

**Questioning the Compatibility of the Infill
Architecture in Historic Environment, Case Study:
Walled City of Nicosia**

Leila Soosani

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

Master of Science
in
Urban Design

Eastern Mediterranean University
July 2013
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Elvan Yılmaz
Director

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

Assoc. Prof. Dr. Özgür Dinçyürek
Chair, Department of Architecture

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

Assoc. Prof. Dr. Beser Oktay Vehbi
Supervisor

Examining Committee

1. Assoc. Prof. Dr. Mukaddas Faslı

2. Assist. Prof. Dr. Rafooneh M. Sani

3. Assoc. Prof. Dr. Beser Oktay Vehbi

ABSTRACT

Historic environments are the mirror of cities' social, economic, cultural, physical and architectural history. Historic environments start to have changes according to the change in lifestyle, socio-economic standards and technology; therefore, new buildings in historic environment are one aspect of these changes. These new buildings sometimes may be constructed in line with the characteristics of the context but sometimes they are constructed without respecting the visual and spatial characters of the context. Therefore, there are some important issues such as the relationship between the new buildings and the existing setting and the quality of them to achieve compatible/contextual design in historic setting and to protect from its identity and values.

Walled City of Nicosia in Northern Cyprus has been through the socio-economic devaluation and physical deterioration decline that caused to decay of the architectural quality and loss of population of the historic center. Nevertheless, there are some newly constructed infill projects.

Consequently, the aim of this study is to assess the compatibility of the new building in historic context and discuss about their design approaches. Based on the aim this study will have four chapters. Initially, introduction of the study will be given in the first chapter. Then in second chapter, definition of historic environment from different resources, importance and values of historic areas and its visual and spatial characteristics will be explained. Thus, the criteria for compatible design and new

building design approaches will be presented. Also some cases from different European contexts will be analyzed to test these criteria and design approaches.

According to the information that gathered from Antiquities Department there are only four infill buildings which are constructed during the last 10 years in Walled City of Nicosia and they will be analyzed. Regarding to the design criteria such as massing, scale, setback, orientation, proportion, rhythm, material, color, sitting and height and accordingly their design approaches and compatibility will be achieved.

The methodology of this research includes qualitative research that is based on analysis, literature survey and field studies. Literature survey, about the subject of the study involves: historic environments, conservation, and sense of place, visual and spatial characters. Filed study will be done on the newly constructed architecture in Nicosia. It will consist of observation and photographs and analyzing them according to the mentioned criteria.

Based on analysis that conducted in Walled City of Nicosia, out of four new buildings, three of them have compatible/contextual design approaches. However, one of the buildings has free design approach which means designer did not consider visual and spatial characters of the context.

Keywords: Historic Environment, Infill Building, Contextual Design, Walled City of Nicosia.

ÖZ

Tarihi çevreler, geçmişte yaşamış farklı kültürlerin sosyal, ekonomik ve kültürel izlerini taşırlar. Değişen yaşam koşulları, sosyo-ekonomik koşullar ve teknoloji nedeni ile tarihi çevreler değişmeye başlamıştır. Bu alanlardaki yeni yapılaşmalar da bu değişimin bir parçasıdır. Bu uygulamalar bazen nitelikli ve bilinçli, bazen de buldukları çevreye saygı göstermeyen, görsel açıdan bu çevrelere yakışmayan tasarımlar olmaktan ileriye gidememiştir. Bundan dolayı, yeni binaların kalitesi ve bağlama uygun tasarımları bu alanların kimliğini ve mevcut değerlerinin korunması için önem taşımaktadır.

Bu çalışmada örnek çalışma alanı olarak seçilen Lefkoşa Suriçi bölgesi, süregelen fizisel eskime, sosyal ve ekonomik çöküntü ve buna bağlı mimari ve fiziksel çevresi eskimesi ve nüfus kaybı gibi problemlerle karşı karşıyadır. Bununla birlikte, bu alanda yeni yapılaşmalar da bulunmaktadır.

Bu bağlamda, bu çalışmanın amacı tarihi çevredeki yeni tasarımların ve bu tasarımlar yapılırken uygulanan yöntemleri irdelemektir. Bu amaca bağlı olarak, çalışma dört bölüme ayrılmıştır. İlk bölümde giriş kısmı verilirken, ikinci bölüm tezin kavramsal ve kuramsal kısmını oluşturmaktadır. Bu bölüm içerisinde tarihi çevre kavramı üzerinde durulmuş ve tarihi çevrenin mimari değerlerinin saptanması, görsel ve mekansal özelliklerin önemi üzerinde durulmuştur. Bunun yanında; “infill” kavramı, yeni yapılaşmalarla ilgili uluslararası tüzüklerde bulunan prensipler; yeni binalardaki çeşitli tasarım yaklaşımları ve bu tasarımların irdelenmesine temel oluşturacak kriterler ele alınmıştır. Belirlenen bu kriterler

çerçevesinde farklı Avrupa kentlerinde uygulanmış yeni bina tasarımları incelenmiştir. Tezin dördüncü bölümünde çalışma alanı olarak seçilen Lefkoşa suriçinde son 10 yılda yapılmış yeni yapılar incelenmiştir. Kuramsal çerçeveden elde edilen kütle, ölçek, geriye çekilme, yönlenme, oran, ritim, malzeme, renk, pozisyon/konum ve yükseklik tasarım kriterleri araştırılmış ve bu binaların tarihi çevreye uyumu ile tasarım yaklaşımları ortaya konmuştur. Tezin dördüncü bölümünde ise elde edilen sonuçlar ve görüşler verilmiştir.

Çalışmanın amacına bağlı olarak, konu ile ilgili literature taraması ve saha çalışması yapılmıştır. Yapılan analizler sonunda, Lefkoşa suriçi bölgesinde son 10 yılda yapılan dört adet yeni bina tespit edilmiş ve bu binaların üç tanesi buldukları çevre ile uyumlu tasarımlara sahip oldukları saptanmıştır. Diğer bina ise çevrenin görsel ve mekansal özellikleri dikkate alınmadan yapıldığından, bu çevreyi hiçe sayan özgür bir tasarıma sahip olduğu saptanmıştır.

Anahtar Kelimeler: Tarihi Çevre, Mekansal Özellikler, Venedik Tüzüğü, Yeni Bina, Bağlama Uyumlu Tasarımlar, Lefkoşa Suriçi.

To My Family

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my advisor Assoc. Prof. Dr. Beser Oktay Vehbi for her patience, guidance, encouragements and useful comments that helped me in all the time of research and writing of this thesis. Beside my advisor, I must acknowledge my committee members Assoc. Prof. Dr. Mukaddas Fasli, Assist. Prof. Dr. Rafooneh M. Sani, Assoc. Prof. Dr. Ceren Bagac for their encouragement and insightful comments.

Last but not the least, I would like to special thank my parents and my gorgeous sister (Marjan) for the support they provided me through my entire life and in particular, I must acknowledge my best friends Abolfazl, Nina, Shirin, Samaneh and Amir for their unlimited supports and encouragement.

TABLE OF CONTENTES

ABSTRACT	iii
ÖZ	v
DEDICATION	viii
ACKNOWLEDGMENTS	ix
TABLE OF CONTENTES	x
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
1 INTRODUCTION	1
1.1 Introductory Section	1
1.2 Problem Statement.....	2
1.3 Aim and Objectives of the Study.....	3
1.4 The Methodology of the Study.....	5
1.5 Limitation	6
2 LITERATURE REVIEW: Concept of Historic Environment.....	8
2.1 Introduction	8
2.2 Definition of Historic Environment.....	8
2.3 Values of Historic Environment.....	10
2.3.1 Socio-Cultural Values.....	11
2.3.2 Socio-Economic Values.....	13
2.4 Importance of Sense of Place, Visual and Spatial Characteristics in Historic Environments.....	14
2.4.1 Sense of place & Identity.....	14
2.4.2 Visual and Spatial Character.....	19

2.5 Infill Buildings in Historic Environment.....	22
2.5.1 Definition of Infill Buildings	23
2.6 Principles of Conservation with Special Emphasis on New Buildings/Development throughout History	24
2.6.1 Articles Related with Infill Buildings in International Charters.....	27
2.7 Review on Contextual Design.....	32
2.8 Different Design Approaches for Infill Buildings.....	37
2.9 Contextual/Non-Contextual Approach	42
2.9.1 Contextual Harmony	43
2.9.1.1 Contextual Uniformity	44
2.9.1.2 Contextual Continuity	45
2.9.1.3 Contextual Juxtaposition.....	47
2.9.2 Non-Contextual Approach.....	49
2.9.2.1 Free Design Approach	49
2.10 Cases from Different Contexts	50
2.10.1 Dancing House, Prague.....	50
2.10.2 Graz, Austria.....	53
2.10.3 Carre d’Art, France	55
2.10.4 Haas House, Vienna.....	57
2.10.5 Citroen C42, Paris.....	59
2.11 Summary of the Chapter.....	61
3 CASE STUDY: Evaluation the Compatibility of Infill Buildings in Walled City of Nicosia.....	62
3.1 Methodology of the Analysis	62
3.2 History Development of Walled City of Nicosia	62

3.3 Analysis of Case Buildings	66
3.3.1 Yakindođu Bank	66
3.3.2 Hukuk Burosu-Law Office	69
3.3.3 Mahmut Pařa Multi-Storey Car Parking and Office Building.....	71
3.3.4 Iřık Kitabevi, Stationary	73
3.4 Summary of the Chapter.....	75
4 CONCLUSION	76
4.1 Introduction	76
4.1 Agenda for Future Research.....	80
REFERENCES.....	81

LIST OF TABLES

Table 1: Research Methodology	7
Table 2: Elements of Visual Character	22
Table 3: Design Criteria for Achieving Contextual Harmony	42
Table 4: Dancing House Analysis	52
Table 5: Graz Building Analysis	54
Table 6: Carre d'art Analysis	56
Table 7: Haas House Analysis	58
Table 8: Citroen C42 Analysis	60
Table 9: Yakindođu Bank Analysis	67
Table 10: Hukuk Burosu-Law Office Analysis	70
Table 11: Mahmut Pařa Multi-Storey Car Parking and Office Building Analysis....	72
Table 12: Iřik Kitabevi Analysis	74

LIST OF FIGURES

Figure 1: Naqsh-e-Jahan Square, Isfahan, Iran	12
Figure 2: Historic City Yazd, Iran	18
Figure 3: The Sage Gateshead, Museum Central in London	24
Figure 4: Richmond Riverside Development.....	38
Figure 5: Cathedral Library extention, Hereford	38
Figure 6: Visitor Centre, Caerphilly Castle.....	39
Figure 7: Formerly Pepsico Building	40
Figure 8: Seamen’s Church Institute, South Street Seaport Historic District, New York	41
Figure 9: Historic City Center in Munich	44
Figure 10: Reachmond Riverside, London	45
Figure 11: Example of Historic Context in Munich	46
Figure 12: MOntral Museum Fine Art.....	48
Figure 13: Venice, Piazza, San Marco, Italy.....	48
Figure 14: Royal Ontario Museum Canada, Addition in 2007 Liebeskind	49
Figure 15: Dancing House	51
Figure 16: Graz Building, Austria.....	53
Figure 17: Carre d’Art, France.....	55
Figure 18: Haas House, Vienna	57
Figure 19: Citroen 42, Paris	59
Figure 20: Cyprus Map	63
Figure 21: Medieval City Walls Of Lefkoşa.....	64
Figure 22: Map of the Walled City of Nicosia.....	65

Figure 23: Yakindođu Bank	66
Figure 24: Hukuk burosu-Law Office	69
Figure 25: Mahmut Pařa Multi-Storey Car Parking and Office Building	71
Figure 26: Iřik Kitabevi, Stationary	73

Chapter 1

INTRODUCTION

1.1 Introductory Section

The phrase ‘historic environment’ refers to all those aspects of our environment which bear traces of past human activities. They are the mirror of the cities social, economic, physical, political and architectural history. The historic urban quarters comprise not only historic buildings and landscapes and other physical survivals of our past, but also the history of all the communities who have made their homes in a country. It is our physical and cultural heritage (Gosling and Maitland, 1984). Lynch (1960, p.47) identify districts as ‘ the medium to – large sections of the city, conceived of as having two dimensional extent, which the observer mentally enters ‘inside of’, and which are recognizable as having some common, identifying character.

Due to the changes in lifestyle, and economic condition of the people, technology, historic environments start to have changes in their social and physical environments. This change has been affected on their unique, traditional character. The adaptability of the historical setting to “changes”, i.e. to socio-economical standards, new technologies, new and life cultures is a necessity for the vitality of it.

Introduction of the new buildings is actually one aspect of change but also it is the reflection of changes in many cases on the architecture of the city. Consequently, the

quality of the new buildings and its relationship with the existing setting is the variable that determines whether the change is in the form of enrichment of the existing tissue, or it is the factor causing the deterioration of the historical settlement and loss of identity.

Walled City of Nicosia in Northern Cyprus with its medieval character has been issue to physical deterioration and socio-economic devalue, decay of the architectural and environmental quality, employment and conditions which resulted in loss of population of the historic center. Since the city is under decay, still there are some newly constructed infill projects. In this study, these newly constructed buildings will be evaluated in order to find their compatibility within the context.

1.2 Problem Statement

There is no control in old historic settings according to urban growth and expansion. Also there is no concern about architectural value of the historic context and historic tissue when new buildings are added to the historic environment. In this case the historic pattern suffers from loss of identity and character of the historic fabric. As a result of changes in historic urban environment new buildings are ignoring local tradition of the surrounding and value of historical heritage; they are damaging the historic tissue. The visual and spatial character of historic environment and sense of place are in danger to get lost.

Cities are complex systems of interacting economic, social and environmental forces that constantly evolve. Today's cities need some changes due to their changing social and economic conditions. Historical environments as open space museums demonstrate and reflect cultural identity. The need of building new structures is one

of the main factors that damage the identity and values of the historical environments. Sometimes these new architectures add values to the historic context and sometimes they may damage it due to the incompatible designs. New buildings should be integrated harmoniously with the surrounding.

Throughout observation, it is recognized that walled city of Nicosia started to have new buildings especially during the last 10 years. Accordingly, in this study, it is decided to analyze the compatibility of these new buildings in the Walled City of Nicosia.

1.3 Aim and Objectives of the Study

One of the main aims of this study is to discuss the new architectures in historical areas and their design approaches and also to assess the compatibility of the new buildings in Walled City of Nicosia by using design criteria. Design criteria will be:

Spatial elements:

- Massing
- Sitting (Plot ratios)
- Height
- Setback

Visual elements:

- Orientation (Position of the entrance)
- Rhythm
- Proportion
- Material & Color
- Scale

Based on this aim, the following research questions will form the framework of the study.

Main question is:

- How much compatible are the new buildings in Walled City of Nicosia?

Sub questions are:

- What is historic environment, its types and values?
- What is the importance of sense of place in historic environment?
- What is the concept of conservation in historic environments?
- What are the different design approaches for new building construction in historic settings?
- What is the visual and spatial character of historic environment?
- What are the design criteria to have compatible designs in historic settings?

The objectives of this research, therefore, listed as follow:

- To understand the concept of historic environments, their classifications and values
- To understand the importance of historic environment
- To understand the conservation of historic environments
- To explain different design approach that can be used for designing new buildings
- To explain different visual and spatial character of historic environment
- To define different design criteria that help to analyze the compatibility of the new buildings in the context

- To determine the compatibility of the selected case buildings in the walled city of Nicosia.

1.4 The Methodology of the Study

This study will be set up in four chapters. Introduction of the study is given in the first chapter. Then, historic environments, values of historic areas and conservation concept, new building designs and different design approaches in historic environments will be discussed in the second chapter. Besides, criteria to achieve contextual/compatible design will be presented and tested on different European building cases. In the chapter three, new building design in Walled city of Nicosia will be analyzed and the compatibility of these buildings will be evaluated. Finally, the conclusion and remarks of the thesis are given in the last chapter.

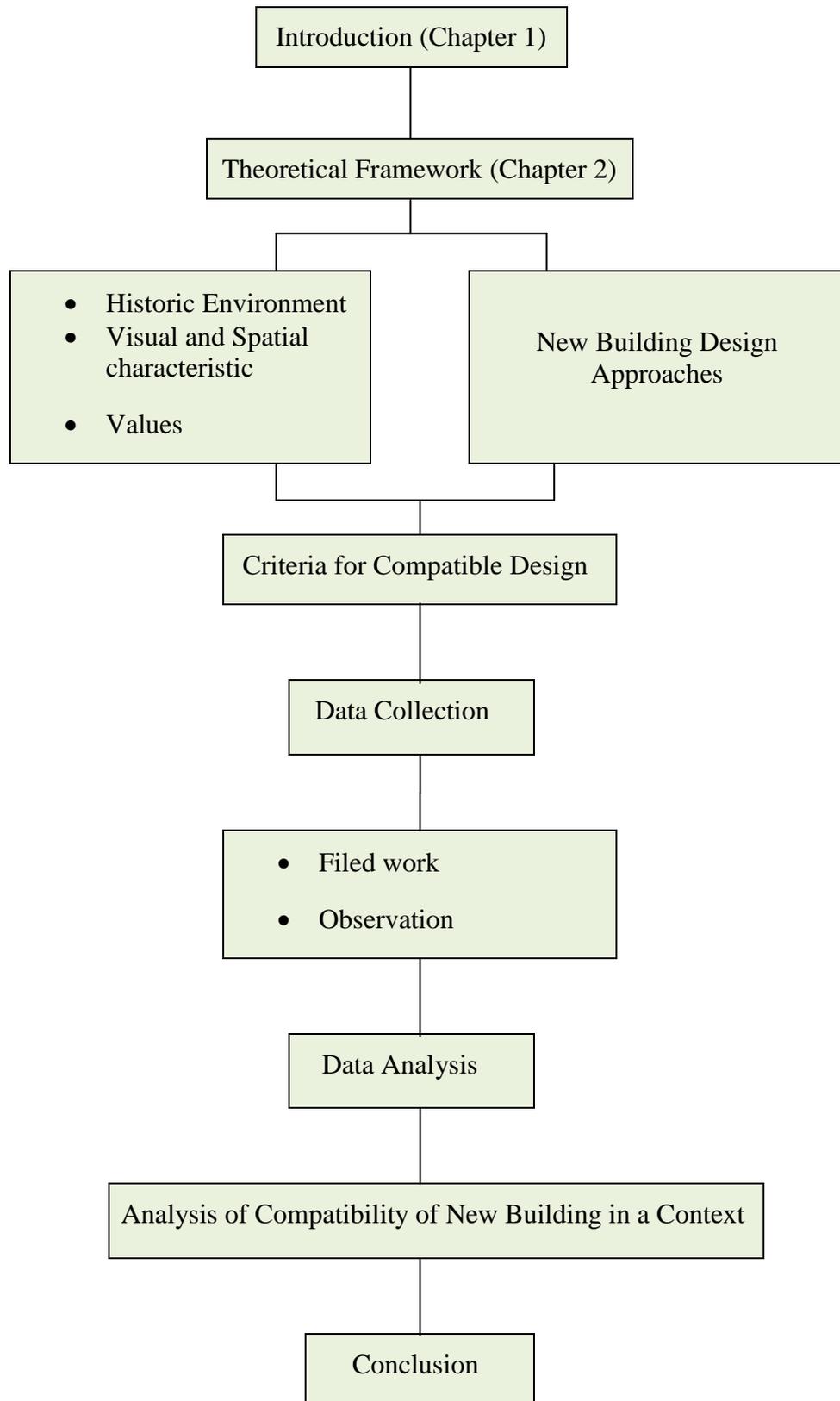
The data will be collected through literature survey and reviews on the sources, which are about the subject of the thesis: Historic environments, values. New architecture in historic contexts and different design approaches for designing new buildings, etc. and field studies that will be done on the newly constructed architecture in Nicosia. It will be formed of observations, photographs, sketches and analyzing of the plan schemas, façade arrangements, building elements and materials, etc.

Both literature survey and field study data will be analyzed. The selected and analyzed studies will be represented in the case study part of the thesis. Table 1 explains the research methodology as follow design.

1.5 Limitation

The compatibility of the new architecture will be determined in the Walled City of Nicosia. Mainly the focus of the study is on the buildings that were constructed last ten years in the city. The newly constructed buildings are asked from the Antiquities Department of Nicosia. According to the information gathered from the Antiquities Department, there are only four newly constructed buildings in last ten years. Therefore, these four buildings are taken as case study for this research.

Table 1: Research Methodology



Chapter2

Literature Review: Concept of Historic Environment

2.1 Introduction

This chapter is trying to explain historic environment, sense of place and its characteristics within the existing literature. Aim of this chapter is to define some design criteria for infill architecture in historic environment to achieve compatible/contextual harmony with its context. Also this chapter is a framework for chapter three.

2.2 Definition of Historic Environment

“The phrase ‘historic environment’ refers to all those aspects of our environment which bear traces of past human activity. They are the mirror of the cities social, economic, physical, political and architectural history” (Oktay, 2005).

The historic environment plays an impressive role in economic development through encouraging tourism, income and employment. The historic environment contributes to our sense of local and national identity and also it accommodate tangible link to our past. It also presents the character and distinctiveness that is so important to a positive feeling about location. In our communities, it is able to support the regeneration and sustainable economic and social progression. It can be assisted in the delivery of housing, education and community cohesion aims. Quality of our daily lives is increased through the historic environment (English Heritage, 2010).

Moreover, “The material and natural world all around us, as shaped by people’s activities through time and perceived by people now” is another definition of the historic environment. The subject was connected effectively and process and recognizes it as a structure of transforming human understandings by historic environment. The historic environment of today bequeathed the past to the future and it is inherited the past. Also it is introducing the need for its management and concept of change (DBB, 2009).

Furthermore, “the historic environment contributes to people sense of local and national identity and also provides a tangible link with our past. Also, the distinctiveness and character that is so important to a positive sense of place are provided by historic environment. “It can support the regeneration and sustainable economic and social development of our communities. It can assist in the delivery of housing, education and community cohesion aims” (English Heritage, 2010).

Although, Koçak defined that “the historic environment is a shared resource. Our environment includes a unique and dynamic history of human activity.” It contains the aspirations, investment and skills of sequential generations, and it has been formed by responding to the surrounding by people who inherit. “People value this historic environment as part of their cultural and natural heritage”. It reflects traditions of various communities, beliefs and the knowledge. It gives distinctiveness, quality and meaning to the places, providing a source of identity and a sense of continuity (Kocak et. al., 2009).

2.3 Values of Historic Environment

The perception of people about the ‘historic environment’ or ‘heritage’, validating it, and the comments of official bodies such as councils and heritage organizations in this regard is one the most challenging issues. Furthermore, individually elements may be changed the definitions and discernment (Graham et. al., 2009).

A scope of heritage values like historical, social, and architectural values is typically presented by the historic environment. From aesthetical view, often these sites also are significant; so the quality of design a modern addition in historic site is considered as an important subject (URL. 1).

In various areas of protection, values and valuing processes are distinguished and play a significant role during our effort to integrate the field. The products of material culture have various concepts and applications for different people and communities, whether, in works of art, buildings, or in ethno graphic artifacts. Values give some things which are more significance than others and thereby turn some objects and sites into “heritage.” Protection of material for its own reason is not ultimate goal but, to preserve (and shape) the values which compromised by the heritage with physical interference or treatment that becoming one of many means toward that end. To obtain result, this heritage is significant to those whom it is intended to profit (i.e., future generations), it is necessary to investigate reason and quality of heritage valuation, and who valuated it. Protection community has used the cultural significance to encapsulate the multiple values which ascribed to objects, buildings, or landscapes. There values have been categorized orderly, such as socio-

cultural values and economic values according to the writings of Riegl to the strategies of the Burra Charter (Avrami et. al. 2000).

2.3.1 Socio-cultural Values

Historic places are the potential resources of cultural improvement in those places. The Burra Charter¹, that developed by Australia ICOMOS² described the heritage value of a place with the “cultural significance” of site, and these cultural values are important because they reflect the variety of our communities, informing us about our personality and our past era. Place of cultural significance providing inspirationally connects make a link between our community and landscape and the past. They are irreplaceable and valuable (Australia ICOMOS, sub. 122, p. 6).

According to Throsby’s view (2001), cultural properties of heritage properties are a subset that creates both economic and *cultural* value. Cultural value was defined by Throsby as a multiple set of features such as: aesthetic value, social value, spiritual value (sense of place and identity), and authenticity value, historical and symbolic value (EFTEC, 2005).

The Burra Charter used cultural significance’ of a place to determine ‘heritage value’: *aesthetic, scientific, historic, social or spiritual value* are defined as cultural significance for past, present or future generations. Cultural significance itself is comprised the following items: Place, its fabric, setting, application, associations, meanings, records, relevant places and related objects.

¹ “The Burra Charter was first adopted in 1979 at the historic South Australian mining town of Burra; minor revisions were made in 1981 and 1988.” (<http://www.defence.gov>)

² “ICOMOS (International Council on Monuments and Sites) is a non-governmental professional organization formed in 1965, with headquarters in Paris.” (<http://www.defence.gov>)

The European charter of cultural heritage stated that “the architectural heritage is a capital of irreplaceable intangible, cultural, social and economic value”. In this sense, it identifies several principal justifications for the preservation of historical environments (Tiesdell et. al., 1996, p. 11).

The *aesthetic value* of buildings and historic urban sites can be set in their own nature, age, beauty and scarcity make the historic sites valuable (Figure 1).



Figure 1: Saint Nicolas Church, 1298-1400 in Famagusta, Northern Cyprus (URL 2)

The aesthetic variety of the urban area contributes to “arrangement” of buildings next to each other from different periods and styles that harmonious create the and unique environment.

Aesthetic value includes some features of sensory discernment for some criteria which may include attention of the material and texture of the fabric, color, scale and form (Burra Charter, 1979).

Aesthetic quality of townscapes and landscapes is under effect of archaeology and historic building via increasing the familiar scene of our historic towns and villages and presenting historic depth and profit to our countryside (English heritage, 1997).

According to Burra Charter (1979) there are some factors that “*scientific or research*” value of a place will depend on them such as importance of the complicated data, representativeness or quality, on its scarcity and on the degree of contribution of future significant information of the place (Burra charter, 1979).

The qualities for which a place has become a center of spiritual, political, national or other cultural attitude in a majority or minority group is considered as social value.

The Australian Government, in its *Environment and Heritage Legislation improvement Act (No. 1) 2003*, found that the:

... the place’s natural and cultural environment containing aesthetic, scientific, historic, or social significance, or other significance are *Heritage value* of a place for current and future Australians’ generations (Australia Heritage Council, 2009)

2.3.2 Socio-economic Values

The notion of economic value has a very unique terminology. However, some evidences suggested that besides economic value the heritage assets cover other notions of value (EFTEC, 2005).

Another rationalization is economic and commercial value of protection of architectural heritage. Rarity is common for historic sites. So, these values are

profitable for tourism of that region and contribute to the attractiveness of the urban region (Riza, 2009).

2.4 Importance of Sense of Place, Visual and Spatial Characteristics in Historic Environments

This section of the thesis is explained the importance and need for conserving the sense of place and visual and spatial characteristics of historic environments. These characteristics of the historic environments need to be respected while designing infill buildings in these contexts.

2.4.1 Sense of place & Identity

All rural/urban environments, has been shaped by natural processes over thousands of years, and contributes to its character and quality by some historic dimension. Historic buildings, archaeological sites and landscapes, ancient monuments and townscapes and parks are built heritages. Some parts of the historic environment are the patterns of the context or setting that used in the past (SHEP, 2009).

Theories on sense of place and place identity discussed in diferent disciplines such as geography, urban and regional planning, urban design and architecture. Major publications that influenced spatial disciplines include Tuan's (1976) *Space and Place: The Perspective of Experience*; Relph's (1976) *Place and Placenessness*; Norberg-Schulz's (1980) *Genius Loci: Towards a Phenomenology of Architecture*. The genius loci (directly translated as spirit of place) perspective on place, views each site as unique in terms of its character, spirit or identity and implies that

planning and design interventions must be sensitive towards a distinctive context and release these qualities in order to maximise the human experience of the place.

Other works which influenced planning and design are Kevin Lynch's (1960) *The Image of the City* and Gordon Cullen's (1971) *The Concise Townscape* where the experience of urban spaces explored from the perspective of the pedestrian and seeks to establish the essential components of experience. All these publications inherently called for spatial disciplines to become involved in the activity of place-making in which sense of place qualities are integrated into the making of built environments.

The above publications strongly emphasised the importance and role of physical character focusing to sense of place and related concepts. Physical features exist as objective realities of space but the physical setting constitutes only one of three known constructs of place namely physical context, activities and meanings (Relph, 1976; Carmona et al., 2003).

Nanzer (2004) defines sense of place as "the manner in which humans relate to, or feel about, the environments in which they live", while "places are much more than points on a map, they exist in many sizes, shapes, and levels, and they can be tangible as well as symbolic" (Nanzer, 2004). Sense of place is defined as an umbrella term that includes many concepts in the social sciences, and attempts to describe human-environment relationships (Jorgensen and Stedman, 2006). Moreover, place identity is explained as a component of Place identity, based on emotional investment and association with location, is seen as part of self identity and regarded as the most important contributor to sense of place (Nanzer, 2004).

In turn, place identity is also described as the quality of the physical setting that provides sense of place (Eben Saleh, 1998; 2000; Gospodini, 2002; Oktay, 2002). This view is developed upon the physical, tangible characteristics of place and the relationship of people with place.

‘Sense of place’ or *genius loci* are some expressions that is used in the historic environment and context of urban design. Different components of the sense of place are ‘meaning’, ‘physical setting’ and ‘activities’. Some physical elements such as built form or townscape of the built environment are related to the physical setting. The associations of people with specific place and public behavior are more related to ‘activities’ and ‘meanings’ (Tiesdell, et. al., 2010).

All different aspects – including, – which make up vernacular distinctiveness or the ‘character’ of a certain place that including built environment, topographical and people’s own experiences are explored by sense of place. “‘Place identity’, ‘place attachment’, ‘place dependency’ and ‘insider-ness’” are as a range of conceptual subsets that are leading by ‘sense of place’ and also it has been used to lay the way that people use and understand places (Graham et. al, 2009).

Research on “*Place distinctiveness* (what makes a place distinctive), *place continuity* (the way a place supports people’s sense of continuity) and *place dependency* (how a place enables people to realize their goals)” that links to a *sense of place* are most clearly made the links between sense of place and historic environment. However, some other factors such as relationships between people and places as a representative of a sense of place might be important or sometimes more important than built environment (English Heritage, 2009).

Place attachment and sense of people's self-esteem are supported by contribution of the historic environment towards a sense of continuity and a specific sense of place. However, the values that attached to the 'historic environment' by people will be changeable, various and will not definitely map onto those official bodies which are identifiable. Also the historic environment should be given rise to an experience of place that is less conscious, understanding as a place for daily lives of people. It seems that 'sense of place' as social networks and place attachment connected in a virtuous cycle (though there is conflict about which is more important and which comes first) (Graham et. al., 2009).

English Heritage as an agency is trying to find the importance of place. From the belief that is 'the historic environment can be renewed neighborhood by providing a solid basis for it and it has the potential to give strength to the sense of community' the 'Power of Place' is understood (English Heritage, 2000). Historic environment, heritage, history and Culture help people to know their environment and local culture and heritage form by active people and their sense of local identity is likely to be stronger (English Heritage, 2009).

Furthermore, the variety of architectural style can be observed from different decades that are set together, and giving the site the unique **identity** (Figure 2) in some historical urban environments. One can see that they refer to different cultures and societies. The uniqueness of the site made by people who were living there or still are living there, and it is relevant to the remarkable qualities of the site (Lynch, 1972, p.66).

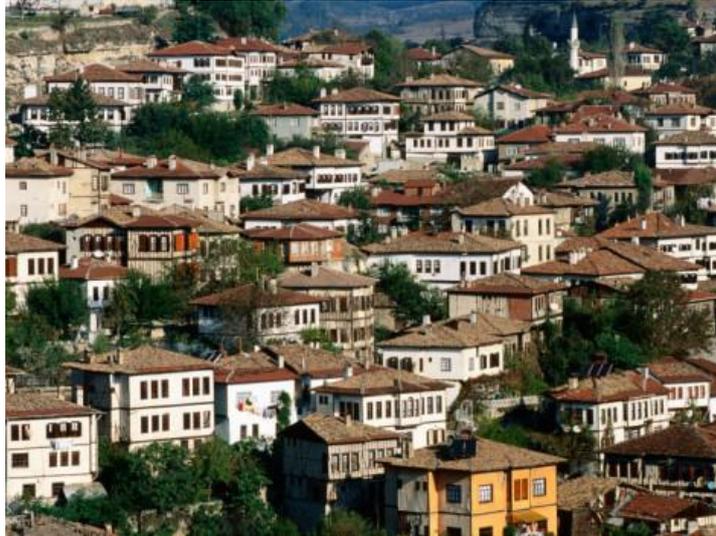


Figure 2: Safranbolu, in the Black Sea region of Turkey (URL 3)

Historic areas include multi applications, functions, historical identity and traditional characteristics. They involve individual local character, historic fabric and street pattern. Elements of historic environments are including the historic buildings and unique street patterns and urban forms/tissue, pedestrian- friendly streets and vibrant public spaces with mixture type of applications (Oktay, 2005).

“Lynch is identifying districts, as the relatively large city areas which the observer can mentally go inside of, and which have some common character. They can be recognized internally, and occasionally can be used as external reference”. Moreover, these characters are described by Lynch as “texture, space, form, use, activity, symbol, building type, detail, inhabitants, degree of maintenance and topography” (Lynch, 1972, p.67).

Although a good understanding about the historical environment should include the evaluation and interpretation of the present historical site in terms of its urban and

architectural characteristics which form out the urban identity and uniqueness of the settlement.

In fact, this environmental character indicates the identity and the uniqueness of the place that distinct it from the others, that is defined by “*the qualities of the things that form the place*” (Bilsel, 1989: 21).

2.4.2 Visual and Spatial Character

The relationship between interior and exterior, i.e. the reflection of interior space quality and on the facades displays on the building elevations as the primary element which describe the character of the place. The main variables forming the nature and character of the settlement are included mass asymmetry and rhythm of the facades, adjacency of the different façade configurations, vertical and horizontal connections between both the façade elements in it and the adjacent facades (Avrami et. al. 2000). These criteria will be discussed in detail in the following chapter.

Spatial and **visual** characteristics define the physical character of an urban environment. They can be defined as the main features which are contributed to the character and sense of place of an urban environment.

The spatial elements are defined by the space systems and street pattern, like organic or grid forms, In order to characterize urban quarter. Additionally, the placement and mass of buildings are given as determiner elements. Usually there is traditional street frontage and pattern in historic urban areas. Therefore, in order to maintain the visual continuity of the traditional pattern, it is important to consider the placement and the form of the buildings. In this context, the height of the neighboring buildings

is also an effective item to be considered. The desired qualities in all progression are as the following (Tiesdell, et. al., 2010):

- To consider the quarter's physical character.
- Character- each act of progression should bring something of its own, thereby, contributing new character.
- Natural design quality- building built now will provide the current zeitgeist in the future and argumentatively must to be worthy of conservation by future generations.

Some elements of spatial personality are **street pattern** which is organic/deformed grid or regular (orthogonal) grid, containing combination & meetings different grids. Three-dimensional mode of the building volume is **height & massing**. The effect of new progression should be considered from various points of view and angles. **Spatial contrast** is areas of different spatial character-single spatial character throughout the area or distinct areas with distinguishing spatial characters.

In these contexts, in the design of modern buildings, spatial and visual characters are important qualities and should be taken into consideration. The *visual elements* are different from spatial elements. They are referred to the material, color and texture of the buildings. In many historic regions, local material are applied which local nature and unity. Moreover, the visual character is also determined by scale, proportion and rhythm. The repetitive elements in the façade strongly emphasized the solid-void relationships in the façade. Other visual elements participate to the visual experience of the place and are details in the façade and application of different motifs (Tiesdell, et. al., 2010).

As mentioned before, **Scale** is one of the visual characters. It is exact dimension of objects, and it is also determined as understanding an object relevant to its other around objects. **Materials** also help to establish local distinction. A consistent application of local building materials can give a quarter strong sense of visual integrity. The relation between the different sections of a building and/or between each part and the whole is a kind of proportion. New buildings established context that may be harmoniously integrated when their proportions comply with those of present buildings. Some quarters are clearly integrated thorough repetition of a particular **architectural ‘style’**; others present great variety but are unified by common principal design patterns or motifs, which all are relevant to the architectural style. Also, **Vertical rhythm** is one of the visual characters. Traditional urban façades often can be organized in to the three elements (i.e. “base”, “middle” & “top”). Ground floor is often more richly ornamented; the middle is often more visually controlled, while the top and skyline are again more visually complicated. **Horizontal rhythm** can be stated as another character of visual characters. Rhythm can be defined as the arrangement and size of the constituent elements of a building’s façade (i.e. its windows or bays), which are repeated normally. Rhythm may come from the asymmetry of wall to window in a façade & the aspect of historic plot divisions or structure in the building façade (Tiesdell, et. al., 2010). Accordingly, the elements of visual character are collected in Table 2.

Table 2: Elements of Visual Character (Tiesdell et. al, 2010)

Materials	Use of local materials, color and texture for new construction help to form local distinctiveness.
Scale	Scale is perception of buildings in comparative with the other objects around it.
Architectural style, motifs	By repeating a particular architectural style, design patterns or motifs.
Proportion	It consider about relationship of any parts of building with each other or any part with the whole.
Vertical rhythm	Organization of traditional urban façade are based on three elements: “base” which is often more decorated, “middle” that is often more visually prevented and “top” is again more visually complex.
Horizontal rhythm	Rhythm comes from the proportion of wall to window and arrangement and size of the elements in a façade.

2.5 Infill Buildings in Historic Environment

Today, the architectural heritage is harmed not only by the classical reason of destruction like natural destructors, but also the increasing changes in socio-economical issues are another cause for deformation of the historic tissue (Riza, 2009).

Before going into more detail about the different design approaches for designing new architecture in historic environments, it is beneficial to give definition of the infill buildings.

2.5.1 Definition of Infill Buildings

The necessity for vitality of historical site is the adaptability of it to “changes”, i.e. to new technologies, new socio-economical standards and cultures of life. One actual aspect of change not only is introduction of the new buildings but also it is the reflection of changes in many cases on the architecture of the city. Hence, the quality of the new building and its relationship with the present site is the variable that defines whether the change is in the form of development of the present tissue, or it is the factor leads to the deterioration of the historical settlement and loss of identity (English Heritage, PPS5, 2012).

Moreover, the architecture compatibility describes a clear design word to be applied through the base, providing specific standards that should be observed in all aspects of exterior design. Compatible architecture is accomplished not only with buildings that are similar, but also through the application of common design forms, materials, details, site features, and streetscapes (NPG, 2001).

Infill is the new progression of vacant, abandoned, neglected, or underutilized land within built-up regions of present communities, where infrastructure is recently in place. Infill also includes redevelopment of lots in those areas (Figure 3). Redevelopment is explained as encompassing construction in previously developed areas, which may include the destruction of present structures and building new structures or the substantial renovation of the present structures that often change form and function (IDSPG, 2006).



Figure 3: The Sage Gateshead, Museum Central in London 2004 (URL 4)

Infill projects should improve the design and function of the present community. Infill involves many different forms and interpretations, but whether in an urban or a rural environment, appearance and function of infill should regard common principles to ensure that the project is beneficial for the present community (Gelendening et. al., 2001).

In the following section, principles of conservation with special emphasis on new buildings throughout history will be gain.

2.6 Principles of Conservation with Special Emphasis on New Buildings/Development throughout History

Until the beginning of the debates at the international platforms, protection of the historical areas was focused on the protection of a single monument. *Athens Charter* has initially introduced protection at the environmental scale, but focused around the monuments, neglecting the urban architectural aspects of the fabrics in 1931. But by taking into consideration their surroundings character, this meeting was the first meeting subjected the restricted new buildings (Erder, C. 1975: 277).

In the International Modern Architecture Congress (CIAM), it is declared “to make an election among the buildings and rest of the buildings with same value may be torn down” (Erder, C., 1975: 286).

This method actually is considered as the one revealing potential infill building plots. In this congress, another important point is the introduction of the historical durability as a concept to be taken into consideration both for new building operations and the protection studies.

As defined in *Athens Charter in 1931*, protection should be carried out for urban settlements with historical values, if they are located on the neighborhood of a single monument.

With the introduction of *Venice Charter* (Erder, C., 1975: 289) the concept of protection is expanded to urban settlements at the basis of single monument that including historical and cultural values without referring to a single monument. New building efforts are declared as the threatening progresses which destroying the homogeneity of the historical areas. However, the meaning of protection is not to leave historical settlements at their own situation after site protection processes. In that context, introduction of new buildings that reflect the functional and social need for the time is an unavoidable process for the vitality of the setting.

In the first ICOMOS symposium (*International Council on Monuments and Sites*) in 1967, keeping the vitality of the historical tissues is declared as the principal goal of the protection. Connecting the historical settings with observed modern city was for the first time. It is defined that these settlements that should be “*integral part of the*

urban and economic developments” (Horler, M., 1975: 10). Within the content of this ICOMOS first symposium, also the need for introducing some obligations for the “*new buildings in ancient settings*” is stated (Horler, 1975).

When we arrive the Brussels meeting in 1969, it was the first time that the term “*integrated conservation*” begun to be discussed in an international protection platform. After Brussels, in 1972, Budapest symposium (*International Documents Regarding the Preservation of Cultural and Natural Heritage*, edited by Madran, E., Özgönül, N., 1999: 105) may accept the first platform problem of “*new building in historical setting*” which is discussed in a detail. In this symposium, historical sites are described as the “*frameworks for the future developments of the city*”. Also, new buildings are described in terms of their material, mass properties with the emphasis of the contemporary material usage.

Kazimiers Dolny meeting (Inter. Doc., Edited by Madran, E., Özgönül., 1999: 138) carried out in 1974 that introduced necessity of the “*analysis investigating the spatial arrangements and relationships and scientific researches between society and architectural inheritance of the past*”.

In 1975, *European Architectural Heritage Year*, Council of Europe in Amsterdam set a congress (Inter. Doc., Edited by Madran, E., Özgönül., 1999: 159), it is put forward that new built buildings arbitrary are threats for the historical sites. The model “*integrated protection*” is referred to protection of the obtained historical tissues, considering the economical, social, and administrative and legislation features of the situation. Amsterdam Meeting may be stated as the first meeting in which investigations of urban protection were discussed both in terms of the

protection of the present historically built fabric and new buildings that is introduced.

In *Barcelona Meeting* in 1990 (Inter. Doc., Edited by Madran, E., Özgönül., 1999: 382), it is stated that planning, designing and usage of the new building investigations is the final stage of the integrated process of restoration and rehabilitation of the built heritage, within the planning workshop, designing and performance of the rehabilitation projects in historical settlements.

As a result, studies about protection were performed according to single monument that today is at the urban scale through considering the new building designs. Meetings carried out in all over the world describe the problem as an interdisciplinary study that is based on the analysis of the present context. So, with the idea of united protection, understanding the major aspects of the current setting, which presents its identity, can be regarded as a solution of our problem.

2.6.1 Articles Related with Infill Buildings in International Charters

In this section, articles related with new building in international charters are given in chronological order.

Several international charters have addressed different aspects on what to be protected in the built environment. For example, the Venice charter (1964) emphasized that special care must be given to the monuments' sites in order to protect their integrity. It also includes broad description of 'historic monument' including the urban or rural setting in which it is found, consisting more modest past work (ICOMOS, 1964). Furthermore, the Amsterdam Declaration (1975) specified

that the architectural heritage establishes not only individual buildings of exceptional quality but also the historic or cultural importance of urban areas (Negussie, 2004).

The *Venice Charter* has represented a set of leader principles for the protection of historic monuments and sites, because of its adoption in 1964 at Second International Congress of Architects and Technicians of Historic Monuments. That meeting expanded and further enhanced those concepts set forth in the Athens Charter of 1931 which effectively had led to the progression of major institutions for international action in the cultural field (Arch 593, lecture notes).

Protection of a monument suggests preserving a setting which is not outside of scale according to Article 6 of charter. Wherever the traditional setting exists, it must be kept. No new construction, demolition or improvement which would change the relations of mass and color must be permitted. Historic monuments /buildings should be considered as a part of setting, so the demolition, new construction and rehabilitations should not change, damage, destroy the relations of mass and color (Erder, 1977).

Article 12 of the charter declared that replacements of lost parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not alter the artistic or historic evidence. This article repeats with some more features, the principles set out in article 9 with considering the additions of the original structure. However, this article has been frequently applied and criticized since the Venice Charter was passed (URL 18).

In Article 13 it is underlined that additions cannot be permitted except so far as they do not reduce from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings (URL 18).

After Venice charter, *European Charter of the Architectural Heritage (Amsterdam Declaration)* (1975) which recognizes that Europe's unique architecture is the common heritage of all her peoples was set up the following principles that are related with the new buildings in historic areas.

Since these treasures are the common possession of all Europe people, they have a common responsibility to protect them against the growing dangers by which they are threatened - neglect and decay, deliberate destruction, incongruous new building and excessive traffic.

Since the modern buildings will be the heritage of tomorrow, every effort must be made to ensure that contemporary architecture is of a high quality.

After this meeting in 1975, The General Conference of the United Nations Educational, Cultural and Scientific Organization, Nairobi meeting at its nineteenth session, from 26 October to 30 November 1976 (*Suggestion Concerning the protecting and Contemporary Role of historic sites 1976*) was established. Considering this meeting, historic sites are part of the human daily environment everywhere, that they represent the living presence of the past which formed them, that they present the variety in life's background which is need to match society diversity, and that by doing they gain in value and obtain an additional human dimension (Arch 593, lecture notes).

Because of modernization, perhaps historic areas in the world are damaged, renewed or destroyed. This is emphasized in the congress as follows:

Where protection plans exist urban progression or slum clearance programs including the demolition of buildings of no architectural or historic profit and which are structurally too wrong to be maintained, the removal of progression and additional storeys of no value, and sometimes even the demolition of recent buildings which break the unity of the region, only may be authorized in compatibility with the plan.

Particular care should be taken to regulations for control new buildings in order to ensure that their architecture conforms harmoniously to the spatial organization and setting of the historic building groups (URL 16).

To this end, the urban context analysis should precede any new construction not only in order to define the general character of building groups but also to analyze its dominant specifications, e. g. the harmony of colors, heights, forms and materials, is constants in the way by which the facades and roofs are built, the relationship between the volume of buildings and the spatial volume, as well as their average harmony and their position.

The size of the lots should be considered particularly, since there is a risk that any reorganization of the lots may lead to a change of mass which could be harmful to the harmony of whole.

Other international meeting was *Convention for the Protection of the Architectural Heritage of Europe - Explanatory Report - [1985] COETSER 4* (3 October 1985). In this charter, Article 4 explains that, the legal arrangements are applicable to the protected heritage. These arrangements establish the general principle that protected properties must not be deformed, dilapidated or destroyed. , regardless of the qualified authority and legal framework in which they are applied, they are provided for a system of prior authorization for the various types of work which is liable to affect the architectural heritage.

Such work includes:

- Proposals for changing or demolishing conserved monuments or monuments toward which protection procedures have been organized and plans which affect the immediate environment (paragraphs 2.a and b) or region in sight of same monuments;
- Proposals for demolition work, the construction of new buildings or major changes that could adversely impact a group of buildings or a site (paragraph 2.b).

The essential aim of these regulations is to ensure that effective work on protected properties is monitored and thereby to prevent deliberate deformation and destruction and, of course, demolition incompatible with the taken protection measures. Under these arrangements, the qualified authority focuses on responsibility for assessing which schemes and changes are acceptable (Arch 593, lecture notes).

As it can be obtained from above literature, throughout these international meetings some criteria such as size, height, etc. need to be considered for designing new buildings. These criteria are explained in detail in the following section.

2.7 Review on Contextual Design

The historic environment can, in fact, accommodate a rich variety of interpretations and expressions. A vernacular or traditional response may be as valid as a more contemporary response. It is the quality of the relationship between old and new that is critical, not the architectural language per se. Issues such as scale, form, siting, materials, color, and detailing are important to consider when assessing the impact of a new development within a cherished historic town, city, or site. These criteria are examples of those typically considered when assessing the impact of new development in a historic context (PPS5, 2012).

Most successful new buildings designed in a valued historic context inevitably rely on an understanding of, and then response to, the spatial/visual character and qualities of the context. As with any conservation work, understanding significance of the place is crucial.

Brolin (1980), stated that new building design in historic context can be similar to or different from the surrounding building only by considering the following criteria:

- Keeping distance from the street,
- Spacing from adjacent buildings,
- Massing: how the main masses of the building are composed.
- Approximate height,

- Facade symmetry and directionality,
- Shape and outline,
- Window and door locations,
- Window and door size and asymmetry,
- Material, scale and colour.

As his discussion can be followed, to obtain harmonious design within the context, above mentioned criteria is necessary to respect in the design.

Similarly, Sotoudeh (2011) supports Brodin's idea to obtain contextual design and congruency in the area and listed similar instructions. He underlined that adjacent buildings' characters must be in harmony. The following criteria are listed by Sotoudeh that will make a new design congruent, harmonious with its neighbouring or its urban context:

- Height, mass, surface covered, scale and symmetry, materials and colours to more minute aspects like details, reliefs and decorations.

There are some guidelines to protect from sense of place in historic environment that Preservation Alliance (2007) mentioned in the issue entitled with "*Sense of Place: Design Guidelines for New Construction in Historic*". Therefore by following these guideline all new designs in historic areas can be compatible when they respect: color, material, scale, size and character of the assets. To achieve main purpose of compatible design, the following list of design criteria can be helpful.

Height: Height consider about the consistency of new buildings with their neighbors' rooflines, the existing height of the neighborhood or closest block, stepping back from current cornice lines and roof.

Street line: Street line concern about the relationship to the street or characteristic of the district and the continuity of the building walls.

Facade composition: It is maintaining facade composition which is divided into three parts; base, middle and top, and vertical orientation to the facade. It may provide a sufficient percentage of opening especially at the first floor. Also facade composition define the top edge of building by some articulation such as cornice line. Additionally it is about a percent of the facade, fenestration patterns and proportions that is compatible with the district.

Rhythm / Pedestrian experience: Rhythm include architectural elements in facade which divided it into intervals to maintaining a pedestrian friendly scale. It also uses the elements that is harmonious with the existing rhythm of the block such as windows and doors.

Materials and details: Material concern about using of materials that is the same as is used in the district with the same color. Furthermore, it consider about three-dimensional character and "human scale" of buildings by using of materials to create details and small scale elements (Preservation Alliance, 2007, p.22).

Groat (1988) in his publication explained three basic criteria to achieve the success in modern building designs. These are site organization, bulk and facade design. He

attempted to enhance a scaling system for analysing how much the new designs are in harmony with the context. According to this 1-7 scaling method, the maximum values given to Replication/Pastiche whereas the minimum values indicate Contrast method. Accordingly, 25 samples of building were provided to both professional and non-professional sectors. The findings were quite similar among them; with the examples with high replication points chosen as including the most intense relationship and the samples with the top contrast points located below the list as by the contributors. No matter how unsatisfied the theorists are due to the result of the research/survey, replication appears as the preferential design direction.

Rıza (2009) also in her master thesis studied different design approaches for the new building in historical neighbourhoods. She studied contextual harmony by taking Spatial Qualities (sitting and mass) and Visual Qualities (scale, proportion, Rhythm and material) into consideration through a continuum composed of Uniformity, Continuity, Juxtaposition and Non-contextual approaches.

As all sources have more or less same design criteria, Tiesdell et. al(2003), in their publication 'Design in Historic Urban Quarters' referring the Cantacuzino (1989)s' criteria for achieving harmonious design within the historic context.

1) *Sitting*: Sitting concern about the occupation of the building to its site and the relation of it with street or other spaces and other buildings. It is an important issue which helps harmonious integration is respect for existing plot sizes or patterns. Also it is important respect for street frontage and existing building line to assure the continuity of external space and its definition.

2) *Massing*: Three-dimensional character of the building mass is massing. Therefore it is important to consider about the new development impact from different point of view. So the volume of development should be controlled on a particular site or plot ratios.

3) *Scale*: Scale concerns dimensions of buildings and perception of it relative to the objects around it. Also scale consider about building's dimensions relative to something of its setting and the dimensions relative to a human being.

4) *Proportion*: Proportion Consider about the relation between, for example, the different parts of a building, and between any part and the whole. This technique helps to focus on the rhythms of solid-to-void along the street by removing the extraneous details. It may relate to the arrangement of the windows openings in relation to the elements of solid walls. If new buildings proportions complementary with established contexts they could be more harmoniously integrated with those of existing buildings.

5) *Rhythm*: Organization and size of the component of a building's façade that is usually repeated is rhythm. In a façade the proportion of wall to window and emphasis of the fenestration are particular significance for rhythm. The other significances for rhythm are the emphasis of fenestration by vertical and horizontal elements and the statement of the structure which is in the building façade.

6) *Materials*: Material helps to establish a significant local distinctiveness by manifesting the color and leading a various range of vernacular building traditions

and materials. Use of local building material for new development/buildings gives a strong sense of unity to cities (Tiesdel, et. al. 2003).

Based on literature, the basic criteria which help to achieve contextual design in historic environment are collected in Table 3.

In the following section different design approaches that can be used for designing new buildings will be presented.

2.8 Different Design Approaches for Infill Buildings

In the following lines different design approaches developed by different authors will be highlighted.

Michael Davies (2003) highlighted that new design in historic environments can be done with more than one approach. He explained these approaches into five categories.

The ‘Pastiche’ Approach

By copying the present order and facade organisation, the harmony can be obtained in this design (Davies, 2003). Davies gave an sample of an office building in Richmond (Figure 4), describes how the modern office building can be covered by copying façade.



Figure 4: Richmond Riverside Development by Erith & Terry (Davies, 2003)

The ‘Traditional’ Approach

According to Davies (2003) this method is the most preferred one like Pastiche method. This method, found under the title of modern vernacular, that takes the specifications of the past and uses them in contemporary times.

The ‘Arrogant’ Approach

This method is very self-confident and does not give any regard to the historic setting. Since it is not regarding to the context, most talented designer may have difficulties with the application of this method, because the finding cannot be contextual at all (Figure 5).



Figure 5: Cathedral Library extension, Hereford, by Whifield Partners (Davies, 2003)

The 'Modern' Approach

Design is modern and indicates its own construction era. This method also takes inspiration from the past and respectful of its ancient context. It is one of the methods that can be accepted as the ideal method among others (Figure 6).



Figure 6: Visitor Centre, Caerphilly Castle, by Davies Sutton

Beside Davies, Seteven W. Semes in his publication '*Differentiated and Compatible: Four Strategies for Additions to Historic Settings*' and Preservation Alliance (2007) explains four different design methods for infill/ new designs in historic sites. They explain them as follow:

Literal Replication: This method is transposition of Pastiche method, that attempts to copy the physical specifications/details of the surrounding buildings as much as possible and attempts to have differences at minimum degree.

Invention Within A Style: In this method, designer attempts to add new elements to the character. In other words, they aim to apply similar specifications without copying the surrounding character, to protect the conformability within urban context. In order to obtain conformability, sometimes, little differentiations are assessed positively within the context (Figure 7).



Figure 7: Formerly Pepsico Building (Skidmore, Owings & Merrill, 1960) with office tower addition (right) by James Stewart Polshek and Partners, 1985

Abstract Reference: This strategy attempts to make reference to the historic environment and omite replication or working with historic style. By this way, it is possible to create distinction and compatibility in the context. It is a difficult to deal with this method, because it needs an artistry and skill that are not often accessible.

The abstract source of ancient architecture is modernist innovation in which the harmony of the new and old is suggested by the deduction of composite form to abstract form. A more lates sample of abstract reference in a historic setting is the Seamen's Church Institute, an infill building in the South Street Seaport Historic District in New York which was designed by James Stewart Polshek and Partners (Figure 8). The new building's brick and metal facade conformable with the massing of the adjacent 19th-century ancient structures, but its pipe railings and uncovered steel connections indicates early modern maritime design.



Figure 8: Seamen's Church Institute, South Street Seaport Historic District, New York, NY. James Stewart Polshek and Partners, 1992

Intentional Opposition: This is conscious approach that may opposite to the context. On one hand, it may change the contextual character of the region and on the other hand, it can obtain unity , using independent ideas.

After review about visual and spatial characters (Tiesdell et. al, 2010), the basic design criteria which help to achieve contextual design in historic environments are determined and collected in Table 3.

Table 3: Design Criteria for Achieving Contextual Harmony
(Adopted from Tiesdell, 2003 & Brolin, 1980)

Contextual/Compatible●		Non- Contextual/Incompatible○
Design Criteria		Non- Contextual/Incompatible○
Spatial Characters	Massing	Three-dimensional character of the building mass is massing.
	Sitting	Concern about the occupation of the building to its site and the relation of it with street or other spaces and other buildings.
	Height	Consider about the consistency of new buildings with their neighbors' rooflines, the existing height of the neighborhood
Visual Characters	Set back	Respect to the set back of buildings from the street
	Orientation	Consider about the respect of the entrance of buildings with its neighboring buildings
	Rhythm	Organization and size of the component of a building's façade that is usually repeated
	Proportion	Consider about the relation between, for example, the different parts of a building, and between any part and the whole.
	Material & Color	Material helps to establish a significant local distinctiveness by manifesting the color and leading a various range of vernacular building traditions and materials.
	Scale	Concerns dimensions of buildings and perception of it relative to the objects around it.

2.9 Contextual/Non-Contextual Approach

New work may be valued in the future and now if it desires to a quality of design and performance which is related to its setting. Responsibility to past, present and future generations are important aspects in shaping the built environment. Therefore, infill architecture should be as a linkage of the past with the present and the future in historic environment. Around forty years ago "contextualism" discussed in the architectural literature as a repetitive subject also consciousness of the need of

compatible design in terms of increasing awareness of historic preservation. Therefore the fitness between new and old architecture among historians, architects, theorists and city planners became wildly discussed. One aspect that generally taken to the signify continuity between a building and its surroundings is conceptuality in architecture. Within architecture, as well as the relationship of a building to its site, a building in its context includes special relationship with its specific neighbor. Infact, the need to have sensitive contemporary architecture to its context is the concept of contextualism. Brolin (1980) stated in his book "Architecture in Context: Fitting New Buildings with Old" it is important that new constructed buildings respect to the criteria such as setback, height, material, scale and details of surrounding older buildings. Tyler mentioned that "When designing an addition to a historic building, or even a new building in a historic district, an architect or designer should look carefully at the question of contextualism". Thus, with this definition the main aspect of contextualism is the issue of fittingness and compatibility (Sotoudeh et. al. 2013).

2.9.1 Contextual Harmony

New buildings should be recognizable as being of their period of construction; however, they should not be so differentiated that they deduct from – or visually compete with their historic neighbors. Within historic sectors, compatibility is more important than distinguish (Figure 9). Since the district is the resource, it is allowed to reconstruct the buildings that existed within the district during significance period. New buildings should be identified via signage or other interpretative means in order to relate them to the context of the district's historic significance. Style is disappointed from being the primary indicator of differentiation. Means of

differentiation may involve materials, mechanical systems, construction techniques, and signage (Historic Preservation League of Oregon, 2011).



Figure 9: Historic City Center in Munich (URL 4)

The policy of compatible design is what most modernist architects apply. This method typically results to extend formal elements such materials, patterns, and building heights of the present building into new work. The major criticism of this policy is that too much visual coherence for its own purpose limits design innovation, creating a false impression of what is the generally agreed way of designing within (Ames & Wagner, 2009).

2.9.1.1 Contextual Uniformity

The approach of the contextual uniformity considers the environment within the context of its history and responds to the history tissue by copying or emulating the architectural elements of the surrounding (Figure 10). Similar physical elements like the historical model are repeated. Baytin is also explaining this method similar as ‘stylistic uniformity’ method (Baytin, 2000, p.58).



Figure 10: Reachmond Riverside, London (URL 4)

In this method the architectural character of the historical sites is simply copied. Any new or contemporary things are not added to the new design. Here, the main concern is the durability of the present local character. This can be obtained within the imitation of a sites visual and spatial character. In addition, the imitation can be restricted on one of these qualities (Carmona et. al., 2003, p.154).

2.9.1.2 Contextual Continuity

Protection - and the accompanying concern for the uniqueness of sites and their history – was instrumental in the assessment of the contemporary concept of urban design. Many current methods to urban design try to respond to the present sense of place, emphasizing 'continuity with', rather than a 'break from', the past. In a world of quick change, visual and visible evidence of the past is valued for the sense of place and durability it conveys. Particular value is considered on the sense of place and the relative stability of its character and identity (Figure 11).



Figure 11: Example of Historic Context in Munich

There are alternative viewpoints to the physical continuity of places. Lynch (1984, p. 451), for example, notes the necessity that joins change with growth:

The failure to respond to alter not only makes it impossible to show reaction to the inevitable flow of events but it is also a failure to improve. Old buildings are generally disused buildings: old habits are compressive. The initial costs and recurring protection cost of permanent things far outweigh the resources needed to substitute them periodically with new materials. Cities should built light, temporary structures, so that people can easily change them according to change of their lives.

As well as a scorn for much of the built heritage of the past, Modernists accepted ideas about the 'instability' of buildings - ideas which were based on the potential of industrial production. Such viewpoints are antithetical both to architecture's traditional construction and place-defining qualities, and to consider the environmental sustainability. Taken to extremes, however, protection and maintenance can obstruct and even halt a city's evolution and progression. Emphasizing the necessity of conformability, Lynch (1972, p. 39) discussed those environments those could not be changed 'invited their own destruction':

We prefer a world that can be improved progressively against a background of valued remains, a world in which one can leave a personal mark beside the marks of history . . . The management of change and the active use of remains for present and future aims are preferable to an inflexible reverence for a sacrosanct past.

To maintain the capacity for change, the need is for environments which are able for evolution: those that can welcome the future and adjust the present without severing the thread of durability with the past. In order to work within established contexts, urban designers need to understand how environments adapt to change and, more importantly, why some adapt better than others. It is also important to distinguish what is fundamental to the sense of site, and should remain, from what is less important and can change. The visual and physical continuity of valued places relates to issues of the 'obsolescence' of buildings and environments, the time frames of change, and the 'robustness' and 'resilience' of the built fabric and other physical attributes of that place (Tiesdel, et. al. 2003).

2.9.1.3 Contextual Juxtaposition

Integration which sometimes slightly called 'fitting in' does not need to have any attachment to an architectural style. The only dimension of fitting in is stylistic dimension. Too much emphasis on visual criteria cause negates the opportunity of excitement and innovation (Figure 12) (Carmona et. al., 2003, p.154).



Figure 12: MOntral Museum Fine Art, 2010 (URL 4)

Most successful groups of buildings have dramatically different styles and materials (e.g. those around the Piazza San Marco, Venice (Figure 13). It is defined that there are three basic approaches which have continuum need to create harmony with the existing settings. Thus each of these three approaches gives a different design philosophy (Carmona et. al., 2003, p.154).

At one extreme, stylistic uniformity includes imitating the local architectural character and in the process, possibly reducing the qualities desired to be maintained. At the other extreme, juxtaposition or contrast includes new designs, making few advantages to the present architectural character. While this can create vibrant and successful contrast, the method is eminently capable of 'a dangerous result in the form of proud exhibitionism' (Carmona et. al., 2003, p.154).



Figure 13: Venice, Piazza, San Marco, Italy (URL 4)

It should be consider about the quality of the old surrounding when more contextualist approach is suitable. These qualities are: the extent, the worth/quality, the consistency/homogeneity, the uniqueness/ rarity, the proximity. It is not important that a building harmonizes with its context or not, however it is a matter of people arbitration. Nevertheless, certain principles apply that enable new buildings to harmonize better with the present context, while variety has particular value in the creation of visually interesting street scenes (Tiesdel, et. al. 2003).

2.9.2 Non-Contextual Approach

Whenever, infill architecture/addition to the historic context does not look carefully at the question of the contextualism it cause to achieve nun contextual approach. One aspect of nun contextual approach is free design approaches.

2.9.2.1 Free Design Approach

Versus to the contextual approach for new building design in historic environment, there is another approach which is named non-contextual approach. Tiesdell defined this design approach as free design approach. Also, the other name for this approach is “freestyle” philosophy (Figure 14). This design approach through ignoring the historic context furthermore this approach does not consider about value of the historic environment, other buildings and the places (Tiesdell et al. 1996).



Figure 14: Royal Ontario Museum Canada, Addition in 2007 Liebeskind (URL 4)

2.10 Cases from Different Contexts

Different new building cases from different cities are going to be evaluated by using the before mentioned criteria (see Table 3) and also same criteria will be used for Nicosia cases later in the case study chapter.

These case buildings are selected due to their infill characters and being public building. Also, some of the buildings, such as Dancing House, Carre d'Art and Citroen are accepted as successful projects, therefore they are selected as the case study. Graz as being one of the important iconic (new) building and Haas House due to being corner building and located in front of the church are selected. Beside and in order to test the applicability of selected design criteria; buildings that are constructed with different approaches are selected.

The ones that are placed in the middle of the squares such as Louvre Museum in Paris and Pompidou also in Paris did not selected as case building because they are freely standing in the context without having attached historic buildings around them.

Accordingly the case buildings are determined as, Dancing House in Prague, Graz building in Austria, Carre d'Art in France, Haas House in Vienna and Citroen C42 in Paris.

2.10.1 Dancing House, Prague

The Dancing House in downtown Prague is the ordinary name for the “Nationale-Nederlanden Building” (Figure 15). Frank Gehry in 1992 with Czech architect designed the building that somehow put one in mind of the famous Hollywood

dancers Fred Astari and Ginger Rodgers. Dancing House with its sculpture form is one of the Gehry's designs with most aesthetically determined structure (URL 5).



Figure 15: Dancing House (URL 6)

According to the criteria which mentioned before it is decided to analyze compatibility of this building with its context (Table 4).

As a result of analysis the volume of Dancing House is the same as other buildings in the context, also in terms of scale; the building is in same scale with its neighbors. It respects to other buildings setback from one side. Regarding to the rhythm on the façade, Dancing House is also following the same rhythm with neighboring building. The only difference is that windows have projections toward outside. The designer wanted to introduce new idea here also by using different material he wanted to make contrast with environment. He used new materials such as steel and glass on the corner part of the building. In addition Dancing House respects to the existing patterns and the entrance of the building is taken from the same direction as other buildings have.

According to this evaluation, 9/10 criteria are found compatible with the context and accordingly the design approach of the building is obtained as Contextual Juxtaposition.

Table 4: Dancing House Analysis

Analysis of Compatibility of Dancing House			Map/Picture
Design Criteria	Contextual/compatible● Non-contextual/incompatible○	Result of the analyze	
Massing	●	The volume of this building is the same as others	
Sitting	●	It respects to the existing pattern and block sizes.	
Height	●	The height of the building respects to its neighbors	
Set back	○	This criteria is respected to other building setback from one side but from the other side it does not respect to its neighboring buildings.	
Orientation	●	The entrance of the building is taken from the same direction which other building also have	
Rhythm	●	The opening on the facade is following the same rhythm with neighbouring buildings.	
Proportion	●	in relation with whole context	
Material	○	No harmony with context	
Color	●	same color	
Scale	●	In terms of scale, the building is in same scale with its neighbors.	
<p>Summary: 9/10 criteria found compatible with the context therefore the building has contextual juxtaposition</p>			

2.10.2 Graz, Austria

In 2003, Peter Cook and Colin Fournier were asked to design a building in Austria for European Capital celebrations which is named Graz (Figure 16). The program that are exhibited in this building specialized in art from last four decades (URL. 7)



Figure 16: Graz Building, Austria (URL 8)

The same as Dancing House it is decided to analyze the compatibility of Graz building with its context according to the mentioned criteria (Table 5).

In terms of scale; the building is out of scale with its neighbor and it does not respect to the volume of existing buildings, existing patterns and block size. Moreover, Graz building does not have any relation with whole context according to the proportion and the window openings are not arranged in the same manner with the surrounding buildings. The height of the building has consistency with adjacent roofline; also it is respected to other neighboring buildings setback. According to the orientation, the entrance of the building is taken from the direction which other building also have. Graz building is made of “iridescent blue panels” however; surrounding buildings are stone and RC buildings so it has no harmony with its historic context.

Since 3/10 criteria are found as compatible for Graz building, this shows that, its design approach is “Free Design” approach which ignores the context.

Table 5: Graz Building Analysis

Analysis of Compatibility of Graz Building in Austria			Map/Picture
Design Criteria	Contextual/compatible● Non-contextual/incompatible○	Result of the analyze	
Massing	○	According to the volume of the other building it does not respect to its surrounding	
Sitting	○	It does not respect to the existing pattern and block size	
Height	●	the height of the building respects to its neighbors	
Set back	●	This criteria is respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	○	The opening on the facade is not following the same rhythm with neighbouring buildings	
Proportion	○	no relation with whole context	
Material	○	No harmony with context it is iridescent acrylic panels	
Color	○	Different color (blue) from other buildings	
Scale	○	In terms of scale, the building is out of scale with its neighbor	
Summary: 3/10 criteria found compatible with the context therefore the building has free design.			

2.10.3 Carre d'Art, France

The Carre d'art (Figure 17) at Nimes, France, designed by Norman Foster in 1984-1993, is the city's library and a museum of contemporary art. The building shows how it not only links ancient to the modern architecture but also can reinvigorate the physical and social fabric of a city (URL. 10).



Figure 17: Carre d'Art, France (URL. 10)

Compatibility of this building is analyzed according to the design criteria which mentioned before (Table 6).

In terms of scale Carra d'Art building has same scale with its neighbor. Regarding to the rhythm on the façade, this building is also following the same rhythm with neighboring buildings. Moreover, the building respects to the existing pattern/block size and the entrance of the building is taken from the same direction as other buildings have. Also, it respects to the other buildings setback. The designer use different material such as glass and steel which creates contrast according to the color of the building with its neighboring buildings. Additionally Carra d'Art building is in relation with whole context according to the proportion and the volume of it is the same as other buildings in the context. According to this evaluation most of criteria are found compatible with the context and its' design approach defined as "Contrast and/or Contextual Juxtaposition" approach.

Table 6: Carre d'art Analysis

Analysis of compatibility of Carre d'art in France				
Design Criteria	Contextual/compatible●	Result of the analyze	Map/Picture	
	Non-contextual/incompatible○			
Massing	●	The volume of this building is the same as others		
Sitting	●	It respects to the existing pattern and block size		
Height	●	the height of the building respects to its neighbors		
Set back	○	This criteria is respected to other building setback from one side but from the other side it does not respect to its neighboring buildings.		
Orientation	●	The entrance of the building is taken from the direction which other building also have		
Rhythm	●	The opening on the facade is following the same rhythm with neighbouring buildings.		
Proportion	●	in relation with whole context		
Material	○	No harmony with context, constructed of glass, concrete and steel		
Color	○	Different color (white) from other buildings		
Scale	●	In terms of scale, the building is in scale with its neighbors.		
Summary: 8/10 criteria found compatible with the context therefore the building has contextual juxtaposition approach.				

2.10.4 Haas House, Vienna

The Haas House, 1987-1990, designed by Hans Hollein in the postmodernist style, in Vienna and it was completed in 1990 (Figure 18). It is using as retail and restaurant (URL. 11).



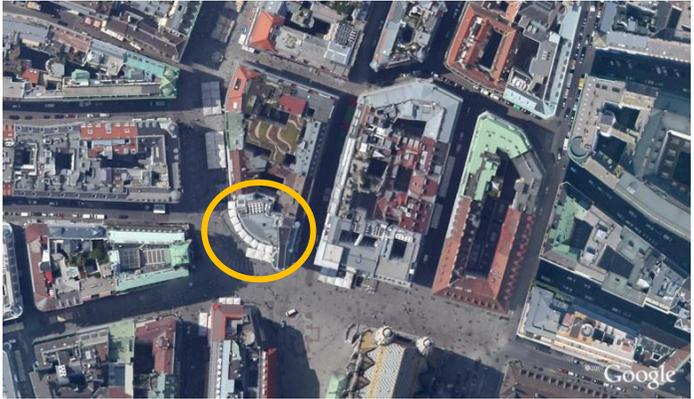
Figure 18: Haas House, Vienna (URL 12)

According to the criteria which mentioned before it is decided to analyze compatibility of this building with its context (Table 7).

As a result of analysis the Haas House is in scale with its neighboring buildings but the volume of the building is different from other buildings in the context. Height of the building has consistency with adjacent roofline, also it respects to other neighboring buildings setback. According to the orientation, the entrance of the building is taken from same direction as others have. Haas House's façade is made from stone and glass which cause reflect image of the St. Stephens's Cathedral in the façade of this building and it is popular motif. The proportion of the openings is following the same proportion and rhythm is also in line with the surrounding buildings. Due to the material and color, Haas building is made from glass and aluminum therefore it is not compatible with the surrounding.

Since 5/10 of the criteria are found incompatible with the context, the design approach of this building is determined as Contrasting Approach.

Table 7: Haas House Analysis

Analysis of compatibility of Haas House in Vienna			
Design Criteria	Contextual/compatible●	Result of the analyze	Map/Picture
	Non-contextual/incompatible○		
Massing	○	According to the volume of the other building it does not respect to its surrounding	 
Sitting	○	It does not respect to the existing pattern	
Height	●	the height of the building respects to its neighbors	
Set back	●	This criteria is respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	●	The opening on the facade is following the same rhythm in most part with the neighbouring buildings	
Proportion	○	no relation with whole context	
Material	○	No harmony with context, constructed of glass and stone	
Color	○	Different color (gray) from other buildings	
Scale	●	In terms of scale, the building is in scale with its neighbors.	
Summary: 5/10 criteria found compatible with the context therefore the building has contrasting approach.			

2.10.5 Citroen C42, Paris

The design for the new Citroen showroom, C42-C for Citroen, 42 for the building number- was submitted by Manuelle Gautrand in a competition in 2003 (Figure 19).

It is located in Paris as a newest landmark and it was finished in 2007 (URL. 13).

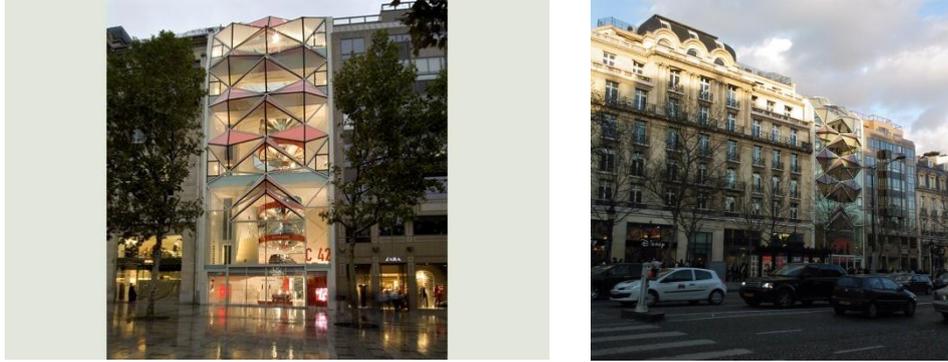
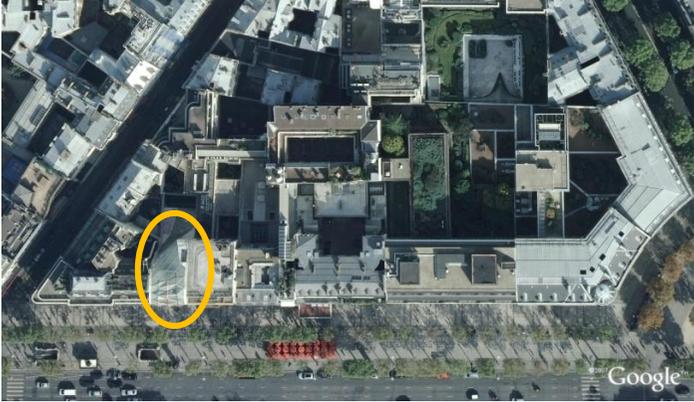


Figure 19: Citroen 42, Paris (URL 14)

Also compatibility of this building will be analyzed according to the design criteria which mentioned before (Table 8).

Citroen C42'façade is made from striking glass and latticework steel. At night by using some electrical techniques the C42 is recognizable with shades of white and red. So it is not in harmony with its context because of using different materials and colors. Moreover, proportion and vertical and horizontal emphasis of the fenestration in the façade is not following the same rhythm with existing buildings in the context. Regarding to the sitting criteria, it respect to the existing pattern and block size but it is in scale with its neighbor. This building also respect to the neighbor building's height and setback. Furthermore, the entrance of the building is taken from the same direction which other buildings. Accordingly, by having 6/10 compatible criteria, the design approach is Contextual Juxtaposition for this building.

Table 8: Citroen C42 Analysis

Analysis of compatibility of Citroen C42 in Paris			
Design Criteria	Contextual/compatible●	Result of the analyze	Map/Picture
	Non-contextual/incompatible○		
Massing	●	The volume of this building is the same as others	 
Sitting	●	It respects to the existing pattern and block size	
Height	●	the height of the building respects to its neighbors	
Set back	●	This criteria is respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	○	The opening on the facade is not following the same rhythm with neighbouring buildings	
Proportion	○	No relation with whole context	
Material	○	No harmony with context, made of striking glass and steel	
Color	○	Different color (red) from other buildings	
Scale	●	In terms of scale, the building is in scale with its neighbors.	
Summary: 6/10 criteria found compatible with the context so the building has contextual juxtaposition.			

2.11 Summary of the Chapter

The historic environment as a natural world all around us contributes to our sense of local community identity and provides tangible link to our past. The historic environments are the mirror of the social, economic and architectural features of the cities. According to the changes in lifestyle, technology and economic standards historic environment start to have changes. Therefore in this chapter, it is tried to review on literatures to find out the importance and values of historic environment, principles of conservation of the historical areas also by reviewing on articles related with infill buildings, ten criteria which include massing, scale, height, setback, orientation, proportion, rhythm, sitting, material and color for compatible design are collected in a table and four approaches for new building design in historic environment gained.

These criteria and approaches which explained in the chapter should be considered for compatibility of new development in historic areas. Due to the infill characters and being public building some cases buildings from different context are selected to be evaluated by using the mentioned criteria. So, analysis of example buildings are helped to make new building design approach more clear and provided a base for further analysis in the next chapter for case study.

In the following chapter compatibility of infill buildings in Walled City of Nicosia will be evaluated by using the result of this chapter.

Chapter3

CASE STUDY: Evaluation the Compatibility of Infill

Buildings in Walled City of Nicosia

3.1 Methodology of the Analysis

There are some criteria for achieving compatibility of new design in historic environment. Therefore, respect to those criteria can help to achieve compatibility of new architecture with its historic context. The previously mentioned 10 criteria; scale, setback, orientation, proportion, rhythm, material, color, massing, height and sitting are going to analyzed on the newly constructed buildings in Walled City of Nicosia.

By using site survey, photographs, map of the city and observations methods and tools data are collected for the case study. As explained in the limitation (section 1.5) part of the thesis, new buildings that were constructed last 10 years are asked Antiquities Department and then four new buildings in the Walled City of the Nicosia are obtained. Accordingly, Yakindogu Bank, Hukuk Burosu Law-Office, Isik Kitabevi and Mahmut Pasa Multi-Storey Car Parking and Office Building are selected as case buildings.

3.2 History Development of Walled City of Nicosia

Nicosia is located in the center of the Cyprus. It was built in 280 BC on the ancient city of the Ledra (Fasli, 2003). The Walled City of Nicosia with its eleven bastions

was built during the Venetian period (1489-1571) in 1571 on the island of the Cyprus, the city was captured by the Ottomans and during the 300 years of Ottoman rule, the urban structure of the city has been converted to a typical Turkish city. For over nine centuries, Nicosia was the capital of Cyprus in some senses due to its central location (Figure 20). Therefore, it was the center of population, employment and services which made it unique in comparison with all other towns of that era (Doratli, Onal, Fasli, 2004).



Figure 20: Cyprus Map (URL 15)

Between 1192 and 1489, Lusignan period, has presented articulated structure which consisting of loggias and government places, cathedrals, archbishopric places, churches and various types of courtyard houses. Between 1489 and 1571, Venetian period, a perfect circular city wall constructed. It was built to give Nicosia immediate defense.

Ottomans, in 1571-1878, after Venetians ruled the Island therefore, city pattern changed according to the Ottoman's architectural and urban characteristics. In that

period, street was defined by the grand walls and the building blocks (Figure 21). East to West axis in Nicosia invented in Venetian period but the Ottomans implemented it by unifying infrastructures for the city.

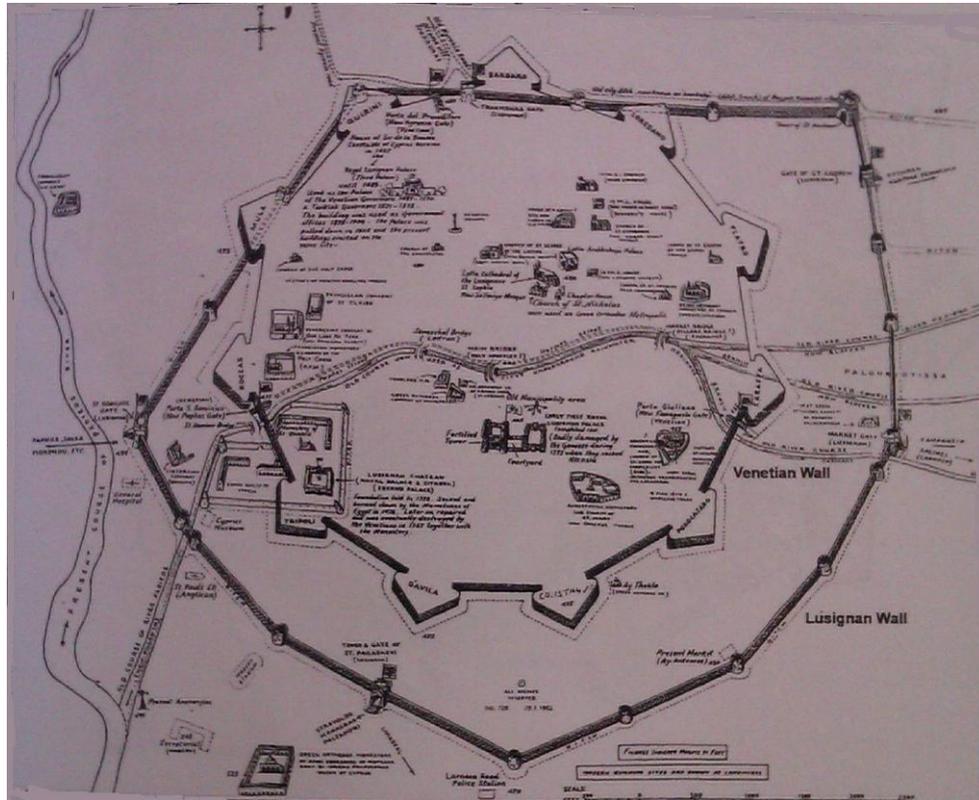


Figure 21: Medieval City Walls Of Lefkoşa (Keshishan, 1993)

After 1878, British ruled the Island so it can be evaluated in two parts in this period. In 1878, the British respected the traditions, pre-existing buildings and cultural aspects of people in the first British period. Also, the urban level had a few changes in this period. In the second British period, the urban pattern of the Nicosia was changed (Figure 22). Consequently, new architectural elements and urban patterns developed in Walled City. The Street and Building Regulation Law issued in 1946 in British period which in Northern Cyprus still is the main legal to control the physical development.



Figure 22: Map of the Walled City of Nicosia (Modified from Kitchener's Map)

After 1960 during the Republic of Cyprus (1960-1963) the governing system changed and the character of urban pattern was kept. After 1974, the city was divided in to two parts, due to the war. Immigration of Turkish Cypriots took place in these years to the northern part of the Island (Fasli, 2003).

In the Turkish sector of Nicosia, modernization, the contemporary needs of the community and the social changes, new development zones, i.e. new residential,

commercial and recreational areas are established outside the walls of the old city (Doratli, Onal, Fasil, 2004).

3.3 Analysis of Case Buildings

As explained in the limitation of thesis, new buildings that were constructed in last 10 years are selected in the Walled City of Nicosia. Accordingly, four new buildings in walled city have been analyzed.

3.3.1 Yakindoğu Bank

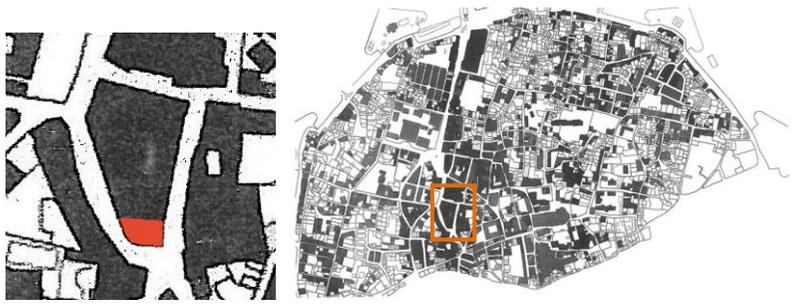
The Yakindogu building was built as a bank in Arasta district, Walled City of Nicosia (Figure 23).



Figure 23: YAKINDOĞU BANK (Source: by Author)

According to the criteria which mentioned in previous chapter, the compatibility of this building with its historic context is obtained as follow (Table 9):

Table 9: YAKINDOĞU BANK Analysis

Analysis of compatibility of YAKINDOĞU BANK Building			
Design Criteria	Contextual/compatible● Non-contextual/incompatible○	Result of the analyze	Map/Picture
Massing	○	According to the volume of the other building it does not respect to its surrounding	
Sitting	○	It does not respect to the existing pattern and block size	
Height	○	the height of the building does not respect to its neighbors	
Set back	●	This criteria is respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	●	The opening on the facade is following the same rhythm with neighbouring buildings.	
Proportion	○	no relation with whole context	
Material	○	No harmony with context, constructed of glass and aluminum sheets	
Color	○	Different color (black and yellow) from other buildings	
Scale	○	In terms of scale, the building is out of scale with its neighbor	
Summary: 3/10 criteria found compatible with the context therefore the building has free design approach.			

In terms of scale, Yakindogu Bank is out of scale with its neighboring buildings and it does not respect to the volume, pattern and block size of existing buildings, patterns and block size. It is not in relation with whole context. Yakindogu Bank's façade is made of glass and aluminum sheets with different colors, yellow and black, which is not in harmony with its neighboring buildings as well. It seems that the designer tried to make harmony in façade by using yellow color in the middle part of the building but it did not help for this purpose. In terms of the height, it does not have consistency with the existing building's height in the district.

Despite the building does not respect to the existing pattern; its vertical emphasis of fenestration in the façade is following the same rhythm with existing buildings and entrance of the building is taken from the others in the context. Moreover it respects to other neighboring buildings setback.

Though consequence of this analysis, it is obvious that most of the design criteria (7/10) are incompatible with the context; therefore its design approach is defined as free design approach.

3.3.2 Hukuk Burosu-Law Office

The Hukuk Burosu was designed by Enver Eronen in Mahmut Pasa Sokak, Walled City of Nicosia as a law office. It was built in 2011 (Figure 24).



Figure 24: HUKUK BUROSU-LAW OFFICE (Source: by Author)

This building is analyzed according to the design criteria that help to achieve contextual harmony in historic context (Table 10).

Hukuk Burosu-Law Office is in scale with its neighbor and its volume is the same as other buildings in the context. Despite it respects to the existing pattern and block size and other buildings setback from one side it does not respect from the other side. The building is in relation with whole context and entrance of it is taken from the same direction which other buildings have along the street. It has compatibility with the height and adjacent roofline of the existing buildings in one side but on the other side, it does not respect to the height of neighboring building. The opening in the façade is following the same rhythm with neighboring buildings. Also, it made from the same material (RC) with other building but its color is different from its neighbors.

As a result of the analysis of the criteria, Hukuk Burosu-Law Office is compatible with its surrounding and it has Contextual Harmony approach.

Table 10: HUKUK BUROSU-LAW OFFICE Analysis

Analysis of compatibility of HUKUK BUROSU-LAW OFFICE Building			
Design Criteria	Contextual/compatible● Non-contextual/incompatible○	Result of the analyze	Map/Picture
Massing	●	The volume of this building is the same as others	
Sitting	●	It respects to the existing pattern and block size	
Height	●	the height of the building respects to its neighbors	
Set back	○	This criteria is not respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	●	The opening on the facade is following the same rhythm with neighbouring buildings.	
Proportion	●	in relation with whole context	
Material	●	It has harmony with context	
Color	○	Different color (white) from other buildings	
Scale	●	In terms of scale, the building is in scale with its neighbors.	
Summary: 8/10 criteria found compatible so the building has contextual harmony approach.			

3.3.3 Mahmut Paşa Multi-Storey Car Parking and Office Building

Mahmut Pasa Katli OTO Parki, 2009-2011, in Mahmut Pasha Sokak, Walled City of Nicosia was completed in 2011. It has three levels which two of them are underground but in façade it seems that it has just one level (Figure 25).



Figure 25: Figure 17: MAHMUT PAŞA MULTI-STOREY CAR PAARKING and OFFICE BUILDING (Source: by Author)

By analyzing the building according to the design criteria it is recognized that (Table 11): Mahmut Paşa Katli OTO Parki has consistency with adjacent roofline and existing height of the district. It is in relation with the whole context and the perception of it is relative to other buildings around it. This building respects to the existing pattern and the entrance of it is the same as its neighboring buildings. Also it respects to other building setback. The building has harmony with context by using the material, which its neighboring building is used; its color is different from those. Moreover the visual rhythm of the street disrupts by horizontal emphasis of fenestration in the façade from one side but the opening in other sides are following the same rhythm with neighboring buildings. Also it is in scale whit its context and according to the mass the volume of the building is the same as other buildings.

Table 11: MAHMUT PAŞA Multi-STOREY CAR PAARKING and OFFICE BUILDING Analysis

Analysis of compatibility of MAHMUT PAŞA Multi-STOREY CAR PARKING and OFFICE BUILDING			
Design Criteria	Contextual/compatible●	Result of the analyze	Map/Picture
	Non-contextual/incompatible○		
Massing	○	According to the volume of the other building it does not respect to its surrounding	
Sitting	●	It respects to the existing pattern and block size	
Height	●	the height of the building respects to its neighbors	
Set back	●	This criteria is respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	●	The opening on the facade from three sides of the building is following the same rhythm with neighbouring buildings but from one side it does not following the same rhythm	
Proportion	●	in relation with whole context	
Material	●	It has harmony with context	
Color	○	Different color (white and yellow) from other buildings	
Scale	●	In terms of scale, the building is in scale with its neighbors.	
Summary: 8/10 criteria found compatible so the building has compatible design and contextual harmony approach.			

Therefore, it has compatible design with its context and has Contextual Harmony approach.

3.3.4 Işık Kitabevi, Stationary

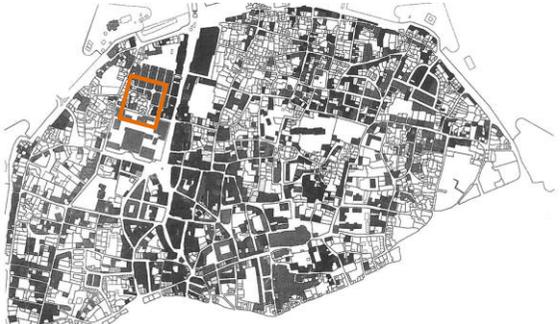
Işık Kitabevi in Polis Sokak was designed by local architect Meltem Nalbantoğlu in 2011 but it is still under construction (Figure 26). So, this building is be analyzed by using same criteria (Table 12).



Figure 26: IŞIK KITABEVI, Stationary (Source: by Author)

According to the design criteria which mentioned before this building is out of scale with its neighbor. It respects to the existing pattern, block size and other buildings setback. Regarding to the rhythm on the façade, Isik Kitabevi is not following the same rhythm with neighboring building. The building does not have any relation with whole context according to the proportion. The volume of the building is the same as other buildings and also the entrance of it is taken from the direction which other building also have. According to the height it has consistency with the existing height of the building in the context. Işık Kitabevi's façade is made of different material and color which is not in harmony with its neighboring buildings as well. According to the findings, 6/10 criteria found as incompatible with the context. Therefore the building has Contrasting/Contextual Juxtaposition approach.

Table 12: IŞIK KETABEVI

Analysis of compatibility of Isik Kitabevi Building			
Design Criteria	Contextual/compatible● Non-contextual/incompatible○	Result of the analyze	Map/Picture
Massing	○	The volume of this building is not same with others	 
Sitting	●	It respects to the existing pattern and block size	
Height	●	the height of the building respects to its neighbors	 
Set back	●	This criteria is respected to other building setback	
Orientation	●	The entrance of the building is taken from the direction which other building also have	
Rhythm	○	The opening on the facade does not following the same rhythm	
Proportion	○	It is not in relation with whole context	
Material	○	It has no harmony with context	
Color	○	Different color (white, yellow and black) from other buildings	
Scale	○	In terms of scale, the building does not have same scale with its neighbors	
Summary: 6/10 criteria found as incompatible with the context and it has contrast/contextual approach.			

3.4 Summary of the Chapter

This chapter analyzed compatibility of four infill (new) buildings in Walled City of Nicosia which are constructed especially last ten years by using qualitative method. Regarding to the criteria of compatible design such as massing, sitting, material, scale, proportion, orientation, height, setback, rhythm and color and new building design approach such as contextual harmony which include contextual juxtaposition, contextual continuity, contextual uniformity and free design approach, all these new buildings have been analyzed. As a result of these analyses, it is obtained those infill (new) buildings are; Mahmut Pasa Multi-Storey Car Parking and Office Building and Hukuk Burosu-Law Office and Isik Kitabevi that are designed with contextual harmony approach and are compatible with context. However, Yakindogu Bank that is incompatible with its context and has free design approach.

Chapter4

CONCLUSION

4.1 Introduction

The “historic environment” has been produced antithesis and collaboration in many years and it is the reflection of various communities’ traditional aspects. Historic environment start to have changes according to the changes in technology, lifestyle and economic condition of the people. Furthermore, new buildings are reflection of change on the architecture of the city. Thus, one of the main factors that damage the value and identity of the historical environments is sometimes the infill (new) buildings that are not designed with contextual approaches. Accordingly, this research has been focused on quality of the new building and its relationship with the existing setting. Therefore, the main aim of this study is to discuss the new architecture design approaches and to evaluate the compatibility of the new buildings in Walled City of Nicosia in North Cyprus. It is recognized that Walled City of Nicosia started to have new buildings especially last 10 years, so research has provided a review on historic environment and new architecture design with focus on compatibility of new building with the context.

Accordingly, definition, value, visual and spatial character of historic environment, importance of place and concept of conservation in historic environment and design criteria to have compatible design in historic sittings have been studied and some cases from different context have been reviewed. Throughout this studies and

analysis, compatibility of new buildings in Walled city of Nicosia have been examined.

According to the main aim, in the second chapter of this research historic environment has been reviewed. Thus, various definition of historic environment has explained at first, then the value of historic environment, socio-cultural and socio-economic values have been reviewed.

Historic places have “cultural significance” which means that it has aesthetic, scientific, historic, spiritual or social value for each generation. The historic environment has an impressive role in economic development through encouraging tourism, income and employment. Economic and commercial values of historic areas are the other justification in the preservation of these places. After that the importance of sense of place, visual and spatial characteristics in historic environment have been explained. Research on the ways that place support people’s sense of continuity and what makes a place distinctive and how a place enables people to figure out their purpose links between historic environment and sense of place. Visual and spatial characteristics define the physical character of historic environment. The elements of visual character are; materials that helps to form local distinctiveness, scale which is the perception of buildings in comparative with the other objects around it, architectural style that design pattern and motifs, proportion which consider about relationship of any part of building with each other or with the whole, vertical/horizontal rhythm that comes from the proportion of wall to window and arrangement and size of the elements on a façade.

As it has mentioned before, new buildings are one aspect that may damage visual and spatial characters of such areas therefore they studied in this thesis. Actually redevelopment of vacant, abandoned and underutilized land is infill. First some principles of conservation with special emphasis on new buildings/development throughout history are reviewed.

Also, some articles related with infill buildings in international charters have been reviewed. For example the Venice charter (1964) stated in article 13 that additions will not be allowed to devaluate its traditional environment, the balance of its structure, its relation with its surroundings and interesting part of the building. In the congress which mentioned before it is highlighted that some criteria such as size, height, color, material, proportion and the volume of the building should be considered for designing new buildings.

Then, these criteria have been used in this research to achieve compatible/contextual harmony designs. Accordingly, sitting (concern about the occupation of the building to its site and its relationship with the street and other buildings), massing (three-dimensional character of the building mass), scale (concern dimensions of buildings and perception of it relative to the object around it), proportion (consider about the relation between the different parts of a building and any part with the whole), rhythm (organization and size of a building's façade), material and color (material helps to establish a significant local distinctiveness by using local material), height (consider about the consistency of new buildings with neighbor's roofline), setback (respect to the setback of buildings from the street) and orientation (consider about the respect of the entrance of building with its neighboring buildings) are determined as design criteria for achieving compatible/contextual design in historic environment.

After explanation of the compatible design criteria contextual/non contextual design approach that can be used for designing new building have been presented. Though contextual approaches, the contextual harmony approach (in this approach new building should be identifiable but it should not detract its historic neighbors by its differentiation) and sub-headings explained under this approach. These are; contextual uniformity approach (in this approach the existing local character is continued and also its architectural character is copied), contextual continuity approach (in this approach respect to the sense of place by valuing comprehensible and visual evidence of the past) and contextual juxtaposition approach (in this approach visual criteria are often more important).

Based on literature review, some buildings from different cities have been analyzed by using the before mentioned criteria and also same criteria has been used for Nicosia cases. According to the main aim, four new buildings in Walled City of Nicosia have been analyzed in the third chapter. As before mentioned there are ten criteria; massing, scale, rhythm, setback, orientation, proportion, height, material, color and sitting, which are used to analyze them.

In conclusion the new buildings in walled city of Nicosia especially these ones that constructed last ten years have been analyzed and as a consequence of this analysis Mahmut Pasa Multi-Storey Car Parking and Office Building, Hukuk Burosu-Law Office and Isik Kitabevi are founded contextual/compatible with the context and Yakindogu Bank found as free design approach that is ignoring the context.

4.1 Agenda for Future Research

The design criteria for having compatible new buildings in historic contexts are already mentioning in international meeting and some of them already existing Conservation of Old Monuments Law. However the full list can be proposed to municipality or antiquities Department in Northern Cyprus.

It is hoped, this study will be a guideline for architectures, city planners or municipalities according to the initial criteria and design approaches for achieving compatible/contextual design in historic context. Also, this thesis could be useful for who are willing to study on historic environment issues.

REFERENCES

- Baytin, C. (2000). Architectural Concept in the Design of New Buildings in Old Areas. *Yapi*. 229, 51-58 .
- Carmona, M., Heath, T., Oc, T., Tiesdell, S. (2003). *Public Place Urban Space*. Britain: Library of Congress Cataloguing
- Celikyay, S., Donmez, S., Bollukcu, P., Kahrman, E. & Ates, O. (2010). *An urban design framework for sustainability of historic environment: A case of Safranbolu, Turkey*. Retrieved November, 2012.
- Conservation, preservation and restoration: definitions. (2009). Retrieved October, 2012 from:
http://www.history.sa.gov.au/chu/downloads/CMP_help_sheets/Conservation,%20restoration,%20preservation%20-%20definitions.pdf.
- Center for Urban Policy Research, Edward J. Bloustein School of Planning & Public Policy, Rutgers, The State University of New Jersey and New Brunswick, New Jersey with the participation of The National Center for Smart Growth Research and Education, University of Maryland, College Park, Maryland and Schoor Depalma Manalapan, New Jersey. (2006). Retrieved October, 2012 from:
<http://nj.gov/state/planning/docs/infillstandards060106.pdf>
- Cullen, G. (1971). *The Concise Townscape*. London: The Architectural Press.

- DBB. (2009). *Devising a Historic Environment Research Framework for Greater London*. Retrieved January 2013 from Museum of London: http://www.museumoflondon.org.uk/GLHERF_definitions.pdf.
- Doratli, N, Onal, S and Fasli, M. An analytical methodology for revitalization strategies in historic urban quarters: a case study of the Walled city of Nicosia, North Cyprus. April 04, 2004. Retrieved November, 2012.
- Eben Saleh, M.A. (1998). Place identity: The visual image of Saudi Arabian cities. *Habitat International*, 22(2), 149-164.
- Eben Saleh, M. A. (2000). The architectural form and landscape as a harmonic entity in vernacular settlements of southwestern Saudi Arabia. *Cities*, 24, 455-473.
- Fasli, M. (2003). *A Model for Sustaining City Identity, Case Study: Lefkosa*, unpublished PHD thesis, Eastern Mediterranean University, North Cyprus.
- Glendening, P.& Kienitz, R. (2001). *Models and Guidelines for Infill Development: Managing Maryland's Growth*. Retrieved January, 2013.
- Gospodini, A. (2002). European cities in competition and new uses of urban design. *Journal of Urban Design*, 7(1), 59-73.
- Graham, H., Mason, R. & Newman, A. (2009). *Literature Review: Historic Environment, Sense of Place, and Social Capital*. International Center for Culture and Heritage Studies (ICCHS). Newcastle University.

International Charter for the Conservation and Restoration of Monuments and Sites.

Retrieved November 2012 from :

http://www.international.icomos.org/centre_documentation/bib/2012-Biblio_Venice-complete.pdf.

Jorgensen, B., Stedman, R. C. (2006). A comparative analysis of predictor's sense of place dimensions: Attachment to, dependence on, and identification with Lakeshore properties. *Journal of Environmental Management*, 79(3), 316-327.

Kocak, H. & Korkut, H. (2009). *Sustainable Management of Historic Environment in the Context of Sustainable Development*. Retrieved October, 2012.

Lynch, K. (1960). *Image of the City*. Cambridge, Mass.: The M.I.T. Press.

Macdonald, S. *Contemporary Architecture in Historic Urban Environments*. Retrieved November, 2012 from. http://www.hbcni.gov.uk/hbc_18th_report.pdf.

Nanzer, B. (2004). "Measuring sense of place: a scale for Michigan" *Administrative Theory and Praxis*, vol. 26, no. 3, pp. 362-382.

Newman International Centre for Cultural and Heritage Studies (ICCHS) Newcastle University. Retrieved October, 2012. From : <http://www.ncl.ac.uk/sacs/icchs/>.

Negussie, E. (2004). *What is worth conservation in the urban environment? Temporal shifts in cultural attitudes towards the built heritage in Ireland*. Retrieved December 2012 from: www.ucd.ie/gsi/pdf/37-2/built.pdf.

Norberg-Schulz, C. (1980). *Genius Loci: Towards a Phenomenology of Architecture*. London: Academy Editions.

Norberg-Schulz, C. (2000). *Architecture: Presence, Language, Place*. Skira press.

Oktaç, B. (2005) *A Model for Measuring the Level of Sustainability of Historic Urban Quarters: Comparative Case Studies of Kyrenia and Famagusta in North Cyprus*, unpublished PhD thesis, Eastern Mediterranean University, North Cyprus.

Oktaç, D. (2002). The quest for urban identity in the changing context of the city: Northern Cyprus. *Cities*, 19(4), 261-271.

Planning for the Historic Environment Practice Guide. (2012). Retrieved November 2012 from: <http://www.english-heritage.org.uk/publications/pps-practice-guide/pps5practiceguide.pdf>.

Relph, E. (1976). *Place and placelessness*. London: Pion Ltd.

Riza, M. (2009) *A Review on the Design of New Buildings in Historic Settings*, unpublished master thesis, Eastern Mediterranean University, North Cyprus.

Sense of Place: Design Guidelines for New Construction in Historic Districts. (2007).

Retrieved may 2013 from:

http://www.preservationalliance.com/publications/SenseofPlace_final.pdf.

Tuan, Y. (1976). *Space and Place: The Perspective of Experience*. London: Edward Arnold Publishers: Ltd.

The Bura Charter: The Australia ICOMOS Charter for Places of Cultural Significance. (1999). Retrieved May 2013 from, <http://www.defence.gov.au/environment/burracharter.pdf> .

Warren, J., & Worthington, J., & Taylor, S. (1998). *Context: New Building Historic Settings*. Oxford: Architectural Press.

URL1. (n.d.). <http://www.getty.edu> Retrieved July 2013

URL2. (n.d.). <http://www.willgoto.com/1/145740/liens.aspx> Retrieved July 2013

URL3. (n.d.). http://www.allposters.com/-sp/Ottoman-Houses-Safranbolu-Zonguldak-Turkey-Posters_i2699386_.htm Retrieved July 2013

URL4. (n.d.). <http://www.google.com> Retrieved July 2013

URL5. (n.d.). http://www.berkshirefinearts.com/06-08-2009_frank-gehry-s-dancing-house-in-prague.htm Retrieved July 2013

URL6. (n.d.). <http://prague-stay.com/lifestyle/review/> Retrieved July 2013

URL7. (n.d.). <http://en.wikipedia.org/> Retrieved July 2013

URL8. (n.d.). <http://www.eugeneandtexas.com/photos-funnyfotos-28-amazingbuildings.htm> Retrieved July 2013

URL9. (n.d.). <http://amazingcentral.com> Retrieved July 2013

URL10. (n.d.). http://www.postalesinventadas.com/2012_02_01_archive.html
Retrieved July 2013

URL11. (n.d.). http://en.wikipedia.org/wiki/Haas_House Retrieved July 2013

URL12. (n.d.). <http://www.simephoto.com/news/878/vienna-may11.html> Retrieved
July 2013

URL 13. (n.d.). <http://www.citroenet.org.uk/miscellaneous/champselysees> Retrieved
July 2013

URL14. (n.d.). <http://www.linternaute.com/auto/magazine/photo> Retrieved July
2013

URL15. (n.d.). <http://www.pgm-blog.com> Retrieved July 2013

URL16. (n.d.). <http://portal.unesco.org> Retrieved July 2013