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ICONARP INTERNATIONAL JOURNAL OF ARCHITECTURE & PLANNING

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The journal aims to be a platform for the studies of design, education and application and has a goal to be a bridge in between traditional/modern, east/west, local/global in the disciplines of Architecture / Planning.

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EDITORIAL

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The tenth issue will be published in December 2017 and we wait for your contributions with your scientific studies until September 2017.

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CONTENTS

Research Article

Architecture and the Social Frameworks of Memory: A Postscript to Maurice Halbwachs' "Collective Memory"

Can Bilsel*

Abstract

This paper offers a commentary on Maurice Halwachs' writings on "collective memory" in the years between 1925-1945. Architectural and urban spaces figure prominently in the work of the French sociologist since he maintains that memories survive in the *longue durée* only to the extent they are indexed into architectural places, and mapped into an urban and historical topography. This comes with a caveat: in his pioneering study of "collective memory," *La topographie légendaire des Évangiles en Terre Sainte: Étude de mémoire collective*, Halbwachs highlights the discrepancy between the archaeological record preserved in material culture—for example ancient ruins and monuments—and the living memory of a religious community. Likewise, in his study of working classes, Halbwachs' neologism, "collective memory" is defined as a deliberately unstable, and socially constructed category.

The provisional and fluid definition that Halbwachs assigned to "collective memory" offers an insight into our present predicament. In the last decades, the ability of architecture, urban design, and

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architectural conservation in framing and preserving a stable and unified cultural heritage has been profoundly challenged. This paper makes the case for moving away from merely technical inquiries that understand architecture and places as "sites of memory" to a new direction that builds upon Halbwachs' social frameworks of memory. It is thanks to Halbwach's pioneering, if incomplete, work on "collective memory" that we may understand how the emerging and open-ended social formations transform architecture and urban spaces.

I.

What is "the memory of place," an idea frequently evoked in architecture, urban planning and architectural conservation: a concept so ubiquitous and vague that it can inform disciplinary practices as distinct as new urban design in historical settings, adaptive reuse in architectural restorations, the installation of war memorials/counter-monuments, or even the interpretation and management of archaeological sites? Although it is difficult to single out any method, either interpretive or tactical, that could encompass "memory" in all the disciplines that are represented in this conference, a broad connection emerges in the way many contributions readily assign the experts the role of the custodian of public memory. Often architects, urban planners or architectural conservation specialists act to serve public interest, broadly defined. But who exactly is the public for whom we safeguard memory? Whose memory is "the memory of place"? As architects, planners and conservationists, we are too quick to equate memory registered in architectural and urban places with identity and heritage. But public memory also consists of trauma, social discord, political oppression and resistance. Recent experience has shown that the unthinking uses of architecture and architectural restoration for cultural heritage reconstruction, or to "reconstruct history," may amount to a top-down imposition of amnesia upon the people, destroying the social fabric of memory. For, memories are socially constructed and diverse, and are linked to architectural and urban places in unexpected ways.

I wish to refocus our attention to a topic that is highly pertinent to our subject, the relation of architecture to what the French sociologist Maurice Halbwachs called "the social frameworks of memory" (*les cadres sociaux de la mémoire).* Between the 1920s and 1945, a time marked by great social and political upheavals, Halbwachs developed the theory of "collective memory."

Although Halbwachs's work has attracted significant interest among the sociologists and historians over the last decades, he is not a widely read author in architectural history and conservation studies. This is in part due to the fact that many of Halbwachs' key works are unavailable in English[1] (Olick, Vinitzky-Serouiss, &

[1] Halbwach's posthumously published book was translated into English as *The Collective Memory* in 1980 with an introduction by Mary Douglas (New York: Harper and Row, 1980). In 1992 Lewis A. Coser translated selections from Halbwachs' 1925 book *Les Cadres sociaux de la mémoire* [*The Social Frameworks of Memory*], and the conclusion of the 1941 book *La Topographie légendaire des Évangiles en Terre Sainte* [The Legendary Topography of the Gospels in the Holy Land] in the volume *On Collective Memory* (Chicago: The University of Chicago Press, 1992), which remains the most comprehensive translation of Halbwachs' work.

Levy, 2011). The English reading architecture audiences have been introduced to Halbwachs' work either through secondary sources or anthologies. Aldo Rossi's *The Architecture of the City,* for one, includes numerous references to Halbwachs' work on urban sociology and collective memory, duly acknowledging Rossi's intellectual debt to the French sociologist (Rossi, 1982). The French historian Pierre Nora and his colleagues' frequently cited thesis, which counterposes *les lieux de mémoire* [the sites of memory / the sites of national heritage] against living/communal memory, is undoubtedly indebted to Halbwach's theory of collective memory (Nora, 1998). Finally, M. Christine Boyer's *The City of Collective Memory* introduced Halbwachs's work to an architecture audience in 1994 (Boyer, 1994). All these, however, remain exceptions and Halbwachs' work has rarely been central for architects, planners and conservationists outside continental Europe, despite his methodological innovation, as I shall return in due order.

Maurice Halbwachs' intellectual biography comes across as an unlikely combination of distinct scholarly traditions. He started his journey as a student of Henri Bergson at the *Lycée Henri IV* in Paris. You may recall that Bergson, the anti-positivist philosopher, is one of the most influential thinkers of the early 20th century, whose writings shaped the idea of "experience" and "memory" in France and in Europe at large. Beginning 1889, with the publication of his first major book, *Essai sur les données immédiates de la conscience,* Bergson offered a critique of the positivist psychology of the nineteenth century. At issue was the psychologists' assumption that they may accurately register and measure the movements of animal and human subjects, as well as human consciousness as a function of time. Bergson famously rejected the scientifically measured, objective time as a mere abstraction. To the scientific notion of abstract, homogeneous and empty time, Bergson opposed an ontological time, "la durée" or duration, which according to Bergson, is intrinsic to the life-process and the "*élan vital*" of all living beings[2] (Bergson, 1889).

It is no small wonder that Halbwachs, who had been introduced to philosophy under Bergson at an early age, dedicated the following decade to rejecting the subjectivist philosophy of his former master. After a brief journey in Berlin, Halbwachs joined in Paris to what was practically a rival camp, the school of scientific sociology of Emile Durkheim."(Douglas, 1980). By 1913 when Halbwachs published his doctoral dissertation: *La classe ouvrière et les niveaux de vie. Recherche sur des besoins dans les sociétés industrielles contemporaines*, his conversion to Durkheimian sociology is complete. By then Halbwachs had become a committed socialist: his conversion from spiritual philosophy to

[2] See also Henri Bergson, *Matière et Mémoire* (1896). Fifth edition of the PUF (Paris: PUF, 1997); and Henri Bergson. *L'Évolution créatrice* (Paris: Félix Alcan, 1907). English translation: *Creative Evolution*. Arthur Mitchel, transl. (1911) (New York: Random House, 1944).

scientific sociology should be understood in the context of his participation in the social movements and the anti-fascist struggles of 1920-1945 (Iogna-Prat, 2011).

Another translation occurs in Halbwach's work between history and sociology in the experimental and interdisciplinary academic environment of Strasbourg in the 1920s, where he taught as a professor of sociology. After recapturing the province of Alsace from Germany in 1918, the French government took action to make the University of Strasbourg French. The German professors were summarily fired and replaced with an unusually young generation of French academics[3] (Craig, 1979). Hailing from a Catholic Alsatian family, which had its unquestionable allegiance to the French Republic (Iogna-Prat, 2011). Halbwachs nevertheless was one of the first to reach out to his German colleagues. He introduced the pioneers of German sociology, such as Max Weber, to France.

In 1929 Halbwach's colleagues in Strasbourg, the historians March Bloch and Lucien Febvre initiated the groundbreaking Annales school, organized around the journal of the same name. Although not a historian by training, Halbwachs agreed to serve on the new journal's editorial board, in addition to contributing numerous articles, and helped Bloch and Febvre devise a new historiography informed by social sciences (Hutton, 1993).

It should not come as a surprise that Halbwachs wrote his first book on memory *Les Cadres sociaux de la mémoire* in 1925 in Strasbourg. The book is as much a history of European social classes, in conversation with Weber, as a rejection of Sigmund Freud's theory of the unconscious (Halbwachs, 1925). More specifically Halbwachs rejected Freud's notion that memories are kept in the unconscious psyche. While Halbwachs acknowledges that each individual retains a mental image of the past events, these representations are fleeting. The images of the past can be structured into lasting memories only to the extent they are contextualized by the social group to which the individual belongs, be it a family, a social class, or a religious community. Collective memory thus transcends simple reminiscences of the past, and encompasses tastes, values, and social mores of a community (Hutton, 1993). By providing a brief history of the social mores of the European feudal classes, Halbwachs shows in this book how the representations of family heritage and social class allegiances intersected, and how precarious and unstable these representations can be. Collective memories are not only localized and indexed to a social group, but need to be kept alive by ritual practices, traditions and repetitions (Halbwachs, 1925).

[3] See also John E. Craig, *Scholarship and Nation Building*: *The Universities of Strasbourg and Alsatian Society*, 1870-1939, (Chicago: The University of Chicago, 1984).

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Published in 1941 in Paris, *La Topographie légendaire des Évangiles en Terre Sainte: Étude de mémoire collective* [The Legendary Topography of the Gospels in the Holy Land] is the most architectural of Halbwachs' books (Halbwachs, 1941). Having traveled to Palestine twice in the late 1920s and again in 1939, and reviewed the historical accounts of travelers and pilgrims, and architectural shrines, Halbwachs wrote a book about the commemorative landscape of the Holy Land (Iogna-Prat, 2011). He contends that none of the shrines or relics that remain in historical Palestine dates back to the day of Jesus of the Gospel, and were instead introduced to the land by the Christian Church starting the 4th century. This was a process that was interrupted by the Muslim conquests of the 7th century, and resumed after the Crusades of late Middle Ages. Halbwachs maintained that the collective memory of the sacred land changes from one generation to another according to the social and historical transformations of each historical present. In order to demonstrate his thesis, Halbwachs studied the archeological record and the travellers' accounts about the Christian monuments in Palestine, together with the "legendary topography" of the Holy Land as maintained in the collective memory of the Christian communities, only to conclude that there was little connection between the two. The conclusion here is radical and fascinating: as Patrick Hutton has observed, according to Halbwachs, the construction of the Holy Land in the Christian consciousness was a form of "colonization" of memory, a process that imposed the European version of the religion upon the indigenous peoples of Palestine, Christians, Jews, and later Muslims alike (Hutton, 1993).

We should note here that Halbwachs wrote *La Topographie légendaire* more than three decades before Edward Said's renowned book *Orientalism* (Said, 1978). Yet his critique is far more sweeping. For Halbwachs, as Said, the East or the Holy Land is not merely there. It is a social construction. But Halbwachs is not limiting himself to analyzing the Western European discourse in a given present. He is far more ambitious: he wants to know how the shifts in collective memory have transformed in the longue durée the religious tradition. The architecture, urban landscapes, and historical topography of Palestine provided Halbwachs with a fascinating case.

According to Halbwachs, the collective memory is in constant flux in the consciousness of a group. Yet when an event experienced by the group is memorialized into a monument, collective memory is fixed in architecture. His study, in other words, both revolutionizes the sociology of knowledge, and yet, paradoxically,

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rests on the positivist assumption that architectural monuments of the past communicate only the original intent of commemoration. Halbwachs believes that architectural monuments help the ruling power—a church, a sovereign family, or a state—control or delay the inevitable shifts in the collective memory of the faithful.

In March 1945 Maurice Halbwachs, the man who introduced "collective memory" to the world literature, died in Buchenwald Nazi concentration camp. He was arrested and deported to the concentration camp after protesting against injustice of the Nazi occupation. Years later, in 1987, another French sociologist, Pierre Bourdieu laments the assassination of Halbwachs. "There is no hierarchy in murder," Bourdieu writes,

> "Yet, one cannot help but plunge into ethical despair about the assassination of a defender of the universal, a man who dedicated all his intelligence and conviction to create the conditions for understanding and tolerance among the peoples separated by history."(Bourdieu, 1987).

II.

The provisional and fluid definition that Halbwachs assigned to "collective memory" offers an insight into our present predicament. In the last decades, the ability of architecture, urban design, and architectural conservation in framing and preserving a stable and unified cultural heritage has been profoundly challenged. During the ethnic strife and ensuing civil wars of Bosnia Herzegovina and Kosovo in the 1990s, the battle was fought, in no small part, over cultural and architectural heritage. Communal violence targeted not only civilian populations, but also sought to erase all traces of the other's architectural heritage: Kosovar mosques have been the targets of systematic destruction (Herscher & Riedlmayer, 2000). A formerly multi-ethnic nation's public memory was Balkanized into shattered and irreconcilable collective memories.

The urban revolts that have arisen around the world in 2010-13, starting with the self-immolation of a Tunusian street vendor, the Egyptian Revolution in the Tahrir Square, the occupation of prominent public spaces during the *Indignados* and the Occupy Wall Street in Spain and the United States, as well as São Paolo's public transportation riots, and the Gezi Resistance have further eroded citizens' trust in the ability of monumental architecture in representing a pluralistic and yet unifying memory in public spaces. A "long Arab Winter" followed the hopeful beginning of "the Arab Spring": either the state apparatus failed, or new

authoritarian regimes are consolidated (Mitchel, 2012). Just as social upheaval, oppression and resistance came to define more of the urban experience in the Middle East, new forms of commemoration such as performative reenactments of events in public spaces or new media have replaced architecture as anchors of collective memory. By *Balkanization of memory*, I refer to a current situation where different social groups not only remember recent social events differently, but also prove shockingly oblivious to the suffering of the others.

I argue that Halbwachs' theory of collective memory is more relevant today than ever methodologically, due to the current fragmentation of public memory, and the crisis of architecture's ability to commemorate a collective past. By the time of his death, Halbwachs was working on a new book on collective memory, which was posthumously published.

Whereas his earlier book, *Les cadres sociaux,* argues that an individual's allegiance to a family, a religious community, or a social class is the determining factor in shaping his or her acquisition of social memory, his late work on memory—compiled as *La mémoire collective*—significantly revises his earlier position. As Gérard Namer has recently shown, Halbwachs' argues in his late work that an individual may have multiple allegiances to competing social frameworks, and thus to competing collective memories[4] (Déchaux, 1998). This might give us hope. It means that memories are not restricted to a closed community. Halbwach's position amount to a cosmopolitan theory: the liberty of the individual to choose plays a role in his or her adherence to a living collective memory.

[4] See Maurice Halbwachs, *La mémoire collective*, augmented edition with commentary by Gérard Namer (Paris: Albin Michel, 1997).

Acknowledgement

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Resume

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09

Research Article

Urban DNA: Morphogenetic Analysis of Urban Pattern

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& Fulin Bölen**

Abstract

Urban pattern is the result of a dynamic transformation process, which can follow two different trajectories: planned interventions generally produces clear geometrical patterns in large areas, however, unplanned transformation process needs more time and has relatively smaller and partial effects on the urban pattern but creates more complex urban patterns. Highly complex spatial structure of urban pattern governed by local and global forces should be analyzed via advanced methods that corresponds the complexity of the pattern. Analyses of the dynamic structure of the multidimensional urban system shows the necessity of using advanced methods and several parameters together.

The aim of this paper is developing a new method to analyze and represent highly complex urban pattern via evaluating geometrical, topological, and mathematical parameters to evaluate essential characteristics of cities.

Physical space is analyzed by 'geometrical parameters', 'topological parameters', 'parameters related to use and perception' and 'parameters related to complexity'. Calculation results gives two main information about urban structure: Firstly, values gives information about spatial characteristics and diversity of urban pattern. Secondly, the spatial

distribution map of changing urban pattern reflects the unique structure of settlements, which resembles DNA of living creatures.

In this paper, Istanbul was selected as case study area because of the rich historical background and dynamic urban growth process resulting various types of settlements including historical settlements, old villages, unplanned development, squatter areas and gated communities with different densities.

As the proposed model shows essential morphological characteristics of urban pattern as a morphological DNA, outputs of this model has a potential to be used in different areas such as comparative analysis of geometrically different cities, analyzing irregularities in urban pattern, controlling growth and density by controlling parameter values, creating urban sub-systems by combining components in different scales.

INTRODUCTION

Urban pattern is a dynamic structure and evolves in time according to the changing needs and choices of society. The urban pattern, which consists of buildings, building blocks and roads adapts to the changing conditions.

In the transformation process, spatial differences among cities and universal principles of settlements result in a very complex spatial patterns that cannot be analyzed via only geometrical differences. Therefore, mathematical and topological analysis methods needed to reveal unique characteristics or urban system. There are several models and approaches exist to analyze such complex settlement structures (Bar-Yam, 2003; Batty, 2008; Bolliger et al., 2005)

In this research, characteristics and differences in urban pattern is analyzed by using advanced mathematical methods to understand the structure of the urban pattern. Spatial parameters classified into four categories: Basic features of physical structure is 'Geometrical features' of the pattern such as dimensions of spatial elements. Second category comprises 'topological characteristics' of physical space. Third category is focused on measures related to the visibility and perception of space. The last category is 'complexity' of urban pattern that includes mathematical relationship and hierarchical structure of spatial systems.

BACKGROUND

Urban pattern is evaluated as characteristics of built environment which specifically addressing street network, building blocks and form of open spaces. Although local characteristics of settlements differentiate the geometrical features of urban pattern, some universal principles exist in all patterns. These features have been analyzed through classifying spatial elements into three groups: Buildings, building blocks and roads as three component of urban

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pattern helps to understand the dynamic structure of the urban pattern. In this research, spatial features are classified into four categories: Geometrical features, usage-perceptional features, spatial relationships and features of transformation of the urban pattern.

Geometrical parameters:

Geometrical features measured by basic dimensions of buildings, city blocks and streets and ratios such as area and the ratio of area/perimeter. A hierarchical system should follow a scaling relationship, thus the existence of the rank-size rule or power law in the distribution of the changing sizes reflects the hierarchical order of the spatial organization.

There are several researches and design approaches that use repeating geometrical units and angular systems (Steadman, 1983; Teller, 2003). The geometrical system of repeating shapes and rules of geometrical interactions defined as 'Shape grammars' in 1970s (Stiny, 1980; Stiny & Gips, 1971) and this approach used in computing technologies to create various schemes to contribute architectural design (Çağdaş, 1996; Steadman, 1983).

Topological parameters:

Topological maps consist of points and connections thus, gives information about relationships and connections rather than distances and size of objects. In the topological system, points represent components of system and axial lines represents interaction among components (Boccaletti et al., 2006) such as building blocks and plots and streets (Kruger, 1989; Krüger, 1979, 1980)

Space syntax model is widely known topological analysis method to explore spatial characteristics of urban settlements via simplifying built form as axial map and convex spaces (Hillier & Hanson, 1984). This model is built on the movement of pedestrian in urban space and focuses on 'natural movement' which means the movement directly related to the morphology of urban structure rather than land use and other factors. As this method focuses on pedestrian movement in an urban space, it is related to the user preference and perception of open space.

Axial maps analyzed by several parameters such as 'integration', 'connectivity', control value' of each line and 'intelligibility' values of areas (Hillier, 1996; Hillier & Hanson, 1984). Lately topological network which consists of linear axis and nodes re-evaluated and angular analysis added (Figueiredo & Amorim, 2005) into the model. Space syntax analysis extended from the analysis or

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pedestrian in urban open space (Batty & Rana, 2004; Hillier et al., 1976) to the relationships of topological structure of cities and land use (Kubat, 1997), crime in an urban space, land values, livability (Topcu & Kubat, 2012). Calculation of the most widespread measure of space syntax is 'integration' that "indicates the degree to which a node is integrated or segregated from a system as a whole (global integration), or from a partial system consisting of nodes a few steps away (local integration)" (Volchenkov & Blanchard, 2008). It is calculated by Real Relative Asymmetry (RRA). Integration measure starts with 'depth' of all points in the system. Total depth is calculated with following formula (1) (Kruger, 1989):

$$D_i = \sum_{i=1}^{N} d_{ij}$$

(1)

Here, d_{ij}, depth between i and j points,

N, number of axial line in the system,

D_i, i total depth value of a point.

On the other hand, depth value should be standardized to be able to compare urban areas that have different sizes and number of axial lines. Thus, standardized value of depth is called as real relative asymmetry 'RRA' (2) (Hillier & Hanson, 1984; Volchenkov & Blanchard, 2008):

RRA= 2(MD-1) / D_N (N-2) or RRA= RA/ D_N (2)

Here, MD is the mean depth,

N, is the number of axial lines in the whole system

D_N value in this formula is calculated as follows (3) (Volchenkov & Blanchard, 2008);

$$D_N = 2\frac{N\left(\log_2\left(\frac{N+2}{3}\right)-1\right)+1}{(N-1)(N-2)}$$

(3)

The distribution of spatial integration values also gives information about hierarchical structure of urban network. According to researches, if values ordered from the largest to smallest, log-log graph of rank-size distribution represents a linear relationship as it found in Manhattan, Rothenberg, Bielefeld, Venice, and Amsterdam (Volchenkov & Blanchard, 2008).

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Parameters related to use and perception:

Interaction of urban space and user might be analyzed via 'geometrical features of space', 'features of spatial relationship' or 'behavior and perception of users and user needs'. The main interest of this research is physical characteristics and mathematical measurement methods of urban pattern. Thus, instead of having comprehensive discussion of user perception and preferences, physical parameters, which related to the human behavior explained here.

Geometrical features such as size and dimensions of streets and squares have significant effect on use and user preferences (Ashihara, 1983; Bacon, 1975; Franz & Wiener, 2008). However, researches show that the topological features also have impact on human behavior and preferences (Hillier, 1999; Kim & Penn, 2004). Therefore, in this research space syntax and 3D spatial enclosure models have been used to analyze spatial structure. Variation in the buildings which enclosing open spaces and geometrical variation of geometries have positive effect on the perception of users (Stamps, 2003; Zacharias, 1999). Characteristic structure of urban pattern and rules of production of space defined as a 'pattern language' by Alexander (Alexander et al., 1977). Behavior of pedestrian in space is analyzed by the principle of least effort (Zipf, 1972) and modelled by space syntax (Hillier et al., 1976) or some other simulation tools (Helbing, 1998). Various simulation tools have been developed to evaluate visibility of an area, which effecting he perception and use, based on the concepts of 'convex space', the 'viewshed', and 'isovists' (Turner et al., 2001). Depthmap is a software application that measures visibility against other syntactic parameters (Turner, 2001) in two dimensions. Buildings in the environment defines the boundary of visible space on a planar surface (Figure 1).
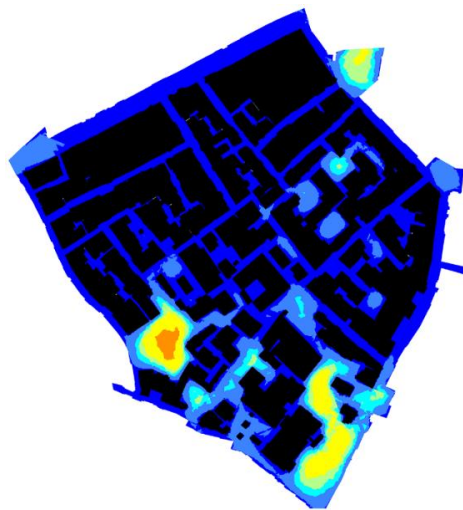

Figure 1. A visibility map of a sample urban pattern in Taksim, Istanbul

Although the space syntax method primarily works on 2D environments, some studies attempt to introduce a third dimension into this method such as the use of axial lines in 3D space to create 3D axial maps (Schroder et al., 2007). In this method, it is assumed that there is no height variation in the ground level, and the slopes of the axial lines are calculated.

3D spatial enclosure model

In this research a new model is developed to represent spatial enclosure in the third dimension to calculate the angle between the points on the road centerline at ground level and the roof top level of the buildings on the both sides of the roads. The angle values have been classified according to the different H/D (Building Heights/Distance between buildings) ratios of open space, which have various perceptual effects.

This model consists of three stages: Firstly, buildings, which have an attribute of number of floors or building heights and road centerlines, needs to be created. After this process, the model creates points over the road centerlines according to the distance value (y) between points defined by user. Then, draws a perpendicular hidden line to find closest buildings for each points and calculates the angles between points and the roof levels of two closest buildings (Figure 2). The H/D values in the urban squares, open spaces, green areas, and main arterials are lower than 1/5. Streets and small openings within the dense urban structure have values of between 3/7 and 1.

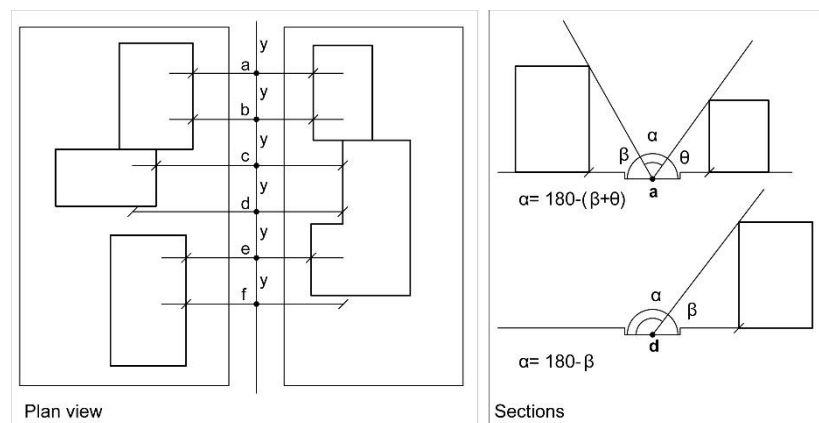**Figure 2.** Measurement method of spatial enclosure in 3D (Kaya, 2010)

In the third stage, these angle values are interpolated by using ordinary kriging method to convert point values to areal information by predicting values between points. This method can be used as an effective tool during the planning process to decide the maximum allowed height of buildings and to create breathing points in the dense urban environment.

Parameters related to the complexity of urban pattern

Urban system is a complex open system, which contains several sub systems and components. The existence of rules is very crucial for the unity of the system. The features of complexity focus on some mathematical principles leading the pattern to work as a system. Chaos theory, rank-size rule, shape grammars (Stiny & Gips, 1971) and pattern language (Alexander et al., 1977) are well-known example searching rules of interaction of spatial components in architecture and urban design. The other area of research is complexity studies that helps to measure relationship between physical environment and richness of urban activities and life like the relationship rules of 'coupling', 'diversity', 'boundaries', 'forces', 'organization', 'hierarchy', 'interdependence', and 'decomposition' (Salingaros, 2000).

It is shown that users generally groups similar sized elements and counts the number of objects and compares with the similar examples in the nature, therefore, designs which are desirable for the users have scaling of objects which fits the power law and this relationship represented via following formula (4) (Salingaros & West, 1999):

$$px^{\mu} = C \qquad\qquad (4)$$

Here;

p: number of elements in characteristic scale,

x: characteristic scale size,

μ: power coefficient which generally have values between 1 and 2,

C: overall size of the structure or total number of elements.

The fractal geometry is also based on similar scaling rule called as 'the self-similarity'. Although there are several methods to use the fractal geometry, 'box counting' method have been used in this thesis. In this method, the urban pattern overlapped with various sized grids and the ratios of the number of intersecting grids with changing grid size have been examined.

Fractal geometry

Euclidean dimension cannot correspond complex objects in the real world, therefore a new approach developed to measure level of complexity via analyzing the change of measurement result of length, area or volume with the change of measurement unit or scaling factor rather than simple Euclidean dimensions (Peitgen et al., 2004). The feature measured by fractal geometry is

explained by the difference between "form" and "structure": Form represents the physical patterns such as land use, population distribution, and service network; on the other hand, structure means spatial organization of human activities and mutual interrelationships. Fractal geometry method measures form and physical structure both (Salingaros, 2003; Wurster, 1969).

Fractal objects in real life differs from the artificial simulations. Urban pattern has changing morphological structures in different scales and different sub-regions, which corresponds a variation in fractal dimensions. Thus, fractal analysis shows that the urban pattern is also a kind of multifractal structure. The evolution process of the urban pattern results in higher level of complexity and this also increases the fractal dimension values (Kaya, 2003, 2010). "Fractal dimensions attempt to quantify a subjective feeling which we have about how densely the fractal occupies the metric space in which it lies, and provide an objective means for comparing fractals" (Xu, 2005).

Fractal dimension can be calculated via different methods such as 'self-similarity dimension', 'topological dimension', or 'Hausdorff dimension', 'box counting dimension' etc. (Frankhauser, 1998a, 1998b; Peitgen et al., 2004). 'Box counting dimension' is a specific case of Mandelbrot's fractal dimension and most preferred method among these methods (Peitgen et al., 2004). The scaling relationship in calculating box counting dimension is defined as the relationship among number of boxes, box size and fractal dimension. As the box size changes, number of boxes that overlaps with the object will change as follows (5):

$$K = A \cdot \varepsilon^{-D_f} \tag{5}$$

Here K represents the 'number of boxes', ε is 'grid size (or scale)', A is a 'constant coefficient' and D_f is the fractal dimension.

This scaling relationship is similar to some other mathematical relationships of hierarchical systems such as rank-size relationship, and power law. Several researches found a distinct relationship among them and urban structure. Evaluating rank-size hierarchy of settlements as a multifractal feature or analyzing structure of analyzing urban systems via scaling relationship have great contributions to understand dynamic structures of self-generated settlements (Y. Chen & Zhou, 2003; Yanguang Chen & Zhou, 2004, 2008; Haag, 1994). Chen and Zhou (2003) uses two power functions to calculate fractal dimension (6) and (7):

$$S_m = S_1 \cdot r_s^{1-m} \tag{6}$$

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$$f_m = f_1 \cdot r_f^{m-1} \tag{7}$$

Here;

S_m: scale of fractal unit in m[th] step,

S_1: is the length of the initiator which is always confined in a unit interval [0,1]

r_s: is the interstep scale ratio ($r_s = S_m/S_m + 1$)

f_m: is the number of fractal units in the mth step,

f_1: is the number of initiators (in general $f_1 = 1$)

r_f: is the interstep number ratio, ($r_m = f_m + 1/f_m$). (Y. Chen & Zhou, 2003).

From two equations, function for the fractal dimension is expressed by the following formula (8) and then (9);

$$f(D) = \frac{\ln r_f}{\ln r_s} \tag{8}$$

$$f = K \cdot S_m^{-D} \quad \text{(Y. Chen \& Zhou, 2003)} \tag{9}$$

In this research, box-counting method is preferred to calculate fractal dimension. In the box counting method, more than one mesh with different grid sizes are overlapped with urban pattern. The logarithmic ratio between differences in changing grid sizes and number of grid cells overlapped with objects gives the fractal dimension (10) (B. B. Mandelbrot, 1977, 1982; Peitgen et al., 2004).

$$D_B = \left(\log K_{S2} - \log K_{S1}\right) / \left(\log(1/S_2) - \log(1/S_1)\right) \tag{10}$$

Here, D_B, is box counting dimension,

K; number of boxes (cells) and,

S; side length of boxes.

Urban pattern is a heterogeneous structure and has different level of detail in different scales, therefore it has more than one fractal dimension. Changing structure of urban pattern in scale generates different fractal dimensions for different box sizes. Likewise, urban structure is not homogeneous in space, thus location of grid is also effect the measurement result. To solve this problem, a software called as 'FracLac' used to calculate fractal dimension for several grid sizes and grid locations. Fractal dimension, which has highest frequency among hundreds of calculation, is accepted as fractal dimension of selected pattern.

Lacunarity

Fractal dimension shows the complexity of urban pattern but different spatial organizations can have same fractal dimensions. Adding a new parameter, which analyzes morphology of open spaces of, built structure to fractal dimension, helps to compare different spatial configurations with same fractal dimension. Lacunarity is a parameter that developed by Mandelbrot to analyze patterns added to the fractal dimension (Cheng, 1999; B. B. Mandelbrot, 1982) which focuses on the spatial and size distribution of open spaces. If variation of open space sizes are higher, then, lacunarity value increases (Filho & Sobreira, 2005).

Lacunarity use binary values an urban pattern as built/non-built (1/0). Defined size box slides over the pattern and the change in the number of filled pixels defined. The ratio of changing filled pixels to total number of boxes gives a statistical value (11) (Wu & Sui, 2001):

"$Q(S,r)=n(S,r) / N(r)$ (11)

Where,

S: number of occupied pixels (1's)

r: side length of a square box

n (S,r): number of boxes of size r with mass S

N(r): total number of boxes of size r

As the box slides over the pattern, the differentiation of distribution of open spaces measured several times. If the situation in the first box location becomes E(S), and second situation in a new box location becomes $E(S_2)$, two moments of distribution is calculated as follows (12, 13);

$$E(S) = \sum SQ(S,r)$$ and (12)

$$E(S^2) = \sum S^2 Q(S,r)$$ (13)

Lacunarity Λ(r) is the change between two situations (14,15);

Λ(r)=$E(S^2)/E^2(S)$ (14)

since;

$E(S^2)$=var(S)+$E^2(S)$ (15)

Lacunarity can be calculated as one plus the ratio of the variance and the mean square of the box mass (16):

Λ(r)= [var(S)/$E^2(S)$]+1, [1, ∞) (16)

where E(S) is the mean and var(S) is the variance of the number of occupied pixels per box" (Wu & Sui, 2001). As this parameter shows the heterogeneity of open spaces, this method is used to analyze the distribution of open spaces of fractal objects (Benoit B. Mandelbrot et al., 2001). Similar situation is seen in historical cores of Turkish cities that have unique and different physical patterns but very close fractal dimensions (Kaya & Bölen, 2006).

Methodology and analysis

Complex systems can be classified into two groups as 'organized' and 'disorganized' complexity. Urban system is a organized complex system like human, brain, economies, Cities, and ecosystems (Wilson, 2002). There is very powerful interrelationship among components of organized complex systems. Because of this reason, analyzing components separately does not give total picture of complex system. Thus, a contemporary methodologies and tools needed to analyze urban complexity.

In this research, a new approach proposed to analyze and represent spatial characteristics of urban pattern. A set of mathematical measurements used together to measure urban pattern. The set of parameters that consists of 'geometrical parameters', 'topological parameters', 'use and perceptional parameters' and 'complexity parameters' together gives a picture that represents intrinsic characteristics of physical pattern, which is called as 'urban DNA'. Analyses under each parameter group is limited in this research but these parameters can be increased to extend this methodology to examine physical and socio-economical features of urban system.

Geometrical parameters consist of 'distribution of plot sizes', 'Floor area ratio (FAR)', 'Building coverage ratio (BCR)', 'ratio of city block edge length to the area'. Topological parameters include 'spatial integration' of space syntax. Although space syntax is also related to the use and perception of users, a new tool, '3D spatial enclosure model' is developed here to analyze three-dimensional enclosure of urban space. Complexity of urban pattern measured by 'box counting dimension' of fractal geometry and 'lacunarity' analysis.

Analyzing the morphology of Istanbul

Istanbul is a metropolitan city, which located on two continents and experiencing urbanization problems triggered by huge immigration from other cities and rural areas. Especially after 1950s, built up area of the city rapidly increased with the huge migration wave (Figure 3). Two motorways and bridges change

development direction from east west to north. The morphological structure of Istanbul is influenced by Roman, Byzantine, Ottoman and Turkish cultures. Added to the cultural variety through the history, the city has very rich natural environment. The Bosporus divides the city into two sides; both Anatolian and European sides have hilly topography and forest areas on the northern side of the city. Forests and water basins were located outside of the settlement area but after rapid growth of the city new settlement areas with a new urban pattern developed around water basin areas and in the forests.
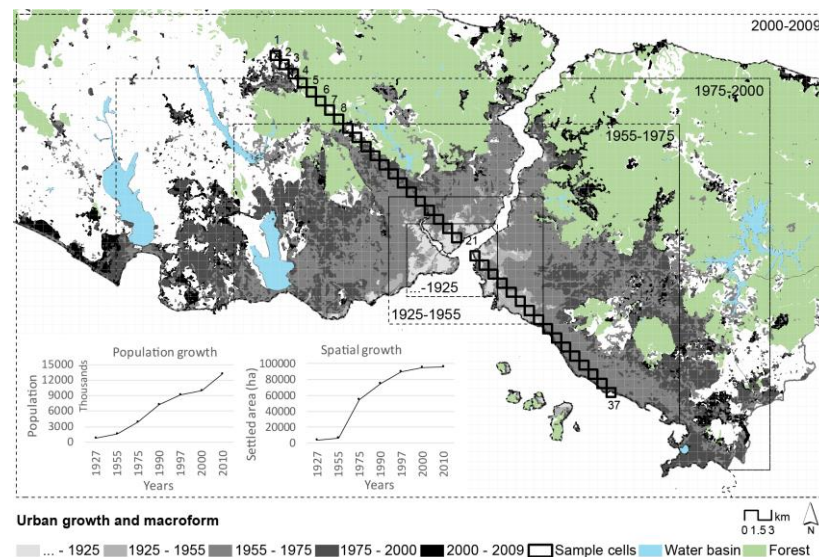
Figure 3. Spatial growth of Istanbul and location of selected cells

In this research built up area of the city overlapped 1kmx1km size grid mesh and cells located on a linear axis have been selected to examine urban pattern characteristics along this linear direction. As the city has different growth process and pattern types on east-west and north-south directions, a diagonal axis selected to capture different urban patterns that also includes main development types of different periods (Figure 3). Selected diagonal axis have some advantages: cells intersect with more various types of settlement patterns. Therefore, the total number of cells analyzed is reduced while keeping the spatial variation as much as possible. Because of these, diagonal axis preferred to select sample cells.

The content of the cells cannot be seen in their original locations on diagonal axis in the city (Figure 3). Instead of increasing image dimensions, which is not possible to fit the A4 sized page, the locations of cells from 1 to 37 are reorganized to represent cells easily (Figure 4). Although it is difficult to read actual locations, the relative locations of each cell can be evaluated easily and Figure 4 might help to understand and evaluate outputs of this research.

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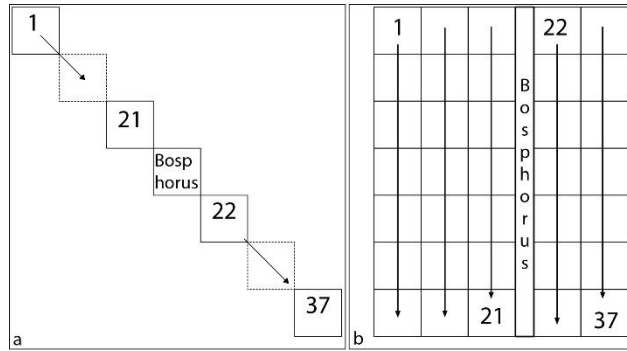This method enables to reveal variation of local patterns and changes of values of the selected areas that are located on a linear axis and helps to explore the spatial characteristics of urban structure, which makes a city unique. Cells in the two sides of the city are not located symmetrically. North-west end of the diagonal axis is overlapped with the edge of the city but southeast end cannot continue to the periphery of city. Selected cells in the Anatolian side intersected with settlement pattern that developed before 2000 and they are very close to the seashore. This should be considered in the evaluation of cells.

Geometrical parameters:

These parameters mainly show the physical density of urban pattern and basic shape characteristics of city blocks. The first geometrical parameter is 'plot size'. Distribution of plot size sows the evolution of pattern. Historical areas should have smaller plot sizes than periphery of the city.

Distribution of plot sizes

Repetitive division of plots through the development process and increasing land values in the central areas results in smaller plots than periphery of the city. The cells 21 and 22 are located in the central core of Istanbul and have smallest plot sizes (Figure 5). However, leapfrog development of the city within the forest areas reduces the plot sizes in the northwestern periphery of the city. Large plots in the central cells are used as public open spaces, universities, etc.

The European side have smaller plots than Anatolian side in the central area. This difference is not limited only to the plot sizes. Box-plot graphs help to understand differences in detail: Cells from 1 to 12 have larger minimum and mean values, which represents the characteristics of periphery and forest areas. The cells from 13 to 37 are located in the central zone and cells 20 and 21which are located in the historical core have the lowest mean values (Figure 6).
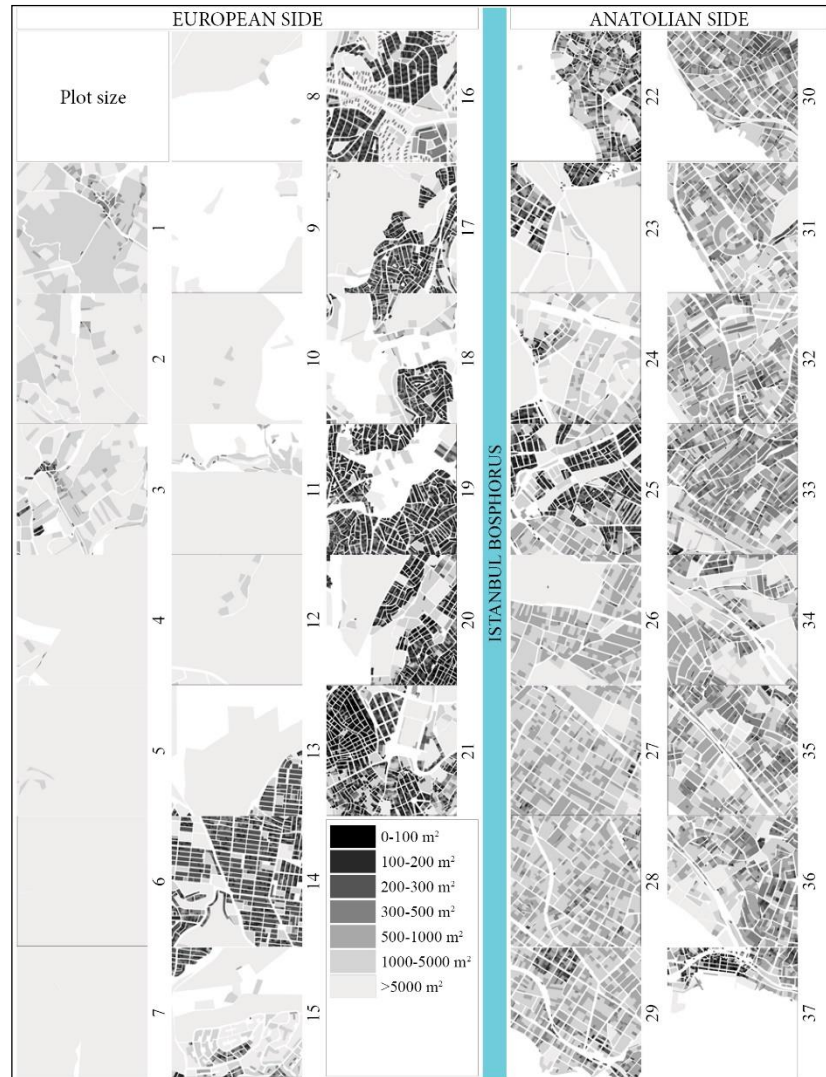
Figure 5. Plot size distribution of cells (Kaya, 2010)
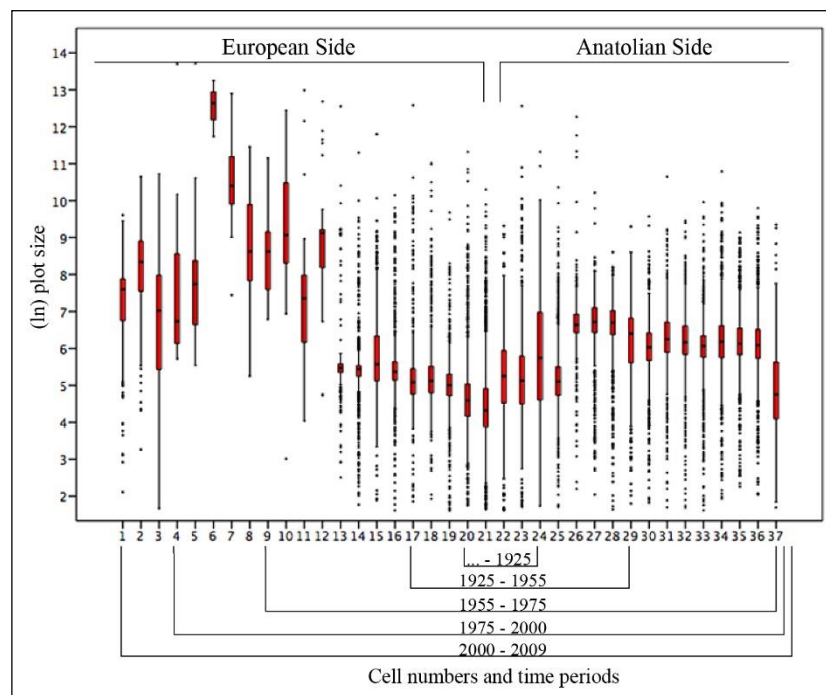
Figure 6. Box-plot distribution of plot sizes for each cell on the selected axis (Kaya, 2010)

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The ratio of city block area/perimeter (a/p)

Amorphous geometries increase perimeter and reduce the ratio. Square city blocks increase the area while keeps perimeter relatively short, thus the ratio will increase. In the hilly topography of Istanbul, there are several dead end streets and stairs on streets that increase the ratio.

The cells 4 to 8 in the Figure 7 correspond to the forest areas and villages, therefore they are very large areas divided by very limited village and forest roads. Settled area of the city started after these cells which reduces the 'a/p' ratio. Although city block sizes reduce, rectangular geometry of the city blocks prevent to have a/p lower than 10 (Figure 7).
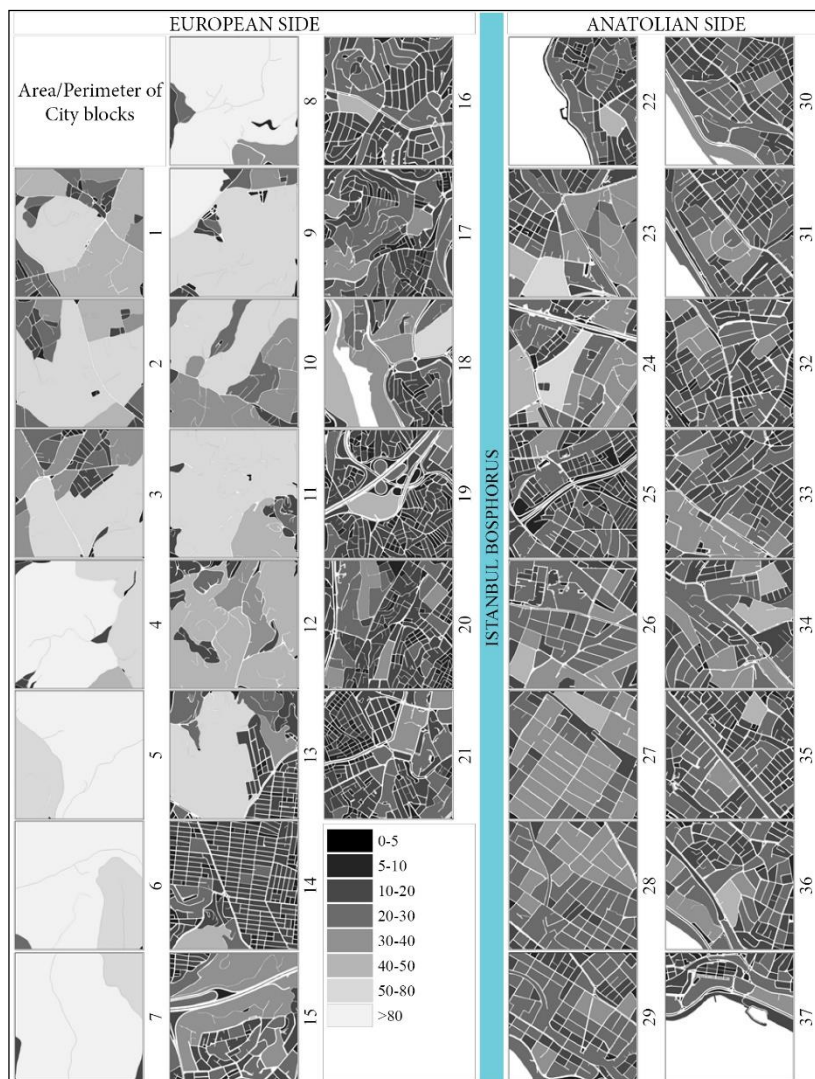
Figure 7. Distribution of city block area/perimeter ratios (Kaya, 2010)

Each cell has different a/p distribution. Especially cells 1 to 13 have very large city blocks because of natural areas. On the other hand, in the low density housing areas and villages, very small city blocks exist and the range of a/p ratio increases. This difference is

shown as longer boxes in these cells in the box-plot graph (Figure 8).
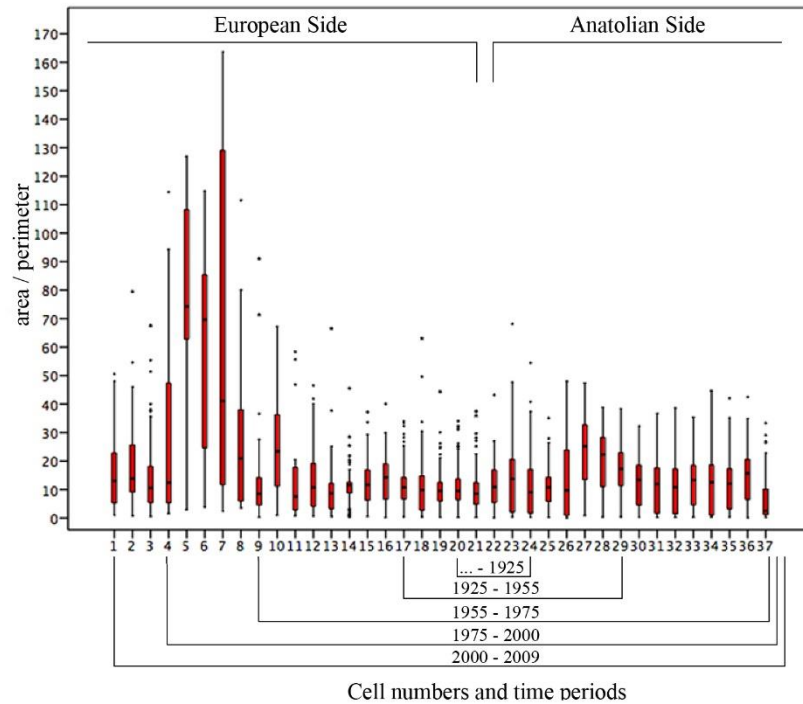
Figure 8. Box-plot distribution of a/p of city blocks for each cell (Kaya, 2010)

Range of values is larger in the cells 4 to 8 than the cells 11 to 37, which are located in the central area (Figure 8). Most of the cells has the ratio in between 5 and 30. The 14th cell h has lowest range and a regular grid pattern with the 'a/p' ratio around 10 can be seen in this cell. Cells from 13 to 37 are the central area of the city and comparing with the Anatolian side, the cells in European side have lower a/p range because of the small city blocks in the dense urban pattern.

Building construction ratio (BCR) and Floor area ratio (FAR)

Physical density is analyzed via 'building coverage ratio' and 'floor area ratio' via total coverage and construction areas in each cell. Surprisingly there is no regular decrease in the BCR values from the central zone to the periphery. Although gross BCR values generally higher in the central area and reaches to the 0.45s in some cells, BCR values are lower than adjacent two cells like cells 15 and 18 (Figure 9, Figure 11).

Floor area analysis gives similar outputs (Figure 10, Figure 11). Forests and water basins in the European side breaks the continuity of values and BCR and FAR values in the cells 1 to 12 are close to 0 (Figure 10). BCR values in Anatolian side are less fluctuated which means that urban pattern of cells has more similarity and continuity then European side. The homogeneous spatial pattern supports this similarity (Figure 9, Figure 11).
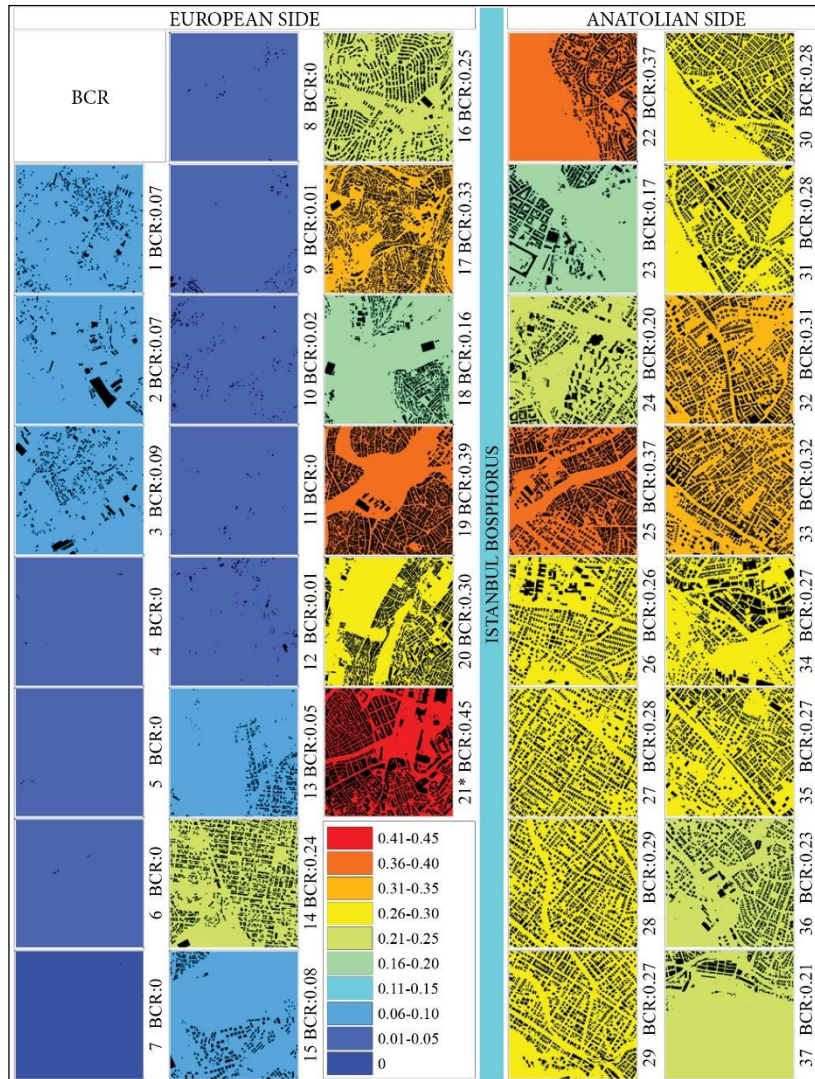
Figure 9. Building construction ratio analysis (Kaya, 2010)

As it can be seen in the Figure 10, in the historical core, BCR and FAR values higher in the European side than Anatolian side. Change in adjacent cells in the European side is also higher than Anatolian side.
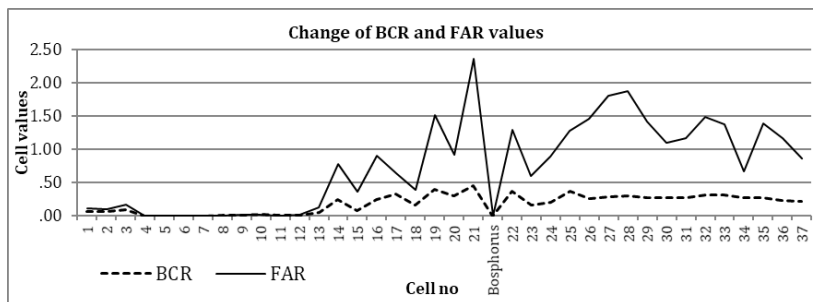
Figure 10. The change of physical density in the selected cells (Kaya, 2010)

Although geometrical features give information about physical pattern, 3D environment and structural organization should be analyzed together to understand intrinsic characteristics or urban pattern.
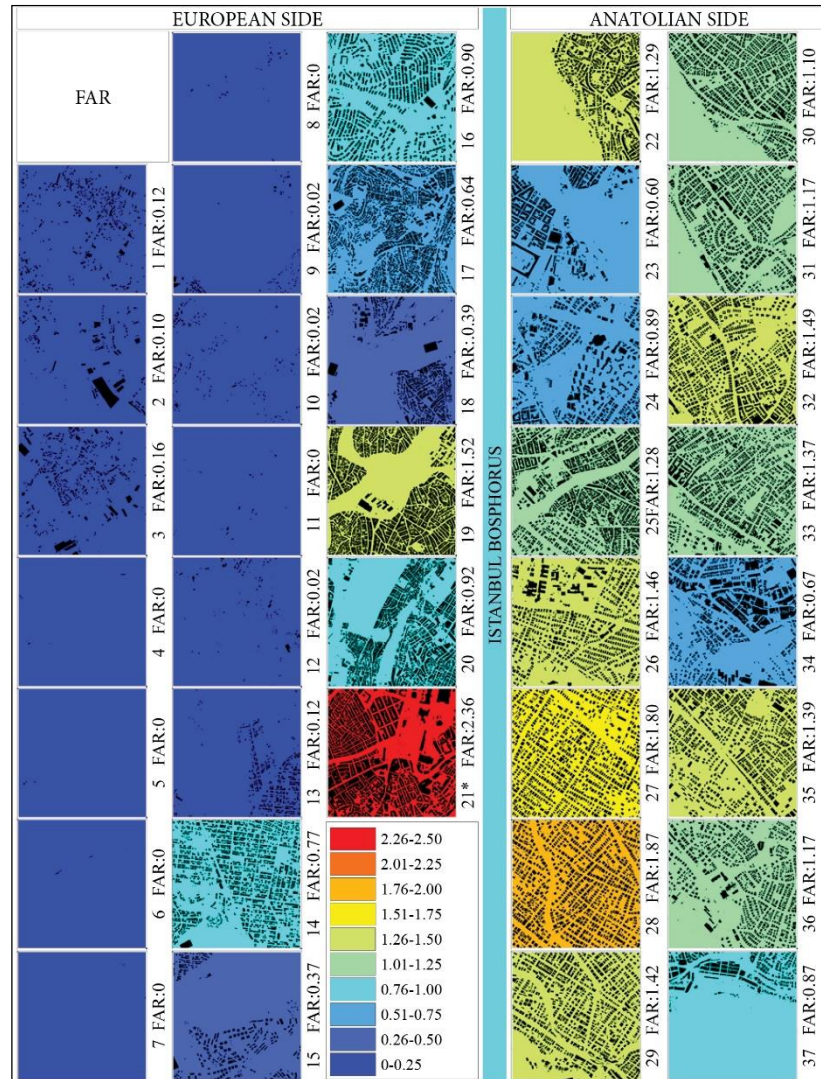
Figure 11. Floor area ratio analysis (Kaya, 2010)

Topological parameters

In this research, two integration values 'global integration (Rn)' and 'local integration (R5)' are calculated via topological step depth method instead of metric depth. Main arterials with high connectivity increases spatial integration values. As there are limited connection from villages and low density settlements in the periphery to main network, integration values in the periphery is very low (Figure 12). If an area is close to the motorways E5 and TEM, integration values increase.

Global integration

Maximum global integration values in Istanbul is calculated as 0,36. Settlements close to the seashore are generally old settlements and integration values in these areas are relatively lower than other regions which can be seen in the cells numbered from 22 to 37 (Figure 12,Figure 13).
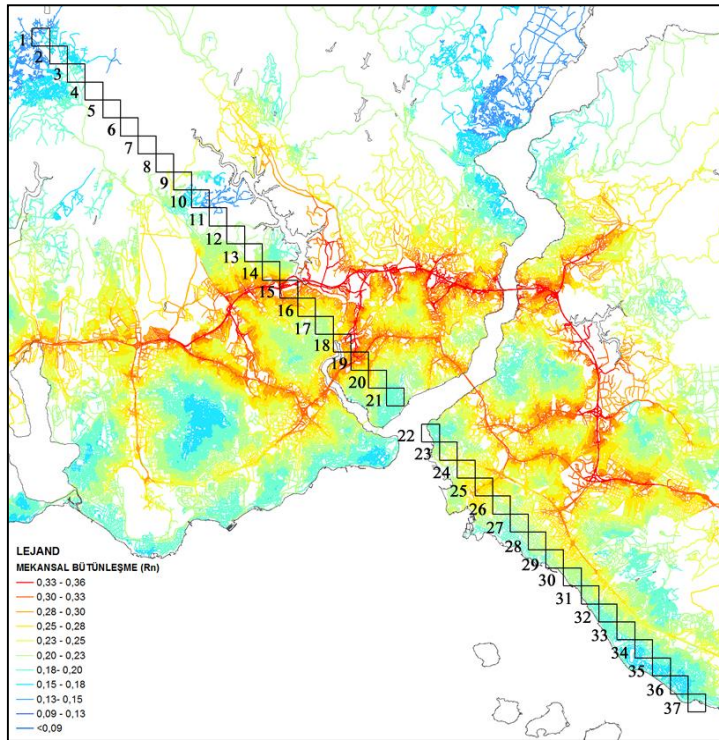
Figure 12. Global integration map (Kaya, 2010)

Highest values concentrated along the highways as in the cells 15, 18, and 19.
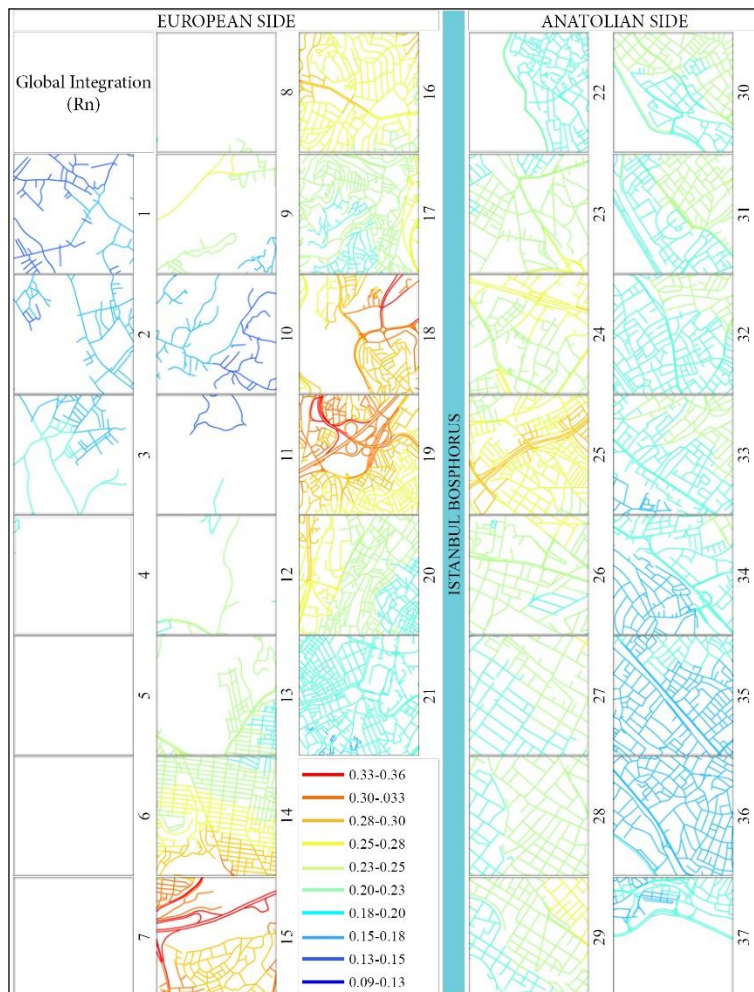
Figure 13. Spatial distribution of global integration (rn) values (Kaya, 2010)

Local integration

The global integration measures the topological accessibility in the whole city. On the other hand, close environment is very important for pedestrians, therefore, accessibility in the local level is calculated for Istanbul. Mean road segment length in Istanbul is 110m and mean walking distance is accepted as nearly 500m, therefore, in this research, the radius of the local integration is defined as 'R5' (Figure 14).
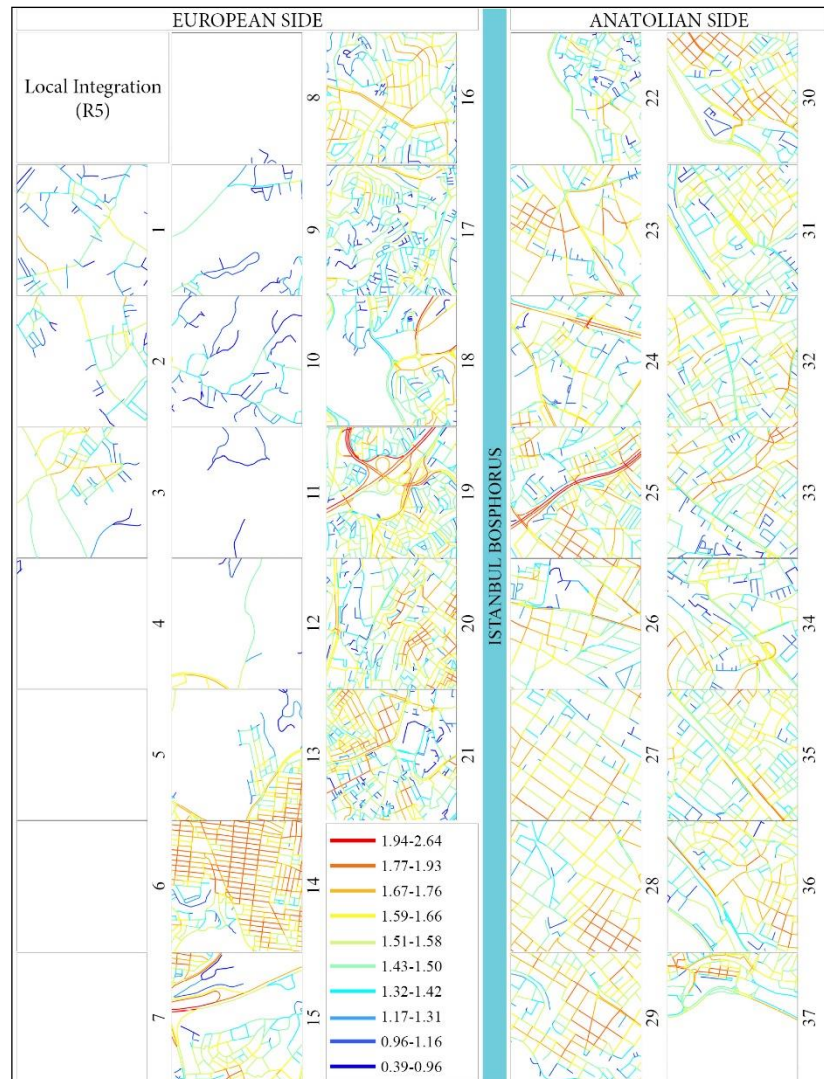
Figure 14. Spatial distribution of local integration (r5) values (Kaya, 2010)

Parameters related to use and perception:

The new model is developed here to analyze levels of enclosure in 3D. Although the visibility analysis of space-syntax examines user's perception of open spaces via classifying level of visibility for each point, it does not include differences in 3D space. Instead of analyzing built space, this analysis measures enclosure of open volume. Various enclosure levels have different effects on perception (Ashihara, 1983; Giritlioğlu, 1991).

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3D spatial enclosure model

The construction law does not allow building facades that are narrow than 6 meters, therefore in this research distance between measurement points is defined as 5 m to be able to measure the effect of all buildings on 3D enclosure. The model reveals the irregular enclosure distribution of the Istanbul. The irregularity can be seen the linear axis and internal structure of cells both. Open spaces do not increase regularly from center to periphery because of the leapfrog development (Figure 15). This parameter might help to create hierarchical open space or green system.
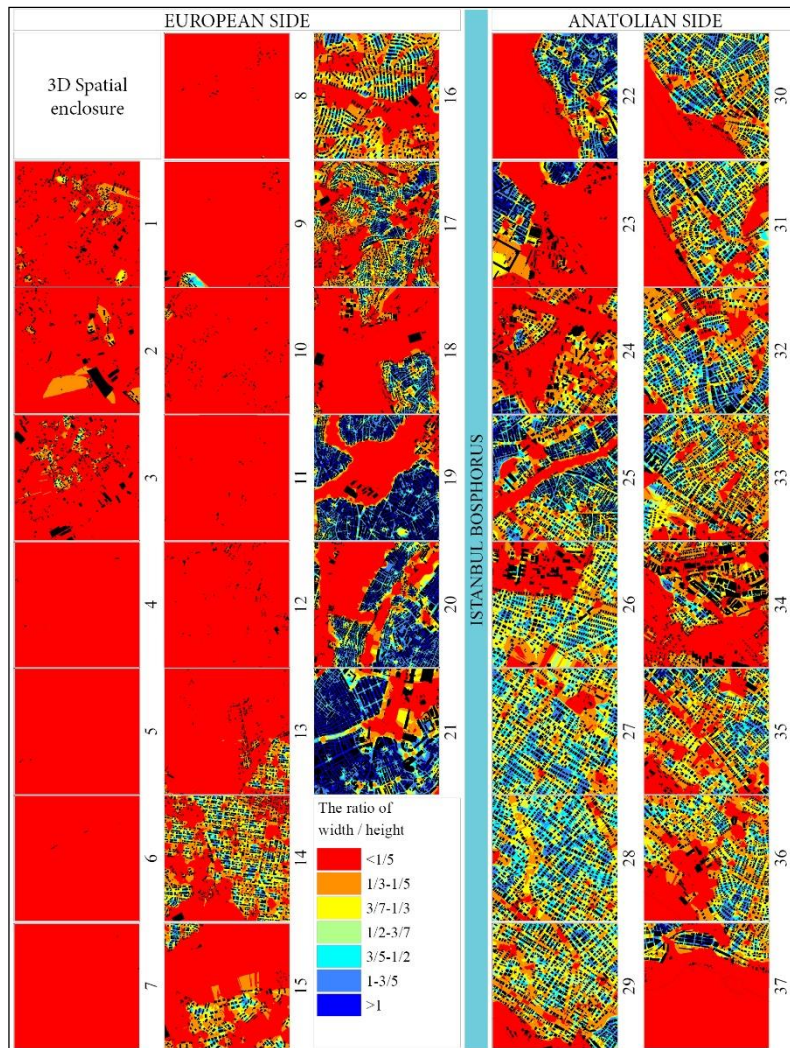
Figure 15. 3D spatial enclosure analysis (Kaya, 2010)

The European and Anatolian sides also have great differences: Multistory historical buildings with narrow roads increases the enclosure levels in European side. On the other hand, Anatolian side have detached houses with relatively wider roads resulting a balanced distribution with lower enclosure values (Figure 15). This model can be used to control building heights to reduce enclosure level within the dense urban structure without the need of expropriation a whole building.

Parameters related to complexity of urban pattern

Advanced methodology is needed to measure complex structure of urban pattern. As the urban pattern consists of built space and non-built space; two parameters have been used in this research to examine them. Fractal geometry measures the complexity of built space and Lacunarity measures the variety of distribution of open spaces.

Fractal dimension (Fd)

Fractal dimension of cells don't represent regular change from the center to the periphery of the city. The hilly topography, forest and water basin areas, and leapfrog development are some factors affecting this irregular structure. Highest Fd. is seen in the historical core. In the 21st cell it is higher than 1.8. It reaches to 1.77 in the Anatolian side (Figure 16).
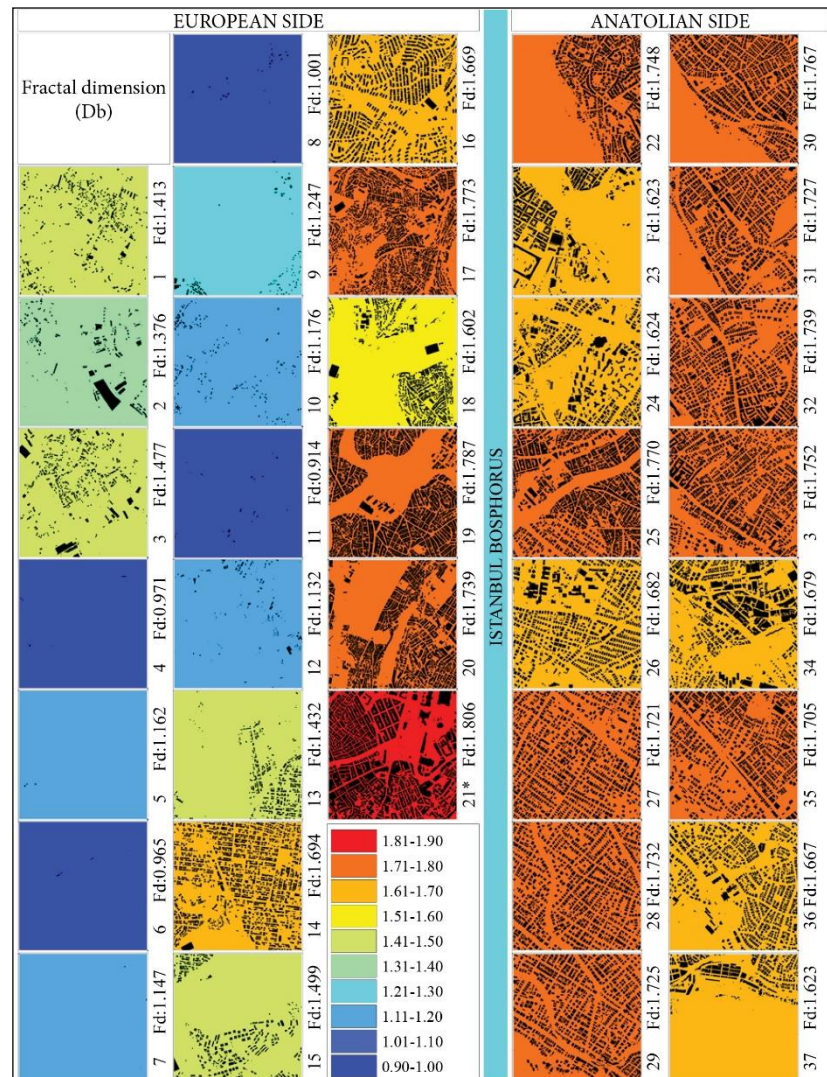
Figure 16. Fractal dimension values in Istanbul case (Kaya, 2010)

These high Fd values denote the rich cultural background and highly complex spatial pattern. It reduces to the 1.4s in the newly

developed periphery. Changing values show the multifractal nature of the city. Fractal dimension gives information related to the complexity rather than geometry. Thus, different patterns can have similar fractal dimensions as in cells 20 and 32 in the Figure 16. Lacunarity helps us to reveal differences between these cells.

Lacunarity

Variation in the number and size of open spaces changes the lacunarity values for each cell.
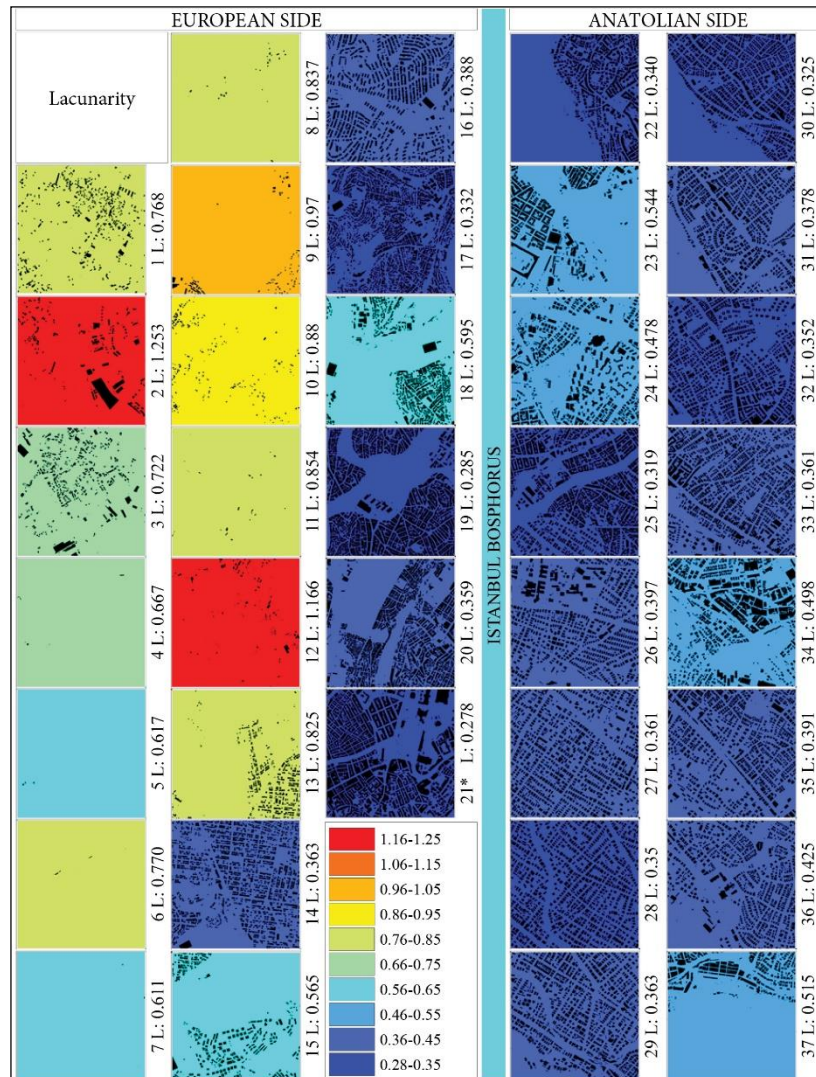
Figure 17. Lacunarity values in Istanbul case (Kaya, 2010)

Natural elements like Marmara Sea, Black Sea, The Bosporus, and The Golden Horn define the dominates to the form of the city. Moreover, forests and water basins, and hilly topography give shape to the city via limiting the built space and density. Because of the non-built areas in the periphery, lacunarity values are high in the first two columns of the Figure 17. Although the cells that located on the forest areas, like 4th to 7th cells, have largest open spaces, lacunarity values in these cells can be lower than some

other cells like 8th to 13th cells (Figure 17) because of the low heterogeneity of open spaces with variable sizes.

Evaluation of lacunarity with fractal dimension gives the more meaningful results as it can be seen in Figure 18. In this graph, two major group of cells can be recognized: The cells from 1 to 13 are periphery of Istanbul and other cells are central area of the city. Density and built up area increases after 13th cell this increases fractal dimension and decreases the lacunarity values (Figure 18).

Figure 18. Variation of fractal dimension and lacunarity values (Kaya, 2010)
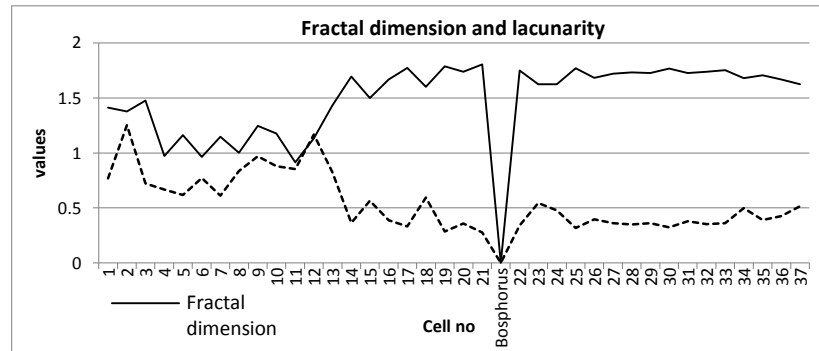
Urban DNA: Morphogenetic structure of İstanbul

The four main parameter categories analyses different characteristics of urban pattern and generally, each parameter itself does not correspond rich urban pattern structure. Therefore, the approach in this research proposes to use and represent all measures together to summarize various aspects of the urban pattern. All cells along the selected axis were projected to a line and a matrix created by all analyses (Figure 19).

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Figure 19. The change of values in each analysis for all selected cells (Kaya, 2010)
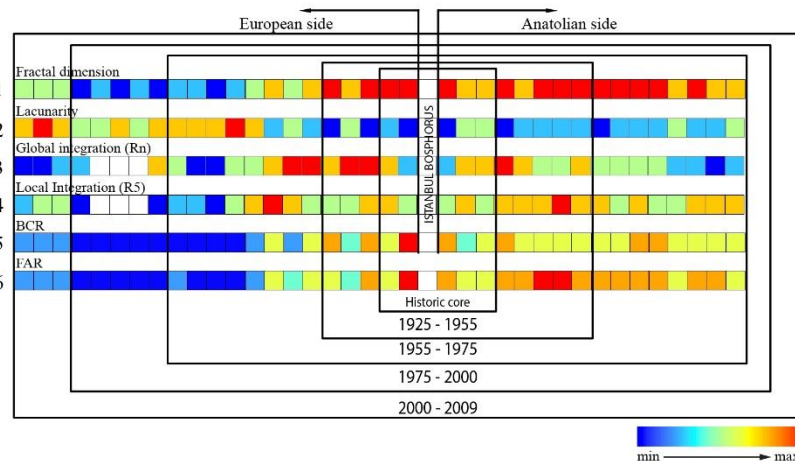
While global integration values increase towards the central core, local integration values of cells that are located 7 km far from the center are higher than central cells. Distance measurement of cluster analysis examined here to evaluate outputs. Correlation analysis is widely used technique to measure similarities, but proximity matrix of cluster analysis is also efficient technique to analyze similarity of variables (Kalaycı, 2005) (Table 1). Lower

distance between fractal dimension and local integration means that the fractal dimension is related to the local network as well (Table 1, Figure 21). Global integration values are dominated by main arterials, on the other hand in local scale, local road network becomes more important. Thus, local integration values represent local pattern better than global integration values. The distance between BCR and lacunarity shows the interrelation of the amount of open spaces and lacunarity. On the other hand, as explained before, lacunarity is more than the amount of open spaces, which measures the heterogeneity of distribution, and therefore these analyses should be evaluated as complementary parameters for each other. The lowest value in the table 1 is the proximity of BCR and global integration, it is interesting but this might be arises from the opportunity to create shorter linear axial map in low-density areas and ability of creating more alternative connections.

Table 1. Proximity matrix for all parameters (Kaya, 2010)

Parameters	Euclidean distances					
Parameters	Fractal dim.	Lacunarity	Global int.	Local int.	BCR	FAR
Fractal dimension	0,0	6,6	8,2	2,2	8,2	5,5
Lacunarity	6,6	0,0	2,8	5,7	3,2	5,2
Global integration (Rn)	8,2	2,8	0,0	7,1	0,7	4,8
Local integration (R5)	2,2	5,7	7,1	0,0	7,2	4,9
BCR	8,2	3,2	0,7	7,2	0,0	4,4
FAR	5,5	5,2	4,8	4,9	4,4	0,0

The cells representing the different periods of development have different measurement results and if the number of classes reduced, the differences between cells can be seen easily (Figure 19, Figure 20). Although there is no crisp boundaries, Fractal dimension, BCR, and FAR values are higher in the historical core and lower in the periphery (Figure 21). Especially cells representing development after 1975 have relatively lower values.
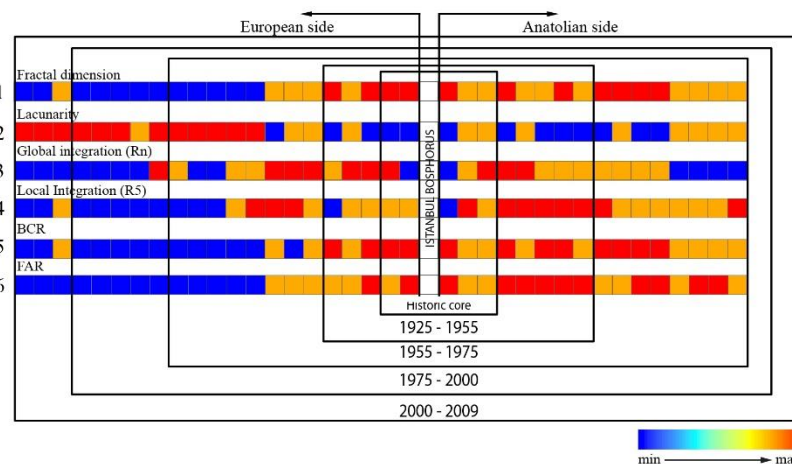
Figure 20. Reclassified values of cells into three groups (Kaya, 2010)

As the city grows, city block and plot sizes decreased and road network became the more complicated. Building densities increases in the historical areas. This process result in higher values in the historical urban pattern (Figure 21). Because of the rapid development, open spaces in the central area decreased and thus, the lacunarity values in the historical center generally lower than newly developed areas. Several cultures on urban pattern result in the increase fractal dimension values in the historical core gets the highest values, which reflects the high complexity of urban pattern.
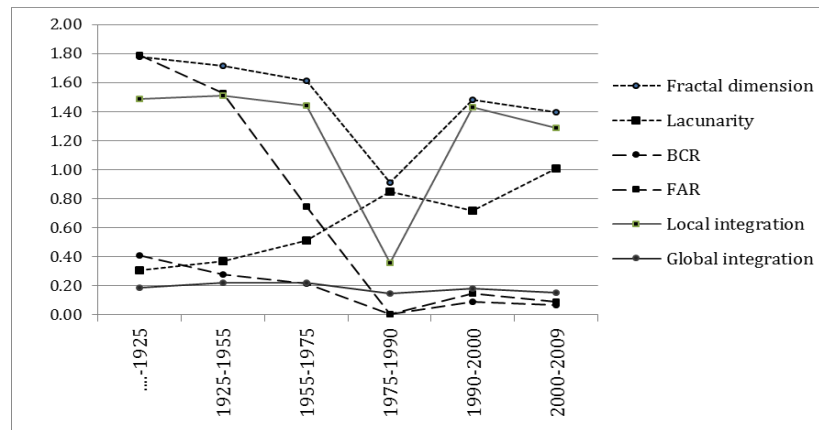
Figure 21. Changing parameter value in different development periods (Kaya, 2010)

All values in the Figure 21 falls between the cells representing growth period 1975 and 1990, because, city spread dramatically after 1950s. Especially after the construction of two bridges over the Bosporus in 1973 and 1988, new motorways increases this spread (Kubat et al., 2007). On the other hand, the forest areas and water basins located in the periphery of the city, thus non-built areas and low density modern settlements reduces the values.

Spatial distribution of values is parallel with development periods. The city developed in both sides of the Bosporus; therefore, values calculated from 15th to 30th cells are higher than other cells (Figure 22).
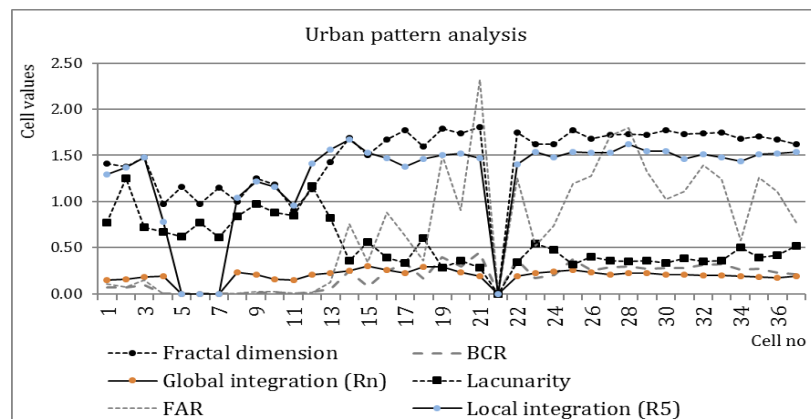
Figure 22. Calculation results for each cell for all parameters

These cells represent the historical core of the city in the European and the Anatolian sides. The highest values located in

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the European side of Istanbul (Figure 22). Although there is an obvious change in after the 13th cell, values in the east and west sides also fluctuates. This shows the heterogeneous structure and irregularity of urban pattern in the cells that located on a linear section from center to the periphery. The values are 0 in between the cells 21 and 22, because this area is Bosporus.

CONCLUSION

Urban pattern is a highly complex system that needs an advanced approach to explore various faces of urban pattern. This approach focuses on using different methods together starting from basic geometrical features to complexity of built structure to draw a detailed picture of urban pattern. Analyzing 'geometrical', 'topological', 'use and perception related' and 'complexity parameters' together as a complementary parameters set helps to comprehend the complex urban pattern.

The proposed model in this research addresses the importance of quantitative methods that enables to understand spatial characteristics of complex urban pattern. According to the findings of the study, some potential contributions and potential improvements of this model can be summarized as follows:

- This model includes several parameters together to draw an extensive map of urban pattern starting from building scale to urban whole, therefore it can be evaluated as an interface that combining various scales of urban pattern. The effect of spatial development process can be seen in the resulting map. This output contributes to the evaluation and control of urban growth problems.
- Use of geometrical, topological, use and perceptional and complexity parameters in this model also can help to evaluate interaction among them. For example, fractal dimension, lacunarity, and 3D spatial openness parameters measures spatial distribution of buildings and open spaces, thus these parameters have relation with BCR and building density as well. These relationships can help to control development.
- Parameters related to the complexity are relatively independent from the geometry and size. They measure the intrinsic characteristics of urban pattern, therefore, the model can help to compare cities that have different macroform and size. Creating a DNA of urban pattern might contribute to variate planning decisions and regulations in each city based on the local characteristics of them.
- The urban DNA maps also represents the change of values from center to the periphery, the spatial distribution of values can help to recognize problematic areas.

- This model can be used to analyze existing urban pattern and might help to create new urban pattern alternatives that are compatible with existing pattern while does not have to be geometrically identical. This is very crucial for urban design studies in the continuity and adaptation of historical urban patterns. Thus, this methodology and outputs of this research has a potential to be used by municipalities, urban planners and urban designers, landscape architects in defining the vernacular characteristics and evaluating the new design proposals. This can be evaluated as a new perspective to the parametric urban design.

In this research few parameters used together to analyze urban pattern via selecting limited number of 1kmx1km cells located on a linear axis in Istanbul. However, this research can be extended via selecting more patterns in different areas that have different typologies such as squatter areas, gated communities, seashore neighborhoods, etc. to build a more comprehensive model of urban DNA.

The main characteristics of urban pattern in Istanbul is the irregular character of the city that does not regularly increase or decrease from center to periphery. The level of complexity increases in relation with the age of urban pattern. The increasing fractal dimensions in the world cities converge to the value of 1.7, Values over 1.7 calculated in case studies reflects that the urban pattern of İstanbul is turning into a highly complex and original structure in the course of time.

Theoretical definition of parameters and analyzing the morphogenetic characteristics of urban pattern was the main focus of this research. On the other hand, each parameter can be improved via adding new capabilities such as analyzing fractal geometry in three dimensional space, or the effect of topography in spatial integration. In the future outputs of this method should be associated with urban systems and uses of space such as hierarchical distribution of green systems or transportation, or evaluation of outputs to define potential uses of smallest open spaces in urban pattern.

Acknowledgements

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Resume

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Research Article

Examining the Role of Cultural Landscape in Regional Development: Defining Criteria and Looking at Ephesus

Gökçe Şimşek*

Abstract

The link between regional development and cultural heritage has been at the center of theoretical discussions and practices in the field of preservation. Especially, varieties of practices and regional plans have been developed in different parts of the World such as Europe, Russia and South Africa in order to ensure regional development through cultural heritage. In this paper, it is accepted that a cultural landscape, as a sub-region of a particular region, is a relevant and meaningful unit that can contribute to the qualities of the region in terms of socio-cultural and economic aspects. In this context, the main goal of this paper is to develop a set of criteria that will act as a tool for identifying to which aspects of a cultural landscape has the potential to contribute regional development and to evaluate possible contributions of Ephesus and its cultural landscape to regional development. These criteria can be classified according to a framework implying a three-fold classification; improvements in the physical quality of the cultural landscape, economic dimension and socio-cultural dimension. As a result, this case indicates that cultural landscape has great potential to contribute to the social and

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economic development of a region. There is a great need to support community through tools such as awareness raising programmes, regional heritage planning, regional heritage institutions acting as regional agencies.

INTRODUCTION

The link between cultural landscape and regional development has been evolving in recent decades in parallel with the developments in theoretical and practical aspects. On the one hand, cultural landscapes are defined 'as combined works of nature and of man' (UNESCO, 1992) and representations of interactions between human society and settlement over time (CE, 2000). The explanation of types of landscapes has been put at the centre of research and discussions (for example, see Antrop, 2005; Vos and Meeks, 1999). Further, the changes in cultural landscape have been viewed as a threat due to their consequences such as loss of diversity, coherence and identity of the cultural landscape. However, these changes are essential parts of landscapes (Antrop, 2005). With the alteration of the conceptual level, the old notion stressing the importance of special valuable sites, especially natural ones, was replaced by a new notion to include all types of landscapes (Antrop, 2005). In addition, it is claimed that a 'landscape' is shaped by people's simultaneous, multiple identities as humans rather than *élites* (O'Keefe, 2016, p. 5). With the establishment of the European Landscape Convention, landscape is viewed as an expression of the diversity of people's shared cultural and natural heritage (EC, 2000). In order to define and implement landscape policies, the general public, regional authorities, and other interested parties, are put at the centre of decision-making processes. Moreover, emphasis is placed on the integration of the cultural landscape with all regional and town-planning policies and increasing the awareness of civil society, private organisations and public authorities regarding the role and value of landscapes (EC, 2000). As a result, cultural landscape as a sub-region draws its power from its natural and cultural heritage for regional development.

In parallel to these, the relation between heritage conservation and development has been deeply rooted since the ICOMOS conference held in Moscow and Suzdal, Russia (1978). At this conference, this relationship was mainly investigated through the consideration of historic monuments located in urban contexts. With the developments in world tourism, this link has been the subject of many arguments. On the one hand, it is argued that cultural values are compromised for commercial gain (Urry, 1990; ICOMOS, 1999), and the effects of undesirable overdevelopment and damage to cultural heritage as a result of tourism have been discussed. On the other hand, the values of cultural heritage for creating partnership opportunities and the mutual beneficial outcomes have been stressed (McKercher, Hoa and du Cros, 2005), and the importance of heritage tourism for reconnecting people to their cultural roots is emphasised (McCarthy, 1994).

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Although the contribution of cultural landscape to regional competitiveness can be evaluated in relation to several fields—such as creative industries and human resources—so far in the 2000s, heritage conservation has been directly related with regional development and tourism. The value of cultural landscape for increasing regional competitiveness is generally examined in relation with tourism destination competitiveness (Crouch & Ritchie, 1999; Kozak & Rimmington, 1999; Enright & Newton, 2005). In the context of tourism, cultural tourism is viewed as one of the key drivers of European economic growth and development. The importance of preventing undesirable overdevelopment and related damage to cultural heritage through careful planning is emphasised (Europe Nostra, 2006).

Given the speed and the effects of the globalisation of societies, the relation between World Heritage and Sustainable Development was discussed on the 40th anniversary of the World Heritage Convention in Kyoto (UNESCO, 2012). Especially for providing contributions of heritage conservation to the sustainable development, enhancing cooperation and coordination among all stakeholders and ensuring the involvement of local communities have been listed among its activities (UNESCO, 2012). In the Paris Declaration, heritage is viewed as the driver of development, and an attempt has been made to establish a link between heritage and regional development. At the theoretical level, the potentials of heritage for ensuring social cohesion, well-being, creativity and economic appeal are stressed. This link between heritage and regional development is explained in relation with three sub-themes: (1) controlling and redistributing urban development, (2) revitalising towns and local economies and (3) preserving space (ICOMOS, 2011). At the practical level, the results of some projects carried out in Russia, Germany, England and Turkey indicate that cultural heritage has positive effects for regional development, such as growth of business, increased private investment, and increased cultural infrastructure (Menteş, 2006; Abankina, 2013). On the other hand, it has negative effects such as changes in social structures and increased expenses (Abankina, 2013). This is a challenge in terms of safeguarding the social structure and its values, and it is a complex issue to solve. At the same time, it is an opportunity in terms of economic development. The validity of the dichotomous relationship that characterises the interaction between cultural landscape and regional development needs to be examined. In this context, the main goal of this paper is to develop a set of criteria that will act as a tool for identifying to which aspects of a cultural landscape regional development has the potential to contribute. The cultural landscape of Ephesus will be the case study. It is accepted that a cultural landscape, as a sub-region of a particular region, is a relevant and meaningful unit that can contribute to the qualities of a particular region. This acceptance requires an effort to analyse what regional development is. Therefore, the following subjects will be explained: (1) the link between the bottom-up regional development model and cultural landscape; (2) key indicators developed for understanding the role and contributions of

cultural landscape in regional development, including tests of these indicators in the case of Ephesus; and (3) an evaluation and suggestions.

BOTTOM-UP REGIONAL DEVELOPMENT MODEL AND CULTURAL LANDSCAPE

In order to understand the link between cultural landscape and regional development, the "bottom-up" regional development approach will be explained first. In contrast to the traditional "top-down" approach, which aims to promote equality among regions by redistributing economic activity to problem areas, the bottom-up regional development model is based on supporting mainly indigenous firms in order to improve competitiveness (Pezzini, 2003; Halkier, 2006) and using local resources and characteristics while doing it (Begg, 1999; Gordon, 1999; Boschma, 2004; Halkier, 2006). In addition, it is viewed as the domain of a regional semi-autonomous body that is able to promote regions in terms of the competitiveness of indigenous firms and attraction of economic activity from outside the area (Danson, Halkier & Damborg, 1998, p. 18–21). However, with the emphasis on the importance of concepts such as industrial districts, learning regions and competitiveness goes beyond the boundaries of individual firms. Non-economic factors such as cognitive, social, cultural and institutional factors are spatially bounded, shaped and reproduced in regional development (Boschma, 2004, p. 1002). The main concepts such as innovation, human resources, social resources, network relations (Eraydın, 2008, p. 8) and local dynamics shaping the economic growth of the region such as knowledge, labour flows and institutional structures (e.g. Lovering 1999; Aminy, 2002; MacKinnon et al., 2002, Coe et al., 2004) are emphasised. In parallel with these developments, models of destination competitiveness have been developed in the field of tourism (Crouch & Ritchie, 1995; Dwyer & Kim, 2003). These developments are reflected in some international documents in the field of cultural heritage and projects therein.

Some international documents (i.e. Paris Declaration, 2011; Namur Declaration, 2015) emphasize the link between cultural heritage and development. While heritage is linked with sustainable development in the Namur Declaration, one of the sub-themes is the relationship between heritage and regional development in the Paris Declaration. In the Namur Declaration (2015), the main two indicators can be inferred: (1) contributions of cultural heritage to landscape quality and to developing public spaces; and (2) improvement of the cultural heritage management capacity of the public sector. These indicators are related with the physical condition of the cultural landscape and the heritage management capacity of the public. The Paris Declaration emphasises the link between heritage conservation and regional development in the context of urban development, towns, rural villages and local economy and preservation of space. The criteria that can be created are as follows: (a) preserving historic districts and encouraging their restoration and regeneration; (b) working on regeneration; (c) promoting balanced planning and

development; (d) recreating multifunctional, landscaped urban neighbourhoods; (e) fostering socio-economic regeneration and reusing built heritage in towns and rural villages; (f) providing employment for local communities through the maintenance of traditional agricultural and craft activities and preserving skills and expertise; (g) developing new sources of energy production through maintaining and bringing back into use local, sustainable, traditional energy production techniques; (h) protecting geological and archaeological heritage, groundwater and ecosystems; (i) promoting alternative modes of transport through maintaining regional and local communication networks such as railways and roads; and (j) respecting historic landscape and traditional settlement patterns through preserving rural heritage and ensuring its appropriate reuse (ICOMOS, 2011).

In parallel with these theoretical developments, some projects (in England, Russia, Germany, New South Wales, England and Turkey) were implemented in different parts of the world. Here, the link between cultural heritage and regional development will be summarised with five examples: Stratford-upon-Avon (England), Weimar (Germany), Yasnaya Polyana (Russia), Southeast Anatolia (Turkey) and KosovoWest (Menteş, 2006; Abankina, 2013). Apart from the case of Kosovo West, which is explained in relation with a regional heritage plan, all other projects have been implemented. According to these cases, cultural heritage serves regional development through varieties of aspects such as a growth in tourism, increase in private investment, and increase in cultural infrastructure and changes in social structures. These aspects can be defined as main criteria for understanding the effects of the preservation of cultural landscape in regional developments. In particular, growing cultural tourism creates growth in businesses, especially in the service sector, and new employment opportunities, as shown in the cases of Stratford-upon-Avon, Weimar, Southeast Anatolia and Yasnaya Polyana (Abankina, 2013). In parallel with increases in cultural infrastructure investments, new institutions developing as an international centre were established in Weimar, Stratford-upon-Avon and Yasnaya Polyana (Abankina, 2013). Changes in real estate costs, due to tourism and new residents moving into the area, generally result in changes in the social structure. In the case of Stratford-upon-Avon, what is explained that the social structure of the city's population changed, due to high real-estate costs; specifically, middle- and high-income groups moved in (Abankina, 2013). According to the regional heritage plan of Kosovo West, cultural heritage can contribute to different aspects of regional development, such as building capacity among stakeholders to raise local/regional awareness of heritage, ensuring cooperation and a guarantee of a certain level of coordination and consistency of approach with relevant partners, ensuring the inclusion and participation of all communities, developing proper management policies, programmes and plans, maintaining on-going inventory preparation, monitoring the implementation of conservation projects, increasing cooperation and coordination between institutions, civil society and local

authorities and so on (CE, 2015). For Turkey, some criteria can be identified through cases such as the South-eastern Anatolia Project (Menteş, 2006) and the research on tourism in Izmir/TR31 Region (Günlü, Pirnar & Yağcı, 2009/ Figure 1). In the case of the South-eastern Anatolia Project, the development of cultural tourism (Menteş, 2006) can be defined as a main criterion. In the context of the research on the impacts of cultural heritage on regional development, some problems and obstacles for understanding why regional development cannot be achieved are explained, such as the lack of policy and a systematic process at the "regional İzmir (TR31 NUT2) level" and lack of cooperation between the governmental bodies and the private sector (Günlü, Pirnar and Yağcı, 2009).

In that respect, some criteria will be defined in relation to these examples. However, the contribution of a cultural landscape on regional development goes beyond the limits of tourism. Preservation and/or archaeology are also effective ways of ensuring the contribution of the cultural landscape to regional development. In this context, key criteria for analysing the roles of the cultural landscape for regional development will be defined below.

Figure 1. The location of TR31 Region and other regions in NUT 2 Level (Redrawn from the figure of Republic of Turkey Ministry of Development, 2013)

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A LOOKING IN CASE OF EPHESUS ACCORDING TO DEFINING CRITERIA

The cultural landscape has potential to contribute to regional development in terms of both economic and socio-cultural aspects. Some cultural landscapes are characterised by the visual incorporation of the geography, whether rural or urban, such as the Pergamon and its cultural landscape, and the Diyarbakır Fortress and Hevsel Gardens by man' (UNESCO, 2014). This paper focus on Ephesus and its cultural landscape created through the superimposition of settlements in different periods and geography that can be traced from the 7th millennium BC. Ephesus and its cultural landscape is formed by several sites including the Çukurici Mound; the Temple of Artemis, one of the Seven Wonders of the Ancient World; the monumental Hellenistic city wall and layout; cultural traditions of the Roman imperial period within the site of Ephesus; the Church of St. John,; the

remains of the Turkish city from the 14th/15th century; and the House of Virgin Mary. The area has an outstanding universal value due to the diversity of superimposition of geography and human settlements starting from the Neolithic age at Cukurici Mound up to the Middle Ages and beyond. Today, remains of urbanisation, architecture and religious history from the Prehistoric, Archaic, Hellenistic, Roman, Byzantine, Seljuk, Aydınogulları, Ottoman and modern period are located sometimes side by side, sometimes on top of each other. The physical, social and cultural traces of all the layers from Cukurici Mound to today's Selçuk co-exist in this area. In this context, it is necessary to give brief information about Selçuk.

Selçuk is located near international arrival points: the Adnan Menderes Airport (İzmir), Kuşadası Harbour and İzmir Harbour (Figure 2). Selçuk, as one of the stations on the the first railway in Anatolia dated back to 19th century and as an old harbour on the Aegean Sea, presents significant potential for experiencing different modes of transport. Selçuk is heavily dependent on agricultural production. Since the 1980s; tourism has become a significant sector in Selçuk. It is ranked 75th on the list showing the level of development in districts (State Planning Organisation, 2004) among 872 districts in Turkey. The 2009 census showed that 34,479 people live in. According to IZKA, the regional development agency of TR31 Region corresponding to the borders of the city of Izmir (1), Selçuk has high potential in terms of agriculture and tourism.

In this context, it is obvious that understanding the contributions of cultural landscape through examining key criteria is not a unique methodology. Many variables and criteria can be defined to facilitate an understanding of the extent and content of these contributions. As explained above, cultural landscapes have great potential for contributing to regional development in terms of economic and socio-cultural aspects. While economic contributions are assessed through indicators such as the creation of jobs and income, employment opportunities and financial flow, understanding the impacts of the cultural landscape on a region's socio-cultural development is a complex issue.
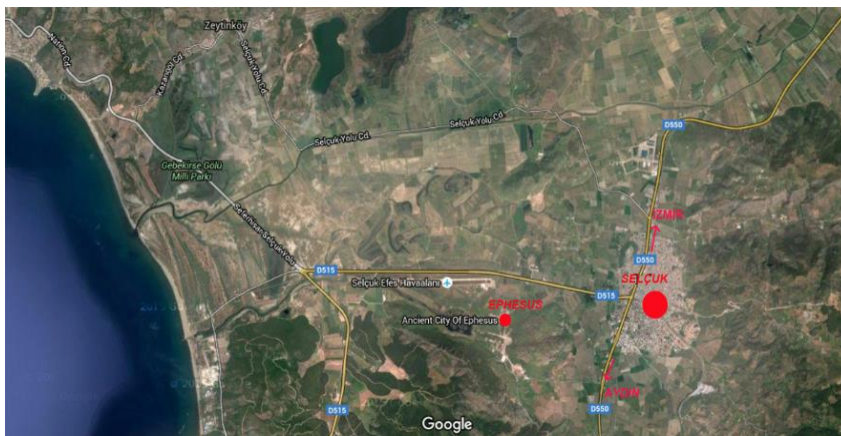

Figure 2. The location of Ephesus and Selçuk. (Source: Redrawn from Google map).

On the one hand, currently, heritage plans developed at the regional level are generally based on a participatory process that encourages local actors to play an important role in maintaining and planning heritage (UNESCO, 2012, articles 39; 40) such as in cases of Kosovo West (European Council, 2012) and Okanagan-Similkameen (Denise Cook Design, 2015). On the other hand, currently, a regional heritage plan is not a valid tool for the preservation and development of cultural heritage in Turkey. Therefore, the social dimension of regional development will be analysed and evaluated taking into account the process of site management plan preparation, which is among the best tools for understanding participants' opinions at local and regional levels. The process of preparation of a management plan, which was introduced for the first time through Law 5226 (2004) and incorporated into Law 2863 (1983), and the Regulations concerning the Principles and Essentials Relating to the Monumental Masterpieces Council (2005), indicates good opportunities for the development of network relations and collaboration at the local and regional level. Especially, meetings that have to be organised throughout the preparation of the management plan can contribute to the development of network relations and collaboration. The following consists of three parts: (1) defining key criteria, (2) exploring the usefulness of these criteria through the case of Ephesus and its cultural landscape, and (3) evaluation.

These criteria can be classified according to a framework implying a three-fold classification as given in Table 1. Firstly, improvements in the physical quality of the cultural landscape are among the significant dimensions. The criteria relate to those physical qualities that are direct results of excavation, conservation and presentation activities (only one indicator is defined here), the installation of new infrastructures, and others. Secondly, the criteria of economic dimension (only five indicators are defined here) illustrate the economic gains achieved through archaeological excavations, researches, preservation activities, tourism and exogenous investments. Thirdly, the criteria of socio-cultural dimension (only three indicators are defined here) relate to those social issues and situations. It is claimed that these indicators are useful to analyse the contribution of a cultural landscape, as a particular sub-region, to the regional development. For understanding some aspects of contributions of the cultural landscape to regional development, the actors who participated in the process of developing a management plan were interviewed. Of seventeen actors (2), nine were interviewed in April and May 2014 and the other eight were interviewed in July 2014. The following section highlights key indicators that illustrate the contributions of cultural landscape to regional development.

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Table 1. Criteria for understanding the contributions of cultural landscape to regional development

Criteria	Improvements in the Physical Quality of Cultural Landscape	Economic Dimension	Socio-cultural Dimension
1	Improving appearance of cultural landscape through excavation and preservation activities	Increasing number of visitors	Developing network relations and collaboration
2	Installing new cultural infrastructures	Generating income	Capacity building for local development
3	Others	High number of businesses in service sector	Contributing local planning policies
4		Developing entrepreneurship	Others
5		Attracting exogenous invest	
6		Increasing regional tourism competitiveness	
7		Others	

1. Improving appearances of the cultural landscape through excavation and preservation activities

As stated in the Namur Declaration (2015), the contributions of cultural heritage to landscape quality and to developing public spaces are indicators of regional development. Here, improvements in the physical quality of the cultural landscape will be analyzed. Excavations, preservation and presentation activities starting from the end of the 20th century in many sites in Turkey have produced many results, and some of these results can be seen clearly in the appearances of the cultural landscape. Especially in the context of cultural landscapes constituting archaeological sites, uncovered areas of a city and fragmented architectural elements covered through excavation can be transformed into standing structures. These types of changes make sites and the cultural landscape visible and understandable. However, there are discussions on authenticity and what is valued. What is valued now may not be valued in the future and what is valued by specialists may not be valued by local people and/or tourists. Even the 'document values' can not long survive without positive 'experiential values' (Jiven and Larkham, 2003, p. 79). Besides as stated by Jokilehto, for more people the 'character and appearance' can be more significant than authenticity of

original materials (1999). But, in case of cultural landcapes including archaeological sites such as Ephesus, Basilica of St.John how should such preferences be taken into account before the physical intervention? As Jiven and Larkham (2003) point out, there is a need to develop more theoretically informed conceptions of authenticity, character and sense of place, which should be informed by the views of the people directly involved. On the other hand, the integration of sites through management and planning efforts can improve the quality of the cultural landscape. Moreover, cultural infrastructures, which are necessary for tourism, create attractive centers.

The archaeological works and preservation efforts at Ephesus, and its cultural landscape continuing since the 1890s, have greatly changed the appearances of the site and its cultural landscape. (Şimşek, 2009). The Temple of Artemis, the Church of St. John, Ephesus, the Ayasuluk Hill and the House of Virgin Mary, which were mostly underground, have become visible through excavations and preservation efforts. For instance, the appearance of the Curetes Street and the standing structures on the street such as the Hadrian Temple, the Terrace Houses and the Celsus Library, have become visible (Figure 3). Thus, the improved appearance and quality of the physical environment of the cultural landscape serve as a resource for tourism and regional development.

Figure 3. Changes in the appearance of the so-called Trajan Temple in Ephesus. **3a**. The so-called Temple of Hadrian throughout excavation, 1956 (Miltner, 1959, 53-4). **3b**. The proposal for the south façade of the authentic design of the so-called Temple of Hadrian (Miltner 1959, 277-8). **3c**. The state of the so-called Hadrian Temple after re-erection (Simsek, 2008).
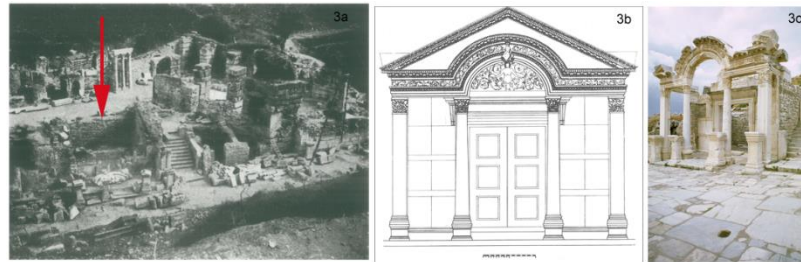
2. Increase in the number of visitors and income generation

As stated above, an increase in the number of visitors in a cultural landscape is another indicator of regional development. A high numbers of visitors have both positive and negative effects on the cultural landscape and the host community. On the one hand, there can be positive effects such as improvements in the quality of the physical environment, income generation, and growth of the service sector and creation of jobs for workers of all skill levels. However, a high number of visitors can also have negative effects such as erosion at sites and a decline in the perception of the meaning of physical characteristics of the cultural landscape. Although Rapaport points out that using a cultural landscape as the unit of analysis necessitates looking simultaneously at archaeological, traditional and contemporary landscapes, in this paper, the number of visitors at certain sites will be taken into account in order to understand the changes in visitor numbers.

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Many tourists visit Ephesus and its cultural landscape, and they generally enter via the ports of Kuşadası or İzmir. Currently, organised one-day tours always include Ephesus and one other neighbouring site (i.e. Selçuk Museum, the Church of St. John or the House of Virgin Mary). Visitors generally leave without visiting the town of Selçuk. This type of tour organisation brings independence from the local community, which is another obstacle to the improvement of social relations between the local community and visitors and for understanding vernacular and traditional lifestyle. In Ephesus, it can be seen that the number of visitors has risen rapidly over the last 30 years, from 300,000 (1982) to over 2 million (2012), and twice as many tourists are visiting Ephesus today than they did in 2000.

A large number of tourists (about 1.5 million in 2015) bring high income. In order to understand income generated through Ephesus and its cultural landscape, it is necessary to analyse the amount of income generated through entrance fees and car parking fees. In 2012, the entrance fees from Ephesus (US$28 billion dollars) and income from car parking fees (US$4.3 billion) were the two major sources of income in Izmir region. After these sources, the House of Virgin Mary, which brought in US$2 billion, was the third one. It is followed by the Terrace Houses (US$1.96 billion), the St. John Cathedral (with US$1.74 billion) and the Ephesus Museum (US$1.25 billion). The total income was almost US$37 billion in 2012, which is 12 times greater than in 2003, as shown in Figure 4.

3. Businesses growth in the service sector and supporting the development of entrepreneurs

As explained, the cultural landscape can greatly influence the businesses, employment and development of entrepreneurs in a positive way. This effect is achieved not only through tourism, but also through archaeology and preservation. On the one hand, the effects of tourism have become one of the major subjects of research and policies in recent decades (Rypkema, 1999; Throsby, 1999; Avrami et al., 2000; Cernea, 2001; Greffe, 2004; Richards, 2005). It is estimated that 10,000 visitors create 1.15 direct jobs (persons employed in the museum itself), and every direct job creates 0.62 indirect jobs in the fields of interior architecture and conservation, and so on (Greffe, 2004). In addition, historic preservation creates more jobs and income than would be generated with the same amount spent on new construction (i.e. see Rypkema, 1999 and Throsby, 2012). In that respect, cultural landscape has great power to encourage small businesses such as restaurant, cafes, souvenir shops, other tourism-related businesses and entrepreneurship at the local and regional level. Here, the businesses will be categorised into three groups: (1) businesses serving tourists, (2) businesses in creative industries, and (3) businesses in science and preservation.
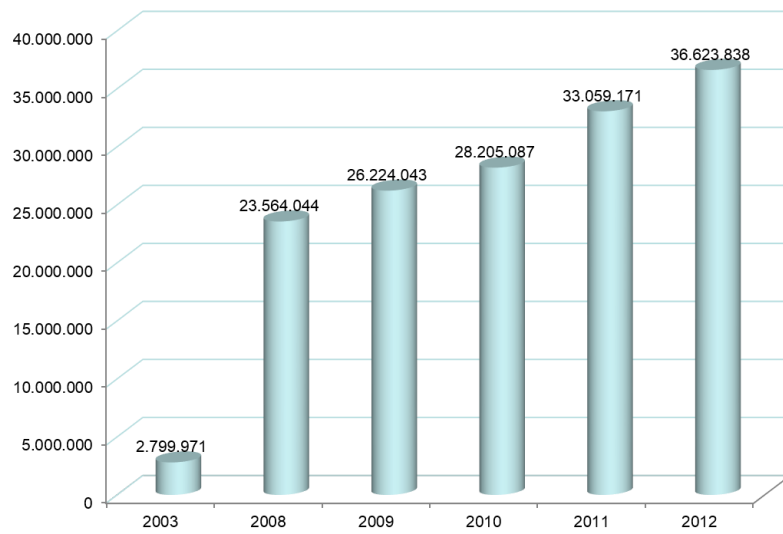
TOTAL INCOME ($) PER YEAR

Figure 4. Income from entrance fees and parking fees of Ephesus and its cultural landscape (Source: Selçuk Municipality Archive)

According to the data from the Chamber of Commerce, in 2014, among the total number of businesses, 30% (190) businesses serve mainly tourists, in comparison to other businesses such as retailers and construction. As shown in Figure 5, the distribution of businesses in the tourism sector indicates that agricultural product sales (27%, 48) and restaurants (20%, 36) are the primary businesses. Souvenir sales (14%, 24), carpet sales (11%, 20) and leather sales (11%, 19) account for much smaller percentages. These are followed by hotels (9%, 16) and jewellery sales (8%, 15). In addition, the number of tourist guides serving in the region is above three hundred (3). As emphasised in the Paris Declaration (ICOMOS, 2011), the high number of agricultural product sales (27%, 48) provides employment for the local community in Ephesus. However, it is possible to state that traditional agricultural and craft activities have not generally been maintained.

In the field of cultural industries, 48% of businesses serving mainly tourists (souvenir sales, carpet sales, leather sales and jewellery sales) directly relate with cultural industries, and there are 70 shops on the gates of Ephesus. In relation with Law 5226 'Incentives for Cultural Investments and Enterprises', the Ministry of Culture and Tourism leases a shop (including a coffee shop) in Ephesus to a particular firm in parallel with 47 other sites (Central Directorate of Revolving Funds, 2009). According to the Ministry of Culture and Tourism, there is an effort to raise the level of service standards at sites. However, leasing cultural sites to a particular firm is highly criticised due to the use of sites for personal and monetary benefits (Pulhan, 2009, p.147). In addition, shopkeepers on the gates of Ephesus have mentioned that the shop within the site creates unfair competition. Although the level of service standards and the quality of design and workmanship of the products sold in shops on the gates are low; leasing shops to a particular firm acts as an obstacle for developing local businesses, employment and entrepreneurship

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at the local and regional level. In addition, the construction of a mall by TURSAB is another obstacle for the development of small businesses. Interviews indicate that these kinds of investments from outside the region for the sake of evaluating tourism potentials discourage local people and have negative effects on building up competitiveness among local firms. Consequently, these practices fail to bring out the potentials of Ephesus and its cultural landscape for generating local businesses and entrepreneurship. Besides, as opposed to what is emphasised in the Paris Declaration, businesses do not generally contribute to preserving traditional skills and expertise at the local level.

In the areas of archaeology and preservation, a number of people work on digging and preserving edifices—such as the archaeological sites of Ephesus and the Ayasuluk Hill—and preserving monuments of different periods, such as Turkish Bath in Selçuk. In the case of Ephesus, Öztürk (2014) states that 141 researchers (including 30 researchers from Turkey) from 18 countries around the world worked for scientific research during the 2013 campaign. This indicates the importance of the archaeological site as a scientific resource and as a generator for research jobs. The number of workers is much higher if the ones working in Ayasuluk Hill and preservation projects are added. In that respect, Ephesus and its cultural landscape have high potential to contribute to the development of not only small businesses and entrepreneurships, but also businesses in science, preservation and construction.
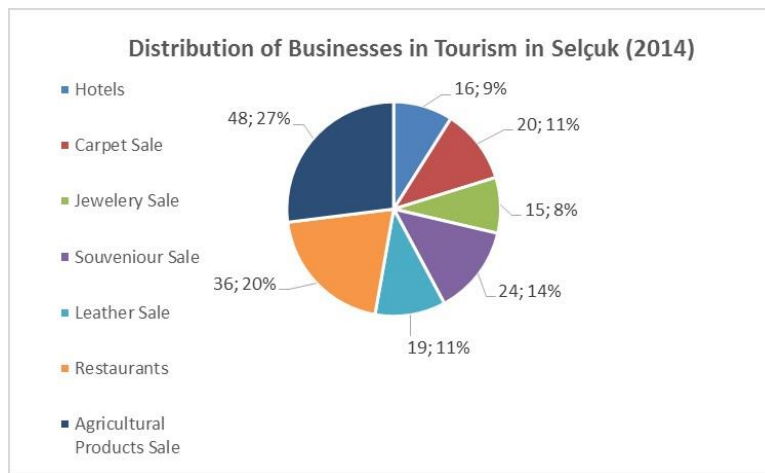
Figure 5. Distribution of Businesses in Tourism in Selçuk, 2014. (Source: Selçuk Chamber of Commerce Archive).

4. Attracting exogenous investment

The cultural landscape has great potential to attract the attention of peoples and institutions from all over the world. Attracting exogenous investment related with the potential of a region for attracting economic activity from outside the area (Danson, Halkier & Damborg, 1998, p. 18–21) is another key criterion here, which is generally not mentioned in the heritage field. In the current literature, exogenous investment is generally examined in relation with tourism. However, archaeology, preservation and research may have great potential for attracting exogenous investment in the case of cultural landscape. For instance, several

non-profit and profit institutions such as the National Endowment for the Humanities (US) and J.M. Kaplan Fund are evidence of the value and importance of cultural landscape for attracting exogenous investment.

This part focus on the case of Ephesus as a source of scientific research for attracting exogenous investment. A great amount of money has been spent since the early years of the excavation. In addition to the Austrian Archaeological Institute, which directs the excavation, thereby bringing in money to the project, several governmental and non-government institutions have been investing in the projects at Ephesus. For instance, in 2012, the total amount of money spent for Ephesus was 2,746,532,82 € as shown in Figure 6. The pie chart compares the level of financial support given by institutions from around the world (4). In addition, the preservation activities of the General Directory of the Pious Foundation and other archaeological projects are other sources for understanding the whole effects of exogenous investments in regional development. Therefore, cultural landscape has great potential for attracting foreign investment through archaeology, preservation and tourism.
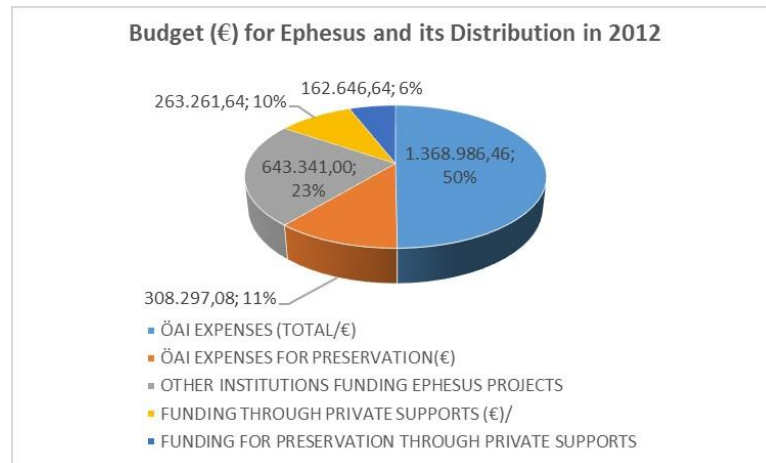
Figure 6. Budget for Archaeological Research and Preservation Works at Ephesus, 2012 (Source: Austrian Archaeological Institute Archive)

5. Developing network relations and collaboration

Heritage belongs to the whole community, and participation needs to take place at all levels. Besides, collaboration is a process throughout which the views of stakeholder groups are considered as legitimate as those of an expert (Bramwell and Sharman, 1999; Hall, 1999). In Turkey, site management plans that are generally based on a participatory process encourages local actors to play an important role in planning and management cultural landscape. The engagement of local communities with the cultural landscape is mentioned in relation with the introduction of the concepts 'management area' and 'site management' (article 3) through the Law of 'Conservation of Cultural and Natural Properties' (Law 5226, 2004) added to Law 2863 concerning the 'Protection of Cultural and Natural Heritage (1983). Further, establishing cooperation among partners is among the main purposes of a management plan, according to Article 5 of the Regulations Concerning the Principles and Essentials Relating to

the Determining of Management Areas within the Foundation and Responsibilities of the Monumental Masterpieces (Şimşek, 2015). The partners are authoritative central, and local administrations and nongovernmental organisations specialised in this field, land owners, volunteers, institutions and the local public (2005). As stated, the emphasis on the participation of stakeholders from specific fields, especially preservation and planning, implies that a different type of collaboration is called for in the law. In this context, there are some problems with the definition in relation to the extent to which stakeholders are involved and which ones are excluded and with the meaning of the term 'collaboration', which is elusive.

According to interviews with the actors who participated in the preparation process of the management plan, the actors were mostly very satisfied with their involvement in the preparation process. The meeting was the first attempt of its type in Selçuk, welcoming diverse stakeholders from local and regional levels for the sake of preservation and management of the cultural landscape. However, some actors who worked on-site (the members of the Chamber of Tourist Guides of Aydin) and at the shops on the gates of Ephesus (the members of the Association of the Shopkeepers at Ephesus) stated that they did not have information and did not participate in the meetings. Among the stakeholders who participated in the meetings, some of them, such as the Chamber of Commerce in Selçuk and the Chamber of Tradesmen and Craftsmen, mentioned that they were not given any information on what a 'management plan' is before the first meeting. In addition, it was obvious that some respondents from authoritative local administrations participated in the meeting because they were required to do so.

The preparation process for the management plan can be divided into two stages in relation with the change in Selçuk's mayor due to the municipality elections on March 30, 2014. Most of the respondents agreed that, before the elections, the process did not influence their network relations or collaborations with other stakeholders. Some local organisations, such as the Austrian Archaeological Institute, the Chamber of Commerce in Selçuk, and the Chamber of Tradesmen and Craftsmen in Selçuk, stated that their views were not included in the management plan at first and that the management plan was not a joint decision among stakeholders. From the interviews, it is understood that the approach of the former mayor, including his low level of openness to participation, negatively influenced stakeholders' participation. In that respect, most of the respondents stated that the process did not offer them opportunities for developing network relations or collaboration among stakeholders.

After the elections, the new mayor of Selçuk took the approach of having a high level of interest and encouraging stakeholders to participate, and this influenced the process in a positive manner. Thus, the management plan preparation process activated stakeholders to engage directly with the cultural landscape. The production of a management plan has been highly significant in

encouraging wide participation, especially at the local level. Some new network relations centring on heritage have emerged. Many meetings are needed to develop collaboration. Besides, it is indicated that the approach of the local leader is an important factor that influences the potential of the cultural landscape for establishing participation, network relations and collaboration. Consequently, there is great need to define what "collaboration" is in the context of management plan and support this process by other tools in order to contribute socio-cultural development at the local and regional level.

6. Capacity building for local development

The criterion 'capacity building for local development' needs to be articulated in relation with both 'capacity building' and 'local development'. The concept of 'capacity building' has been explained in relation with the capacity of people and institutions for playing an effective role in settlement planning and management (e.g. UN Rio Declaration, 1992; UNCED, 1996; UN, 1996). According to the OECD (2005), some effects of culture on local development are (1) to enhance synergy between players at the local level and (2) providing leverage for the creation of products. In the context of the programmes of regional development agencies in Turkey, the projects based on capacity building relate to diverse issues such as the development capacity of institutions and persons, economic and social coherence, innovation and entrepreneurship, and factory production quantities. Below, the role of cultural landscape in capacity building is examined in relation with these three aspects.

Improving the capability of people and capacity of institutions: Cultural landscape has the capacity to improve people's capabilities such as for doing research or performing jobs related to preservation and tourism. Moreover, cultural landscape can contribute by activating resources for the foundation of educational institutions at the local level. Thus, cultural landscape has the potential to activate local or exogenous resources for the foundation of some institutions and to improve the institutional capacity of the region and people's capability to do specific jobs.

Enhancing abilities, relationships and values that will enable organisations and institutions to improve their performance: Cultural landscape has great potential for enhancing abilities, relationships and values that will enable organisations and institutions to improve their performance at local and regional level. As explained above, the values of the cultural landscape for creative industries lead companies to improve their performance in this sector.

Enhancing people's and organisations' willingness to play new development roles: Cultural landscape has the potential to activate people for enhancing people's and organisations' willingness to play new development roles in the fields of preservation, cultural tourism and creative industries. Especially, the tourism potentials of cultural landscape lead people and organisations to play new development roles. Further, a

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management plan has the potential to contribute to the willingness of people and organisations to play new development roles. For facilitating people's and organisations' willingness to play new development roles, there is a great need for encouraging participation in the management process.

Ephesus and its cultural landscape pose both advantages and problems in relation with capacity building. On the one hand, they have great potential for building capacity by improving people's capabilities. For instance, the ceramic research on the pottery from the Hellenistic period to the Ottoman period—in which researchers from the University of Zurich, University of Salzburg, University of Sıtkı Koçman and Austrian Archaeological Institute collaborate—indicates the potential for creating a scientific research environment at the global level. In addition, the 141 researchers (including 30 researchers from Turkey), who come from 18 countries across the world, show the significance of Ephesus for building capacity by improving people's research and vocational capabilities. On the other hand, this contributes to the generation of jobs in the tourism sector by activating investment in the education sector, such as the tourism vocational high school (*Selçuk İMKB Otelcilik ve Turizm Meslek Lisesi*, 2006). However, the people whose capabilities and skills were improved, cannot generally be actors in tourism implications and development at the local level. Therefore, there is a need for enabling an environment in which people can interact easily. The high tourism potential of Ephesus and its cultural landscape are also a good indicator of its role for building capacity. However, some practices, such as establishing a shop within Ephesus and TURSAB's construction of a new mall, discourage local people's and organisations' willingness to improve their performance. The construction of the mall was highly criticised by local people for failing to limit local shopkeepers' performances. Thus, there is a need to take into account the voices of local people and capacities of local companies before implementing certain practices at the local or regional level. As a result, encouraging stakeholders to participate and collaborate throughout the preparation of the management plan will have positive effects on enhancing people's willingness to play new development roles.

7. Contributing to local planning policies

Generally, management tools, especially management and planning, are viewed as an essential part of providing effective protection for a cultural landscape. The importance of developing an integrated approach to planning and management is highly stressed (UNESCO, 2012, article 112). In contrast to traditional planning approaches (top-down planning policy), the integration of planning and management adds a new participatory process and bottom-up planning policies. In Turkey, the local governments, especially local municipalities, were designated as responsible bodies for the preparation of management plans (2004, article 2). In that respect, the cultural landscape within the borders of a municipality has the potential to contribute to the planning studies of local governments at a theoretical level. A

management plan has positive effects on the planning approaches of local municipalities. Thus, a new spatial unit and a new planning approach have been added to the practices of local municipalities beyond traditional physical planning.

In the Ephesus case, the respondents were also asked whether a management plan could positive effects on the development of local planning studies or not. It is surprising that the respondents usually agreed that a management plan has great potential for contributing to the planning policies of the municipality and changing their views on planning. Further, they were generally satisfied with their inclusion within this kind of process and with the opportunity to express their opinions. However, the exclusion of their opinions and views before municipality elections indicates that their efforts to participate in the management plan were insufficient. On the other hand, the new mayor's high level of openness to participation influenced the stakeholders' opinions. The findings show that the management plan has great potential to contribute to the development of local planning studies. In that respect, management plans have high potentials for expanding municipalities' planning approach beyond traditional physical planning.

CONCLUDING THOUGHTS

Cultural landscape has the potential to contribute to the broader social, cultural and economic goals of regional development through research/archaeology, preservation, tourism and creative industries. Ephesus and its cultural landscape demonstrate high contributions to local and regional development independent from the implementation of bottom-up regional policies and the regional heritage plan. It is necessary to repeat that the aim of this paper has been to clarify the possible contributions of cultural landscape to regional development. The data are mainly gathered from the Austrian Archaeological Research team. The data from other sites within the cultural landscape, such as Ayasuluk Hill and the Museum, show the exact contributions of cultural landscape in regional development. The criteria explained above can be developed and new ones can be added for developing a better framework for understanding how cultural landscape can contribute to regional development. Each criterion can be explained and discussed in a separate paper. New criteria can contribute to broad understanding of the contributions of cultural landscapes in regional development.

This paper has argued the necessity of considering the contribution of cultural landscape in order to conceptualise the ways in which communities can more effectively benefit from their cultural heritage for regional development purposes. This case indicates that cultural landscape has great potential to contribute to the economic development of a region. At the same time, it has potential to contribute to local community needs such as capacity building, development of network relations and collaboration and development in local planning studies. The case

indicates that, although necessary legal instruments have been created for ensuring the participation of particular stakeholders in the management of a cultural landscape, the traditional top-down approach, as a dominant approach in Turkey, generally seems to act as a barrier to the inclusion of some stakeholders' views and voices. The key actor in regulating and managing the process of preparation of a management plan, has to develop an appropriate approach and avoid excluding the views of other stakeholders. The government's practices regarding the cultural landscape should take into account the importance of community for both cultural landscape preservation and regional development. There is a great need to expand the stakeholder groups, avoiding limitations with experts and interested groups, and to generate more active involvement in order to ensure collaboration and coordination in the community, as well as capacity building. Moreover, some practices that function as barriers to increasing competitiveness among local firms should be considered, and the voices of local peoples should be taken into account prior to implementation. Therefore, the great potential of cultural landscapes for 'providing employment for local communities through the maintenance of traditional agricultural and craft activities and preserving skills and expertise' (ICOMOS, 2011) should be supported by appropriate tools and applications. Government applications and different types of legal documents should be compatible and support each other for reaching the targets of both heritage management, planning and local and regional development.

The government, which plays an important role in supporting the community for better regional development, should support this process by creating necessary tools such as awareness raising programmes and regional heritage planning. For the sustainable preservation of cultural landscapes and better regional development, the management of cultural landscapes has to be planned at the regional level. Furthermore, heritage management planning needs to be implemented by a heritage institution, which acts as a kind of development agency, at the regional level. Management plans and site management—as tools proven to be effective at the sub-regional level in Turkey—need to be adapted at the regional level and placed in the centre in order to facilitate the needs of a better regional development. Besides, regional and local communication networks such as railways and old harbours can be included in the management and planning of cultural landscapes in order to better provide heritage contributions in the regional development.

Acknowledgement

Notes:

(1) According to the most up-to-date data (2001) of the Turkish Statistical Institute, Izmir is above Turkey's average of $2,146 with its value of $3,215 for gross domestic product (GDP) per capita values.

(2) Sabine Ladstätter (Director of the Ephesus Excavation), Cengiz Topal (Site Manager and Ephesus Museum Director), Yusuf Yavaş (archeologist, Selçuk Municipality), Yusuf Dereli (Director of the Assembly of the Selçuk Chamber of Commerce /shop owner at Ephesus Lower Gate), Özgür Aydoğan (Secretary of the Chamber of Tradesmen and Craftsmen) Tuba Gülamber (architect, Selçuk Municipality), Mustafa Büyükkoloncı (Director of the Excavation of Ayasuluk Hill and the Church of St. John), Özlem Vapur (Vice Director of the Ephesus Excavation Team), Vefa Ülgür (former mayor of Selçuk), Veysel Badem (*Selçuk Kaymakamlığı*), Filiz Acargil (Secretary of the Chamber of Commerce), Hasan Topal (Director of the Chamber of Architects, Izmir Section), Mehmet Güngör (İzmir Regional Directory of Culture and Tourism), Aslı Korur Ergün (İzmir Regional Directory of Foundations), Levent Gürçavdı ve Ozan Sayın (Director and Vice Director of the Chamber of Tourist Guides of Aydın), Halil Düztaş (Chamber of Civil Engineers Selçuk Office) and Demet Yanbolu (Architect). I would like to thank to the respondents for their time and interest during the interviews.

(3) This information is given by Levent Gürçavdı ve Ozan Sayın (Director and Vice Director of the Chamber of Tourist Guides of Aydın).

(4) According to the pie chart, 61% of the total budget was brought by the Austrian Archaeological Institute, and of that amount, 11% was spent on preservation. In addition, 23% of the total budget was from public institutions such as the Austrian Science Fund, European Union and Austrian Academy of Sciences, Vienna University; several museums (e.g. *Kunsthistorisches* Museum); and other Austrian and international universities. Thirteen percent came from private institutions such as The Society of the Friends of Ephesos (*Gesellschaft der Freunde von Ephesos*, Austria), Ephesos Foundation (Turkey), American Foundation of Ephesus (USA), J.M. Kaplan Foundation (USA) and Borusan (TR).

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Resume

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Research Article

The Contributions of Urban Landscape to Urban Life

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Abstract

The issues of urban and urbanization emerged after the industrial revolution. Thus, cities that have increased rapidly in population have become points of attraction for people. Over the past century, the world population has begun to gather quickly in urban areas. Cities are transforming into unhealthy living environments with distorted ecological balance, lost green areas and aesthetic qualities. The value of accessible green spaces in urban areas is increasing to the unprecedented levels. The green space system seen as a necessity in the cities have provided the emergence of the "urban landscape" phenomenon. The issue of urban landscape is now a very serious concept. The landscape change is moving along with the level of civilization. Primarily, guidance service should be offered for more efficient, comfortable and protective areas. An interdisciplinary approach is needed in the creation of urban spaces. In this study, the term of urban landscape was explained and the researches about the contributions of urban landscape to urban life were examined and suggestions were made about the subject.

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INTRODUCTION

Cities that exist with the natural and physical environment, live a rapid process of change with the strong technological interventions and changing needs of today's world. Thus, cities that have rapidly increasing population have become points of attraction centres for people. The urban population in the world was approximately 2.5 billion in 1995, and this number is expected to be double around the year of 2025 (Loures, Santos, & Panagopoulos, 2007; Melchert, 2007).

Cities reveal unhealthy living environments with their degraded ecological balance, lost green areas and aesthetic qualities (Melchert, 2007). Inadequate environmental policies, social and economic problems caused unsustainable construction, illegal occupation of the land and lack of environmental protection works, thus these are causing loss of green spaces. The value of accessible green spaces in urban areas is increasing to the unprecedented levels for the urban residents whose recreational needs are rising and characteristics are changing (Kızılaslan, 2007). The green space system seen as a necessity in the cities bring to light of the "urban landscape" phenomenon (Polat & Önder, 2012).

Public (urban) spaces, also called open-green spaces are the common places that provide public interest opportunities surrounded by constructions in urban fabric. The main parts of these places are; parks, playground and sports areas, shopping areas, transit-assembly areas, zoos and botanical gardens, cemeteries and chapel gardens, open exhibition spaces and fairgrounds, historical and archaeological sites, coastlines, government agency gardens, urban forests and temporary open spaces (Hepcan, Kaplan, Küçükerbaş, & Özkan, 2001).

Landscape change is acting in unison with the level of civilization. First of all, guidance should be made for more efficient, comfortable and protective areas. An interdisciplinary approach is needed in the creation of urban spaces. In this sense, profession experts such as architects, urban and regional planners, landscape architects and interior architects that constitute spaces have important tasks (Polat & Önder, 2012).

The issue of urban landscape is now a very serious matter. Especially it is very important for local governments to protect and develop these resource values by taking the research results obtained about the subject into consideration. In this study, the concept of urban landscape was explained and the researches on the contributions of urban landscape to urban life were examined and suggestions were made about the subject.

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URBAN LANDSCAPE

Cultural landscapes are places where all or some of the natural assets or objects were modified, created and activated by humanity (Çubuk, 2001). Urban landscape is a kind of cultural landscape that is shaped by the cultural open spaces reserved for the benefit of more people and society. A conscious arrangement of the urban spaces is the expression of urban landscape. In urban space, it is the relation of structures to each other and to unstructured spaces as a whole. All urban factors and elements that generate the urban environment are being used in urban landscapes. In the formation of urban landscapes, there is a significant effect on the data about the socio-cultural structure as well as the physical structure (Karaman, 1992).

The main theme of urban landscape planning is the creation of an urban green space system (Pamay, 1978). The term of green space is defined as surface areas formed by covering or combining of existing open spaces with plants (woody and herbaceous plants) (Önder & Polat, 2012). According to the by law numbered 23804, the term of green space is defined as the sum of playground, children's gardens, rest, excursion, picnic, entertainment and coastal areas reserved for community use. It is also being stated in the bylaw, 'international fairgrounds, botanical and zoo gardens and regional parks are also in the green area' (Anonymous, 1999).

The United Nations World Health Organization recommends that the amount of urban green space per capita should be at least 9 m^2 for mitigating the undesirable environmental effects and for other benefits of these areas (Deloya, 1993). For the cities of Turkey, according to the provisions of the "Regulations on the Principles Regarding the Implementation and Modifications of the City Development Plan" published in the Official Gazette No. 23804 dated 02.09.1999; The green area amount per capita in urban areas should be at least 10 m^2, and at least 14 m^2 per capita outside municipal and contiguous area boundaries (Anonymous, 1999).

The determination of the amount of active green areas per capita in the cities of our country has considered in many scientific studies so that the deficiencies related to the amount of urban green spaces were tried to be kept on the agenda (Önder & Polat, 2012). The studies show that the existing amount of active green area per capita is under the standards. For instance, these amounts of green areas were determined in some studies; 3.1 m^2 in Antalya city (Ortaçeşme, Karagüzel, Atik, & Sayan, 2000), 1.9 m^2 in Istanbul (Aksoy, 2001), 3 m^2 in Isparta (Gül & Küçük, 2001),

1.02 m² in Kars (Yıldız & Yılmaz, 2003), 5,44 m² in Kayseri (Öztürk, 2004), 2.2 m² in Kırıkkale (Özcan, 2006), 1.4 m² Kahramanmaraş (Doygun & İlter, 2007) and 4.01 m² in Burdur (Yenice, 2012). According to the researches made in Konya, the amount of green area per capita is 12.53 m² in Selçuklu District (Onder, Polat, & Korucu, 2011), 59.27 m² in Meram District, 9.93 m² in Karatay District (Table 1) (Önder & Polat, 2012).   In European cities, this value is higher than our cities. Urban green areas are defined as "green spaces such as parks in the city open to public use" in the Urban Audit Report published by the European Commission (Taylor, Bozeat, Parkinson, & Belil, 2000) and the average amount of the green areas per capita in 32 European cities for the year of 1996 is 26 m². The amount of the green areas foreseen according to the Konya City Development Plans for the year of 2020 were given in Table 2.

Table 1. Konya City Central Districts' Green Areas (Önder & Polat, 2012)

Konya City Central Districts' Green Areas							
District	Population	Playground		Neighborhood Park		Sport Field	
		m² (number)	m²/ person	m² (number)	m²/ person	m² (number)	m²/ person
Karatay	232 237	44 820 (88)	0.19	256 782 (117)	1.11	41 250 (8)	0.18
Meram	290 297	39 450 (71)	0.13	465 366 (171)	1.60	58 035 (12)	0.38
Selçuklu	459 921	104 512 (229)	0.23	415 304 (34)	1.11	248 499 (72)	1.85

Table 2. Green Areas foreseen in Konya City 2020 Development Plan (Önder & Polat, 2012)

Green Areas foreseen in Konya City 2020 Development Plan					
Districts	Population	Recreation Areas m² (Number)	m²/ person	Urban Park m² (Number)	m²/ person
Karatay	288 930	4 305 216 (2132)	14.90	4 726 264 (9)	16.36
Meram	330 945	2 116 874 (609)	6.39	12 285 806 (10)	37.12
Selçuklu	561 946	7 935 578 (5274)	14.12	13 634 212 (19)	24.26

THE CONTRIBUTIONS OF URBAN LANDSCAPE TO URBAN LIFE

ECONOMIC CONTRIBUTIONS

Energy saving: The most obvious function of urban forests in terms of economy is energy saving (Yılmaz, Bulut, & Yeşil, 2006). Trees reduce the amount of energy used in buildings by the cooling effects in summer and by the windbreak function in winter (Dwyer, McPherson, Schroeder, & Rowntree, 1992). McPherson and Gregory (1994) estimates that a tree with an average length of 6 meters reduces the annual heating-cooling cost of a house by

8-12%; Heisler (1986) also notes that plants save 8-12% fuel consumption by reducing heat loss, by blocking wind flow and blowing snow or changing their direction. A forty-year-old ash tree in an urban forest reduces the cost of energy consumed for heating system by 7% with the shading effect and increases the price of the surrounding houses by 1%. According to the results of E. G. McPherson (2004) and Akbari, Rosenfeld, and Taha (1989), studies, it has been shown that, 100 million mature trees (three trees for each house) save 2 million dollars in energy expenditures in the United States cities. Simpson and McPherson (1998) found that due to the reduction of heat loss by shading, each tree around the houses saved $ 14, in a study conducted on a residential area with 254 houses.

Providing Tourism and Job Opportunities: The aesthetic, historical and recreational values of the urban landscape provide employment by increasing the attractiveness of the city and tourism revenues (Chiesura, 2004; Dunnett, Swanwick, & Woolley, 2002). Art festivals organized in public parks, sporting competitions, food festivals, music concerts and theater shows provide significant positive economic contribution to the communities by bringing customers to local shops, restaurants and hotels (Sherer, 2006). Well-planned and managed urban parks revive the economic life in an area (Uzun, 2005). In addition, parks provide educational opportunities for the community and provide long-term employment opportunities for young people and adults to show their talents and experiences (Walker, 2004).

Hedonic Value: Many studies have revealed that green spaces or forest areas affects the prices of the surrounding houses and other immovable properties in urban areas (Yılmaz et al., 2006). The "Big Dig" project in Boston is a good example of mega-projects that create new green spaces in the city centre. A study based on the "hedonic pricing" method has been conducted to show the urban benefits of this project. It has been determined that property prices are affected positively in the vicinity of open green areas (Tajima, 2003). As a result of Luttik (2000) work it was found that especially environmental factors affected housing prices. For instance; while the price of a house side by side with the water feature increases by 8-10%, the price of a house surrounded by green spaces increases by 6-21%. It was found that in a survey carried out in Davis, California, USA, 24,000 roadside trees contributed $ 1.2 million annually to the city by increasing environmental quality and the prices of immovable properties (Maco & McPherson, 2003). According to the results of a study on a forestland near Aalborg city in Denmark, it was determined that house prices in the residential area increased by 273,000 Danish

Kroner after the establishment of the urban forest (Hasler, Damgaard, Erichsen, Jørgensen, & Kristoffersen, 2002). In evaluating the benefit analysis of Fairfax's urban forest, Virginia, has shown that a total of 57 million trees at Fairfax have been proven to be beneficial to the locality, socio-economically, annually at approximately $ 398 million (Knapp & Jordan, 1995). Increasing property values result in higher tax revenues for cities. In a study conducted in Colorado, it was estimated that the green area in a neighbourhood could generate $ 500,000 a year in potential tax revenue. In the same study, the value of the houses near the green areas was measured to be 32% higher than the houses at 3200 feet away to these areas (Sherer, 2006). These studies support the willingness of people to voluntarily pay for houses near the park. In a national survey conducted by the National Association of Realtors in 2001, it was found that participants could voluntarily pay 10% more for houses near protected areas and parks (Bruch, 2006).

ECOLOGICAL CONTRIBUTIONS

Oxygen Production: The amount of the oxygen that trees produce in a year depends on carbon uptake of the tree biomass and the photosynthesis activity of the plant (Nowak, 2002). The annual net oxygen production of all plants in the world is 70×10^9 t and the atmospheric oxygen is renewed every 17000 years. The amount of oxygen used in biological processes and given to the atmosphere remains almost the same, with only a few amounts of production. However, as a result of the burning of fossil fuels and the destruction of the vegetation cover, high amount of potential oxygen disappears (Barış, Yazgan, & Sahin, 2004; Bernatzky, 1982).

It is known that green plants, especially forests, give significant amounts of oxygen to the atmosphere by photosynthesis. For instance, a mature beech tree uses 2350 g CO_2 per hour and produces 1710 g O_2. 2350 g of carbon dioxide is the carbon dioxide produced by 10 families (40-50 people) per hour and 1710 g of oxygen equals to the daily oxygen requirement of 3 people (Pamay, 1978). A tree that grows in suitable ecological conditions produces enough oxygen for 10 people per year. A tree with a leaf surface area of 150 m^2 produces enough oxygen for a person every year. A tree with a height of 25 m and a diameter of 14 m produces 1,799 kg of oxygen and 1,699 kg of dry matter per hour by using 0,960 kg of water and 2,352 kg of carbon dioxide (Uslu, 2007).

The US Forest Service has calculated that a tree produces $ 31,250 worth of oxygen, $ 62,000 in air pollution control, $ 37,500 in

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water reclamation and $ 31,250 in soil erosion control over a 50-year lifetime (Sherer, 2006).

Filtering Dirty Air: Plants reduce pollution by filtering solid and gas particles in the air. Filtration of dust occurs in two ways. Active filtration; With active absorption and adsorption by the leaves of the trees. Passive filtration; by changing the direction and velocity of the air flows, the trees generate a turbulence with the sediments, as a result of this, passive dispersion and filtration with collapse occurs (Nowak, Crane, & Stevens, 2006).

In an all-wood covered area (such as trees in parks), trees remove 15% ozone, 14% sulphur dioxide, 13% particulate matter, 8% nitrogen dioxide and 0.05% carbon monoxide. In addition, trees absorb nutrients such as phosphorus and potassium created by human activity. Otherwise, lakes and rivers become polluted (Sherer, 2006).

Trees can hold up to 5-10 times more dust than the current leaf weight. According to a survey conducted, it was determined that the amount of particulate matter in the atmosphere in wooded areas is less than in non-wooded areas. In the study, according to the results of 8 months of measurements, it was determined that the deciduous trees reduced the amount of dust in the atmosphere by 30% (rural) and 27% (urban). According to the results, it was found that coniferous trees reduced the dust in the atmosphere by 42% in the rural environment and by 38% in the urban environment (Dochinger, 1980). Coniferous trees have more air cleaning capacity than deciduous trees due to the higher leaf area (Bolund & Hunhammar, 1999). In a 5-year study conducted in France, an average of 3910 bacteria in 1 m^3 of air were found in an area in Paris and this number decreased to 455 bacteries in a nearby park (Atay, 1990). According to another research conducted in the Sacramento urban forest, it was determined that the urban forest holds these amounts of air pollutants per hectare for one year; 10,9 kg in all study area, 13,9 kg in urban area and 4.2 kg in rural area (Scott, McPherson, & Simpson, 1998).

Coolness Effect: A dome-like heat islands occur in cities due to the following reasons; dense heat absorbing construction in the horizontal and vertical direction and road materials (artificial surfaces such as asphalt, concrete, steel, glass, roof areas, etc.), reduction of wind speed because of high buildings, transferring large amount of the rainfall to underground with artificial drainage, prevention of the leakage into the soil by the impermeable materials and generation of smoke fog. In addition, the warmed air due to the lower wind speeds in the lower atmosphere layers in the cities is transported more slowly than in

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rural areas. This results in the heat of the cities being 8-12 ºC higher than the surrounding rural areas (Özbilen, 1991). Areas such as parks, shaded corridors created by street trees, river corridors, valleys, areas where large shopping malls are located, industrial parks are the refreshing entrances in urban heat islands (Marsh, 2005).

The plants are functioning as regulators that regulate the temperature of the air. The plants reflect some of the solar rays hitting the top of the roof, absorb and diffuse some of it. For this reason, the weather becomes cooler in summer in shady places. In addition, the plants release water vapor during the transpiration of their leaves, which causes decrease of temperature (Yıldızcı, 1988). For instance, an umbrage tree with 21 m in length releases 400 litres of water a day in summer (Federer, 1976). In the urban environment, the temperatures under the trees are 5-8 °C higher than the open areas at night times (Atay, 1990). In a study conducted in Berlin, the temperature in a 212-hectare park was found to be 7 °C lower than the area where the buildings were located (Uslu, 2007).

In a summer day, about 1460 kg of water disappears from an average tree in gaseous form by transpiration. An average of 860 mJ of energy is consumed for this operation. The cooling effect caused by this energy is equivalent to an average of five air conditioners. Areas covered with trees have 10 times more cooling effect than grass areas (Uslu, 2007).

Reduction of Greenhouse Effect: Greenhouse effect is the result of preventing the sunlight from being reflected by the air pollutant gases again after entering the atmosphere. There are about 40 heat absorbing gases in the residential areas that are given to the atmosphere by mostly human activities. About half of the greenhouse effect is generated by CO_2. Trees take store the carbon taken from the CO_2 gas as cellulose in the wood tissue and leave the oxygen again in the atmosphere. A healthy tree can store about 6 kg of carbon per year or 2.6 tons of carbon per acre (4047 m^2). Trees also reduce greenhouse effect due to shading effects. This effect reduces the requirements for cooling by 30% and so, it allows less fossil fuels to be used in the production of electric energy required for these processes (Barış et al., 2004).

According to the Southern Karolina Forest Commission Report (1990), trees reduce greenhouse effect by up to 30% by reducing the amount of fossil fuel used for energy production. When field studies in 10 cities in the United States and national urban forests data are evaluated, it is determined that urban forests located in the US stored 700 million tons of carbon (by holding $ 22,8 million

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tonnes of carbon, valuing at 460 million dollars annually), valuing at 14,300 million dollars. As a result, it is emphasized that urban forests play a significant role in reducing CO_2 which is the dominant greenhouse gas (Nowak et al., 2006).

Prevention of Erosion and Providing Water Balance: Rainwater monitoring can be defined as detecting the amount and direction of surface water flow. In rainwater monitoring, urban green areas provide significant contributions to the prevention of surface water flow and the infiltration of rainwater surplus. In addition to the prevention of erosion, planted surfaces will be provided with water storage during the precipitation period and suitable environment for plant growth will be prepared (Başal & Özdemir, 2008). Trees can manage the excess of surface water flow with more effective and less cost than sewages and drainage channels. Due to the fact that cities are covered with impermeable surfaces such as roads, pavements, car parks and roofs, the surface of the ground is prevented from the absorption of water and water problems arise. As the trees slow down the rainfall, the asphalt-free areas absorb the water and the runoff waters reach their stations slowly. American Forests, a conservation organization in the U.S., has found that trees in metropolitan areas save $ 400 million in surface water retention systems (Beattie, Kollin, & Moll, 2000; Sherer, 2006).

Although the amount of the rainfall retention depends on various factors, the coniferous plants can hold more rainfall. For instance, in pine forests, 60% of the rainfall can pass through the top of the forest to reach the soil but this amount reaches 80% on a forest covered with broad-leaved trees (Atay, 1990).

Ecological Restoration and Conservation of Biodiversity: Green areas help to restorate urban ecology with the greenery they cover. It is expected that the urbanization-damaged areas will be reconstructed with the natural systems in which general ecological principles are applied. Urban forests and parks create recycling models with low energy use, low chemical inputs, well-managed surface runoffs, and nature conservation (Trzesicka-Mlynarz, 2005). They provide habitats for the development and protection of birds, insects and other wildlife in cities. They also help people solve the problem of liaising with the animal world that has been lost in cities (Dwyer et al., 1992; Oğuz, 1998; Uzun, 2005).

Reduction of Noise: One of the major problems of the cities is the noise pollution with an increasing amount of damage in terms of human health. The traffic noise in the surrounding of the roads with the dense housing increases much more with the echo. In the

roads around empty areas, the sound reaches far away easily. Undoubtedly, the most decorative obstacles against the noise are plants (Acar, 2006). Plants reduce or eliminate the negative effects of noise on people and the environment by absorbing the noises coming from various sources by means of green masses they formed. Plants with broad leaf, evergreen, frequent, large and hard leaf texture and branch form extending to the soil are more effective in the absorption of the noise. It has been proven by the scientific researches that noise can be reduced by up to 10 dBA with the vegetative noise barriers implemented according to the technical principles (Fang & Ling, 2003). Attention should be paid to the characteristics and type of vegetation used and technical principles for obtaining the desired result in vegetative noise barriers. Noise can be reduced around 10-12 dBA by noise barriers established in adequate width and length with proper plant species (Önder & Polat, 2007). In a survey conducted in Konya, Turkey, it was determined that shrub groups composed with different plant species reduced the noise by 6.3 dBA (Mutlu & Onder, 2012).

SOCIAL CONTRIBUTIONS

Providing Education and Cultural Activities: Green spaces offer a wide range of educational opportunities. They provide services to help children and young people develop their skills, knowledge and trends with the help of community-based activities. Especially in places where children can easily reach their neighbourhoods, playgrounds are very important for children to develop their communication, business association, creativity, supervision skills (Dunnett et al., 2002; Sherer, 2006; Walker, 2004). Well-designed parks are interesting in terms of history, culture, botany and wildlife. It is the realization area of ecological education. They allow urban people to establish the lost relationships with the plant and animal world in the city. Parks are places where growth processes of plants and some animals such as squirrels, butterflies and insects are observed. Parks provide pleasure of the ecological and biological awareness by changing the urban ecosystem (Kızılaslan, 2007; Oğuz, 1998; Sommer, Learey, Summit, & Tirrell, 1994).

Reduction of Crime Rate: Recreational activities increase social development by reducing crime rates. Green spaces help people to relax and revitalize by reducing aggression. Access to parks and recreational activities is strongly linked to crime reduction, and in particular to the reduction of child crimes. Recreational activities keep young people away from the danger in the streets, provide them safe environments where they can provide group interactions and allow them to fully use the time without getting

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into other problems. According to Fort Myers, in the year of 1990, the police documented that the STARS (Academic and Recreational Support and Success) programme reduced the arrest rate for child offenses by 28% in Florida. The school achievement of young people has developed significantly. In a study of crime and recreation in Texas, it was found that the 1 mile-diameter midnight basketball reduced crime by 28% (Bruch, 2006; Chiesura, 2004; Sherer, 2006).

Providing Opportunities for Recreational Activities: Urban landscapes form an organized outdoor space for recreational purposes. They prepare all the possibilities for active and passive recreation of people (Oğuz, 1998; Uzun, 2005). These areas allow entertainment, recreation, games and sports activities. Accessibility, availability and multifunctionality of green areas are important in terms of usage (Levent & Nijkamp, 2005). According to a study conducted in Washington Seattle, USA, it has been found that the families with children frequently visit the parks than the other places in the neighbourhood and especially the vegetation factor is influential on these trips (Tilt, 2010). The result of a survey conducted in Hong Kong and China shows that parks are mostly used by older people and these users often prefer activities related to walking and physical exercise. It was determined that these activities contribute to their physical and psychological health (Wong, 2009).

Contribution to Social Development: Nature encourages the use of outdoor spaces, increasing social unity and interaction between neighbours (Chiesura, 2004). Parks are places where social relations can be established, which will allow for the development of social relations and increase solidarity. These areas are the places where people from different age groups and social classes come to meet and have different activities (meeting, encounter, walking, playing, chatting, etc.) (Peters, Elands, & Buijs, 2010). In addition, all members of the community can use parks to reduce social tension and inform each other of social classes (Bruch, 2006). It can provide opportunities for intercultural interaction with the cultural characteristics of various ethnic groups (Peters et al., 2010). Surveys show that residents with more green areas have stronger social ties than those living in restricted concrete environments. In a survey conducted by Chicago and Illinois universities for urban people, it was determined that the development level of social bonds within the neighbourhood is proportional to the level of vegetation (Sherer, 2006).

Public Health Protection: Green areas have significant positive effects that cannot be underestimated on human soul and body

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health (Sanesi, Lafortezza, Bonnes, & Carrus, 2006). Dense plant cover in people's living spaces is providing physical and spiritual relaxation (Müderrisoğlu, Eroğlu, Özkan, & Ak, 2006).

According to researches about health, increasing physical activity decreases the mortality rate and provides psychological healing. Reduced physical activity can lead to heart disease, cancer, chronic lung disease, and diabetes. It has been determined that physical inactivity is the third leading cause of death at national level in the year of 2000 (Bruch, 2006). A survey conducted with 758 residents in Hong Kong by telephone interviews showed that parks are mostly used by older people, and the park users generally prefer walking and physical exercises. It was determined that they believe these activities contribute to their physical and psychological health (Wong, 2009).

The healing process of operated patients in a Pennsylvania hospital was investigated in a survey. While some patients have rooms with tree views, some of them are covered with brown brick walls. When the 10-year medical records were examined, on the comparison it was determined that the patients in the tree-view rooms stayed shorter in hospital, used less painkillers, and received less negative comments in the nurse notes according to the brick-walled patients (Sherer, 2006).

Previous researches have shown that people living in urban areas show very different behaviours from people living in rural areas due to reasons such as crowd, noise, lack of open-green areas. In addition, it was revealed that by previous researches, the people living in houses without trees have committed more violence to their spouse and children than those who live in houses without trees in the surrounding areas. For instance, Kuo and Sullivan (2001) found that people living in near or in the vicinity of urban trees, were less likely to commit violence and bullying to their families than people living in houses with completely empty surroundings. In 2001, a comprehensive research result was published in the Netherlands with over 10,000 people to determine the link between green space and health. Results showed that people living in a green environment have less health complaints, feel healthier and have better mental health (Sherer, 2006).

PHYSICAL CONTRIBUTIONS IN TERMS OF PLANNING

A wide variety of open spaces can prevent undesirable core formation in dense residential areas and can have an impact on urban form with space structures they will create by dividing the city (Richter, 1981). They provide convenience in the city circulation by diverting vehicle and pedestrian traffic.

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It may allow to reduce population density in certain points of the city and for the realization of social activities. According to Richter (1981), some areas in the urban development process are protected by taking their future functions into consideration, and these areas can be temporarily offered to other uses.

Outdoor areas balance between people and their environment in terms of scale in the city. In cities where high buildings have an overwhelming scale effect on people, they lighten the oppression of open spaces over people and carry the spaces to the human dimension (Özbilen, 1991).

The plants have a great contribution to the visual quality of the urban environment. Vegetational materials used in these areas provide aesthetic value to the city with its features such as form, size, texture, colour and line. They enrich urban landscape with their colourful, lightened, and seasonal colour features from the aesthetic point of view by forming a contrast with artificial and inanimate elements of the city (Polat, 2010). In particular, the trees in the city freshen up the city by eliminating the city's aridity with their bulky greens and gain aesthetic presence with their colour characteristics depend on the seasons (Uzun, 2005). In cities, mass or surface conditioned green areas soften the hard and solid effects of architectural forms. Green areas camouflage undesirable objects and landscapes by masking appearance.

In the physical structure of the city, open green areas distinguish the different usage areas from each other and provide the physical balance of the city. They serve as a buffer between areas with different qualities such as accommodation, trade, work and education by contributing significantly to the structure of the cities. They equilibrate and establish an organic relationship between human beings and environment, structure and structure, structure and space. They are the equilibrium elements that reduce the density of the structures and community with their distribution in the city (Özbilen, 1991).

Urban landscape contributes to the preservation of historical and cultural heritage (Dunnett et al., 2002). Historical parks protected by restoration increase the awareness of the people in this area and at the same time they provide an opportunity to the preservation of historic areas. There are important projects that parks and recreation institutions have done in America. An important landscape restoration project was carried out on Prospect Park in Brooklyn, New York, designed by Frederick Law Olmsted and Calvert Vaux in 1886. The project is presented as an ecological restoration and historic preservation process. These projects combine natural ecological restoration with historical

preservation of original design features. In this study, information gathered from questionnaires on park users was evaluated. It has been recognized that social and cultural experiences are historically significant by many park users (Taplin, 2002).

Sustainable development is considered as a strategic structure in urban parks which play a significant role in urban planning. Despite the fact that sustainability and urban renewal strategies focus on the man-made elements of the urban periphery, it is noteworthy that in recent years the interest in natural development in urban areas has increased (Loures et al., 2007). Some cities develop their own sustainability indicators to measure and test quality of life issues in a meaningful way. "The amount of green space per person", "parks" and "recreation areas" are often mentioned as an important factor in making a liveable, beautiful and charming city for citizens (Chiesura, 2004).

CONCLUSIONS AND RECOMMENDATIONS

The phase of city development planning is the first and most important step in terms of a healthy structuring of a city. At this stage, the most important problem arising from the planning related to the green spaces is that no green space system has been predicted in any of the city development plans. This is a fundamental deficiency that causes problems in all other cases. An erroneous green area determination policy is mostly being followed at the stage of the city development planning in our country. Informal, small surface parts of lands that are not suitable for use as a building site, and lands belonging to the treasury or foundations, are designated as green areas by this approach. It is not possible for these types of isolated and unevenly distributed green areas to fulfil the functions expected of them.

It is absolutely necessary to have a green space system forecast in the development plan phase. Urban green area systems were developed in the 19th century and applied in many European cities in the 20th century. It is of utmost importance to develop a green space system by taking advantage of green area system implementations which have many examples (such as the green belt, the green wedge, the green network, the green heart) in the world and taking into consideration the city's unique qualities. In our cities, it is absolutely necessary to have foresight of the green space system at the phase of city development plan. After the appropriate green area system is based, it is necessary to design the individual green spaces in sufficient size, to ensure the regular distribution of the projected green areas in the city, to connect the planned green areas with the green corridors and to bring an organic texture

to the city. Because small and multi-part urban green areas have high maintenance costs and they will not allow wildlife to grow due to inadequate vegetative tissue, they will also cause a low number of people to benefit from these areas, and will cause some disadvantages in terms of area management and contribution to urban ecology.

When bringing small active green areas into service foreseen in the plan, these areas should be in ideal form and width, and designed to have a large settlement texture and to serve many people. It is sometimes impossible to create such a system in areas with dense housing and to turn back for ensuring its continuity. However, there is a chance to create a sustainable green space system in areas of development where construction has not yet begun or densified. In urban renewal projects, 'the possible green area transformation' philosophy should be adopted as a principle.

The design of urban landscape areas should primarily be in the example of natural landscape areas. In other words, success in urban landscape must be created in urban environments as good imitations of natural landscape areas. Landscape design criteria and landscapes shaped by discipline and monotony of urban life are insufficient to provide expected service.

The perceptions and preferences of urban people should be investigated in urban landscape design and applications. The obtained data will reveal the preference profiles of the users of that city. Urban landscape designs based on these data will be able to satisfy the urban people. Moreover, these studies can provide significant contributions to the identity of each city.

The most important phase of these studies is the "design process". The feasibility studies carried out, the measures to be taken and the resource analysis in this process will eliminate the problems that may arise in the implementation and management stages. The design process integrated with land and office work should be fully operated, not to be rushed, and these works should be done by landscape architects who are experts in this field.

Standards should not be ignored in the design and implementation of road landscapes, which are the most important elements of urban landscape. Shade trees should be preferred and located at appropriate points for roads.

Production of ornamental plants should be emphasized; especially native plant species should be produced. Healthy plants should be accepted and of plants which have problem in trunk, corolla and form should never be used in urban landscape. Principles of plantation design should be well researched and plantation should be completed according to these principles.

Optimum utilization of green spaces will be achieved primarily by the adequacy of these areas in terms of location, size, accessibility, quality and presentation diversity and the establishment of appropriate use conditions for the people of the city. Hence, it is necessary to plan, design, implement and maintain the green areas adequately in urban areas. Maintenance works should be carried out on a weekly, monthly, seasonal and annual programme on time by competent persons.

In this regard, the park and garden departments of the local governments in the center of this process should be well organized in terms of design, implementation and management. These parts should be in coordination with each other at the same time as they carry a dynamism within themselves. One of the most important factors is to carry on every work through its own experts

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Resume

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Research Article

Understanding Social Sustainability in Housing from the Case Study "Wohnen mit uns" in Vienna and Adaptibility to Turkey

Hatice Kalfaoğlu Hatipoğlu*

Abstract

The aim of this research paper is to contribute to the design of socially sustainable housing by discussing the significance of social sustainability and assessing this quality according to the determined criterias of social sustainability.

There is a massive construction industry in Turkey, most of which is in the housing sector. These residential areas generally have been built as chaotic mass productions and lack a vision related to social quality. Today, there are significant problems confronting the building sector, such as globalisation, industrialisation, the imbalance between nature and humanity. These problems determine the quality of life we will have in the future. The intention of this paper is to demonstrate more socially orientated housing design, especially in countries such as Turkey in which this aspect is not a real concern in the housing practice according to the perception of author, especially in comparison to Europe.

In order to achieve this goal, this paper first points out the importance of social sustainability in housing within architectural quality. The description and necessity of social sustainability in multi-unit housing

have been discussed and the criteria have been determined to evaluate the quality of social sustainability.

An award-winning project in Austria has been chosen as a case study to analyse and perceive social sustainability in residential areas, according to the described criteria. These criteria for assessment and the concrete case study including the emerging phase of the project background provide a guideline for developing housing projects towards social quality in Turkey.

In conclusion a general evaluation of the success of the case study with its background and applicability of this concept to Turkish housing, which is used by middle-class has been discussed.

INTRODUCTION

There is a rapid increase in housing especially in large cities around the world after industrialisation. This rapid change can be perceived in social life, structures and cities. Technology has started to control people and this has resulted in an increasing imbalance between nature, human and technology.

About 30 years ago, there was a paradigm shift, from "hard-system thinking" to "soft system thinking" (Kaltenbrunner, 2002). As a result of economic and energy crisis, dismiss of social needs and a city stress on human psychology has arisen. These problems led to the concept of "sustainability". Sustainability, as a wide-reaching concept, acted as a signifier of public awareness (Kalfaoglu Hatipoglu, 2016b). Sustainability is founded upon a three-column model: ecology, economy and society. It is defined as designing without negative impact of future generations and supplying daily needs as best as possible (Brundtland, 1987). Sustainable housing is high-quality housing and seeks to create a better residential environment and enhance people's lives. Sustainability has to answer the following question: How can sustainable architecture contribute to social needs and requirements better? Focusing only on ecological and economical aspects does not bring a real solution; social quality must also be considered in order to have a liveable future. Social quality contributes to qualified housing, which is a crucial issue to ensure a liveable future for the people.

Housing is more than a place that solves basic human needs such as sleeping, eating etc. It is a place that enhances our lifestyle. Moreover, better social quality of built housing projects improves social interactions. The architecture has the power to change the society in a positive way through better forms of productions related to social quality, especially in residential areas. Thus, this liveable future can be formed through a radical awakeness in terms of social sustainability.

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Social sustainability is an aspect of sustainability and is related to the satisfaction level of the users. In architecture, it encourages communication between people and forms the concept "human-centred" planning. Littig and Griessler describe this concept, as "Social sustainability is a quality of societies. It signifies the nature-society relationships, mediated by work, as well as relationships within the society. Social sustainability is given, if work within a society and the related institutional arrangements which satisfy an extended set of human needs and are shaped in a way that nature and its reproductive claims of social justice, human dignity and participation are full filled."(Littig, 2005) Following this definition, sustainability builds the relationship between nature-society-human in the long term with the aim of improving environmental quality as well as social integration and equality of people. This also contributes to their participation, life enhancement, emotional and physical well-being. To achieve these aims meeting the people´s requirements is needed. This means social sustainability also emphasizes functional quality as well as social quality. Functionality is described as "the quality of having a practical use: the quality of being functional and the particular use of set of uses for which something is designed".("Functionality," n.d.) The people must be able to feel comfortable, healthy and safe in their houses, which defines the "optimal circumstances" (not too hot/cold/dirty/dark/noisy). The houses need to be capable of providing privacy, social contact, freedom, choice and autonomy.

METHODOLOGY

To assess the qualities of social sustainability in residential areas, which is a leading aspect of the liveability of a place, the criteria of social sustainability was determined. These criteria contributing to the social quality provide the possibility for the evaluation of social sustainability of several housing projects.

A case study has been chosen from Vienna, which has an award of "State Award Architecture and Sustainability", to understand these aspects more concretely. Vienna has been nominated the most liveable city in the world eight times and has managed to take several important measures in terms of social quality to offer liveable, equal and sustainable spaces politically as well as practically. ("Vienna voted the most livable city in the World for the eight time!,"). Therefore analysing a case study from Vienna is insightfull and important. This case study is the housing "Wohnen mit uns" by Einszueins Architecture Office. This building comes into prominence especially with its participation and integration possibilities for the tenants, and is a product of many years'

experience of sustainable and good quality social housing in Austria.

This case study is analysed according to the principals of criteria of social quality, defined in the following section. Qualitative analyses including spatial and structural data has been used with observations, floor plans and sections obtained from the Einszueins architecture office. Presentations of the housing and interviews with the architects are the other data used for the analysis of the criteria.

INDICATORS OF SUSTAINABILITY

The main point of view of social sustainability is a human-centered planning which means taking the needs and requirements of the user to the center with a balance with nature. There are some aspects, which should be considered in the residential design to provide this goal.

The criteria of social sustainability related to the social functional quality has been adapted from the Social Functional Quality Analysis of "Sustainable Housing Quality (SHQ)" Framework (Kalfaoglu Hatipoglu, 2016b), which was developed to evaluate housing quality in a holistic view. The principals of the SFQA of this framework have been used to analyse the following case study in this paper. The indicators of social sustainability are determined as:

1.   Needs-oriented design and participation

2.   Accessibiltiy and circulation

3.   Efficiency of planning

4.   Flexibility

5.   Safety

6.   Health, well-being and comfort

7.   Common rooms and facilities

8.   Open spaces

9.   Children´s playground

10.   Proportion of buildings, diversity of living units

11.   Storage, parking and waste services

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CASE STUDY "WOHNEN MIT UNS (LIVING WITH US)

This project, winner of the "State Award Architecture and Sustainability 2014", was built following a housing developer competition ("Bauträgerwettbewerb" in German). On this site (Figure 1) there are two building blocks, which were designed by different architecture offices. These are "Wohnen mit uns (living with us)" and "Wohnen mit Scharf". These two buildings have different concepts but similar constructions and seem in harmony without copying one another, which contributes to architectural quality. The block, named "Wohnen mit Scharf", emphasizes individual and intergenerational functionality. Besides, it qualifies for super subsidies from the City of Vienna that enables easy participation of the tenants in the project, mainly tenants with an immigration background. On the other hand, the case study project "wohnen mit uns" focuses on communication and participation and also subsidied by the City of Vienna. Housing Project Vienna, Association for a Sustainable Life, composed the idea and concept of the project. Feldmann, the initiator of the project, tells the beginning of idea as follows: "We sent an e-mail to the group with a question: How can we live well in a social community life while reducing our CO_2 emissions and our ecological footprint, and how can we create it in an urban environment?" ("Ein Weiter Schritt über Technische Werte Hinaus, Wohnhaus Wohnprojekt Wien, Wien Leopoldstadt," 2014). This concept encouraged people to develop these aims: living together in their own properties with their self-management. Some other sustainable concepts have emerged, such as "car sharing" and communal participation. Instead of a garage in the basement, a place for rent a car and different common rooms are designed. On the ground floor and top floor, there are some other common rooms to promote communication between inhabitants.

Figure 2. Wohnen mit Uns, garden
(Einszueins Arch. Office Documents)

The goals of this project are; participation, self-management and living sustainability and the main concerns of the architects are to promote solidarity and connection to life, to ensure communication through common rooms, liveable spaces and cities. It has been considered a planning process with structural concepts, innovative methods and the ideas of tenants to provide a high level of participation, which was very intensive and deliberate. It is vital to understand the diverse needs of residents, as there are not any standard families and this participation process transforms inhabitants from victims to participants (Bayer, 2015b).

Project Analysis Regarding Social Sustainability

Needs-Oriented Design and Participation:

Affordability and needs-oriented design are important criteria in the planning phase. Due to the participation of the residents, the housing meets the needs perfectly. "A sustainable home with a good neighbourhood and communication in the urban life" has been the main challenge of this project.

To ensure participation, several meetings were organized to inform people and to determine needs related to their dwelling design. This allowed them to discuss about the room organisations of the house plan. Additionally, 3D models were created to visualize understandable projections of the dwellings.

At the beginning of the participation process, some questionnaires were prepared. Besides the questionnaires, information about the storeys of the flats they choose, the characteristic of each floor and direction of the flats have been described. Figure 5 shows one of the questionnaires conducted in the meetings, which includes

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questions about the room sizes and numbers each resident need.
Figure 3 and 4 show workshops organised for participation to
determine a layout for community spaces and dwelling decisions.

As a result, it can be stated that participation, which is an
important issue to understand different needs and requirements
of the users, has been one of the central concerns in this project.
Each dwelling has a different character due to the orientation of
its own user, which is a good example for participation and need-
oriented design.

Figure 3. (left) Workshop organised for participation, (Bayer, 2015a)

Figure 4. (right) Seminar organised for participation *(Zilker Presentation in Bratislava, Einszueins Arch.Office Documents)*

Figure 5. Questionnaire *(Bayer, 2015a)*

Accessibility and Circulation:

Accessibility is to reach the desired destination without any difficulty and to take part in their intended activities (Van der Voordt, 2005). There is a clear and adequate movement concept in and around the building. The entrance of the building has a familiar atmosphere with its wide space, information boards and diagrams that give information about the building services. A play equipment has been located to enrich this familiar atmosphere and attractiveness. The circulation routes in the building get rich daylight that supports the safety of pedestrians and have an adequate atmosphere, which also contributes neighbourhood (Figure 6). Descriptive and contrary architectural elements and materials have been applied to provide an efficient orientation. Necessary numbers and names are clear, visible, and legible for the ease of use.

The planning considers pedestrians, especially people with impaired mobility, children, and old people as well as cyclists. Important measures were taken from the design phase to support wheeled equipment for disabilities and prams, which support "design for all" concept. That means all people are able to use services equally and independently. Bicycle using is encouraged through wide storage rooms for bicycles and the adequate environmental design around the site. Vehicle flow has been minimised through a car sharing system and the absence of an individual parking place.
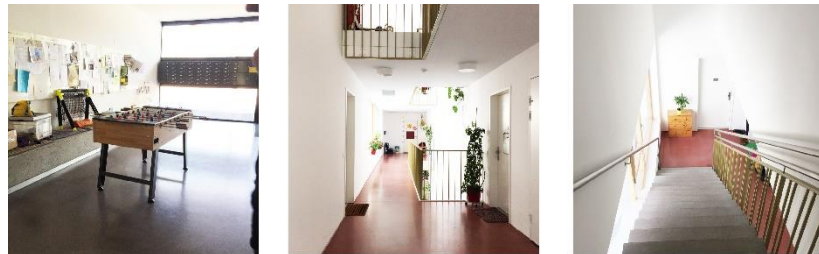
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Figure 6. Photos from circulation routes *(photos by the author)*

Efficiency of Planning:

Figure 7. View to the Bednarpark *(Einszueins Arch.Office Documents)*

Efficiency of planning means appropriate solutions and organisations of a space. The site is appropriate for residential use, as the area around the building site has also been designed through competitions and there was to promote a liveable residential area in the city life with its greenery and public transport possibilities which discourage traffic flow.

The design in total has certain challenges and goals, which provides a sustainable, family-orientated neighbourhood in the city. These intentions make this planning more efficient. Participation and ecological concerns have been focused to create a liveable housing estate. The ambiance of corridors in the apartment ensures a wide and relaxing space with the contribution of greenery from inhabitants. Sufficient capacity for individual rooms in the planning has been considered parallel to the requirements of the users. Common rooms have connections to open spaces and outdoor facilities, which provide a link to the nature as well as between themselves. A sunken courtyard has been planned at the rear of the building to create light for the underground functions, which also creates a more attractively designed space for the inhabitants. As a result optimum solutions have been decided through the efficient planning process.
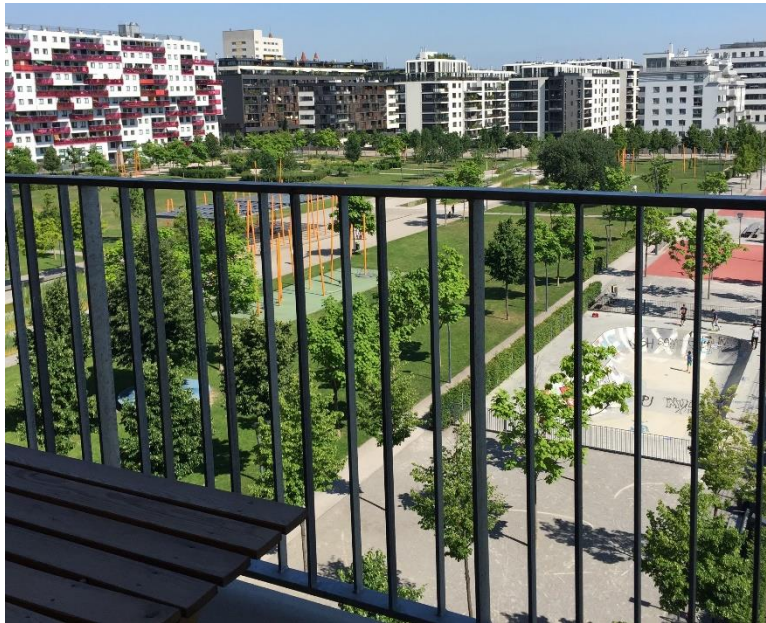
Figure 8. View from the roof floor WMU *(photo by the author)*

Flexibility:

Despite the detailed participation process, it has been considered that the needs of the inhabitants may have changed within the time through the alteration of economic and social circumstances, which requires flexible space organisations or some design arrangements to ensure flexibility have been discussed in the planning phase of the project. Interior dividing walls are non-load bearing in order to be adaptable for different solutions. The entrances of the dwellings also provide the possibility to combine

two dwellings, or to divide a large dwelling to two. Figure 9 shows the flexibility concept and demonstrates that the entrance doors of the dwellings, size and place of windows and balconies are flexible.
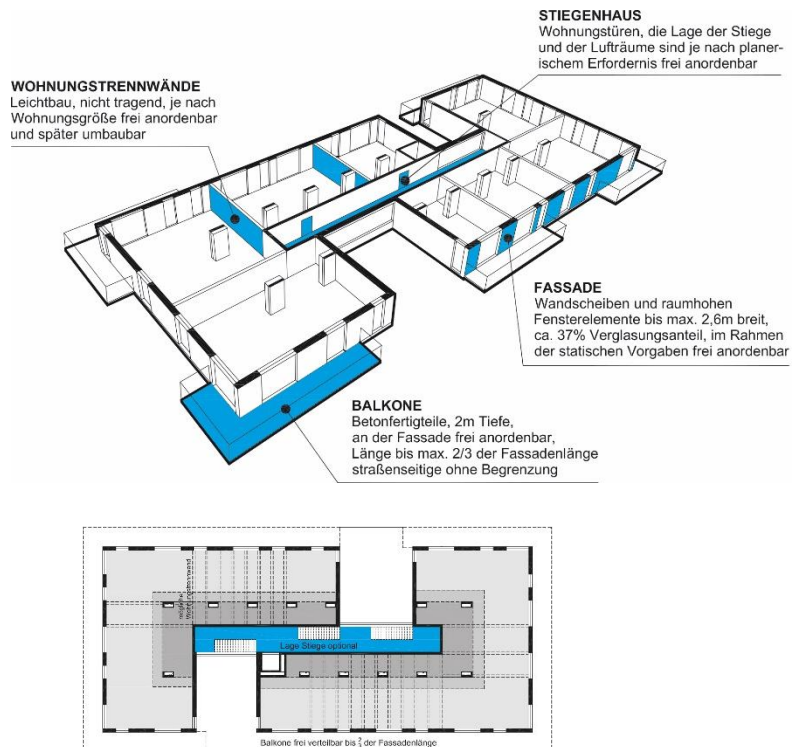
Figure 9. Flexibility Diagrams
(Einszueins Arch. Office Documents)

Safety:
The building site is not enclosed with guidance outside but this is an advantage, as the site is not designed like a closed ghetto. The safety of the building is ensured with controlled access at the entrance. Public areas are overlooked and controlled to anticipate possible dangers.

The safe transportation of people and goods are ensured by preventing the possibility of falls through non-slip floor finishes, providing adequate lighting for corridors and vertical circulation routes. Precautions have been provided to prevent fire outbreak and provide safe escape through fire-resistant materials. Moreover safety glass is used instead of ordinary glass.

Health, Well-being and Comfort:
Since the built environment has an effect on psychology, well-being, opportunities for social interaction and can cause a physical illness known as the "Sick Building Syndrome" (Rosner, 2007), it is essential to consider this criteria in residential design. These illnesses can be prevented through designing healthy living environments and encouraging healthy lifestyles by creating spaces for communication, activities for hobbies like gardening, walking cycling, relaxation etc. and these factors are considered in

this housing. Psychological well-being of people is supported through the atmosphere inside and outside of the building through common rooms, sitting areas, as well as greenery at the top of the building and in the garden. Moreover they can garden in their garden plots (also together with neighbours) both in the ground-floor garden and on the roof. Sauna and meditation room contribute to enrich well-being and comfort.

Figure 10. Sauna (left), meditation room (right). (*photos by the author*)

Because of the discouragement of car use, this site is isolated from main traffic roads, which prevent possible noises from vehicles. This has transformed the area a liveable atmosphere.

Figure 11. Left to right; Roof Garden (*by the author*) and intercultural gardening with neighbours, *(Bayer, K.2015B)*

To avoid negative effects of uncomfortable living spaces sound insulation between different units and against outside should be implemented to avoid unwanted noise. In this project, sound insulation of walls, ceiling and windows have been applied adequately, which is also obligatory by building norms in Austria. Noisy communal eqipments such as lift etc. are placed to be more than 3m distance from doors and windows of the dwelling. The rooms and circulation routes reach good daylight and have the possibility of natural ventilation for the comfort of the residents.

Common Rooms and Facilities:

People need indoor spaces by means of communication and free-time activities, which enhance the quality of life and attractiveness of residential areas. The building has a hybrid function to serve as a housing within 350 m2 commercial uses, common rooms for

communication. The eight residents of the housing complex manage a grocery store with cafe including natural products, which is compatible with the sustainability concept of the building. The architects of the building have also their office and dwelling in the building.
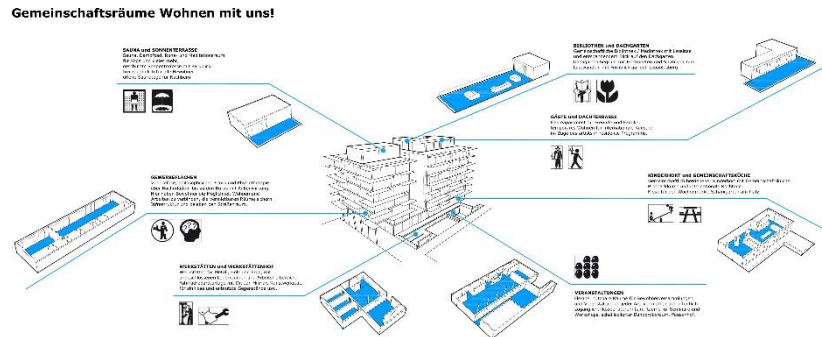
Figure 12. Diagram showing community rooms and facilities *(Einszueins Arch. Office Documents)*

The building has a great quantity of community rooms, which occupies 700 m2 area. These are in the basement floor which occupies the space instead of an underground car-park and gets very good light through the sunken courtyard at the back of the building, on the ground and top floor. These community rooms are equal to 25% of the total floor area of the building. The access to these rooms and the link of these rooms to the surrounding are designed to provide an ease of use for the inhabitants. These rooms are enriched with visual contacts and spatial scope. At the underground floor there is a multifunctional event room with size of 200 m², which has a direct access to the garden through the courtyard. The architect of the project indicates that there are 6-8 events per week such as celebrations, theatres, workshops, concerts, and presentations some of which are also open to the external users. Next to the entrance is the common kitchen on the ground floor, which is very efficiently equipped. Two cooking places with double equipment and a dining room for about 30 people serve to the inhabitants and people at offices. There is a team for cooking who are volunteers from the inhabitants. The meals cost 3 euros each. Architect Bayer states in her presentation that one of the inhabitants (Elisabeth) says, "…cook once, eat 10 times. Lunch organisation in this project facilitated my life and enriched my day with my child." (Bayer, 2015a) Next to the kitchen is the indoor playground with a visual contact to the kitchen and to the event room at the lower floor through a glass wall. Zilker, who is one of the architects and also a resident states this concept as: "I have always dreamt of a place where I can see my children but I don´t hear them. Thus, a glass wall allows the children to be seen by the families in the events room from the kitchen."(Zilker, 2015)

Figure 13. Connection between Kitchen and Playground *(Einszueins Arch. Office Documents)*

The housing has an atelier, which includes tools and allows people to have a hobby as a relaxing activity. The furniture of the guest apartments on the top floor was made in this atelier by the people who have an interest. This proves the success of idea of communal engagement and solidarity, which was one of the aims of the initiators of the project and ensured by their architectural design concepts.

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Figure 14. Common kitchen *(Einszueins Arch. Office Documents)*

Figure 15. Multifuncitonal room *(Einszueins Arch. Office Documents)*

Instead of private units at the top floor, which is assumed as the best and most desired location of the buildings in Austria, there are three guest rooms, yoga and meditation room, sauna and a library including donated books and a panorama view to Bednar Park in front of the housing.

Figure 16. Top left; rehearsal room, top right; interactions between the rooms, bottom; library, a view to the window of the library *(Photos by the author)*

Figure 17. Sizes of the open space and community rooms in relation to dwelling area *(by the author)*

TOTAL SITE AREA	TOTAL DWELLING AREA	COMMUNITY ROOMS	OPEN SPACE incl. common terraces and	TOTAL NUMBER OF DWELLING
		WMU + WMS*		
4783 m2	7200 m2	773,18 m2	3772	90

*WMU: Wohnen mit uns, WMS: Wohnen mit Scharf

Open Spaces:

Being a part of nature is important in today´s city life because with rapid urbanisation, buildings are the dominant features of cities, which encourages an egocentric approach to life. Thus people feel the need of open spaces in their housing environment and want to be a part of the nature in their stressful urban life. These open spaces are visually stimulating as well as provide opportunities for community.

The garden and sunken courtyardt of the building allows play, recreation, celebration and gardening. A part of the garden has been designed to provide plots for growing plants and vegetables by the tenants, which ensures a relaxing hobby for them (Figure 11, 19). İn order to support urban coherence the harmony between the garden design and Rudolf-Bednar Park in front of the building has been a consideration in the design phase. The

courtyard allowing light into the common rooms in the basement floor serves as an extra-enriched place for community and play for the children (Figure 18). It is also required for a landscape architect to contribute to the landscape design as an obligatory part of the competition.

Figure 18. Sinken Courtyard *(Einszueins Arch.Office Documents)*

Figure 19. The rear garden with gardening pots *(Einszueins Arch.Office Documents)*

Another common open space is the roof terrace located at the top floor with the possibility of a sunbath. This green-planted roof garden is near to the library and sauna/meditation room and moreover includes some raised flower beds (Figure 20). The materials of the common open space are natural such as wood and the general appearance of these spaces is natural and green.

Residents have balconies as private open spaces designed with materials that allow taking advantage of the view and fresh air. These have standard depth of two meters and range in size between 10 m^2 and 18m^2, which is chosen by the user according to their requirements. The maisonettes of the other building (Wohnen mit scharf, which is designed together in the competition) have their own roof terraces.

Figure 20. Top left; garden, top right; roof garden, bottom left; balcony of a dwelling and bottom right; the sight of balconies from the front of the building *(Photos by the author)*

Proportion of Buildings and Diversity of Living Units:

Today there is a shift to high buildings due to the density of urban structures. There are advantages of this transformation but also the disadvantages cannot be ignored. The problem of connection between interior and exterior and the negative effect of height difference and density on communication between people are some of these disadvantages. Jan analyses that the people in higher floors have less communication possibilities than the people in lower floors (Gehl, 1987). There are some studies that indicate children in high rise dwellings are more socially deprived than neighbourhood peers than low storey buildings (Alexander, 1977).

The proportion of the building is in harmony with the surroundings and convenient as human scale for a residential area with its eight floors (including the roof storey). This allows people to be a part of the urban scene from their dwellings and they do not lose sight of the city perspective and details. Moreover, this proportion allows stair use in vertical circulation independent from lift usage, which is also encouraged with its attractive character including openings in the ceiling that creates an enjoyable space movement.

There are a variety of different living options, which is important for the quality of the housing. There are several different apartment types from 36 to 137 square metres in the housing (only in Wohnen mit uns). There are 39 dwellings each of which

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has a different floor plan (Figure 21, 22). These different types offer also several room divisions according to the personal needs and requirements of participants through the flexible structure system with non-load bearing interior walls. The other building, "Wohnen mit Scharf" have also different types, which vary in size from 54 to 119 square metres some of which are area maisonettes with roof gardens. This variety of dwelling types encourages the integration and communication of people from different ages and backgrounds.

WOHNEN MIT SCHARF

BLOCK	TYPE	NUMBER OF STOREY INC. GROUND FL.	NUMBER OF DWELLING TYPE B WITH 2 ROOMS	NUMBER OF DWELLING TYPE C WITH 3 ROOMS	MAISONETTE TYPE 1 73,46 m2	MAISONETTE TYPE 2 97-100 m2	MAISONETTE TYPE 3 more than 100m2	DWELLING WITH ROOF-TERRACE	TOTAL NUMBER OF BLOCKS	NUMBER OF DWELLINGS IN ONE BLOCK	TOTAL NUMBER OF DWELLINGS
WOHNEN MIT SCHARF		8	19	22	1	4	5	4	1	51	51

BLOCK	TYPE	EACH DWELLING HAS A DIFFERENT PLAN DUE TO THE PARTICIPATION						GUEST APARTMENTS AT ROOF FLOOR	TOTAL NUMBER OF BLOCKS	NUMBER OF DWELLINGS IN ONE BLOCK	TOTAL NUMBER OF DWELLINGS
WOHNEN MIT UNS		39						3	1	39	39

Figure 21. Diversity of living units "Wohnen mit uns" and "Wohnen mit Scharf" *(by the author)*

1_Entrance
2_Offices-trade
3_Bicycle storage
4_Indoor playground
5_Common kitchen
6_Trade-Gastronomy

GROUND FLOOR PLAN

1_Rehearsal room
2_Event room
3_Atelier
4_Courtyard

UNDERGROUND FLOOR PLAN
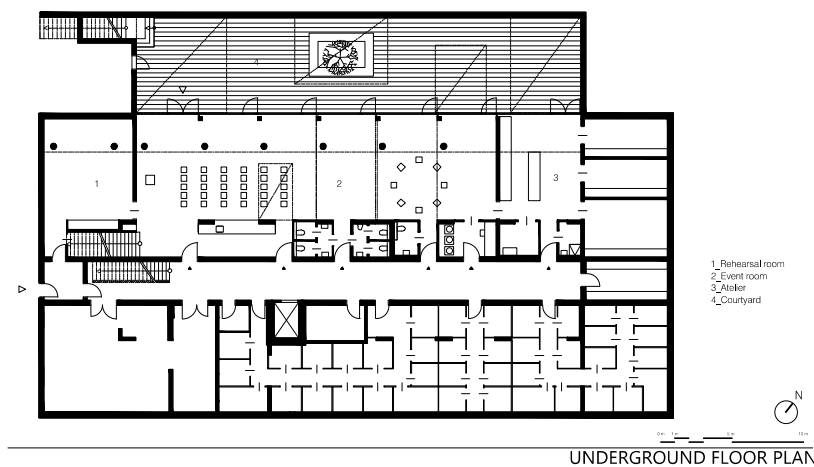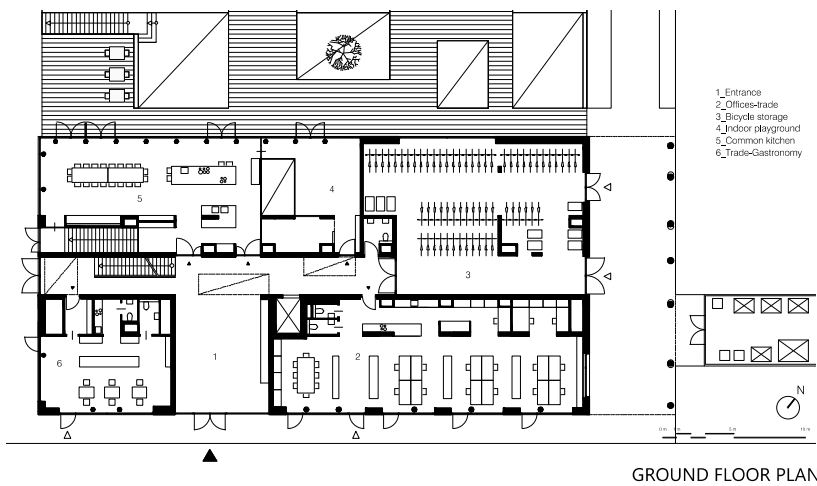
Figure 22. Floor plans *(Einszueins Arch.Office Documents)*
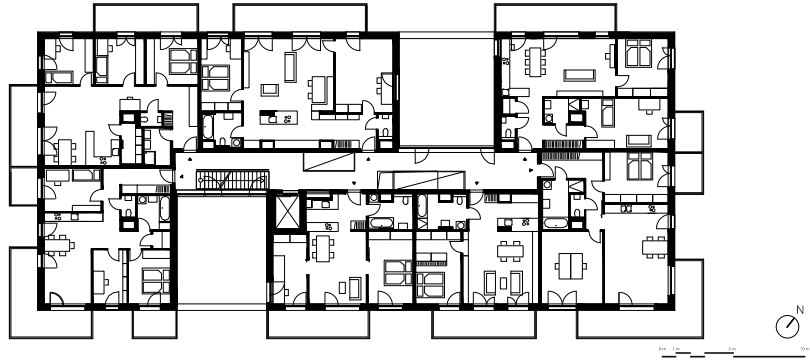
SECOND FLOOR PLAN
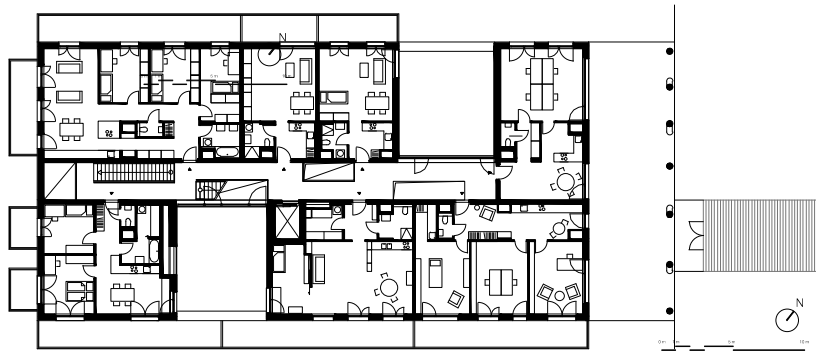
FIRST FLOOR PLAN

FOURTH FLOOR PLAN

THIRD FLOOR PLAN

FOURTH FLOOR PLAN

THIRD FLOOR PLAN

ROOF TOP VIEW

LONGITUDINAL SECTION
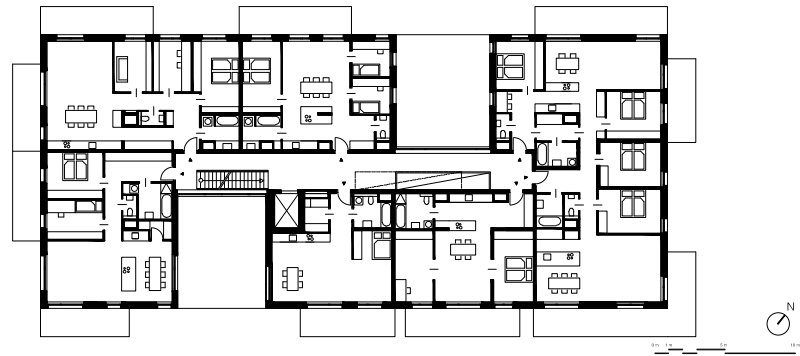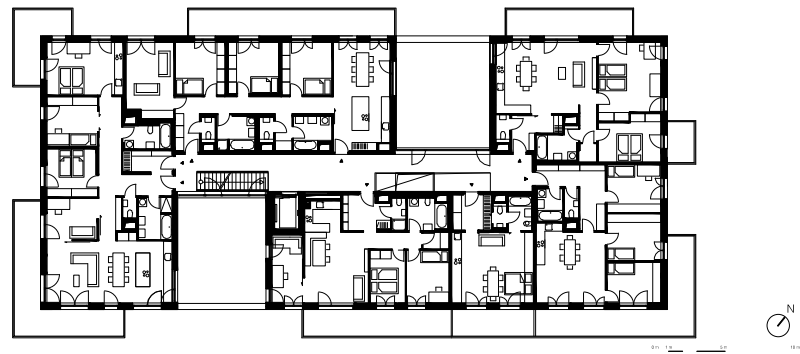
ROOF FLOOR PLAN

CROSS SECTION
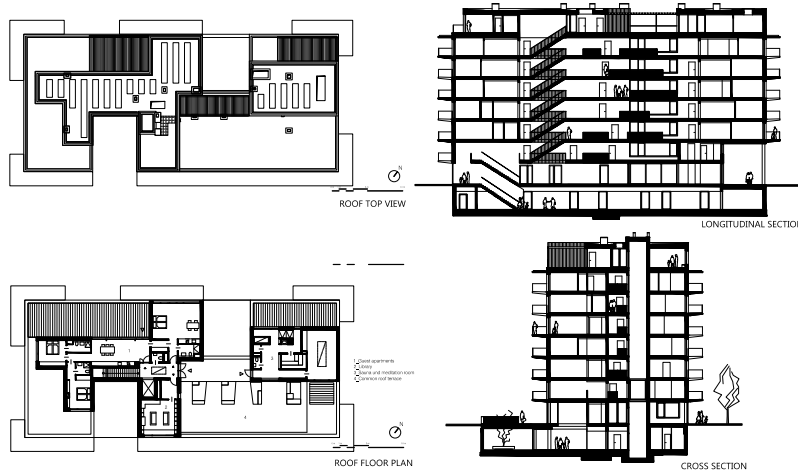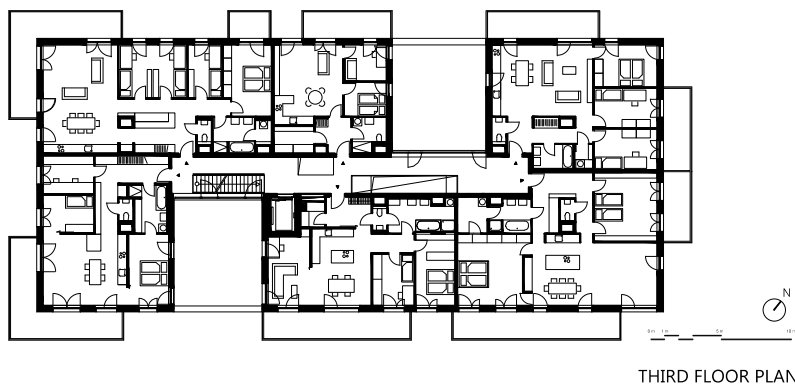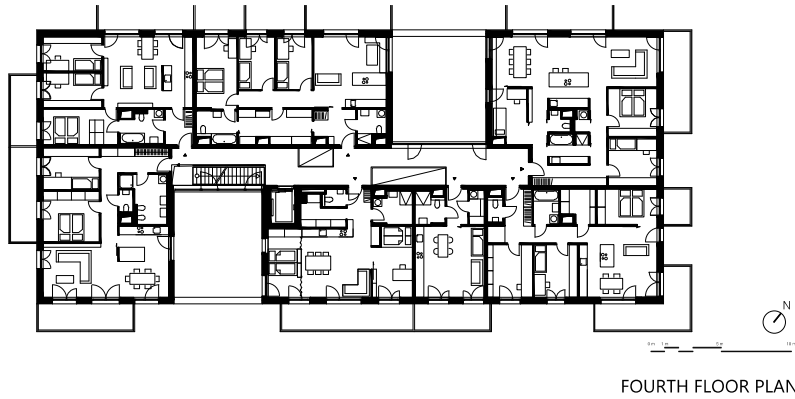
Figure 23. Roof plans and sections
(Einszueins Arch. Office Documents)

Children´s Playground:

Play spaces have a great significance to improve intelligence and brain growth and playing is an approach to education (Piaget, 1990). Besides, according to Freud, playing in childhood is the base for creative thinking (Freud, 1959). Therefore it is essential for living spaces to provide opportunities for play for for children and youth.

The building has a small open playground that includes sandpit and swing (Figure 24). As it was mentioned before, the sunken courtyard also offers a creative building space for children. The Bednar Park in front of the building and other playgrounds of housing around the site also provide additional playing possibilities for the children of "Wohnen mit uns". Moreover, the indoor playground in the building is visible from other common rooms and therefore enhances the playing possibilities of the young inhabitants.

Figure 24. Playground *(Leeb, 5/2014)*

Storage, Parking and Waste Services:
Convenient car parking and waste services are positive attributes in housing. The underground garage is provided in the next building, "Wohnen mit Scharf" but due to the car-free (mobility) concept of the buliding "Wohnen mit uns", an essential aspect for the architects in the design phase to support the idea of sustainability, it has been developed a system of self-organised car sharing. In this system there are eight park places, which also includes a car parking area for disabled people. The architect Zilker says in the interview with the author that this system is sufficient to support the car needs of the inhabitants.

There is a wide bicycle-parking place for 116 bicycles near to the parking garage. Moreover, there are also rooms for baby buggies to support the daily life of families. Each dwelling also has storage rooms inside and outside of the dwellings.

CONCLUSION

This study has focused on the significance of social sustainability in residential areas. Indicators of this quality have been identified to provide the possibility of analysing and evaluating several housing projects.

The results were attained from the analysis of social sustainability through the developed framework; the project "Wohnen mit uns"

proves a successful design and practice process. Participation, communication and integration are supported through several community rooms and the concept of car sharing are the most prominent aspects of the project in relation to the social sustainability. In addition to these aspects, the project offers various dwelling types and flexibility, which respond different requirements of the different types of families, and healthy open spaces and playgrounds, good storage possibilities, convenient building sizes in human scale and efficient layouts.

In conclusion, the findings show that the project is a demonstration project in terms of social quality and sustainability and quality of housing. With this better quality of housing projects, which improves social relations of people, a sustainable and more liveable future will be ensured.

The success of housing and sustainability today in Vienna, one of which is demonstrated in "Wohnen mit uns", is the product of their long-standing history of experiences, initiatives and policies as well as concept projects such as participatory housing (Kalfaoglu Hatipoglu, 2016a). Ottokar Uhl and Sargfabrik are the examples of participatory housing projects designed in the years 80s and 90s. These policies and experiences can shed the light on other countries as well as Turkey, as the positive affecting factors of architecture can be translated considering that all human in the world desire and deserve a liveable life.

With this overall aim, this study provides a helpful guideline through defining the criteria to evaluate social quality for the actors of new residential projects in countries such as Turkey. As intensive mass productions of housing have been built without a clear vision and social quality in Turkey (Tekeli, 2010). In addition, this successful demonstration project presents a respectable example of practice of these criteria to enable a better understanding of social sustainability, which improves housing projects designed for the middle class in Turkey. Built on the findings from the case study it is clear that successful housing implementations can be applied in Turkey if the building actors take more responsibility about human-centered planning, liveability and quality of life for all and take into consideration aforementioned guideline about social quality in housing. New and radical concepts supporting social quality should be derived to enhance housing towards a liveable life. The building policy of the municipalities should also support these kinds of projects with subsidies and motivations. Moreover, the desire and incorporation of the inhabitants for these kinds of the concepts is also an important factor for this social quality as we see the model in the background of the case study.

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Resume

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Research Article

Urban Design Project for Historical Mevlana Türbeönü Square and Holistic Protection of Environment and Reassessment

Murat ORAL*

Abstract

Urban design project for historical Mevlana Türbeönü Square and immediate environment is a study conducted on the request of Metropolitan Municipality of Konya. This project covers draft of an urban design project in an area of approximately 25,000 m² regarding to Konya Türbeönü Square in direction of primarily city development plan decisions. The target is to be able execute a study which can be integrated with the existing urban recreation fabric and which may provide a concept idea to the urban fabric which shall be in the extents o Konya Türbeönü Square. This study shall be a driving force for development of cultural, artistic and recreation structure of the city in a totality and shall provide hints which shall ensure transformation of the fabric in its immediate environment within the process.

INTRODUCTION

As a living being, continuous renovation and transformation of the cities are unavoidable. Historical environments gain important as long as they are able to keep in step with today's conditions with their cultural identities which they show as the result of the transformation they have undergone within the period of time and to sustain these identities. Physical environments created by the communities in various periods reflect the cultural structure of that community. Historical places are qualifies as "old" in spoken language when being defined and this characterization tells us both physical and functional ageing. Since these places are a part of human culture, they also have historical quality. Remains of our culture are our historical environment. Environment is an expression for an historical accumulation of a culture. Environment is born, grows up, and develops in parallel with human. Historical city fabrics are the places arranged in the scale of human which reflect social, cultural, and economic structure, living philosophy, and aesthetic concerns of the ancient civilizations. History does not only tell the past but also is a part of history today. Traces on the historical environment were established by different generations of different eras in accordance with the different opportunities and conditions. It means a continuous renovation and interaction of new and old concepts. Communities reflect their identities to the extent that they are able to protect their historical and cultural values and to combine these values with the lifestyle of today. Another method to prevent extinction of these values is to sustain historical environments with necessary functional changes and integrate them with community life. (Arabacıoğlu ve Aydemir, 2007).

SUBJECT OF THE PROJECT/ OBJECTIVE AND SCOPE

The objective to draft urban design project is preparation of urban design projects regarding to Mevlana Square, design on social equipment, kiosks, cafeterias, and urban furniture, preparation of lighting projects, and preliminary project for the design creating economic, applicable, and easy to apply, maintain, and clean environments to get a healthy, livable, ergonomic, sustainable, and aesthetic environment in order to meet the needs of the area, and execution of application projects.

Within this scope, every kind of project required in engineering in company with urban design projects shall be obtained, targets, principles, approaches, and techniques related to every kind of physical-spatial for practice depending on the characteristics of the project (archaeological, natural, urban, historical etc.) shall be determined, management models shall be

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detected and promoted in a way which shall protect the potential of project area, problems arising out of existing use and circulation shall be solved, the needs of the area shall be removed with the equipment required by modern and technology improvements require, and procedures to be applied for this purpose shall be determined in the projects.

It has been tried to establish suitable environmental quality in the project within the framework of that procedure. As already known, environmental quality includes many components such as assessment of identity, vista, and natural view points and corridors, human scale, comfort in pedestrian traffic, being able to get away from traffic noise, existence of public areas in which people can rest and chat, development of heritage awareness, and reassessment of cultural and historical heritage as well as "being aesthetic". Scale which is required for every branch of science and occupation is valid for urban design.

TRANSFORMATIONS IN MEVLANA TÜRBEÖNÜ HISTORICAL CITY SQUARE

Many structural changes have been experienced within the process in the area studied and changes in this area have caused formations opposite to the ontological character of the square. Until the recent times, Çelebi Konakları were demolished in order to open the surrounding area of Mevlana Türbesi although road expansion zoning activities for Mevlana Avenue were completed. In a similar way, former provincial public library (Mevlana Documentation Center) was demolished before square urban design project due to transportation master plan. "Dervişan Kapısı" having been used for ages among the gates identified by the square was stopped to be used. Many quality architectural structures bearing witness to immediate and far history on the urban fabric providing identity for the city on Mevlana Avenue connecting Alaaddin Hill and Türbeönü (allegedly to be able to directly see Mevlana Türbesi!). (Ulusoy, 2014)

LOCATION OF THE WORKING AREA IN HISTORICAL CITY CENTER OF KONYA

Historical city center of Konya is an urban protection zone determined as "historical, commercial, urban protected area" with the decision of High Council of Real Estate Relics and Monuments (GEEAYK) dated 13.11.1982 and numbered A-3861 as "natural, archaeological, and historical protected areas", "areas requiring controlled excavation", and "areas requiring protection of ancient covered bazaar structure". Historical city center of Konya is an urban area open for cultural tourism and spatial and functional developments with the urban center function in which economic

activities and administrative services addressing all the urban population are intensified in terms of urban area using pattern and functional zoning as well as geographically central position and opportunities of easy accessibility and with spatial and functional pattern formed in company with cultural heritage assets and cultural heritage asset in its immediate neighborhood (Özcan, K, 2009). Working area discussed is in Mevlana Türbeönü which is considered focus point of historical city center. It has been considered that a good opportunity shall be taken for uplifting the region with establishment of various commercial functions as well as touristic sites and social and cultural centers which shall provide service to local and foreign tourists and study has been conducted in this direction.

METHOD USED IN URBAN DESIGN STUDY

The area has been categorized in subgroups in urban design study and planned with the method mentioned below.

Data obtained as the result of Data/Preliminary Studies:
-Structured and empty lot relationship in the pattern (Occupancy rate),
-Land use,
-Structural status of buildings,
-Documentation of the land with images,

Evaluation of the Data

Existing problems in the working area have been determined based on the data mentioned above. In a way which shall lead the solution offers in the whole area;

-Social and physical arrangements have been made based on plan (pattern) for city block.
-New recommended building facades have been designed as the result of analyses conducted for facades of structures which are also facades for the area (existing facade, occupancy rates in facades, horizontal and vertical lines, silhouette effect, template status, typology etc.).
-Transportation status in the working area, borders of which were determined, has been discussed by assessing the totality of history and city. Connections of the mentioned area with the other regions of the city have been analyzed and decisions having been previously taken (pedestrianization of the covered bazaar) as data. Parking problem and failure of

pedestrians to move safely have been determined to be issues required to be paid attention to.

-Analyses conducted based on the land have been integrated within the borders of working area and decision recommendations in relation with the area have been discussed.

PLAN/PROJECT PREPARATION PROCESS (WRITTEN AND DRAWN DOCUMENTS)

I. PHASE WORKS

In direction of the Zoning Plan decisions, documents which shall provide data to the project have been updated, documents have been collected, they have been compared to the former documents, analytic studies have been made, and preliminary projects and final projects have been prepared. All maps, plans, documents, and projects have been transferred to the digital context.

I. A. RELATED ANALYTIC STUDIES

I. A. 1. DOCUMENTATION

I.A.1.1. Plans - 1/1000 Scaled Implementary Development Plan - Delivered by the Administration.

I.A.1.2. Orthophotographs - They have been displayed on A3 Album with markings on orthophotographs in a way which shall show the project area.

I.A.1.3. Ownership Details - Within the Borders of Analytic Survey, "Ownership Map Section" containing the ownership details in which the up-to-date map showing the cadastral status has been used as background.

I.A.1.4. Infrastructure Details and Map Sections - Map sections regarding with the existing and planned infrastructure to be constructed by other related units (Sewerage, Clean Water, Rainwater, if any, Drainage, Natural Gas, Electricity, Phone and Cable etc.) have been obtained from the relevant establishments.

I.A.1.5. Transportation Plans and Projects and Transportation Coordination Center (UKOME) Decisions - Development plan decisions, transportation plans and projects, UKOME Decisions and Investment Programs drafted in the digital media regarding to the area within the borders of analytic area have taken part in A3 Album of 1st Phase Studies as a report and general transportation scheme with the scale of 1/1000 has been drafted.

I. A. 2. DETECTIONS and ANALYSES

I. A. 2. 1. Preparation of Dimensional Drawing

*Existing triangulation and polygon points have been determined and those missing have been established.

*Superstructure facilities in the project area (Tree, bush groups, park details, transformers, buildings etc.) have been measured.

*Dimensional drawing map sheet has been drafted in suitable scale showing the up-to-date status of the project area in order to establish base for the application projects.

I. A. 2. 2. Transportation Analysis

- Junctions in the transportation impact area and in a close proximity to the impact area, width of the roads, number of lanes, directional conditions, physical characteristic, vertical and horizontal traffic signs and boards, pedestrian crossings and signalization points have been detected.
- Transportation values of the public transportation types, bus and minibus lines, stops and terminal locations within the transportation impact area have been detected.

I. A. 2. 3. Detection and Analyses of Existing Plantal Elements

Map section for detection of plantal elements has been drafted on the scaled city maps by detecting the botanic, physiologic etc. characteristics of the plants in the project area. Specific plantal pattern or those obliged to be protected have been shown with separate legend on the map section.

I. B. PRELIMINARY PROJECTS

Preliminary project map sections covering the studies which provide base for the application projects and in which design decisions for the area of approximately 25,000 m2 consisting of roads, pavements, and squares in Urban Design Areas are shown have been prepared.

Preliminary projects cover the arrangements of outdoor areas and outdoor areas with indoor areas, general transportation, solution of short and long-term park problems, recommendations regarding to the infrastructure, establishment of relationship with the surrounding structures, and main principles of every kind of basic arrangements in direction of the need program of Project area and area data.

City equipment album has been prepared with preliminary scaled structural and plantal landscaping projects of the designs

assessing the environmental impact values, economy and function interaction factors within a totality with the explanatory studies such as report, perspective, section, view etc.

Three-dimensional animations have been prepared with photos, free hand drawings, and perspective which explain the functions. Requirements and standards for the people with physical disability have been taken as data in designs.

I. B. 1. PRELIMINARY STRUCTURAL DESIGN PROJECT

In the preliminary project, information such as plan data, cadastral status, transportation project data in the dimensional drawing integrated with city maps covering the grades, entrance - exit points of the area, transportation decisions in open areas, water elements, recreation and activity areas, material selection etc. have been specified on the map section.

In these designs,

1. Standard measurements,
2. Grades,
3. Ladder - ramp values,
4. Material selection and passages,
5. Layout plan of the city equipment etc. have been specified on the map sheet.

Projects and reports containing the details for the structural elements given place in the open area arrangements, symbols of city equipment used in the project and designed (furniture, lighting elements, artistic objects, announcement panels etc.) and total counts have been drafted.

I. B. 2. PRELIMINARY PLANTAL DESIGN PROJECTS

Scaled plantation project on which plants to be protected and prescribed to be transferred on the Preliminary Structural Design Project has been prepared.

I. B. 3. PRELIMINARY CITY EQUIPMENT PROJECTS ALBUM

In the urban design project in which there are details for the city equipment and structural elements prescribed in the project design, researches have been made for all equipment required to be given place in the project such as seating units, lighting elements, sign and information boards, border elements, sales units, artistic objects, trash bins, flower beds, grates, manhole covers and covers of other transmission lines, grates under the trees and tree protectors, elder and disabled ramps, ladders, floorings and wall panels etc., aquatic and plantal elements and

materials and flooring types and there are alternative recommendations.

I. C. FINAL PROJECTS

Final project is the project phase based on the preliminary project approved in which uses agreed upon (considered appropriate/approved) are developed and final solutions are shown. This stage includes the designs regarding to the transportation and open areas in the project area, general characteristics of the plantation, measurement of all elements, determining the materials, preparation of minimum two sections and silhouettes, projecting the indoor areas if deemed required and preparation studies of management plan. Also, final projects for city equipment such as the detail list, lighting equipment, direction and introduction boards, trash bins etc. and artistic objects have been prepared.

II. PHASE WORKS

This phase includes the preparation of Urban Design, Landscape Architecture and Engineering Application Projects and reports, surveys and technical specifications and studies of project promotion, introduction and animation.
Urban Design Projects are those including suitable architectural and engineering detail references, materials, landscaping elements, equipment and plantal arrangements which may be used in office or worksite at every stage of the project containing grades and measurements allowed by the scale desired for the application projects according to the approved final project for the project area, 1/100 and/or 1/200 and also 1/50 application projects as well as detail references. It must be delivered with Application Project Report.

II. A. APPLICATION PROJECTS FOR LANDSCAPING ARCHITECTURE

II. A. 1. APPLICATION PROJECT

1/200 scaled Application Project shall be prepared for application of the design, it shall cover the structural and plantal design, partial and specific details (with the scale of 1/100 and 1/50) have been taken from the places where deemed required.

Requirements and standards for the disabled have been taken into consideration within the scope of the plan.

Application projects with the scale of 1/200 have been attached to the design map section with the scale of 1/500.

II. A. 2. CITY EQUIPMENT APPLICATION PROJECTS ALBUM

It is the album with the size of A3 in which there are details for city equipment and structural elements prescribed in the project design. Material characteristics, specific details, connection elements and details and anchoring system detail plan which shall provide data to the application within this scope are given in detail in plans, sections and perspective.

II. A. 2. 1. Details

Material selections, material transitions and details for the equipment and structural elements (flooring, ladder, aquatic elements, entrances, roads, squares, shadow elements etc.) used in the structural landscaping application project and recommended have taken part in company with plans, sections, looks and detail references in scales of 1/50, 1/20 and 1/10 etc.

II. A. 2. 2. City Equipment

Material selections and details for the city equipment (lighting elements, artistic elements, trash bins, seating units, direction panels, bordering elements, stops etc.) used in the structural landscaping application project and recommended have taken part in company with plans, sections, looks and detail references in scales of 1/50, 1/20 and 1/10 etc.

PROBLEMS IN THE WORKING AREA

Problems in the Working Area; Problems detected as the results of physical and social analyses have been gathered under these headings:

a. Structural Problems
- Lack of structural repair and maintenance on building facades in the area
- Cantilevers added to buildings
- Color, material and size chaos on the building facades
- Structural height which is not suitable for development plan

b. Problems On the Basis of Texture
- Deformation of historical silhouette (facades) by the new architectural formations between the civil and monumental architectural structures, (Such as Mevlana Bazaar)

- Visual pollution in color and size of the advertisement boards on the building facades
- Visual pollution created by disharmonious additions to the buildings such as TV antenna, air conditioner, hood and window blinds
- Problems in use of units such as trash bin, lighting poles and wires and pavement (asphalt)

c. Problems Related to Transportation

- Limitation of daily life by the intense vehicle traffic loaded on the main axes in the working area
- Failure of secondary byroads to serve to vehicle and pedestrian traffic
- Disorder and interruption of pedestrian ways
- Lack of pull-offs or car parks which shall provide service to stopping vehicle traffic

d. Lack of Gathering (Square) or Recreation Points (Park) Which Shall Meet the Needs of the Region in the Working Area

BASIC DESIGN PRINCIPLES AND APPROACHES SHAPING URBAN DESIGN PROJECT AND DETERMINING ITS FORMATION

The concept named as 'Urban design principles' or 'urban design objectives' has been defined in various sources as a concept covering various matters. Some of the urban design principles listed commonly in various sources are:

*Character,

*Sustainability and confinedness

*Public space quality

*Mobility,

*Readability,

*Adaptability

*Diversity,

Apart from that, the objectives are listed as sustainability, image formation, human scale, transparency, complexity, consistency (Ewing, 2006) While some of these principles have emerged in relation to the functioning of urban space, others have arisen from features related to the perception of space. According to the

approaches, the following points have been evaluated primarily in the urban design project to be carried out here.

* The square should be physically well-defined in order to create identity and sense of place.

* The square should be supported by historical, social, cultural and aesthetic characteristics, taking into consideration the contribution of establishing links with the past to urban sustainability.

*Functional diversity within the scope of the square should be supported and the place should be kept alive night and day.

* Visual appreciation, order and contrasts should be created and the artistic elements in the square should be designed from scratch as a part of the space. In this context, the issue how the public art products may contribute to the creation of the sense of belonging 'spirit of the place' should be tackled in cooperation with the artist. (Oktay, 2007)

* Designing or improving the major squares of the cities in line with the proposed principles will be urban designs contribution to the social integration (Oktay, 2007)

* The application to be realized should provide a 'square integrity' and accordingly over diversity of functions and materials used should be avoided.

* The established identity of the space should not be destroyed and utmost sensitivity must be displayed in respect thereof.

URBAN DESIGN PROJECT OF MEVLANA TOMB SQUARE AND SURROUNDINGS

Goals and Principles

•Projects have been prepared in accordance with the current implementation plan decisions.
•A project design approach that gives priority to the environment and the area and protects its natural, cultural, architectural, historical, economic, aesthetic, visual values and authentic identity has been adopted.
 •Projects include design and programming of the actions that are practicable in terms of legal, administrative, economic and technical aspects and that take place in the implementation process.

• During the project design process, the factors related to the natural environment (climate, soil, water, natural structure, flora,

fauna etc.) have been determined and their impacts on the constructed environment (structures, buildings, cultural assets, etc.) and social (life, working, recreation facilities, etc.) environment and interactions between them have been determined and based on these data, the protection use balance has been formed.

• During the project design process, it has been aimed to improve the environmental quality with harmonious designs.

• Projects have been prepared on the approved current city map cadastral map and dimensional drawing on which all kinds of architectural, historical and natural elements in the area have been processed in an applied and manner.

• Designed according to the users by determining the user profile and settings designed for addressing the needs of disadvantaged users such as disabled, children, elderly, etc. have been included.

• While the contemporary uses and landscape arrangements have been made possible by preserving the traditional, regional, historical, cultural, natural qualities and surrounding areas and their functional integrity of the areas such as open spaces, squares, garden, yards, pedestrian paths, etc., traditional architectural texture has been improved.

• While the accessibility of the project area has been increased and the main pedestrian and vehicle transportation have been separated as much as possible and service facilities have been provided without damaging the transportation system and the natural environment and traditional/structured texture and contemporary solutions have been used.

• Functional, spatial, etc. integrity and continuity have been achieved in pedestrian and vehicular transportation between the project area and the whole city or its surroundings.

• The existing structures in the project area have been improved firstly and possible uses have been investigated.

• Arrangements have been made to eliminate the complexity created by the electricity and telephone poles, advertising boards, infrastructure lines and so on.

• Optimum conditions have been provided in terms of necessary natural and artificial light level in the indoor and outdoor areas and climate compatibility.

• The sufficiency and effectiveness of clean water, sewage, waste, garbage and fire etc. infrastructure systems have been ensured.

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• It has been aimed to protect and sustain the ecological balance
in the designs made.

GENERAL APPROACHES

The first thing to remember when it comes to the nature of urban
environment is that the city exists for people. Urban public spaces
are the most important means of realizing these functions in the
context of creating the basis for the communication and activities
of the people. The social integrity of the city and the revitalization
of urban life depends, in part, on the relationship of structural
style and outdoor spaces and the diversity and character.

Perhaps the most important dimension of urban design is related
to the concept of 'center'. Lynch (Lynch, 1961) in his study of
perception of urban fiction, has argued that 'nodes' are the most
important elements in the perception and understanding of a city
and the image of a city. Whyte (White, 1989) emphasizes beyond
that a city with a distinct center and a strong unity can be said to
be integral to the whole region.

A crucial issue to consider when evaluating the squares is that
they create a sense of place and belonging in their users.
Establishing ties with the past in the urban is essential for
enhancing identity and sense of place and strengthening the social
memory (Rossi, 1982)

For this reason, in places where old and historical buildings are
part of the urban landscape, preservation and revitalization and
sustainability in accordance with the socio-economic and cultural
structure gain particular importance. (Oktay, 2007) Art practices
in the square can also strengthen meaning, identity and
orientation. While these elements strengthen the image and
readability of the space they are in, sometimes they also attribute
a sacred meaning to them. What is important here is to ensure a
harmonious relationship and integration between the artistic
elements and the structural texture in the square they are in, and
to position the works of art considering the pedestrian movement.
(Oktay, 2007) Creating the desired positive effect of a square is
not only dependent on its qualities but also its relation to other
squares and streets within the urban texture, and operation
capacity of the pedestrian artery in these spaces and the
perception when reaching the square also create an effect of
stronger and striking space. (Oktay, 2007)

Within the framework of all the above mentioned issues, the
'Urban Design Project of Mevlana Türbeönü Square and its
Environment' will also allow for the formation of units that are
lacking in that area. In this regard; the project will feature tea,

coffee houses in traditional texture, and amphitheater units for mini-gatherings, square fountains, and small functional units.

These units which will be positioned on the land of the existing public city library to be demolished will also build a barrier in front of the campuses in the back and create a sense of isolation The urban design project of Mevlana square will have a concept to meet the urban reinforcement that the city lacks (Figure 1).

Figure 1. Mevlana Türbeönü Square/General View.

Mevlana urban design project has been carried out as a design approach that creates a flexible, participatory and systematic network that can be transformed over time, allowing the other elements to be articulated to itself, from the upper scale to the lower scales.

On the basis of the project, there lies the matter of protecting the existing trees and qualified green texture in the arrangements to be made in an area of 25.000 m2 to be constructed together with the tram route.

The present green texture to be protected is a part of the green continuity in the city. It has a setup that can respond to the environmental activities and activities that the city's residents and those who come here need. It has been considered as the most important focal point to contribute to the development and change of the city.

The transportation master plan in the project includes the stores and sitting areas to be built on the land of the demolished library (Mevlana Documentation Center), a mini-amphitheater with seating elements, Üçler Cemetery entrance arch, the pool to be restructured, restored taxi stand, tea drinking areas, a public wc and restroom, urban design elements to be constructed and tram route to be restructured

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Within the scope of the project, the floor tiles to be renewed, the lighting elements to be constructed and the city furniture will change the existing worn-out texture in the Konya Türbeönü square, allowing for the revision of the nearby environment to be evaluated in the second stage. The arrangements to be made will appeal to people from all strata, to disabled and able people. By making different zoning in the space, the square will gain three dimensional effects.

RECOMMENDATIONS FOR WORKING AREA

Roads to the Historical Mevlana Türbeönü Square from Mevlana Avenue have been regulated again. The biggest change at this point is the transfer of the light rail system from Alâaddin Hill to this historical main road, passing in front of the temple, and connection to the Mevlana Culture Central between Selimiye Mosque and Üçler Cemetery. Grade of the Selimiye Mosque shattered with plateaus at different grades (Fountain has been transferred to the square within the technical problems) has been regulated with square grade. (Figure 2)

Set of nonregistered old stores obscuring Aziziye Mosque region of the Square has been removed and spatial totality has been formed. Removal of Mevlana bazaar between Aziziye Mosque and Selimiye Mosque in Türbeönü Square has been left to the process within the scope of master plan. (Figure. 3) Grade differences between the road and square have been removed to ensure inclusion of Aziziye Mosque and Historical Covered Bazaar texture to the design environment of the Square. Physical conditions and functions of the stores at the border of Historical Covered Bazaar texture have been renovated. (Figure. 4, 5)

Figure 2. General Overview of Mevlana Türbeönü Square and its Immediate Environment.

Figure 3. Mevlana Bazaar between Aziziye Mosque and Selimiye Mosque.

Figure 4. Improvements/Function Recommendations in the Existing Facade Texture in Mevlana Türbeönü Square.

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Figure 5. Traditional Texture Recommendation for Mevlana Türbeönü and its Immediate Environment. Existing Facade Texture in Mevlana Türbeönü Square.

"Mevlana Documentation Center Building" among the republican period at west of the Square has been demolished (within the scope of Transportation Master Plan) although there is no decision in the project for it with the initiative of local administration since it is on the route of light rail system. (Figure. 6, 7)
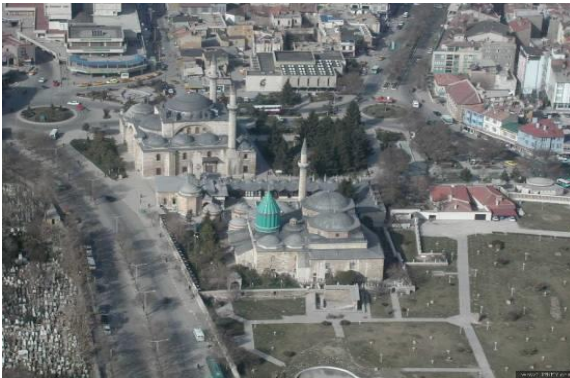

Figure 6. General Overview of Türbeönü Square. Environment. Existing Facade Texture in Mevlana Türbeönü Square.

Figure 7. Mevlana Documentation Center/Former Provincial Public Library. Texture in Mevlana Türbeönü Square.

Structures around which are not in harmony with the square identity (Provincial Culture Building) shall be built by being re-designed. (Figure. 8, 9)

Figure 8. Provincial Culture Building in Türbeönü Square. Figure. 8. 9. Provincial Texture in Mevlana Türbeönü Square.

Figure 9. Provincial Culture Building Project Offered in Türbeönü Square. Mevlana Türbeönü Square.

Rearrangement has been made on the surface to the square in order to strengthen the integration of Üçler Cemetery with the square. (Figure 10) Recreation areas have been prescribed in the Square. (Figure. 11, 12, 13, 14, 15, 16.)

Figure 10. Üçler Cemetery Entrance Arch Offered in Türbeönü Square. (Author) Mevlana Türbeönü Square.

Figure 11. Alternative/Urban Design Project (Author)

Figure 12. Alternative/Urban Design Project (Author) Mevlana Türbeönü Square.

Figure 13. New Seating Elements Offered in the Design (Author) Mevlana Türbeönü Square.

Figure 14. New Shade Elements Offered in the Design (Author)

Figure 15. View of Türbeönü Square from Mevlana Avenue (Author)

Figure 16. Selimiye Mosque in Türbeönü Square (Author)

Pavement of the Square (Green Diabase Stone), natural texture, lighting and direction of surface waters have been projected again. Aquatic/green textures in the direction of kiblah of Selimiye Mosque damaging the surface wall have been restored. Urban equipment selection and placement in the Square have been made. It has been recommended that window blinds, advertisement panels and external units of the air conditioners which cause environmental pollution on the building facades surrounding the Square are to be rearranged. (Figure. 17)

Many recommendations have been produced within the scope of
this project in design of immediate environment of the Square.
Primarily, a mystical trip full of sense has been prescribed for
special planning area identified as "Special Project Area (ÖPA)".
Existing structures in this area shall be improved and shall have
functions which shall support the senses. (Structural and detail
recommendations such as Private Room etc.)(Figure. 18, 19)In
the similar way, side connections on the route of Mevlana and
arrangements such as "Small Parks" which shall include urban
memory have been considered for the immediate environment of
the Square. (Figure 20)

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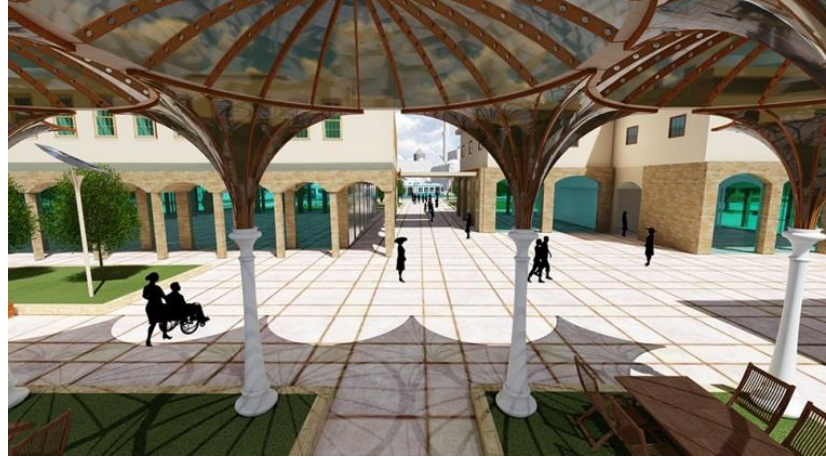
CONCLUSION

Planning, design and execution of the urban design studies in historical places are the final phase of integrated restoration process of the heritage. In this context, methodological styles and approaches related to planning and design of application studies are the integral parts of a whole.

As mentioned above, Mevlana Historical Türbeönü Square Urban Design Project including the wide-ranging studies and phases has been submitted to the relevant municipalities and approved by the Preservation Board of Cultural Properties. With Urban Design Project, this part of historical city square which has become old shall be made livable in every hour of the day. What is expected from the relevant institution is the execution of the project in compliance with its approved form.

Acknowledgement

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Resume

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Research Article

The Effects of Individual Factors on the Formation of Cognitive Maps

Zahra Alinam*

Abstract

Human's weakened bond to residential areas, compromised identity and stability of residents in residential areas, have resulted in higher rate of transfer. Individual and collective understanding of the environment could be seen as a major force in shaping that environment through the action of human choices and behavior. In this regard, Cognitive maps are of great theoretical and practical importance for understanding how humans interact with their environment.

This research is aimed to investigate the effects of the individual factors on the formation of cognitive maps in the neighborhood. Research seeks to answer the question: "How and to what extent the individual factors affect the cognitive and metal maps of the residents in the neighborhood?" Research is a combination of qualitative (interview)

and quantitative (questionnaire) methods which is conducted on 297 residents of a neighborhood in the city of Tabriz.

Results indicate that individual characteristics such as gender, age, occupational status, housing ownership status, length of residence, transport mode and duration of walking have a significant relationship within the formation of three components of cognitive map (landmark, route-road and survey knowledge). Educational status is the only variable that does not interact significantly with the cognition knowledge of the neighborhood. Achievement of this research is to introduce the effective individual factors in the formation of cognitive and mental image within the neighborhood and effectiveness rate of each in this process.

INTRODUCTION

Human's weakened bond to residential areas, compromised identity and stability of residents in residential areas, have resulted in higher rate of transfer. Nowadays, the texture of neighborhoods has lost its relation with in the perception of the resident living in it and has confronted him with a serious crisis of identity.

Residents' perceptions of a desired place and its elements are directly related to their physical and mental needs. Hence, extracting components involved in the formation of mental image and applying them in future designs is a prerequisite for fulfillment of needs through the place.

Due to the cultural and historical diversity in various parts of the city, each element has its true meaning in interaction with the surrounding elements set. Thus, to perceive the phenomena and their interactions with the surrounding environment, In addition to observing them as an outside observer, they should be perceived through the eyes of the people who are the subject or object of those phenomena. It should be the main starting point for any analysis of the relationship between humans and the environment. Taking this inside view into account could make an important contribution to the planning process, helping to adjust it to human needs.

Cognitive maps are of great theoretical and practical importance for understanding how humans interact with their environment. They contain subjective knowledge of the environment, and can give us an insight into people's orientation in the environment and how it is used. In this regard, identification of individual factors affecting cognitive maps formation can provide valuable information to recognize the view from ''the inside,'' which should complement the view from the outside.

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This research is aimed to investigate the effects of the individual factors on the formation of cognitive maps in the neighborhood. Research seeks to answer the question: "How and to what extent the individual factors affect the cognitive and metal maps of the residents from the neighborhood?"

The structure of the research is divided into conceptual and evidential approaches. In the conceptual section, the background of the subject is reviewed in the field of cognitive map and individual factors affecting its formation. Within the evidential section, to evaluate the effects of individual factors on the formation of cognitive maps, a specific neighborhood in Tabriz (The Gharebaghis' neighborhood) with purposeful sampling is chosen as the research case study.

RESEARCH METHOD

To eliminate local factors and minimize socio-cultural variables affecting the cognitive mapping process, only one place (the neighborhood of Gharebaghis) with purposeful sampling was chosen as the research case study. Thus it was possible to assess individual factors of the residents and focus on the types of knowledge forming cognitive maps.

Research is a combination of qualitative (interview) and quantitative (questionnaire). In order to determine the appropriate number of participants, first a pretest was performed as a pilot study on 40 residents of the neighborhood and after the estimation of variance for the initial sample (S^2) at the confidence level of 95%, the number of the sample was increased to 297[1]. To increase the reliability of results and to dispel ambiguities for participants, the test was conducted on 297 residents of the neighborhood in the form of questionnaires (including residents' statistical information and their sketch maps of the neighborhood) and individual semi-structured interviews (conducted in person by the author to provide clues about the analysis of statistical results).

Statistical data of questionnaires were analyzed by SPSS Ver15. The sketch maps drawn by residents (Figure 1) were assessed based on the five-level Likert scale ranging from "Very poor" on one end to "Very good" on the other with "Acceptable" in the middle (5≥M≥0) in three categories of landmark knowledge, route-road knowledge and survey knowledge, and the relationship between these components and individual factors (gender, age, occupational status, educational status, housing ownership status, length of residence, transport mode and duration of walking) were examined with the help of analysis of

1.

$$n = \frac{Z_{\frac{\alpha}{2}}^2 \times S^2}{d^2}$$

$S^2 = 0.77$

$Z_{\frac{\alpha}{2}}^2 = 3.84$

$d^2 = 0.01$

$n = 297.36 = 297$

variance (ANOVA) and Mann-Whitney tests. Finally, the quantitative results obtained from the software analysis were qualitatively interpreted based on the data from semi-structured interviews and in accordance with the finding of previous studies.
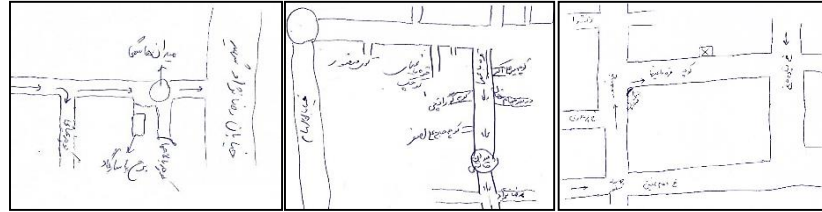

Figure 1. The samples of the residents' cognitive maps (Alinam, 2014)

COGNITIVE AND MENTAL MAP

The notion of a "cognitive map", is attributed to Tolman (1948) who demonstrated that rats freely exploring an environment (maze), tend to construct an internal "map" of it, which they later employ to execute spatial tasks. In a subsequent paper entitled "Cognitive Maps of Rats and Men" he extended his theory to the human domain. Since then the concept has been employed extensively by cognitive scientists (psychologists, neurologists and the like) and also by students of culture and society mainly as a reference to images of space or as a metaphor for space. This is why there are many interpretations and different ways of using concepts of mental cognition and mental maps in academic research (Fenster, 2009).

Cognitive mapping is defined as "a process composed of a series of psychological transformations by which an individual acquires, stores, recalls, and decodes information about the relative locations and attributes of the phenomena in his everyday spatial environment" (Downs and Stea, 1973). Cognitive mapping is usually considered to be a subset of *spatial cognition* which can be defined as "the knowledge and internal or cognitive representation of the structure, entities and relations of space; in other words, the internalized reflection and reconstruction of space and thought" (Hart and Moore, 1973). In turn, spatial cognition is sometimes seen as a subset of *environmental cognition,* which refers to "the awareness, impressions, information, images, and beliefs that people have about environments. It implies not only that individuals and groups have information and images about the existence of these environments and of their constituent elements, but also that they have impressions about their character, function, dynamics, and structural interrelatedness, and that they imbue them with meanings, significance, and mythical-symbolic properties" (Moore and Golledge, 1976).

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The end product of a *cognitive mapping process* is called a *cognitive map.* Usually accepted to be a device that helps to simplify and order the complexities of human-environment interactions (Walmsley, Saarinen and MacCabe, 1990), the cognitive map is essentially our individual model of the world in which we live. Kitchen and Blades (2002) defined cognitive map as a term, which refers to "individual knowledge of spatial and environmental relations, and the cognitive processes associated with the encoding and retrieval of the information from which it is composed" (Kitchen and Blades, 2002). Cognitive maps are internal representations of our physical environment, particularly centering on spatial relationships. Cognitive maps seem to offer internal representations that simulate particular spatial features of our external environment (Rumelhart and Norman, 1988; Wagner, 2006)*.

Methods developed to recover cognitive configurations are as varied as the purposes behind such research. One of the earliest methods suggested by Lynch (1960) was the use of sketch map techniques*. Sketch mapping* has long appeared to be a useful instrument for recovering information about environments, if the maps are properly interpreted.

Humans seem to use three types of knowledge when forming and using cognitive maps which is visible in the sketch maps: *Landmark knowledge* is information about particular features at a location and which may be based on both imaginal and propositional representations (Thorndyke, 1981). *Route-road knowledge* involves specific pathways for moving from one location to another. It may be based on both procedural knowledge and declarative knowledge. *Survey knowledge* involves estimated distances between landmarks, much as they might appear on survey maps (Thorndyke, and Hayes-Roth, 1982). It may be represented imaginally or propositionally (e.g., in numerically specified distances).

 Thus, people use both an analogical code and a propositional code for imaginal representations such as images of maps (McNamara, Hardy, and Hirtle, 1989; Russell and Ward, 1982).

INDIVIDUAL FACTORS AFFECTING THE STUDY OF COGNITIVE MAPS

Each individual builds up his own personal image which, because of his temperament and background, will differ from that of any other individual. Many researches have emphasized a variety of variables which appear to relate to individual and group difference in the perception and evaluation of the townscape

(Table 1). However the importance of the physical environment in map formation suggests that a public image exists, consisting of the overlap of individual cognitive images.

Klein's (1967) work on respondents of widely differing backgrounds, discovered gender, socioeconomic status, and place of residence to be important variables effecting the way people viewed the city. Physiological differences and distinctive culturally assigned roles suggest that sex is important in terms of spatial imagery (Erikson, 1964). A study of Los Angeles demonstrated that mental map size, content, and directional bias differed according to gender (Everitt and Cadwallader, 1972). Psychoanalysts assert that, when creating environments, girls design static enclosures, whereas boys are concerned with the externalities of buildings, with activity in unenclosed space, and with movements along paths (Erikson, 1964). In Venezuela Appleyard (1970) found that females tended to draw area-based than path-based (sequential) maps, and were more prone to error.

Table 1. Studies on the individual factors affecting cognitive map (Alinam, 2014)

Investigated individual factors affecting cognitive map	Reference
Gender	Orleans and Schmidt, 1972 Erikson, 1964 Appleyard, 1970 Everitt and Cadwallader, 1972
Age	Porteous, 1977 Lewicka, 2009 Ng et al., 2005 Pretty et al., 2003 Lovejoy et al., 2010
Occupational status	Goodchild, 1974
Educational level	Mesch and Manor, 1998 Porteous, 1977 Hur and Morrow Jones, 2008
Housing ownership status	Lewicka, 2009 Brown et al., 2003
Length of residence	Nielsen et al., 2010 Knez, 2005 Borrie and Roggenbuck, 2001 Appleyard, 1970
Transport mode	Goodchild, 1974 Orleans, 1973 Michelson, 1970
Duration of walking	Lund, 2002 Mesh and Manor,1998

The imageability of individual structures may vary with age. A study in England found that whereas elderly persons' mental maps contained afterimages of structures actually derelict or

demolished, the cognitive maps of young persons tended to be dominated by new, highly visible construction project (Porteous, 1977).

Experience as a function of length of residence affects the cognitive maps of the residents. Recent immigrants are likely to have images different from those of long-term residents. In a new city in Venezuela, newcomers tended to produce sequential (path-oriented) maps rather than maps which emphasized spaces. Their maps were also more restricted in area, but were less prone to error than those of longer-term inhabitants, indicating a higher level of interest (Appleyard, 1970). On the basis of experience, metal maps should be most detailed in areas most frequently used, notably around the home. This is especially so for females and for children (Anderson and Tindall, 1972).

Several studies have found differences in imagery on a socioeconomic class basis (Ladd, 1970; Orleans, 1973; Stea, 1974). Appleyard (1970) found several components of class to be significant variables. Automobile travelers produced more coherent, broadly based maps, whereas 80 percent of the bus riders' maps were fragmented, inaccurate, and indicative of repeated sequential journeys. Bus riders tended to be of low education, thus emphasizing the importance of transport mode in imagery formation. The most accurate maps were those of business executives and skilled workers (self-employed), the least accurate those of housewives and professionals. Moreover educated residents had a different view than the less educated. Maps of the less educated were most clearly based on subjective experience and tended to describe their own journeys rather than the existing transportation system. The more educated groups drew the city more objectively and coherently. Their ability to visualize coherent patterns, however, could lead to error through inferring the existence of an absent element because of previous experience with similar layouts (Porteous, 1977).

Using a single measure of social class, namely, occupational status, Goodchild (1974) found that middle-class maps tended to cover a wider area and incorporate a more widespread road network than did working-class maps. It was concluded that middle-class people tend to conceptualize the environment in a clearer and more coherent manner than working-class persons[2]. Ineichen (1972) suggested the housing ownership status as another measure of socio-economic class. He argued that the fact of home ownership alone makes people more aware of the public environment surrounding their home base.

2. The "working class" includes individuals, groups, and families who can be broadly characterized as having none or some college education and living in rented homes. Members of the working class are usually employed in manual, unskilled, or semi-skilled jobs at workplaces where they have little or no control.

The "middle-class" is comprised of people who normally have a college education and are involved in professional work. They are usually owners of a home and can move up the ladder to afford a nicer and more comfortable house.

CASE STUDY

Tabriz, the capital of East Azerbaijan province is among Iran's six main historical and cultural cities. As old and weary parts of a city, central parts of the city are constantly under renovation and transformation and this increases the level of attenuation of the residents' bond with the residential areas of these regions. Over the last ten years, the Gharebaghis' neighborhood, as one of the central neighborhoods located in Region 8 of Tabriz, has been going through constant renovations. The adjacency of historical texture with the new one and integration of them during the renovation provides the possibility to study and investigate the effects of both these textures in the form of a case study (Figure 2). The Gharebaghis' neighborhood is among the rare neighborhoods in Tabriz which has always maintained its genuineness and it seems that the old residents have kept their attachment to the neighborhood in spite of renovations and transformations in texture. The study of cognitive maps of residents in a neighborhood with such properties can provide us with valuable information.

Figure 2. Images of Gharebaghis' neighborhood(Alinam, 2014)

RESULTS AND DISCUSSION

In line with the research aim, the impact of each individual factor on the components of cognitive map is reported in graph form based on the results of data analysis, on average of $(5 \geq M \geq 0)$[3]:

Gender: Figure (3) shows that men have stronger cognitive knowledge than women. This confirm the findings of studies which claim that environmental images of women are different from those of men (Orleans and Schmidt, 1972)

There appears to be strong congruence between an individual's cognitive map and his/her regular activity pattern. Gender difference in mental maps may be the result of differing activity patterns. Household division of labor is still largely defined by gender roles, and many wives remain tied to the home base,

3. For a significance relationship Sig. must be less than 0.05 (Sig. <0.05)

especially if young children are present in the home. In other words, these differences are due to different social roles rather than biological differences (Porteous, 1977). Due to the lower mobility among women compared to men, the cognitive maps of women were limited to certain places in the neighborhood, to and from which they commuted. Therefore, women had cognitive maps with a lower width but greater details compared to men.
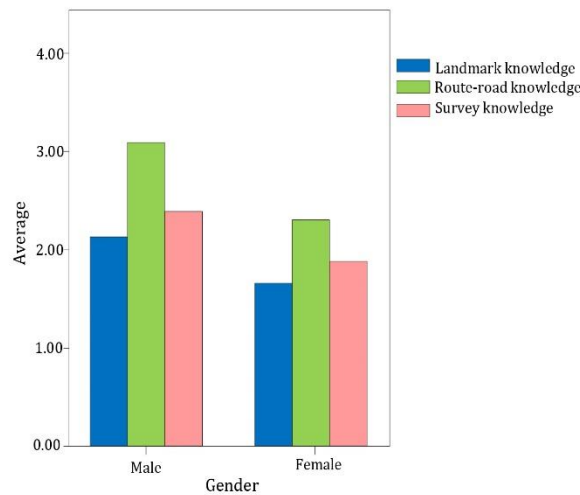

Figure 3. The relationship between gender and cognitive components (Alinam, 2014)

Age: In examining the effect of age factor on cognitive maps of the residents from the neighborhood, three age groups: A) 18-40, B) 41-60, C) over 60 were considered for average test respectively as the young, middle-age and elderly age groups. Route-road and landmark knowledge, respectively, have the highest and the lowest averages between age groups. The (60-41) age group has the highest average compared to the other groups (Figure 4).

Recent renovations, way widening, and destruction of many historical and symbolic buildings in the neighborhood have led to a mismatch between the current appearances of the neighborhood with the present mental images of residents. This is more evident in residents over 40 years of age, who are mostly the old residents of that neighborhood. Moreover, destruction of historical and symbolic buildings by weakening the landmark knowledge have resulted in enhanced route-road knowledge in mental images of residents particularly the young generation with a shorter duration of residence in the neighborhood. This could be in accordance with the research results by Porteous (1977), where the elderly often show the images of dilapidated buildings in their mental images, while in the minds of younger ones, the images of under construction projects are more prevalent. Accordingly, the cognitive maps presented by this group will be different with the current situation of the neighborhoods.
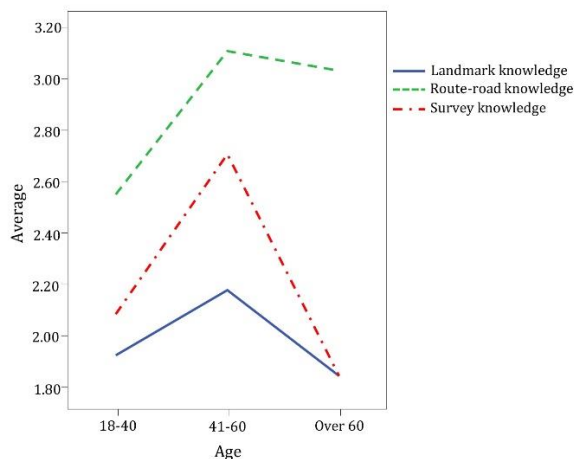
Figure 4. The relationship between age and cognitive components (Alinam, 2014)

Length of residence: Length of residence factor in the neighborhood were evaluated among three groups with a) less than 5, b) 5-20, c) over 20 year of residence. There is a significance relation between the length of residence in the neighborhood and cognition components so that as residence length increases in the neighborhood, the cognitive knowledge promotes (Figure 5).

This finding is in line with the research by Borrie and Roggenbuck (2001) who suggest that prolonged positive interaction with the environment contributes to enhanced cognition in individuals. Similarly, this confirms the findings by Nielsen et al (2010), Knez, (2005), and Erkip (2010) regarding the importance of time as a positive factor in cognition of a place.

Stability not only increases the cognition to a residential neighborhood but also helps with the development of social ties. Social bonds facilitate local residents' efforts to monitor outside situations and public spaces in the neighborhood. Social contacts allows residents to become familiar with each other. Repeated interactions increase social trust and sense of security among residents and neighbors which leads to the attachment to the neighborhood.
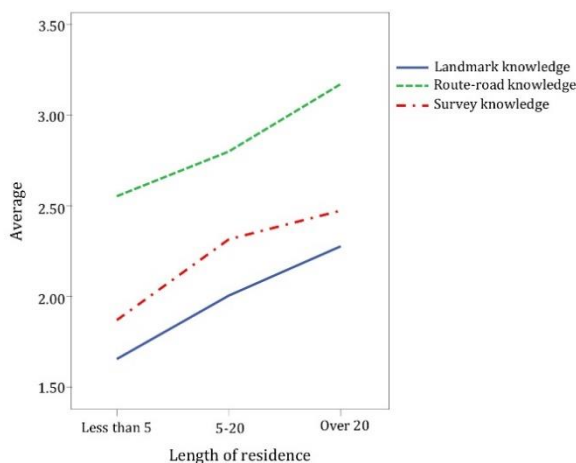
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Figure 5. The relationship between length of residence and cognitive components (Alinam, 2014)

Occupational status: Resident's occupational status factor was evaluated in four groups: a) housewives, b) self-employed, c) employees and d) students. Figure (6) shows that self-employed group has the highest and the house wives group has to lowest cognitive knowledge. While the Route-road knowledge have the highest average for both. There isn't any significant relation between the occupational status factor and the survey knowledge component (Sig. = 0.059).

It is interpreted that self-employed group as middle-class residents have a greater emotional investment in the environment. They tended to attach somewhat greater significance investment to townscape features of high architectural quality or historic interest, and were more concerned with aesthetic improvement than were employees. Moreover, this group usually live close to their workplace and easily can commute between their home and workplace. Students group often because of being non-native doesn't establish significant social relations in the neighborhood and spend most of their time outside of the neighborhood to meet their needs.
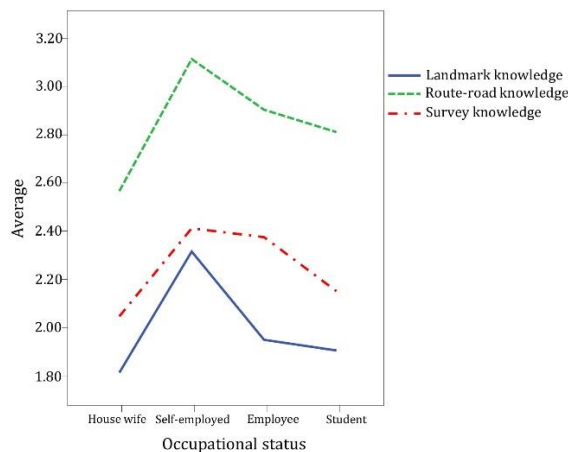
Figure 6. The relationship between occupational status and cognitive components (Alinam, 2014)

Educational level: There is no significant relation between the educational level factor and each of three components of cognitive map: Landmark knowledge (Sig. = 0.487), Route-road knowledge (Sig. = 0.199), Survey knowledge (Sig. = 0.390).

Housing ownership status: Figure (7) shows that cognitive knowledge is higher in the group with private housing ownership compared with group of tenants in the neighborhood. Route-road and landmark knowledge, respectively, have the highest and the lowest averages between both groups of residents.

It seems that the ownership of private housing in the neighborhood is directly related to the length of residence in the neighborhood and promotes the residents cognition toward it.

This finding may confirm the fact that poor people tend to have far more constricted images than affluent people attributed to the costs of spatial mobility (Orleans, 1973; Michelson, 1970).
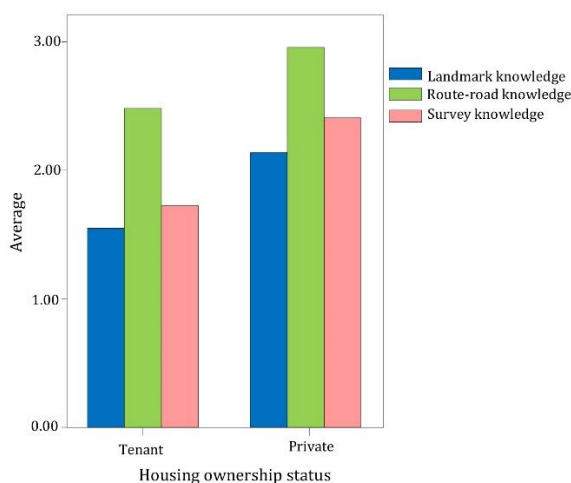
Figure 7. The relationship between housing ownership status and cognitive components (Alinam, 2014)

Transport mode: Residents' transport mode in the neighborhood was evaluated by four categories: a) on foot, b) bicycle, c) taxi and d) private car. Survey and landmark knowledge has the highest average among private car users and the lowest average among motor/bicycle users in the neighborhood (Figure 8). There isn't any significant relation between the transport mode factor and the route-road knowledge component (Sig. = 0.146).

This finding is in line with the research by Goodchild (1974) who suggests that people with private cars have a more accurate idea of their environment than those who rely on public transportation. Route-road knowledge is more effective than landmark knowledge in the formation of cognitive maps and has the highest average among group with private car. As a result, the cognition rate is higher in residents with cars.

Figure 8. The relationship between transport mode and cognitive components (Alinam, 2014)

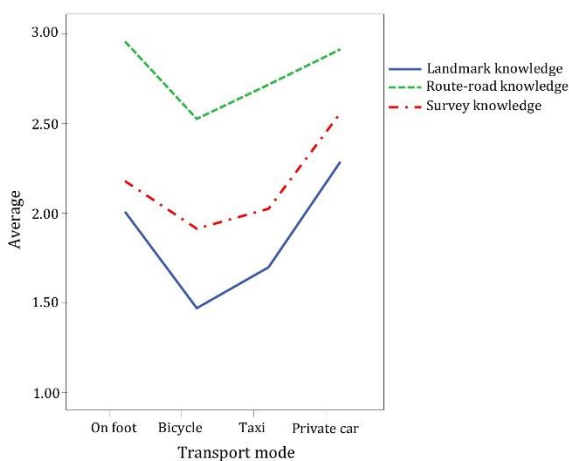**Duration of walking:** To evaluate the effect of walking duration factor on cognitive knowledge of residents, the daily duration of walking in the neighborhood was categorized into three groups of a) less than 1, b) 1-3 and c) over 3 hours. Cognitive map knowledge has the highest average among the group with (1-3) hours of walking duration in the neighborhood. For the group with over 3 hours walking duration, the survey knowledge has the highest average and for the group with less than 1 hour walking duration, landmark knowledge has the lowest average (Figure 9).

This finding confirms the research by Mesh and Manor (1998) who suggest that the higher characteristics of the physical and social environment are considered; the more cognition is formed toward the neighborhood. By increasing the duration of walking in the neighborhood, the opportunity to examine physical and social environments goes up and this leads to the promotion of cognition knowledge about the neighborhood. According to the reciprocal relationship between activity and cognition, presence and participation in social events in the neighborhood increase the average of cognitive knowledge of the residents.
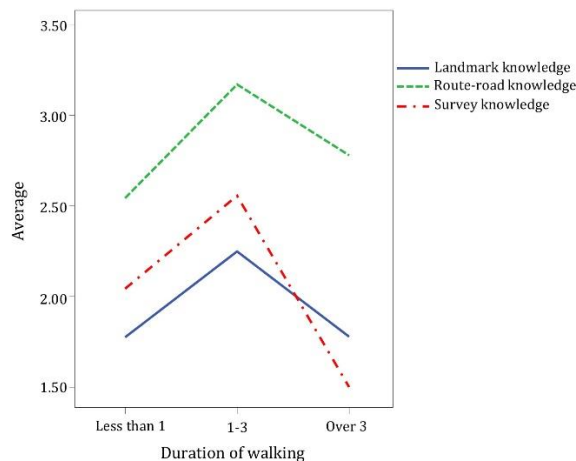
Figure 9. The relationship between duration of walking and cognitive components(Alinam, 2014)

CONCLUSIONS

Results indicate that individual characteristics such as gender, age, occupational status, housing ownership status, length of residence, transport mode and duration of walking have a significant relationship within the formation of three components of cognitive map (landmark knowledge, route-road knowledge and survey knowledge). Education is the only variable that does not interact significantly with the cognition knowledge of the neighborhood.

Today, the use of cities and urban spaces by citizens does not match the designed structure of the cities and this is why the citizen's satisfaction of the physical structure of the city is declining. Urban design is regarded as one of the professions influencing the living environment and human activities. In the design of a city and urban space, the relationship between human and environment and the way this relationship is established is of significance. Humans, environment and the relationship between them should simultaneously be considered in urban design. Urban designers require psychological understanding of the cognitive processes of the human mind in the creation of urban spaces. Through the investigation of the relationship between these processes and the physical environment, it is possible to achieve maximum spatial adaptation in urban spaces and provide residents with psychological and cognitive needs in a city.

Acknowledgement

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Resume

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Research Article

Evaluation of Sille Settlement in the Context of Ecological Tourizm

Arife Deniz Oktaç Beycan*

Abstract

Today, people have been seeking vacation in historical, cultural and natural environments besides coastal, sea and urban tourism, and they prefer different tourism activities. Tourism requests, focusing on traditional settlements with cultural and natural values, have caused the emergence of sustainable tourism approach. Ecological tourism, one of the sustainable tourism types, is used as sustainable development tool by protecting history, culture, and nature. Ecological tourism, which has minimal impact on the natural environment and has the least impact on ecological, and cultural heritage, contributes to the fields of tourism by protecting values, providing local economic benefits and eduction to the area where it is used.

Sille, located on the outskirts of Konya province in Turkey, has natural, historical and cultural values regarding alternative tourism. In this context, the study focuses on the evaluation of Sille as a new ecological tourism destination. The study was completed using survey, interview, photography and literature review. In the first part of the study, ecological tourism was defined. In the second part, natural, cultural and

architectural features of Sille were explained. In the third part, positive and negative sociocultural and architectural changes experienced recently in Sille were discussed. In conclusion, some suggestions were made within the context of ecological tourism for the development of Sille through tourism by preserving the values it already has and conveying these values to the future.

1. INTRODUCTION

Traditional urban textures, as the traces of past lives, are the places with their natural, historical, and cultural elements that have reached to modern day and where sustainable living should be established and preserved. Within the principle of sustainability, the preservation and survival of the old urban texture would be possible through the active use of all buildings within the framework of today's needs, their planning, and preserving them with their economic and social qualities (Lichfield, 1988).

The Venice Charter, which was adopted in 1964 and constitutes the international constitution of the protection issues, in its first article has carried the concept of "the monument to be preserved" to a much larger dimension from the concept of a monument and its surrounding. The first article states that "the concept of "historical monument" does not merely cover an architectural work, but it also covers an urban or rural settlement that witnesses a certain civilization, a significant development, and a historical event. The concept does not only comprise important art works but simpler works that gained cultural meaning in time." Thus, the concept of protection extended to include urban settlements with the necessary characteristics to be preserved, as well as an unchanged or slightly changed rural settlements (Url 1). Today, protection is perceived as protecting and sustaining the differences in all the values that the city has, along with its identity and natural environment (Meşhur, 1999).

Tourism is used as a positive power and development tool for traditional settlements and the preservation of cultural heritage and nature. Tourism is a sector that adds value to nature, culture, and history without requiring any additional costs (Kuşat, 2014). Tourism, an improvement tool for the developing countries, can be a major factor for development if it is well managed. Over-exploitation, poor management, tourism-related construction in tourism areas threaten the unique structure, integrity, and existence of natural and cultural heritage (url 2). The concept of sustainability in tourism has been developed to gain economic benefits by protecting the natural, historical and socio-cultural values that are the source of tourism and transfer these values to future generations (Oral ve Şenbük, 1996).

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Within the framework of delivering values to future generations in sustainable tourism, the most important issues to be considered are to improve the living standards of the local people, functioning culture and functioning nature (Selimoğlu, 2004). Ecological tourism, one of the sustainable tourism types, has been identified as the most suitable tourism type for Sille, our study field, in the context of protecting natural and cultural sources (Weawer, 1999)

Sille settlement which has natural, historical and cultural structure is located on the outskirts of Konya in Turkey (Figure 1). Settlement of Sille, with its geography, history, population, living culture, and architecture, is one of our cultural heritage values that needs to be protected, and its lost traditions need to be regained and transferred to the future generations. Today, Sille settlement is under protection, and it is planned that the settlement which has conservation plan would be developed with tourism. The opening of our cultural heritage to the tourism without using the right method causes to the weariness of common values. It is seen that the most accurate tourism route that would enable Sille's development by considering its values would be ecologic tourism.

The purpose of this study is to examine the traditional settlement of Sille and to lead it in the context of ecological tourism. For this reason, ecological tourism content will be examined in the first section of the paper; the second part will be about the natural, historical, socio-cultural and architectural features of Sille as a traditional urban settlement which can be a subject of ecological tourism, and the third part includes information about the studies on transition to protected tourism. The final part has a conclusion and some suggestions. The study was completed using survey, interview, photography and literature review.

Figure 1. Location of Sille (Google Earth, Date: 05.05.2017)

2. ECOLOGICAL TOURISM

In time, mass tourism (urban and coastal tourism) had negative impacts on natural and cultural sources. Ecological tourism developed in the 1980s as a reaction to the impact of endangering the tourism areas and destroying them (Erdoğan, 2003). The United Nations Commission on Sustainable Development declared 2002 as the "International Year of Ecotourism," and in

May of the same year, all the countries joined World Ecotourism Summit in Quebec, Canada. United under the same definition. Accordingly, ecotourism was defined as "An approach and an attitude for securing the sustainability of natural resources on earth while providing support for the economic development of local communities and protecting their social and cultural integrities" (url 3). In short, ecological tourism, which is used as ecotourism, includes rural and cultural tourism elements and is known as the most suitable type of tourism that can be developed in natural and cultural areas that need to be protected (Kaypak, 2010). Ecotourism is a type of tourism that is based on the principle of acting with a responsibility to avoid negative impacts on the environment that connect natural and cultural environment with tourism (Turizm Bakanlığı, 1999). Ecotourism that has the least impact on natural and cultural heritage and contributes to the preservation of their values is more advantageous when compared to other tourism types (Bakırcı, 2002). Ecotourism is based on combining economic development with the purposes for protection (Kaypak, 2012).

In ecotourism, the principle of sustainability of local the cultures is important. Material and spiritual values of the local culture should be respected. It is necessary to treat and respect the local cultural artifacts, to support their protection, and to prefer and support the accommodation facilities which serve authentic structures instead of modern architectural products which do not match the local art. In the regions where the local cultures are lived without corrupting moral values, tourist groups must treat these values with respect (to care for costumes, to respect religious and traditional values, to participate local eating and drinking ceremonies, enjoy local entertainment as much as possible).

In ecotourism, it is necessary for the local communities benefits from tourism activities and obtain financial share from touristic activities. For this reason, it is necessary for small regional agencies, rather than large international tour operators, to take part in ecotourism activity. The tour needs should be provided from the region and benefit to the region. Training, workshops, and briefings should be given to local managers and the regional community about the types of ecotourism, and methods and support should be provided for developing eco-accommodation opportunities (Url 3).

Ecotourists are people who are generally from middle or upper-income groups, who love nature and participation, and people who act with the spirit of sensitivity (Kahraman ve Türkay, 2004).

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Ecotourists also make a contribution to the local people's wealth by creating employment and financial tools (Kaypak, 2012)

3. SİLLE SETTLEMENT

3.1. Geography, History and Population

Sille, 12 km North-west of Konya in Turkey, is a small town located on two slopes of a deep and narrow valley in the east-west direction. (Figure 1-3)

Figure 2.Natural formations around Sille, Geleve Fortress and Sille Dam (Google Earth İmages, Date: 05.05.2017)

Figure 3. Sille satellite view and city view (Processed on Google Earth image. Date: 05.05.2017)

The seasonal waterways around Sille are characterized by floods with dry streams and water flows during rainy seasons (Tapur, 2013). The Sille Creek, which flows from the west to the east, divides Sille into two parts (Figure 4). Due to the irregular flow regime and flood hazard of Sille creek, the Sille Dam was built in the west of the settlement in1961.
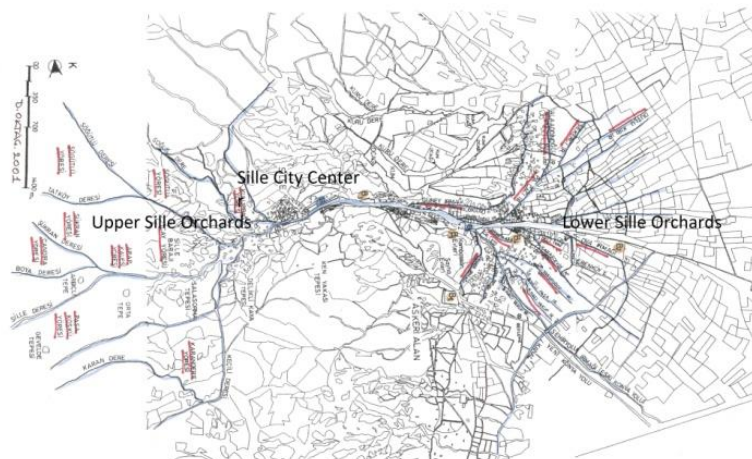

Figure 4. Map showing Sille and its surroundings (Author, 2001)

An active fault line named as Konya fault is situated it the southeast direction of Sille. In the south, there are volcanic rocks (andesite, trachyte, granite) formed in Miocene (Biricik, 1998-1999). Sille Stone, with its slightly pinkish color, is used in many buildings in Sille and Konya. Due to its easy workability, it has been preferred as a flooring, covering, paving stone, due to its resistance to the heat, it has been used in brick tile factories, lime quarries, and furnace construction

Oak and pine trees are seen in the mountainous-plateau regions of Sille, while willow, populus and fruit trees are observed at the valley bottom (Tapur, 2009). Since Sille has a continental climate and located in a valley, winters are warmer, and summers are cooler than Konya (Aklanoğlu, 2009)

History

Settelement had the names of "Silena" by Phrygians period (Baştak, 1938)"Sullata" or "Silata" by Greeks (Bildirici, 1994), "Su Dirhemi" in Ottoman period (Aköz ve Ürekli, 1997)and finally "Sille" in Turkish Republic.

According to the archeological excavations around Sille, historical ruins have been found in Tatköy from the Neolithic Period and in Gevela Castle from the Iron Age (B.C. 1000) (Bahar, 1994). The town has been used as a settlement since the Azianic, Hittite, Phrygian, Greek, Roman, Byzantine, Seljukian and Ottoman periods, (Baştak, 1938) (Figure 5). Rock-carved places (churches, tombs, and dwellings) that bear traces of Roman and Byzantine eras can be seen in Sille today (Konyalı, 1964). Sille is on the Silk and Spice Road routes, which is important from the 2nd century to the 1800s. During the Christian period, it has become one of the visiting places of holy pilgrimage routes (Sarıköse, 2009) (Figure 5).
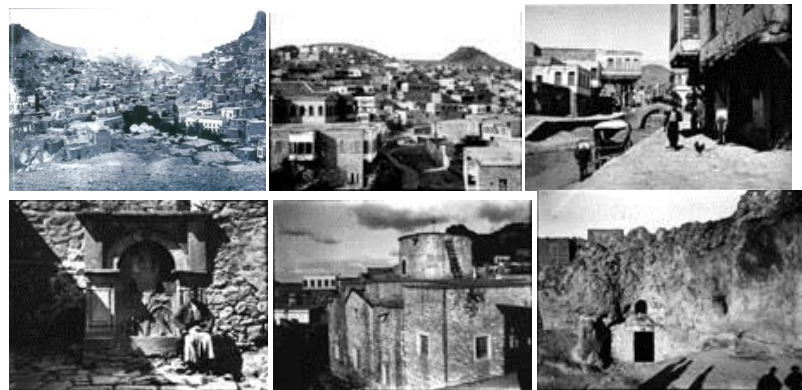
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Figure 5. Sille from Getrude Bell's camera in 1905 (url 4, 05.05.2017)

Population Features

When the Turks came to Anatolia, they had encountered Turkish elements such as Bulgarian, Hazar, Pechenek, Uz, Kuman and Avar who accepted Christianity, which was introduced to the region by

the Byzantines. According to 1300/1882 Almanac of Konya, among 5500 households the Muslim population was 6296, and the non-Muslim population was 1349. Totally 7645 people lived in the town (Aköz ve Ürekli, 1997). According to the Population Exchange in 1926, the Christians were replaced with the Muslims from Balkans. Until the exchange, the Muslims and Christians have lived together fraternally, confidently and permissively under the tolerance of administration without presenting any discrimination. Sille has reached today by building commercial and cultural links with Konya (Dülgerler, 2000).

Livelihood Resources

Citizens of Sille became famous with their mastership in construction, especially with their mastership in stone walls. Because of its alluvial soils, soil manual labor has developed in Sille. At the workshops in Sille, soil products such as tiles, bricks, floor furnaces, pitchers, earthenware jars, and pots have been processed (Nas, 2014). Agriculture and animal breeding remained at the level of meeting the requirements of the community.

Weaving, which had its origins in the Phrygian period, has always had its place in daily lives of the community. Carpets that were colored with "cehri" plant and root plants, has a special place in the world known as "Sille Carpet Business" (Sarıköse, 2008, Akan and Hidayetoğlu, 2014). In Sille, production of candles from suets is a traditional art that has been carried out for centuries (Özönder, 1998)

3.2. Social Life Culture and Traditions

People in Sille live in the city center during the winter months and in orchards during the summer months as most of the Anatolian people do. Residents of Sille who had homes or cottages in the orchard would move to the orchard during Hıdrellez (old Turkish celebration of spring), and they would move to their homes in Sille at the end of October. The family members migrate to their winter house with all the household goods used in the orchard house such as bundles, even the demountable wooden goods, and the products obtained from the orchard, large earthenware jars, and animals. The products of the orchard, foods, firewoods, dried-dung blocks will provide a comfortable life in the winter season (Oktaç, 2001)

The water regime and the soil structure of Sille and the regional tradition of using grape products and molasses instead of sugar have resulted in producing only grape which is named as dimlit, gut, fox's tail, smocked, aladiriz, dark girl, camel eye, germe, and white grape. (Tapur, 2014).). Grape molasses, molasses products, vine, and vinegar are made of grape syrup (Oktaç, 2001)

Sille is also famous for its entertainments named as "Barana, Ahek, Hıdırellez, Gereğiler (Taking grape to the Reverend)" (Kılıçaslan, 2009, Kapar, 2014). All the citizens living in Sille are involved in these spontaneous entertainments, and all activities are traditionally determined (Bağcı, 2009)

4. SİLLE SETTLEMENT CHARACTERISTICS

Sille is located in the northwest of Konya in Turkey. Entrance from Konya is in the east of the settlement (Figure 1). Sille is located on the southern slopes of the region at the northern part of Sille River (Figure 6). There are rock cave areas above the Dam road on the northern skirts of the valley (Figure 7). The settlement spreads along the creek along the eastern, western axis, adapting to the dam, narrows on the sloping ground on the north and south axis. For this reason, the main roads follow the river. Most important of these roads are Hükümet Main Street passing from the north of the river and Baraj Main Street passing from the south of the river. The settlement is mostly dense around Hacı Ali Ağa Street and Karataş Main Streets. Roads that are parallel to the river and the slope are connected to the upper roads with short roads which are slopy or have steps. Road coating is made of Stone, and water is discharged from the middle of the road. At the small squares where the streets cross, fountains and furnaces with their covered tops can be seen.

Figure 6. Sille urban texture (url 6)

Figure 7. Rock carving spaces (Author's Personal Archive-2012)

The southern and northern parts of the river are combined with bridges. The oldest one is "Stone Bridge" while wooden, concrete and iron bridges are also built.

The settlement area at the southern part of the rivers and especially at the southwest region where Aya Eleni church is situated is a region known as Subaşı Quarter. This is a region where houses and work places of the non-Muslim community are located. Work places, shops, and stores, called "Karhane," are located within the residential structure as one-storey the front side of which was covered with wooden or metal cover.

While mosques were situated at different places within the texture, churches were generally situated on the west side of settlement area. Its mosques were Kurtuluş (Mormi) Mosque, Şubaşı Mosque, Kayabaşı (Mezar yakası Mosque), Orta Mahalle Mosque, Ak Mosque, Karataş Mosque and Çay Mosque. Around Sille, there are many living spaces and churches that were made from rock. These are situated at the northern part of the mountainous area at the southern side of Sille River. Bela Hovath stated that in the year 1913, there were sixty churches in Sille. Among these, there are Akmanastır, Aya Eleni (Big) Church, Çevrikler Mezarlık Arkası (Behind cemetery), Hıdırellez Church (At the Greek Cemetery), Aşağı Church, and Kızıl Church.

None of the structures mentioned in the almanac such as Sille Caravansary and inns survived today (Özönder, 1998). One of the two Turkish baths (hammam), called Hacı Ali Ağa Hammam is situated at the entrance of Konya road. Şubaşı hammam is situated within the quarter which is known by its name.

Cemeteries that are situated in Sille are Ak Mahalle Yeni Cemetery (Aşağı Cemetery), Sille Martyr's Memorial (Garipler Cemetery), Ak Mahalle Eski Cemetery, Subaşı –Gölbaşı Cemetery, Mormi Cemetery, Karataş Cemetery, Şubaşı / Burial Area at Karhane Mosque, Gayrımüslim Cemetery (Sarıköse, 2008, Işık, 2014)).

4.1 Traditional Houses

Residences and other structures form a texture with their terraces without disrupting the slope of the land. The appearance of the settlement texture consists of prismatic structures that are aligned side by side, rising with the elevation angle of the slope. The adjoining dwellings are overlaid on the street with closed or open flats (Figure 8-9-10). Constructions do not interfere with each other in the direction of the sun, the wind as well as the landscape (Figure 6). They have avoided facing to the courtyard of each other or the inside of a flat. However, there are doors of sincerity and friendship, which are opened from the storehouse, the garden, even the houses (the neighboring house to the neighboring house) as a work of beautiful, neighborly relations between them.

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Figure 8. Slope placement of Sille residence plans in plan level (The Kamberoğlu and his son's Houses) (The drawing from Architect Argun Dağıstanlı has been improved.)

Figure 9. The fotograph of given the plan area (Personal Archive, 2012).

The top of some narrow streets was closed and they were turned into rooms. These spaces which were named as "Hanay", made the houses look as if they were joined from outside (Özönder, 1998, Karpuz et al., 2013).

Figure 10. Street and housing samples (Personal Archive, 2012).

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Mostly the houses have two floors above basement. In the basement floors, there are separate entrance doors to the stables from different levels. While entering the stable from the lower road, the first slope and the second flats are entered from the level of the rising perpendicular slope. While the ground floor and the first floor are connected with stairs from inside, entrance to the floors could be made from the street with upper level. Some housing and service areas are accessed by passing a perched guard behind the stone walls when viewed from the street. When the structure of Sille is viewed from the opposite direction, the trees rising from the yards between the buildings and grapevines surrounding the buildings from the front facades are seen. At the entrance of housings that don't have yards or gardens, flowers and grapevines which are raised in vases climb over the fronts of houses and add a green feature to the texture.

The ground floor of the houses is accessed from the street by using a two-wing wooden door. There is a window over this main entrance door to bring light in. The entrance is usually a dimly lit floor with a stone floor and a small water well and carpet loom. Toilet dend shower areas are situated on the ground floor at the wooden section of the stony entrance. The space accessed by going up a few steps from the ground floor is an area reserved for

male quests. This place, a window of which overlooks to the road and the other window looks at the stony ground flor, is used as a winter room in many houses because it is sheltered. Because of the adjacent structures of the houses, Sille had wedged into the rectangular plan home plan (Figure 8). Therefore, a window looking at the stony ground was opened to receive light and air to these dark places.

The first flor is accessed by using separate wooden stairs. The kitchen which is situated in staircase provides easy service opportunity to the first and second floors. "Bievi" space is accessed from the kitchen is used as a cellar. Here food has been stored in jars and glazed pots. The space does not have windows, or it is cooled by a window facing to the north. The space completing the relation of 'Bievi' and the kitchen is "Bush area" where the bush required for kitchen furnace is stored.

Kitchen, hand washing water and toilet water and shower waters are discharged to separate dirty water jars in the garden or in the basement to avoid mixing each other.

The first floor above the ground floor is the area from where the planning scheme of the house could be viewed. Each house in Sille has a different plan scheme that is designed as per different land conditions and requirements of each house. Sille houses have a sofa plan type, which is one of the traditional Turkish home types. In some of the houses in Sille, sofa area was kept bigger than in samples in Konya, and passage to the rooms and other functional spaces could be made from this area. In some examples, the rectangular planned sofa is perceived from the front in the form of openings (balconies) called "front roof."

Rooms are very spacious with a width of 3.0-3.5m and a length of 5.0-7.0 m. There is a cedar in front of the window on the front, and a wooden cabinet consisting of a bathing cubicle, carpets, and flowers on the wall between the other room.Flower beds which are also placed on the sofa walls are wood carved niches. Room walls are furnished with cupboards with wooden covers. For the ceilings, In the sofa and rooms "round wooden beams" are used, or wooden coating is done.

Rooms were given names according to their functions. Room in which the floor furnace is placed is named as "winter house," dark room is named as "chest room" and a room with grape clusters is named as "grape room" (Özönder, 1998)

Most important ornament of the housings is stone material that is the main structure component. Door handles, corner chamfers and cubical mass are among the aesthetical characteristics. The

room has a simple touch with wooden cupboard, flower beds, and the other features.

The basic material of housings is Sille stone. Stone structures have lime sutures. Wooden parts made from pine, juniper, and poplar trees are used in wooden joinery, columns and in room beams. Mudbrick material is seen as filling material on the timber-work walls.

Basic wall thicknesses in the houses are between 70-80 cm and the thicknesses on upper floor walls is between 60-65 cm and on the walls, a special system, named as "bağdadi - dolmagöz," has been used. Stone walls have been made stronger by using wooden stretchers. Wooden pillars can be seen on cellar floors and sometimes on upper floors. These pillars have wooden beams, and they provide support for the ceilings.

Roofs are flat soil roofs. After the wicker that is placed on wooden beams, thin tree branches are put, and thatch and sedges are also placed. Afer the mudbrick, arid soil with purple color is placed on top, and the roof structure is completed.

4.2. Properties of Sille Orchard Settlement

The roads in Sille's orchard settlements have been opened parallel to Sille Stream and its narrow branches (Figure 4). The pedestrian paths near the orchards have been leveled by man power and hardened with sands brought by the stream (Figure 11). In general, the orchards settled on the inclined lands extending from west to east are quadrilateral shaped fields side by side and creating a harmony between channels and roads.

Although there were shacks (tol) and orchard houses especially belonging to the non-Muslim people before the Exchange, they were all destroyed and disappeared due to lack of care after the Exchange. The shacks have been constructed at the secluded orchard sections for people and animals to protect themselves from extreme weather conditions. Shacks (tol) are small-size stone huts whose top and three sides are closed while the front side is left open. Closing the front side, the shack becomes a room or a barn. Sometimes these two units (room and barn) are constructed together side by side or as two floors; one room at the top, the barn at the bottom floor (Figure 12-13) (Oktaç, 2001)
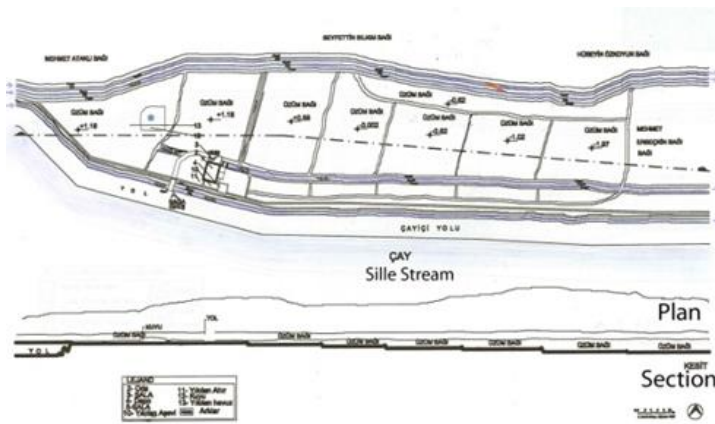
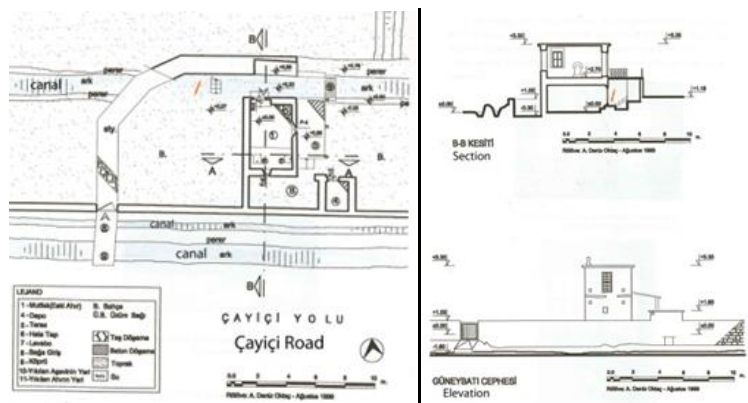**Figure 11.** A Sille Orchard Plan (Yanartaş Orchard) (Author, 2001)

Figure12. Yanartaş shack sample in Sille Orchards (plan, section and facet) (Author, 2001)

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Figure 13. Yanartaş shack sample in Sille Orchards (Author, 2001)

5. CHANGES IN SİLLE AND TOURISTIC ACTIVITIES

5.1 Changes seen in sociocultural and economical life:

While Sille was a municipality with a population of 3600 people and seven quarters till 1999, it was connected to Konya Municipality as two quarters in 1999. These are Ak Quarter (Aşağı Quarter, Kayabaşı, Camii Kebir, Çeşme-i Kebir Quarters) andSubaşı Quarter. (Kurtuluş, Orta Quarter and Karataş Quarters).In the elections of 2014, all of the quarters were combined under the quarter named as Subaşı.

Changes experienced in Sille: At the beginning of twentieth century at the Ottoman period, it was a settlement area having a population of 18.000 and a municipality, where commerce gained importance with nearly 300 stores. The first change was seen in

the population as the non-Muslim community was removed from Sille and the Muslim population from Balkans was brought here. It could not be possible to fill the space of the non-Muslim community that was dealing with trade, jewelry, and other forms of art while making production and holding capital in their hands. Today elderly citizens of Sille remember their non-Muslim neighbors with longing because it has been difficult for them to unite with the population having a different culture. Furthermore, the necessary measures to enable trade and traditional arts to survive were also not taken. Sille has undergone a socioeconomic change and a great convulsion (Özönder, 1998)

After the exchange, the second change in population was lived through in the 1970s with the influence of industrialization in the country and the related urbanization. The residents of Sille sold their houses to the villagers of Tepeköy and Sulutas and moved from Sille to Konya where they settled. These two population changes have altered sociocultural and economical life in Sille. In Sille, people with different cultures began to live, and these people did not know the former sociocultural life, grapes and techniques to use them. Activities such as harvest feasts, Barana-Harmony remained in the memories of the elderly citizens of Sille, and these activities are not known by the current community. Local terms have been forgotten.

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The current community in Sille has low-income level, and they work at jobs that they can find in Konya. There are few numbers of construction masters and vine growers. The community in Sille is not trained about the developing tourism sector. However, a few numbers of enterprises such as Sille Konak Restaurant, Boutique Hotel, and Kemeraltı Cafe are operated by the residents of Sille.

Existing educational institutions are an elementary school, a private school at the exit location of Sille towards Konya road, and Kent Workshop aiming to raise construction masters. Kent Workshop has not beeen used in line with its purpose, and it is used as a training center by KOMEK (Konya Vocational Courses). At the Sille Kent Workshop, which is currently closed, training were given on carpet making, paper marbling, folkloric baby doll making, mat and ceramic shaping and mother of pearl inlaid.

Among the traditional art forms carpet making, jewelry, weaving, candle making have been forgotten, and stone mastership works began to be reduced. Masters dealing with soil works (pots, crockeys, etc.) got older. The final remaining workshop is striving to continue this occupation. The master of the workshop states that there are no people interested in learning the profession. In candle stores, candles that are imported from outside are sold.

The residents of Sille are working in Konya as staff in trade and other occupational areas.

5.2 Architectural change, protection and tourism activities:

As the community of Sille lost their sociocultural and economic values, many structures were abandoned. The reason for collapsing of a thousand year old structures in Sille, which is known to be close to a fault line, is not earthquakes by their abandonment. When the old and new pictures are viewed, it is seen that the quarter near Karataş mosque has completely disappeared and that Karataş Mosque has remained alone. It is observed that many structures within the settlement structure of Sille are not in their places (Figure 14). The residents of Sille say that those having houses in high altitudes abandoned their homes and bought houses near the river. Houses which are collapsed as they were abandoned, stores that were closed or turned into houses, monuments not taken care of, have caused the city texture to become unrecognizable. Reinforced concrete structures and flat roofs were covered with wooden structures change the silhouette. In short, as Sille came from twentieth century to this time, it had an appearance that looked like a ruin. While the situation is like this, it is pleasing to see that many structures like mosques, churches, rocky spaces, Turkish baths (hamam) and fountains remain. While the registration works relating to cave engraving spaces continue to be processed, Konya Directorate of Museum and Municipality are carrying out the cleaning works.

Figure 14. Differences between old and new Sille (Bell, 1905 –url 4 and Author's Personal Archive- 2012)

In Sille, viticulture is under threat as the orchard are abandoned due to orchard diseases, lack of water, structuring requests. Even if it is not outside the protection area, there are no structure works at the moment. Vineyards comprise of agricultural lands where requirements of land owners are met by using new irrigation techniques, old and new orchard houses. On the other hand, as there are high floor apartments being built in the vicinity of Sille, it is seen that Sille and its orchard are under threat (Figure 3).

After Sille was announced as an urban and archeological protection area in 1995, Sille Municipality has aimed to open Sille to tourism as a development model starting from 1998. Tourism activities which started with stream improvement and continued with a restoration of Hacı Ali Hammam and turning it into an

ethnography museum are still continued. All of the mosques and churches were restored. On Hükümet Main Street and Hacı Ali Street, works relating to facade arrangement and stone coating on floors were carried out. Restoration and reconstruction works are carried out on structures that are expropriated by the state or owned by private sector. At the entrance of Konya on the area that is situated in the southern part of the bridge, Municipality Hotel is being built. Besides Selçuklu Municipality Sille Art Gallery, a private Photography Art Center is also opened.

It is seen that some touristic enterprises are opened in Sille. The majority of places where touristic objects are sold, café and restaurants, and boutique hotels are operated by exploiters coming from outside of Sille.

While local materials and construction techniques are used in the restoration of registered structures, reinforced concrete works are applied in reconstruction and newly established structures. It is seen that in Sille, relevant institutions dealing with construction have doubts about the usage of local materials and construction techniques, and it is seen that reinforced concrete structures are implemented widely.

The touristic activity observed on Hükümet Main Street is not seen on the upper street, and the daily life is continuing there away from tourism. Restorations and works for strengthening the streets are carried out with the images of bedraggled street. In 2001 the Sille Conservation Plan introduced and enacted (Figure 15). After this date, the Sille Commission, which was founded in Selçuklu Municipality in 2016, started to work.
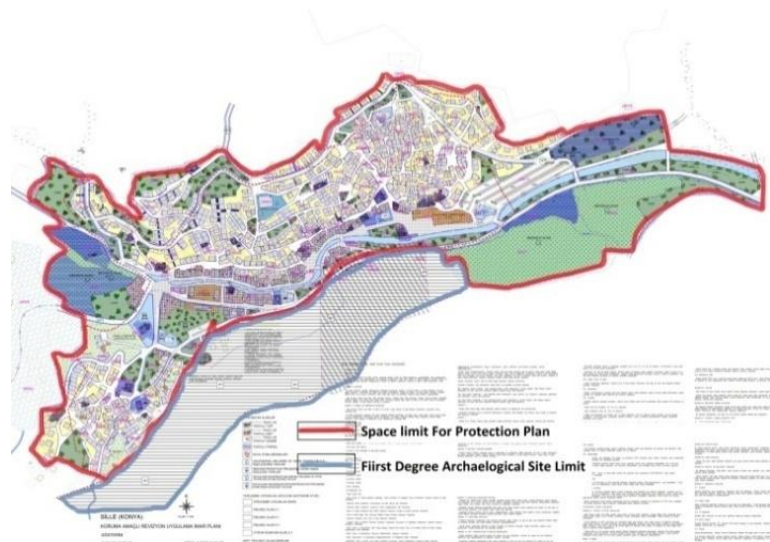
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Figure 15. Sille Conservation Plan

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6. CONCLUSION:

Tourism is used as a positive power and a development tool for the protection of the culture heritage, traditional settlements, and the nature. Ecological tourism, in which nature conservation creates the least impact on the natural environment, contributes to the field of tourism on the preservation of values that have the least impact on ecological and cultural heritage, local economic benefits and education.

The Sille settlement, located on the outskirts of Konya province in Turkey, with a cultural heritage of thousands of years has a significant tourism potential regarding geography, nature, history, especially as a tolerance center where different religions are blended, its unique socio-cultural values, and with the attraction of urban and orchard settlements. Changes in population structure and sociocultural life have led to the loss of cultural heritage values. Today, in Sille, which has lost its traditional handicrafts and traditions, a different lifestyle has been experienced that creates a different social texture.

Sille which was taken under protection at a late date after losing many values in the traditional sense, has been targeted to development through tourism since 1998. For this purpose, the improvement works in the physical structure, restorations, street health works stand side by side with the poor houses.

The improving works gave their fruit and tourism has gained momentum in the last two years. In Sille, tourism enterprises are mainly opened by foreign capital and tenants. Local people cannot afford to run tourism enterprises. Local awareness and development initiatives are not at the expected level. Religious values, Nature, and agriculture-related activities are not organized.

 Sille, as a destination attraction center, is a settlement with ecological tourism values. It should be managed with ecological tourism methods to protect and transfer the natural and cultural values to the future generations. For this purpose, the following recommendations are foreseen:

Recommendations regarding the physical space and its protection:

* It should be avoided for tourism to give harm to cultural heritage under the purpose of achieving development. With the help of local planning and conservation work, the original silhouette has to be preserved, and the proper restorations of traditional houses should be made, and these structures should have new functions such as pension, hotel, culture and arts centers, museums, local food and handicrafts businesses.

* In the empty areas that disturb the silhouette, the construction of the new building should not be allowed in the historic surroundings, and apart from this, there should not be any new constructions especially for accommodation. New standards should be introduced regarding plates creating visual pollution, mechanical facilities, and the existing settlement.

*Ministry of Culture conservation boards and local governments should guide and support restoration, reconstruction and use of traditional construction techniques and materials in new constructions. The Sille Town Workshop should be a local center providing material and technical support as well as being the center of training master craftsmen.

* The orchards outside the protected area, which are natural, historic, and cultural values, should be protected as agricultural land and should be evaluated as agricultural tourism and local products should be produced for nutrition.

Recommendations regarding Management Planning and Training the Community

* At each step of Sille management planning, ecological tourism and natural and cultural values should be protected, and local development should be promoted. Local governments, public, non-governmental organizations, technical teams, universities should work together in the sustainable management plan.

*International quality standards and physical environment regulations, transport, communication, electricity and health infrastructures should be completed

* Participants should put their efforts to attract qualified, educated and conscious tourists. Incoming tourists and residents should be informed about Sille's heritage values, their use, and preservation. To support local development, public training on tourism services and businesses should be provided.

* Any kind of technical and economic support should be given to the local people for their participation in tourism (tour agency, guidance, education, tourism operation, etc.). The citizens of Sille, who has settled mostly in Konya, should be granted privileges in tourism support to revive the old life culture (collaboration, local terms, dining culture, entertainment activities like barana, gereğiler, hıdrellez) and agricultural traditions (viticulture, usage of products) that Sille has.

*Relations with universities should be developed, and the universities should become centers of interest in areas such as art, culture, conservation, and tourism related to Sille's sustainability.

Sille ecotourism should work with diversified tourism throughout the year instead of mass tourism.

* Advertisements should be given through international and national agencies, regional promotional films, touristic introduction booklets, bureaus, guidance services, and website installation.

Recommendations regarding tourism activities

*Support for training, space, and economy should be given for the promotion and marketing of traditional arts. The development of traditional arts (soil works, candle works, jewelry, weaving, carpet making, music), and the design of tourist products, which are unique brand values, should be supported by university and local vocational training courses.

* Besides natural and cultural tourism, Sille also has values regarding belief and agricultural tourism, and these potentials should also be used. Different tour routes should be established such as cultural route comprising Sille cave and urban settlements, nature route comprising vineyard areas, climbing route comprising Takkeli Mountain-Gevele Castle, and religious route comprising spaces, caves, and structures which are especially important for the Christians. On the tour routes, facilities should be established to meet the needs of the visitors such as resting areas and food courts.

*Orchard tradition of Sille and grapery should be supported, and for the interested tourists entertainment culture at the orchard during maintenance, harvesting and post-harvesting should be revived. Grape production should be developed again, and besides fresh grapes, traditional grape products should be produced for tourism purpose again.

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Resume

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