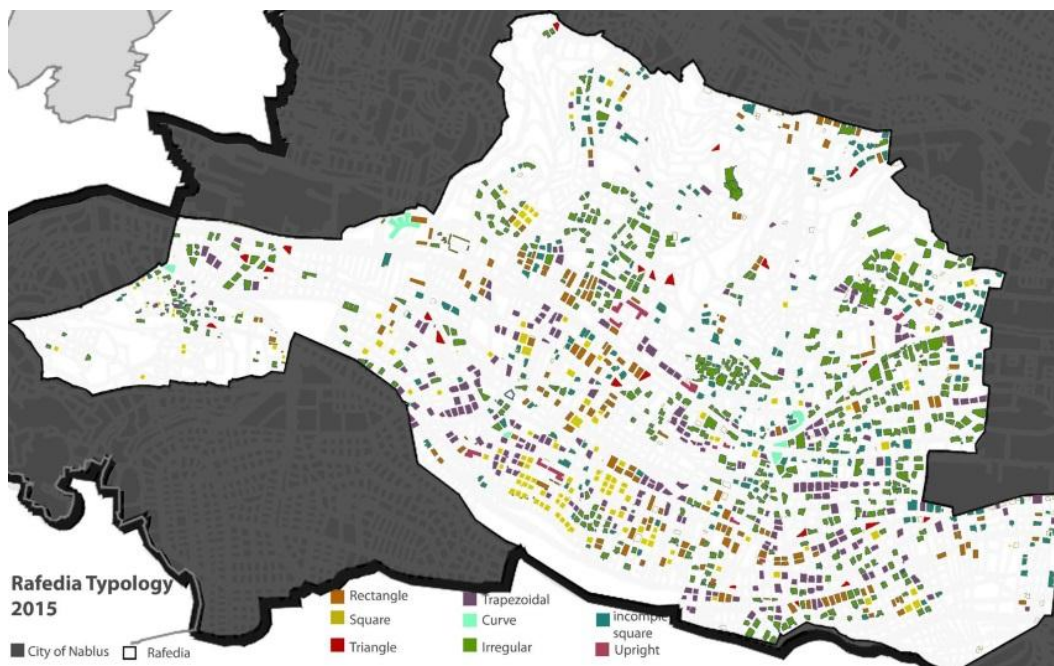


Figure 36: map of building typology in Rafidia 2015. Source: urban morphology class 2016, An najah university.

These struggles of organizing the site features as streets, plots and buildings ,or plan unit as for Conzen, and to relate it in an proper relationship are an evident of the absence of typology and its role in developing appropriate understanding of site elements (*Gutman, 1966*). The transition from the traditional urban fabric, which characterized by continuity, compactness and the integration of buildings with the space surrounding, to the modern fabric of scattered buildings without connection of other elements as shown in (figure 37). Buildings in most of Rafidia stand as large blocks separated from each other by open spaces without any link between them, and suggesting the lack of continuity in the projected area. Moreover, mutual influence between streets, plots, or buildings provides important indicators in shaping form of plan unit and contributes to the identification of certain characteristics such as openness and enclosure (*Oliveira, 2016*). The sense of enclosure dominates this traditional type of fabric as buildings accumulation produce open spaces and defines its borders.

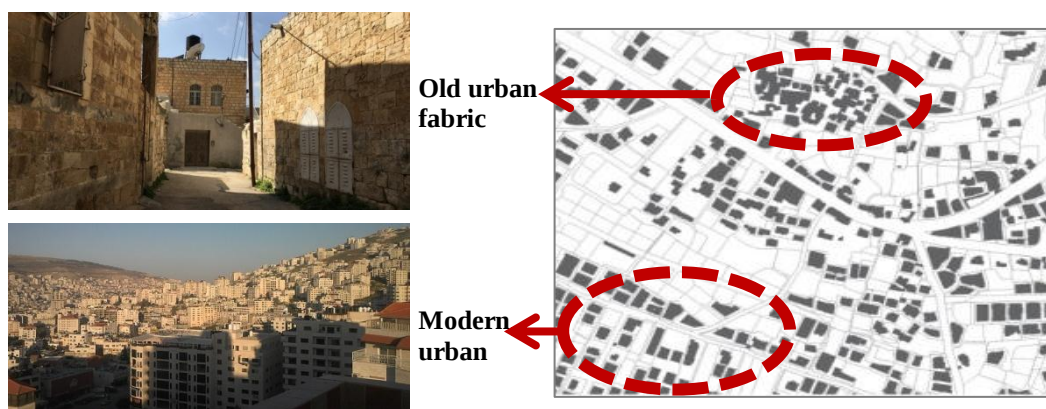


Figure 37: figure ground plan of part of Rafidia, show both traditional and modern fabric of different areas. Source: researcher, 2017

So, after defining the characteristics of Town scape of Rafidia and analyze its physical elements and evaluate its performance, the next step is to reflect these physical attributes on people behavior and its impact on their social interaction. As mentioned in chapter two, there are certain determinants of physical environment relation to social interaction that will be considered as the base of case study (Rafidia) analyses in the next section.

4.2.2 Determinants of physical environment relation to social interaction in Rafidia

4.2.2.1 Density

The researcher in the second chapter referred to the debate of high density of cities and its implications on social life. Some researchers who advocate high density in cities defended their claim that increased density could support better and cheaper public transport, and more control over people. At the same time, high density also lead to more pedestrian injuries and the effects of urban thermal islands and waste; loss of privacy and direct sunlight. And reduce the level of physical and mental health. In case of Rafidia, the built up area density is still moderate and not considered high or highly compacted, with about 40% of its total area, see (figure 38).

However, measuring density is not affected only by the ground floor occupancy, where vertical expansion is necessary to consider as Rafidia is characterized by high buildings. This means higher density of population in

the same area of building. This has affected the area of public spaces where more people should share it, also public space portion per person is declining as Rafidia growing and building movement increasing.



Figure 38 :map of built up are in Rafidia 2015. Source: urban morphology class 2016, An najah university

In the case of Rafidia, the density of the built-up area is still moderate and not very high or compacted, with about 40% of its total area. However, measuring density is not only affected by occupancy area of the ground floor, where vertical expansion is necessary to consider as Rafidia is characterized by high buildings. This means higher population density in the same construction area. This has affected the area of public spaces where more people should be involved, and the public space quantity for

each person is declining as Rafidia growing and building movement increasing.

Moreover, the increase in density was not combined with a mix of uses throughout Rafidia. Residential buildings are mostly existed there except for some areas such as the main street, where there are commercial and mixed use buildings, see (figure 39). It creates less vibrant and active socially areas according to Jacobs.

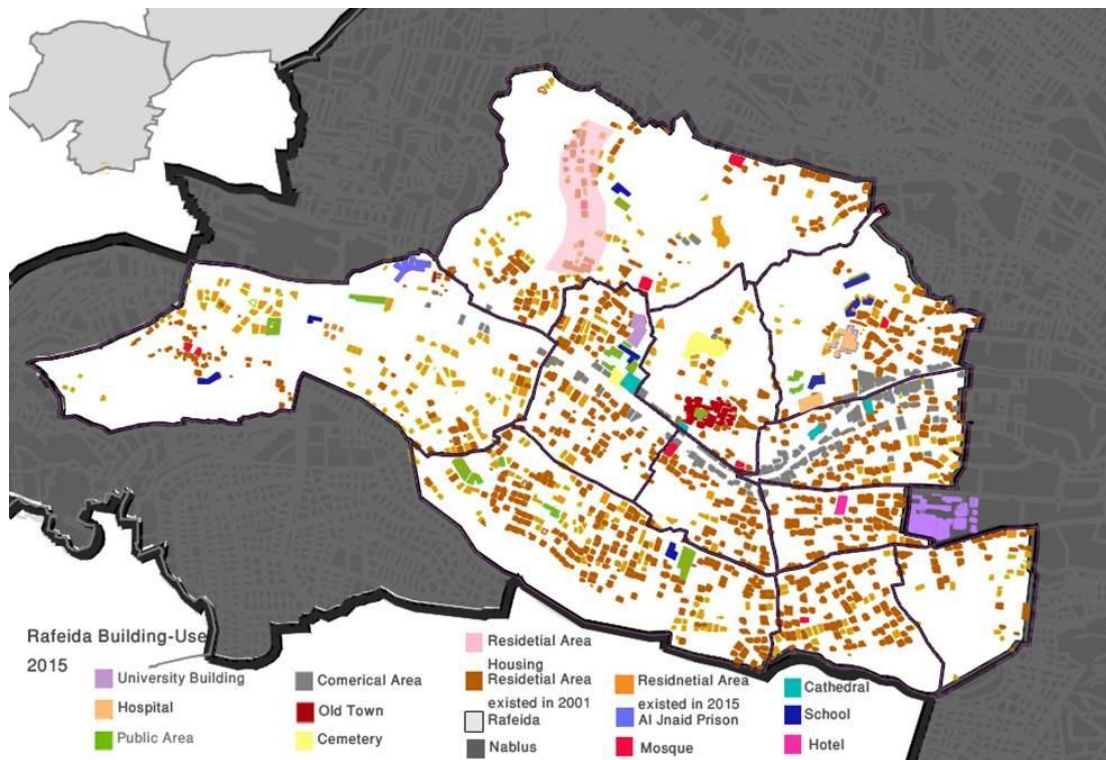


Figure 39: map of building uses in Rafidia, 2015. Source: urban morphology class 2016, An najah university

4.2.2.2 spatial layout and physical distance

Generally, the current urban fabric of Rafidia reflects the changes that have taken place in the city, where high rise residential buildings dominated the built up area. And the response of these buildings to urban changes is revealed in the way they are organized and aligned. Buildings are being isolated in the process of modern urban development, and ignore their relation to the urban fabric that includes open spaces, streets and other elements (*Trancik, 1986*).

the emergence of high buildings in the urban fabric and its inclusion in residential neighborhoods was accompanied with problems resulting from the incompatibility and harmony of elements of urban configuration with each other and lack of efficiency in the design of these elements, such as undefined and lost open spaces, high buildings fragmented and isolated, or even the absence of urban character and typology.

The hard topography of the area contributed to the small plot size, which affected the footprint of buildings as they stand as high but small sizes blocks with small setbacks in between, which could provide legibility and vitality to the area, but this pattern impedes the creation of well-designed open spaces. This issue was advocated by Leslie Martin (*1972*), where he examined different patterns such as small and large blocks of buildings and their relation to open spaces and proved mathematically that large blocks are more capable to produce balanced built environment. The

large footprint of building would allow the continuity of open space which is essential to enrich the flow of people and encourage their interaction as they explained themselves. The importance of open spaces and their design is never less than the buildings, where good urban design consider these spaces as a group connected to each other, not as random spaces resulting from buildings, see (figure 40).

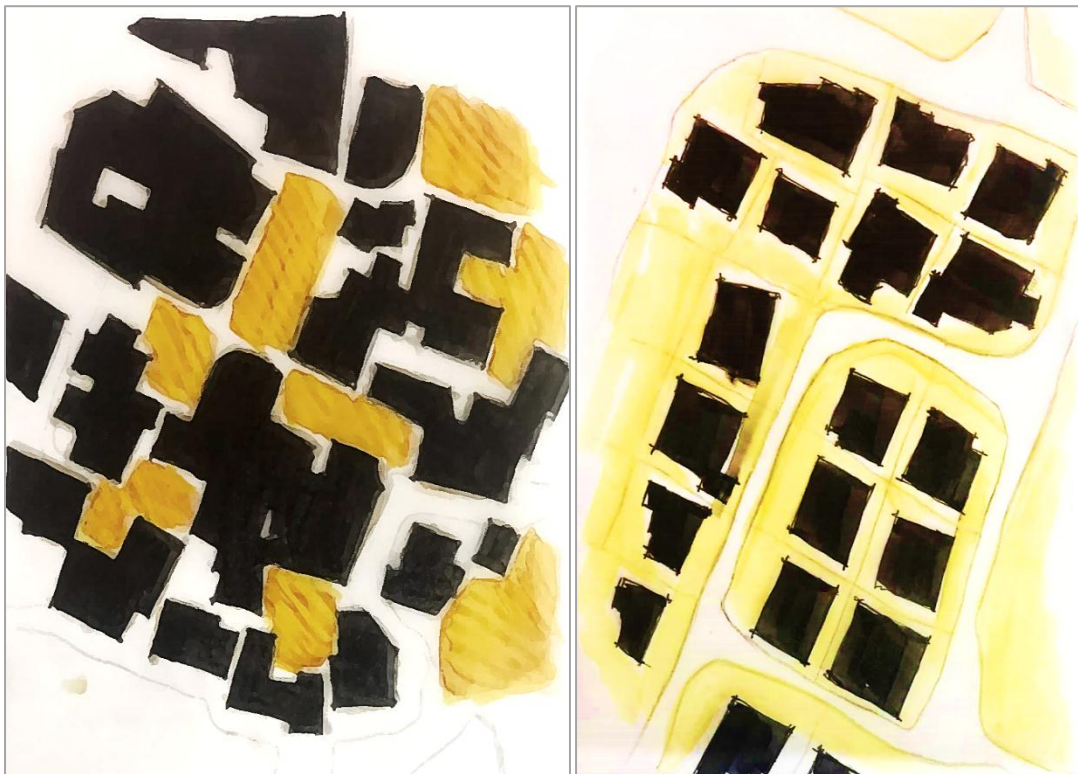


Figure 40: the difference between spaces produces in the old fabric (left) and modern fabric (right). Source: researcher, 2018

The old cities relied in their composition on the open spaces to create urban character for buildings and define the boundaries of the place. But modern urban fabric, as shown in the case of Rafidia, produce urban spaces that are not limited or specific and do not have a vibrant relationship with the buildings or contribute to the enhancement of their composition (*Modi, 2014*). These resulted in lost spaces rather than open spaces, see (figure 41), as the former defined by Trancik (*1986*) “the leftover unstructured landscape at the base of high-rise towers or the unseen sunken plaza away from the flow of pedestrian activity in the city”.



Figure 41: lost spaces between buildings, Rafidia. Source: researcher, 2017.

The lack of proper open spaces in Rafidia resulted from the disintegrated and fragmented urban fabric, where buildings located randomly without considering each other and other several factors, including building footprint and the difficult terrain of topography. Also these buildings lack of appropriate accumulation or grouping, “*Tall buildings can be equally appropriate grouped in clusters or located alone*” (Ibrahim, 2007). It is spreading as free standing masses without any connection or orientation, as shown in (figure 42). The placing of these buildings lack of gathering sense such as circulating around some space and define it as a common area for a group of buildings or clustering in a composition that would achieve enclosure and connectivity.



Figure 42: map shows the random accumulation of buildings in Rafidia.
Source: Researcher 2018

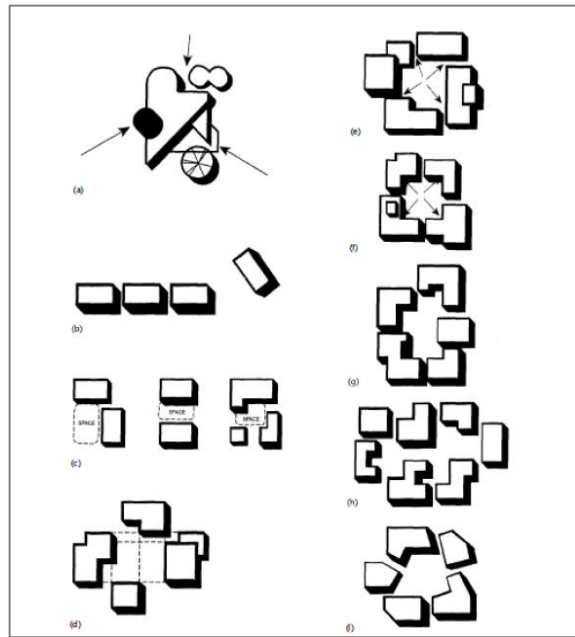


Figure 43: different patterns of buildings arrangement according to Booth (1983)

The weak enclosure and definition of open spaces in Rafidia results from certain arrangement of buildings as Booth (1983) illustrated the cases as shown in (figure 43), such as the alignment of buildings in a long row or single building standing. On the opposite, higher enclosure could be accomplished through arranging buildings around some space or change the angle that buildings face each other. Also irregularity is a key factor of creating sense of mystery in the space, which encourages people to experience it more.

4.2.2.3 Height

The increase of high residential buildings number in Rafidia was vast over the last decades, as shown in (figure 44), where most buildings have 7 floors or more. This caused many problems; first, variety of height produced a lack of harmony in the urban image of the city and the skyline. Figure (45) illustrates buildings adjacent next to each other with different heights, where some high buildings of more than 7 floors stand right next to one or two floors buildings causing a gap in the landscape and imbalance in height. Also, distinguish of public and private buildings and uses has disappeared with the unlimited height of buildings, that it became hard to recognize the character of monumental buildings (Krier, 2009). This is due to several factors, including the mix of land use and the random changing of it, as well as the topography and its impact on the level of streets and buildings on either side, so that the building may rise to several floors, but all goes under the level of the street as shown in (figure 46).

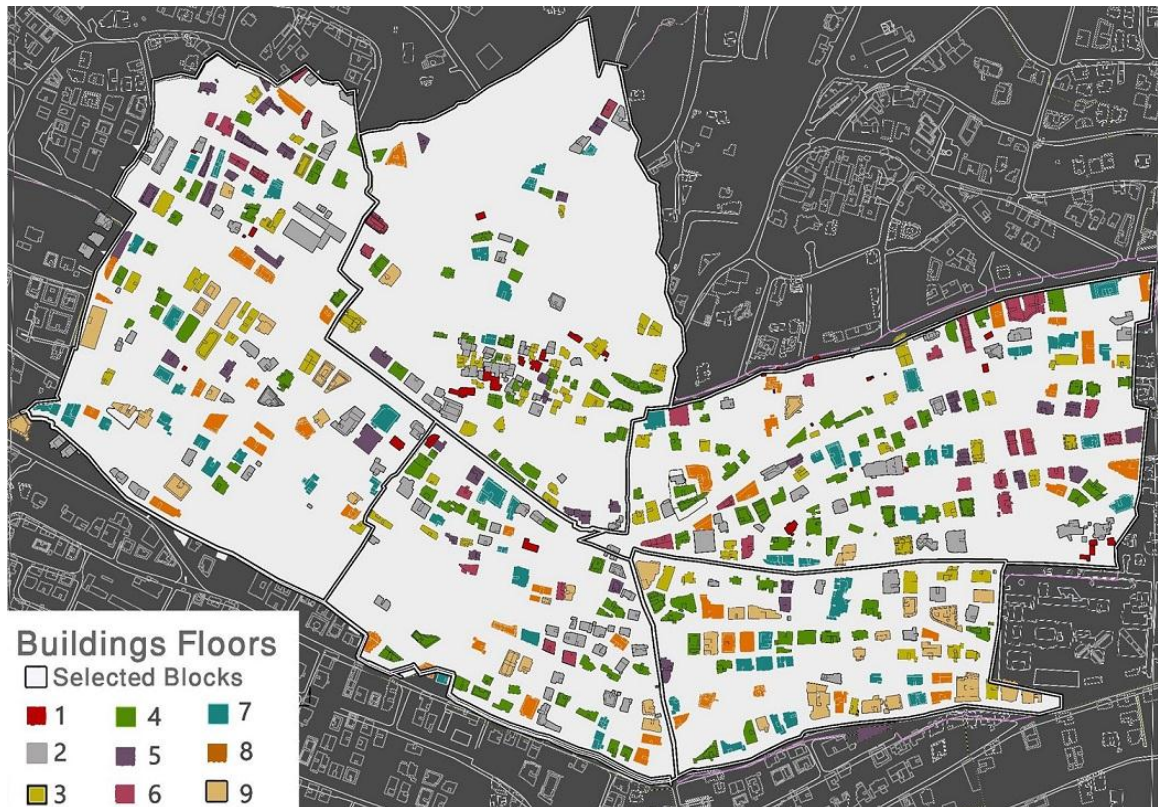


Figure 44: map of building heights in some blocks of Rafidia, 2017. Source: urban morphology class 2016, An najah university



Figure 45: two pictures of Rafidia shows the difference in height Source: researcher, 2017.



Figure 46: buildings on different levels in Rafidia. Source : researcher , 2017

Moreover, the effectiveness of the parcel is affected by additional factor, which is the plot ratio. In the old areas, the ratio is usually only 2:1, where the buildings were one or two floors surrounded by a public area or a garden or vice versa, such as the houses of the courtyard. This density is suitable for humans, unlike the change of the current ratio of more than 7:1, where high buildings that rise for more than 7 floors, see (figure 47, 48). This means less shared public space per person and more compacted buildings with large masses because of height.



Figure 47: example of different heights in Rafidia. Source: researcher,

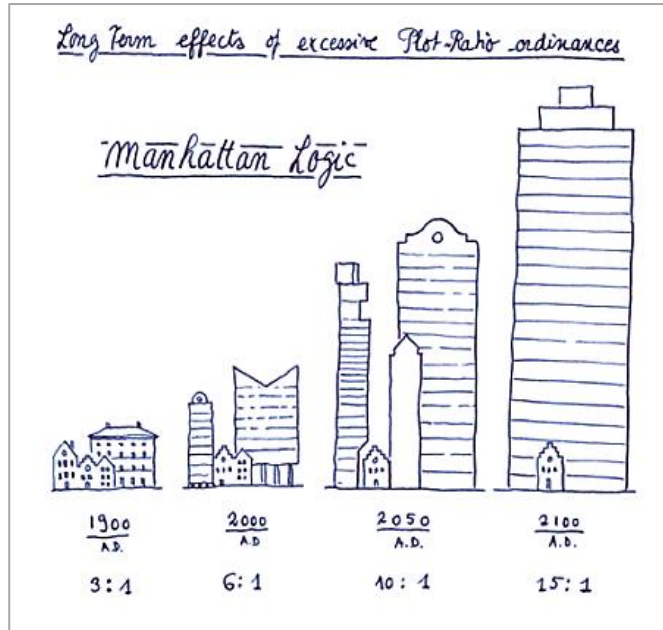


Figure 48: long term effects of excessive plot ratio ordinance. Source: Krier, 2009

In response, in 2007 the municipality created a system to limit the heights to a certain extent using the law of floor ratio (*Qasrawi, 2017*). As mentioned previously, most of Rafidia land is residential B, commercial, and some transformed into local commercial. The regulation allows raising for 4 to 7 floors in residential B, depends on street width. In case of 15m street, 7 floors is the maximum height and floor ratio should not exceed 320%, and with streets less than 8m, 4 floors allowed but floor ratio not to exceed 190%. And if the number of basements exceeds 3 floors, the vertical building line is moved to be with a depth of 12 m until reaching four floors above the level of the upper street (*Nablus municipality, 2006*).

Local commercial use allows a floor ratio of 300% at the maximum and height of 7 floors with a front setback of 4 m. And the commercial use in Rafidia Street allows 350% with a 3 m front setback. In the case of streets with a width of 20 meters and the area of the parcel is less than 2000

meters, it allows to rise to twenty floors and a floor ratio of 500%. These regulations have contributed to the reduction of building heights and thus reduce the size of the resulting problems to some extent, and forced investors and urban developers to reduce the number of floors to not exceed the floor ratio. But most of the high buildings in Rafidia existed before passing these laws, which makes it hard to change it.³

However, this development and acceleration of urban growth in Rafidia had consequences on the old buildings. In recent years, there has been a marked decline in the number of old buildings that were spread on both sides of the main street or in the surrounding areas. Rising land prices, coupled with increased demand for housing, have attracted investment and urban developers, stimulating many older residents to sell their homes to the private sector to replace it with high buildings.

In general, Rafidia has been in stages of growth and development but has produced a low quality physical environment, which is characterized by high density of people and buildings, lack of building typology, ignorance of buildings organization and their relationship to each other, creating scattered open spaces and lost spaces, and spread of high buildings that lack proper social spaces. The following section discusses the extent to which this urban configuration is linked to high buildings and physical environment through assessment of social relations between the population,

³ Appendix 1: Nablus municipality setbacks and floor ratio regulations

and in which aspects, as well as the main characteristics of the physical environment that intervened.

4.3 Physical environment of high buildings problems that affect social interaction

Social changes accompanied the compact and dense environment of high residential buildings, where Rafidia was a destination for people from all around the governorate such as villages, camps and city. This urban boom in Rafidia and the change of its physical environment, that characterized by high rise buildings currently, was accompanied by a sudden influx of different people from numerous backgrounds, who later found themselves forced to adjust not only to the new urban environment but also to the other residents around them in the building and neighborhood. This distinction in background of residents in the same neighborhood or even building caused a disruption of the nature of population interaction.

Yet again, this type of rapid development did not give the residents an opportunity to develop a natural and smooth social environment and relations, unlike the old areas of Nablus where it consisted of big families growing close to each other. Hence, other factors cannot be disregarded in determining the nature of people's interaction, but this study looks only into the role of the urban environment, especially those high residential buildings and their surroundings.

In this part the study illustrate the social influences resulted of analyzed urban fabric of Rafidia. In order to accomplish that, blocks 6 and 8 of Rafidia were chosen as a sample, where random buildings from this area including 20 high residential building that are more than 5 stories, 3 family buildings, which residents are all from the same family, and 2 detached houses were the subject of study, see (figure 49). As buildings and its context physical characteristics, resident's behavior in the building and the surrounding was observed, and semi-structured interviews were applied to these buildings residents.



Figure 49: the location of sample area in Rafidia. Source: researcher based on Arial photo from The Integrated Spatial Information System of the Ministry of Local Government (GeoMOLG)

4.3.1 High density

The density issues in Nablus and Rafidia are not only concerned with building density in some area, but extend more to the number of people using the space or live in the building, see (figure50). And more families are trying to adapt the increasing number of their members by moving to high buildings. Such as an old women in the sample who explained: *“We lived in a small house, but when my son got engaged we moved to this bigger apartment so he can live with me”*



Figure 50: pictures of Rafidia shows the high density of buildings. Source: researcher, 2017

The majority of people mentioned high density as a problem, not as an effective solution for rapid urban development and urbanization (Gifford, 2007), especially those who have been in the area for more than 20 years and witnessed the rapid change describing it as: *“The area is never the same as before, anyone who have a small land he want to build a*

high building and get benefit, what's the point of making 20 or 30 family live in boxes above each other?!"

Rationally, with more people in the same area we expect more active social life and interaction, unlikely it's the opposite here. Most of people interviewed tend to be isolated from that large number of people and create connections with only few people around to keep their privacy and be protected from other cultures impact of their families. And 20% of them expressed their refuse to interact with any neighbors despite the long time they existed around. For some family, who lived for 10 years in the same building, the woman said: *"You know, buildings have a lot of people from everywhere, so it's better just to avoid them"*

4.3.2 Lack of open spaces / public spaces

The city of Nablus generally has shortage in open spaces such as public spaces, gardens, and playgrounds. Only few places are the main destination for the families at weekends or vacations to practice activities. Unfortunately, large areas and neighborhoods are not provided with any spaces or entertainment facilities to gather residents and create opportunities for higher interaction amongst them, and Rafidia is one of them. Figure (51) illustrates the footprint of buildings demonstrate large area comparing to the area of open spaces left, hence that it includes all streets, private and semi-private open spaces, while there are no public spaces in the sample area.

Lack of public spaces around the buildings or in the neighborhood for women and kids or families as a whole have a significant impact on the social system and ability of residents to interact. The majority of the population with children said that there is no safe or suitable place for children, whether in the building itself or in the surrounding area, so they prefer to keep them at home.



Figure 51: map of open space (in blue) vs. built up area (in white) in the sample area. Source: researcher based on municipality maps, 2017

“When my grandchildren visit me, I keep warning them about playing inside or on the stairs because it will be annoying for neighbors since there is no place for them to play and we don’t have balcony”

“Even kids by now recognize that high building means no playing except in the parking or somewhere else”

About 85% of buildings lack playing areas for kids, mostly they use parking, street or near facilities like schools for playing. While 15% have small areas around the buildings for kids but it's not qualified to be play ground or completely safe. It was only one garden was found in Rafidia , close to the sample area, with area of 1250 m², but it was very small, as shown in (figure 52). This ended up with children trapped in the apartments and isolated from others and surrounding environment because it's unsafe for parents to let them play in the street.



Figure 52: Arial photo and map shows the location of the only public garden close to study area. Source: researcher 2017.

One of the kids amongst others in the streets mentioned that a friend of them lives in the same building but in the upper floors can't play with them; he said *“his mom won't let him come to play in the street with us because she thinks it's dangerous”* and he continues *“even our mothers try to keep us in the apartment but sometimes we sneak out”*. Although 35% of parents let their kids play around the building or at the parking, but they also still find it unsafe and no place is qualified for kids and their needs. This issue has negative consequences on kids and their families too.

4.3.3 Bad integration of urban elements

As mentioned previously, the distribution and arrangement of buildings give the impression of a weak relationship between these buildings and other urban elements such as streets that separate them. This has had an impact on the level of privacy between residents and neighbors, as well as on the quality of ventilation and lighting of residential units in high buildings or even the adjacent other buildings. On one hand, most of the high-rise residential communities in the study area lack privacy, as the buildings are next to each other and only separated by the minimum distance of setback, thus facing windows and balconies are limiting their use and the residents' discomfort, see (figure 53).



Figure 53: Aerial photo and pictures shows the distance between buildings in the sample area.
Source: researcher

On the other hand, the narrow distance between the buildings obscures the ventilation and sun needed for the buildings and residential units within them, which is not available in most of the area, where high residential buildings may be adjacent to another high building or low rise building with one floor or two, in both cases the ventilation and privacy reduces due to height. This affects the quality of housing negatively and therefore the inconvenience of residents and refrain from communicating with others in their surroundings because of the sense of discomfort or safety.



Figure 54: hard topography between buildings in Rafidia. Source: researcher 2017.

Topography has played a role in the difficulty of gathering buildings and connecting areas through streets, which indirectly affected the capability of communication among the people due to the urban expansion into areas with a steep slope and difficult access in Rafidia. Despite the presence of outdoor stairs and ramps as a link between the levels, see (figure 54, 55), but the high decline hinders movement, even within a small area that may not exceed a group of several buildings in some areas. This made pedestrian mobility significantly less according to researcher observations, at different intervals during the day or week.



Figure 55: stairs between buildings to move between different levels. Source: researcher 2017

4.3.4 Absence of urban features

In general, the area lacks some architectural and urban features, which are characterized by their lack of quality, if any. For example, there is no pavement on most streets, otherwise its deteriorating state and not suitable for walking either in terms of insufficient width to pass several pedestrians next to each other or the need for maintenance, which reduces the desire of people to enjoy walking and meet outdoors in front of buildings or in the neighborhood for the lack of sidewalk eligibility even for kids strollers and the elderly or people with disabilities, see (figure 56).



Figure 56: pictures of pavement and sidewalks in the sample area. Source: researcher 2017.

4.3.5 Building form

1. Façade design: The façades are mostly regular and monotonous, as they are repeated on several floors in a manner that is not thrilling, possibly due to the inability of the building configuration to enrich the façade. The commercial orientation towards building and reducing cost has contributed to the creation of a rigid facade that does not often reflect the internal structure of the building, see (figure 57). The lack of dynamism and harmony can generally be seen as buildings in Rafidia are often huge blocks that rise to 7 floors and more on the same pattern and end with roof floor. Recently, with the appearance of the law of the floor ratio, the equation changed slightly and contributed to the development of the shape of the building through the retreats after a certain number of floors, which was reflected on the façades positively.



Figure 57: pictures of some elevations in the study area. Source: researcher 2017.

2. Balconies and terraces: Also important standards to be followed in the design of these buildings are the communication and transparency between the apartments and outdoors, through several elements, most notably the balconies, see (figure 58). All residents interviewed assured the importance of open spaces in the apartment like balconies and terraces, and its role of easing up living far from ground and isolation from street life and neighborhood. In the sample, 43% of apartments have only one balcony or terrace, which is satisfying for the most but not enough sometimes because of area or large number of family members. And 37% of apartments have 2 balconies that include 3 apartments on the roof with terraces. While 5% of apartments don't have balconies or terraces, and they all agreed on their need to have at least one.



Figure 58: pictures buildings that have balconies and terraces in the study area. Source: researcher 2017.

The significance of balconies as a social space related to the activities it may include, 15% of families use it very well for kids to play, entertaining area and relaxing ,and 32% find it useful and important area of the house. However, the number of balconies is not the most important factor of residents' satisfaction, other issues like area, orientation, and connection with other rooms; view and shading methods determine its efficiency, where 20 % of people said that their balconies need some changes in these aspects. On the contrary, 24% of families don't use it all; it's either closed or shared with another room to enlarge the space.

Only less than half of those who have balconies or terraces in the sample are using it properly and it accomplish its purposes, and mostly those are the ones live in the roof apartments with big terraces, or those who have balconies with decent areas. While the rest of apartments aren't capable of using the only open space attached directly to the apartment.

3. Parking: as it not might be seen as a significant indicator related to social interaction in high buildings, thus parking existence could either allow or impede resident's interaction. On one hand, 65% have parking but not all of it is functionally working well or enough for all residents. Mostly there are problems with parking entrances and its slope, circulation of cars and columns arrangements, visibility and ventilation. And sometimes building owners change parking use into storages, which is against building license and regulations where a 5000JD fine set for transformation of parking into stores in Rafidia. However, in many buildings residents use

parking as a social space to use for multi purposes like meetings, events and play area for kids. On the other hand, although the regulation of Nablus municipality requires one parking lot for each residential unit, 35% of high residential buildings in the sample have no parking at all, either outdoor parking around the building or as a story included in the building, which resulted of random parking on the side of streets and obstructed traffic movement.

Eventually, the large number of people that contained in these high buildings are looking for an escape from the small apartments, but the design or planning of the area ignored the open spaces as a vital element of physical environment and its impact on resident's life, and the random nature of spatial layout and buildings arrangement didn't allow the formation of proper spaces for resident's to enjoy and interact. Density, spatial layout and its quality, open spaces, housing type and buildings accumulation seem to have a contribution to the social behavior of residents and work as factors of defining the level of interaction.

4.4 Assessments of social relations in high buildings

As it is essential that urban, social and visual context to be considered in the development and design of balanced urban environment (*Ibrahim, 2007*), the new urban context of high rise buildings was challenging in the aspect of social relations and interaction, where seems it

has created an uncomfortable environment for residents in Rafidia that resulted in isolation and a desire of less communication between people.

through observations and interviews with residents of buildings in the sample it was found that almost none of the people know the neighbors of the surrounding buildings or the same neighborhood, and they pointed out that this is due to the high density and the large number of apartments in one building, so there is no need to look for more in the neighboring buildings, also the lack of public areas in the neighborhood reduce opportunities to meet neighbors from different buildings.

The presence of high buildings for housing purposes is a reality on the ground and cannot escape the problems that accompanied it especially social issues. And even over time, this uncomfortable environment that urban form generates, either from urban spaces or buildings, didn't encourage more active social life, where residents varied in their living period, as 33% of them have lived in the current apartment for more than 10 years, 30% were there for 5-10 years, and 37% have been in their apartment for less than 5 years. However, it was noticed that not necessary all residents who lived in the same apartment for more than 10 years knew all neighbors in the same building well or even most of them. Time wasn't a significant factor in changing social behavior of people. In fact, 27% of residents didn't know any of neighbors at all and they didn't show any ability to get to know them, while 35% recognized few neighbors from the same building but with no regular interaction with them. Only 25% of

residents know all neighbors and had connections with them including meetings or visits. However, they complained of lack places for activities and kids playing, or spaces to gather them with each other in the building or in the neighborhood.

4.5 Social problems of high buildings

4.5.1 Cultural differences:

Urbanization with all its driving forces has given the opportunity for people from different areas and villages to move to urban center of Nablus and to be engaged in urban life. That means that mixtures of different people from different backgrounds have to live together in the city and share housing and neighborhoods. As the first sight, the idea might seem easy and rich experience for community but in reality it's mostly undesirable and create segregation and discrimination amongst people based on background.

People who are from villages, camps, and urban areas live together in the same building, however connections are weak or not existed because of cultural differences that prevent communication between residents. Many families explained their concerns of having contacts with other neighbors, who come from camps for example, and they use the culture and environment as an excuse.

4.5.2 Residents background and social interaction (housing experience):

Many factors affect the Satisfaction degree with their residence, such as the quality of physical environment and services. But one factor is directly connected with residents themselves that is their residential background and their previous experiences with housing. The significance of this issue is that it indirectly impacts the ability to develop social relations with others around and feeling comfortable with place and people.

The ability to adapt new environment is an important aspect of feeling comfortable in housing. Sometimes the inability to adapt to the new housing type, and thus also the surrounding, leads to social isolation, which is the common case of moving from detached house into high building, or leaving the village into urban center.

Another 54% of families were living in houses before moving into apartments. And 10% of these came from villages. It was hard for the most to accommodate with the different type of life, give up privacy to a certain level, and many other difficulties with the physical environment. For example, Dr. Shadeed, who lived for the last 10 years in high building in Rafidia, expressed his desire to move back to his village soon, although he will have to commute for 40km every day to get to his work in the city. He explained

“High buildings life style wasn’t comfortable for me and my family and I prefer to have our own house with spaces for kids and activities”.

Nevertheless, 46% of families were living in apartments in high residential buildings before their current apartment. Those who are used to live in apartments and familiar with its physical structure and social environment are more satisfied and compatible with high buildings life style because they are more used to it, and it’s the only type they have experienced. So they complain less about certain problems than residents who moved from houses to apartments.

“When we used to live in a house, neighbors were more like family because we grow up together, but moving to the apartment makes people hesitate more to make connections”

4.5.3 Stress and restriction

Many studies were concerned with the psychological effects of different types of housing on people. Fanning (1967) has a significant study about families in flats, it was found that households living in apartments had a 75% higher susceptibility to the disease than families living in houses, in addition to the susceptibility to neurological disorders, especially among women. The latter was one of the biggest differences between them, and the reason for this is the size of small apartments compared to houses, and also the imprisonment of the family in the apartment, which cause social isolation that researcher believe is the cause of neurological strikes.

These results matches what women in the sample in Rafidia mentioned about the feeling of restriction and stress, where 82% are house wives but many of them have worked before. The main problem with living in a high building for this group of women is staying at home for a long time, without any kind of activity, or any space in the building or the surrounding that allows interaction with outer context and other people. Lack of interaction with nature and human being add more stresses and they feel restricted in the apartment.

“It’s annoying to stay in the apartment for a long time between for walls, also kids”

“Living in high building always gives the feeling of being restricted, in case you want to wash windows you would be afraid to bother other neighbors”

On the other hand, 18% of the sample is working women. Some has explained that work outside the house, taking care of kids and house work doesn’t leave them any extra time to interact with neighbors even if they wanted to. Other working women expressed their satisfaction with not having good relations with neighbors because it helps avoid troubles and they prefer more privacy.

This suppression of this type of housing is evident on the children and elderly too, and their relations with each other in the same building or

neighborhood. For children, their inability to play in the surrounding area of the building because of the lack of places dedicated to that and also cannot visit each other in the apartments because of small space restrict their movement.

An old woman said “I can’t leave the apartment very often because we don’t have evaluator and we live in 4th floor”

4.6 Conclusion

This chapter demonstrated the changing landscape of Rafidia as the morphological analysis discussed the development of Land use, street, plot and building pattern. These elements’ change have affected physical environment of Rafidia and resulted with growing density of buildings especially with vertical expansion and high buildings spread, unorganized spatial layout and random accumulation of these buildings. So that the urban context of high buildings created uncomfortable environment for residents and people, consequently that influenced social interaction negatively in the same building as well as the surrounding, and it impeded interaction due to bad quality of physical environment.

By demonstrating the social problems resulted of living in high buildings in the last section, it’s significant to develop and recommend modifications to improve the physical environment of high buildings in Rafidia, in order to enhance social life and reduce problems resulted.

Chapter Five

Conclusion and Recommendation

5.1 Main finding

Through interviews and observations the study found that generally Physical environment affects social interaction of people, it also concluded that poor physical environment of Rafidia has key role in people social interaction level. The research looked further into the physical characteristics that contribute to this relation and the problems of physical environment and found that high buildings (or height generally) is not the main problem related to social interaction, its more about the quality of physical environment of building and its surrounding. Lack of public spaces, unqualified open spaces (streets, sidewalks, building surrounding), fragmented buildings accumulation and unorganized spatial layout are weaken social interaction amongst residents in Rafidia.

5.2 Conclusion

The key for change and creating a good quality physical environment to enhance the social life of people in high residential buildings in Rafidia is through different strategies at various levels, such as urban planning and design policies as well as architectural and building design. There are three main players who can lead the change, as they are in regulatory bodies, urban developers and designers. Although each has an important role to play in the development process, cooperation among them is what makes development more efficient.

5.2.1 Planning considerations and building regulations

Based on the obstacles facing the Municipality of Nablus in terms of planning and policies for the control and regulation of high buildings, mentioned in Chapter II, there are various steps that can be taken to rehabilitate the physical environment of high buildings in the aspect of planning and regulations regards to land use, city expansion, and building codes.

1. Expansion problem: to overcome the issue of high density and limited expansion in Nablus, the municipality has applied to the local government with border expansion request in 2016. This will help to limit the vertical expansion of buildings and control heights in the future, which means less social problems as ones mentioned in the last chapter. This strategic vision will provide the city a new life, otherwise it will turn into a repulsive area for the population as municipality engineer explained. Decentralization polices and creating new sub centers is essential to overcome problems with infrastructure capacity, traffic and massive buildings that exceeds 30 apartments in each one and heights.

City borders expansion is the only strategic solution for Nablus, otherwise the situation will be more critical and promising with destructive future. For now, Trying to improve the current situation and having a clear vision for the next 50 years is recommended but no radical changes can be done.

2. Land use: Part of the new strategies of Nablus municipality towards decentralization was to convert some of Rafidia lands into commercial use (local commercial), where city center is moving towards Rafidia in the west. Which takes some procedures such as public transportation activation to connect the center with new areas of expansion by busses or caravans already used now.

3. Height problem: it's important to work on limiting height in the new areas under development through specify certain areas for high buildings. Planning is the key. Society is not ready yet to lie in high buildings and adapt its system, people are struggling with it because it's against our traditional social culture. This refuse of the surrounding environment affects their psychology and increase pressure and stresses. To specify a certain area in the city for high buildings will prepare people gradually that they are moving to such area and situation, and they won't be uncomfortable with this transformation from small houses with one or two floors into high buildings. Streets that used to have 20-30 family all along the way have transformed into one high building, this affected area capacity of residents and services and negatively impacted old residents.

The new system of construction by ratio floor area (floor ratio) declined many problems. For example the change of usual form of building that follow setbacks exactly into gradual building and steps or cantilever have affected urban form of neighborhood, but more important was that

municipality forced specifications on buildings form which affected building design itself and urban physical environment.

4. Housing policy (D housing): In the light of increased demand on apartments, Facilitation land owning for people and attract them to the idea of buying land and building a small house that meet their needs but also to consider future expansion is vital but ignored strategy. This strategy will decrease pressure and demand on apartments in the market and slower the development and spread of high buildings. The Creation of D residential area will allow to classify small areas of land like 350 m², which leaves 150 m² available for building after considering setbacks. Municipality have to work on limiting high buildings areas construction and develop its standards and requirements to include good services, gardens, open spaces, kids playing areas and usable setbacks.

5.2.2 Urban design considerations

Based on the findings in the previous chapter, where problems of physical environment were discussed, and considering the recommendation of Rapoport and Gehl to improve social life in urban area, buildings, and open spaces, the following guidelines could work to enhance urban life by modifying physical environment of high residential buildings in Rafidia:

1. The desire of high buildings residents to meet has been hindered by the lack of public spaces to gather them instead of apartments, as they seek maintain privacy. Thus, it's essential to provide public spaces, reuse or maintain existing ones through some strategies:

- a. Maintain entrances, front of buildings, and setbacks and re use these small areas for public activities or building residents as families or kids. It should be secured, redesigned and defined to be comfortable.
 - b. Share setbacks of each two buildings or more and turn it into public area for each few buildings will allow more efficient use of lost spaces between buildings.
 - c. To provide social space in the high building itself as alternative of outside one (if not possible) such as transforming buildings roofs into roof gardens, or to use the parking floor for social events especially in the day time as some buildings residents already have done.
2. Develop more effective use of some elements like balconies and terraces through some adjustments, such as shading system that helps to maintain privacy but keep the connection between indoor and outdoor, as these balconies are not well used because it has no privacy because of small distance between buildings. However, this shading have to be light, perforated, dynamic and durable material.
 3. Redesign facades through modifying some adjustable elements in order to create unity, type and harmony in the street. For example, change openings frames, modify entrances to be more clear and strong element in the façade, and enhance green elements through planting windows and building surrounding.

4. Rehabilitate movement elements rather than streets such as small paths between buildings, pavement, outdoor ramps and stairs to make it comfortable for users especially elders and kids.

5. Also some other guidelines for future design and projects to consider:

1. The regulations of building should enforce and connect height with the area of social space or open space within the building. So in order to increase the floor area ratio, the developer need to provide certain social space like roof garden, public areas surrounding the building.

2. Limit heights with maximum 4 floors except certain areas where buildings can rise more.

3. To replace internal parking of each buildings with public parking for each neighborhood, it will work as spaces between buildings and improve circulation around it.

4. Change the spatial layout of high buildings from small footprint separated masses of high buildings into more grouped accumulations or buildings that has large footprint, in order to reduce the lost space between buildings and use it more effectively as one big open space that serves each group of buildings.

5.3 Recommendations and future research

1. This study have the potential to be developed and open the door for more detailed studies in many aspects, such as detailed study of high buildings itself through analyzing its physical form and interior relation between apartments, to enhance better social environment. This direction was already taken in consideration while preparing this study, even until last stages, however it's been deleted as the researcher find it distracting for the current study.
2. Some future researches can support the subject of this study by using different modern tools as they are being developed recently. Space syntax and Geo design are the most related analytical tools to be considered. The latter has been developed by Yu – Ye and his colleges in the University of Hong Kong. His study entitled “**Form Syntax**, As a contribution to geodesign: a method to measure urban form quantitatively and assist urban design”.

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Appendix

Appendix (1)

1. Semi structured interviews draft

Here are some of categories and questions that were prepared for the Semi structure interviews in the sample area:

1. General information about residents

- a. Number of family members
- b. Any elders or kids
- c. Households type of work
- d. Rented or owned apartment

2. Living in a high building

- a. For how long
- b. Background of the family (city, village, camp)
- c. where did they live before their current apartment (detached house/ high building/ family building)
- d. the reasons of living in high building currently
- e. what do you think of living in high buildings (pros and cons)

3. Relation to neighbors

- a. neighbors in the same building
- b. neighbors within the next buildings

- c. strength of relation

4. High building and urban context

- a. building itself
- b. services / design / number of apartments/ building use / ventilation / vertical circulation / privacy / noise
- c. urban context
- d. relation of building to surrounding / open spaces and it quality / public spaces / near buildings / relation of building entrance with street / distance between buildings / play grounds

5. apartment details

- a. rooms /area/ ventilation / relation of interior spaces / privacy / isolation/ balconies / safety
- b. family members behavior indoor / comfort level
- How do you think kids are being affected by living in high building / women/ elders (if any exists?)
- How can people get together in the same building or neighborhood in your opinion?
- What changes you recommend that can improve social life in high buildings?

Appendix (2)

Nablus municipality building regulation (2006)

(Setbacks and floor ratio)

ثانياً: نظام النسبة المئوية والطابقية وارتفاعات المباني في مناطق مدينة نابلس السكنية			
الارتفاع	الاسم	جانب	خلفي
أ- الحد الأدنى للارتفاعات في سكن (أ) ١/ الحد الأقصى للنسبة المئوية ٢٩,٩% والطابقية ١,٥% سكن أخص نسبة طابقية ١٦,٠% ونسبة مقوي ٢% وارتفاعات ٥,٣,٤	١	٢	٣
ب- ١/ الحد الأدنى للارتفاعات في سكن (ب) ٢/ الحد الأقصى للنسبة المئوية ٢٩,٩% ٣/ الحد الأدنى للارتفاعات في سكن (ج) ٤/ الحد الأقصى للنسبة المئوية ٢٩,٩%	١	٢	٣
ج- ١/ الحد الأدنى للارتفاعات في سكن (ج) ٢/ الحد الأقصى للنسبة المئوية ٢٩,٩%	١	٢	٣

ثالثاً:-

- ارتفاع المباني طابقين وروفا في منطقة سكن (أ) و (أ خاص).
- ارتفاع المباني ٤ طوابق حسب عرض الشارع في منطقة سكن (ب) وحسب عرض الشارع.
- ارتفاع المباني ٤ طوابق في مناطق سكن (ج) و (د).
- ارتفاع المباني على طرق التسوية والإسراج أربع طوابق فقط في منطقة سكن (ب) و (ج) و (د) وتطبق في منطقة سكن (أ).
- البناء فوق البناء القائم المرخص يجب الالتزام بالنسب الطابقية ونظام الارتفاع.
- الزيادة بارتفاع يزيد عن ١٠ طوابق تحتاج لموافقة اللجنة على المخططات الأولية والالتزام بمتطلباتها.
- البناء فوق البناء القائم المرخص يجب الالتزام بالنسبة الطابقية ونظام الارتفاع.

رابعاً:- في حالة وجود تسويات تحت منسوب الشارع المعتمد في الارتفاعات يسمح بما يلي:-

- طابق تسوية وطابق أرضي وروفا في منطقة سكن (أ) و (أ خاص).
- طابق التسوية وأي طوابق أخرى بمجموع أربع طوابق وروفا في منطقة سكن (أ) في حالة زيادة التسويات عن ترميزين وبما لا يقل عن طوابق التسويات ٤ طابق أرضي + روف.
- طابق التسوية وأي طوابق أخرى بمجموع ٢,٤ طوابق في منطقة سكن (ب) وفق البند من ١٦,٧ وحسب عرض الشارع.
- ١- طابق التسوية وأي طوابق أخرى بمجموع أربع طوابق في منطقتي سكن (ج) و (د) وما هو موضح في بند ٥.
- في حالة وجود البناء تحت منسوب الشارع يسمح وفي جميع الأحوال الارتفاع عن معدل منسوب الشارع ١٦,٥ م وعمق ٢ م فقط للموازين التي لا تزيد عن الارتفاع المقرر.
- أو عمق زائد كما تقتضيه النسب الطابقية في مناطق سكن ب ٥.
- إذا زاد عدد التسويات في منطقة سكن ج, د, ب عن ٣ تسويات فينتقل خط البناء الرئيسي لمسافة لا تقل عن ٣ أمتار من ظهر الطابق ٤ في سكن ج, د لتتم إزالة الشرائط التي يمكن (ب) التسويات ليكون البناء يمتد ١٢ م حتى الوصول لمنسوب أربع طوابق فوق منسوب الشارع العلوي.

٧. في حالة البناء على الأرض الطبيعية يكون الارتفاع ٧.٠ طوابق حسب عرض الشارع محاذية للجهة المواجهة من الشارع في مذكور ب والارتفاع ٧.٠ طوابق في مذكور ج.
 ٨. أ- وسبعة طوابق من أول نقطة سفلية في البناء على الأرض الطبيعية تحت منسوب الشارع في سكن "ب" وأربعة طوابق في مذكور ج.
 ٩. وفي حالة زيادة التسويات عن تسويتين يصبح البناء فوق منسوب الشارع أربعة طوابق ويسقط ١٦م للارتفاع عما حدد في البند (١) من نفس المذكرة.
 ١٠. عند اعتماد الأرض الطبيعية في تشكيل البناء يكون عدد طوابق المنطقة المسموح به وخط موزي للأرض الطبيعية وبما يحقق أربعة طوابق، وبما لا يقل عن ١١م فوق منسوب الشارع عند وجود التسويات تزيد عن تسويتين.
 ١١. جميع مساحات التسويات تدخل في النسبة الطابقية ما عدا ما هو مبين في البند ١١ والبند ١٢.
 ١٢. يسمح ببناء طابق واحد أو اثنين يعمق لا يزيد عن ٨م وقسمة لا تزيد عن ٤٠% لمجموعهما من مساحة الطابق الرئيسي تدخل في حساب الارتفاع، لا تدخل في حساب المساحة بالمساحة الطابقية.
 ١٣. المساحات الملاصقة للشارع في التسويات وبارتدادات جانبيه وعمق لا يزيد عن ٨م من وجه البناء لا تدخل في حساب النسبة الطابقية أو النسبة الطابقية.
 ١٤. المبنى الفرعي لا تدخل في حساب النسبة الطابقية وكذلك النسبة الطابقية وكذلك طابق الروف في سكن أ، أخص.
 ١٥. في حالة وجود المبنى على شارع عرقي فيعتمد الشارع المعرض في تحديد الارتفاع كما هو مذكور في المواد السابقة.
 ١٦. في حالة وجود المبنى على شارع ملال أو درج فيعتمد المنسوب عند أخفض نقطة في البناء بالشارع أو الدرج وتطبيق المادة (٩).
- بمجموع مخطط موقع العام من أجل ترخيص البناء :-

٣- مئاسيب الشوارع من البلدية مربوطة بمئاسيب شوارع وتصاميم البلدية.	١.C.D. سي دي)
٤- بيان مئاسيب الأرض والأراضي المجاورة للموقع وكذلك الأبراج والطرق المقترحة.	٢.C.D. سي دي) والكهربائية والميكانيك

٥. بيان الأبنية القائمة والأبنية المجاورة والأسوار وأوجه الإنشاءات على الطرف الآخر والطرق والشوارع المحيطة بالقطعة المعنية وأبعادها وأبعادها من الجوار.
 ٦. مخطط كتوري للأرض.
 ٧. تثبيت الحدود على رتبة الأرض.
 ٨. الحصول على تحديد الشوارع والطرق المحيطة بالقطعة وكذلك المئاسيب من البلدية والحصول على ترسيم حديث.
- تخصيص مخطط الأفراز :-
- ١- ذلك في الأفراز مربوط بالاحداثيات القطرية.
 - ٢- مئاسيب الشوارع من البلدية مربوطة بمئاسيب الشوارع وتصاميم البلدية والحصول على تحديد شوارع وترسيم حديث.
 - ٣- مخطط كتوري وبيان مئاسيب أرض الجوارين والطرق المقترحة.
 - ٤- بيان كامل ما هو موجود على رتبة الأرض وكذلك الأبنية والقاميل القريبة من حدود الجوارين والشارع المقابل.
 - ٥- تثبيت الحدود الأصلية والأفراز على الموقع قبل عملية ختم المخططات من قبل البلدية.
 - ٦- المخططات المقدمة مختومة من قبل مساح مرخص.

التاريخ:

التنظيم

اسم المالك/ الطالب:		رقم المشروع التنظيمي:		الرقم:		رقم الحوض:	
الاستعمال:		مساحة القطعة:		رقم القطعة:		رقم الحوض:	
الحشد الأدنى		الحشد الأعلى		الحشد الأدنى		الحشد الأعلى	
مساحة القطعة	وجه الاستعمال	النسبة المئوية	النسبة المئوية	عدد الطوائف	أناسي	جائتي	عقلي
القطاع القسري والقطاع من 1م ² 00	سكن ب	49.9%	22.0%	7	4	3	5
قبا لثوق للقطع الجديدة			27.0%	6			
			24.0%	5			
			19.0%	4			
القطاع المستقر مع الساحل من 1م ² 00 وساحل من 1م ² 00	سكن ب	49.9%	19.0%	4			
التي تطل عليها من 1م ² 00 وساحل من 1م ² 00							
1م ² 00 مياه تطل على القبة من 1م ² 00							
لا تطل على من 1م ² 00	بناء عالي			2 طابق			

ملاحظة: اعتبار طرق التسوية 6 متر بالاتزان رقم 20 بتاريخ 1996/12/11 للطرق القائمة.

خطة الدلائل

خارطة الفرس

منها الرسم ١ :

تاريخ	عدد النسخة	توقيع	التاريخ
مجلس التعليم	مجلس	توقيع	التاريخ
مجلس التعليم	أمن ومراجع	توقيع	التاريخ
مجلس الإدارة	مراجع الحسابات	توقيع	التاريخ

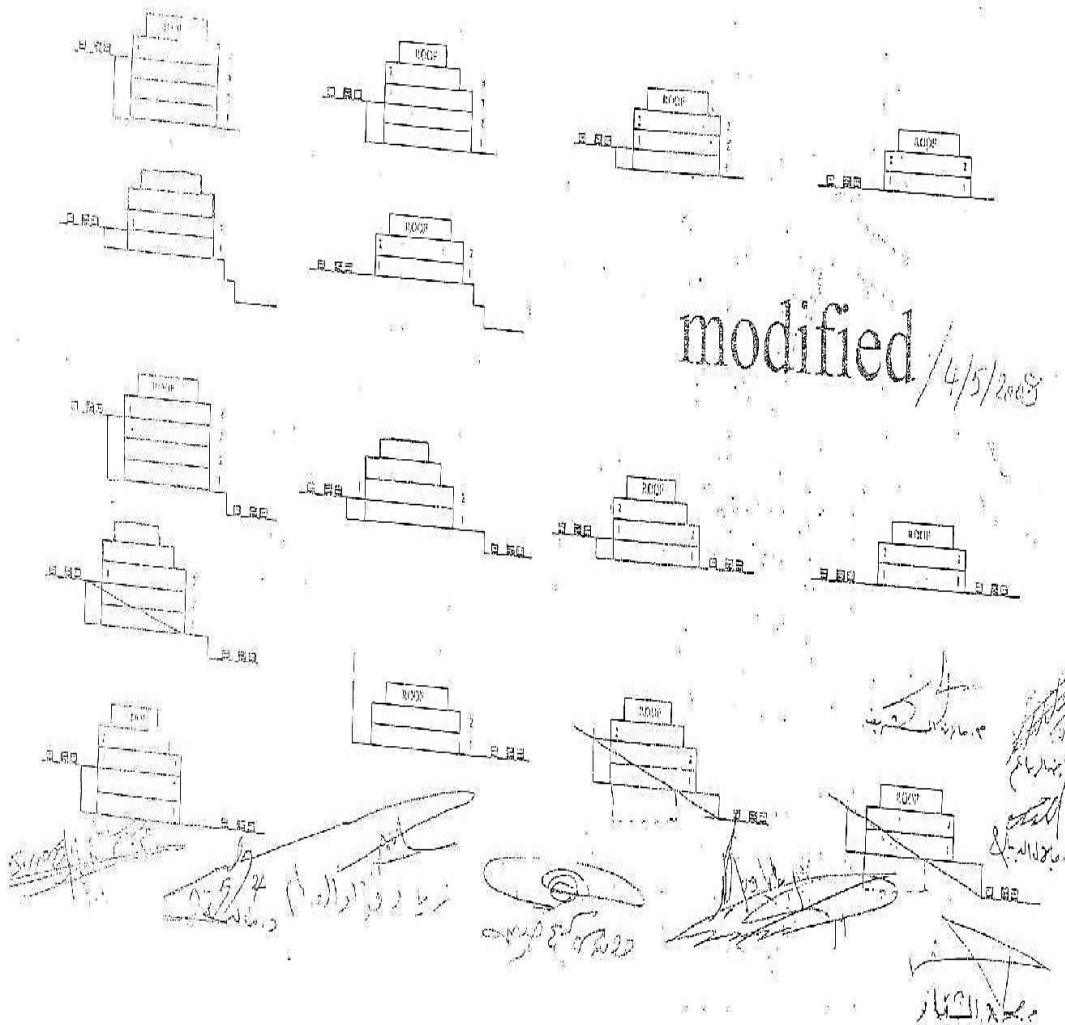
[illegible]

A	H.P.	A Special	MIN. R.D.
MAX		MAX	A Special
P.A.=10.0%		P.A.=10%	F=5
T.F.A.=150%		T.F.A.=160%	S=5
H.T.=10'	242=roof	H.T.=2	D=5

NO FREE PARKING & SERVICE FLOOR

CLASS A

modified 4/5/2008

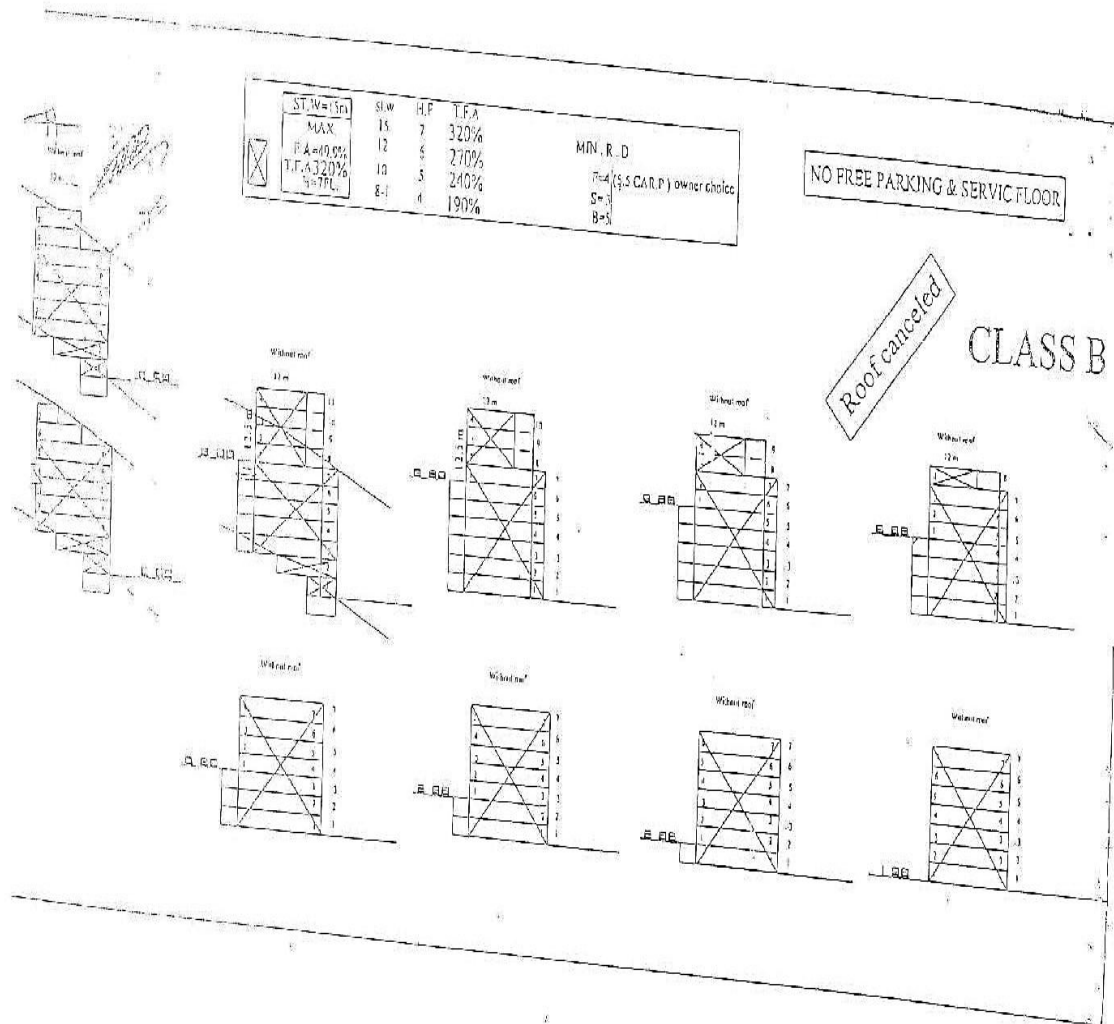


NO FREE PARKING & SERVIC FLOOR

Roof canceled

CLASS B

CLASS B



جامعة النجاح الوطنية

كلية الدراسات العليا

توجهات لزيادة التفاعل الاجتماعي بين السكان في العمارات السكنية
العالية من خلال تعديل البنية الفيزيائية، حالة دراسية: رفيديا/ نابلس.

إعداد

ألاء سعدي محمود القواسمي

إشراف

د. محمد عطا يوسف

د. زهراء زواوي

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في الهندسة المعمارية،
بكلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس - فلسطين.

2018

ب

توجهات لزيادة التفاعل الاجتماعي بين السكان في العمارات السكنية العالية من خلال تعديل
البنية الفيزيائية، حالة دراسية: رفيديا/ نابلس.

إعداد

ألاء القواسمي

إشراف

د. محمد عطا يوسف

د. زهراء زواوي

الملخص

واجهت مدينة نابلس خلال تطورها تحديات نجمت عن الإدارات السابقة التي توالى عليها خلال القرن الماضي. وقد نتج عن ذلك ندرة في الأراضي، مما شجع التوسع العمودي وظهور المباني السكنية العالية في انحاء المدينة لمواكبة النمو السكاني. وقد صاحب هذا التغير في التشكيل العمراني والبيئة المبنية تغيرات في الجانب الاجتماعي وتفاعل الناس فيما بينهم. لذلك، وانطلاقاً من الإيمان بقدرة العمارة على تشكيل حياتنا وتغيير سلوك الناس من خلال التصميم، يهدف البحث الى فهم تأثير البنية الفيزيائية للمباني السكنية العالية على تفاعل الناس في هذه المباني ومحيطها. وذلك من خلال تحليل الشكل الحضري الحالي لمدينة نابلس بشكل عام، ودراسة البيئة الفيزيائية المبنية وعلاقتها بمستوى التفاعل الاجتماعي بين سكان المباني العالية في منطقة رفيديا كحالة دراسية.

في النهاية، عمل البحث على تطوير توجيهات وارشادات لإجراء التعديلات الممكنة على المباني السكنية العالية الحالية ومحيطها الحضري، والذي من شأنه تشجيع الناس على التفاعل فيما بينهم. وكذلك وضع توصيات للمباني الجديدة مما سيساعد المخططين والمهندسين المعماريين والمطورين العقاريين وصانعي القرار على تحسين خططهم وكذلك المشاريع والتصميمات المستقبلية للمباني والفراغات الحضرية، لتحقيق التوافق بين المباني العالية والناس وحياتهم اليومية.

