University Campus as a Public Space of the City Case Study: Eastern Mediterranean University Campus

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ABSTRACT

On one hand, suburbanization, urbanization, and technology are the phenomenon of 21th century that influence on behavior of public spaces, on the other hand, knowledge society, knowledge economy, and university campus are the main components of society in 21th century, so development of relationship between university campus and the city can affect positively behavior of public spaces that physical and social relationships between university campus and the city are the main focus of this research. According to focus of this research, the aim is to understand how campus environment can act as a public space of the city and Famagusta City and Eastern Mediterranean University (EMU Campus) are chosen as Case studies of this research. Famagusta city is divided to four districts that are: Walled city, Maraş, Asaği Maraş, and new quarter devlepment. EMU campus is locaed in new quarter of the city that it affects development of the city toward itslef and today, Famagusta city face with lack of good quality of public open spaces, which cause that the level of livability of the city decrease. The physical and soical relation ships of EMU campus with Famagusta city is in low level, so the mian research quesions are "How can EMU campus act as a public space of Famagusta city?" and "What should be design criteria for turning EMU campus into a public space of the city, without disturbing its privacy?" for answering these research questions, this research is divided to theoritical framework and case study research. In theoritical framework, type of campuses, physical and soical relationships of university campus with the city, recent trends of universiyt campuses, type of public open spaces, and physical and function characteristics of public open spaces are explored and in case study research, the methodology that are chosen are qualitative and quantitative surveys. Qualitative

surveys includes litriture survey, questionniare, participation observation, and documantary and evaluation of these data are quantitative and qualitative method. Finally, this research answer to research questions and propose general guildines for University campuses in general, and general guildines for EMU Campus in specific.

Key Words: University Campus, Public Place, Public Open Space, EMU Campus, Famagusta.

ÖZ

21. yüzyılın en önemli algılanabilen olguları arasında banliyöleşme, kentleşme ve teknoloji yer almaktadır ve bunlar kentlilerin, kamusal alanlardaki davranış tarzlarında etkili olmaktadır. Aynı zamanda, bilgi toplumu, bilgi ekonomisi ve üniversite kampüsleri 21. yüzyılda toplumun ana unsurları olmakla birlikte, üniversite kampusu ve kent arasındaki ilişkinin geliştirilmesi kamusal alanlardaki olumlu davranışları etkileyebilmektedir. Bu araştırmanın temel odak konusu; üniversite kampusu ve kent arasındaki fiziksel ve sosyal ilişkiler üzerine kurulmuştur. Bu bağlamda bu tezde sunulan araştırma, kampus ortamının kentin kamusal alanını nasıl etkilediğini anlamak ve ortaya koymak üzere kurgulanmıştır. Bu doğrultuda, Gazimağusa kenti ve Doğu Akdeniz Üniversitesi (DAÜ) Kampusu, bu araştırmanın çalışma alanı olarak belirlenmiştir. Bugün Gazimağusa kenti dört bölüme ayrılmıştır. Bunlar: Tarihi Sur İçi, Kapalı Maraş, Aşağı Maraş ve yeni gelişen bölgelerdir. DAÜ kampusu kentin yeni gelişen bölgelerinde yer almaktadır, - ki bu gelişim kentin kendisini doğrudan etkilemektedir ve bugün, Gazimağusa kenti kamuya açık alanlardaki kalite eksikliğinden dolayı kentteki yaşanabilirlik düzeyinin azalmasıyla karşı karşıyadır. DAÜ Kampusu ile Gazimağusa kentinin fiziksel ve sosyal yönden ilişkileri düşük düzeyde yer almaktadır. Böylece araştırmanın başlıca soruları 'DAÜ Kampusu kamusal alan olarak Gazimağusa kentini nasıl etkilemektedir?' ve 'Mahremiyeti bozmadan, DAÜ Kampusunu kentin kamusal alanına dönüştürebilmek için tasarım kriterleri ne olmalıdır?' üzerine kurulmuş ve araştırma sonucunda bu sorulara cevap verilmiştir. Bu araştırmanın temel metodları kuramsal çerçeve için literature çalışması ve alan çalışması olarak ayrılmıştır. Kuramsal çerçevede, kampus çeşitleri, üniversite kampuslarının kent ile fiziksel ve

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sosyal yönden ilişkisi, üniversite kampuslarındaki son eğilimler, kamuya açık alanların türleri ve kamuya açık alanların fiziksel ve fonksiyonel yönden ilişkileri incelenmiştir. Alan çalışmasının metodolojisi, nitel ve nicel araştırmalar olarak seçilmiştir. Nitel araştırmada, literatür araştırması, yerinde gözlem yöntemleri kullanılırken, nicel araştırma olarak da anket ve görüşme teknikleri kullanılmıştır. Bu yöntemlerle elde edilen veriler yine nitel ve nicel yönden incelenmiştir. Son olarak, bu çalışma, sorulan sorulara yanıt vermekte ve genel olarak kampusların bulundukları kentlerin kamusal alanı olabilmelerine yönelik bazı öneriler sunmakta; özelde ise DAÜ Kampusu için yine kampusun Gazimağusa kentinin kamusal alan olabilmesi için daha özelde öneriler sunmaktadır.

Anahtar Kelimeler: Üniversite kampusu, kamusal alan, kamusal açık alan, DAÜ Kampusu, Gazimağusa.

To My Family

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INTRODUCTION

1.1 Definition of the Problem

On one hand, development of urban population has caused the cities to expand toward suburban areas in the 21st century and these growths, going along with the development of technology such as vehicle, computer and internet, have influenced behavior of public spaces, public life and face to face communication in open spaces.

On the other hand, development of university campuses in inner cities affect the urban pattern and life of people, so it is a positive potential of university campus to improve public space and it can develop quality of life by integration with the city and guide city to become sustainable.

As Harloe and Perry (2004) state, higher education is impressed by globalization of knowledge economy in 21th century and technology and innovation become the core of economy issues of the city, so demands of people especially young generation to achieve to knowledge through studying in universities influence on expansion of the university campuses around the world and alter the physical characteristics of the campus. In comparison with traditional campuses that they were isolated from the urban milieu, today majority of university campuses are located in the city or next to the city (Tomaney, & Wray, 2011, p.914) (Benneworth, Charles, & Madanipour,

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2010, pp.1611- 1616), so University Campuses affect urban environment according to natural, physical, social, economic and culture dimensions (Irvin, 2007, p.1).

From the point of view of the natural environment, all type of university campuses have effects on air pollution, energy consumption, global warming and production of greenhouse gases. Physically, they affect density, diversity, traffic congestion, centralization or decentralization, and activities of its neighborhoods. Economically, they can affect the economics of the city, price of houses and they have a main role in social life of the city. For all these reasons, integration of campuses and cities positively help to the development of the city and thus, in below, some reasons that universities and cities must be integrated are explored:

- University Campus can be an open community of city for increasing safety,
- University Campus influences on diversity of activities of its neighborhoods and city,
- Universities make job opportunities for people and they affect economy of city,
- By considering the enhancement of traffic, crime, parking, noise, service demands, expansion of cities and zoning, corporations of campus and city help to reduce these problems,
- Utilization of pedestrian ways and bicycle connections between city and campuses through the edges decrease the negative effects of large universities on community that are increasing traffic and isolation of community,
- The entertainment, cultural activities and park facilities in campuses cause campuses to be considered as part of the city and this increases the quality of community,

- Campus can increase the average education of city,

- Campus can solve technical problem of a city (Irvin, 2007:p.2).

The location of campuses is also significant and it affects functions of neighborhoods. Regularly, neighborhoods surrounding campuses include: commercial shops, bars, restaurant, sport club, and residential, so when campus is separated from the city/neighborhood, quality of neighborhood is decreased. Campus as a symbol of knowledge society is the community that in addition to education is public space for students and its region and city, so the university campus must have successful characteristics of the public space (Gumprecht, 2008). Public space as a square, street, park and building is the active space for communication, relaxation, playing and movement that it can give a specific cultural sense and safety to people. After development of suburbanization and growth of vehicles, the social life of people and types of communication have been changed by innovation of television and computers and private places are more popular than public spaces, but the worth of public space are not forgotten yet. As Stephan Carr et.al, Stated in their book Public Space "there are three primary values that guide the development of public space that it should be responsive, democratic, and meaningful." It means that public space should be a place that in addition to consider the needs of people (diversity of users), pay attention to rights of people (diversity of uses) and it becomes a center core of connection between personal life, social life and place (Carr et al., 1992, pp.1-22) and university campus can be one of that place.

The field study of this dissertation is Eastern Mediterranean University (EMU) in Famagusta, North Cyprus. Famagusta city is a harbor city that it is popular for its Walled City, which it is the heritage of Cypriot people. After foundation of EMU

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University, the livability in old district of Famagusta has been decreased and the city is developed in direction towards university and the new quarter of city become more livable than the old one. Today, the main problem of Famagusta is that its public spaces are in low level quality and most of them are public indoor spaces; even EMU does not have strong connection with the city and it is another negative feature of campus and city. Many reasons of separation of EMU from Famagusta city can be listed as lack of defined edges, poor transportation connection between city and EMU (Car, pedestrian, bicycle, and bus), and lack of any perpetual activities that attract local people to attend in EMU. This phenomenon affects the city according to physical, socio- culture, and economic dimensions of urban design.

1.2 Aim, Objectives and Research Questions

Based on the arguments above, the main aim of this research is to understand how campus environments can act as a public space of the city.

The research focuses on the EMU Campus in Famagusta city with two inter-related research questions:

1- How can EMU work as a public space of Famagusta?
2- What should be the design criteria for turning EMU campus into a public space for the city, without disturbing its privacy?

To be able to answer these research questions, following objectives have been set up:

- To describe type of campuses;
- To study history line of campuses;

- To explore the relationships between university campus and the city in terms of physical, social, and economic dimensions;

- To find out the recent trends of university campuses;

- To find out the definition and types of public open spaces;

- To argue about physical and social characteristics of public open spaces;

- To evaluate campuses as public space of the city.

1.3 Research Methodology

The methodology of this research is case study research that uses both qualitative and quantitative research techniques and documentary research. The literature review is based on the keywords of campus, city, place, public open space, physical, and social. In the field study, method of data collection covers both qualitative methods including literature survey, site survey and on-site observations, and also quantitative methods including questionnaire survey and interviews. All results of these data collection have been evaluated mainly qualitatively in the end.

Chapter 2

A REVIEW OF UNIVERSITY CAMPUS PLANNING AND DESIGN

Based on initial literature survey, the campuses can be studied under three main types: "University campus", "High- tech campus", and "Corporate campus" (Hoeger & Christiaanse, 2007). This research focuses on university campuses based on its problem statement.

The importance of higher education was considered from foundation of university in 10th century by creation of "University of Bologna in Italy", "University of Oxford", and "University of Cambridge" and then it was followed in the United States in 17th century. However, the development of University in the United States was influenced by "English Collegiate Ideal" in Colonial period, but they had their own concept that was concept of "Campus" and it was shaped for the first time in this period (Turner, 1984, pp.3-17). The word of "Campus" refers to vast green area land with separated buildings that it involves a community who study, work, and live together (Turner, 1984, p.47) (Hoeger, & Christiaanse, 2007). On one hand, high tech campus as one kind of campus that was founded in 19th century is a researcher campus and it is not an academic campus. According to science, knowledge, and technology, high- tech campuses do research and it is more related to business and it is probably located near university campus or city such as Stanford Research Park near Stanford University, Technology Park near university of Bremen near Berlin, Technical University of Munich, Helsinki University of Technology in Finland, Humboldt

University Berlin, University Van Amsterdam, and etc. (Hoeger, 2007:pp.14-17) (Hoeger, & Christiaanse, 2007, pp.260-291). On the other hand, corporate campus provides innovation and creativity to show their products to outside of campus such as Nike World Campus, the Vitra Campus, Benetton Headquarters, Microsoft Campus, Novartis Campus, and etc. These kinds of campus traditionally were closed to outside until foundation of Vitra Campus that by construction of different landmarks opens campus to outside community. (Hoeger, 2007:pp.14-17; 294-317).

The main focus of this chapter is the evaluation of "university campus" planning according to its relationship with the city. According to variety types of campuses, "university campus" is the main debate of this chapter and type of university campuses according to their relationship with the city will be probed. It will help to understand each campus's characteristics according to their location, then the relation of campus with the city according to physical, socio-cultural, and economic will be analyzed, then three examples are chosen to understand the characteristic of campuses which are located in the city or near the city. At the end, recent trends on campus planning will be explored

2.1 University Campus

University campus is an educational milieu that creates a new generation of knowledge and new scholars and it includes educational district, leisure district (such as restaurants, café, sport facilities, and etc.), office district, and residential district (Bindels, 2007, pp.77-87). To understand the university campus planning and its policies, briefly the history of university campus will be explored below from colonial period until 21th century in the United States as an origination of foundation of campus.

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The storyline of Campus started from settlement of Massachusetts Bay Colony in Cambridge by foundation of Harvard College as a first University in the United States (Bush, 1968:pp. 9-11). In colonial period, nine colleges were founded that significant colleges between them are "Harvard College", "William and Mary", "Yale College", and "Princeton". Although College's planning in this period was followed by the English one that it was three quadrangle forms, but the buildings in contrast to England colleges were located separately. According to Puritan's religious beliefs, colleges were located in frontier of city or in rural area (William and Mary was located in rural area for the first time)[1]. The colleges in this period included chambers, library, general living space, lecture hall, president's quarter and Meeting house[2] that most of functions were located in one building The concept of "Campus" was shaped by foundation of Nassau Hall in Princeton and this concept was continued after American Revolution period (Figure 1). According to increasing numbers of campuses in American Revolution period, campuses were built in rural area like colonial period except State Universities[3] that were constructed in the cities.

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[1] Paul Venable Turner referred to reasons of location of campuses in rural area in his book "Campus: An American planning tradition": At first, this was motivated by the goal of training Indians for missionary work. By the mid- eighteenth century, two other factors contributed to the rural placement of schools: a distrust of cities, which were viewed as centers of irreligion and discord, and an attraction to the supposed purity of nature.

[2] According to penetration of religious in colleges and beliefs of people in colonial period, each campus included chapel or meetinghouse for religious services for students.

[3] State University was found in American Revolution period.
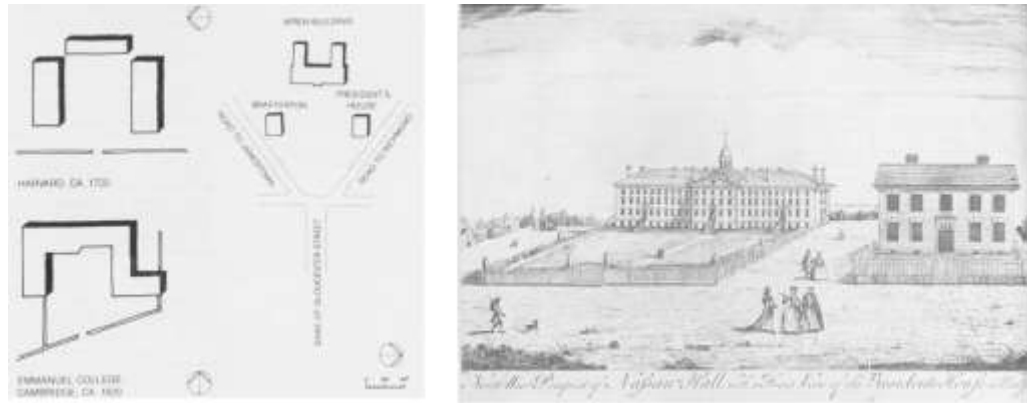
Figure 1: Left Picture Shows Plan of Harvard College, William and Marry College in United States and Emmanuel College in Cambridge of England and Right Picture Shows a Nassau Hall in Princeton as a First Campus (Turner, 1984)

The type of campus planning of this period was impressed by idea of Benjamin Henry Latrobe[4] and the result of his concept was three quadrangle forms with connected buildings and his work influenced on idea of Thomas Jefferson (academic village) in University of Virginia. The importance of nature in campuses that was originated from 1820 to Civil War[5] was improved by idea of Fredrick Law Olmsted as a father of Landscape of United States in 19th century. According to his ideas, most of campuses in this period were located in suburban area with high integration to surrounding neighborhoods as a part of large community and type of planning of them were irregular that was formed as a park By creation of modern campuses in the late 19th century, they were influenced by German Universities that ignored the traditional collegiate plan especially about their locations and they were located in the cities, but the power of traditional collegiate prevented from rapid improvement of modern campuses (Figure 2) (Turner, 1984).

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[4] Benjamin Henry Latrobe as a pioneer of professional campus planning designed eight colleges in this period: "Military academy in University of Pennsylvania in 1800", "Rebuilt Nassau Hall at Princeton in 1802", "Design Stanhope and Philosophical halls in Nassau Hall in 1803-1804", "Dickinson college in central Pennsylvania in 1802", "Transylvania College in Kentucky in 1812", "Design for South Carolina College in competition 1802", and "Draw a plan for national university in Washington."
[5] In this period, campus planning was symmetrical.
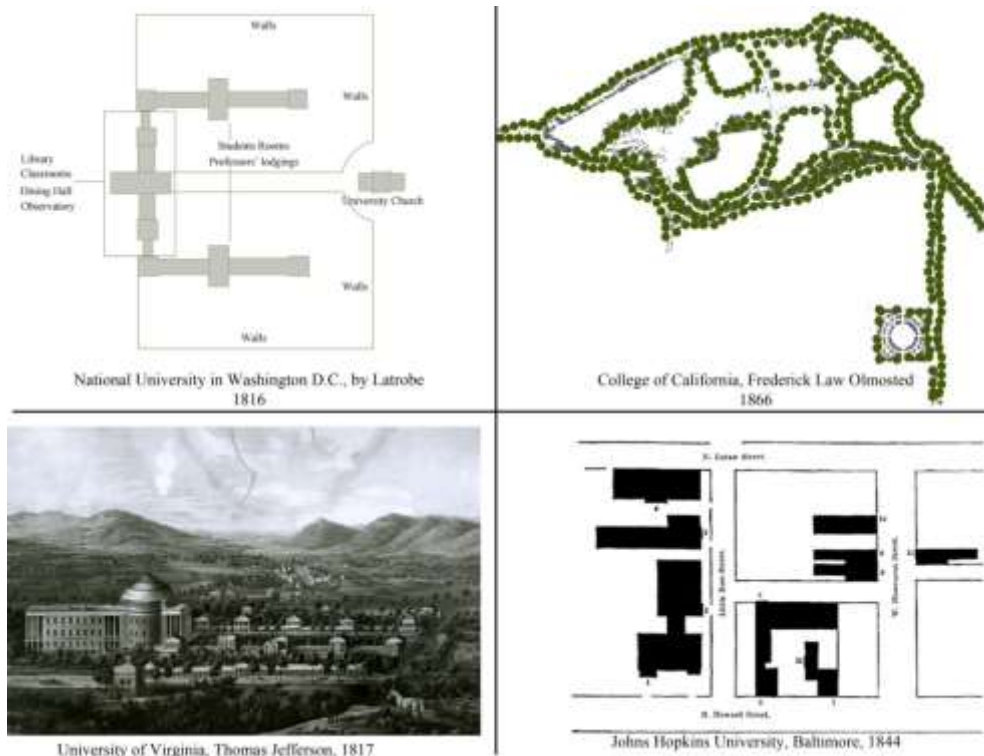
Figure 2: These Pictures Show a Process of University Campus Planning from Revolution Period until Late 19th Century (Turner, 1984)

One of the examples of German university campus is Karlsruhe University that was founded in the south of Berlin in 1825. However, this university is located in historic quarters of the city of Berlin, it is open to outside community by uncovered edges and its main characteristics is high integration of the university and the city and it is supposed as one of the German university campuses that was influenced by American University Campuses in 19th century (Figure 3) (Hoeger, & Christiaanse, 2007, pp.200-204). Another main movement that influenced on campus planning in this period was Beaux- Arts[6]. Diversity of uses in comparison with traditional periods, were improved in 20th century and campuses in addition to prior functions had "laboratories", "Museum", " Separate dormitories area", "research libraries", and

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[6] Beaux- Arts Movement was influenced on campus's planning in 1900 and it is supposed as a foundation of "city beautiful movement" in the United States.

"Gymnasium". "Campus as a rural characteristic" was replaced by "campus as a city characteristic" in this period (Turner, 1984).

Figure 3: Karlsruhe University is an Urban Campus that has a Relationship with its Surrounding (Karlsruhe Press and Information Office, 2011)

In the middle of 20th century, concept of American campuses were expanded in European countries and however many campuses were founded in the suburban area of cities mainly because of lack of lands in cities; their connection with cities were considered precisely (Merlin, 2006, p. 188). In this period (Post War), increasing in the requirements for education, growth of population, complexity of variety of functions in campuses, and urban modular campuses were the main issues of campus planning. Anti- historicism, functionalism, and end of traditional college was the main influence of modern architecture on campus planning in 20th century. Another factor was innovation of Automobile that influenced on location of campuses by consideration of access of campus to road, location of parking lot, and traffic circulation in campuses. In the second part of the 20th century, consideration of historic and traditional architecture became significant again and it influenced

campus planning. Eero Saarinen as a modern architect was interested in historicism in this period and designed Concordia College in Neo- traditional approach.

Thus, it can be deduced that university campus has two kinds of form: the university campus that has characteristics of city and these kinds of university campuses are mostly regular; and other type is university campus that has characteristic of green area and these kinds of university campuses are mostly irregular (Irvin, 2007). Besides, each period had some innovations in campus planning and the campuses until 19th century were located in rural area, but by the improvement of modernism, some campuses were built in inner-cities; and today, by expansion of cities and their population, different kinds of campuses according to their location exist, which can be named as: "City as a Campus" and "Campus as a City" (Turner, 1984) (Hoeger, &Christiaanse, 2007).

2.1.1 City as a Campus

World Wars caused increasing needs of American people who are professional that can develop the country in future, so the commitment was shaped for development of public higher education at that time and this commitment helped to develop of state university by endowing the Land- grant for construction of colleges. The development of industry and technology developed urbanism and urban, so needs of more campuses was felt than before and by 1960s, urban campuses were increased especially in the United States (Elliott, 1994:pp. 1-20). According to Haar (2010, p.xvii) the city as a campus does not just refer to academic buildings and educational environment, even emphasis on strong relationship of academic environment with city milieu. Considering the city as a campus, two categories can be observed: "the Inner- City Campus" and "the College Town".

2.1.1.1 Inner City Campus

Inner- City Campus as an urban campus refers to campuses that are located in the city, but it does not mean that each campus that is located in city has integration with city. Accordingly, we can talk about "open- community campus" and "close-community campus" that define the categories of Inner- City campus according to relation of them with city. Open community campus means that the campus that is located in the city (inner-city campus) has relationships with the city and these relationships are physical, social, and economic. Consideration of all these dimensions in relationships of campus with the city means community campus open its arms to the city and lack of attention to each dimension reduce the relationship of campus with the city. For instance, Harvard University as one of good examples of "open- community campus" located in the city and its square is the center of the region with commercial functions and the buildings of Harvard university is part of Massachusetts, so it gets a characteristics of the city and has a physical, social, and economic relationship with the city (Figure 4) (Hoeger, &Christiaanse, 2007, pp.196-200).

"Close- Community Campus" refers to inner city campus that does not have any physical, social, economic, and sustainable relationship with the city and it is closed to outside community

According to these arguments, the relationship between city and campus is evaluated in order to physical and social deeply and generally explore the economic relationships of campus and the city.

Figure **4**: Harvard Square as a Center of Massachusetts (Chensiyuan, 2013)

2.1.1.2 College Town

College town refers to towns that are influenced by colleges. The college town ordinarily include high- ratio of educated young people from different races, social classes, and nations that it is not so simple to recognize which towns are college towns, so Blake Gumprecht in his book "The American College Town" defined some criteria for discovering college towns that are explained in below:

1- College towns probably were located in small towns,

2- The ratio of college students to overall population: if the number of four- year college students equals at least 20 percent of a town's population, then a collegiate culture is likely to exert a strong influence,

3- The share of the labor force that works in education, or the population that lives in group quarters such as dormitories (Gumprecht, 2008, pp.2-3).

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By these criteria, college towns are separated from other type of colleges or campuses. It is undeniable that college towns have different characteristics from other colleges and in below this characteristics are probed:

1- The most population of college towns is young.

2- Ratio of educated people to overall population is higher than other cities.

3- Most of residents in college towns prefer to work in their professional filed; in other word, they prefer white- collar jobs more than blue- collar jobs, so the industry and factories are less in college towns than other cities.

4- Living expenses such as rent of houses, expenses of foods, and etc. are high in college towns.

5- The livability of college towns depend on their students. It mean when students that majority of them are from another cities or countries travel to their mother city, the college towns seem like ghost town.

6- Most type of houses in college towns are apartments that are rented by students who prefer to have roommates in contrast to other cities that people prefer to live alone or with their families.

7- According to diversity of users (according to their nations, races, social class, ages and education) in college towns, the city become international city with diversity of uses (restaurants, café, bar, sport facilities, and etc.).

8- The most of people use bike or walk for their transportation to college or their work places.

9- Finally, it is a place with high quality of life where has a safety with different facilities such as parks, different kinds of restaurants according to different nations, college and etc. (Gumprecht, 2008, pp.4-16).

The value of college towns came back to history of American innovation. There were different reasons that college towns became more common in America than other countries. Firstly, in opposite to other countries where the foundation of cities influenced on creation of colleges, development of college influenced directly on urban development in the United States; in other words, the colleges made cities. Secondly, the vast land and assortment of cultures increased requirement of variety of colleges in different states. Thirdly, diversity of religious caused multiplicity of colleges for each state and finally, their beliefs that colleges must be far from cities are exception from reason of foundation of college towns like colonial colleges such as Harvard, Williams and Mary, and Princeton that all of them were located in rural area far from cities (Gumprecht, 2008, pp.17-22). However, enrolments in colleges and universities are decreased in recent decade, but college towns population are increased that can refer to high quality of lifestyle in college towns and job opportunities that motivate students who also graduated to stay there, so today college towns are grown in different states (Gumprecht, 2008, p.39).

2.1.2 Campus as a City

These kinds of campuses mostly are built in suburban area and they are named as a "Greenfield Campus". Greenfield campus is an isolated campus from the city that is designed in green landscape outside of city. The vision of this kind of campus is preparing calm environment for studying and thinking, but the main disadvantage of it that is ignore of expansion of knowledge to outside the campus caused this kind of campuses become outdated today (Hoeger, 2007:pp.13-14). The examples of this kind of campuses are Freie University Berlin, University Utrecht Netherland, ETH Honggerberg Zurich, Delft Techno polis, University of Konstanz, and etc. (Hoeger, & Christiaanse, 2007, pp.226-258). According to the effects of campuses on

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development of cities, after foundation of "Greenfield campuses" in suburban area, the neighborhood around the campus would be developed and attract the city to itself and after a period, the campus are located in adjacent to city and are named "campus close to the city" (Rawn, 2002, pp.3-6). Overall, campus as part of big community of city has effects on cities according to physical development, cultural, social, and economical dimensions that these influences will be explored in the next section. According to the focus of this research and type of its case study, university campus that is used in next section refers to campuses that are located in the city.

2.2 Relationship Between University Campus and the City

Cities as a place of communication, business, trades, technology, and social life of people with diversity of races, religious, nations, beliefs, and social classes is center of competitions, science, and knowledge today, and direct relationship between education and job opportunities in the city have attracted many young people to cities in the period of knowledge economy competition and they have effects on the behavior of campus design planning and relation of it with the city (Cisneros, 1996, p.1). By development of cities, population has increased and campuses have extended with different kinds of students from different cultures and ideas, so in accordance with relation of campuses and its neighborhood and its surrounding communities, both kinds of design; architectural and urban design, must be concerned the physical relations of campuses with the city (Haar, 2010, pp. xiii- xiv). One of the main effective issues in relation of Campus and City is the location of campus. The campuses that are located in city or near to the city (according to type of university campus) influence more on the city than Greenfield campuses that they simultaneously have influenced on cities, so the location of campus in the city causes

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increasing interaction of campus with the city and this collaboration help to development of both of them (Hoeger, 2007, p.17).

In today's knowledge city[7], by transforming the relation of urban and campus, the campuses in addition to their social, economic and culture forces work as laboratories in cities (Hoeger, 2007, p.13). University campuses according to three main conditions of knowledge economy that are "Knowledge", "Learning", and "Creativity" influence economic, social, and cultural region levels of the city and help to connect them to "Global Knowledge Economic" (Williams, Turner, & Jones, 2008, p.23).One main question here is that "what conditions must the university campus have that it can connect with the city?" For answering this question, physical, social, and economic relationships of campus with the city will be studied in this section.

2.2.1 Physical Relationship of University Campus With the City

In 21th century, on one hand, many urban planning focus on physical relationship of university campus with the city, whereas majority of university campus are located in center of cities (Irvin, 2007); on the other hand, one of the main effects of university campus on the city is physical that it causes growth of the city to its direction and many facilities such as restaurants, café, bar, and houses are developed surrounding the university campus and they increase quality of life in cities. We may argue that the physical characteristics of university campus have many effects on the city, some of which are:

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[7] The knowledge city is referred to cities that their economics are related to innovation, creativity and knowledge (Corneil, & Parsons, 2007, p.116).

a. Cause that new neighborhoods develop around the university campus,

b. Development of the economy of the city,

c. Increase in integration of the students and the local people,

d. Rise in activities in its surrounding neighborhood,

e. Increase in security of the city,

f. Make it easier to flourish knowledge to society.

According to different scholars (Rawn, 2010) (Carmona et. al., 2003) (Carmona et. al., 2008) (Irvin, 2007) the first and significant criteria in physical relationships of university campus and the city is location of university campus and then if consider university campus as a neighbourhood, the edge and center of it affect physical relationships of university campus with the city, also the buildings, open spaces, and transportation play main roles in physical relationship of university campus with the city, so each of them is explored separately in below.

Buildings: One of elements of university campus that must be considered in its physical relationships with the city is its buildings. The buildings of university campus[8] must have connection with the city and their connections are measured by their height, their location of entrances, and their architecture style. According to principles of urban design, the townscape of city has significant role in unity of the space, so the height of buildings of university campus must be respected to townscape of city (the buildings in this section refer to the buildings that are located near edge of the campus). Another element that influences the physical relationship of university campus and the city is the location of entrances of buildings. If the

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[8] The buildings those are located close to path of the city.

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direction of entrance of buildings opens to paths of the city, the physical relationships of university campus and the city will be developed. The architecture of buildings of university campus must follow architecture style of city and they must preserve the identity of the city and to improve legibility of university campus, it is better to have a landmark within the university campus (Rawn, 2010).

Open Spaces: Another element of university campus that influences the physical relationships with the city is the open spaces, which include landscape, pavements, and urban furniture. As mentioned in buildings, the height of buildings must respect to townscape of the city and it is the same in height of trees, also form of open spaces in edge of university campus must be host to the city. For developing the physical relationships of university campus with the city, the proportion between university campus' buildings and open spaces must be respect to proportion of mass and open spaces of the city (Rawn 2010).

Transportation: In addition to vehicle transportation, in majority of university campuses the pedestrian path and bicycle lanes (Sustainable transportation) are considered precisely, so it can be an opportunity to connect these path to the city and it affects quality of its neighbourhood, in other words, continuing the pedestrian paths and bike lanes through the city decrease traffic congestion and it encourages walkability and cycling that lead to increase social interaction and it helps to sustainability (Irvin, 2007).

Edge of university campus: Edge of university campus is the most significant element of it for improving physical relationships of university campus and the city.

It includes buildings, barriers, gates and open spaces. The edge of university campus must be defined clearly and it is better to define by buildings and open spaces instead of walls and fencing. According to Robert Stevteville et al. (2003), the functions that are considered in the edge of university campus must be public such as park, public spaces, and etc. Another main element of edge of university campus is its gates that their location, their numbers and types of architecture affect this relationship (Irvin, 2007) (Rawn, 2002).

Center of University Campus: In scale of the city, the university campus is a neighbourhood and center of neighbourhood is considered as main core of there and it is a main element for connection with the other parts of the city, so the center of university campus is evaluated by its location and its activities. According to Robert Stevteville et al. (2003), the center of neighbourhood must be reachable from everywhere, so center of university campus as a neighbourhood must have access from everywhere and it must have strong connections with its edges. As Robert Stevteville et al. (2003) mentions in "New urbanist principles for human scale community", the functions that are considered in center of University campus is better to be mixed use (Irvin, 2007).

For instance, in IIT Main campus, the architects attempted integrate the buildings of campus with structure of the city and it is indicated in the work of Rem Koolhaas in designing of McCormick Tribune Campus Center (Figure 5), also the most of buildings of IIT campus are located adjacent to the street and open spaces define the edge of the campus (Hoeger, & Christiaanse, 2007, p. 211).

Figure 5: McCormick Tribune Campus Center is designed by Rem Koolhaas
(Hoeger, &Christiaanse, 2007, p.211).

Physical relationship is not the only dimension that can improve the integration of campus and the city; other dimensions that must be realized are economic and social, however, physical integration influences on them. Below, the economic relationship of campus with the city will be analyzed

Economic Relationship of University Campus With the City

Development of technology influences growth of knowledge economics. As cities are the main core of business, productivity, creativity, and trades, knowledge

economy is developed more in cities. The most places that knowledge economy strongly effect on cities are where the universities exist as a bridge between knowledge and innovation, creativity, and productivity. University campuses can act as both inventor and consumers in knowledge economy. However, existence of university campuses can be help the economy of the cities, but ignoring the vision of the university campuses cause that these relationships do not develop economy of the cities, so for improving these relationships, some points must be considered. Firstly, the mission of university campuses must be guided in accordance with vision of the cities according to their social and economic factors. Secondly, changing the ideas about university campuses that they are not only places for science and knowledge and find the way to utilize their knowledge in business sectors of the cities. Thirdly, universities and cities must identify their strategies clearly according to reality and they must share their vision with each other and find the same goals. Finally, they must hold some meetings and share their works together (Williams, Turner, & Jones, 2008, pp.4-25). The existence of university as a production of knowledge that is used as productivity, help to improve knowledge economy and it increases the competition between societies. From business point of view, many companies and stakeholders prefer to collaborate with university as their core of research instead of researches themselves in their laboratories; so today the means of university campuses are changed and the expectation and demands from university campuses are increased and most of university campuses construct high tech campus or cluster campus for improving the economy of the city and it helps to economic relationships of University campus with the city (Reichert, 2006, pp.16-22). As has been said before, the main role of development of economy of the cities is existence of universities. The question here is "How does university improve the economy of the

region?" For answering to this question, six reasons will be explored below based on discussions of Porter (2007).

- Job Opportunities: Provide job for local people in university.

- University campus includes markets, restaurants, and café, they need to purchase their goods from companies and it somehow help economy of the city.

- "Real Estate developer": The power of university in Real Estate preserves and revitalizes abandoned regions where private stakeholders do not invest there.

- "Workforce developer": Teaching students as a future investment of the city, and hire them as employers in the technical-research cluster (Cluster means the connection between companies, stakeholders, providers, and universities) after their graduation.

- "Advisor and Network builder": Each undergraduate students must spend their internships in public or private sectors of companies or offices, so the students are the sources of companies, research centers, and offices for their benefits and their benefits help to economic of the city.

- "Technology and trades": one of the main characteristics of successful economy is growth of technology and universities play main role in development of technology (Porter, 2007, pp.41-44).

Although economic dimension is an important dimension in relationship of university campus with the city, but according to focus of this research, this section

just introduced the general characteristics of economic relationships of university campus and the city and it is not involved in main debate of this research.

2.2.2 Social Interaction Between University Campus and City

Today's urban development, increasing population, density of cities, and diversity of users (according to races, ages, nations, social classes) change the way of life of people and many factors such as suburbanization, urban sprawl or compact development, decentralization or centralization, university campus influence on social life of people in different ways (Gottdiener, & Hutchison, 2011, pp.55-58).According to the focus of this thesis, the effects of university campuses on social life will be explored in this section.

After World War II, increasing demands of education cause expansion of university campuses and majority of students with different culture and social background enrol in universities, so behaviour of universities in society have being changed and today most of adult people study in universities and it cause that this society is named "knowledge society" and universities is located in the middle of this society as a main hub of social development (Frank, & Meyer, 2007, pp.289-295). Learning of society in accordance to knowledge and improve culture of them are the main duty of university campuses as a centre role in knowledge society (Delanty, 2001, p.151). As university campus can be an opportunity to improve culture of people, members of university suppose themselves as a part of the society, and development of knowledge economy, the university campuses can be play main role in development of knowledge society (Wusten, 1998, pp.4-6).

University campus as an educational community face students to different diversity: "Structural diversity", "Curricular diversity", and "Interaction diversity". Structural diversity refers to diversity of students with different cultures, races, nations, and social classes. Gathering these communities together, cause students understand different cultures, races and learn different social behaviour. Curricular diversity refer to formal schedule programs that the students experience how to work with different ideas and cultures and learn to communicate with them; whereas interaction diversity refer to informal integration of different cultures that shows measures of communication of students with different cultures that include students and local people. So these diversities, prepare students in global societies and make them comfortable in their social life (Denson, & Bowman, 2011, pp.4-6).

In urban areas where the university campuses exist, diversity of users can be considered as a positive social impact of university on the city. It causes that different people with different cultures know other cultures and this transformation of culture can improve the socio- cultural behaviour of people. However according to diversity of social- culture of these cities, the main problem that must be considered in these cities is "Interaction between students and local people" and it is originated from differences of cultures, lack of information about social behaviour and cultures of each other, different type of social life, and different language.

2.2.2.1 University Campus and Communities

As foundation of campuses, they were located far from cities because of many reasons that one of that reasons was escape from social and economic problems of the city, but by passing times, cities were expanded toward the campuses and they unpredictably were surrounded by urban context, so the campuses were protected

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from their territories by putting walls in their surrenders. Then again they could not prevent from social and economic effects of cities and however campuses were located in the cities, they were again supposed as a solely community in the city. According to these issues, many policies attempt to improve connection of campuses with cities and collaboration of them with communities by partnerships of university, government, public sectors, and private stakeholders' investments. According to the Office of Community Partnership (OUP, 1999), the association of university with community in order to innovation procedures are divided into seven sections that are:

"Service Learning": It includes universities that provide situation for students by holding classes that they are taught to collaborate and work with community.

"Service Provision": University can become a main coordinator of projects of community, for instance, coordinators of University of Pennsylvania helped to revitalize its neighbourhood.

"Faculty Involvement": Faculty works as a main part of community activities.

"Student Volunteerism": Work of students as an unpaid helper in the community.

"Community in Classroom": The subject of courses of university must be related to problems of communities and the city.

"Applied Research": The main topics of research and their kinds of data collection are considered according to their communities.

"Major Institutional Changes": Change the vision and mission of university according to increase participation of university with community.

In accordance with these definitions, the relationship between campuses and communities are not easy connected and for successful in this strategy four conditions will be needed: Firstly, the government agencies must provide the budget of this collaboration. Secondly, however the meetings of university and community sometimes face with challenges, but they must arrange some principles for effectiveness of these meetings. Thirdly, collaboration of all partnerships such as university, communities, stakeholders, and public sectors in the same issue are more useful than individual acting. Finally, the presentation of university- community activities in different way such as articles, GIS, PowerPoint to encourage the relation of universities with their communities, so collaboration of university with community can be helpful in development of relation of campus with the city (Martin, Smiths, & Philips, 2009, pp.1-16).

2.3 Study on University Campus Examples

There are many different examples of university campuses in different parts of the world. Among many examples studied through literatures, only 3 of them have been selected to be explored in terms of their relation to the city. One reason of selecting these 3 examples is the availability of documents. Second reason is that these are the examples, which are repeatedly studied in different resources due to their success. Third reason is their location in the city.

2.3.1 University of Cambridge

The University of Cambridge is located in the city of Cambridge near to London in England and it has 17,803 students that 18 percent of them are foreigner. It was founded in 13th century by scholars that were graduated from Oxford University (Hoeger, & Christiaanse, 2007).

Before 14th century, Cambridge University did not have any specific land for itself and their classes that were hold in churches and private houses were utilized as lodging of students, but by finding of "Senate- House Hill" as a private land for Cambridge University, several buildings were built that included "classes", "chapel", "library", and "treasures". In this period, different colleges were built that played main role in university's life after 16th century and it caused that university's site was expanded and number of irreligious students were increased (University of Cambridge, 2013).

After 1945, the university had a significant development in all fields especially in social and culture activities and today the Cambridge University is a main heritage of campus in England and in the world (University of Cambridge, 2013).

As Cambridge University is divided to colleges and university cause that most of people who does not visit there or does not live there become confused. University in Cambridge University means the place for research and studying that are organized in three parts: "Schools" that refer to different institution groups according to their subjects, "Faculties" that are subdivision of each schools and "Departments" that each faculties include different departments, but colleges in addition to place for some classes of undergraduate students, is also core of living, resting, activities, and sociality of students (Undergraduate and graduate students) (Library House[LH],2003, pp.13-14). As stated by site of university, it includes 31 colleges and more than 100 schools, faculties and departments which are located far from colleges (Srouri, 2005, p.258) (University of Cambridge, 2013).

In Accordance with land use map of the Cambridge city, most of the colleges are located in the center and west of the city and most of faculties are located in the south that the different faculties are located in the same site for example in the south west of the Cambridge city the faculty of law, divinity, philosophy, and economic were built in the same site (Figure 6).

Physical characteristics of Cambridge will be explored in below according to elements of physical relationships of university campus with the city that were explained in the prior section.

Buildings: Majority of colleges of Cambridge are enclosed space that the main courts of them are used only by students; however they are open to tourists for visiting and sort of them like St Edmond College are three quadrangle forms. Cambridge University is its linking with pattern of city and the buildings shape most of its edges and their physical characteristics are:

Land Use

- Agriculture
- Wooldland
- Unimproved Grassland and Healthland
- Waterland and Wetland
- Minerals and Landfill
- Recreation
- Trasnport
- Residential
- Community Buildings
- Industries and Commercials
- Vacant Lands and Buildings
- Defense lands and buildings
- Unknown
- Administrative Boundry
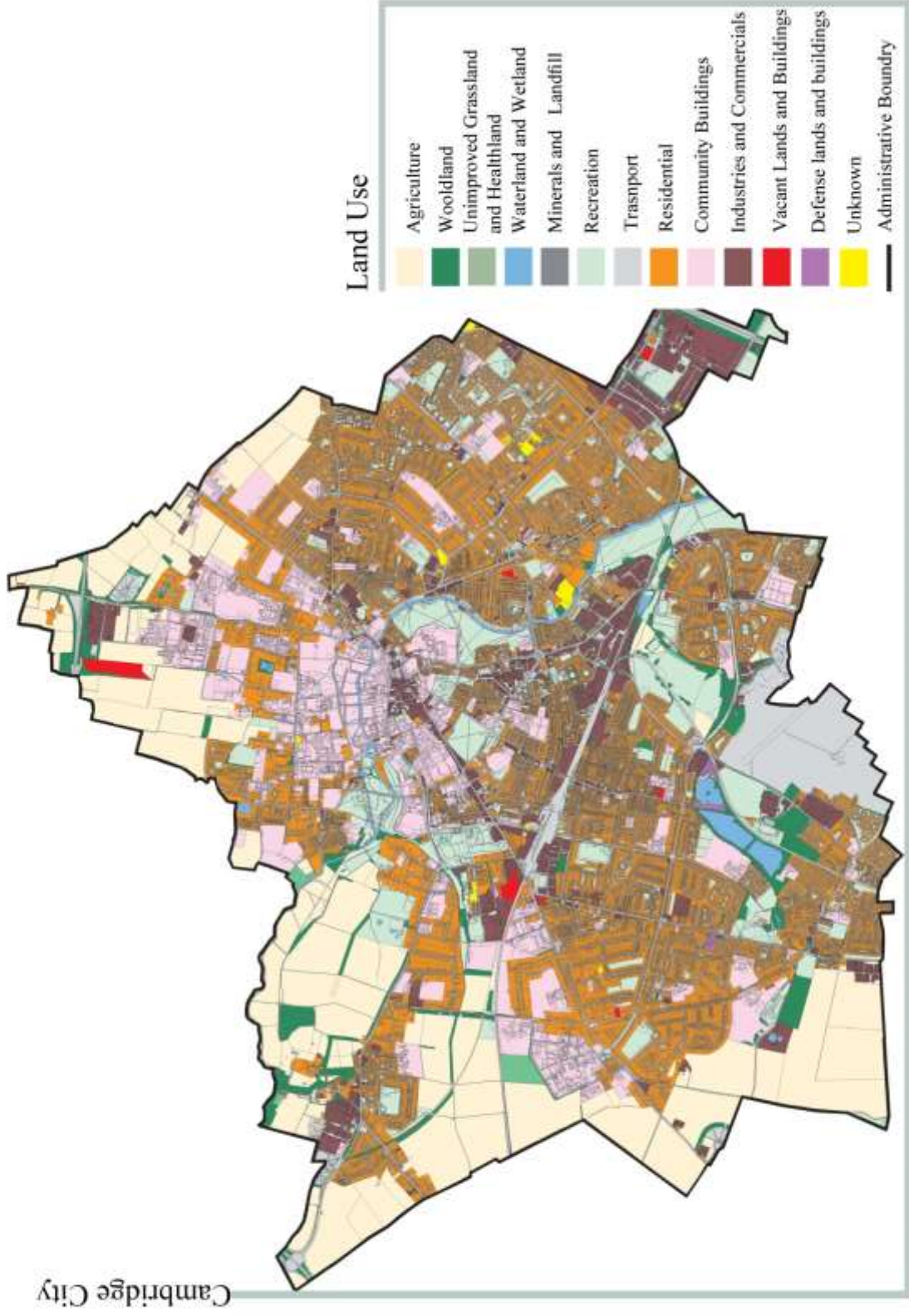
Cambridge City

Figure 6: Land Use Map of Cambridge City (Cambridge shire County Council, 2010)

- Their heights that are almost two floors are follow townscape of the city except their porter's lodge that have different height and they increase legibility for identifying the entrance of college,

- Despite the physical relationships of Cambridge university with the city, the entrance of majority of buildings are from inside the university,

- Architecture style of buildings of Cambridge follows architecture style of its surroundings and respect to them.

- *Open spaces*: Majority of open spaces of colleges is inside the university and they are not host to the city.

- *Transportation*: The main type of transportation inside the Cambridge university is walking and cycling and the vehicles do not allow to access to all parts of colleges.

Edge of Cambridge Colleges: The most edge of traditional colleges of Cambridge is buildings, walls, and fencing in contrast with modern ones that are trees.

However most of their edges are covered by buildings, by their functions is public and it increases the integration of university with the city.

Center of Cambridge Colleges: The central of college are mostly their main courts that social life of colleges is holding (Figure7).
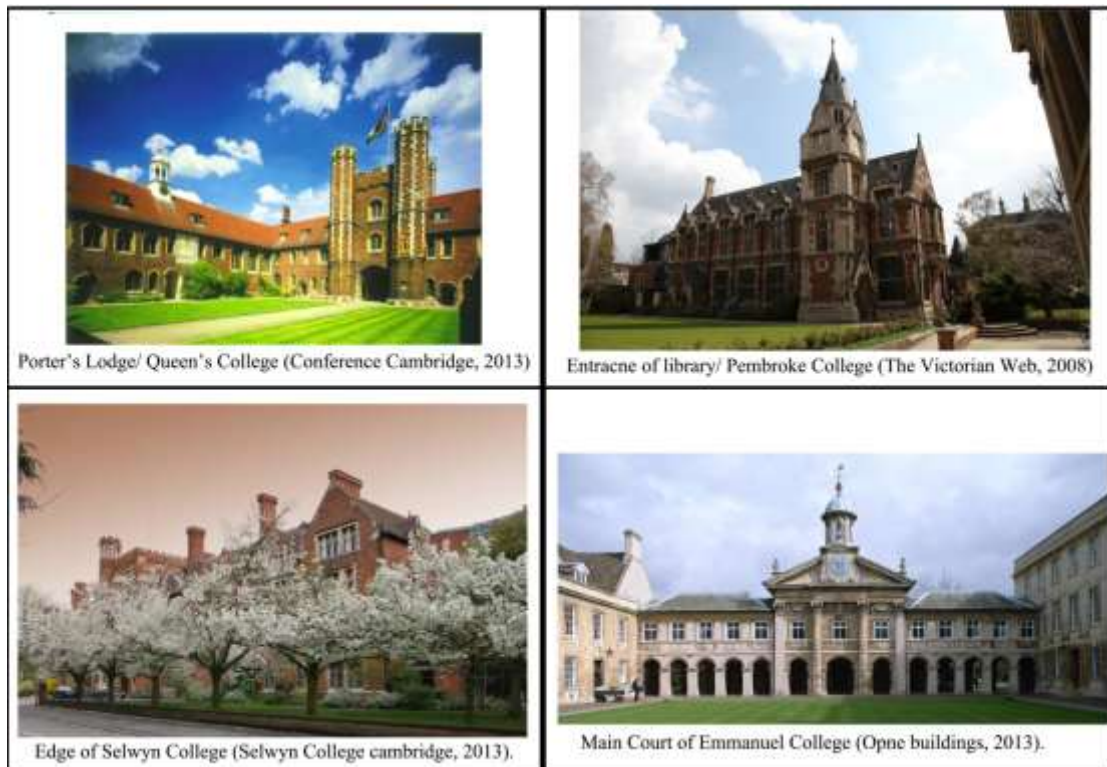
Figure 7: Left Picture Above Shows a Height of Porter's Lodge of Queen's College that is Different from Other Buildings. Right Picture Above Shows an Entrance of Library of Pembroke College is from Inside the College. The Left Picture in Below, Shows the Edge of Selwyn College that is Covered by Trees and the Right Picture in Below, Shows the Main Court of Emmanuel College

In social and culture points of view, Along with location of University buildings, integration between students and local residents of city is in high level and corresponds to receive hardly high integration between Towns and gowns, the question here is "what is the characteristics of Cambridge University that the integration of people and students are in high level?" From its foundation as a place for studying and living of masters and scholars together to expansion of university in the city that cause development of relationship between students and community and affect development of houses and economic of the city, high incorporation between students and residents are the key factors of Cambridge that is named university city today.

Although some parts of paths are restricted to Non- students, but existing of River Cam near Colleges cause that residents walk through colleges for passing from river (they cannot walk through courts).

The main shopping center of city that is surrounded by colleges is the core of integration between students that their main consolidation is in the west and residents that their main union is in the south east side. According to analysis of Dima Srouri in his article "Colleges of Cambridge: The spatial interaction between the town and the gown" that is about main street that which one is used by residents and which one is used by students ,this result is indicated that the movements of students from west to east and residents from east south to shopping city center cause the main integration of students and residents happen in the same time and same place which lead to mixed- use area and it helps to economic condition of city and attract more facilities in that area (Srouri, 2005, pp. 255-262).

In economic points of view, the Cambridge cluster that includes Chesterford Research Park, Granta Park Cambridge, Cambridge Research Park, and Cambridge science Park is the bridge between university and economic of the city (Hoeger, & Christiaanse, 2007, pp.192-196).

Overall, Cambridge University as a university city is divided into two part according to studying and welfare of students and it is expanded in the city. The studying parts that are faculties are mostly located in south of the city and the welfare parts that are colleges are located in the center of the city where the most integration of students and local people are existed. The privacy of students are important as same as public

activities and it causes that the university follows the enclosed quadrangle form. The main integration of students and local people in shopping center of the city is result of location of colleges and faculties. By foundation of Cambridge cluster the economic relationships of it with the city become stronger and it is supposed as one successful university campus in Europe and in the world.

Overview of Characteristics of Cambridge University

- However the colleges protect form their privacy by enclosure spaces, but the relations of them to city also were considered by construction of college's buildings near the street, define the paths of colleges clearly by specific edges and gates, emphasis on leisure in surroundings of colleges, and consideration of the proportion of their openness to buildings.
- Entrances of most of buildings of colleges are from inside the courts.
- Colleges that are situated far from center of the city have a little integration with city in compare with those that are located near the center of the city.

2.3.2 Illinois Institute of Technology (IIT Campus)

Chicago with 2.8 million inhabitants is center of business, industry, and transportation and it is supported by many urban institutions. The campuses that were built in the Chicago developed the urban pattern by integration with the city and Illinois Institute of Technology is one of those campuses that is the result of urban renewal programs after fire of Chicago in 1871 (Haar, 2011, pp. xxv-xxvii; p.52). Illinois Institute of Technology was founded in 1940 in Illinois State of Chicago where the Lake Michigan is located adjacent to it and it includes five campus in different location of the city that are named "main campus", "downtown campus", "institute of design", "Daniel F. and Ada L. Rice Campus", and "Moffett campus"

that the main campus is chosen as an example study (Figure 8) (Illinois Institute of Technology, 2013). Main campus is located in the downtown of Chicago where is named as a historic quarter of the city and it is close to West center of Chicago.
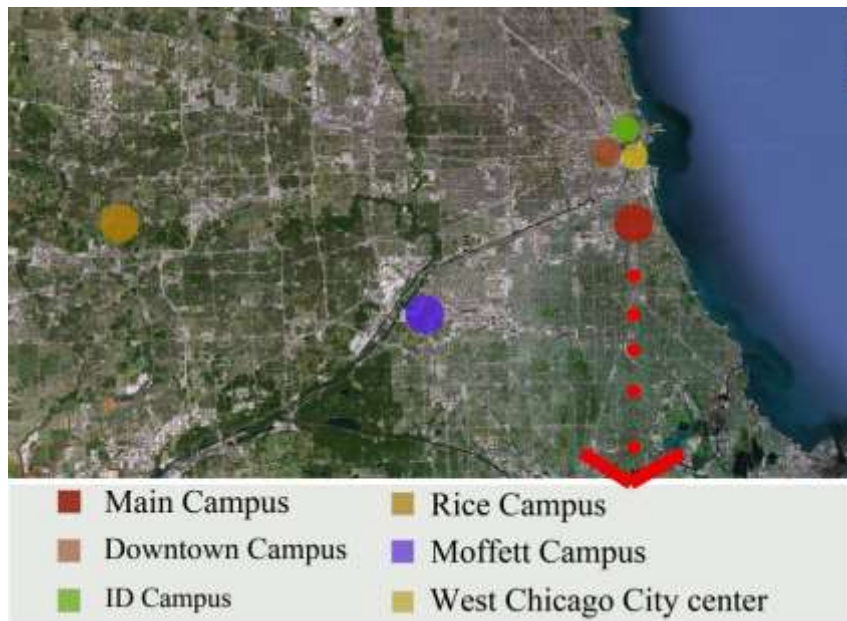
Figure 8: IIT Campus is Divided to Five Sites that are Main Campus, Downtown Campus, ID Campus, Rice Campus, And Moffett Campus (Source: http://www.maps.google.com)

It is connected to other parts of the city by subways and train lines that are located in two sides of the campus. State Street as main vehicle paths of the neighborhood is located in the middle of the campus and divides the main campus into two parts that in one part academic buildings, library, conference buildings, and main research center are existed and in the other side, residents' halls, students' services, and sport fields are located (Figure 9).According to elements of physical relationships of university campus and the city, the physical characteristic of IIT campus will be explored briefly in below.

Buildings: The urban texture of the city of the Chicago is based on grid streets and Ludwig Mies Van der Rohe as a designer of the school of architecture of IIT

proposed a master plan of main campus that followed grids of the city in designing of

the campus and it, in addition to respect to urban context of the city, makes a

harmony in architecture of the city that lead to combination of IIT campus with its

surroundings.

Figure **9**: The State Street Divide the Main Campus to Two Parts (Hoeger, &
Christiaanse, 2007, p.210)

Open spaces: The proportion of open spaces to masses of IIT campus respect to

proportion of mass and open spaces of the city and they are host to the city.

Transportation: The main type of transportation inside the campus is walking and

cycling, however one of the main public transits of the city of Chicago is located

adjacent to it.

Edge of IIT Campus: Buildings and open spaces are covered edge of campus and their entrances are from street of the city that it enhances physical integration of IIT campus with the city.

Also this physical relationships between IIT campus and its surroundings affect economy of the city by existence of Technology Park Center as a bridge between knowledge and production that can be supposed as a main pole of the university that develop the economics of the city, also in strategic plan of IIT in 2013and its mission that pointed out to "Vigorous partnerships with the great city of Chicago", and "Cross- disciplinary research and education that builds on our strengths in the professions and technology" refer to relationships of knowledge with technology and innovation and utilize it as a supporter of economic of the city (Figure 10) (Hoeger,&Christiaanse,2007,pp.208-212) (Illinois Institute of Technology, 2013). Overall, IIT campus respect to characteristics of the city and it has successful relationships with its surroundings.
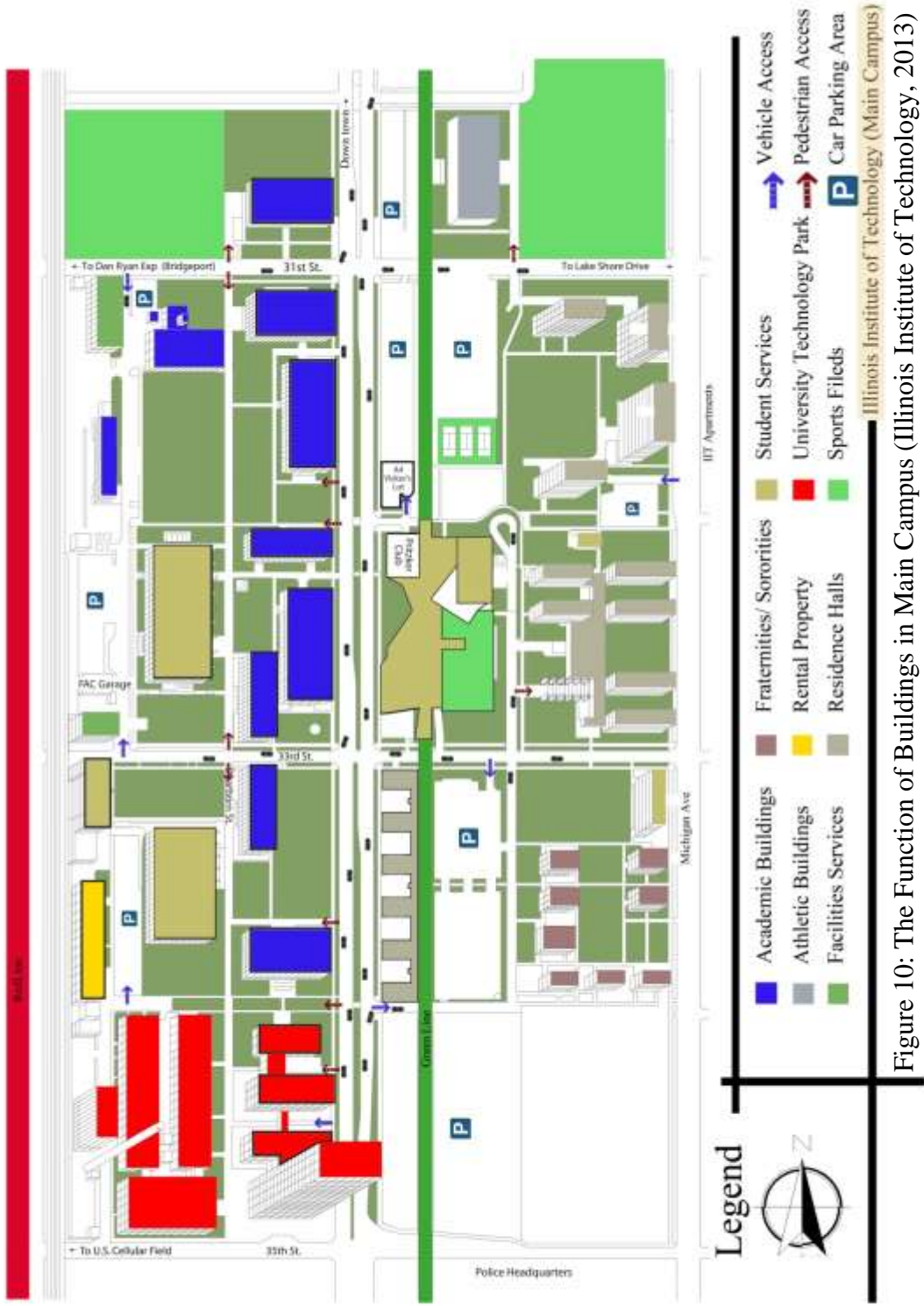
Figure 10: The Function of Buildings in Main Campus (Illinois Institute of Technology, 2013)

2.3.3 University of San Jose State

San Jose State University campus that was founded in 1870 is located in south of San Francisco. Its main site is in middle of mixed use district that are residential, commercial, and community buildings (Figure 11). According to main vision of university that is development of university relationship with the city according to physical and social, the master plan for San Jose state university campus was proposed (Irvin, 2007), so the physical characteristics of San Jose University will be explored according to elements of physical relationships of university campus with the city.
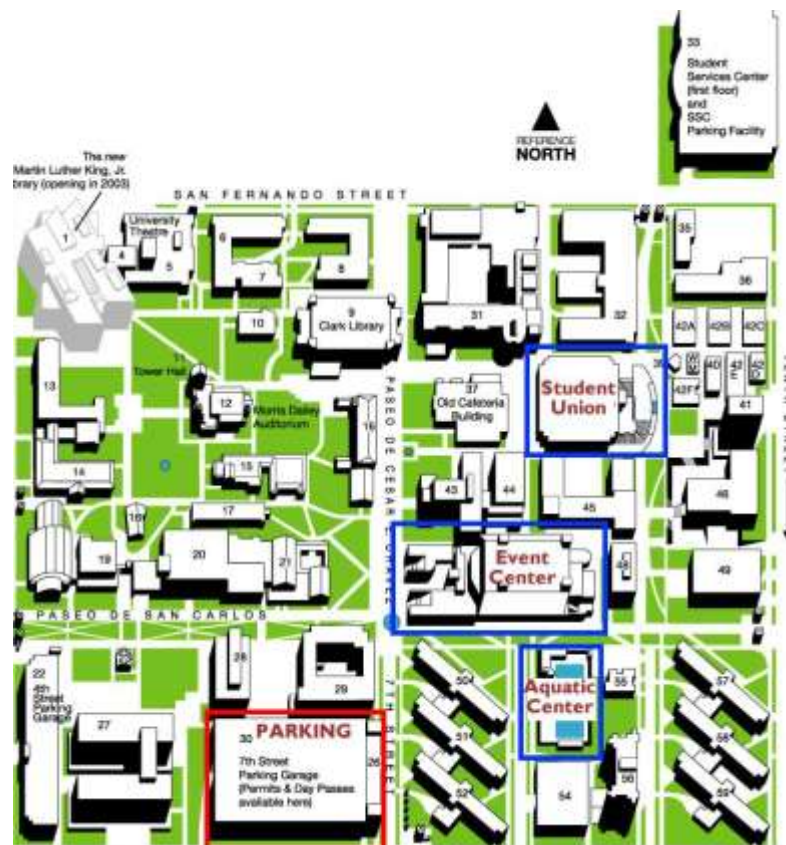
Figure 11: It is the Map of Main Site of San Jose University (San Jose State University, 2013)

Building: Although majority of buildings respect to architecture style of the city, but their size and height are not respect to mass and townscape of the city, also entrances of building in edge of campus are from street.

Open space: It is not host to the city and most of them are located inside the campus.

Transportation: It includes all types of transportation and its strong feature is its transit connection with the city, also the pedestrian paths are defined by trees and they are connected perfectly to each other.

Edge: The edge of San Jose State University campus is defined by landscape and buildings that the function of buildings and open spaces are public.

Center: Most of events of university are hold in center of campus and it has strong connection with edge of campus.

Also in addition to physical relationships, it has social relationships with the city and the university has collaboration with community of the city. Overall, it indicates that San Jose State University is one of successful example of university campuses that has a strong connection with the city and its surrounding (Figure 12) (Irvin, 2007).

Figure 12: The Left Picture Above Shows a Pedestrian Path in University, the Right One Above Shows a Pedestrian Gates; The Left One Below Shows a Residential District of University and the Right One Below Shows the Main Library of Campus Near the Main Path of City (Source: http://www.maps.google.com)

According to analyses of three examples, the similar points and different points of them in their relationships with the city are concluded in below:

The similar points of them in the physical characteristics of relationship with the city are:

- The main transportation in IIT Campus and Cambridge University are walking and cycling, but all types of transportation in university of San Jose State are used.

- The buildings and open spaces cover the edges of IIT Campus and University of San Jose State; however most of edges of Cambridge University are covered by buildings.

- Another positive feature of IIT Campus and University of San Jose State is the access of buildings (the buildings that are located in the edges) from outside the campus and it improves their relationships with the city, but in Cambridge University, majority of entrances of buildings are from inside the colleges.

- The functions of buildings along the edges of Cambridge university and University of San Jose State are public, but the buildings' functions in edges of IIT Campus are private.

- In comparison with IIT campus that the open spaces have connection with the city and they are host to the city, but the open spaces in Cambridge university and University of San Jose State are not host to the city and they do not have direct relationships with the city.

The different points of them in their physical characteristics of relationship with the city are:

- Cambridge university is an university city that all buildings are located in context of the city;

- The entrance of all colleges in Cambridge are defined by different buildings with different heights;

- Location of most colleges in Cambridge near shopping center of Cambridge improve the integration of students with local people;

- Location of main street of west of Chicago in middle of main campus of IIT improve the relationships of campus with the city;

- The main feature of University of San Jose State is the transit connection with the city;

- Center of University of San Jose State is a center of variety of events and it has a strong connection with the edge of campus.

2.4 Recent Campus Trends & Approaches

The improvement of technology influences on recent trends of campus planning (Hashimshony, & Haina, 2006, p.5). For identifying recent trends and approaches of campuses, the prior trends and strategies of campuses and universities, which were influenced directly on other campus planning, must be explored.

The prior concepts of campus and university planning are divided to three sections: Single College, American Campuses, and mega structures (Figure 13).
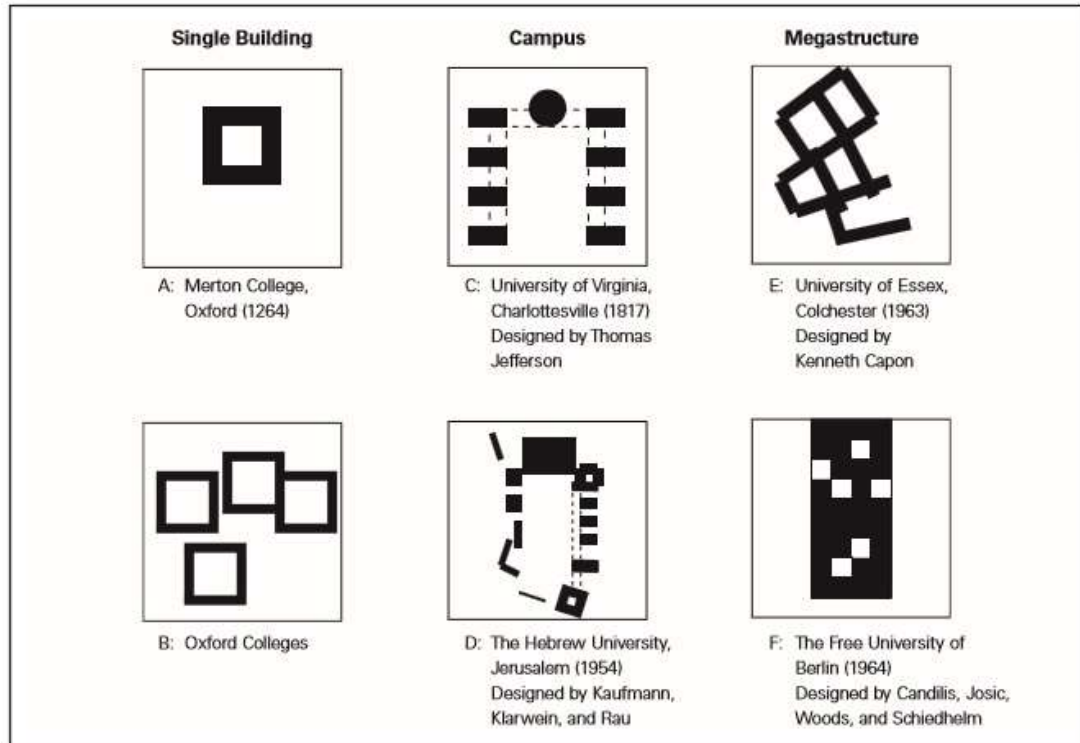
Figure 13 Three Concepts of Campus Planning (Hashimshony, & Haina, 2006, p.6)

Single college: It was the main type of England strategies in 11th century by foundation of Oxford University that their concept was prepared an environment for studying, living, eating, and praying of students that were located separately from city by consideration of enclosed quadrangles form. This approach was continued in the Europe until reducing the power of religious and foundation of modern movements that German universities in the late 18th century and the early 19th century had main role in changing of the trends of campus planning in the world that was complex institutions of education (Hashimshony, & Haina, 2006, p.6).

American Campus: By foundation of Harvard, Yale and Princeton universities in 17th century in the United States, other trends of university were founded. Their concepts that were named "Campus" referred to independent community in college ground with many facilities in nature texture and this trend influenced rapidly on other universities around the world. The facilities such as sport fields, dormitories, café, restaurant, theatre, museums and other functions afford a welfare environment for students and staffs (Hashimshony, & Haina, 2006, pp.6-7).

Mega structures: "Multi University" that was originated from expansion of university, high demands of education, and foundation of different faculties and departments in the 20th century has effected on foundation of concept of mega structure that it was abandoned in the late 1960 as lack of respect to scale, proportion, and flexibility of urban texture. It means that instead of construction of different buildings for different functions, construct vast structure building that include different functions as the university need as same as city (Hashimshony, & Haina, 2006, pp7-8). According to Maki's definition that was referred in book of

Banham "mega structures: urban futures of the recent past": "a large frame in which all the functions of a city or part of a city are housed. It has been made possible by present day technology (Banham, 1976, p. 217)".

Recent trends attempt to eliminate the distance between university campus and the cities and develop the vision of "City as a Campus" which means the campus combines with the city without any borders. In contrast to past, when university campuses were isolated from the city, in 21st century, significance of integration between university campus and the city is touchable while the economy condition of the city depends on knowledge (as mentioned before, the relationships between university campus and the city is evaluated according to physical, socio-culture, and economic dimensions) (Corneil, &Parsons, 2007, pp.115-116). The vision of "City as a campus" and emphasizing on integration of the city and university campus lead to creation of new idea that is named "Knowledge City".

2.4.1 Knowledge City

Knowledge city focuses on creativity and innovation by development of knowledge in society to promote sustainability. While the knowledge is the base of city, the quality of social, economic, and culture of the city will be improved and knowledge act as an umbrella above the city that lead to alter theoretical frame of university campus to practical frame and their relationships become strong (Yigitcanlar, O'Connor, & Westerman, 2008,pp.1-3). According to Van Winden (2007) the knowledge city includes seven elements that are:

- "**Knowledge Base**": This element as a base of the knowledge city refers to educational institutional such as university campus.

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- "**Industrial Structure**": As a base of technology help in promoting of knowledge city.

- "**Quality of life and urban amenities**": Flourishing of knowledge in society effects on quality of life of people.

- "**Urban diversity and Culture mix**": Variety of students from different nations make a diversity of culture in city that lead to variety of uses.

- "**Accessibility**": In knowledge city, focus more on the transformation of knowledge into the city.

- "**Social equity and inclusion**": Discourage the social segregation

- "**Scale of the city**": The knowledge and university campus influence on development of the city and lead to increase diversity and provide job opportunities for workers and business (Winden, Berg, & Pol, 2007, pp.525-549).

The recent approaches in university campuses in Europe and United States is changing the nature of university to knowledge city that the university campus work as a center of social, culture, and economics of the city along with sustainable developments (Corneil, &Parsons, 2007, pp.121-127). Growth of enrollments and increase of students from variety of nation affect expansion of university campuses according to their needs (Mayfield, 2001, p.234). Expansion of university campuses, high population of cities, technology, and knowledge society cause the physical trends of university campuses changed and these physical trends are evaluated by five factors:

a. **Size** referring to land area of university,

b. **Spatial arrangement** referring to compact and centralization or dispersal and decentralization,

c. **Borders and ease of access** referring to openness or closeness of university to outside society,

d. **Facilities** referring to mixed use or zoning and kinds of function according to their needs,

e. **Position** referring to location of university according to city and all these factors relate to knowledge city's concept (Hashimshony, & Haina, 2006, pp.10-12)

2.4.2 Sustainability Trends of University Campuses

Contemporary societies that depend on knowledge force that university campuses change their nature and trends (Hashimshony, & Haina, 2006, p.8). According to Delanty (2001) universities have four roles that are: "Research", "Education", "Professional training", and "Intellectual criticism" that all these roles consider society's needs (Delanty, 2001). Recent trends of university campuses are based on two criteria:

a. Relation of it with its surroundings (it was explained in prior section),

b. Consideration of sustainability as the main concerns of today's society in their planning.

In today's world, development of urbanization that according to "United Nations" 52.1 percent of population of the world live in urban area in 2011 (United Nations, 2011) effects on way of life of people in order to natural, physical, social, cultural, and economical dimensions and gaining the sustainability become an essential

authoritative in urban areas (Dempsey, & Jenks, 2005, p.1). The sustainability has many meanings, but the main definition of it is providing the needs of today's generation with respect to next generation's needs (Reid, c., 2008, p.5). Today dependence of innovation and creativity to relation of university and industry is a result of needs of sustainable development to creativity to preserve from natural resources and sustain life of people. Sustainable campus is the main concept of growing sustainability in the cities. In other words, the city will be sustainable if the university campus becomes sustainable. Moreover for achieving to sustainable university campus, three main dimensions of sustainable university that are natural environment, social, and economic must be considered in university strategy plan (Lukman, & Glavic, 2007, pp.104-106).

Overall, on one hand, university campus as a main hub of city plays a main role in development of the city, so it influences on physical, social, culture, and economics of the city and it must improve these relationships (physical, social, and economic) with the city. On the other hand, all urban designers concern about quality of life of people and public space as a main element of social life can improve the quality of life of people, so existence of university campus in the city can be supposed as a potential for the city and it can help to improve the vision of public space. According to these definitions, one of the main concepts that can improve the interaction between student and local people, develop quality of life, and make livable city is "Campus as a public space of the city". This concept will be explored in Chapter three after analyzing the characteristics of public space.

2.5 Summary of the Chapter

The campus that was shaped from foundation of Nassau Hall in Princeton in 17th century, is divided to three types that are "University Campus", "High tech Campus", and "Corporate Campus". Based on the main research question, University Campus is analyzed in this chapter. It is a place for education, entertainment, and living area of students that includes the functions that the city must have, in addition to academic buildings, university campus includes restaurants, café, museum, theatre, cinema, dormitory, and etc. By looking at history of university campus, the period from 17th century to modern period, university campuses were built far from cities and most of them were located in rural area or suburban area and they did not have any relationships with the city (physical, social, and economic relations). After modernization, associations of university campus with the city became significant and today, as a knowledge society, integration between university campus and the city become an essential element of each campuses in the world; especially United States and Europe. In this chapter, the relationship between university campus and the city is analyzed according to physical, social, and economic dimension. For integration and connection of them, physical relationships is one of the main condition of this connection that it influences development of economy, mix of cultures, diversity of activities, high security, and encourage of knowledge. Physical relationships of University campus with the city are evaluated according to five elements that are building, open space, transportation, edge of campus, and center of campus (Table 1).

Table 1: Physical Relationships of University Campus and the City Evaluated according to Buildings, Open Spaces, Transportation, Edge, and Center of University Campus

Element	Physical Relationships of University Campus with the City				
	Buildings	Open spaces	Transportation	Edge	Center
Type	Entrance	Trees	Walking	Wall	Building
	Window	landscape	Bicycle	Fencing	Open space
	Material	pavement	Public transportation	Building	
		Urban Furniture		Open space	
Chracter	Respect to townscape	Townscape	Connection with the city	Public Functions	Legibility
	Entrance from street	Host to the city		Define clearly	Connect to the edge
	Architectural style	Mass and open spaces		Open to city	Mixed use
	Identity	Comaptable pavements			
	Legibility				

Also university campuses affect economic of the city and in addition to physical relationship, they must have economic connection that develop the economics of the city. Another affiliation that is analyzed in this chapter is socio- culture connection. This connection helps to livability of the city and rises the quality of life of people and it impacts on social behavior of people and students, also it develops the culture of the city by growth of integration of different cultures with each other; especially relation of students and local people. This relationship is evaluated by diversity and type of its relationships with community (Table 2).

Table 2: Social Relationships of University Campus and the City Evaluated According to Diversity and Community

Social Relationship of University Campus with the City									
Diversity			Community						
Structural	Curricular	Interaction	Service learning	Service provision	Faculty involvment	Student Volunteerism	Community in Classroom	Applied Research	Major Institutional Changes
Diversity of students from different nations, cultures	schedule to learn how work with community	Informal Integration	Hold classes to learn Colloboration with Community	University as core of Projects of Community	Work as Core of Community Activities	Colloboration student with Community	subject of courses problems of the city according to problems of the city	Topic research in order to Community	Vision and Mission Particiaption with Community
Social Behavior	Work Different idea	Communcation with local people	Strategies ➜ Budget		Meetings	Colloboration	Presentation		

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According to types of university campus, three examples are explored in this chapter. "Cambridge University" is a successful example of University City in England, "IIT Campus" is an example of inner city campus and "University of San Jose state" is a successful example of inner city university campus that has a strong relationship with the city.

So according to benefits of relationship of university campus and the city, recent trends of university campuses focus on this concept, whatever by development of technology and dependence of economy on knowledge, the concept of city as a campus becomes more significant than prior times, so these trends influence on creation of new idea that is named knowledge city where knowledge and university campus play a central role in society according to social, culture, and economic dimensions. Accordingly, it is concluded that the physical, social, and economic relationships of university campus with the city can help to develop sustainability (Figure 14).
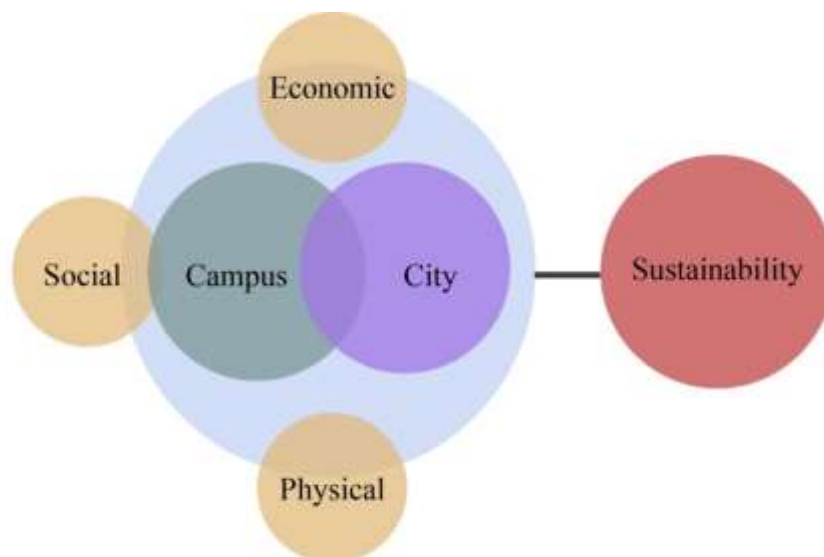
Figure 14: The Diagram Shows the University Campus That has a Relationship With the City in Order to Physical, Social, and Economic Dimensions, Help to Improve Sustainability (Developed by Author).

Overall, this chapter has evaluated type of campuses, history of them, physical, socio-cultural and economic relationships with the city, three examples that are University of Cambridge, IIT Campus, and University of San Jose State, and recent trends of campuses - sustainable trends and knowledge city. Types of campuses are categorized as "city as a campus" and "campus as a city". Inner city campus and college towns are organized in city as a campus category that this type of university campus is one of the main focus of this research. Campus as a city is divided to Greenfield campus and campus next to the city that are not popular today (Table 3).

Table 3: Strategy of Chapter Two

```
                          Campus
                             │
        ┌────────────────────┼────────────────────┐
        │                    │                    │
  University Campus    High Tech Campus    Corporate Campus
        │                    │
   ┌────┴────┐         ┌──────┴──────┐
   │         │         │             │
History    Type   Relation between   Recent Campus
                   Campus and City       Trends
      ┌────┴────┐        │                │
      │         │    ┌───┴───┐      ┌──────┴──────┐
Campus as    City as │       │      │             │
 a City     a Campus Physical Socio-cultural  Sustainability  Knowledge
      │         │        │         │           Trend          City
  ┌───┴───┐  Inner City  │      Examples
  │       │   campus  Greenfield   │
College  Campus near    Campus  ┌──┴──┐
 Town     to city              Economic  Socio-cultural
                                  │
                          ┌───────┴────────┐
                          │                │
                   Cambridge University  MIT University
                          │
                   University of San Jose State
```

Chapter 3

UNIVERSITY CAMPUS AS A PUBLIC SPACE OF THE CITY

In previous chapter, the significance of university campus is explained and it indicates that university campus play main role in development of city in physical, social, and economic dimensions. According to its abilities, the university campus can act as a public space of the city to improve city life quality, so this chapter focuses on public space, its physical characteristics, its behavior, its typology, and its function in Macro-level and in Micro-level, it focuses on one type of public space that is university campus. This chapter answers to the main research question of this thesis that is "How does the university campus act as a public space of the city without losing its privacy?"

Accordingly, different definitions about public space, variety typologies of public space from different scholars will be discussed firstly and then, the physical characteristics of it will be evaluated. Other characteristics of public space are its function that is divided to social and cultural functions and these functions of public space will also be analyzed.

According to exploration of the public space and its characteristics, the next section of this chapter focuses on the university campus. In previous chapter, the characteristics of university campus and its relationships with the city according to physical and socio-cultural issues were analyzed, and at the end of chapter 3, the

physical and social indicators of university campus to act as a public space of the city will be explored. According to these definitions and characteristics, one examples of university campus that act as a public space of the city will be studied in this chapter.

3.1 Public Space

This section will present and overview about public space concentrating on its definitions, types, physical and socio-cultural characteristics.

3.1.1 Definitions

According to Oxford Dictionary, the word "public" means concerning the people as whole and the word "Space" means a continuous area or expanse which is free, available, or unoccupied. According to the definitions of Oxford Dictionary, public space means the continuous area that is used by all kinds of people and it is a place for communication. Public space as a dynamic space is a space that provides needs of people for moving, gathering, social activities; relaxation, etc. Public space is a kind of link between individual life and social life. It provided the needs of people for communication to other people (Carr et. al., 1992, p.3; p.187). According to spaces in urban level that are divided to exterior and interior spaces, public space also is divided to public buildings and public open spaces. Public open spaces are spaces outside of the buildings that are for the use of the public such as streets, squares, and etc. Public buildings refer to public places inside the buildings such as museums, library, shopping malls and etc. Public buildings and open spaces include spaces that are semi- public and they include spaces that are inside and outside of buildings and their privacy are defined by their regulations such as university campuses, cinema, and etc. (Carmona et. al., p.111). According to focus of this thesis that is public open spaces, the type of public open space, its physical characteristics, and functions of it will be explored.

3.1.2 Types of Public Open Spaces

Public space is the place for gathering people, for socialization, for poiltic's purpose, and for commerical and according to Matthew Carmona, it is result of:

- Historic and prior public space effects on nature of public space;

- Kinds of government, regulation and behavior of them on function of public space;

- The culture of people, their beliefs, their traditions influences on nature of public space;

- Way of social life of people;

- Support of government and stakeholders in development of public space increase the diversity of activities in there (Carmona, Magalhaes, & Hammond, 2008, p.60).

Type of public open space is classified according to different variables such as function, ownership, location and etc. One of this classification was done by Helen Woolley (2005) that she divided typology of Public space according to three categories: domestic urban open space, neighborhood urban open space and civic urban open space. She analyzed all kinds of urban open space that among them majority of elements of neighborhood urban open space and civic urban open space are referred to public space (Table 4) (Woolley, 2005, pp.72-75). Another classification is done by Matthew Carmona, Claudio de Magalhaes and Leo Hammond (2008) and they divided typology of public space to twelve categories in order to level of characteristics:

1. From a sociological perspective;

2. Focusing on the expreince of space;
3. In term of power relationship;
4. As a journey from vision and reality;
5. By means of control;
6. In terms of their adaptability in use;
7. Through their exlusionary strategies;
8. Reflecting degrees of inclusion;
9. By their clientele;
10. In terms of how users engage with space;
11. Throuhg their physical/ morphological character;
12. And by function (PP.60-62).

Table 4: Classification of Types of Public Open Space According to Helen Woolley

According to another categories that was done by Kohn (2004), the public space is

Type of Public Space		
Helen Woolley		
Domestic Urban open space	NeighborhoodUrban open space	Civic Urban open space
Housing	Park	Commercial
Private Gardens	Playgrounds	Plaza
Community Gardens	Playfileds and sports grounds	Office grounds
	School Playground	Hospital grounds
	Streets	University Campus
	City Farms	Roof Grounds
	Natural green space	Trasnport

classified to four section that are "Positive space", "Negative space", "ambiguous

spaces", and "Private space" according to ownerships and function (Figure 15)

(Carmona, Magalhaes, & Hammond, 2008, pp.60-63).

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Space type	Distinguishing characteristics	Examples
'Positive' spaces		
1. Natural/semi-natural urban space	Natural and semi-natural features within urban areas, typically under state ownership	Rivers, natural features, seafronts, canals
2. Civic space	The traditional forms of urban space, open and available to all and catering for a wide variety of functions	Streets, squares, promenades
3. Public open space	Managed open space, typically green and available and open to all, even if temporally controlled	Parks, gardens, commons, urban forests, cemeteries
'Negative' spaces		
4. Movement space	Space dominated by movement needs, largely for motorised transportation	Main roads, motorways, railways, underpasses
5. Service space	Space dominated by modern servicing requirements needs	Car parks, service yards
6. Left-over space	Space left over after development, often designed without function	'SLOAP' (space left over after planning), modernist open space
7. Undefined space	Undeveloped space, either abandoned or awaiting redevelopment	Redevelopment space, abandoned space, transient space
Ambiguous spaces		
8. Interchange space	Transport stops and interchanges, whether internal or external	Metros, bus interchanges, railway stations, bus/tram stops
9. Public 'private' space	Seemingly public external space, in fact privately owned and to greater or lesser degrees controlled	Privately owned 'civic' space, business parks, church grounds
10. Conspicuous spaces	Public spaces designed to make strangers feel conspicuous and, potentially, unwelcome	Cul-de-sacs, dummy gated enclaves
11. Internalised 'public' space	Formally public and external uses, internalised and, often, privatised	Shopping/leisure malls, introspective mega-structures
12. Retail space	Privately owned but publicly accessible exchange spaces	Shops, covered markets, petrol stations
13. Third place spaces	Semi-public meeting and social places, public and private	Cafés, restaurants, libraries, town halls, religious buildings
14. Private 'public' space	Publicly owned, but functionally and user determined spaces	Institutional grounds, housing estates, university campuses
15. Visible private space	Physically private, but visually public space	Front gardens, allotments, gated squares
16. Interface spaces	Physically demarked but publicly accessible interfaces between public and private space	Street cafés, private pavement space
17. User selecting spaces	Spaces for selected groups, determined (and sometimes controlled) by age or activity	Skateparks, playgrounds, sports fields/grounds/courses
Private spaces		
18. Private open space	Physically private open space	Urban agricultural remnants, private woodlands,
19. External private space	Physically private spaces, grounds and gardens	Gated streets/enclaves, private gardens, private sports clubs, parking courts
20. Internal private space	Private or business space	Offices, houses, etc.

Figure 15: Classification of Type of Public Space According to Kohn (Carmona, Magalhaes, & Hammond, 2008, p.62)

However these categories according to different dimension are classified, but the type of public space and elements of them are the same and these types are : streets, square, parks, gardens, cemeteries, cafe, restaurant, library, town halls, religious buildings, university campus, and etc (Carmona, Magalhaes, &Hammond, 2008, pp.60-62). According to focus of this thesis (university campus) and main elements of city (street, square, buildings, and open space) the function and physical characteristics of public space will be analyzed in below.

3.1.3 Physical Characteristics of Public Open Spaces

The main purpose of designing urban space; especially public space is to make a connection between people and environment and this relationship is influenced directly by physical environment of public space, so one of the main characteristics of public space that must be precisely evaluated is physical characteristics (Carmona et. al., 2003, p.106). According to Matthew Carmona et.al., (2003) in their book "Public spaces- urban spaces" and Mark Francis's theory in the book of "Companion to urban design" that its Editors are Tridib Banerjee and Loukaitou Sideris, the physical characteristics of public space are evaluated in order to three categories that are:

- Form of public space;

- Quality of Public Space;

- Image ability and Legibility;

- Transportation (Francis, 2003, pp.432-445) (Carmona, Heath, Oc, & Tiesdell, 2003).

However different scholars categorized variety of physical characteristics of public space, but in this thesis is decided to evaluate briefly physical characteristics of it according to these factors (that were discussed above) and the results of these evaluation will be considered in case study of this thesis, so in below, each factors are mentioned briefly.

3.1.3.1 Form of Public Space

The first physical factor of public space is form of public space. Each public open space includes different elements that are buildings, landscape, infrastructure and

users (Carmona, Magalhaes, & Hammond, 2008, p.9) (Figure 16). Organization of these physical elements in the space indicates the quality of the space according to enclosure elements. The space is defined by vertical and horizontal elements such as buildings, trees, streets, etc.

Buildings	Infrastructure	Landscape	Uses
Walls	Roads and cycle lanes	Trees	Events
Structure	Bus stops/shelters	Planting beds and areas	Gatherings
Windows	Tram/bus lanes	Lawns and verges	Street entertainment
Entrances/exists	Traffic lights/road signage	Planters/hanging baskets	Street trading
Balconies/projections	Telegraph polls	Paving	Markets
Shopfronts	Telecommunications	Road surfaces	External eating/drinking
Signage	equipment	Traffic calming	Kiosks
Building lighting	Street lighting	Steps	Play grounds
Floodlighting	Telematics	Boundary walls/fences/railings	Parks
Artwork	Parking bays/meters/car parks	Fountains/water features	Sports facilities
Decoration	Public toilets	Public art	Retail uses
Canopies	Waste and recycling bins	Signage	Leisure uses (active/passive)
Colonnades	CCTV polls and cameras	Advertising	Community uses
Skyline/roofscape	Telephone/post boxes	Street furniture	Homes
Corners	Gutters/drainage	Bollards	Workplaces
Flags and banners	Utilities boxes	Shelters/band stands	Industrial uses
Monuments/landmarks	Underground services	Festive decorations	Tourism
	Servicing bays/turning heads		

Figure 16: Physical Element of Public Space (Carmona, Magalhaes, & Hammond, 2008, p.10)

Degree of enclosure spaces is defined by organization of these elements that are located adjacent to each other, so the proportion of these vertical elements with width of street make a comfortable feeling (Ewing, & Bartholomew, 2013) that according to Allan Jacobs (1993) this proportion must be between 1:2 and 1:2.5 (Jacobs, 1993).

Quality of Public Space

According Matthew Carmona et. al., (2003) in their book "Public places- Urban Spaces" quality of urban space are evaluated according to component of urban

environment that are categorized in two sections: Hard and soft landscape" and " Positive and Negative space". Landscape is one of elements of urban environment that its main function is to enhance the quality of the space. Landscape according to its elements is divided to hard and soft landscape.

Hard landscape includes the elements that are not natural and they involve hard floorscapes and street furniture. Hard floorscape refers to pavements of the open space and street furniture refer to variety of elements that are considered in urban open space such as lighting, shelters, siting furniture, and etc. but soft landscape includes trees and natural elements that give a sense of character to the places. The main points that must be considered in designing soft landscape are:

- **Legibility**: way of design of soft landscape help to enhance the legibility of public space;
- **Enclosure**: the soft landscape effects on enclosure of the public space;
- **Townscape**: type of designing soft landscape must be considered according to townscape;
- **Continuity**: According to type of design soft landscape such as rhythm of trees, give a sense of continuity. Another factor in quality of public space is positive and negative space. In contrast to Positive space that refer to space that is understandable for users by defining clear edges and it makes a feel of relaxation to users, negative space is complex and people feels uncomfortable in this space. Physically, in positive space, each point is visible from other ones, but in negative space, each point is not visible from other points (Carmona et. al., 2003, p.138; pp.159-164).Other factors that are considered

in physical form of public space are "Human scale" and "edge and Center of public space". In designing public space; especially its from, the human scale of the space is also significant in perception of sense of space. The physical elements such as details of buildings, pavements, lighting, trees, and etc, that are designed in public space must have a proportion with the space and consideration of human scale improve the proprtion of public space and people feel comfortable in this kind of space (Ewing, & Bartholomew, 2013). The main physical elements of public space are their edges and centers. The public space is successful and liveable when its edge and center are well-designed and active. The facilities in edge of public space and its type of form determine the livability of public space; also center of public space play the same role in activity of public space, lack of any center in public space leads to sense of emptiness (Carmona et. al., 2003, pp.173-178). As Christopher Alexander, Sara Ishikawa, and Murray Silverstein mentioned in their book "A pattern of language: towns- buildings- construction" "a public space without a middle is quite likely to say empty and the life of public squares forms naturally around its edges, to which people gravitate rather than linger out in the open. If the edge fails, then the space never becomes lively… the space becomes a place to walk through, not a place to stop" (Table 5) (Alexander, Ishikawa, & Silverstein, 1977, pp.600-606).

Table 5: Evaluation of Quality of Public Space According to its Form

Form of Public Space	Degree of Enclosure	Proprtion of vertical elements to width of the street= 1:2 or 1:2.5	
	Hard Space	Without Natural element	
	Soft Space	With natural environment → Consider → Legibility Continuity Enclosure Townscape	
	Positive Space	Understandable space / comfortable/ Define Edge/ Relax	
	Negative Space	Uncomfortable/ Undefined Space/ Confusing	
	Human Scale	Perception of sense of palce	

3.1.3.2 Imageability/Legibility

According to Kevin Lynch, identity is a key concept of perception of space and it increase tbe imageability of the city. İt is recognized as a identification of a place according to physical and soical dimensions (Lynch,1960) (Southworth, & Ruggeri,2011, pp.495-497). It refers to place identity that according to Bentley and Watson "place identity is a set of meaning associated with any particular cultural landscape which any particular person or group of people draws on in the construction of their own personal or social identities" (Bentley, &Watson, 2012, p.6). Identity has a direct relationship with sense of place and image of the city that this image can be created by sepcial symbol and signage according to identity of the city and give a meaning to the city and improve the legibility that symbolism in each city can be defined by buildings and other components of the city, so public space as part of a city must be legible to make a connection to city and people; and considering symbols, landmarks, and tangible open spaces in public spaces

(especially in edge of public space) can help to improve legibility and imageability of public space (Cheshmehzangi, & Heath, 2012).

3.1.3.3 Movement and Transportation

Movement in public space is one of the elements of activity in there, however it depends on type of movement that the public space is just for circulation or according to its activity is used, so type of transportation in public space play main role from point of view of movement. Dependence of people to automobile (private car) casue that mobility mostly are done by vehicles and this kind of transportation make a feel of safety for people; especially the women and it leads to reduction of social interaction. In contrast, walking, cycling, and public trasnportation casue public space become more livable. There are one of differences between journey with car and journey by walk that is their purposes. In journey with car, mostly the only purpose is to arrive to the destination, but in walikng journey in addition to arrive to destination, people can shop, watch, communication, and sitt, so walkability can offer many opportunities for different activities in public spaces. Walkability increases the quality of urban public spaces, however the access of all type of trasnportation to public space is important. It is better to propose the car parking near public space, consider bus station, and encourage people to walk that due to increase movement in public space, also control of speed of vehicle increase safety and encourage people to walk. Overall, the vision of dominant of pedestrian paths lead to livability of urban spaces especially public spaces (Carmona et. al., 2003, p.128; pp.169-173; pp.188-190).

According to these characteristics, the public space is successful that consider all items that were discussed above. In management of public space, consideration of

degree of enclosure and type of space according to human scale improve sense of comfort, and improvement of edge and center of public space enhances the liveability of public space and it help to quality of life of people, also aware about type of access to public space and consideration of them in management of public space help to increase safety and liveability of there and it reduce crimes and feels of safety. The public space must be legible by consideration of five elements of it according to Kevin Lynch and according to vision of public space that it must be mixed life, the facilities and activities in designing of public spaces must be related to all kinds of people, races, social classes, ages, and gender and high density of it can help to increase social interaction, walkability, etc. However, the main type of transportation is private vehicle in urban life, but vision of public space that is encouragement of sustainable transportation specially walking and cycling help to type of transportation in city, so in management of public spaces, the comfortable pedestrian path and bicycle lanes must be considered according to climate of the city (Table 6).

Table 6: Physical Characteristics of Public Space Evaluated According to Form of It, Imageability and Legibility, and Type of Transportation

Physical Charactersitics of Public space		
Form of Public space	**Imageability/ Legibility**	**Transportation**
Degree of enclosure	Perception of space	Sustainable Transportation
Hard and soft space	Edge/ Path/ Landmark/ District/ Node	Walking/ Cycling
Positive and Neagtive space		
Human scale		
Edge of public space		
Center of public space		

3.1.4 Functions of Public Open Spaces

The main function of public open spaces is gathering for political issues, social interaction, and communication (Carmona et. al., 2003). It is a connection between city, culture, and people. The public space must be responsive to culture, meaningful to city, and democratic for people (Carr et. al., 1992, pp.12-16; p.19). The main function of public space is explored according to its socio-cultural functions.

3.1.4.1 Socio- cultural Functions of Public Open Spaces

The socio- cultural functional characteristics of public open spaces are evaluated according to seven sections that are:

- Value of public space;

- Rights of people in public spaces;

- Needs of people in public space;

- Meanings and connections;

- Mixed use/ Density

- Multiculturalism (Carr et. al., 1992) (Carmona et. al., 2003) (Wong, 2007).

3.1.4.1.1 Value of Public Space

Advertising the dream life with all facilities, affordable houses for middle- class families support of government by construction of highways cause segregation of people from different nation and social classes after World War II in the United States and this pattern continued by other countries by growth of population and urban development that it encourage the individualism more than socialism. Suburbanization and dispersal of urban patterns effect on public life. Another factor that influence on public life is development of technology, network, internet that cause people also for socialization and communication use more from internet than public space; in other word, life of people; especially in big cities, become like machine. Todays, many urban designers, sociologists, architects attempt to find solution for protection from value of public space and public life (Carr et. al., 1992, pp.3-6; pp.26-30).

Awarness of value of public space has many benefits in dimensions of economic, human health, social, and environment. In accordance with economic function of public space, it effects on price value of land, buildings, and its neighborhood, however it enhances different business in region. From point of view of human health function, public spaces as a place for relaxation and calm reduce the stress of people, which directly influence on decreasing of the diseases; especially mental diseases. Social function of public space as a bridge between indivualism and socialism casue that people especially children who is situated in a special age, become strong in social relationships and it reduce crimes in region, also people

knows different social behavior and cultures by communication in public spaces. From point of view of environment function, it influences on type of mode of trasnportation. As the one characterisitics of public space that is sustainable trasnportaiton system (Walking, Cycling, ...), it encourages people to utilize more sustanible trasnportations than private vehicles and it directly effects on decreasing of air pollution and it affect urban ecology (Carmona, Magalhaes, &Hammond, 2008,p.7).

3.1.4.1.2 Needs in Public Spaces

One of the fucntions of public space is providing the needs of daily life of people. However this characteristic is different in each city according to culture and way of life of people, but five elements are similar in all public spaces according to Carmona et. Al., (2008):

- Comfort;

- Relaxation;

- Passive engagement;

- Active engagement;

- Discovery.

Comfort

People always spend their free times where they feel comfort and public space should not be unique from this characteristic. Comfort in public space is evaluated according to physical, social, and psychological dimensions. Physically, in designing public space, the climate, location and orientation of seating furniture, shading elements, and landscape must be considered for comfort of people. From point of

view of social and psychological, the security is the main characteristics that must be mentioned in public spaces, so the measurement of comfort of people in public spaces is evaluated by measurement of their spending times in there and level of their satisfaction from the space (Carr et.al., 1992, pp.231-232).

Relaxation

Relaxation in public space somehow is different form comfort and it is more related to psychological where the space is far from any noise, crowding, traffic, vehicle and the natural environment such as water, tree play the main role in relaxation of people (Carr et. al., 1992, pp.232-233).

Passive Engagement

Passive engagement refers to activities that does not have any physical interaction such as watching people, so the spaces must be considered in public space that people has a vision to other parts of public space. Another passive activities that attract people in public space, is a space that are designed for performance, concerts, and other shows, also public arts such as sculptures can be attractive (Shaftoe, 2008, pp.233-234).

Active Engagement

It involves activities that are related to interaction of people that are mostly recreational such as sport facilities, ceremony, festivals, tennis court, restaurant, bars, coffee shop and etc. (Carr et. al., 1992, pp. 234-238).

Discovery

It refers to attract people by their sense of exploration. They need to experiment the new space, so while different quality of space and activities are existed in public space, the sense of discover is successful and people like to discover the mystery of the space (Carr et. al., p.238).

3.1.4.1.3 Rights in Public Space

In public space the rights of people must be respected by three main factors that are: "Access", "Freedom of action ", and "Change". One of the main key concepts of quality of public space is its accessibility. However, access to public space must be open for every members of society, but issues of security and safety cause that this access becomes limited. By consideration of types of access that are identified by Stephan Carr, Leanne Rivllin, and Andrew M. Stone, this problem can be somehow solved. The types of access are:

-   **Visual Access**: This kind of access mostly focuses on feeling of safety of users. The public space must be identified for users who decided to enter to the space. If the public space does not have any visual access, the users do not feel safety.

-   **Symbolic Access**: It is a factor that cause the public space become livable or not and it comes back to degree of safety. As considered before, existence of some gangs can threat the livability of public space as a lack of safety, so in this kind of access, one symbol or type of design the space can be identified that what kinds of people are suitable, however these spaces need to guards for guarantee the security of public space.

- **Physical Access**: In physical Access, the public space is evaluated according to three factors that are barriers, diversity of uses, and location. Physical access indicates the relation of it with the city and it shows the amount of its attractiveness. Whatever its edges are closer to circulation paths and it has a less barriers, it has more strong physical access to society than the public space that it is surrounded by barriers (Table 7) (Carmona et. al., 2003, p.124) (Carmona, Magalhaes, & Hammond, 2008, p.14) (Carr et. al., 1992, pp. 138-151).

Table 7: Type of Access to Public Space

Access		
Visual Access	**Symbolic Access**	**Physical Access**
Feeling of safety	Kinds of activity	Barriers/ diversity of uses/ location

However, the access and freedom of activity in public space has some positive advantages, but it has some negative effects that the main disadvantage of it is claim of people that cause to chaos in public space, so each public space in addition to freedom of action, need to spatial control and reasonable rules (Carr et. al. , 1992, pp. 137-169). According to Loukaitou- Sideris and Banerjee control in public space is divided to hard control and soft control. Hard control refers to strict security in public spaces by providing elements of security such as security officers, and camera. But soft control refers to control of public space by design management of the space that encourages people to avoid from disagreeable activities (Keyden, pp.183-185). The

access and freedom of action is not sufficient for rights of people and the factor of change must be added to those factors. Public space must be capable for changing through the different times according to needs of people and etc. (Carr et. al., 1992, pp. 169-180), also rights of privacy in public space is another characteristics of it and People in addition to public activities need to privacy and edge of public space can be defined the border between public and private places (Carmona et. al., 2003, p.178).

3.1.4.1.4 Meanings and Connections in Public Space

The main role of public space that is connection of people to their outside world causes that value of connection of public space to people becomes significant and this connection must be meaningful for people. The public space is meaningful that follow these fundamental needs:

- **Legibility:** It refers to easy visual identify of the space by different cues. It attracts different users to participate in public space (Lynch, 1963, pp.3-10).

- **Positive meaning:** It must have a connection with culture of people that it causes they feel familiar to space and it enhances the sense of belonging in public space (Carr et. al., 1992, pp. 187-191).

As mentioned before, the connection of public space with people play main role in attraction of people and these connections are categorized according to different ways that are:

- "Individual connection;
- Group connection;
- Connection to the larger society;
- Biological and psychological connection;

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- Connection to other world." (Carr et.al., 1992, pp. 199-233).

The meaning in public space is not statistic and it always changed by alter of people, space, needs of people and etc. The public space is meaningful that the vision of designer, management and users share with each other and they consider the diversity of users in public space. The meaningful space does not just refer to history, even it refers to today's way of life of people and identity and provide their needs (Carr et.al., 1992, pp. 233-239).

3.1.4.1.5 Mixed Use/ Density

Each public space must be considered for all kinds of people from different cultures, nations, races, social classes, and etc. All users must feel safety and comfortable in public space; in other words, each public space must be mixed- use or mixed- life that lead to the development of community and social activities. Mixed- life has many benefits that are:

- Increase walkability;

- Improve social interaction;

- Diversity of users;

- Improve safety;

- Improve liveability of city (Francis, 2011, pp.346-434) (Carmona, et. al., 2003, pp.180-182).

The main factor that help to diversity of uses is high denstiy that it refers to sustainablity. Density has different dimesnions that "Urban Land use density" among them is the main debate of this research. In urban land use density, the proportion of buildings to all area are analised and whatever this proportion become lower, the

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density of area or city is higher. The high density in puiblic spaces can improve the communication of different users with each other and encourage them to walkability and it leads to devlop quality of life (Roberts, 2007) (Carmona et. al., 2003,p.183).

3.1.4.1.6 Multiculturalism

As mentioned before, access to public space is a right for all people. On the other hand, the immigration of people from different countries cause that variety of cultures live in one city and it leads to multicultural society (Wong, 2007). The meaning of culture is behavior of members of society in their daily life that is learned from observation and interaction with others and it is transmitted from one generation to another one to solve their problems and interaction of different cultures can improve the culture of people and they learn new individual and social behavior (Erez, & Gati, 2004), so public space as a free access place for all cultures can be an

opportunity for knowing other cultures that lead to close different cultures to each other, for instance, culture festivals in urban public space can introduce different cultures to each other and it effects on quality of life of people (Table 8) (Wong, 2007, pp.41-48).

Table 8: Socio- Culture Function of Public Space is Evaluated According to Value of It, Needs of People, its Rights, Meaning and Connections, and Multiculturalism

Social Characteristics of EMU Campus					
Value of public space	Needs of people	Mixed Use/ Density	Rights in public space	Meaning and connection	Multiculturalism
Economic Value	**Comfort**	Increase walkability	Physical access	Legibility	Variety of Culutre
Price value of land/ Buildings, …	**Physically**	Improve social interaction	Symbolic Access	Positive Meaning	
Enhance business	Climate	Diversity of users	Visual Access	**Connections**	
Human Health	Location of sitting elements	Improve safety	**Freedom of activity**	Individual	
Reduce Stress	Shading elements	Improve liveability of city	Comfortable	Group	
Decrease diseases	Landscape		Diversity of activities	Large society	
Social Value	**Socially**		Spatial control	Biological and psychological	
Sustainability	Security		**Change**	World	
	Level of satisfaction		Needs of people		
	Relaxation				
	Natural Environment				
	Psychological				
	Passive engagement				
	Watching				
	Active engagement				
	Type of activities				
	Discovery				
	Senese of exploration				

3.2 University Campus as a Public Space of the City

University Campus as one type of public open space is an environment with variety of activities and events. It has three main functions that are educational function, entertainment function, and residential function. University campus includes different types of public open spaces, which are street, square; park, and etc., so improvement of these elements can help to enhance the quality of university campus as a public space of the city.

The question here is "Why the campus must be a public space of the city?" campus according to its definition is a utopia community for students that in addition to education (that it is an essential issues in economy) spend their times in the public space. It is a democracy and freedom of thinking. It is a symbol of the city. The students do not just learn knowledge; even they learn different cultures, social behavior, way of life, and etc. The campus as a public space can attract people to learn knowledge; to communication with different nations; know other cultures and overall it influences on development of the culture of the city (Gumprecht, 2008, pp.40-71). If the university campus wants to act as a public space of the city, the characteristics of public open spaces must be considered in its physical and social characters.

3.2.1 Evaluation of Physical Indicators of University campus to Act as a Public Space of the City

If the university campus would act as a public space of the city, it must have relationships with the city and it must have characteristics of the public space. Therefore, according to Table 3 in which the characteristics of physical relationships of campus with the city has been evaluated and Table 9 which explores the physical characteristics of public space; the indicators that must be evaluated in physical characteristics of university campus to act as a public space of the city are form of university campus, imageability and legibility, and transportation.

Form of University Campus: Type of planning of university campus shape a form of it and it is evaluated by four elements that are buildings, open spaces, edge of university campus, and center of university campus. For improving physical relationships of campus with the city and shape it as a public space of the city, the

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entrance of buildings, which are located near the path of city, is better to access from city, the height of buildings is better to have harmony with townscape of its surroundings and its architecture style should have identity to improve legibility. Another element is open spaces in university campus that play main role in development of university campus as a public space of the city. For achieving to this goal, they must be host to the city, the proportion of open spaces to buildings must be respect to proportion of mass to open spaces of city, and townscape, pavements, urban furniture, type of space according to hard, soft, positive, and negative space, and human scale must be considered in University campus. Another two significant elements are edge and center of university campus. On one hand, development of edge and center of university campus can improve the physical relationship of university campus with the city; on the other hand, the edge and center are the main areas of public space, so the development of edge and center of university campus can improve the characteristics of it as a public space of the city and there can be core of public activities of university campuses. Edge of university campus is the border between city and campus that it must be host to the city for improving the physical relationships of university campus with the city, so it is better to remove fencing, walls, and other elements that segregate campus with the city and replace them with open spaces and buildings that the functions of them is better to be public for improving the quality of university campus to act as a public space of the city. Center of university campus is probably the core of activity of campus, so improvement of its relationship with active edge of campus can improve the physical relationships of university campus and the city. Consideration variety of activities in center of university campus can help to improve the quality of university campus to act as a public space of the city.

Imageability/ Legibility: Each urban space must be legible to guide and attract people, so university campus as kind of urban space; especially its edges and center must be legible to students and people by consideration of elements of legibility that according to Kevin Lynch they are paths, district, node, edge, and landmark to give imageability to people.

Transportation: The general type of transportation in campus is walking, cycling, car, and public transportations. University campus as a knowledge society is an opportunity to encourage sustainable transportation among the people by consideration of sustainable transportation inside the university campus and connect them to outside the university campuses, also consideration of suitable pedestrian paths in public spaces can help to development of walkability instead of private cars (Table 9).walkability has a strong relationships with livability and it causes that interaction of people become stronger and it helps to quality of life.

Overall, these are the indicators that improve the physical relationships of university campus with the city and shape it as a public space of the city, but the physical dimension cannot shape of university campus as a public space of the city without consideration of social characteristics of university campus, so in below, it will be evaluated.

Table 9: Physical Indicators of University Campus to Act as a Public Space of the City

University Campus as a public space of the city									
Physcial Indicator									
Form Of University Campus				Imageability/ Legibility					Transportation
Building	Open space	Edge	Center	Path	Node	District	Edge	Landmark	Sustainable
Entrance	Host to the city	Type of barrier	Type of functions and activities	Pedestiran	Traffic node	Education district	Walls	Imageability	Walikng
Height	Proportion of it to buildings	Type of functions	Type of connection to edge	Bicycle	Pedestiran node	Residential district	Fencing		Cycling
Legibility	Townscape	location of entrance	Its location	Vehicle paths		Mixed use district	Building		Public Trasnportation
Architecture style	Pavements	Type of open spaces				Commerical district	Open spaces		
Identity	Urban furniture					Leisure district	Tree		
	Hard and soft space								
	Postive and negative sapce								
	Human scale								

3.2.2 Evaluation of Social Indicators of University campus to Act as a Public Space of the City

According to Table 4, the social relationship of university campus with the city is divided to two elements that are diversity and community and according to Table 10, social characteristics of public space are evaluated according to value of public space, needs in public space, rights in public space , meaning and connections, Mixed- life/ density and multiculturalism, so according to these characteristics, the main social indicator of university campus to act as a public space of the city is socio- culture function of university campus.

Socio- cultural functions: It is divided to value of university campus, needs of student and people, rights in university campus, and mixed life/density.

Value of university campus is evaluated in order to economic characteristics of it, its diversity, its type of relationships with community of city, and its type of activities and events.

The needs of people in public spaces are comfort, relaxation, passive engagement, active engagement, and discovery, so in designing university campus to act as a public space of the city, these five items must be considered that each of them were explained in pages 69 to 71.

Each university has its own rules inside the campus and they have some limitation, so the rights in university campus are evaluated according to rules of it that it leads to limit access, activities, and freedom. Access to university campus refers to access of people to public space of the campus and it is divided to two sections: physical access and visual access. In physical access, type of barriers of university campus and type of activities in public spaces of university campus shows the degree of access of people to there, also in designing the public spaces in university, the visual access must be considered for attraction of people. When the university campus act as a public space of the city, the main problem here is lose the privacy of university campus, so access in university campus that refers to access inside campus should limit to non-students in private districts of university campus to preserve the privacy of the campus.

One of the characteristics of university campus is diversity of users that means it includes variety of students from different nations, races, and cultures. It is an

opportunity that most of spaces of university campus become mixed use to improve the quality of public spaces in university campus and increase variety of users by development of activities. The mixed life or mixed use is evaluated by type of functions in university campuses according to type of users. Another issue that is important in public spaces is high density of them to improve interaction of people, so the university campus as a public space must have high density for getting character of the city. Density that refers to urban land use density in urban space is evaluated according to proportion of buildings to all area and it shows the enclosure degree of spaces (Table 10).

Table 10: Social Indicator of University Campus to Act as a Public Space of the City

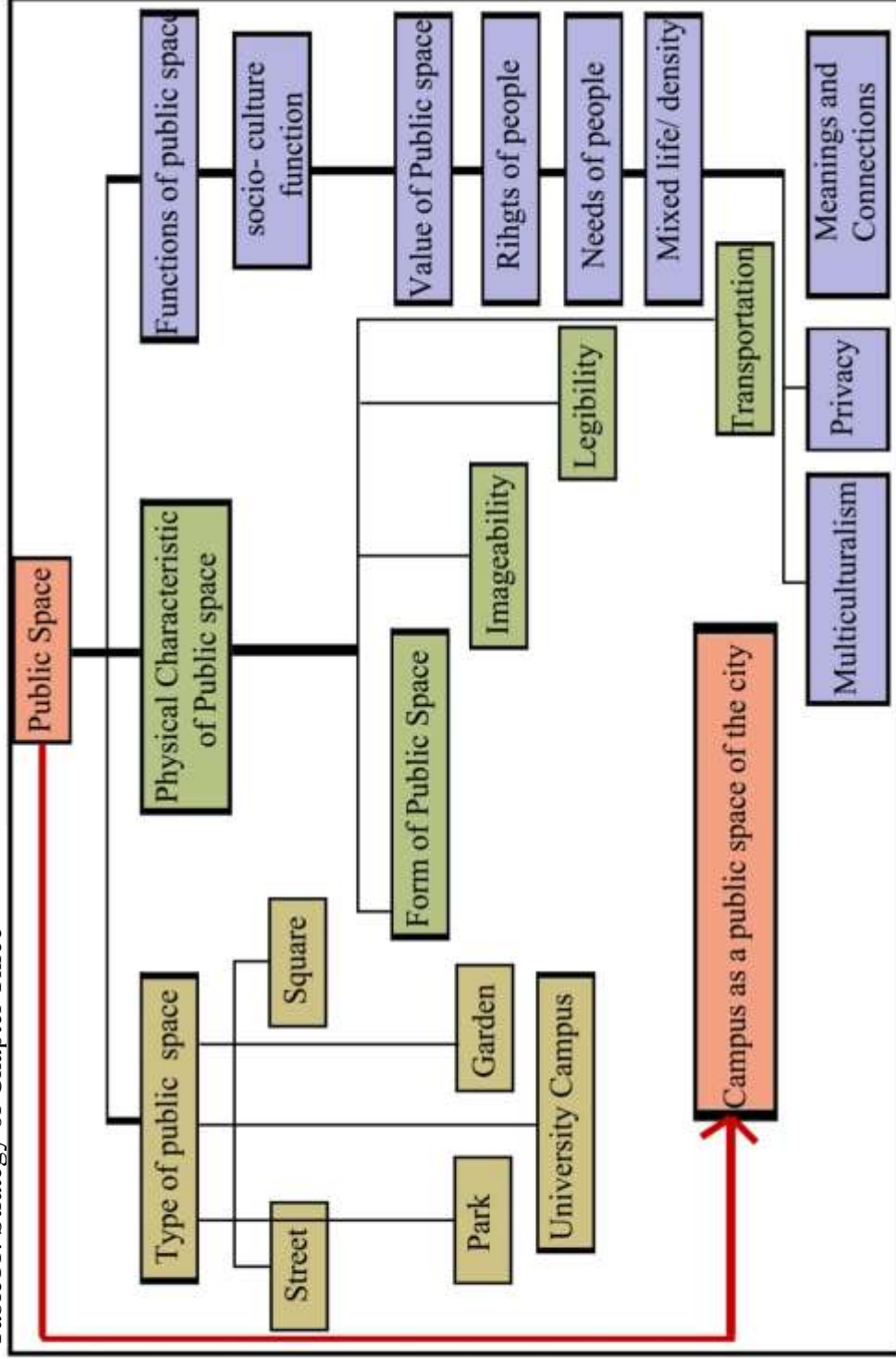| University Campus as a public space of the city					
Social Indicator					
Socio- Cultural Function					
Value of University Campus		Needs in University Campus	Rights In University Campus	Mixed life/ Density	
Economic		Comfort	Rules of University campus	Tye of Function	Urban land use density
Diversity		Relaxation	Access	Diversity of Activities	Degree of Enclosure
Structural / Curricular / Interaction		Passive engagement	Activity		
Type of relationships with community		Active engagement	Freedom of action		Proportion of buildings to all area
Type of activities and events		Discovery	Privacy of studnets		

Overall, development of university campus to act as a public space of the city depends on its physical and social relationships with the city and consideration of physical and social characteristics of public space in university campus improve the quality of university campus to act as a public space without disturbing its privacy, also the edge and center of university campus are the best places for improving the

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relationships of university campus with the city and it helps to university campus to act as a public space of the city.

3.3 Summary of Chapter

Public space that is divided to public open space and public buildings is a place for enhancing quality of life that is related to livability of the city. Its types has different classification according to different scholars, but the main types of public open space are street, square, park, garden, university campus, and etc. public space has two main characteristics that are physical and function characteristics. Physical characteristic of public space is evaluated according to "form of public space", "access", "imageability and legibility", "mixed life and density", and "movement and transportation". In form of public space, the degree of enclosure of public space (suitable proportion of vertical elements to horizontal elements of city is 1:2.5), considering human scale, and enhancing edge and center of public space is significant as much as its access that is divided to visual access, symbolic access, and physical access, also people sense of belonging in public spaces where there are considered the identity of the city, however one the main vision of public space is consideration of variety of people from different nations, cultures, social classes, and etc. The last physical characteristic of public space is movement. Today, lack of enough natural resources lead to encourage sustainable transportation such as walking, cycling, and public transportation, so improvement of pedestrian paths, bicycle lanes, and public transportation encourage people to use sustainable transportation more than private cars and it influences on livability of public spaces and quality of life. Other characteristics of public space is function characteristics that is evaluated according to value of public space, needs in public space, rights in public space, meaning and connections, privacy, and multiculturalism (Table 11).

Table11: Strategy of Chapter Three

Public Space
- Functions of public space
  - socio- culture function
  - Value of Public space
  - Rihgts of people
  - Needs of people
  - Mixed life/ density
  - Meanings and Connections
- Physical Characteristic of Public space
  - Form of Public Space
  - Imageability
  - Legibility
  - Transportation
  - Privacy
  - Multiculturalism
- Type of public space
  - Square
  - Garden
  - University Campus
  - Street
  - Park

Campus as a public space of the city

Chapter 4

EMU CAMPUS AND FAMAGUSTA CITY: EVALUATION OF EMU CAMPUS CONSIDERING PUBLIC OPEN SPACE

4.1 Introduction: Eastern Mediterranean University Campus [EMU Campus]

Eastern Mediterranean University (EMU) Campus is located in North- West of Famagusta City that is the second largest city in North Cyprus with 46,000 populations (Census 2006) (Figure 17) (Esentepe, 2013).
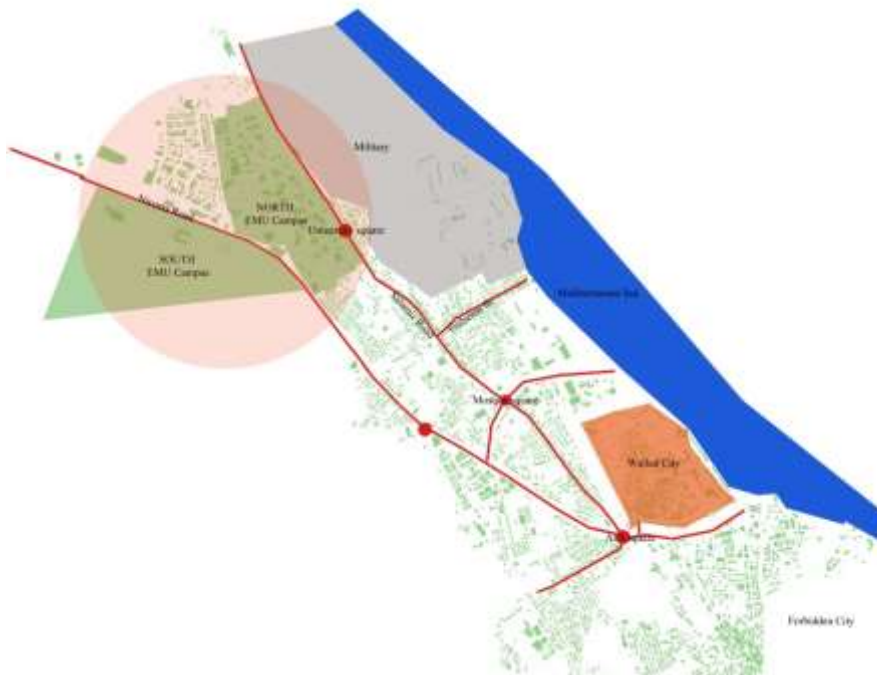

Figure17: Location of EMU Campus

In addition to EMU Campus, Famagusta includes a harbor and historic environment. The city is supposed as a student city and population of students of EMU Campus is

approximately 13000 (Strategic plan EMU, 2012). It has been established as a Greenfield campus with the intention to have an attraction point towards the rest of the city since the city was restricted to all other dimensions (closed Maras in the east, Military zone, the sea). EMU Campus has 71 buildings with approximately 1,856,954.64 m^2 Area that 320,784.94 m^2 Area is educational district as a center of campus, 133,290.16 m^2 Area is sport district, 226,514.83 m^2 Area is dormitory district, and 129,183 m^2 Area is mixed use district (Figure 18).

Figure 18: Eastern Mediterranean University Campus with Approximately 13000 Students is Supposed as a University Campus Adjacent to the City (Eastern Mediterranean University, 2013)

According to one of the main problems of Famagusta city that is low quality of public open space, the aim of this chapter is to evaluate the EMU Campus according to literature review and find out how it can work as a public space of the city to improve quality of life in Famagusta. EMU Campus with 11 faculties and 30 departments is divided to two sites: north campus site (Main Campus) with

781,955.15 m^2 Area and south Campus site with 1,074,999.49 m^2 Area (Figure 19) (Strategic plan EMU, 2012) that the main site of EMU will be study deeply in this thesis.
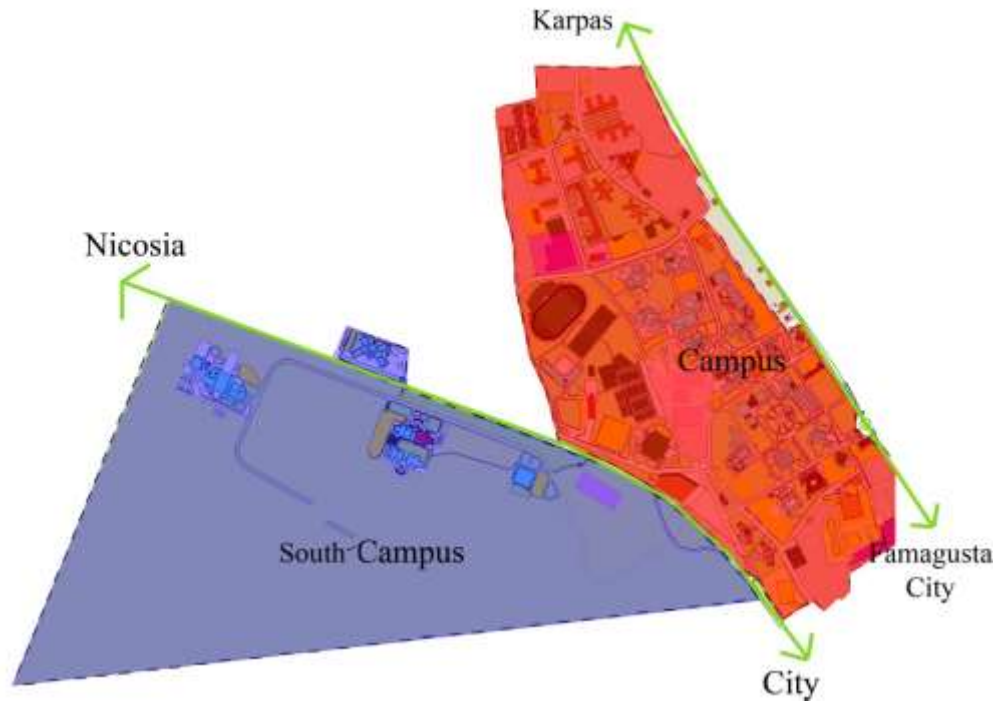

Figure 19: EMU Campus is Divided to Two Sites that are North Site (Main Site) and South Site

4.2 Methodology of Analysis of the Case Study

The strategy of this chapter is to evaluate Famagusta city and EMU campus according to physical and social dimensions and then analyze EMU campus as a public space. Data collection methods for the case study analysis are both qualitative and quantitative survey. As part of quantitative survey, firstly a questionnaire survey has been conducted by 152 students that 73 of them live inside the EMU campus and 79 of them live outside EMU campus (Appendix A). The number of questionings is based on sample size formula of Cochran (Appendix B).

The result of this sample size formula according to population of EMU (13000 students) is:

$$n_{1} = \frac{150.06}{(1 + \frac{150.06}{13000})} = 148$$

This result shows in questioning survey of EMU campus from 148 students must be asked with acceptable margin of error of 8 percent that the result from these questions can be refer to whole population of EMU. The results that are expected to be gathered from questionnaire survey from students are:

- Find out type of activities in EMU campus that are popular amongst students;
- Find out type of facilities in Famagusta city which are more popular amongst students;
- Realize active and passive spaces in EMU campus;
- Discover if the facilities, spaces, and activities in EMU campus provide needs of students or not?
- Find out the needs of students outside activity;
- Notice the strong and weak features of EMU campus according to idea of students;
- Recognize which spaces, streets, and squares are more usable in EMU campus;

Secondly, a structured interview has been conducted with the local people (the local citizens of Famagusta). The interviewed people have been selected randomly within

different neighborhoods of the city. About 50 people have answered questions about how they use the EMU campus (please see Appendix C for the interview questions).

The results that are expected to be gathered from interview survey from local people are:

- Find out the facilities and spaces in EMU campus that they use;
- Recognize their relationship with EMU environment;
- Find out the interaction of local people with students
- Find out their views about EMU campus;
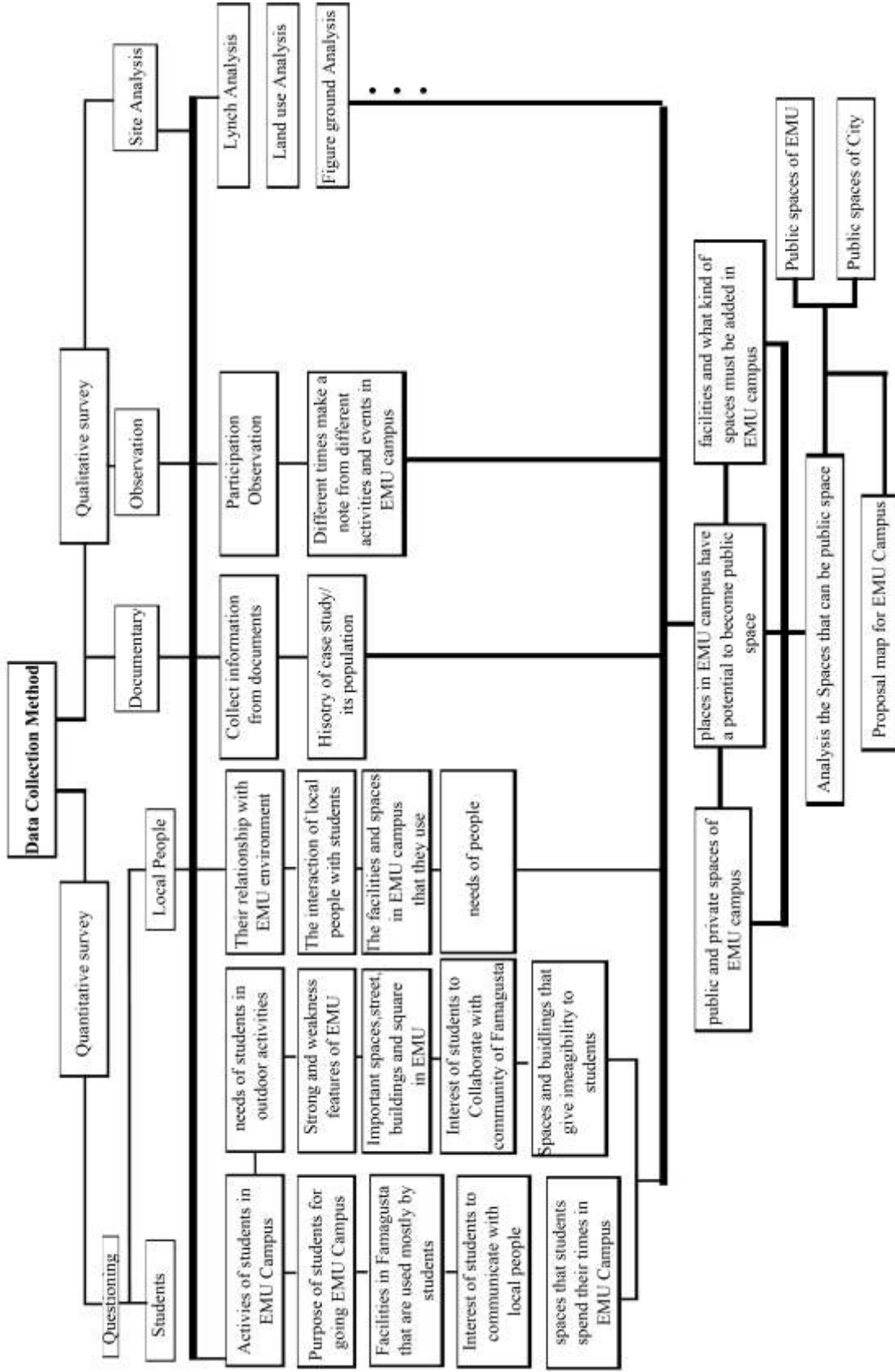- Discover needs of people.

As part of qualitative survey, documentary study, on site participation observation, and site analysis are the main methods of this research. In documentary survey, information from documents for history of the city and its population are selected. Another data collection method is participation observation that in different times of the day, the activities of students and events that are happening in EMU Campus were noted and these notes helped to find out the strengths and weaknesses of EMU campus. According to all data collection and evaluation methods that are bases on quantitative and qualitative methods:

- Find out the public and private spaces of EMU campus;
- To discover which places in EMU campus have a potential to become public space;

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- Find out which facilities and what kind of spaces must be added in EMU campus.

According to these results, focus on specific spaces in EMU campus that can be public spaces that these spaces are divided to two groups: group one, places that can act as a public space of EMU campus and group two, places that can be act as a public space of the city, then is analysis these spaces and in the end of this chapter, it is expected to give a proposal map for EMU campus (Table 12).

Table12: Data Collection Methods of the Research

Data Collection Method

Quantitative survey — Questioning — Students — Local People

Qualitative survey — Documentary / Observation — Site Analysis

Site Analysis:
- Lynch Analysis
- Land use Analysis
- Figure ground Analysis
- . . .

Observation:
- Participation Observation
- Different times make a note from different activities and events in EMU campus

Documentary:
- Collect information from documents
- Hisrory of case study/ its population

Local People:
- Their relationship with EMU environment
- The interaction of local people with students
- The facilities and spaces in EMU campus that they use
- needs of people

Students:
- Activies of students in EMU Campus
- Purpose of students for going EMU Campus
- Facilities in Famagusta that are used mostly by students
- Interest of students to communicate with local people
- spaces that students spend their times in EMU Campus
- needs of students in outdoor activities
- Strong and weakness features of EMU
- Important spaces,street, buildings and square in EMU
- Interest of students to Collaborate with community of Famagusta
- Spaces and buildings that give imeagibility to students

- public and private spaces of EMU campus
- places in EMU campus have a potential to become public space
- facilities and what kind of spaces must be added in EMU campus

- Public spaces of EMU
- Public spaces of City

- Analysis the Spaces that can be public space
- Proposal map for EMU Campus

4.3Famagusta City

Famagusta City as a cultural and architectural heritage of the Island is divided to four districts today that are:

- Old City (Walled City);

- Asagi Maras District;

- Maras district (Varosha);

- New established district.

These quarters and parts were expanded in different periods, so according to development of the city, different periods of expansion will be briefly explained that these periods are the period before 1974, 1974 to 1986, after 1986, and today (Onal, Dagli, & Doratli, 1999, pp.333-335).

In period before 1974, the development of Famagusta was limited to Walled City, Asagi Maras, and Maras. This period is divided to six eras that are: early period (648-1192 AD), Lusignian period (1192- 1489 AD), Venetian Period (1489- 1571), Ottoman period (1571- 1878), first British period (1878-1960), and republic of Cyprus (1960-1974). The city of Famagusta was shaped in ruins of Salamis, but after attack of Arabs, the settlements shifted to south part of today's Famagusta. In Lusignian period, the city was developed near the harbor (Citadel) and this development was continued by Venetian and they built walls surround the city for protection, so the Famagusta was popular as a fortified city at that period. In Ottoman period, Muslim people (Local people) moved to outside of walled city (Maraş and Asaği Maraş) and the people who immigrated from Anatolia of Turkey

were settled in Walled City, so the population of inside Walled city were reduced and the city was developed outside there. This development was continued in British by foundation of Maras, but in Republic of Cyprus period, the conflicts between Turkish Cypriot and Greek Cypriot caused that most of Turkish lived inside the walled city or in West side of it and Greek inhabited in Maras (Figure 20) (Onal, Dagli, & Doratli, 1999, pp.335-341).

The war between Turkish Cypriot and Greek Cypriot caused that Cyprus Island was divided to north and south, so Greek Cypriot who lived in Famagusta immigrated to south Cyprus and it caused that the population of Famagusta decreased, even the Maras was closed by UN and it is an abandoned district today and by immigration of Turkish people to north Cyprus, the population of Famagusta was increased, so the city was developed to west and north part of Walled city (some people lived in walled city; some of them lived in Asagi Maras, and rest of them lived in west and north of Walled city) (Onal, Dagli, & Doratli, 1999, pp.341-342).

By foundation of Eastern Mediterranean University in 1986[9], livability came back to the city by attraction of students from different countries and existence of EMU altered the way of development of Famagusta that before 1974, it was toward the south and after 1974; especially after 1986, it was toward the north, so needs of students to accommodation caused that shops, houses, restaurants, and other

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[9] EMU was early constituted as a high institute of technology in 1979 and it was expanded through that period and in 1986, EMU Campus was established (Onal, Dagli, & Doratli, 1999, p.341).
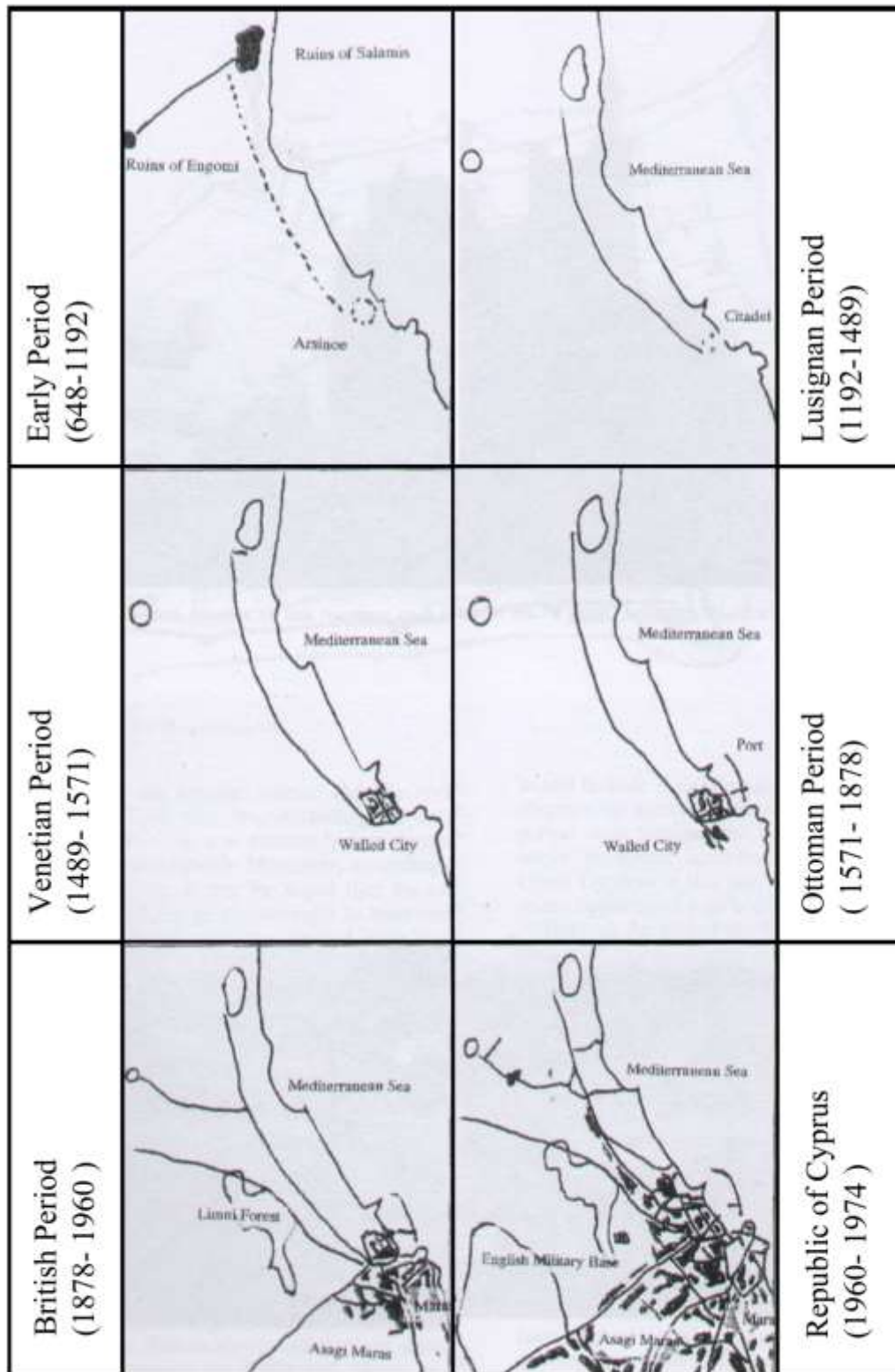
Figure20: Development of Famagusta from 648 Until 1974 (Onal, Dagli, & Doratli, 1999, p.337)

accommodation were constructed close to university campus and today a city is expanded to Tuzla and Yeni boagzici as suburban areas of the city (Onal, Dagli, & Doratli, 1999, pp.342-346). The Famagusta includes two main paths that are Ismet Inonu Boulevard [Salamis Road] and Mustafa Kemal Boulevard. Salamis road connects three main nodes of the city to each other that are: Anit square, Mosque square, and University square. However architecture of new quarter of the city is different from traditional architecture of Famagusta and it does not have any specific characters; additionally, it does not give any image to people, but Polat Pasa Camii mosque in mosque square give legibility and imageability to new quarter of the city as a landmark. The activity in city is through Salamis road as a main paths of City and city is divided to three parts according to livability: The Forbidden city that was closed to people after war is part A, whole districts from Anit square to mosque square is part B, and from mosque square to north is part C(Figure 21).
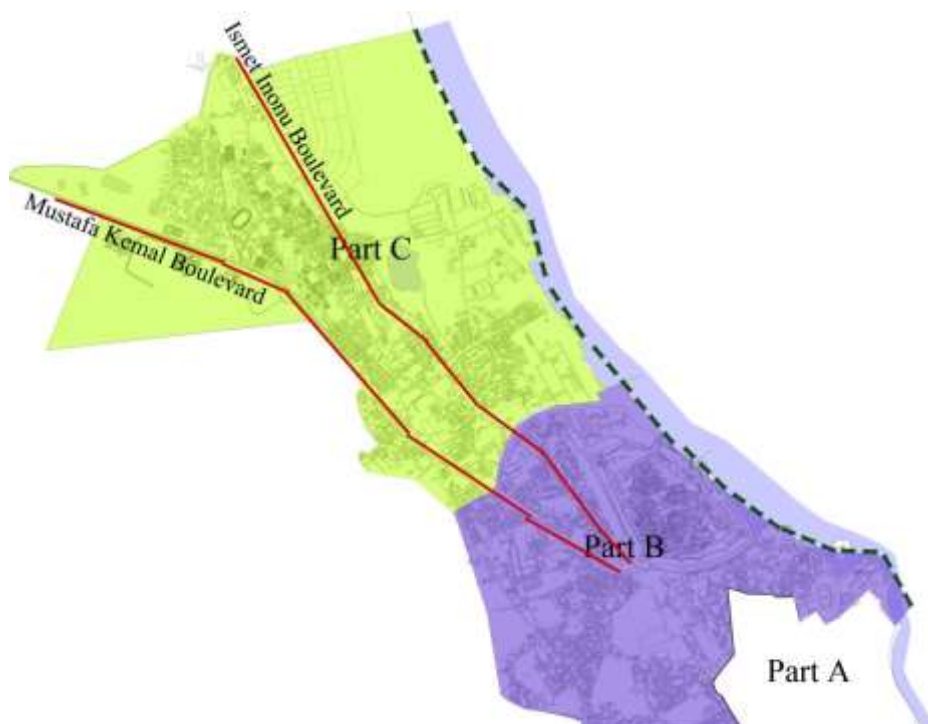
Figure 21: Famagusta City is Divided into Three Parts According to its Livability

Part A is popular as a Varosha that in British period, this district were constructed and it attracted most of people from all around the world to there, but after war between Turkish Cypriot and Greek Cypriot, there was closed to inhabitants and it influenced on development of the city. In part B, most of inhabitants are local people who live mostly in Asagi Maras district and Walled city, but rest of inhabitants in this part are students that mostly live near the Mosque square. According to land use analysis, most land use functions of part B are residential, historic quarter, industry, and vacant land. Table 13 shows that the public facilities in this district are not enough to attract people and students to there, so it causes that this part of the city does not become livable, however existence of walled city has a potential to give a life to this district. Also lack of any good quality of public spaces and its distance from EMU campus are another reasons that Part B is not livable. According to the questionnaire survey, 14.8 percent of students of EMU, who use facilities of outside of EMU campus (Figure 22), spend their free times in the Walled city, 5.6 percent of them use open spaces and 11.1 percent of them go to café and bars (Figure 23).
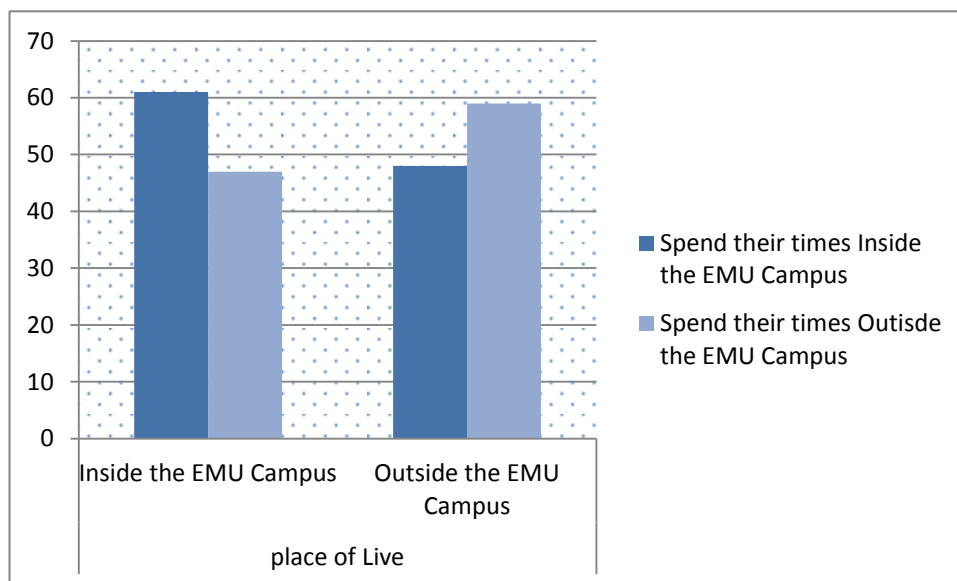
Figure 22: This Bar Shows that Students Spend Most of their Times Where they Live

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Table 13: Area of Part B of Famagusta According to Land Use (These Land Use Areas are Calculated by AutoCAD Map)

	Area (m^2)	Percentage
Residential	1,280,118	36.74%
Leisure	93,052.03	2.67%
Office	16,061.49	0.46%
Retail	110,923.76	3.18%
Education	17,829.16	0.51%
Historic	572,652.44	16.43%
Community service	105,104.11	3.01%
Industry	378,068.98	10.85%
Public utility	16,764.8	0.51%
Military	159,585.71	4.58%
Vacant	733,709.54	21.06%
Total	3,483,870.02	
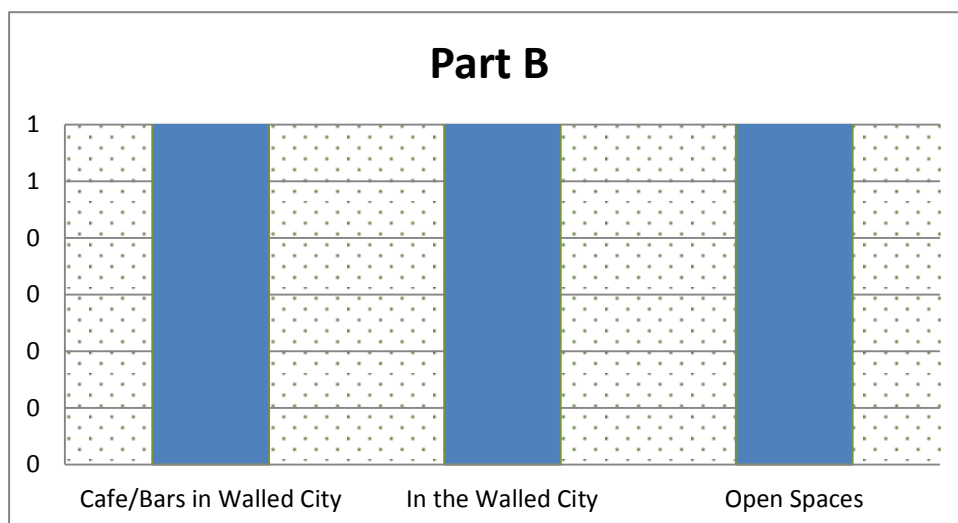
Figure 23: This Graph Line Shows the Places that Students Mostly Visit through their Education in Part B

According to Table 14, most land uses in part C, are residential (most of them are rented to students), military, industry, university, and vacant lands. However, the existence of EMU Campus influences on livability of Salamis road; especially in center of it and most of functions of buildings near the salamis road are retail and leisure, but low areas of recreational activities and lack of any public spaces lead to reduce the quality of life in Famagusta. From analyzing of part B and C, it is concluded that the majority of functions of lands and buildings of Famagusta city are residential, military, education, vacant land and industry. According to questionnaire survey, 39.8 percent of students go to coffee shops, 13.9 percent spend their times in café and bar, 49.1 percent spend their times in Lemar, 43.5 percent go to restaurants, 4.6 percent use net café, 17.6 percent use open sport fields, 31.5 percent go to cinemas, and 37 percent spend their times in Magem in part C (Figure 24& 25).
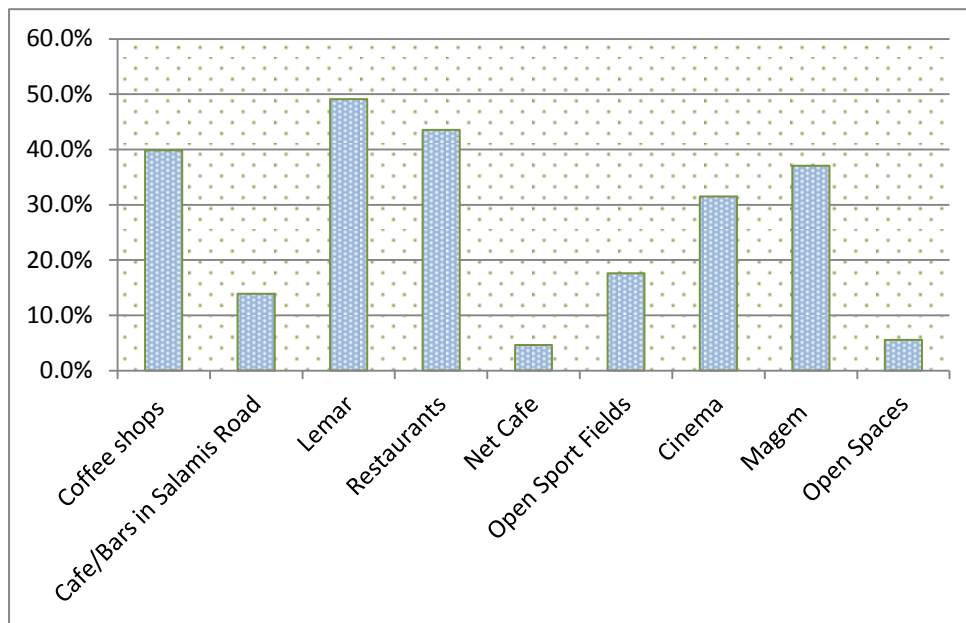
Figure 24: This Graph Line Shows that Student Mostly Spend their Times through their Education Period in Part C

Table14: Area of Part C According to Land Use (These Land Use Areas are Calculated by AutoCAD Map)

	Area (m^2)	Percentage
Residential	1,597,451.59	20.9%
Leisure	42,258.22	0.55%
Retail	80,592.69	1.05%
Education	1,856,954.64	24.3%
Community service	13,410.36	0.17%
Industry	769,273.51	10.06%
Public utility	14,312.93	0.22%
Military	2,183,448.32	28.57%
Vacant	1,083,789.09	14.18%
Total	7,641,491.35	

As graph lines show, the most of spaces that students spend their times in there are indoor spaces and there is not much outdoor open spaces in Famagusta City, so according to this argument and also focus of this thesis , Famagusta has weaknesses that are:

- Distance of Walled city from EMU Campus cause part C become more livable than part B and it lead to separation of these two parts, which effects on segregation of local people and students.

- Vast area of vacant land and type of urban planning leads to low density in Famagusta and it influences on increasing distances, so traffic congestion, air
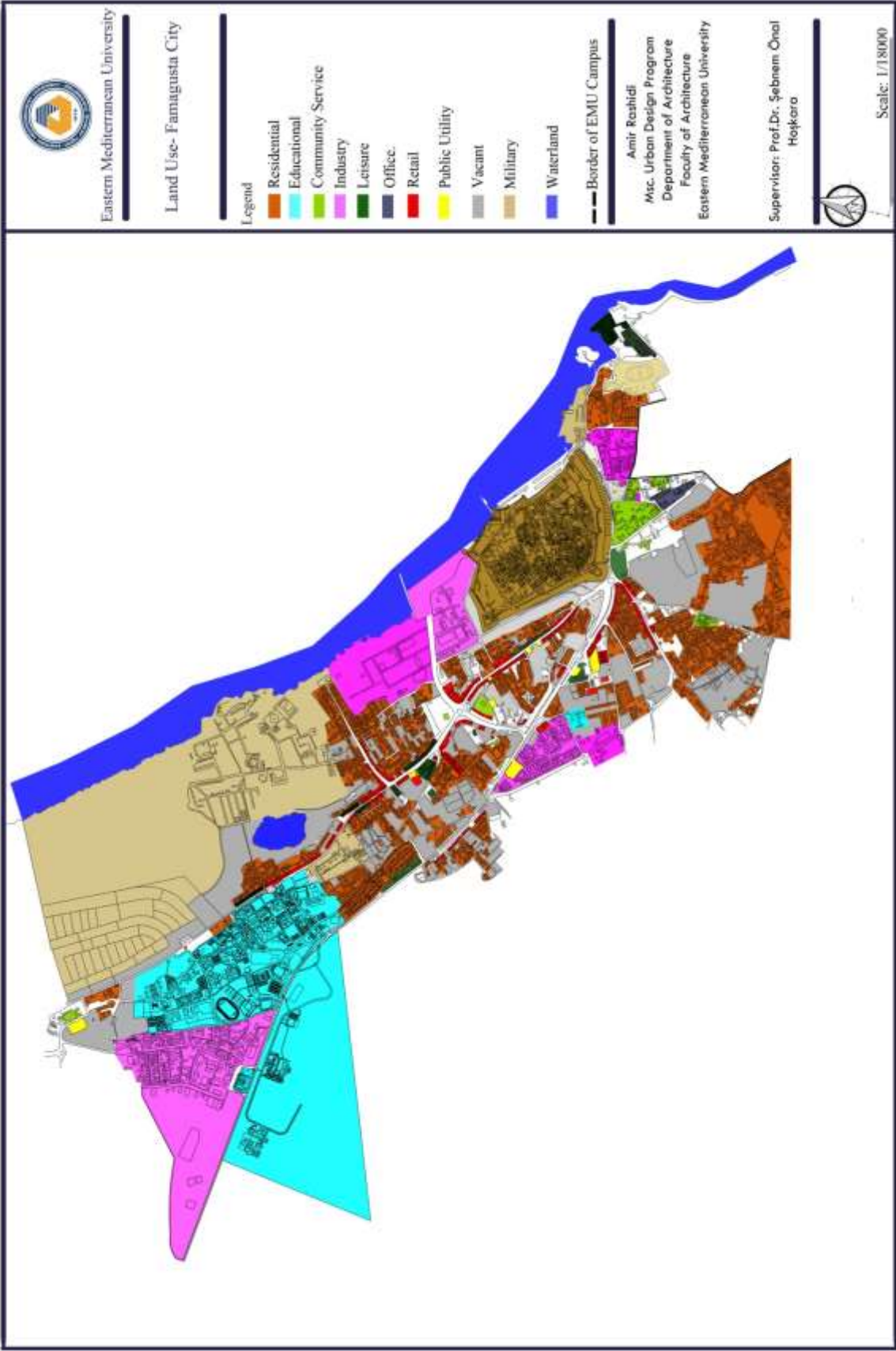
Figure 25: Land Use Map of Famagusta City

pollution, energy consumption, automobile dependency, and time consuming is increased and social activity and public health are reduced.

- Occupation of vast land by military cause the construction of buildings and spaces are limited to some part of the city and also it influences on the development of EMU Campus that its expansion become linear.

- However, restaurants, café, bar, and shopping malls as focal points are existed in Salamis road for social activity of people, but lack of any public open space is one of the main problems of the city.

- However the EMU campus has effected on urban pattern of Famagusta and it causes that Salamis road become somehow livable, but lack of any public open space management in whole city cause that the social issues of people and students are not solved and quality of life in Famagusta region becomes low.

Below, EMU Campus will be analyzed according to two dimensions that are: physical and social.

4.4 Physical Characteristics of EMU Campus and its Relationship With the City

EMU Campus influences on the development of Famagusta city and it changed the urban pattern of Famagusta. As discussed before, EMU campus includes two sites that most focus of this thesis is on north site of EMU campus.

Physical characteristics of EMU campus will be analyzed according to physical characteristics of university campus to act as a public space of the city that are discussed in chapter three, so in further section, form, legibility and imageability, and transportation in EMU campus will be evaluated.

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4.4.1 Form of EMU Campus

EMU campus was developed through different periods and form of spaces is mostly irregular and as same as other urban spaces, it includes buildings, infrastructures, landscape, and uses. As shown in figure ground map, the buildings are located separately from each other and they make three kinds of spaces in EMU campus: enclosure quadrangle form, three quadrangle form, and free spaces (Figure 26 &27)
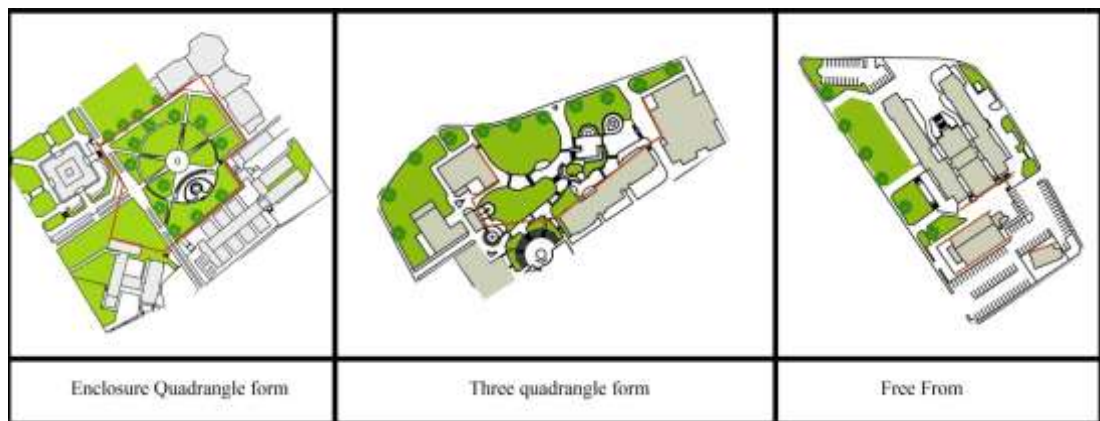

| Enclosure Quadrangle form | Three quadrangle form | Free From |

Figure 26: Three Examples of Type of Forms In EMU Campus
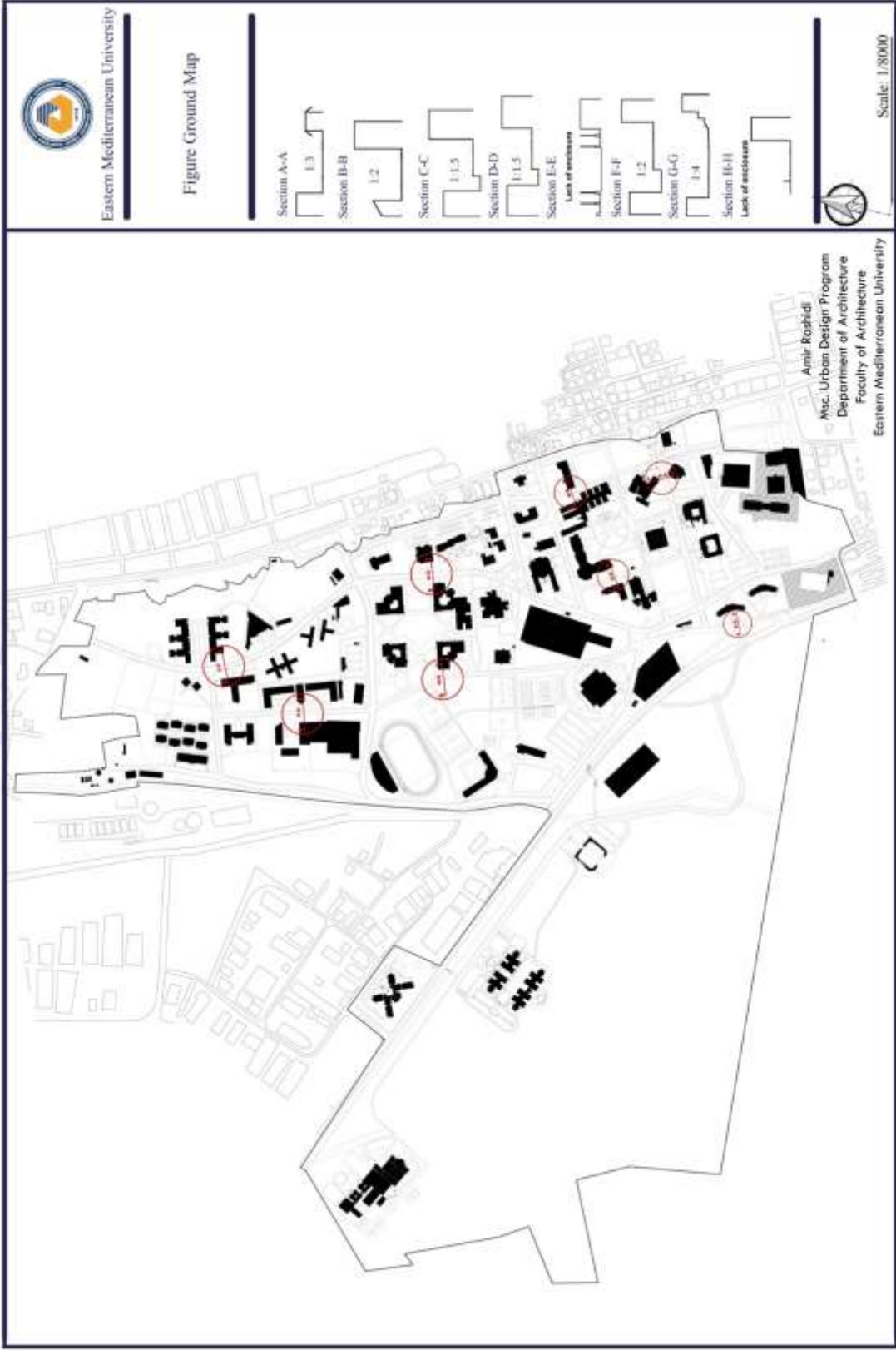
Figure 27: Figure ground map of EMU campus

According to Table 9, form of university campus will be evaluated according to buildings, open spaces, edge, and center.

Buildings: According to literature review, the buildings are evaluated according to their locations; entrances, and height, so in below, each of them are explained.

- Majority of buildings of EMU campus that are located near the edge of the campus have distance from main path of the city; the nearest one has 2 m distance and the farthest one has 78 m distance.

- Entrance of most of them is from inside of the campus and it influences on physical relationships between campus and the city.

- Majority of height of buildings in EMU campus is two and three floors and the height of buildings near edge of campus is one and three floors that they respect to townscape of the city and there is just one building that its height is 6 floors and it is located in dormitory district (Table 15).

Open spaces: According to Table 9, the open spaces in University campus must be evaluated according to its form, its proportion to buildings, its type of trees, pavements and its urban furniture and in below, these elements are evaluated.

- According to Analysis Table 16, 75 % of all campus is green area that by considering the north and south site separately, 97.41 % of south site and 54.70% of north site is green areas. It shows that majority of spaces are soft spaces and it is one of positive features of campus.

Table15: Form of Spaces in Education district of EMU Campus
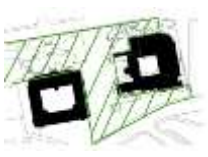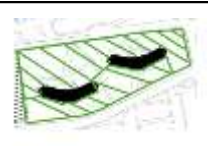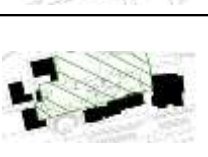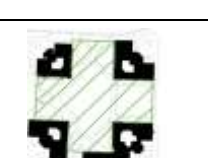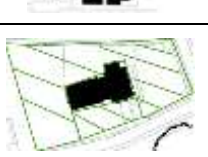
	Form		Picture
Register office		Free Space	
Namport		Free Space	
Student activity		Free Space	
Sabanci		Free Space	
CL Square		Enclosure Space	
Faculty of Art and science		Three quadrangle Form	
Faculty of Architecture		Three quadrangle Form	
Engineerings		Enclosure Space	
Health Center		Free Space	

Table 16: Area of EMU Campus according to Land Use (These Land Use Areas are Calculated by AutoCAD Map)

	Area (m²)	Percentage
Residential	30,236.78	1.62%
West site	0	0
East site	30,236.78	3.86 %
Leisure	52,510.48	2.82 %
West site	534.76	0.31 %
East site	51,975.72	6.64 %
Office	3,769.14	0.2 %
West site	0	0
East site	3,769.14	0.48%
Educational	57,481.44	3.09 %
West site	18,389.14	1.98 %
East site	39,092.3	6.60 %
Community service	4,592.36	0.24 %
West site	0	0
East site	4,592.36	2.19 %
Industry	8,426.26	0.45%
West site	0	0
East site	8,426.26	2.68 %
Public utility	82,344.57	4.43%
West site	8,393.88	0. 3 %
East site	73,950.69	11.06%
Under Construction	16,111.65	0.86 %
West site	0	0
East site	16,111.65	3.67 %
Green area	1,475,174.96	79.44 %
West site	1,047,181.71	97.41 %
East site	427,493.25	54.70 %
Vacant	126,307	0.06 %
West site	0	0
East site	126,307	1.77 %
Total	1,856,954.64	100 %
West site	1,074,999.49	57.89 %
East site	781,955.15	42.11 %

- Other criteria is the relationships of open spaces with the city and according to type of edge of EMU campus, the openness that are located in the edge are not host to the city and they are covered by fencing, so it decrease the physical relationships between EMU campus and the city (Figure 28).

- Other criteria that must be considered in designing campus is its type of pavements. On one hand, the pavements inside the campus must have different pattern from pavements of pedestrian paths of city, on the other hand, it must respect to pattern of pavements of pedestrian paths of city, so according to this issue, type of pavements inside the EMU campus is as same as pavements of Famagusta city and it is better to change the pattern of pavements, although it must be respect to pattern of pavements of pedestrian paths of Famagusta city.

- The urban furniture such as sitting elements, lights, etc. is not sufficient and suitable in EMU campus and it needs to be considered in future plan of EMU campus by adding lighting and sitting furniture in open spaces specially designed for the campus.

- According to land use map, the percentage of proportion of open spaces to buildings of EMU campus is more than percentage of proportion of mass and open spaces in the city and it does not have the characteristics of the city, so it reduce the physical relationships of EMU campus with Famagusta city.
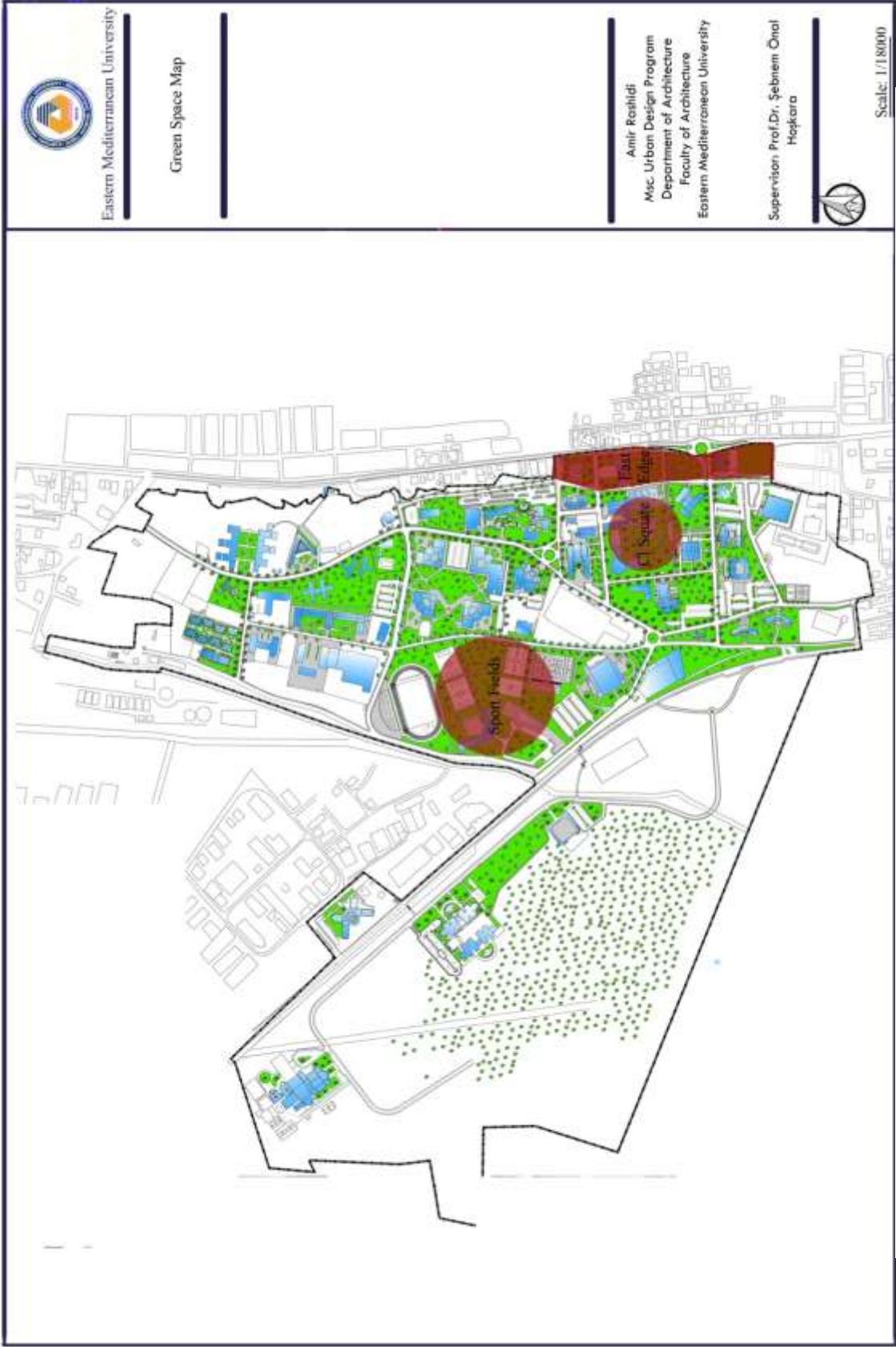
Figure 28: Green area map of EMU Campus

Edge of EMU campus: According to Table 9, the edge of university campus are evaluated according to its type of barriers, type of functions, location of entrance gate, and type of open spaces, so in below, each of them are analyzes in edge of EMU campus.

- The edge of EMU campus is covered by fencing all around campus and it reduces the physical relationships with the city, also in some parts, the edge is not clearly defined and the tall buildings cover the edge of EMU campus.

- The existence of private residential buildings with 12 floors in some part of edge of EMU campus affect visual access and it can reduce the relationship of EMU campus with the city.

- The functions that are located near the east edge of campus are register office, department, and Merkez restaurants that it shows the functions of them are belong to university and they do not have any public functions (in other edges, there is not any functions).

- The type of open spaces in edge of EMU campus is green spaces and vacant land.

Five gates in east edge of EMU campus [10]shows that this edge is the most significant edge of EMU campus (Figure 29 &30).

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[10] EMU campus has 9 gates in Main site that five of them are located in east side, two of them are located in the west side, and north and south side has only one gate.

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Figure 29: East Edge of EMU Campus

Gates for Pedestrian ➡

Gates for Vehicles ➡
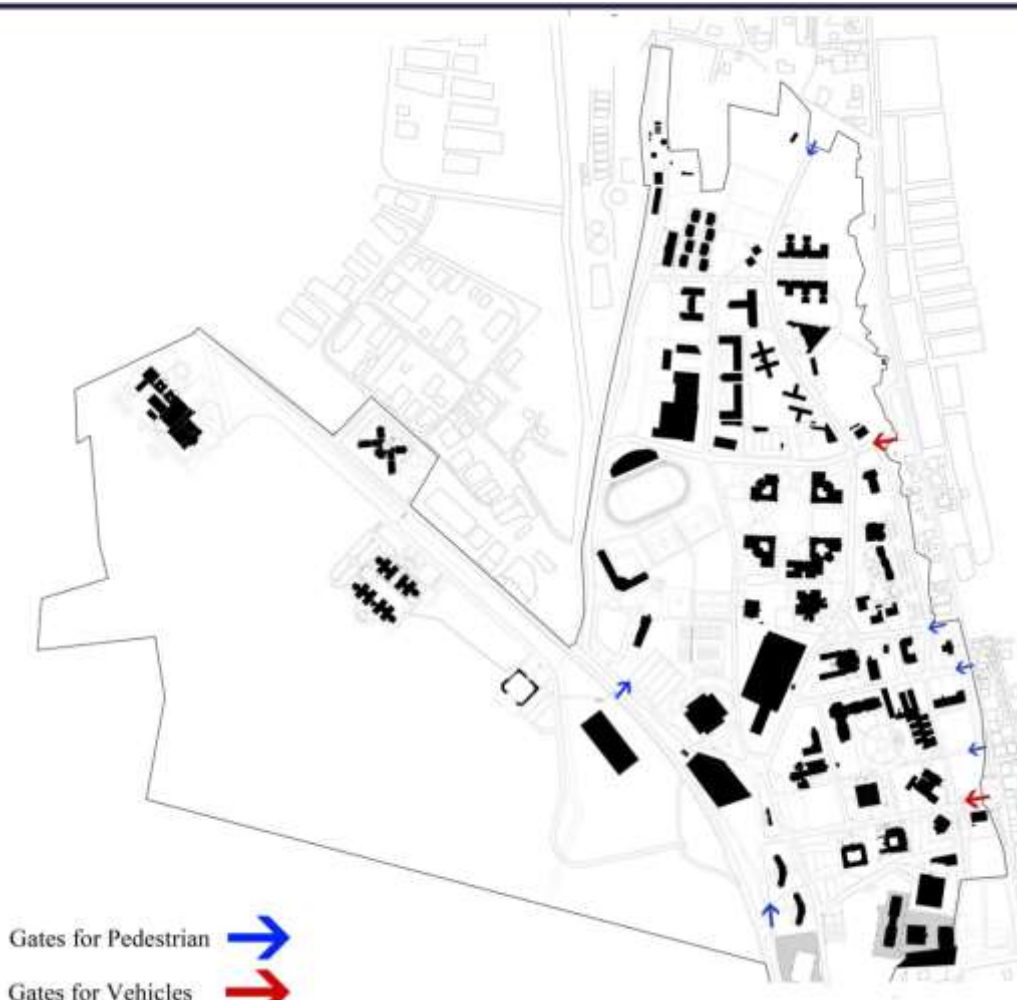
Figure 30: Number of Gates in EMU Campus

Center of EMU campus: According to Table 9, center of university campus is evaluated according to type of functions and activities, its location, and its type of connection to edge of university campus, so center of EMU campus that is CL square[11] will be evaluated in below.

- The CL square is the main node of EMU campus and the functions of buildings in there are faculties, lecture hall, and library. However there is not any mixed- use functions, but some events are hold in CL square.
- It is located near east edge of EMU campus and it is connected to edge of EMU campus by pedestrian paths (Figure 31).

Figure 31: CL Square

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[11] CL square according to its location and function is supposed as a center of EMU campus; however it is not in centre according to geographic location.

4.4.2 Imageability and Legibility of EMU Campus

The evaluation of legibility and Lynch analysis is result of the methods that are used in this research that are questioning and field analysis. These questions are:

1- When you walk through the EMU campus, which routes often do you use (Draw it in the map)?

2- Please draw a mental map from EMU?

The results of these questions are concluded from analyzing of students' responding according to their place of lives.

Students who live outside the Campus: According to questionnaire survey, the most nodes that students pass from there are main gate node of EMU campus, Cl square, and the node between Faculties of Law, Art and Science, and Architecture. The most paths that students walk through there are paths from main gate to Sabanci Dormitory, CL path, path between CL and Faculty of Art and Science, and paths between Faculties of Architecture and Civil Engineering.

In another question, asked the students to draw a mental map that it is concluded that Cl square, education district, east edge of EMU campus, and the path from main gate to Sabanci Dormitory are the most imagiable places for students who live outside campus.

Students who live inside EMU campus: According to questionnaire survey, the most nodes that students pass through them are again the main gate, node between Faculties of Law, Art and Science, and Architecture and differently, node between

sport districts and dormitory district. The most paths that they walk through there are paths between Faculties of Architecture and Civil Engineering.

In another question, CL square, education and dormitory district, and east edge of EMU campus are the most image bile places for students who live inside the campus.

***Total*:** As a result from analyzing of questionnaire survey from students who live inside and outside the campus, it can be concluded that the main gate node, node between Faculties of Law, Art and Science, and Architecture, and node between health and Simit Sarayi and Engineering Faculty are the main nodes of EMU campus that students walk through them. The main paths that are more popular for students to walk through them are paths between cl and Art and Science and path between Faculty of Architecture and Faculty of Civil Engineering. According to results from mental map, cl square, east edge, education district, and paths in education district are the main node, edge, district, and paths of EMU campus (Figure 32).
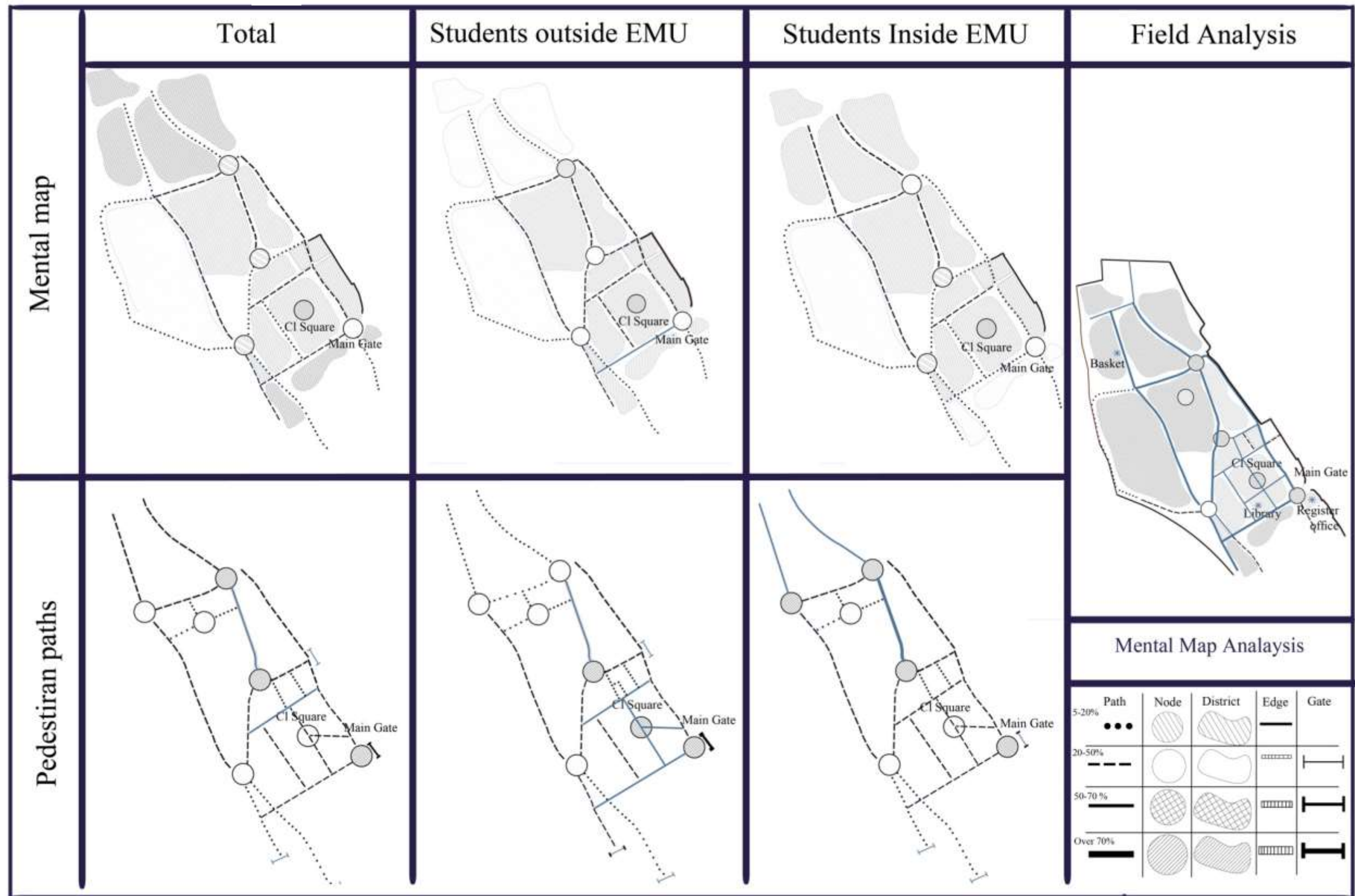
Figure 32: Mental Map Analysis

According to field analysis, EMU campus has four districts that are educational, mixed use, sports, and dormitories districts. Mixed use district is close to two main paths of Famagusta and it includes: administrative, education, leisure, and dormitory. One of the main accesses of campus to the city is from main gate of campus that is located in this district and according to filed analysis; it is one main node of campus (Figure 33).

Figure 33: Main Gate is One of the Main Node of EMU Campus

It is not any active district in compare with educational one as the main district of EMU campus that is close to Salamis Road and most of main paths and nodes of campus are located in this district. It has five nodes that CL square and engineering square are the pedestrian nodes of campus among them. In contrast to CL square that is the most significant node of the campus because of its location (center of education district) and its surroundings buildings' functions (main library as a focal point, lecture hall, faculties, and café), engineering node is the weak node of campus that there is no activity and it is just used as a path. Dormitories district is the living area of students and it is close to east and west edge of the campus and the area in

front of Hassan Ozok dormitory is the focal point of this district. According to question survey, imageability of spaces and buildings of campus depends on students' departments and living area, but the CL square is the same between all of them and it concludes that CL square has imageability for majority of students of EMU.

According to Lynch analysis (Figure 34) the characteristics of EMU campus are:

- Lack of any landmarks reduce the legibility;

- Division of districts according to their function is the positive feature of campus;

- Adjacent of mixed use and educational district to Salamis road increase the connection of campus with the city;

- CL square as a main node of campus is located close to main path of Famagusta;

- Edges are not defined clearly and it reduces the legibility;

- Location of education district in center of the campus is the positive feature of the campus.

Figure 34: Lynch Map of EMU Campus

4.4.3 Movement and Transportation in EMU Campus

In compare with Famagusta city that its types of transportation are private vehicles and walking, types of transportation in EMU campus are walking, cycling, public transportation, and private vehicles that walking, cycling, and public transportation are the elements of sustainable transportation. Lack of good quality of pedestrian[12] and bicycle lines cause majority of students travel by public transportation and private cars and it reduces walkability through the campus and the city that it is one of main characteristics of public space.

EMU Campus has eleven gates for connection to city that five gates are access for vehicles and three of them are accessible for pedestrian. Among all gates, five of them connect the east site of campus to Salamis's road, two gates connect the east site of campus to Nicosia road and rest of them connects the west site of campus to Nicosia road.

Overall, it is deduced that physical relationship of EMU campus with Famagusta city is not strong, however, it is located in the city and in Table 17 all physical characteristics of it is shown.

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[12] Quality of pedestrian refers to quality of shading elements, its pavements, and its furniture (light, sitting elements, and etc.).

Table17: Physical Indicators of EMU Campus

EMU Campus									
Physcial Indicator									
Form Of University Campus				Imageability/ Legibility					Transportation
Building	Open space	Edge	Center	Path	Node	District	Edge	Landmark	Sustainable
Entrance from inside the campus	54.7 % of north site is green area	Fencing	Cl square as a main node	Pedestrian in Medium quality	Main gate	Mixed use district	Low legibility	No landmark	Walikng
Distance from edge of the campus	They are not host to the city	It is not defined clearly	It is not mixed use	Bicycle lane is not defined sperately from vehicle paths	Cl square	Educational district as a main district	It is not defined clearly		Cycling
Respect to Townscape of the city	Proportion of open space to buildings in EMU campus do not respect to proprotion of mass to open space in city	Private Functions	There is hold events	Vehicle paths	Engineering node	Sport district			Low quality of pedestrian path
		Nine Gates	It is located near east edge of EMU campus	Bus line in low quality	Location of Cl square as a main node to east edge of campus	Good division of districts			Low quality of Bike lanes
	Similar pavements with pavements of city		It is connected by pedestrian path to east edge of campus			Closeness of education district to east edge of campus			
	Lack of effiecient urban furniture								

4.5 Social Characteristics of EMU Campus

EMU campus as an academic community has influenced on social behavior of Famagusta city and it is expected to have social relationships with the city, so in order to Table 10, social characteristics of EMU campus will be evaluated based on the information gathered through on site analysis, observations, interviews with local people and the questions survey with the students.

4.5.1 Socio- Cultural Functions of EMU Campus

According to Table 10, socio- cultural function of EMU campus is divided to three sections that are: Value of EMU campus, needs in EMU campus, and Rights in EMU campus that each of them is analyzed separately in below.

4.5.1.1 Value of EMU Campus

According to literature review, value of EMU campus is divided to economic, type of diversity, and type of activities and events.

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Economic Value: As mentioned before, EMU campus has influenced on development of Famagusta city and nowadays, Famagusta is developed through suburban areas and it causes that social interaction between people are reduced, but EMU campus has a potential to improve the quality of life and increase the social life in Famagusta city. It has economic benefits such as job opportunities for local people, improvement the restaurants, café, bars, and shops in the city, and help to improve the buildings' value (Especially near the EMU campus). According to interview survey, most of local people believe in high value of EMU campus in Famagusta city and they say that EMU campus cause that Famagusta city become livable and it help to development of economy, culture, and sociality of Famagusta city.

Diversity: As mentioned in literature review, diversity is divided to structural, curricular, and interaction. One of the value of EMU campus is its diversity of students and gathering these students together help to understand different cultures and how to work with each other that curricular of EMU campus help to it, but the programs of EMU campus according to collaborate students with local people are weak and it is supposed as negative feature of EMU campus.

4.5.1.2 Needs in EMU Campus

EMU campus in addition to academic environment is a place for social life of students, so students need recreation activities for relaxation after a hard day of research. Needs in EMU Campus will be evaluated according to Table 10.

Comfort: The level of comfort in spaces is analyzed physically and socially. In physical point of view, low quality of urban furniture such as sitting elements,

lighting, shading elements according to climate of Cyprus decrease the feel of comfort in EMU campus, however the quality of landscape is high. From social point of view, the high safety of EMU campus increases the feeling of comfort.

Relaxation: Two main things effects on relaxation of people that one is based on psychological behavior that according to question survey, majority of students mention to shopping, live music, restaurants, coffee shops, watching movies, communication with others, sitting in nature, and walking for their relaxation (Figure 35) and second elements for relaxation is existence of natural environment such as landscape, trees, and fountain that except fountain, EMU campus includes landscape and green area in high level.
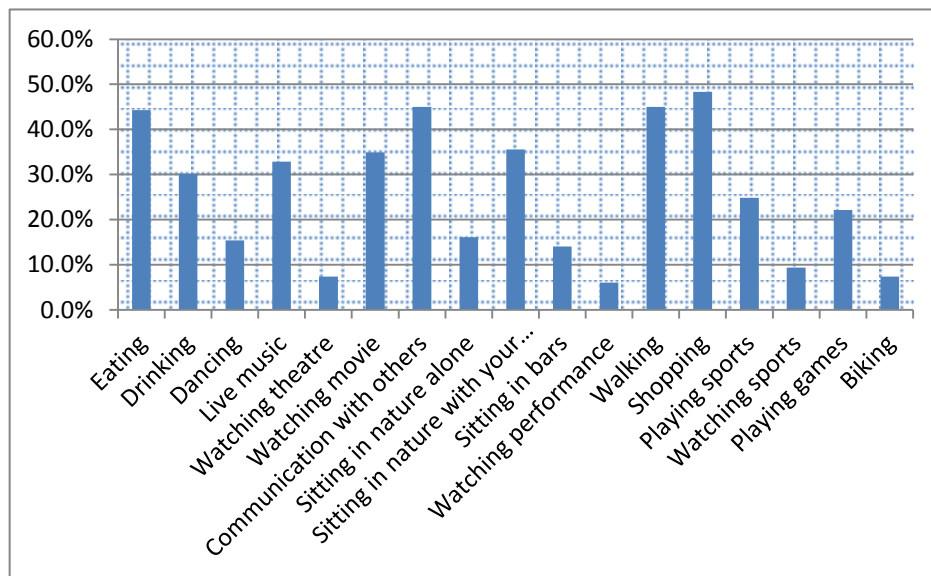
Figure 35: The Elements that Cause Students Feel Relax

Passive engagement: The open spaces in EMU campus is a potential for this kinds of activities and low quality of activities such as theatre, cinema, public arts, performances, and etc. lead to reduce social behavior.

Active engagement: Lack of enough recreation facilities in EMU campus cause that students spend their "extra-curricular times" outside the campus or in their houses. In accordance with questioning, majority of students spend their times in EMU campus for meeting their friends, going to restaurants, coffee shops, attend events, and walking (Figure 36), so EMU campus should provide needs of students and people such as cinema, park, gathering spaces, public facilities, night activity, theatre, culture programs, recreation activity, shops, exhibition, and etc., if it will be managed as a public space of the city.

Figure 36: Purpose of Students to Spend their Extra Curricula Times in EMU Campus

4.5.1.3 Rights in EMU Campus

The rights in EMU campus are evaluated according to access, freedom of action, and privacy of students that these items will be explored in below.

- **Access:**

Access to university campus as an educational community always is limited, but its type of limitations is different in each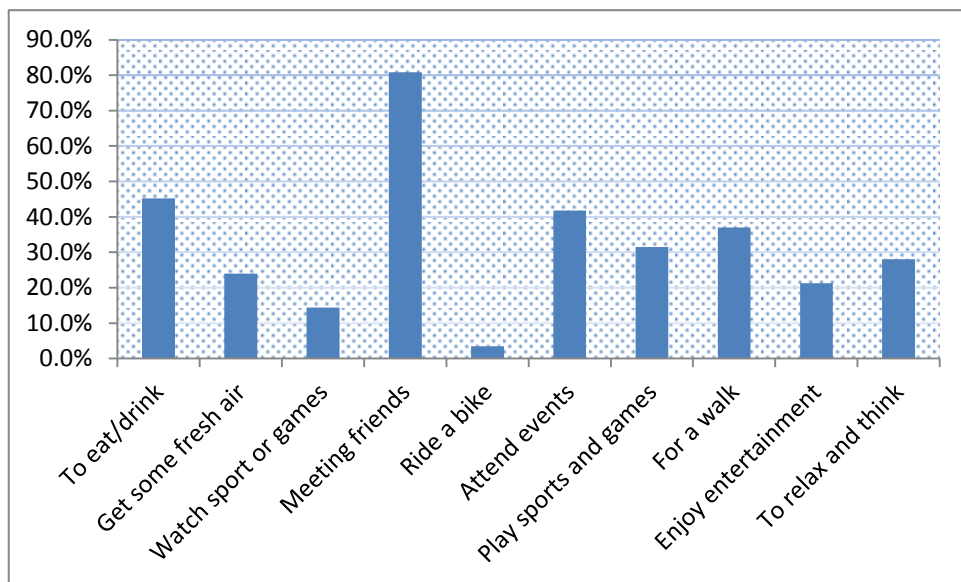 city. EMU campus is not exceptions from this rule. One of positive feature of Famagusta is its high safety and it influences on type of access of city to EMU campus. As mentioned in literature review, the access to University campus is divided to physical and visual that it is evaluated according to type of barriers, type of activities, entrances location, and type of control in EMU campus.

Type of barriers: As mentioned before, type of barriers of EMU campus is fencing, also in some parts of the edge of campus is covered by tall buildings that it lead to edge of campus is not defined clearly, so it reduces the physical relationships of EMU campus with Famagusta city.

Type of Activities: Lack of efficient mixed life activities lead to reduce access of people to EMU campus. The social activities in EMU campus are organized according to cultures and arts to attract students and local people to corporate in these activities in order to aim of clubs, which improve communication between students and local people, so diversity of clubs in order to social and culture activities are planned in "student activity center" for preparing pupils for actual life such as animal welfare club, communication club, design club, fine arts club, environment club, and etc. (Social and Cultural Activities Directorial, 2012). According to activities of these clubs, different events are hold in EMU campus through the year that announcement of them are weak and it cause that some of students do not aware about these events and activities, but among these events, international ceremony,

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spring festival, sand sculpture festivals, and welcoming party for new students are most popular between students and local people. **"International Ceremony"** is an event that is hold in fall semester of each year in EMU campus and it is hold mostly in CL square. Each nationality has one stand with their traditional foods to introduce their cultures to other nationality, also each clubs has one pavilion to advertise their activities and attract students to attend to clubs. **"Welcoming Party ceremony"** is hold for introducing new students to old ones and it is hold mostly in beach club (it is a private beach for students of EMU campus) with different culture activities. **"Spring Festival"** is one of popular events among students and local people. It is hold each spring for three days. There are different activities such as concerts, performances, and dancing, also different stands are hold there such as food, clothes, sculpture, entertainment and etc. that attract students and local people to there and this event is organized in street between dormitories and sport fields. **"Sand sculpture festival"** is organized each year in spring and there is a competition between students in Beach Club to make a sculpture by sands. "**Design Week"** in addition to these activities, each department also has their own events that one of the famous one in EMU campus is Design Week in Faculty of Architecture that variety of workshops are hold during three days and students from different faculties are attend to this festival. These events and festivals help to improve quality of life in EMU campus (Figure 37). From the interview results with the locals, we may argue that, citizens of Famagusta city are also aware of all these activities since the University promotes them to the public.

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Figure 37: Events in EMU Campus

Location of Entrances and type of control: However, its two main gates are controlled by watch mans, but rest of them are not under control and it shows that people who are not students (Local people and tourists) can access to there and it can be one of the negative feature of campus, if it will be act as a public space of the city and it leads to lose its privacy and safety, however, considering security cameras and watch mans through the campus increase safety and according to questionnaire survey, 86.8 percentage of students feel safety inside the campus.

- **Freedom of Action:**

EMU campus has its own rules and it limit the freedom of action.

- **Privacy of students:**

Students besides public activities need to privacy and if EMU campus will become a public space, from private spaces of there must be preserved, so in Figure 40, the

spaces of EMU campus are evaluated according to their location and function and the spaces that have a potential to become public space are evaluated in this map. According to map, CL square, sport fields and edge of the campus (in direction of Salamis road) are semi- public spaces, educational district are semi- private and dormitories are private spaces of EMU campus, so in further, this research focus on spaces that have potential to become a public spaces.

4.5.1.4 Mixed life/ Density in EMU Campus

According to Table 9, mixed life in university campus is evaluated according to type of functions and density of university campus is evaluated in order urban land use density.

Mixed life in EMU Campus: EMU Campus includes diversity of students from different nations and this issue helps to develop mixed life in campus. According to Land use map, the functions of buildings and lands of EMU campus are located in these categories: residential (1.62%), educational (3.09%), community service (0.24%), industry (0.45%), leisure (2.82%), office (0.2%), green area (79.44%), public utility (4.43%), vacant land (6.85%), and under construction (0.86%) that according to Table 15, the most lands use in EMU campus are Green area (54.70 % of main site is green area) that consistent with questionnaire survey, green area is the most attractive features of EMU campus (Figure 38) and another land use is vacant

land that occupy 16.17 percent of main site and minimum function is office buildings (Figure 39).

Feature of EMU campus

	Restaurants	Green area	Sport facilities	Coffee shops
Series1	21.0%	46.6%	18.2%	14.2%
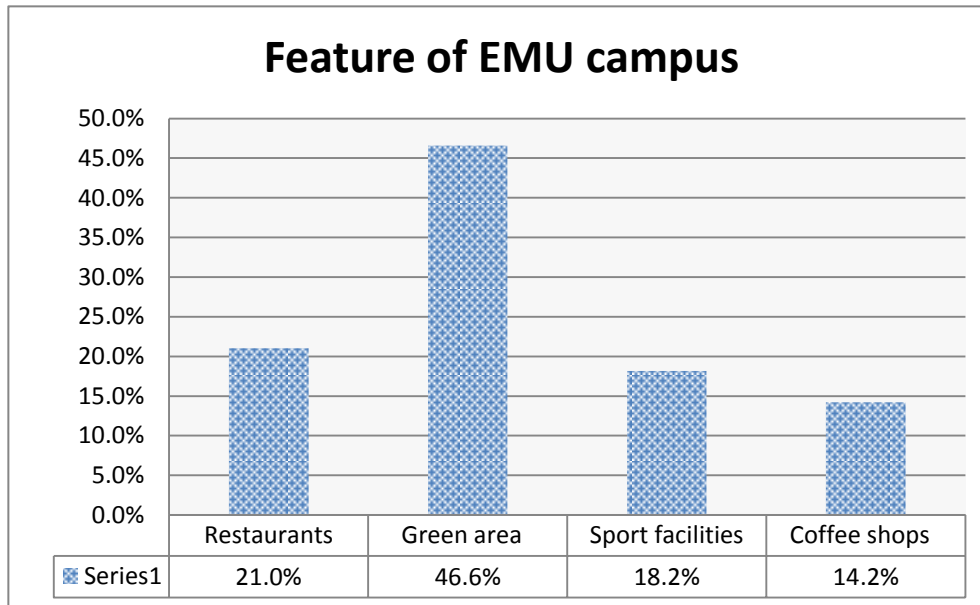
Figure 38: Features of EMU Campus from View of Students.

These analysis shows that diversity of uses are in low level and there are not mixed use activity for students and people and the facilities in EMU campus are not sufficient.

Density of EMU campus: According to literature review, the density is measured according to proportion of buildings to all area and area of buildings (East site) is 112,226 m^2 and whole area of east site is 781,955 m^2 that proportion of buildings to all area is 0.14. It means that 0.14 of all area is built environment.

Land Use Map

Eastern Mediterranean University

Legend

- Residential
- Educational
- Community Service
- Industry
- Leisure
- Office
- Retail
- Green Area
- Public Utility
- Vacant
- Military
- Under Construction
- Waterland
- Border of EMU Campus.

Amir Rashidi

Scale: 1/8000

Figure 39: Land use map of EMU Campus.

Overall, EMU campus's facilities are not mixed life, also high percent area of green area and vacant land lead to decrease the density of campus and it influences on social activity of students (Table 18).
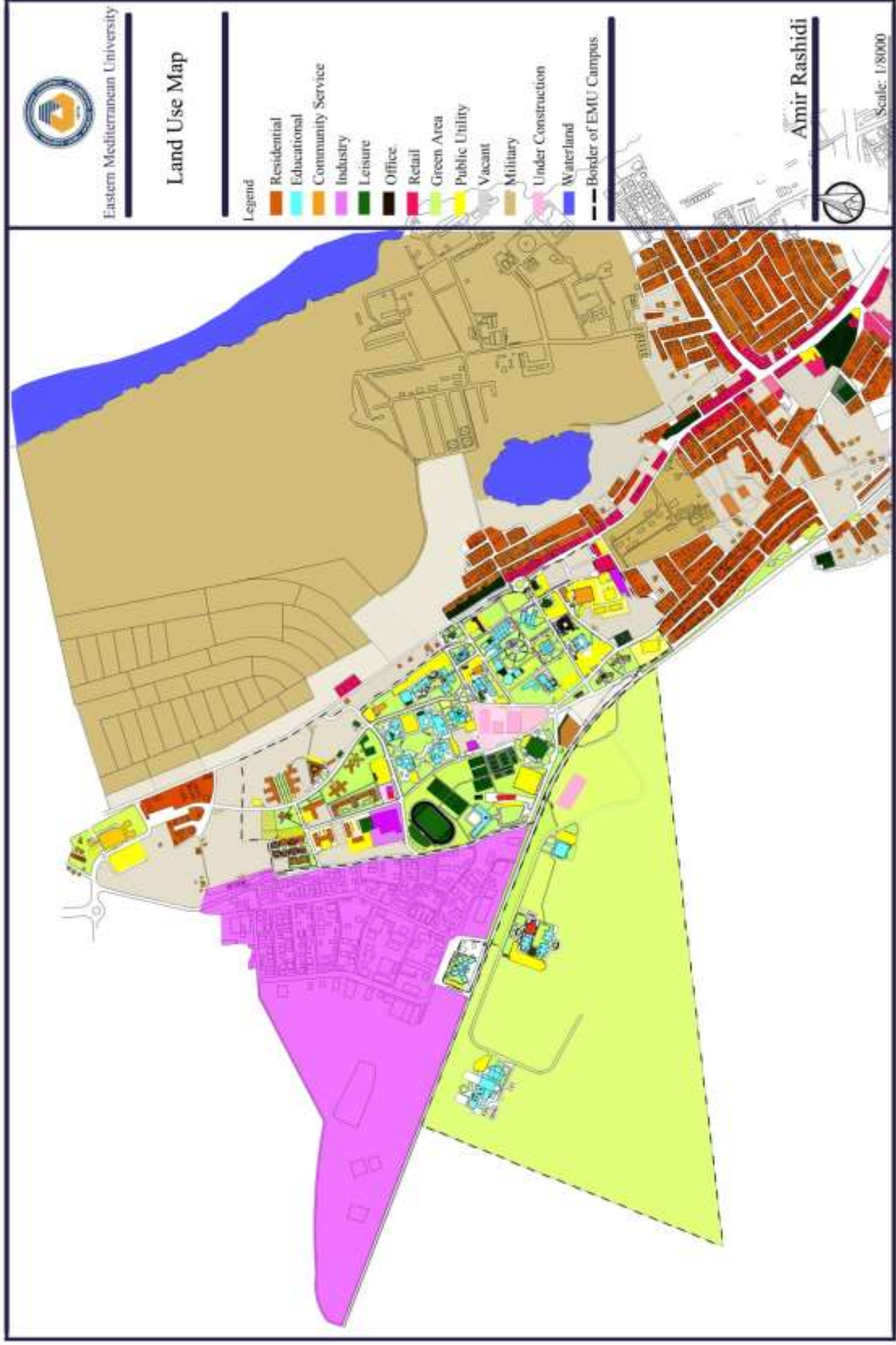
Table18: Social Characteristics of EMU Campus according to Dimensions of Public Space and Relationships of University Campus with the City

Social Characteristics of EMU Campus					
Value of public space	Needs of people		Rights in public space	Mixed life/ Density	
Job opportunities for local people.	**Comfort**	**Relaxation**	Medium Physical access	**Type of Functions**	
Enhance business	**Physically**	**Natural Environment**	Low Symbolic Access	Residential (1.62%)	
Development shops	Low quality of urban furniture	Good quality of Landscape	Low Visual Access	Educational (3.09%)	
Increase buildings value	Low quality of shading elements	Good quality of trees	**Freedom of activity**	Community service (0.24%)	
Currucular of departments along with problems in city	High quality of landscape	Psychological	Limit	Industry (0.45%)	
Type of events	**Socially**	Needs of students	lack of Diversity of activities	Leisure (2.82%)	
	High security	Shopping	Privacy of students	Office (0.2%)	
	Passive engagement	Live music	**Access In EMU Campus**	Green area (79.44%)	
	lack of Park	Restaurants	**Type of Barriers**	Public utility (4.43%)	
	lack of Theatre	Coffee shops	Fencing	Vacant land (6.85%)	
	Low quality of Culutre program	Watching movies	**Type of Activities**	Under construction (0.86%)	
	Active engagement	Communication with others	Lack of efficient mixed life activities	**Density of EMU Campus**	
	low quality of Cinema	Sitting in nature	Diversity of clubs	Pproportion of buildings to all area is 0.14.	
	lack of Park	Walking	International ceremony		
	Gathering spaces		Spring festival		
	lack of public facilities		Sand sculpture festivals		
	Lack of Night activity		Welcoming party		
	Low quality of cultural programs		Design Week		
	Low quality of recreational activities		**Location of Entrances and type of control**		
	Lack of shops		Lack of strong control in Gates		
	Low quality in diversity of Restaurant		Camera		

4.5.2Social Relationships Between EMU campus and Famagusta City

As mentioned before, one of the aim of student activity center is development of relationships between students and local people, but these activities could not improve these relationships and, there is not any kinds of activity in campus to attract local people to use it except spring festival and concerts. According to interview survey, local people like to spend their times in EMU campus, however because of lack of activities for different types of users in EMU, they rarely go to there. The most needs of local people of Famagusta in EMU are public functions with considering all ages, consider spaces for talk, sitting, and relaxation, green areas, park, increasing activities, and training activities , so improvement of the facilities and events can attract people to campus and it helps to develop the quality of life, which depends on quality of place. Some programs and events of EMU University are hold in Walled City of Famagusta such as honor ceremony that these kinds of programs help the livability of the Walled City and it affects integration of students with people.

4.5.2.1Social Integration of Citizens With Campus Events

The weakness of social activities in EMU campus causes that local people do not tempted to attend in there and according to interview survey, 10% of them never go to EMU, 40% of them go a few times, 18% of them go once a week, 24% of them go twice a week, and only 8% of them go every day and their main purpose to visit in EMU campus are sport facilities, walking, meeting friends, personal work, events and activities of EMU, restaurants, and internet (Figure 40). According to observations, some of them go to EMU campus just for walking, also the employers of hospital (it is located in the neighbor of EMU campus) pass away from EMU campus. Another integration of local people with students are attendance of them in

events of university; especially spring festival that attract majority of them to university, so it can be concluded from interview and observation that development of activities and facilities in EMU campus would attract more people to integrate with campus environment.
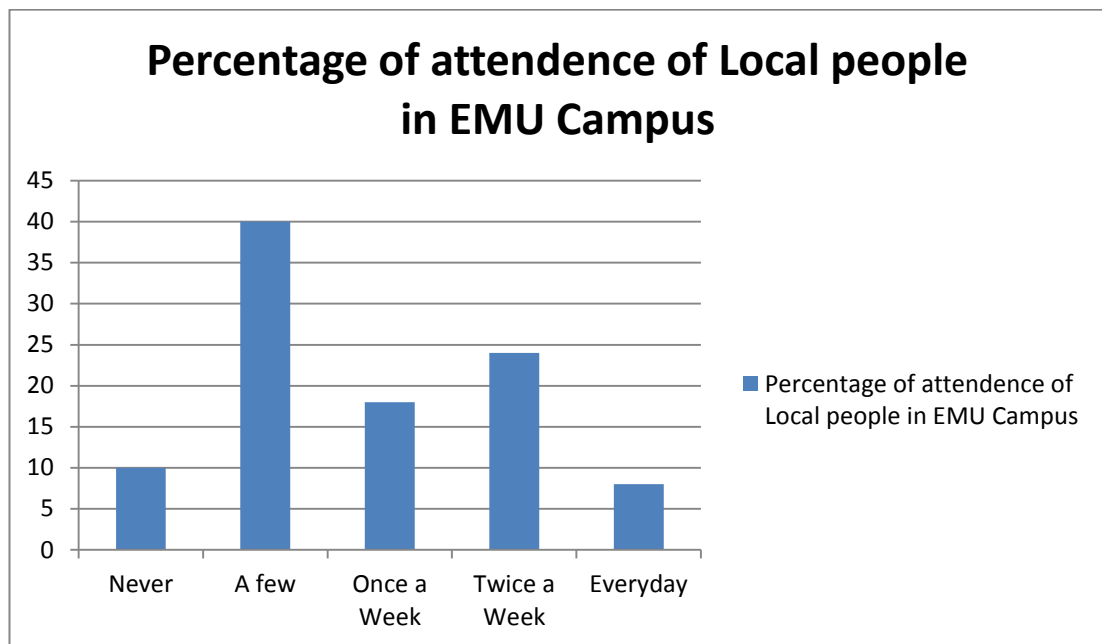
Figure 40: Local people go a few to EMU campus for walking, sport, meeting friends, eating, and internet

4.6 EMU campus as a Public Space of the City

According to data evaluation, the spaces that can act as a public space are edge of campus, CL square, and sport fields and center of educational district and dormitory district can be act as a public space of campus, so in below, the spaces that can act as a public space of the city will be evaluated and according to those analyses, the proposal map will be recommended for EMU campus (Figure 41).

Eastern Mediterranean University

Privacy in EMU Campus
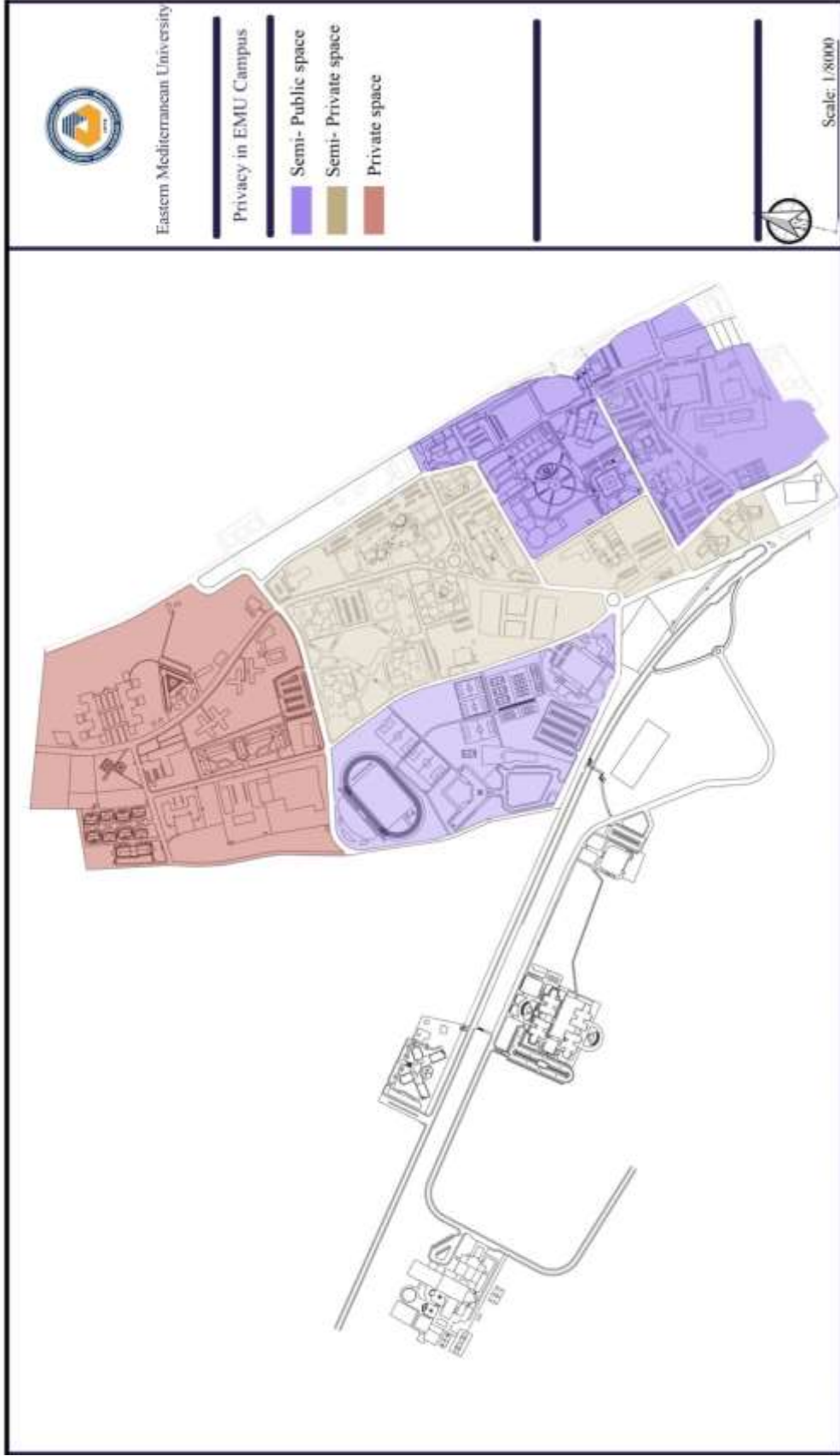
Semi- Public space
Semi- Private space
Private space

Scale: 1/8000

Figure 41: Division of EMU Campus according to Public and Private Spaces

4.6.1 Edge of EMU Campus

A successful public space has an active edge to attract people to there, so edge of EMU campus must be improved, if it will act as a public space of the city. The reason of selection of east edge of campus is its closeness to main path of Famagusta and existence of main gates of EMU campus in this side. However, edge of EMU campus has five gates for access of people to there, but the fencings reduce the visual access to there and it affects physical and social relationships of it with the city and people. The edge of campus is a place for integration with people and attracts them, but edge of EMU campus does not have any activities and most of spaces are green area and vacant land. Another items for improving quality of life and quality of place high density that edge of EMU campus are in low level as same as other spaces of EMU campus that the minimum degree of enclosure is 1:3.5 and the maximum degree of enclosure is 1:11 in edge of the EMU campus (Table 19).

4.6.2 CL Square as a Center of EMU Campus

Another significant element in public space is center of it and CL square according to its surrounding functions that are library, lecture hall, and two faculties, can be supposed as a center of EMU campus. It is an enclosure space that includes landscapes, trees, buildings, memory wall and Ataturk's sculpture[13]. It has access from all parts, however it is not visible from east side and its legibility is not strong. Though, it is a space for sitting, walking, and events, but it is not mixed use and the activities in CL square are in low level of quality. The main positive feature of there is location of it and its closeness to edge of campus and it has a potential to attract people by rehabilitation and propose diversity of uses (Table 20).

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[13] Sculpture of Ataturk is respectful for Turkish Cypriot people.

Table 19: Analysis of East Edge of EMU Campus

Form	**Elements:** Building: Medium quality Infrastructure: Medium Landscape: Good quality Uses: Low quality	**Positive space**	**Degree of enclosure space:** Minimum degree: 1:3.5 Maximum degree: 1:11	**Soft space:** Legibility: adjacent to main paths of city and campus Enclosure: Townscape: Continuity: location of trees give continuity to edge of campus
Access	**Visual access:** Medium quality **Physical access:** Low quality (fencing surround the edge)	**Legibility**	**Legibility:** Good quality - Adjacent to main gate - Adjacent to main path of Famagusta - Adjacent to main path of EMU campus	**Transportation** - Pedestrian - Cycling - Vehicle - Public transportation
Mixed life/ Density	- **Not mixed life/ lack of activities:** office buildings vacant lands green area **low density:** Proportion of open space to mass is in high level.			

Vehicle Access
Entrance
Pedestrian paths
Bike lane
Bus line
Car parking

Table 20: Analysis of CL Square

Form			
Elements: Building: Medium quality; Infrastructure: Medium; Landscape: Good quality; Uses: Low quality	**Soft space:** Legibility: define the paths; Enclosure: eclosure the space; Townscape: Respect to twon space of buildings; Continuity: location of trees give continuity to Cl square	**Degree of enclosure space:** Minimum degree: 1:2.5; Maximum degree: 1:10	Negative Space

Access			
Visual access: low quality; **Physical access:** Medium quality	**Legibility**	**Legibility:** Good quality — center; — Adjacent to main path of EMU campus	**Transportation** / Pedestrian

Mixed life/ Density		
- Not mixed life/ lack of activities: - Education; - Library; - Cafereria	**low density:** Proportion of open space to mass is in high level.	

Legend:
- Vehicle Access
- Entrances
- Pedestrian path
- Bike lane
- Bus line
- Car parking

4.6.3 Sport Fields

A sport district or sport field is located in west side of EMU campus near dormitory district. It includes one Stadium, one sport hall, football ground, tennis court, volleyball court, basketball court, and American soccer court. These sport fields have free access for all kinds of people (Local people and students). In addition to students, local people use the sport facilities of EMU campus because of lack of enough sport facilities in city and it is considered as a positive feature of Campus. Even concerts and ceremonies are hold in the sport fields that it helps to improve the quality of EMU campus in social relationships with the city.

4.7 Proposal Map for EMU Campus

According to evaluation of EMU campus, edge of it and CL square have potential to become public space of the city and other parts such as engineering district can be act as a public space of university. On one hand, the edge of public space affect quality of public space, on the other hand, edge of campus affect relationships of it with the city, so combining these two criteria can improve the edge of EMU campus. As figure 41 shows, the proposal map that is recommended for EMU campus is according to evaluation of Filed study and in east edge, the fencing is mentioned to eliminate and recommend a diversity of functions such as cinema, culture activity center to hold different events and programs according to different cultures, park and playground for all ages to feel relax, mixed use that its main function is art education with café and restaurants and other recreational activities. This edge has connected to CL square by main pedestrian paths that the landmarks near new rector office is proposed for improving the legibility of EMU campus; especially CL square. Back of memory wall in CL square, is the secluded space that the historic museum is proposed for this space that it represents different history of the world and introduces

them to people and students; also CL square is considered as a center of events that are hold in EMU campus that the events can be conventional. these spaces must be have pedestrian and vehicle access and they are considered in proposal map, even watch man kiosk are supposed in different places for improving safety and guarantee comfort of people and students. Also in proposal map the public space of university are proposed that in engineering node, the car parking area is shifted to other side and museum, conference hall, library for engineering science, shop, markets, café, and restaurants are recommended. In dormitory districts, two spaces are recommended that they are multi culture center and park. Overall, the aim of this proposal is to increase the relationship of EMU campus with the city that it helps to physical, social, culture, and economics of the city and its public spaces can develop the quality of life of people and students (Figure 42).

Figure 42: Proposal Map for EMU Campus (Developed by Author).

4.8 Summary of Chapter

Eastern Mediterranean University is located in Famagusta city where its population is about 46000. The city after foundation of EMU campus was expanded toward it, so recreational activities and residential were developed surround the EMU campus. Famagusta city according to its activities and livability is divided to two quarters that Salamis road is the main public space of the city and it includes shops, restaurant's, café, bar, and other facilities that it connects to EMU campus and it is one of positive feature of EMU campus and Famagusta city. However, Famagusta includes public spaces, but low quality of them reduces the quality of life of people. EMU campus is the main urban element of Famagusta that affect physical, social, culture, and economics of Famagusta city, so it has a potential to become a public space of the city. EMU campus with 71 buildings is divided to mixed use district, educational district, sport district, and dormitory district. It has five access from salamis road (it has potential to improve relationship of campus with the city) and one access from west side. The facilities of campus include restaurants, coffee shops, cafeteria for each faculty, and sport fields in addition to educational functions, so it indicates that facilities and recreational activities in EMU campus are in low level of quality. Other issue that is analyzed in this research is its legibility and imageability that the result was the only place that has imageability is CL square, however the legibility of EMU campus is in low level and the spaces are not defined clearly by signage ,defining names for streets and paths, designing elements and structures to identify the area easily and etc. another evaluation of EMU campus was relationship of it with the city and lack of define edges clearly, close edge to city by fencing, lack of host of open spaces to city, and lack of mixed use facilities in EMU campus reduce its physical and social relationships with Famagusta city. However there are variety of events

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annually such as spring festival, international ceremony, design week, and etc. that attract people to attend in events .It is concluded according to analyses, edge and CL square can act as a public space of the city and engineering node can act as a public space of EMU campus, so according to needs of students and people that are communication with others, walking, shopping, watching movies, live music and other, the propose map is recommended for edge and CL square. In edge of EMU campus, the fencing are suggested to eliminate and it is replaced by natural elements, even public functions in the edge of campus is recommended that according to literature review and case study survey, art center as a place for integration of local people to knowledge, park and playgrounds for all ages as a place for relaxation, passive activities, and active activities, culture center for introducing different cultures with each other and improve culture of city, cinema, shops, and restaurants are recommended in edge of EMU campus. In CL square that is connected by pedestrian path to edge of EMU campus, the exhibition that is identifying backgrounds and history of each country and their cultures, multi-functional and mixed spaces and the main function that is recommended in CL square is center of events in EMU campus and it leads to improving integration of local people with students and their collaboration and the relationships of EMU campus with the Famagusta city help to improve the physical, social, culture, and economy of Famagusta city.

Chapter 5

CONCLUSION AND RECOMMENDATIONS

Urbanization and growth of population affect development of cities toward suburbs and automobile become as an essential type of transportation in 21th century, so it lead to increase energy consumption, air pollution, time-consuming, traffic congestion, diseases, dissocial, and etc. Today, according to consequence of suburbanization, scholars attempt to find out a solution to decrease the negative effects of suburbanization on physical, socio-culture, and economics of the cities and aim of them is to achieve to "Sustainable city".

Dependence of job opportunities to knowledge attract young people enroll in universities, so the universities are expanded and majority of them are built in concept of "university campus" around the world, which was founded in Nassau Hall, and university campus as a one main element of the city in 21th century can help to develop "Sustainability", so it must has physical, economic, and socio-culture relationships with the city and it is better to locate in the city.

University campus affects development of the city toward itself and its physical integration with the city increase social activities that lead to develop economy and integration of students with local people, which make flourish knowledge to society become easier, also it causes that physical characteristics of university campus such as architecture style, its type of planning, and its type of transportation affect

physical characteristic of the city and if university campus become sustainable, the city also can be.

As development of technology and dependence of economy on creativity and innovation, university campus as a core of creativity can play main role in economy and it is named "Knowledge economy" and it help to sustain economy of the city.

Another indicator of sustainability is social and university campus as a multicultural community effects on social life of people, if it has mix programs/activities with people and city and community of university collaborate with community of city. Therefore, according to these indicators of sustainability, recent trends of university campuses is knowledge city and it has seven indicators that are: knowledge base, industrial structure, quality of life and urban amenities, urban diversity and culture mix, accessibility, social equity and inclusion, and scale of the city. Thus, this research argues that, the university campus is a center of sustainability in city, so public space as a place for communication, relaxation, and socialization can improve quality of life and university campus as an effective element in improving sustainability can act as a public space of the city, if it adopts its characteristics with characteristics of public space.

With this understanding, the main aim of this research is set up as to understand how campus environments can act as a public space of the city. Thus, the research focused on the EMU Campus in Famagusta city with two inter-related research questions: "How can EMU work as a public space of Famagusta?" and "What should be the design criteria for turning EMU campus into a public space for the city, without disturbing its privacy?"

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To be able to answer these research questions, following objectives have been set up:

- To describe type of campuses;

- To study history line of campuses;

- To explore the relationships between university campus and the city in terms of physical, social, and economic dimensions;

- To find out the recent trends of university campuses;

- To find out the definition and types of public open spaces;

- To argue about physical and social characteristics of public open spaces;

- To evaluate campuses as public space of the city.

Following both qualitative and quantitative methods, the research can summarize its findings under two main headings.

- General findings and recommendations about university campus as a public space of the city

- General findings and recommendations about EMU Campus

5.1 General Findings and Recommendations About University Campus as a Public Space of the City

According to characteristics of university campus and public space, the university campus can work as a public space of the city if the following enhancements in the related campus are applied physically and socially, based on the regulations of each university campus:

Physical Enhancements:

- As possible in university campus, the buildings are better to locate near active edge of university campus.

- Entrance of buildings that are located near edge of university campus is better to be located from the path of city.

- Type of architecture style of buildings of university campus must follow the architecture of city and they must have harmony with them.

- In designing of university campuses, consideration of identity of the city cause people attract to that places and they feel sense of belonging to there;

- The height of buildings of university campus must respect to townscape of the city.

- The open spaces that are located in edge of university campus must be host to the city.

- The proportion of open spaces to buildings in university campus must be respect to proportion of open spaces to masses in the city.

- The pavements in university campus must have compatibility with pavements of the city, although they should not be same.

- According to climate, location of seating furniture must be considered;

- Human scale must be considered in designing buildings, spaces, and urban furniture.

- The edge of university campus must be defined clearly;

- In the edge of the university campus, the elements like walls that segregate campus from the city should not be used.

- Edge of the campus must adjacent to path circulation of the city;

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- The open spaces of university campus must give a sense of enclosure and degree of their enclosure must be 1:2.5;

- In edge of the university campuses, the facilities must be considered that is more public;

- Make a strength connection between edge of the university and other parts of public space of it;

- Entrances in university campuses must be defined clearly;

- Number of entrances in university campus must be sufficient according to area of university campus, its number of students and staff, and population of city;

- The functions that are considered center of university campus must be mixed use;

- The center of university campus must be located near edge of it and it must has strong connection with edge;

- Considering visual access in designing open spaces in university campus, increase safety;

- Consideration of type of activities in each space can define type of users of that space in university campus and it shows type of access;

- Paths of university campus must be defined clearly and they must have legibility;

- The university campus is better to have a landmark to improve its legibility;

- The university campus can work as a public space of the city or its neighborhood when it is located near the city or its neighborhood;

- Considering high density in designing the university campuses, enhance the quality of life;

- Consideration variety of elements and symbols in different parts of university campus, improve legibility in there, for instance, designing fountain in main paths of university campus guide people their location and they can find their way easily;

- Public spaces in university campus must have mixed-use;

- The spaces and buildings that are considered as a public space, the variety of cultures, ages, races, and sexes must be considered;

- Variety of activities according to different nations should be considered in university campus;

- Pedestrian paths in university campus should be improved so that they make a strong connection with the city;

- According to climate, shading elements should be considered in pedestrian paths in campuses;

- Enhance the bicycle line in university campus and continue it to outside of the campus;

- Public transportation inside and outside of university campus should improved.

- The direction signage must be considered in university campus.

Social Enhancements:

- Increase the economic relationships of university campus with the city;

- Vision of university campus become toward collaboration of it with public and private sectors in variety of programs that are related to the city;

- Guide the curricula of the university toward the problems of the city.

- Propose some programs and workshops toward collaboration of students with local people;

- Participate university campus with other communities;

- Prepare programs that students work with other communities;

- Enhance the participation of university campus with other communication;

- Find a solution about problem of the city by consideration of curriculum according to those problems;

- Guide vision of university campus according to enhance the relationship with the communities;

- Consider spaces in university campus for relaxation of students and people;

- Enhance security of university campus by considering security elements such as camera, security guards, light for nights, and etc.;

- Consider natural elements in open spaces of university campuses such as trees, water, and etc.;

- Consider spaces that variety of events such as concerts, theatre, performance can be hold;

- Define the privacy spaces of university such as dormitories and faculties by designing the spaces;

- According to privacy parts of university campus, the public spaces must be designed;

- In order to privacy parts of university campus, the paths must be designed to guide people to public spaces;

- To hold different festivals for attracting people to university campuses and enhance the integration of students and local people;

- Type of activities in university campus must follow rules of university;

- The playgrounds must be considered for children;

- The leisure activities should be considered;

- To consider different cultures programs in university campus for introducing variety of cultures to each other.

5.2 General Findings and Recommendations About EMU Campus

Eastern Mediterranean University (EMU) is located in Famagusta city as a case study of this research. Famagusta city was expanded toward EMU Campus after its foundation and according to population of students, which are approximately half of population of the city, the districts near EMU campus become more livable than districts adjacent to Walled City of Famagusta. Salamis Road is the main livable street in Famagusta with variety of activities such as shops, restaurants, café, bar, and etc. Based on analysis, the main problem of Famagusta is lack of good quality of public space, so this research evaluated the EMU campus to change it to public space of the city. According to characteristics of public space and the indicators of relationship between city and campus, the strengths and weaknesses of EMU campus can be listed as below.

Strong Features of EMU Campus:

- Location of EMU campus is adjacent to city and it is a positive feature of EMU campus to become public space of the city;

- Majority of spaces are soft space in EMU campus;

- Architecture of EMU campus respect to architecture style of the city;

- Townscape of campus has harmony with townscape of the city;

- Human scale is considered in designing buildings, spaces, and urban furniture of EMU campus;

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- Adjacent of main node of Campus (CL square) to the edge of campus;

- Connection of CL square to east edge of EMU campus by pedestrian path;

- Safety in EMU campus;

- Open access to local people and it can be an opportunity for increasing relationship between EMU campus and the city;

- Division of districts according to their functions;

- Location of education in center of campus;

- Location of dormitory district in North part of campus preserve from privacy of campus;

- Diversity of students from different nations is an opportunity for multicultural activities to improve culture of a city;

- Considering sustainable transportation in EMU campus;

- Numbers of gates increase the access from all side of city to campus;

- EMU campus improve economic of Famagusta city;

- Subjects of coursed are mostly toward problems of Famagusta city;

- Holding events and festivals in EMU campus.

Weak Features of EMU campus:

- Far distances of buildings of campus near edge from main path of Famagusta;

- Entrance of most of buildings are from inside the EMU campus;

- Proportion of open space to buildings in EMU campus does not respect to proportion of open space to masses in Famagusta city and it does not has characteristics of the city;

- Pavements pattern of pedestrian path in EMU campus is as same as pavements pattern of city;

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- Lack of sufficient urban furniture in EMU campus;

- The edge of campus is covered by fencing and it reduces relationships of EMU campus with the city;

- In some parts of edge of campus, tall residential buildings decrease visual access to EMU campus;

- The functions in edge of EMU campus are not public;

- High percentage of vacant lands in edge of EMU campus;

- Lack of mixed- use activities in center of EMU campus;

- Edge of campus is not defined clearly;

- Low density of EMU campus affects natural environment, physical environment, and social interaction inside the campus;

- Lack of standard enclosure spaces make a sense of uncomfortable among students and people;

- Lack of any mixed use activity reduce the collaboration of campus with the city;

- Close openness of EMU campus to city that are located in edge of campus;

- Lots of vacant lands;

- Lack of enough control to access to EMU campus can be a threat for losing its privacy;

- Lack of Landmark cause that the legibility of EMU campus is reduced;

- Lack of sufficient uses in EMU campus reduce the social interaction of it with the city;

- Pedestrian path and bike lane do not have good quality in EMU campus;

- Lack of strong public spaces;

- Lack of shading elements;

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- Lack of good quality of lighting;

- Organization a few programs in faculties for collaboration with community of city according to problem of the city;

- Lack of any education program to prepare students to work with people in big community;

- Lack of enough recreational activities inside EMU campus.

According to theoretical framework and case study research, and positive and negative features of EMU campus; the following physical and social enhancements to turn the EMU campus into a public space of Famagusta city can be recommended for EMU campus.

Physical Enhancements for EMU Campus:

- The physical relationship of EMU campus with the city must be improved;

- Construction of buildings in east edge of EMU campus and propose public functions for them;

- The entrances of new buildings in edge of EMU campus must be from Salamis road;

- The heights of new buildings must be maximum three floors;

- Open spaces in edge of EMU campus must be open toward Salamis road to attract people to there;

- The type of pavements must be changed inside EMU campus and its pattern must be compatible with pavements of city;

- Shading elements must be considered for comfortable of students and people;

- Light elements must be improved in all area of EMU campus for improving safety;

- The sitting furniture must be considered in all parts of EMU campus;

- The direction of sitting elements must be considered according to sun and wind directions;

- The human dimension must be considered in designing spaces and buildings of EMU campus;

- The fencing must be eliminated from edge of EMU campus and they will be replaced by nature elements;

- Edges in private spaces of EMU campus must be covered by box trees to protect from enter of people to there;=

- Pedestrian gates must be considered in EMU campus to eager walking among people and students;

- The public open spaces that are considered in edge of EMU campus must be open to Salamis road and the best form of spaces for edge of campus is three quadrangle forms;

- The edge of EMU campus should be connected to CL square by defining strong pedestrian path to guide people to there;

- The functions that are considered in CL square must be mixed- use;

- Watchman kiosks must be considered in each gates to control the safety of EMU campus;

- The land mark must be constructed near new rector building for improving legibility of EMU campus;

- The edge of EMU campus and CL square must be connected clearly to engineering node of campus;

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- The direction signage must be considered in all part of EMU campus for improving legibility;

- Each streets and paths of EMU campus must be named;

- The mixed- use buildings must be constructed in edge of campus with diversity of uses to attract diversity of users and the main function of this building is art center education with other recreational activities to integrate people with knowledge and the knowledge flourish to the Famagusta city;

- The pedestrian path must be improved in all parts of EMU campus by developing pavements, light elements, sitting furniture, shading elements , and landscapes;

- The distance of each buildings from each other must follow the standards of Allan Jacobs about degree of enclosure that it is 1:2.5;

- Car parking near public spaces must be considered;

- Consider safe bike lanes in EMU campus and continue it in Famagusta city;

- Improve public transportation inside and outside EMU campus.

Social Enhancements for EMU Campus:

- Shops, restaurants, and coffee shops in edge of EMU campus can help to economy of campus. on one hand, EMU university can rent these buildings to private sectors and give an economic benefits from their property, on the other hand, it affects livability of Famagusta city that lead to improve economy of city;

- Strategy of EMU university must be changed from improving economy of university to develop both economy of EMU university and Famagusta city;

- For improving the economy of Famagusta city, the EMU cluster near EMU campus (the propose place for it is west site of EMU campus) that it is become a bridge between EMU university, Famagusta city, private Stakeholders, and municipality.

- Vision of EMU campus become toward collaboration of it with public and private sectors in variety of programs that are related to Famagusta city;

- Improve collaboration of students with community through consideration of workshops and programs;

- Propose a curriculum according to development of Famagusta city and public sector supervise a process of courses in EMU;

- Parks must be considered for all ages to feel comfort and relax in EMU campus;

- Construction of playgrounds for children can attract people to attend in EMU campus and it improves the interaction of local people with students;

- The activities and functions that are added to EMU campus follow the rules of EMU university;

- The rules of public spaces in EMU campus follow by rules of EMU campus;

- Functions of university must be considered outside the EMU campus to improve interaction of EMU campus;

- Water features and fountains must be considered in open spaces;

- Culture center must be constructed in edge of EMU campus for integration of different cultures with each other;

- History exhibition must be constructed in CL square to introduce backgrounds of all nations to people;

- The CL square will be a center of social events with concept of mixed life;

- Each weeks, at least one events must be hold in CL square;

- The announcements of events and activities must be improve in all city;

- Open times of CL square to public must be considered after class times and it must be shown in boards;

- The variety of events according to different cultures, ages, races, and social classes must be considered in EMU campus;

- Consider bulletin board in edge and CL square to show rules of EMU campus that must be followed by people and students;

- By consideration of watchman and signs limit the access of people to all parts of EMU campus.

5.3. Recommendations for Future

Overall, this research shows the values of university campus in development of city in 21th century and it estimates that the relationships of university campus with the city according to physical, socio-cultural, and economic dimensions can help to improve quality of city. Besides, the research concludes that, one of the elements for connection of university campus and the city is public space and this research estimates that university campus can act as a public space of the city without losing its privacy.

This research can be a tool and a guide for the EMU administration for their future decisions about the campus. It can also be used by other researchers who are willing to work on university campuses as well as specifically on EMU campus.

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APPENDICES

APPENDIX A: Questionnaire Survey from Students

Age: 15- 19 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐ other……
Gender: Male ☐ Female ☐
Where do you live?   Inside the EMU Campus ☐   outside the EMU Campus ☐
Nationality:
Which Faculty do you study?

1. Where do you spend most of your free times except your house?					
Inside the EMU Campus		outside the EMU Campus			
2. If inside the EMU Campus, Where? (you may choose multiple answers)					
Cl Square		Dormitories' coffee shops		Department's coffee shops	
Open sport fileds		Lala musafa Pasa sport hall		Library	
Namport		Restaurants		Dormitories district	
3. If outside the EMU Campus, Where? (you may choose multiple answers)					
Café/ Bars in Walled City		Café/ Bars in Salamis road		Lemar	
Coffee shops		Net café		Open Sport Fields	
Restaurants		Cinema		Magem	
In the Walled City		Green areas		Seaside	
Other………					
4. How often do you spend your free times in EMU Campus?					
Every day		Twice a week		Three days	
Four days		Once a mouth		Never	
5. For which purpose do you go to EMU Campus (except studying) (give maximum five answers)					
To eat/drink		Get some fresh air		Watch sport or games	
Meeting friends		Ride a bike		Attend events	
Play sports and games		For a walk		Enjoy entertainment	
To relax and think		Walk a dog		Other………	
6. What time do you spend your time in EMU Campus? (select one choice)					
Morning- afternoon (8-13)		afternoon- evening (13-18)		Night (18-24)	

7. Do you go to EMU Campus in weekends?					
Yes		No			

8. If yes, which place in EMU Campusdo you go mostly?					
Library		Namport		Sport Fields Districts	
Dormitories district		Simit Sarayi		Other	

9. Which activities make you feel relax when you spend your times outside your house? (you may choose multiple answers)					
Eating		Drinking		Dancing	
Live music		Watching theatre		Watching movie	
Communication with others		Sitting in nature alone		Sitting in nature with your friends	
Sitting in bars		Watching performance		Walking	
Shopping		Playing sports		Watching sports	
Playing games		Biking		Other	

10. Do you feel safety at night in EMU Campus?					
yes		No			

11. What features of EMU Campus attract you mostly?					
Restaurants		Green area		Sport facilities	
Coffee shops		other			

12. For entertainments, which facilities do you need in EMU Campus?

13. If variety of entertainment facilities will be considered in EMU Campus, do you prefer to spend your time there?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

14. If variety of culture events will be hold in EMU Campus, do you prefer to attend?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

15. If the quality of pedestrian paths will be improved, do you prefer to walk inside the Campus?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

16. If the university prepare a situation that students collaborate with the community of Famagusta city according to their fields, do you prefer to attend?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

17. If different events and festivals like spring festival will be hold during the year, do you prefer to attend?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

18. If some public facilities will be considered in campus that local people also can attend in public parts of EMU, do you prefer to go?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

19. Do you think by mixed- use of EMU and increasing density of spaces would attract you to spend most of your time in university?					
Definitely		Probably		Probably not	
Not sure		Definitely not			

20. How can you rate the quality of entertainment facilities in EMU campus?					
Very good		Good		Fair	
Poor		Very poor			

21. How can you rate the access from the city to EMU Campus?					
Very good		Good		Fair	
Poor		Very poor			

22. How would you rate the existing sports facilities in EMU?					
Very good		Good		Fair	
Poor		Very poor			

23. How can you rate the quality of light in EMU Campus?					
Very good		Good		Fair	
Poor		Very poor			

24. What is the first building or space that comes to your mind in EMU Campus?					

25. When You walk through the EMU campus, which routes do you use?
Please drawi it in the map?
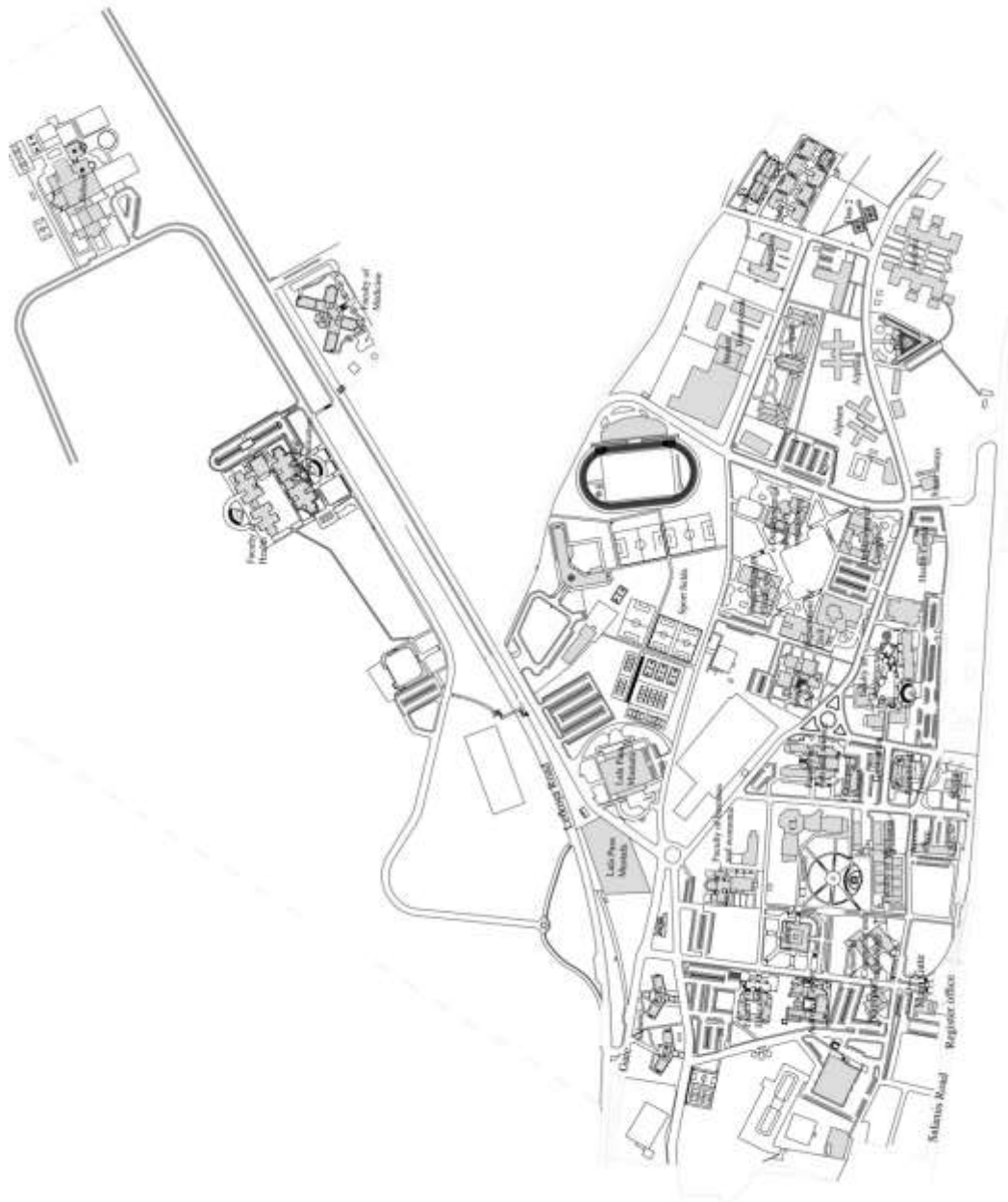
26- Please draw a mental map from EMU? (**Definition of Mental Map:** A map which represents the perceptions and knowledge a person has of an area. May be a map in the mind.

Thank You for Your Collaboration

APPENDIX B: Formula of Cohran

This formula is divided to two formulas that the first sample size formula is (Bartlett, Kotrlik, & Higgins, 2001, p.47):

$$n_\Theta = \frac{(t)^2 * (p)(q)}{(d)^2}$$

In this formula, "t" refers to alpha level that is 1.96, (p) (q) means "estimate of variance" that according to questioning survey of this thesis, each of them is considered 0.5, and "d" is the percentage of error of data collection (it must be between 5- 10 percent) that here it is 8 percent, which means the evaluation of questionings can be refer to whole population of EMU with 8 percentage error, so according to these information, the result of first sample size is (Bartlett, Kotrlik, & Higgins, 2001, p.47):

$$n_\Theta = \frac{(1.96)^2 * (0.5)(0.5)}{(0.08)^2} = 150.06$$

Formula two that is the final sample size of Cochran indicates the number if questionings that must be asked from students of EMU that this Formula is:

$$n_1 = \frac{n\Theta}{(1 + \frac{n\Theta}{Population})}$$

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APPENDIX C: Interview Survey from Local People (English Version)

1. Age:					
15-20		21-30		31-40	
41-50		51-60		60+	
2. Gender:					
Male		Female			
3. Where do you live in Famagusta?					
4. Where do you live in Famagusta ?					
5. For how many years have you been living in Famagusta?					
6. How often do you go to EMU Campus?					
7. Which places do you visit mostly in EMU Campus?					
8. For which purposes, do you go to EMU Campus?					

9. As a citizen, which facilities would you like to see in EMU Campus? What kind of a Campus would you like EMU Campus to be?
10. Which places do you go for recreation in the city mostly? (Please explain)
11. Do you think there is enough interaction between the city and the EMU Campus?
12. Do you think EMU has made Famagusta a "university town"? Why? How?

13. As a local person living in Famagusta, are you informed about the cultural/recreational activities/ events that take place in EMU campus? If yes how?
14. Do you think the university community and EMU campus has a positive contribution to the social life of the citizens of Famagusta? If yes how? If No why?

Thank You for your Collaboration

Amir Rashidi

1. Yaş:					
15-20		21-30		31-40	
41-50		51-60		60+	
2. Cinsiyet:					
Erkek		Kadın			

3. Ne işle uğraşıyorsunuz?

4. Gazimağusa'da nerede yaşıyorsunuz?

5. Gazimağusa'da ne kadar zamandır yaşıyorsunuz ?

6. DAÜ kampüsüne hangi sıklıkta gidersiniz?

7. DAÜ kampüsünde çoğunlukla ziyaret ettiğiniz yerler hangileridir?

8. Hangi amaçla DAÜ kampüsüne gidiyorsunuz?
9. Bir Mağusalı olaral Daü Kampusünde toplum için ne tür olanaklar olmasını isterdiniz? DAÜ Kampüsünün nasıl bir Kampus olmasını isterdiniz?
10. Boş zamanlarınızı değerlendirmek için şehirde hangi mekanlara gidiyorsunuz? (Lütfen açıklayınız)

11. Sizce DAÜ kampüsü ile şehrin arasında yeterli etkileşim var mıdır?
12. Sizce DAÜ Gazimağusa'yı üniversite şehri haline getirdi mi? Neden? Nasıl?
13. Gazimağusa'da yaşayan yerel bir kişi olarak, DAÜ kampüsünde yer alan kültürel/eğlence aktiviteleri/olaylar hakkında yeterince bilginiz oluyor mu? Cevabınız evet ise nasıl?
14. DAÜ kampüsünün ve üniversite camiasının Gazimağusa'lı vatandaşların sosyal hayatları üzerinde olumlu bir etki bıraktığını düşünüyor musunuz? Cevabınız evet ise, nasıl? Cevabınız hayır ise, neden?

İşbirliğiniz ve zamanının için teşekkür ederim.

Amir Rashidi