

Physical and Functional Evaluation of Mehmet Akif (Dereboyu) Street in Nicosia

Atieh Salimi

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Approval of the Institute of Graduate Studies and Research

Prof. Dr. Cem Tanova
Acting Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Architecture.

Prof. Dr. Özgür Dinçyürek
Chair, Department of Architecture

We certify that we have read this thesis and that in our opinion; it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Architecture.

Prof. Dr. Şebnem Önal Hoşkara
Supervisor

Examining Committee

1. Prof. Dr. Şebnem Önal Hoşkara

2. Assoc. Prof. Dr. Mukaddes Faslı

3. Assoc. Prof. Dr. Beser Oktay Vehbi

ABSTRACT

This study analyzed the role of physical and functional characteristics of public open spaces in the case of Mehmet Akif (Dereboyu) Street, Nicosia. This study evaluated the different form of public open spaces such as streets and parks. Different types of streets affect on the urban design and usage. Mehmet Akif (Dereboyu) Street as the main street of Nicosia has the highest potential to be the best active and vital public open space in Nicosia generally and Northern Cyprus specifically. It is worth to mention that there are some deficiencies in the design and construction along the street which all mentioned in the recommendation part.

Generally public spaces identify the culture and characteristics of the urban area through providing social interaction and human communications. Hence, public open spaces play an important and vital role in improving the social life alongside of city structure. Streets as the main components of the public open spaces as mentioned before, gather people for exchange of cultures, ideas, lifestyles entertaining and etc.

Streets are the most useful part of public spaces during history. Different activities such as shopping, walking, sitting and greeting happen in streets. Streets are both for social activities and access. At the end of the study recommendation and future research paths is presented.

Keywords: Public Open Space, Street, Mehmet Akif (Dereboyu) Street, Nicosia

ÖZ

Bu calisma kamusal açık alan olarak sokaklari incelemektedir. Kibris'in baskenti Lefkosa'nin en onemli arterlerinden biri olan Mehmet Akif (Dereboyu) Caddesi, bu tezin calisma alani olarak secilmistir. Calismanin temel amaci, Mehmet Akif (Dereboyu) Caddesi'ni bir kamusal acik alan ele alarak, soz konusu sokagin fiziksel ve fonksiyonel ozelliklerini incelemektir.

Bir alan calismasi olarak ele alinan bu arastirma, birinci ve ikincil kaynaklarin taranmasi ve alan analizlerini arastirma yontemi olarak kullanmistir.

Problemin tanimi, amaclar ve metodolojinin tanitilmasinin ardindan, ikinci bolumde bir kamusal acik alan olarak sokak, kuramsal anlamda fiziksel ve fonksiyonel ozellikleri ile irdelenmis, ve alan calismasinin alt yapisi olusturulmustur. Bu altyapidan yola cikilarak ucuncu bolumde Mehmet Akif (Dereboyu) Caddesi, yine fiziksel ve fonksiyonel ozellikleriyle incelenmis, ve son bolumde calismanin genel bulgulari ilea di gecen sokak icin bazi oneriler sunulmustur.

Anahtar kelimeler: Kamusal acik alan, sokak, Mehmet Akif (Dereboyu) Caddesi, Lefkoşa

DEDICATION

To My Lovely Mother

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Chapter 1

INTRODUCTION

Nowadays more attention is given on to need for quality in the public spaces and the human dimension in the city planning. Importance of public spaces is universally accepted by one and all. The question is what makes public space more successful? The designer is trying to give best model of good public spaces.

When a city or town is to be planned from the scratch, the designer can give the best with the help of his design input. How well the people will accept a public space if it is designed without taking into account their taste and needs? It may fail through it may be the most ideal design situation.

The street and the built environment along the street both work in character of the place and connection to determine the life on the street. Though it is easier at this level to classify streets and the city on the basis of the function alone; by defining the different standards and qualities that go with the functional aspects a much stronger picture of the city is framed.

People coming to certain public space have different reasons to come and therefore multiple activity options on the space make it more convivial. Mixed used activities generate maximum public response.

Street as the public open space should provide different functions along the ground floor focusing on the needs of the users. This study reviews the physical and functional characteristics of the main street of “Mehmet Akif (Dereboyu)” located in the northern part of Nicosia, the capital city Cyprus. This street is one of the most visited streets in this country. Most of the locals and visitors visited this street along their travels or daily life.

1.1 Problem Definition

Streets as the public open spaces should attract the attention of the locals, tourists and drivers to stop and spend time with variety of activities and entertainment elements or enjoying the design and relaxation. Unfortunately, most of the streets cannot attract and supply the needs of the pedestrians. The case of this research, Mehmet Akif Street (so called Dereboyu Street) includes sorts of activities and entertainment but lack of user-based urban design decreases the user percentage use of this vital street. Designing the urban environment of the street based on cultural and social functional aspects with use of physical and functional dimensions should be evaluated.

Variety of activities along the street is the main attractor element for users. Dereboyu Street has sorts of activities but lack of appropriate design and physical aspects decrease the face of the street.

1.2 Aim, Objectives, Research Questions

This research aims to evaluate the physical and functional characteristic of Mehmet Aktif (Dereboyu) Street, in northern Nicosia, the capital city of Cyprus.

Accordingly, this research will be conducted by the following fundamental research question: “What are the physical and functional characteristics of Mehmet Aktif (Dereboyu) Street as a public open space?”

To reach its aim this question the objectives of this research are listed as below:

- To understand public open spaces,
- To understand role of street in urban environment,
- To discuss functional and physical characteristics of streets as a public open Spaces
- To find out potentials and weaknesses in Mehmet Aktif (Dereboyu) Street as Public open space.

1.3 Research Methodology

This is a case study research. The methods, which are used in this study is centered based on qualitative methods. The investigation will start with a comprehensive literature review by focusing on public open spaces and streets and explaining physical and functional characteristics of streets. Then research moves to a Case study. On site observation and site analysis are the main methods used for clear understanding of the selected site.

Thus, the first part of the thesis discusses the general idea of the current study through providing the basic definition and explanation of streets and their

characteristics.

The second part has detailed concentration on the aspects, characteristics and types of public open spaces. This part also presents a detailed theory on street and street design by concentrating on classification, physical and functional characteristics.

The third section focuses on the case study.

The last part presents the outcomes of the research.

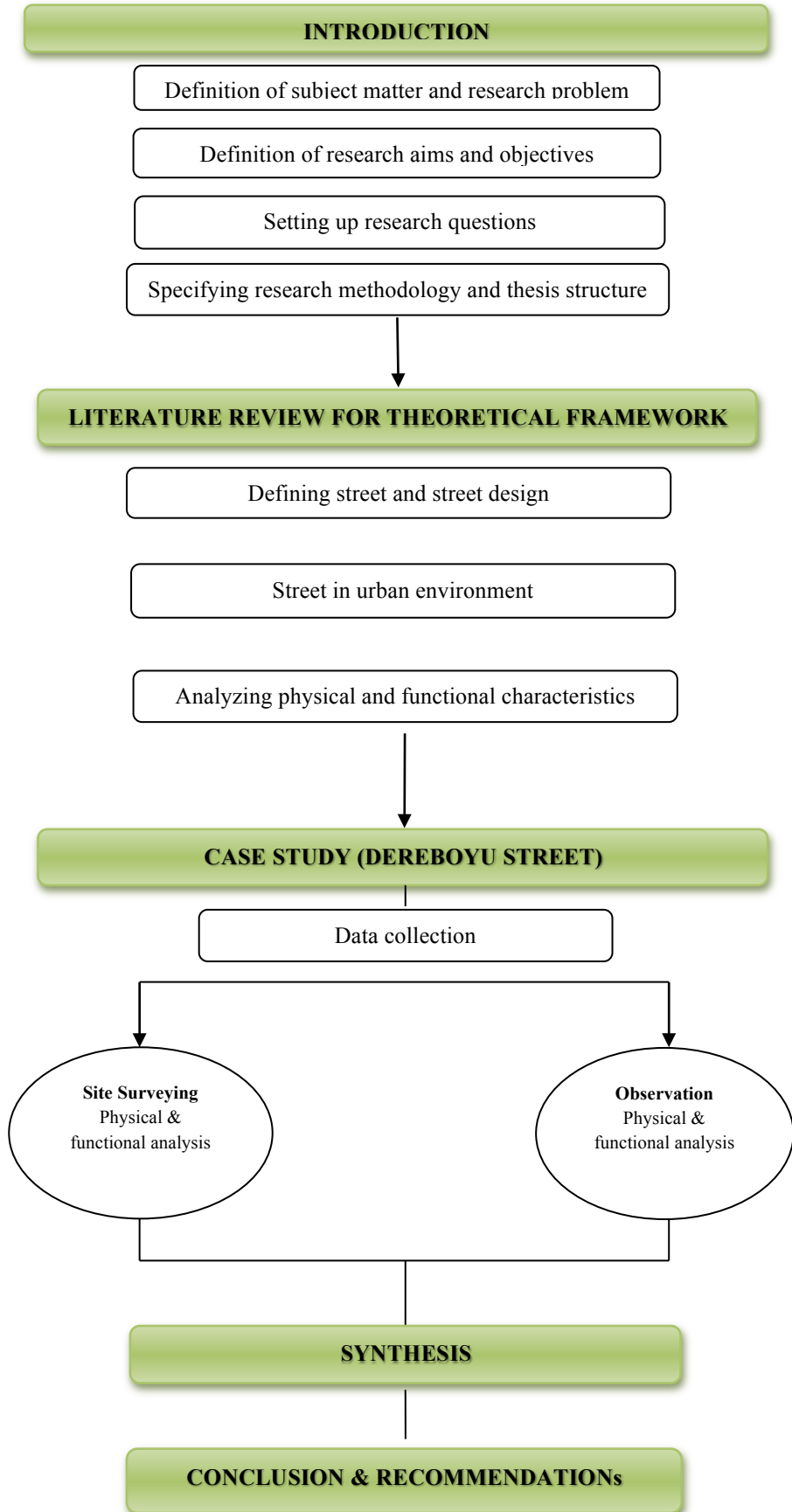


Figure 1.2. Research Methodology chart

Chapter 2

THEORETICAL BACKGROUND

Streets are one of the most important elements that everybody including citizens and tourists care about cities. In most of the societies the general standards of the cities based on town structure are neglected or oversight. These things have happened due to the wrong policies of the town.

Some sorts of problems in urban designing are lack of open spaces, tough traffic, lack of green spaces, shortage of urban spaces, poor socio-economic, well-being, and health situation and etc. Regarding these issues, urban planning and urban design can act as the best solutions to fix these problems.

Urban design is concerned with the arrangement and function of suburbs and cities. It is both a process of creating familiarity where people live; engage with others, and the physical place around them (Lynch, 1960).

Lynch (1960) abstracted five elements - paths, edges, district, nodes and landmarks to describe an image of city after researching three American cities. He found that citizens identified a city though reading those five elements; so urban design should not be a subjective creation of architects and urban planners but need to consider the observation of citizens. Clarify these five elements is a feasible method to explore and organize a city with its own identity. Urban design engages many different

sectors including planning, development, architecture, landscape architecture, engineering and finance.

Urban design acts from the macro scale of the urban structure (planning, zoning, and transport and infrastructure networks) to the micro scale of street furniture and lighting. When fully integrated into policy and organizing systems, urban design can inform land use planning, infrastructure, built form and even the socio-demographic mix of a place (Lynch, 1960).

Urban design can significantly influence:

- The economic success and composition of a locality - whether it evokes local businesses and entrepreneurship; whether it attracts people to stay there; whether the costs of housing, working and travel are logical and affordable; and whether there is an access to job opportunities, infrastructures, facilities and services are equitable;
- The physical scale, space and mixture of a place; As such, it influences the balance between natural ecosystems and built environments;

"... Urban design should be taken to define the relationship between different buildings; the relationship between structures and the streets, roundabouts, squares, parks, boulevards and waterways and other spaces which make up the public areas; the nature and quality of the public domain itself; the relationship of one part of a village, town or city with other parts; and the movement pattern and activity which are established: in short, the complex relationships between all the factors of built and unbuilt areas"(Carmona, 2010).

2.1 Public Open Space

Public Open space is a coherent construct means the availability of areas for the usage of all people, which affect the whole community (Holtzman, 2014). Open space can be called to any open land that is accessible and undeveloped (no private owner) area, which can be used by people. When public will add to open space its definition would be changed a bit; therefore, public can be called as the owner of the public open space as a result. Mainly public Open Spaces are streets, parks, squares and waterfronts. Public space means any building, structure, indoor or outdoor, and public areas with free access for people (Carmona, 2009).

Public spaces are important and most useable part of urban heritage, social interaction and development of community. Public spaces can be categorized into two types:

- Public Outdoor spaces
- Public Indoor spaces

It is worthy to mention that not all open spaces are public and may not all-public space be open all the time. (Woolley, 2003).

Regardless of these dimensions, this research focuses on outdoor public open spaces due to its vital role between publicness and privateness of social life (Rapoport, 1980). As long as cities are getting bigger, the privateness is going to be disappeared while the importance of publicness is increasing (Ndaba & Landman, 2014). Public open spaces during these changes are provided flexibility in terms of physical forms and policies to public open spaces (Cheung et al., 2015).

Various urban planners and engineers have stated the importance of public space; one of the well-known researchers in this area is Lynch (1984). He stated that public spaces are lands with availability of chances for people to choose and enjoy.

- In non-invested public open spaces, individual has a challenge to meet or challenge to meet or chance to use in different patterns.
- Most of public places have less intensity so it can provide an area for being comfortable and released.
- Public open spaces are areas of publicity so there is a chance of new friendly relation or unspecialized contact.
- Public open spaces provide further understanding of the environment and ecology.
- Public open spaces contribute in community growth, change and control.

Therefore, public open spaces can be used as an amusement, relaxation, communication, growth or challenge for the city in which has effect on lifestyle and culture of the community (Carr, 1992). Based on this information, public open spaces include two dimensions as physical and social. Physical dimension directed to the setting, land and space that involved the social interaction and public life; on the other hand, social dimension pointed at services and activities available for public to serve and use (Carmona, 2008).

Based on study was done by Wolch, Byrne and Newell (2014), both of these general dimensions are important but two important characteristics of physical dimension are attractive and size of the space. More information in regard to this issue will provide further.

According to pedestrian point of view, public open spaces categorized in two processes such as naturally developed public space and planned public open spaces (Shaftoe, 2012).

- Naturally developed open spaces: this process engendered without having any plan or any idea to make them. These happened due to the attraction, space availability and concentration of people (Carr, 1992).



Figure 2.1. Johannesburg, South Africa (URL1)

Historic features and sites were preserved and integrated into the public open space. A historic family classroom and graveyard building was incorporated into the open-space system as a place of interest and contemplation (Can, 2012) (Figure 2.1).

- Planned public open spaces: this process is planned to respond the need of the community-not naturally (Moudon, 1987). This process called as the result of urban areas, which are based on design standards universally.



Figure 2.2. The Granary Square 'Pops' in London's King's Cross is one of the largest open-air spaces in Europe (URL2)

Squares and Plazas, streets, and parks are the most popular categories of public open spaces. Among the different categories, the main issue in attention to public open spaces is that these areas should have the ability to attract people and keep them amused socially, culturally in a physical center (Gehl, 2012).

The quality of public open spaces depends on the viewpoint of government, researchers, and people. Although significant number of researchers (e.g. Lavery, Davey, Woodside, and Ewart, 1996; Krieger, 1992) .

believed in attractiveness and beauty of sidewalks, parks, streets, and playing grounds to bring out the excellent condition for courteous society, but some pessimistic people believe that nice public design provide the space for strangers and vagrants.

Another reason in declining the expansion of public open spaces can call as socio-cultural transformation. Regarding this point, there is an action and two-side relationship between public space and public life (Carr, 1992). Actually public society embraces public life to show the vital role of space quality as helpful and supportive environment (Lavery et al., 1996; Gehl, 1996).

As the usage of public space is declined. The nature to increase expansion and variety of new public spaces will be increase and creative the new public open space. In addition, by the development of the internet, most of public civic activities transferred to private spaces such as home, cafe nets, game nets or etc. rather than public spaces (Ellin, 1999).

This separation of public life and public activities increases the tendency toward privatization. All those reasons are enough to consider improvement of public space. Public open spaces should have different characteristics containing social and physical dimension such as:

- Useful for any range of age,
- Availability of different types of activities,
- Comfortable
- Repetitive evaluation, improvement and redesigning
- Continuous involvement, manipulation and control,
- Accessible,
- Challengeable,
- Healthy,
- Democratic place,

- Be efficient socially and economically,
- Appreciable by users,
- Safe and secure (Francis, 1989, Pg. 670).

All of these issues are important, but among all of them accessibility and movement have significant role. Carr (1992) mentioned that accessibility should be for all people. According to him, accessibility divided into three parts as:

- Visual access: the place should have directions and be visible for them.
- Symbolic access: symbolic signs can be referred to people (alive) or shops to enter the public realm.
- Physical access: physical public place should be available.

In addition to this, movement and connection between public open spaces to other sides is important to pedestrians (Duany et al., 2000). Pedestrians' movement is important due to their various purposes during walking; so connection is significant in movement densities and rates of counting (Hillier & Hanson, 1984).

Public open space without a mid-point in the middle is quite and empty. Public space should have borders-starting point and ending point. Another element in quality of public open center is density-density of people and activities. Comfort ability is another factor in making qualified public open space. Levels of shade, sunlight, humidity, temperature, rain, snow, wind and noise affect and define the favorable condition of public open space (Jacob & Appleyard, 1987).

Based on these elements, spatial and temporal aspect of land uses is also important to consider. In regards to Jacobs and Appleyard (1987, Pg.118), public open spaces should follow some goals as:

- Livability: city should be a livable place for everybody.
- Availability and access to opportunities, imaginations, and joy. City should be an opportunity to break the tradition and extend public experience.
- Authenticity and mean: the clear purpose and function of public area should be understandable for everybody.
- Community and public life: city should motivate its people to participate and communicate.
- Urban and self-reliance: self-sustaining of the cities in use of energy and resources.
- An environment for all of the people: the accessibility of the environment for all in terms of identity, livability, opportunity and control.

In short, public open spaces are important in case of usability of people. So their design should be exclusively friendly and continuously be improved by designers to attract more users so among all of these public open spaces streets as the focus of the study should take more look in detail (Marcus & Francis, 1997 Pg.46).

Categorization of open spaces by their functional point helps to have the better plan and knowledge for future of it. Functional categories of open spaces are six as below:

- Natural resource protection areas: includes stream belt corridors, animal and vegetation habitat, trap rock ridges (Fennel & Smale, 1992 Pg. 26);

- Outdoor recreation: Active such as playgrounds, parks and beaches. Passive such as plazas, and sitting areas (Ibrahim & Cordes, 1993 Pg. 72);
- Resource Management: forest and fisheries (Druker, 2003, Pg. 18);
- Protection of public health and safety: unbuildable areas floodplains, wetlands (Raffensperger, 1999, Pg. 132);
- Areas for community characters and designs: open spaces dedicate to development, greenways, and urban plazas (Powazek, 2006, Pg. 59);
- Historic or archaeological sites: town green and historical sides (Blanchette, 2003, Pg. 331).

Attention to the functional categories of open spaces helps the designers to make the sustainable plans and enunciate better ideas and visions (Gibbon, 1998).

2.2 Street and Street Design

For a long period of time, streets were a neglected part of all cities. Street is a mean of communication, transport, circulation and neighborhoods (Lipton, 2002). Streets as the first institution of the city should be supreme. Streets as the essential shared public spaces are mostly overlooked or neglected. Nowadays, streets are mostly used for parking, cars, transporting, and advertising goods (Hebbert, 2002 Pg. 113).

Streets as the way of movement and mobility refer to three-dimensional space. Streets surround by buildings on both opposite sides. Streets are the movement point and an arena for expression socially (Moughtin, 2003). In contrast to streets, roads are paths to end the trip between two houses. Street is a road which movement happens along adjacent houses.

The design of streets indicated the attention of the government and municipalities of the city to the routes of transport, accommodation of systems and services (Vuchic, 2007). Actually, streets affect the characters of urban's culture, neighborhood and define the people interaction and usage of it (Vuchic, 2007). According to Jacob (1995), the quality of streets characterizes the people's usage type such as walking, cycling or driving. Streets and their designs are also related to feel safe and its commercial usage. In safe streets, people choose to scroll and spend time rather than hurry through. Generally, streets moderate the culture, character, form, structure and nature of communication (Vuchic, 2007).

New types of streets with the effects to improve its structure started since the second half of 20th century in north part of Europe (Vuchic, 2007, Pg. 17). Streets should be the center of activities, attentions, public and observable (Jacobs, 1995).

In contrast to the road as quite the means of movement from one place to another, streets mean the circulation of public. In summary, streets have functions as follow:

- Commercial service and activity point
- Access to spaces and buildings
- Movement and circulation for pedestrians and vehicle
- Parking and storage space (Bell, 2005).

In addition, the length of street describes the percentage of functions. Structure of cities defines the public life in cities and towns. Urban streets represent the actual accessible, ubiquitous and familiar space publically. Usually, streets comprise 50% of urban area and also provide the direct connection between city's landscape and

urban residents. Streets' structure and design differ based on geographical and cultural concept of the city (Kanakiya, Singh and Mehta, 2015).

Streets have the stand for important cultural, social and political constructs of the cities – urban planners and design narratives have decided to recognize streets as important elements in placemaking efforts. Streets include wider sidewalks, street furniture, articulated street fronts (which are more visually interesting and create spaces for lingering), shade (sun) and etc. In sum, *The Street* is an exemplary study that is both rigorous and reachable. Planners, designers, social scientists, architects and transportation engineers would all benefit from skilled integration of methods from across these disciplines (Kankaya et al., 2015).

2.2.1 Importance of Streets for Pedestrians

Streets are the most important access point for pedestrians (Calthorpe, 1993). Actually the connectivity of street networks to each other's affects the distribution and intensity of pedestrians between streets' basses in the city (Ozbil, Peponis, and Stone, 2011).

Actually walking in the urban design predicts its positive points and problems as well. So taking the pedestrians' viewpoint into consideration would provide useful supplement for questioning and evaluating the environmental design and street spaces (Fruin, 1971). Sidewalks should design accurately to not shy away the pedestrians (Murali and Coughlan, 2013). Generally, street is the mean of transport in urban structure.

These functions should design reasonably to attract pedestrians to use sidewalks, shopping centers, streets, parks, and etc. (LeCarbusier, 1967).





Streets same as sidewalks carry various purposes for both pedestrians and vehicles (Moughtin, 1992). It is vital to provide good sidewalks, streets, parks and so many attractive public places to represent the best for human nature in courteous and civil society (Ford, 2000). Good streets have to manage the movements and directions of strangers, citizens, separate public and private spaces, provide activity source, and control the activities.

Due to the several changes in the use of streets in compare to thirty years before; nowadays, housewives have much more responsibility as co-working partners or single parent or breadwinner. Hence regardless of gender, the transactions in streets by cars have been increased. These change effect on the role of streets, cause environment and green aspect of society which all of them impact on urban life and structure negatively (Moughtin, 1992).

2.2.2 Classification of Streets



Many scholars have represented different classifications of streets. Generally, all of these classifications are divided into two-view point such as functional or formal. According to Moughtin (1992), streets are classified into four categories that can be followed in Table 2.1.






Table 2.1. Categories of Streets

Street	Description	Example	Description
Civic street	Streets around civic building such as theater, and museums		Barcelona, Spain (URL3)
Residential street	Streets among neighborhood units and residential areas		Cusco, Peru (URL4)
Commercial street	Streets include commercial activities		Beijing, China (URL5)
Multi-function street	Streets with more than one functions		Melrose town center, Scotland (URL6)

On the other hand, Cathrope (1993) classified streets based on pedestrians' viewpoint as summarized in Table 2.2.






Table 2.2. Classified Streets Based on Pedestrians

Street based on pedestrians' view point	Description	Example	Description
Arterial streets	Streets with high level of mobility for longer journeys		Typical Chinese City Arterial Street, Beijing (URL7)
Commercial street	Streets Including mainly and commercial activities		Commercial streets in Madrid, Spain (URL8)
Connector street	Accommodate moderate and high traffic volume inside the city		Mound Street Connector, Washington, USA (URL9)
Local street	Serves low traffic volumes through pedestrian oriented environment		Local Streets, Olympic Village, Vancouver, Canada (URL10)

<p>Alley</p>	<p>Far from streets for low moving traffics and parking</p>		<p>Omaha, Oklahoma, USA (URL11)</p>
<p>Covered street</p>	<p>Covered roof streets suitable for pedestrians</p>		<p>Milan's Glass Covered Street, Italy (URL12)</p>
<p>Water ways</p>	<p>Water streets along river canals</p>		<p>The River Seine, Paris, France (URL13)</p>
<p>Bridge street</p>	<p>Bridge links streets to an opening area</p>		<p>Berlin, Germany (URL14)</p>
<p>Boulevards</p>	<p>Complex urban streets with the possibility of various speed moods</p>		<p>Ataturk Boulevard, Ankara, Turkey (URL15)</p>

In terms of urban patterns, Hale (1929) introduced hierarchy of streets as shown

Table 2.3. Hierarchy of Streets by Hale (1929)

Hierarchy of street	Description	Example picture	Description
Residential street	Leading from main street to the houses through tiny distance		Warwick Road, Carlisle, Cumbria, England (URL16)
Industrial street	Adopting heavy traffics		Southern Edge of Downtown Brooklyn, New York, USA (URL17)
Main street	Connecting various urban areas to others or suburbs		Quaint New England main streets, England (URL18)
Park street	Owning various visual appearance with surroundings and different situations		Collage park, Orlando, floridaUSA (URL19)
Stair street	Including stairs all of the way to other paths (Lillebye, 1996)		Elysian Heights, Los Angeles, California, USA (URL20)

A boulevard poses a width more than 46 meters including two lines of trees, pedestrian path, benches, and etc. Boulevards have different width, forms and ways such as Boulevards Street, center Median Street, and multi-ways boulevards (Watson et al., 2003). “Pedestrians’ realm” is the distinguishing factor for boulevards to be known as safe or unsafe ones. Pedestrian realm contains sidewalks, the access road way and planted median. Extended pedestrian realm needs various conditions such as;

- Continuous median between lanes (thorough and access);
- Continuous density tree lines along medians and intersections;
- Availability of narrow access roadway for one lane traffic;
- Providing benches as transit stops to encourage pedestrians to use them;
- Existence of access ways varied from central part to ways.

Construction of boulevards depends on some qualities such as location, usage, context, surrounding building, sign and its boulevards realm and the way through central part, pedestrian realm, trees’ rows and spacing, continuous three line medians, lane width, parking, public transportation, traffic control, intersection design, separating road ways, and discouraging “mid-block walking” (Watson et al., 2003). Street lane is defined by its width, type, curvature and position to the cars (Sparbart, Dietmayer, and Streller, 2001). Table 2.4. Summarizes the classification of streets by different scholars.

Table 2.4. Various Scholars and Their Street Classifications

Scholars	Classification of Streets	View of the Scholars
Moughtin (1992)	Civic Streets Residential Streets Commercial Streets Multi-Function Streets	Functional
Cathrope (1993)	Arterial Streets Commercial Streets Connector Streets Local Streets Alleys	Based on the pedestrian's need.
Gnal and Dorratti (1997)	Covered Streets Waterways Bridge Streets Boulevards	Urban morphology
Hale (1929)	Residential Streets Industrial Streets Main Streets Park Streets Stair Streets	Traffic Arteries Pattern

2.2.3 Physical Characteristics of Streets

Up to now, we talked about the different factors and process of streets which all of them refer to physical characteristics of streets. A Street has to be studied through their physical characteristics. Streets have many physical characteristics based on different scholars.

Based on Jacobs (1993), these characteristics are divided into vertical and horizontal aspects.

- Vertical refers to trees, building, walls, and all vertical structures, but
- Horizontal aspect refers to length, width and spacing of streets (Jacobs, 1993).

Physical characteristics of streets include their shape (straight vs curve), forms (long vs short, open vs enclosed, formal vs informal and wide vs narrow) (Moughtin, 1992). Well-designed street physically attributes on the livability of street

(Mahmoudi, Ahmad and Abbasi, 2015). Next to all of these, same streets combine these two aspects with the attention to floor for better usability (Kim, 2014).

All factors such as proportion, rhythm, contrast, scale and the connecting path to other streets can be explained in the form of streets (Mackett et al., 2008). Urban designers should care about all these features to increase the walkability and livability of streets for all groups of people including children, adult, old and disabled individuals (Forsyth et al., 2008).

For the purpose of the thesis the physical characteristics of streets based on Moughtin (1992) will be taken as a basis as such: form, length, proportions, unity, legibility, edges, facades, sidewalks, flooring, microclimate aspects, and elements of streets.

The following lines will be presents detail information about all of these characteristics with related pictures and information.

2.2.3.1 Form of Street

Street forms can be categorized in terms of many types as short, long, curved, wide, and narrow or etc. Trancik (1986) mentioned two types of street forms as inflected (curved) (Figure 2.3) and uninflected streets (straight) (Figure 2.4).



Figure 2.3. Curved Streets, Amsterdam, Netherland (URL21)



Figure 2.4. Straight Street, the Champs-Élysées Street, Paris, France (URL22)

Curved streets represent the sense of continuous and vistas for pedestrians via irregular footage (Cullen, 1961). Whereas the straight streets designed without any concern for terrain, visual amusements, and various circumstances (Gibberd, 1955).

Gibberd (1955) mentioned that streets are not the buildings' footage, they are dwelling various types of people, pictures and histories (Pg. 230).

Collins (1986) mentioned that straight street is monumental while curve streets are more pleasant and satisfying for both pedestrians and planners. Sitte (1945) believed that attractive outcomes made from some practical reasons.

In narrow street vertical features are more significant and some part of facades are observable in sharp view but in broad streets complete view of facades and their surrounding are evident; Moughtin (1992) approved the benefits of both forms of curved and straight streets. He also mentioned that wide streets make the city hotter and less healthy while the narrower one let the sunshine to shine and air move (Kostof, 1992, Pg. 69).

2.2.3.2 Length and Proportions of Street

Based on the standards of the urban design, the length of streets should be approximately 1 mile or 1500m; more than this the human scale would be lost and smaller can face the difficulty for the enclosure of the view (Moughtin, 1992).

Streets can be long or short; in which the long streets can be use as the connector and short streets for residential usage as an example. Long street in Gdansk, Poland is one of the good examples of long streets which starts from markets and end to temple (Figure 2.5).



Figure 2.5. Long Streets, Gdansk, Poland (URL23)

Street proportion is another important factor in urban design which the analysis and basic ratio from width, height to length. The idea of street proportion came back to the Hellenic Greece time for the notion of symmetry (Moughtin, 1992).

Streets with well-designed structure have well-defined form with positive sense of enclosure. Spatial enclosure determines by the continuity of the walls rather than height-to-width ratio (Sitte, 1945). Streets have two walls, which define their area so to represent the sense of unifying the area the outward view should have enough space (Carmona, 2008).

Providing suitable height to width ratio motivate the people to walk due to scale on thoroughfares. Based on Figure (2.6), Human scale ratio falls between 1:2 and 1:3 based on front buildings; these ratios are comfortable for people and motivate them to walk.

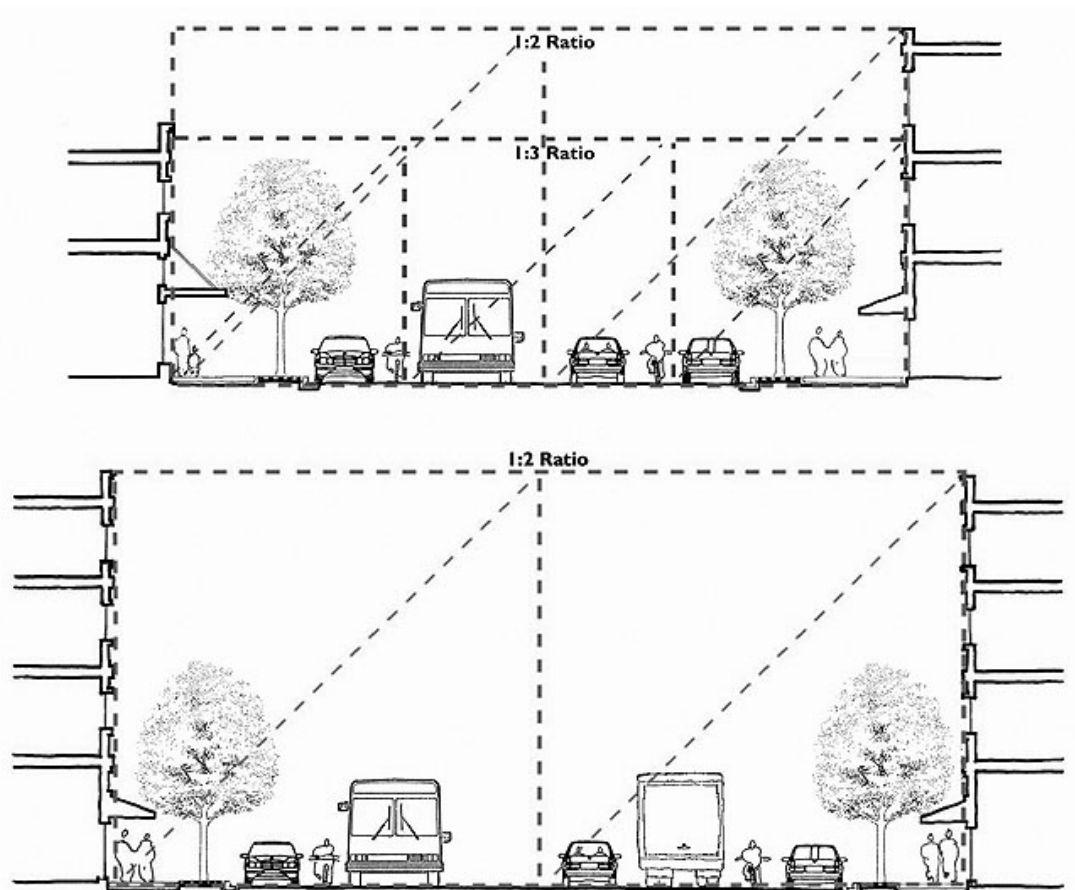


Figure 2.6. Illustration of Height to Width Ratios (URL24)

Building width, like building height, contributes to the sense of enclosure of the thoroughfare. There are three factors of width: (1) the percentage of a building's width fronting the street, which should range from about 70 percent in suburban environments to nearly 100 percent in urban environments; (2) the space between buildings separation, which should range between 0 to 30 feet; and (3) the articulation of buildings leading in a building scale.

So its proportion of the streets is one of the most important factors in designing a good street in regards to height and width. Width roads and streets are preferable for drivers and engineers but it's not suitable for shopping and walking. Provide socially attractive space with narrow pedestrianized streets and walls higher than streets widths absorb more people successfully (Moughtin, 1992).

In short, the particular proportion of the streets should be preserved to design the street. So it's difficult to find a sense of enclosure in width and long streets (Moughtin, 1992). According to May (2013) streets with narrow of 6-9m (20-30ft) with building of three or four floors inspire the perfect enclosure and completeness as a street (Figure 2.7).



Figure 2.7. Narrow Street, Dubrovnik, Croatia (URL25)

Street proportion and scale is important not in terms of aesthetic but also due to the climate and environmental characteristics of the place. So in designing the street proportion should be one of the main factors to consider. For example streets in cold weather should have wider streets to let the sun shine and penetrate over the street to make it warmer (Mehta, 2013, Pg. 59).

2.2.3.3 Facades along Street

Facades are surface of the buildings' blocks to the street. Facades are important due to the representation of experience diversity and visual richness to the viewer. Visual

richness related to the walls, color, windows, buildings, light and shades contrast and so on. Visual aesthetic of urban environment achieve from both spatial and physical characteristics of buildings such as surface, decoration, colors and etc. (Carmona, 2003).

Contrast and similarity can make both inhuman and human effects on viewer so developing the similar and discipline surface in streets mostly have achieved through centuries (Moughtin, 1992)



Figure 2.8. Façade, Office Building, London, United Kingdom (URL27)



Figure 2.9. Facades, Chalmers University of Technology, Sweden (URL28)

It is possible to focus on one or two types of façade of building. The most important part is the foundation of the building, which is the main entrance and front floor viewed by passerby.



Figure 2.10. Shop Façade, Shanghai, China (URL29)

Considering harmonization of the building with its surrounding is also important for street view in the eyes of pedestrians (Tibbalds, 1992).

2.2.3.4 Unity in Streets

Buildings in unified street from different styles respect each other due to the unity in the design in terms of their scales, scopes and structures. Many factors are important to create the unified streets but one of the most significant one is form of the buildings. In unified streets, buildings should be as a surface structure rather than a mess (Mehta, 2013).

Applying unity in streets is possible by architectural elements, common materials, and details of buildings. Buildings' roofline works the lid of the streets as the most important factor in skyline. View the streets from skyline shows quite different scene of the street to show the unsteady roofline. Developing one part or continuing to set some part does not necessarily mean unity; the whole structure of the street should be developed and improved together in a unit way to contribute as street unity (Moughtin, 1992).

Therefore in designing the streets unity should be also considered as the important factor to show the arrangement in the area (Moughtin, 1992). In designing the street the complete street scene should be considered rather than private and personal structures. Take an attention to facades and gaps in the streets help in improving the street unity as well (Moughtin, 1992).



Figure 2.11. Street Unity, Melbourne, Australia (URL 26)

2.2.3.5 Sidewalks along Street

Sidewalks are one of the requirements of the streets. Countries determine the availability of sidewalks. Jacobs (1993) mention that well-designed streets should have sidewalk in two sides of the streets; this would let people to walk in wide and leisurely space and spend time in the public open space. According to him, sidewalk should give the pedestrians a sense of being no alone, not crowded and safe.

Dimension of sidewalks are different based on the area, weather condition and sidewalk situation. Based on the standards, sidewalks should be 1.5 meters as an unobstructed pathway. This measurement is the minimum standards for encompassing two persons. For example for commercial areas, sidewalks should be larger in order to let everybody to walk and enjoy shopping (Figure 2.12).



Figure 2.12. Properly Designed Sidewalks (URL30)

2.2.3.6 Flooring in Streets

Flooring is one of the essential factors in providing suitable public open space to the people. Flooring should be designed considering the harmony and integration of the public open space. Flooring divided into two types such as hard pavement and soft landscapes. Flooring character is based on the way they are made and used. Flooring materials are bricks, macadam, concrete, cobbles and etc. (Carmona, 2003).

The primary function of the flooring is to provide the dry, hard and non-slip surface for vehicles and pedestrians to convey the traffic load. Changes in construction and flooring material have the direct effects of traffic load (Moughtin, 1992).

Using different materials in flooring can be resulted as the public and private owners or semi-private caused so many problems and warnings. Flooring as the linear posture of the street also inspires the direction sense to the people (Carmona, 2003).

Another role of Flooring is to manipulate the actual size like to show the small space bigger, which is all, defined in terms of tendency of modulation (Carmona, 2008).



Figure 2.13. Flooring in Privately-Owned Public Open Space, Chicago, USA (URL31)

2.2.3.7 Micro-climate in Street

One of the most activities of public open space is to keep the comfortable condition for users to survive the public open space. Based on scholars, public open spaces should provide the place to stay so availability of these spaces would attract more people to use and spend time in public open spaces.

This also adoptable in terms of environmental cases such as wind, rain, sunlight, noise, humidity, temperature, shading and snow (Carmona, 2010). Climate-related characteristics are quantifiable in providing comfort ability and a need for street design.

All of these elements should be designed in term of natural lighting (efficient use of sunlight), wind flow (providing natural cold weather for pedestrians), and shading

(providing available shade or sunlight based on climate is essential) (Jacobs, 1993, Pg. 274-275).

2.2.3.8 Elements of Streets

Street elements can be divided into four as in the following:



Figure 2.14. Street Furniture, Manchester School of Art, United Kingdom (URL32)

- **Artificial Lighting:** This type of lighting mainly use for pedestrians and have two functions; first is as statutory lighting to help pedestrians to find the way for walking and Amenity lighting is to increase the sense of street brought liveliness like shop lighting, seasonal lighting and lights at parks and signs.



Figure 2.15. Artificial Lighting, Keizersgracht, Amsterdam, Netherland (URL33)

- Greenery, grasses and trees inspire the sense of change of seasons and life to the environment, in general and within the street.



Figure 2.16. Greenery, Shanghai, China (URL34)

- Public Art: This type of art is referred to the artificial and artistic features decorated and designed to show the public domain and be accessible for all (Carmona, 2003).



Figure 2.17. Public Art, Pittsburgh, Washington D.C., USA (URL35)

2.2.4 Functional Characteristics of Streets

Before development of vehicle and public transportations, the dominant use of street movement and usage was on foot or by horse. However, changes in transportation methods affect in the face of streets. Functional changes of street have been happening frequently from ordinary use of car to faster and better types of transportation varieties.

Nowadays streets became the car space or let's say car parks in terms of circulation and vehicles movement (Carmona, 2003). Changes in role of women, population and lack of time have added to intensity of social interactions, density of car transportation and daily trips (Moughtin, 1992).

Negative changes in the use of public open spaces such as rapist and robbery, most of the people and urbanism as a reaction to these situations prefer privatization of public spaces (Jacobs, 1965). Hence all of these issues help the disappearance or rise

of pessimist ideas against public open spaces. This situation remains the streets as the way for car transport rather than communication (Gibbon, 1998).

Toward rapid changes in the face of streets and public spaces, the conflict for having social area for movement and communication has increased (Moughtin, 1992). Streets should be considered as a place more than just a pathway for transportation. Streets are actually a place to sit, stay, wait and relax rather than moving through (Barnett, 1982). According to what Norberg-Schulz (1971) mentioned streets are the representation of the life's history.

Table 2.5. Functional Classification of Streets

Street	Context	Overlay
Avenue Boulevard Street	Commercial Industrial Residential	Country Route State Route
Arterial Collector Local	City Town Village	Sanitation Route Snow Route Truck Route
Alley Lane Main Transit	Campus Cultural Institutional	Ceremonial Economic Historic Scenic
Connector Major Multi-Way Thoroughfare	Center Corridor District Downtown	Bicycle Priority Driving Priority Pedestrian Priority Transit Priority
Auto-Oriented General Multimodal Parkway Paseo Pedestrian Shared Slow	Low-Density Marketplace Mixed-Use Neighborhood Park Urban Workplace	Home Zone Pedestrian District Transit-Oriented

Based on this Table (2.5), different classification of streets with their context, and overlay is mentioned. This is an example of streets classification with functional characteristics of them, but it would not be limited just to this table, numerous characteristics can be represented for streets.

Functional classification is the process by which streets and boulevards are grouped into systems, according to the character of service they are intended to provide (Das, Lee, Sillitoe, Dawson, Lee and Orengo, 2015). Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner (Takami, Arai, Takemoto, Uchiyama, and Taniguchi, 2015). Functional classification defines the nature of this channelization process by explaining the part that any particular road or street should play in serving through a highway network (Das et al., 2015).

Based on empirical studies, functional characteristics have various elements such as Density and mixed use in streets, Active-passive edge and permeability and accessibility. Now there is more detailed explanation about every element (Takami et al., 2015).

2.2.4.1 Human Activities in Streets

Human dimension in outdoor urban spaces was neglected in order to promote vast open air spaces.

The design of these buildings and therefore of the outdoor spaces they create has to do with showing off a status symbol and not any kind of effort to integrate or interact with the outdoor surrounding spaces. The result is a gathering of private building

with flowing outdoor areas without scale, qualities or coherence with one another (Trancik, 1986).

Gehl (1987) divided outdoor activities in three categories as:

- Necessary activities: more or less obligatory to participate without considering physical environment such as shopping first need materials,
- Optional activities: if the condition for participating in activity happened and it was a desire such as sunbathing,
- Social activities: depending on existence of other people and availability of public spaces for linking different groups (Gehl, 1987).

Moundon (1987) states another classification for human activities as below:

- Pedestrian Movement: shopping and walking
 - Dynamic Pedestrians behavior: shopping and walking
 - Static Pedestrians Behavior: eating, working, sitting;
- Non-pedestrian Movement: Wheeled vehicle movement such as bicycles, cars and buses.

All human activities need these parameters such as physical and functional. Below there is in detail explanation about these two important parameters.

2.2.4.2 Land-use / Mixed-Use and Density

Providing adequate density of people and activities in streets is one of the vitality for streets. Having density and diversity of various activities in streets make them be alive and attract more people for different purposes (Jacob, 1961). Availability of spatial and temporal concentration of different uses and various land uses create the well-designed streets. As a result of functional zoning policies, sterility is an answer,

which in respect to its mixed use planning has been confirmed as an urban design objective (Carmona, 2003). Overlapping and interweaving of different activities are an essential phenomenon in vitality of streets which all of these should be inline and familiar to the city structure and functions (Jacob, 1961). He states four conditions for diversity of the streets such as:

- Availability of one or more than one main function in the street
- Short blocks to provide opportunities for turning to corners
- Availability of mixture of building with different age and condition
- Density in people concentration for different purposes.

For mixed use following benefits ascertain by Banister (2012) as:

- Creating more access to facilities;
- Making more social interaction opportunities
- Providing diverse communities in social manner
- Providing more safety
- Making efficient use of space and buildings
- Providing various choices based on lifestyles, location and building types
- Providing more vitality and street life in urban environment

So mixed use empowers walking in the daily life and density gives the variety of choice to the various lifestyles and cultures (Carmona, 2007). Based on Duany et al (2000) the efficiency of mixed used streets are in availability of various functions naming from stores, malls, parks and schools so that people can satisfy their needs with walking.

A mixture of mixed use and density can provide wide array of benefits to the town such as:

- Social: encouraging social interactions
- Economic: improving the economic capability of infrastructure and development
- Transport: mixed use of facility provides density of walking while decreasing car travels and car parks.
- Environmental: high density decrease the transportation by cars or any other sorts of transportations so reduced the energy and resource consumptions, and also reduce environmental pollution (Banister, 2012, Pg. 49).

2.2.4.3 Active-Passive Edges in Streets

Determining the edge of the streets with its function is important. Studying the edge of the street from functional point of view gives us two kind of active and passive edges. Active edges of the streets are those that people use them during their daily times and contribute to the individual's activities. While passive edges are those, which make no connection with, streets user and they have no livability and activity such as houses, vacant buildings and lands (Alexander et al., 1977).

It is important to consider the active and passive function of buildings in streets. Functional structure of each building should be in a way to provide the active relationship to the life of the streets. Active edges of the street define the crowdedness and the attractiveness of the street for the users. Providing variety of activities, shops, restaurants, cafes, parks, game rooms and etc. increase the success of the public open space.

Public edge of building should communicate with the active life of the streets and bring vitality to there (Carmona et al., 2003). MacCormac (1983) stated about “osmotic” properties alongside of streets, which give life by indicating percolating activities. That is, some land may show the irrelevant relationship and interest in the people while there are some, which involve the people to do activities. Some examples of active edges are such as café, housing, restaurant, small offices, shops and etc.

2.2.4.4 Accessibility and Permeability in Streets

Providing the ease of access between two areas is the main goal of the streets. Next to accessibility, permeability is also offering individuals the possibility to access to their final destination while offering attractive social spaces to improve the interaction between people.

Tibbalds (2001, Pg. 49) defined permeability as the freedom an individual can walk and look around the spaces. Alongside of availability of accessibility and permeability, the physical quality of the street such as width, slopes and number should be visible to the people. one of the most important factors of accessibility is the ease of reaching from one place via public transit, cars, walking or any other ways to the destination. This can be the main characteristic of good city and well-design streets.

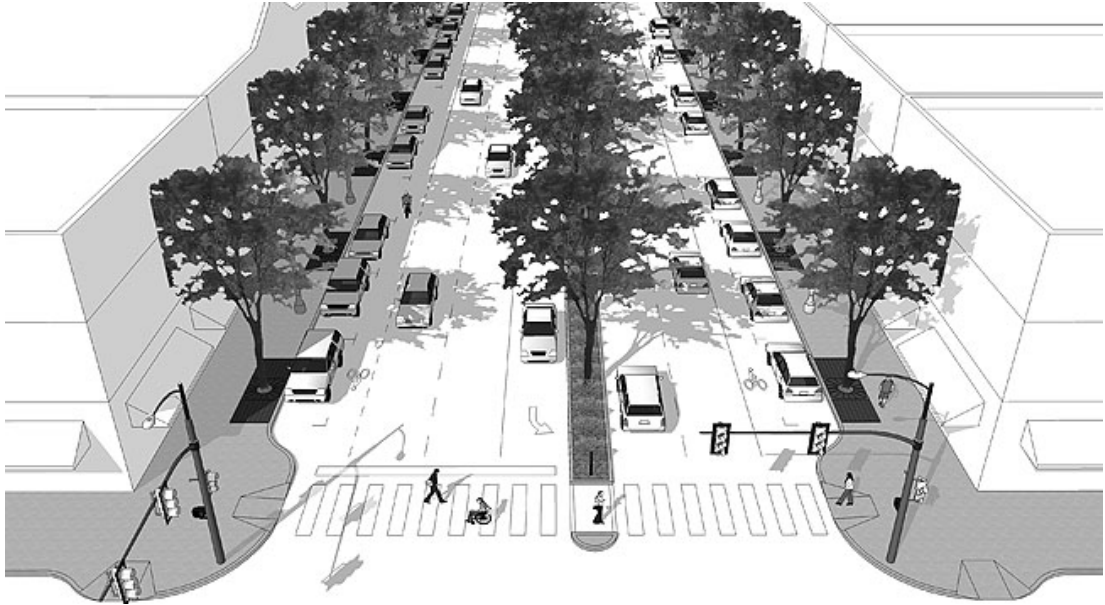


Figure 2.18 Functional Characteristics of Boulevard (URL36)

Traditional street space held an abundant activities and showed different information at one time, thereby it was difficult to explain the street space clearly but it was harmonious.

However, the emergence of the car changed the transportation method in the city and between towns. Towards the end of the 20th century the amount of vehicular traffic rose quickly so that most streets continue to be dominated by the car and resident's daily activities lost. And with the development of the modern city, the traditional lifestyle and character missed. Increasing number of people start to ask for human space and unique city culture which root is mainly city's own traditional culture context.

Although the traditional shape of cities and architectures has its own historical limitations, people are still able to learn from these rich heritages. Due to the rapid expansion of urbanism and demand of post-war construction and

reconstruction, the idea of functionalism became the main issue of urban planning theories. Athens Charter established the main role of functionalism in the urban planning field, and emphasized the function zoning in his works.

It deviated from the diversity of the life in the city became the place no for living and impersonal. Generally, social aspects of the cities embrace some sort of problems and conflicts. These social conflicts effect on development and transportation of urban context. Scholars think of the streets as the social space rather than movement. Streets as the popular space for people to meet each other are the best place for social communications and psychological discussions in community (Jacobs, 1965).

2.3 Summary of Chapter

One of important part in public realm is public space. According to Understanding Street as a public open space the concept of public open space in detailed is explained. In this chapter we talked about physical and functional characteristics of street in public open spaces. Public space is a place for relaxing, sitting, enjoying and walking in urban space. Public space can be connect and access to all part of environment that including parks, square and street.

In the next step streets are explained in terms of public open spaces. One of most important parts of urban spaces is a street. Streets are defined as passage for movement of vehicles, people and goods.

Streets are analyzed from three different and important parts, which are physical, functional and social characteristics that we are focused on physical and functional characteristics. Characteristics of public space are meaning, control, comfort economic, safety and natural system. We focused on physical characteristic of street in public open space such as form of street, length and proportion of street, unity of street, legibility in street, edge and center in street, facades along street, sidewalk along street, flooring in street, microclimate in street, elements of street and Functional characteristics of street in public open spaces such as human activity in street, land use/mixed use and density, active passive edge in street, accessibility and permeability in street.

Table 2.6 summarized the content of the chapter that will actually shape the framework of analysis of the case study in the coming chapter. Mehmet Akif Street (Dereboyu), located in Nicosia, as case study is evaluated according to the two

different characteristics in terms of physical and functional characteristics in chapter three.

Table 2.6. Subset of Functional and Physical Characteristics

		Evaluation Criteria
Physical Characteristics		Form of street
		Length and proportion of street
		Facades of street
		Unity in street
		Sidewalks along street
		Flooring in street
		Micro climate in street
		Elements of street
Functional Characteristics		Human activity in street
		Land use / Mixed-use and Density
		Active-passive Edges in street
		Accessibility and Permeability in street

Chapter 3

CASE STUDY OF MEHMET AKTIF (DEREBOYU) STREET, NICOSIA

In this chapter, information about the case of the study, which is Mehmet Akif (Dereboyu) Street in Nicosia, Northern Cyprus is presented. Along with the case information several pictures has been placed for further consideration. At the closing part of the research, all the related justification for data collection and data analysis is provided.

3.1 Introducing Mehmet Aktif (Dereboyu) Street, Nicosia

The city of Ledra was first created in around 1050 BC, as an ancient country and kingdom, which is situated in the Center of Cyprus Island. Today, it is now known as Nicosia (Turkish: Lefkoşa, Greek: Λευκωσία) and is the island's capital. The city was established on the side of the 'Kanlidere' River then known as Pedios Creek. Historically the city's names have included 'Lefkotheon' named by Levkos, the son of the Egyptian Ptolemaic King Soter I in the first years of the 3rd BC.

Most of the surviving historic buildings were established in the Lusignan period, with the buildings from the Venetian period having been destroyed and their stones used in the construction of the Old City walls still standing today. After the Ottomans took the island in 1571, they used the buildings that remained from the Venetian period and changed their use, and also built new authentic structures. Nicosia has become a historic city connecting the past to the present with its

buildings constructed in different periods, ranging from the ancient times to up to our day.

Lefkoşa, Nicosia or Lefkosia ...all names for the last remaining divided city and located in the center of Cyprus.

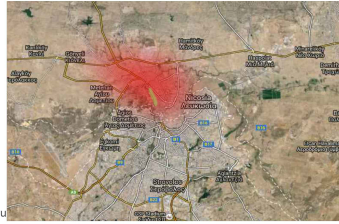


Figure 3.1. Lefkosa, Northern Cyprus

There are a myriad of sights to see in Nicosia, many of the most ancient ones are now being improved by various restoration projects funded by the UN and European Union, and the city also has one of the largest arts and cultural centers in North Cyprus. Mehmet Akif (Dereboyu) Street is known to be the leisure and entertainment route of northern Nicosia, which starts at the corner of American cemetery and ends at the northern part of English barracks. (Figure 3.1)

Physical and Functional Evaluation of Mehmet Akif (Dereboyu) Street in Nicosia

Alefi Salim
M.S Architecture
Department of Architecture
Faculty of Architecture
Eastern Mediterranean University



■ Lefkoşa
■ Dereboyu

Location



3.2 Methodology of Analysis

The methodology of data analysis is based on empirical and documentary review of source materials, which already described in the literature review. The current status of Mehmet Akif (Dereboyu) Street is analyzed as the case study of this thesis and will be described by the methods of:

- Site analysis (on the evaluation criteria listed in Table 2.6 in page 63)
- Observation on site

Maps, photographs, charts are used as tools for analysis.

3.3 Evaluation of Mehmet Akif (Dereboyu) Street

Mehmet Akif (Dereboyu) Street is one of the busiest entertainment and leisure streets in northern Nicosia.

The street expands out the Green Line, and the part of it under Turkish Cypriot control has a length of 1,600 meters, with two lanes. Mehmet Akif (Dereboyu) Street hosts bars and restaurants, as well as occasional shopping festivals and concerts and the annual Nicosia Carnival. Also the Lefkosa Marathon's route passes through the street. With these characteristics it is one of the commercial and recreational axes in northern Nicosia.



Figure 3.3 Mehmet Akif (Dereboyu) Street

The street was known as "Shakespeare Street" during the rule of British. Local people referred to the avenue as "Mehmet Akif Street", but they described it as ("the street along the river") which it exists along the Pedieos River. There were also a road built by the British along the Dereboyu but it flooded during the winter.

The name of the street was officially changed later because it was "a remnant of the British colonial period". The Dereboyu Street stretches from Walled City to Osman Pasa Street (Figure 3.3).

Nicosia is the capital city of Cyprus (the Northern and Southern parts). Mehmet Akif (Dereboyu) Street as the longest street in this city provides a variety of activities for various users. In addition, this street plays as the connection to other streets, alleys and boulevards. Availability of two historic landmarks at starting and ending points of the street make it possible for users especially tourists to cross from it. Dereboyu Street is one of the most visited streets in the Northern Cyprus.

This street is mostly crowded at nights and touristic seasons. On daily base, early morning and late afternoon is the busiest time for Dereboyu Street. Availability of different cafes attracts people for spending time around afternoon up to late night. Based on the location of Dereboyu Street, users living in Nicosia cross this street at least 3 up to 10 times a day (personal evaluation and observation).



Figure 3.4. Mehmet Akif (Dereboyu) Street, Source: Google Maps

The Dereboyu can be classified as a multi-functional street as variety of functions to use of mixed building can be found in the street. The Dereboyu can also be considered as Arterial Street as it interconnects two major urban areas from Green line to another busy street, which is Osman pasa, and mainly as a major entertainment district of the city.

The Dereboyu is classified as a Boulevard based on urban morphology (Onal and Doratli 1997). However it is not defined as a boulevard, which misses different types of physical characteristics.

3.3.1 Physical characteristic of Mehmet Akif (Dereboyu) Street

3.3.1.1 Form, Length and Proportions of Mehmet Akif (Dereboyu) Street

Mehmet Akif (Dereboyu) Street has nearly a fully straight form from its starting point in the south at the crossing point of Osman Pasa Street until its end in the north-west. It has a length of 1600 meters.

As being a long street it connects Green Line section to Osman Pasa Street. The street has a normal width but not in all of its sections as in shopping and restaurant areas it accommodates different irregularities in pedestrian realm and near to non-existence in cross sections (Figure 3.5).

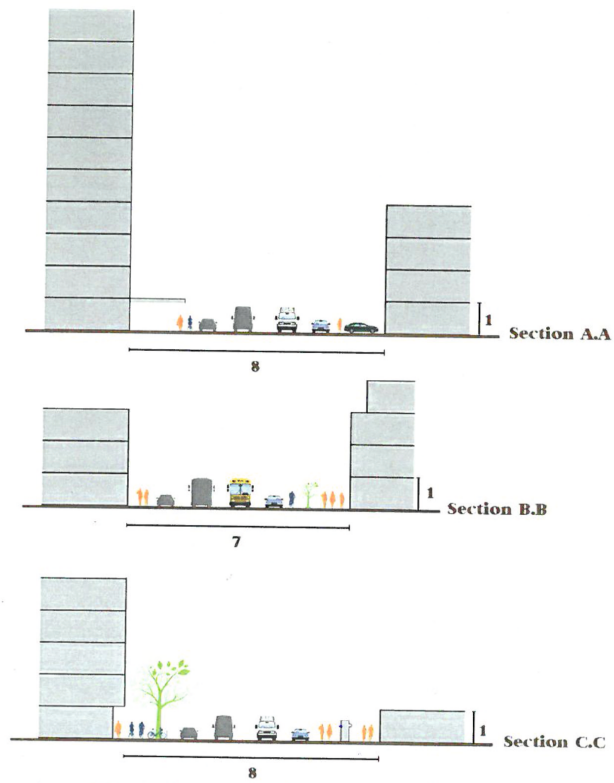
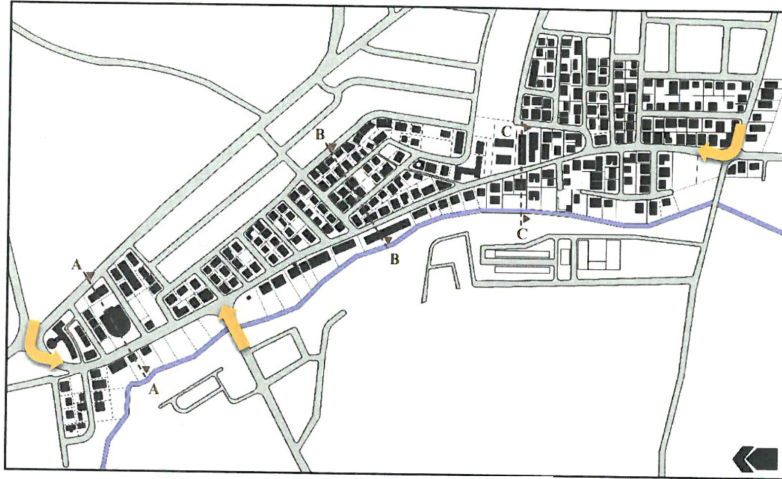


Figure 3.5. Section along Mehmet Akif Street

As a long street, Mehmet Akif (Dereboyu) Street has a well-indicated edge, entrance, center, and termination. The definition of entrance first begins in the Bedrettin Demirel Caddesi between the two section of the south and north to Osman Pasa Street and to the termination of the street which ends in several alleyways and deadends.

However in 2015 many other branches have been closed to help easing the traffic, as it was one of the main problem and complaints of Dereboyu. Considering the proportions, i.e. the ratio of width of the street to the height of the enclosing buildings can be regarded as appropriate enough to create enclosure all along the street.



Figure 3.6. Lack of Continuity in Roofline

Physical and Functional Evaluation of Mehmet Akif Street (Dereboyu) in Nicosia

Aliyah Salim
M.S Architecture
Department of Architecture
Faculty of Architecture
Eastern Mediterranean University



1 storey
2 storey
3 storey
4 storey
5 storey and more

Building Height

Scale: 1/5000



Along the Dereboyu Street, lack of some height buildings with different concept and usability. The lack of unity creates visual pollution.

The Dereboyu has a variety of different buildings with different heights from one storey to the 10 storey buildings. Unfortunately the street view becomes unpleasant and ugly as height irregularity is evidently exists. The street however has unbroken continuity of building area in the most part as most of the shops and restaurants are exist in the same lane and area. The order of the building heights however is undefined and there is no harmony along the streets causing ugly and unpleasant view due to irregularities.

3.3.1.2 The Facades along Mehmet Akif (Dereboyu) Street

The diversity of visual characteristics of the facades along the Mehmet Akif (Dereboyu) is consisting of elements like building windows, walls, color, materials and texture. On one hand different material and different colors make a complex area but on the other hand, can help street to more beautiful and people can better recognizable place in this street (Figure 3.8).

In the case of Dereboyu the old shape of the building with different heights, building blocks, which are separated, will come to the view of people. The street facades are the most important part of buildings for the street, which should present suitable view to the public. Although there is a continuity along the facades along Dereboyu, most of building separation is due to building access in residential areas and parking areas, which is also mixed with commercial use of shops and restaurants. There are also some landmark buildings, which can be distinguished for Dereboyu such as Golden Tulip Hotel and Avenue Mall, which contribute positively to the facades of the street.

The advertisement placements over the building facades are eye hurting; most of these are placed on the sides of the buildings with no plan of viewpoint placements.

In turn they mostly made huge picture pollution and the mixed use of advertisement is not suitable.



Figure 3.8. Residential Building in Mix with Shops



Figure 3.9. Discontinuity and Irregular Rooflines and Separated Building Blocks



Fig 3.10



Figure 3.11. Discontinuity and irregular rooflines and separated building blocks



Figure 3.12. Roofline along Dereboyu

3.3.1.3 Unity in Mehmet Akif (Dereboyu) Street

Unity of street can make a good sense to the street. Actually in Dereboyu Street we have not continually unity in buildings. Mix use of the street caused using different colors and materials in each building. Every shop, restaurant and bar use its own material for advertising, or color for its facade.

3.3.1.4 Sidewalks along Mehmet Akif (Dereboyu) Street

The sidewalks are one of the most crucial parts of the street for pedestrians who in this case are in mix with commercial shops and restaurants. Dereboyu as mentioned before is the most important district of the city because of its entertainment and commercial function. Therefore well-implemented well-designed sidewalks as pedestrian paths are most important. Unfortunately some areas are in bad condition and damaged due to either poor material or by excessive use by cars as a parking sections (Figure 3.13). Width of the sidewalks are also not the same in all areas and sometimes are too narrow that can only one person can go through (Figure 3.14).



Figure 3.13. Poorly Maintained Pathways and Unattended Foliage



Figure 3.14. Poorly Maintained Pathways along the Sidewalks



Figure 3.15. Advertisement Placements and Interrupted Sidewalks



Figure 3.16. Flooring of Sidewalk with Different Material, Shape and Heights



Figure 3.17. Mix-use of Sidewalks as being used as Car Parks

There are also well-defined sidewalk especially in front of shops and restaurants. However in other areas most likely near residential building the status is terrible as it

makes walking hard for many people. The creation of ramp barriers makes walking for disabled people difficult.



Figure 3.18. An Example of Well-Defined Sidewalk but Different from The Other Sections



Figure 3.19. Unbalance Width Sections of Sidewalks



Figure 3.20. Sidewalks along Dereboyu



Figure 3.21. Parking Irregularities and Lack of Enough Space for Parking



Figure 3.22. Walkways and Sideways of Dereboyu

3.3.1.5 Flooring along Dereboyu Street

Materials used in surface paving are defined by being a non-slip, dry, and hard materials for individuals. In Dereboyu streets, vehicle roads are covered with asphalt and mostly in good condition with color lines to separate two directions and in some cases with physical elements such as metallic blocks or speed barriers. The pedestrian paths are inconsistent in parts of the street. Some shops and restaurants have their own paving which create several inappropriate views with a lot of height differentiations.

Broken pavements exist in some areas and also some unsuitable materials usage must be mentioned as these issues make it difficult to sometimes navigate through these highly populated areas. Ownerships do a selfish job on several sections of sidewalks as unrelated materials plus colors lessen the harmony of walkways. Another apparent problem is the use of walkways as parkways, which disrupts the flow of pedestrians as well as damaging the pavement flooring (Figure 3.23).



Figure 3.23. Damaged Flooring and Unattended Pavement

3.3.1.6 Microclimate in Mehmet Akif (Dereboyu) Street

The Island shares the weather characteristic of a standard semi-tropical island. The island is situated in the hottest part of Mediterranean Sea and its weather includes very hot summers and rainy and short winters. The morning in Dereboyu when sunlight is not being in its full strength is suitable for walking. The shading elements only apply to some shops, restaurants and bars and the only two bus stops. The wind flow is normal in high-density residential and commercial areas but in the beginning and middle of Dereboyu Street because of vacant lands, the airflow is almost non-existence to cool the street in daytime.

3.3.1.7 Elements in Dereboyu Street

Providing a comfortable public space is very important for a street to be a successful and suitable place for people to use and many factors will come into play. The major purpose of public open space is to keep the comfortable condition for users to survive the public open space. Based on scholars, public open spaces should provide the place to stay so availability of these spaces would attract more people to use and spend time in public open spaces.

In terms of street furniture need improvement while the rest were undecided. According to the site survey and visual study Dereboyu Street can be deduced that because of the primary nature of entertainment and commercial center, it has received a number of improvements on its street furniture status.

As for lights in the street, the natural light is non-existent in the winter and during the summer/spring times, it is partially controlled by shading elements from shops and restaurants because of hot sun rays and lack of greenery in the street it is problematic for pedestrians during those time periods.

Shops and restaurants use the natural light during summer and winter periods to make suitable and pleasant areas for people. Due to the weather condition of the region, in the summer the walking is hard due to the hot days of the summer and the shading restaurants and shops only control elements. Also there are a few greenery areas in the street and lack of sufficient trees makes it even harder to endure the direct sun rays by the pedestrians (shows the example of night time illumination).



Figure 3.24. Night Illumination at Dereboyu

During the night time the lighting is supply by shops, restaurants, hotels and advertisement billboard which make it somewhat illuminate at nights according to visual analysis and site survey lighting in street because of restaurant and bar it make a good sense in the street.

As mention in the microclimate section in the literature review, the status of shading factors is all depends only in shops and restaurants. Because of weather conditions, there is need of several shading elements in the street. The Dereboyu delivers little to no space for many of its pedestrian paths and only defensive elements goes only to equipment provided by restaurants and sometimes shops and when it gets overcrowded there is only one solution to this problem and that's when driving by car is a necessity which many people used over the year.

Due to site survey and visual observation shading of bar and restaurant can help people to walking and sitting safe in the street.

There is another street furniture element, which are the garbage and trash bins along the street.

There are a lot of garbage cans and bins existed along the street and between the alleys connected to the street, but there are a lot of problems linked to them. First, many of them are in either poor conditions or placed in inappropriate positions. The waste management of shops and restaurants is another issue. While there are a normal number of these bins existed, their placement is wrong and not properly distributed along the street and there are not enough of them to satisfy the need for garbage disposal (Figure 3.25 and Figure 3.26).



Figure 3.25. Garbage Bin Positioning in Dereboyu



Figure 3.26. Inappropriate Wastes and Garbage Disposal

Bus stops are also counts as street furniture, which are not enough of them in the street in accordance to people need. There is a lack of seats in the bus stops, which especially more evident in busy hours.

Nearly all four boss stops are already replaced but their structure is problematic, with only one 2 seat chair and positioning is wrong in two of them which are facing the sun which make their shading impractical and useless (Figure 3.27).



Figure 3.27. Bus Stop with one seat and ugly placement

There is also a matter of seats and sitting elements in Dereboyu. Most of the restaurants and bars are providing their own set of seats in the sidewalks but in winter and cold weather they will remove them or shorten the number of seats.

Also the positioning of public benches is problematic as wastes and garbage are most likely found beside them and stationed on a not well-maintained land and most of them are either damaged or in a very bad shape and are in state of repair or replacement (Figure 2.28).



Figure 3.28. Samples of Public Benches, Bars and Restaurants Seats

Physical and Functional Evaluation of Mehmet Akif Street (Dereboyu) in Nicosia

Aislinn Salim
M.Sc. Architecture
Department of Architecture
Faculty of Architecture
Eastern Mediterranean University



■ lighting elements
● sitting elements
■ bins
● bus stop

Street Furniture

Scale: 1/5000



Dereboyu Street suffers from poor lighting elements, lack of sitting elements and bins across the way. There are two bus stops along the road, which show the public transportation availability.

The greenery of the Dereboyu is situated in some part of the street and limited to palm trees, Focus, Pine, and Cypress. Most of these sections provide the much needed shadow for pedestrians to have a pleasant walk in the middle of the day (Figures 3.30 and 3.31).



Figure 3.30. Greenery along Dereboyu Street

Greenery table 3.31

3.3.2 Functional Characteristics

3.3.2.1 Land Use along Dereboyu Street

The Dereboyu Street is consisting of many commercial buildings, which are connected by different varieties of connection to the public space of the street itself. Mostly restaurants provide the attractiveness for the street and shops with each of them use good visual connections along the façade, which primarily at their ground floor level in the street itself.

The land use is consisting of several sections for different shops and commercial buildings in addition to several restaurants using outdoor space for seats and shades. In some parts there are also public seats in public areas for people who need a rest without using the bars or restaurants. (Figure 3.33)

There are many distinguished interest points exist in the Dereboyu, one of them is the Golden Tulip Hotel which is a five star hotel situated in the entrance of the street which is the focal point for the Dereboyu.

There are a lot of shops, bars and restaurants located along the street which function as both entertainment and commercial purposes and as places that people can spend their time in the street rather than just passing through it. The Avenue mall, which was established in 2014, is another focal point for street, which serves an active edge for the Dereboyu.

Land use fig 3.32

The Dereboyu has a steady number of continues buildings and there is no space shortage in surfaces. Dereboyu also shares the characteristics of narrow streets as it is more suitable for social interactions and shopping and its designation are more or less based on an entertainment space for the city (Figure 3.33).



Figure 3.33. Shops and Markets along the Deberoyu Street with Characteristics of Narrow street

3.3.2.2 Human Activities in Mehmet Akif (Dereboyu) Street

Human activity is connecting to outdoors space, as I mentioned it in literature review divide to three parts as necessary activity, optional activity and social activity. Actually, human activities have different in daytime and nighttime.

In the day, human activities are close to pedestrian movement and dynamic pedestrian such as shopping and walking. People in the day prefer to shaping, walking and eating, especially in traffic time between 11:00 till 14:00.

In the night, human activities are close to social activity and pedestrian movement. Actually, after working hours around 18:00 pm all of shops will be close and people go to the restaurant and bar and spend time.

3.3.2.3 Accessibility and Permeability in Mehmet Akif (Dereboyu) Street

Actually Dereboyu Street has two-main access points as entrances, one from Golden Tulip Hotel and the other from Osman Pasa Avenue. According to site survey and visual observation accessibility in this street are pretty good. Dereboyu Street has too many second streets, between shops and restaurant there is too many second street and they can increase accessibility in Dereboyu Street.

In the other side permeability in Dreboyu Street has a quiet good. All of shops and restaurant has access to Main Street and people can access to all functions easily.

Street's path is divided in two categories, as Vehicle paths and pedestrian paths. Then, predominant elements in the urban tissue and also by setting an image of the urban layout. For example by concentrating special uses or activities on the street may give it predominance in the mind of the observer.

In case of the Dereboyu the street path is always bugged with heavy traffic both during the day and during the night. The vehicles are ranged from bikes, ATVs, mini buses, buses, cars, and trucks. The stress on the street paths is heavy as well as the weather condition makes it a bit hard to maintain and in a good state. However, vehicle path is maintained regularly and in time the asphalt is renewed while the pedestrian paths are totally a different story.

The Dereboyu is a two-way street however in its central to its termination sections the street becomes narrow and chokepoints become a routine matter during high traffic hours. There is also an issue of parking shortages as indicated in the questionnaire and evident in parking on pedestrian paths. The site survey and visual observation show pedestrian path in most of part has quiet good.

According to visual observation and site survey, the analysis for car parking space and areas has so bad specially in crowded time and traffic time there is no space for car parking and people leave the car in pedestrian or illegal place. On the other hand car-parking situation because of Dereboyu being a long street with many shops and restaurants, it is a necessary act to address the problem.

The street can be livelier due to car traffics and pedestrian groups but also heavy traffic can also hinder the enjoyments of the place. There are standards speed barriers, street signs, pedestrian walking signs, and speed breakers. However the street width sometimes cannot support a lot of vehicular transition and creates heavy traffics, which are unpleasant to both pedestrians and people who are in cars, and also creates air pollution and sound pollution and make thing complicated.

Fig 3.35 accesibility



Figure 3.35. Dereboyu Traffic in Both Day and Night and Street Standards

The pedestrian mobility is smooth in most of the street especially near the shops or restaurants; however the major problem, which is width differentiation, is a hampering issue for pedestrians. With are also not the same in all areas and sometimes are too narrow that can only one person can go through. Also unfortunately some areas are in bad condition and damaged due to either poor material or by excessive use by cars as a parking sections.

For vehicular mobility most of time, drivers are faced with medium to heavy traffics in rush hours or nighttime.

3.3.2.4 Active-passive Edges in Mehmet Akif (Dereboyu) Street

Studying the edges of a street from functional point of view gives us two kind of active and passive edges. Active edges of the streets are those that people use them during their daily times and contribute to the individual's activities. While passive

edges are those make no connection with streets user and they have no livability and activity such as houses, vacant buildings and lands.

Active and passive functions along Dereboyu Street are so important, according to literature chapter. Dereboyu Street, because of its variety of shops, restaurant, bar, parks and other activities, has a good potential for an active edge. Dereboyu Street is in the city center and is crowded both in the morning and in the evening and night time. Some people are walking or sitting and see around some people use other activity.

The clarity of understanding edge is very different in some parts of Dereboyu street. While in some parts the edges have been defined by several signs or in some way appropriate edging, the other parts are totally undefined and non-recognizable which lead to mixing up vehicle paths and pedestrian paths.

3.5 Summary of the Chapter

In this chapter the Dereboyu Street has been thoroughly examined by physical and functional characteristics in street. In general the street serve its purpose in the entertainment and commercial roles and it gained many positive results as it is also the center of the city. While the street is one of the old and important parts of the city, it is considered to be the important section due its commercial characteristics. The users still need a lot of facilities and proper functionality of the street.

The weaknesses in physical and functional characteristics are in street furniture, some parts of sidewalks and districts. The pavements are in some areas lack the harmony and maintenance and are not designed in line to the other parts mainly due to shops developing their own style of pavement and walkways for their own shops

and restaurants. Car parking also cause of a lot of problems as the street is old; there are not enough legitimate parking spaces to keep up with rising number of car usage. The street lacks an open public space and although look good in some part it lacks a friendly atmosphere. Based on the results, the characteristics of Dereboyu have been summarized in Table (3.1).

Table 3.1. Summary of Dereboyu Street

Street Characteristics	Dereboyu Characteristics
Street form	Straight
Street length	1600 meters
Street width	18foot - 5.5 meter
Urban Pattern	Irregular building blocks with sometimes no connection
Building heights	Different and various heights from 1 to 15 stories with undefined roof and skyline
Building Facades	Different styles with various coloring, material and poor quality of some buildings.
Edges	Well defined edges in some areas while a little to no in minor areas
Flooring	Different use of flooring materials and style in addition to some poorly maintained parts
Sidewalks	Some narrow parts Blocked path by cars Disturbed by some undefined street furniture Poorly maintained walkways in some areas Small number of parking spaces
Shading and Microclimate	Shading are restricted to shops and restaurants Not enough public area shading

Chapter 4

CONCLUSION

In this chapter the final outcome of the study is represented. In the present chapter, the discussion of the study, implication and recommendation for the improvement physical and functional characteristics in Mehmet Akif (Dereboyu) Street, conclusion, limitation and future path of the study is presented as well.

Streets as the part of the public open spaces are the main factor in city. This street connects the two side of Lefkosa (old and new) to each other and also accommodates lots of shops, restaurant, markets and houses for residence and students. Obviously after establishment of many universities, the city of Lefkosa faced with so many developments architecturally, but this city still needs so many architectural upgrades, restructuring and reconstruction.

Mehmet Akif (Dereboyu) Street has now become one of the most important streets in Lefkosa as a public open space. Students are the major users of the new part of Lefkosa city. During the recent development in facilities such as construction of malls, hotel and so many restaurants, most of the local residents are attracted to spend.

So its worthy to mention problems and deficiencies of this road in Lefkosa based on its physical and functional characteristics such as poor quality of sidewalks, lack of

sitting area, lack of sufficient entertainment facilities, lack of parks, lack of shading and etc.

4.1 General Findings

Increasing car dependency life effects on the way of living, so more roads are going to be built for people's use under urban structure and architectural constructs. People prefer to get rid of polluted urban area and due to this reason, public spaces become seclude. Generally public spaces identify the culture and characteristics of the urban area through providing social interaction and human communications. Hence, public open spaces play an important and vital role in improving the social life alongside of city structure. Streets as the main components of the public open spaces as mentioned before, gather people for exchange of cultures, ideas, lifestyles entertaining and etc.

Streets are the most useful part of public spaces during history. The most important factor about streets is to provide facilitates for pedestrians movements and sidewalks in city. Different activities such as shopping, walking, sitting and greeting happen in streets. Streets are both for social activities and access. Those streets serve both vehicles and pedestrians have the potentials as a setting for courteous and civil society. Streets act as the connector between buildings, people and vehicles.

Physical characteristics of streets as mentioned in the literature review are related some object. Which should be designed in a pleasant welcoming, attracting and comfortable way for the users. In terms of street forms, a curved narrow street is more preferable due to its sense of enclosure, and view for pedestrians.

Narrow streets are healthier based on environmental criteria's. Length of the streets should not be exceeded 1500m to not lose the human scale. Having break along the long streets make it more attractive and encourage more people to stay in it.

A unified street includes buildings with harmonious color, height of building, and architectural styles and with respect to another streets based on their appearance and length. Next to the importance of height, forms and length, the floor facades of street are important edge of the street should be designed uniquely as pleasant and welcoming for people. Unified street should bring pleasant view in the eyes of pedestrians to increase their encouragement and willingness to join the public area.

Appropriate sidewalks need qualified flooring to create the suitable surface for walking and running of pedestrians considering disabled and elderly people. Road pavement should be in a way to convey the comfortable movement for vehicles and traffic load. For this, considering the environmental and physical situation is very important for providing comfortable condition for residence. Street furniture is also important for providing the comfortable area for people. Street furniture is consist of artificial lighting, shading elements, sitting constructions and bins in a high quality to make them possible for long time use.

Street arts alongside of street furniture are interesting in identifying the street culture. Greenery is also important for having the successful street with trees and vegetation to create a sense of human lifestyle and scale. Trees can work as the shadow provider for pedestrians and also a border to separate the street from sidewalks. Trees can also reduce the air temperature and surface heat.

Availability of sufficient density and entertainment activities are also beneficial for streets in order to attract more people. Accessibility of the streets is also important in terms of walking, private car, public transport, and car parks.

Street as mentioned before should provide attractive condition for people to call them to join and use the streets; for this, considering the active edge along the street instead of blank or passive edges should be organized. Active edges are shops, parks, cafes, restaurants, malls, green areas and etc. with variety of human activities for different ages. Apply various human activities such as optional and human activities results in high quality of physical aspect of the street. In addition to all of these, presenting the safe and comfortable space for people in street is a must for urban designers and municipality.

Aforementioned information and discussion are concluded from literature review and result of chapter 3. Following the recommendation for improving the Dereboyu Street as the successful street is represented.

4.2 Recommendations for Mehmet Akif (Dereboyu) Street

Based on the street typology, Mehmet Akif (Dereboyu) Street is an arterial street, multi-function and a boulevard in Lefkosa City. It is a one way boulevard with narrow median (1:5 up to 3m). Greenery in the Dereboyu Street is applied but need complete structured effort to increase the beauty and legibility of the boulevard. This street need a defined pedestrian realm with continuous three-lined medians, rows of flowers and tree with greenery spacing, managing a line for sufficient public transport, providing car parks near to the entertainment and shopping centers,

specializing bike lane, unique architectural design, discouraging the possibility of mid-walk jaywalking and better traffic control.

To conclude, the following lines will present improvement recommendations for Mehmet Akif (Dereboyu) Street first for physical characteristics and then for functional characteristics:

Improvement Recommendations for Physical Characteristics

- Providing continuous street borders to create and increase the sense of enclosure,
- Providing sufficient greenery for the appropriate use of wind and shadowing
- Intellectually filling the blank building facades and vacant areas
- Defining the standard criteria in terms of color, architectural materials, doorways, windows, size of the block, roof form, texture and etc. along the street to reach unity
- Bringing standards for façade and sign design;
- Improving the visual quality of signs with removing the brash and/or garish intrusion with shop logo;
- Renovating the shop fronts;
- Improving the design of the street with applying unique materials and design intelligence;
- Screening the vacant areas with special covers or decoration;
- Improving the building facades and quality with structural maintenance;
- Applying harmony between building heights in a similar sky line.
- Providing more greenery along the street,
- Improve the landscaping with the combination of the public art, painting, planting and decoration,

- Improving the maintenance of the current trees and plants of the street;
- Increase the space quality through planting,
- Applying more trees and flowering for sheltering and shadowing,
- Applying the fresh flowers in the gardens or boxes to represent the fresh natural colors to the space,
- Putting enough sitting and shading elements in specified distances along the way
- Improving the lighting design according to street themes,
- Highlighting the importance of spaces, building and activities with appropriate lighting.
- Locating sufficient numbers of bins with improvement in their design and places;
- Placing sufficient furniture alongside of street;
- Cleaning the sidewalks from any barriers such as boxes, rubbish, advertisement and etc.;
- Differentiating the traffic load by suitable flooring;
- Intellectually use the wind flows to decrease the sidewalk temperature
- Filling the vacant spaces to have continuous edges
- Infilling the building development through improving the quality of urban design
- Assigning pedestrian signs to increase the legibility

Improvement Recommendations for Functional Characteristics

- Increasing the street permeability
- Improving the quality of the entrance points of the street
- Increasing the number of car parking and improving the quality of car parks
- Highlighting visual permeability of important buildings
- Providing multiple car parking in back side of the street
- Fixing the car park signs and entrance sense

- Forbidding the car parking in the sidewalk
- Preventing the high speed along the street
- Fitting the traffic sense alongside of the urban sense
- Providing safe bike lane
- Improving the current public transportation quality and bus stops
- Increasing the number of vehicles for public transportation
- Assigning the particular part of sidewalks for disabled and elderly people
- Increase the crossing lanes of sidewalks with appropriate design
- Filling vacant areas with functional activities like parks
- Providing festivals to attract the people to the streets
- Placing more cultural functions to the street
- Structuring cultural and social functions near to the roundabouts and university
- Managing the availability of continuous activities.

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