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***Prof. Dr. Bilge IŐIK***





# Project Implementation in Public Open Spaces: Saraçlar Street Urban Design Project, Edirne-Turkey<sup>1</sup>



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**Abstract:** Public open spaces are an integral facet of urban life and have social, physical, and symbolic dimensions. In particular, public spaces deemed to be focal points of historical cities have been adversely affected in recent years by globalization and societal transformations. Many public open spaces, including squares, avenues, and boulevards, no longer reflect the cultural identity of “place,” and have instead become faceless, generic spaces. This situation has given rise to the necessity of studies designed to improve the quality of public places in the urban environment. In this paper, usage problems associated with public open spaces in historical city centers are examined. “Public open space” and “urban interface/façade” concepts are defined and methodologically explored. In addition, the paper discusses problems observed by citizens, the characteristics of these problems, and how these problems impact the urban environment. The regulatory principles of the “Saraçlar Street Urban Design Project” in Edirne, Turkey, are presented as an example of public space planning for a historical city. The project aims to enhance the environmental quality of Saraçlar Street, which is commercially and socially the most important public space in Edirne, by transforming it into a pedestrian-only area. The study concludes with an assessment of Saraçlar Street’s problems prior to pedestrianization and its status and contributions to city life after pedestrianization.

**Keywords:** Public open space, interface, urban design, pedestrianization, Turkey, historic cities

## Kamusal Açık Mekanda Proje Uygulaması: Saraçlar Caddesi Kentsel Tasarım Projesi, Edirne-Türkiye

**Özet:** Kentsel olayların süregeldiği kamusal açık mekanlar; sosyal-fiziksel-simgesel boyutlarıyla ve üstlendikleri işlevlerle ön plana çıkan kent parçalarıdır. Tüm dünyada ve ülkemizde son yıllarda yaşanan değişim ve dönüşüm sürecinde, özellikle tarihi kentlerin odak noktaları sayılan kamusal dış mekanlar olumsuz etkilenmiştir. Bazen meydan, bazen cadde veya sokak olabilen kamusal açık mekanlar o “yer”in kimliğini yansıtan anlamlı mekanlar olmaktan çıkmış, kimliksiz mekanlar haline dönüşmüştür. Bu durum, kamusal mekanlarının yeniden kente kazandırılması için, çevre kalitesini geliştirmeye yönelik (üçüncü boyutta arayüzleri de içeren) kentsel tasarım proje çalışmalarının gereğini de doğurmuştur. Bu çalışmada tarihi kent merkezlerindeki kamusal açık mekanlar ve kullanım sorunları incelenmektedir. Metodoloji olarak öncelikle “kamusal açık mekan” ve “kentsel arayüz/cephe” kavramları tanımlanmıştır. Kentte yaşayan insanlar için, çevreyi algılayabilecekleri mekanlar olma özelliği taşıyan bu alanlarda gözlenen sorunlar ortaya konmuştur. Çalışmanın örnekleme kısmında ise; kamusal alan düzenlemesinin bir örneği olarak; Edirne’de “Saraçlar Caddesi Kentsel Tasarım Projesi”nin düzenleme ilkeleri anlatılmıştır. Proje ile, Edirne’nin ticari ve sosyal açıdan en önemli kamusal açık mekanı olan Saraçlar caddesinin yaya alanına dönüştürülerek, çevre kalitesinin artırılması amaçlanmıştır. Çalışmanın sonunda Saraçlar Caddesinin; yayalaştırma öncesi sorunları ile yayalaştırma sonrası kente katkıları değerlendirilmiştir.

**Anahtar kelimeler:** Kamusal açık mekan, arayüz, kentsel tasarım, yayalaştırma, Türkiye, tarihi şehirler

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## **1. INTRODUCTION**

The personal and cultural business of individuals in “public places” within cities forms the bedrock of societal life. In urban environments, residents gather in streets, squares, or parks to converse and freely express themselves. Public open spaces serve as integrative environments where cultural mores are transferred from generation to generation and socialization is improved. However, the public spaces in today’s cities are unable to satisfy the expectations of city dwellers. These open areas, which are increasingly being developed as parking lots or throughways for motorized vehicles, have started to lose their appeal as spaces where people can wander easily or explore the environment. Historical city centers are under particular pressure from intensive use, and problems of urban decay, aesthetic depreciation, and unwelcoming open space have become significant problems [1], giving rise to the need for a plan to revive the allure of public open spaces in cities.

In this paper, usage and planning problems associated with public open spaces are explained. The study consists of two parts. In part 1, the theoretical underpinnings of “public open space” are described. In this context, the concept of an “urban interface-façade” functioning as a border element between public open space and structured areas in historical city centers is scrutinized. In part 2, the principles of the “Saraçlar Street Urban Design Project” are described as an example of public space arrangement. Location, design status, spatial functions, and existing problems with the horizontal and vertical planes (i.e., plan and façade) are identified for Saraçlar Street, which serves as a public open space in the historical city center of Edirne, Turkey. The study concludes with a comparison of the street and its contributions to the city before and after pedestrianization.

## **2. THE CONCEPT OF “PUBLIC OPEN SPACE”**

In urban settlements, places where common or personal requirements are met as a result of collective living are called *public open spaces*. Structured and unstructured spaces are divided into public or private spaces depending on land use zoning [2]. The concept of public open space is emphasized in this study due to its relevance to the research aims.

Public space studies began in Europe in the 1960s, but even today, there remain different viewpoints on the concept and no agreed-upon precise definition. Although political scientists and architects/urban planners have different conceptions of public open space, the fundamental characteristics often overlap. Çubuk (1989) define public space as functional areas that are accessible by anyone and have symbolic meanings [3]. Rowe (1997) refers to public space as areas that can be directly accessed and which satisfy the key requirements of human socialization [4]. Keleş (2012) characterizes public places as laboratories for determining the limits of living together, moral rules, and life direction [5]. Madanipour (2013) refers to public open space as areas that have always been an integral part of the city [6].

The common point in the definitions above is that public spaces feature discourse, action, and emphasis on “sociality.” The most significant feature of public space is that it is open to all citizens: indeed, it manifests the spirit of a city with its physical form and social fabric [7]. All non-private housing or business gathering areas (e.g., squares, avenues, streets, parks) may be referred to as *public*. In this paper, “public outdoor place” or “public open space” concepts are used interchangeably. Public places are essentially open spaces in which people gather to conduct all kinds of social and economic objectives [8, 9]. On a broader scale, public outdoor spaces may be seen as integrative environments where culture is transferred from generation to generation. Public space may serve as a dynamic passage area (e.g., avenue, street, waterway, channel) or statically qualified assembling area (e.g., square), depending on its spatial properties [10]. Public outdoor places are also associated with the structures encircling them.

In order to nurture collective life [11], open urban places should allow all for all kinds of social activities and at the same time should be in harmony with the topographic character of the natural environment. Conversely, structures intended to restrict public space should be expressed in such a way that establishes a collective identity. In recent decades, globalization has brought about a sea change in social, cultural, and economic processes. During this transformation, many public outdoor spaces deemed to be focal points have been adversely affected (i.e., they have ceased to reflect the identity of “place” and no longer contribute to the lives of city dwellers). Urban planning studies for historical cities in Turkey have mostly adhered to a two-dimensional ground arrangement strategy (i.e., Urban Plan). The desired results could not be attained except in instances of improvement for “urban interfaces” that make up the collective identity of building façades, which limits public engagement with the third dimension. In the following section, the interface phenomenon, which is a spatial consideration where the physical and societal frames of city life intermingle [12], is analyzed in detail.

### **3. THE INTERFACE CONCEPT: A Problematic Field in the Public Spaces of Historical Cities**

The interface phenomenon refers to architectural façades that limit urban open places [10]. It is a boundary element that delineates structured areas in urban outdoor places. *Interfaces* are the transition zones between “urban public outdoor places” and “architectural structure forms”; they determine how the urban fabric will be read and establish visual and functional links between private indoor places and public outdoor spaces [13]. The interface, which does not emerge uniformly in historical cities, is a physical formation shaped through local characteristics (e.g., space, architectural typology, construction materials, form, and aesthetics) and communal values.

Meanwhile, the interface phenomenon is composed of façades from a societal standpoint. That is, although transition zones may be an indication of a society’s personality, they are also the reflection of the communal differences of a city [12]. Interfaces, which have evolved through different cultural phases over the course of hundreds of years, constitute the most obvious evidence of urban evolution. The main elements that change are determined by systemic factors such as technology availability, construction materials, legal obligations, zoning laws, and aesthetic preferences.

As stated above, public outdoor spaces are integrative environments where culture passes from generation to generation. In recent years, interface characteristics that confer the unique identity of historical city centers have been supplanted by unqualified structures as a result of intensive use pressure. In fact, deterioration of public outdoor spaces may be seen in both pattern (function-interface) and structural (plan-façade) scales, which also reduces citizens’ regard for these areas as common ground.

Urban interfaces play a major role in determining the degree of negative impact suffered by public places. “Urban Plans” are an inadequate prescription to solve problems with the current planning system in Turkey. “Urban Design Project” studies, which ostensibly address the third dimension of place, were carried out in order to produce more appealing urban interfaces [14]. An initiative of the public administration, these studies aimed to improve environmental quality by combining function with aesthetics. Spatial relationships were examined with the understanding of particular systems in the regulation of interfaces, which serve as sub-elements of public space. While examining the interface layout, different techniques were used to separate façades by the components that were utilized during construction [12]. Here, it should be noted that the architectural characteristics of façades that form the interface for existing historical structures should not be thought of as badges (i.e., imitations, motif repetitions, etc.) to be attached to planned buildings [15].



The process of the aforementioned technical studies for regulation of interfaces is detailed below:

- Using photographs and drawings, a determination is made of which façades (interface) of existing structures restrict place.
- Next, textural-structural-volumetric-legal analysis studies are conducted.
- A determination of design principles is proposed. Fundamental inclinations of the design in determining formal and structural relations between historical structures are emphasized. Required protections and new buildings to be constructed on empty parcels remaining among existing structures are identified.
- Improvements for current degraded historical façades are identified.
- Finally, a design guide is prepared.

Urban design projects allow for the integration of subjective personal attitudes in plans to enhance the value of public outdoor place [16].

#### **4. CASE STUDY: The Saraçlar Street Urban Design Project and Contributions to Urban Life**

##### **4.1 The History and Urban Development Process of Edirne**

Edirne is located in the far northwestern region of Turkey. Greece and Bulgaria are located to its west (Figure 1). The city, which dates back to prehistoric times, has been the birthplace of various civilizations and has long been a community focal point for the region. The city was established in 700 B.C. by the Odrysian kingdom [17]. The city then came under control of the Romans in A.D. 46, and then fell under rule of the Byzantine Empire in A.D. 375 when the Roman Empire was partitioned. The name of the city, which had been Adrianapolis until this date, was converted into Edirne when the Ottomans conquered the city in 1362 [18].

Edirne has been a significant settlement for centuries by dint of its geopolitical location. The city has historic neighborhoods located on the western side of the Tunca River and a settlement (Castle Interior–Exterior) in the arc shaped by the Tunca River (Figure 2). Edirne’s importance increased dramatically after the Turks conquered it: the city served as capital of the Ottoman Empire for about one century. The city, with its magnificent monuments and stately civil architecture, represents the height of Ottoman architecture (Figure 3).



*Figure 1. The geographic location of Edirne.*

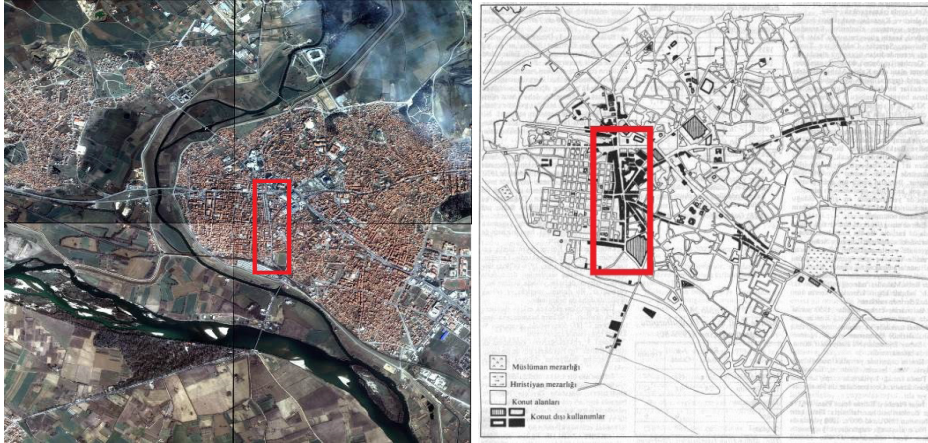


Figure 2. The historic macroform of Edirne.

Figure 3. Saraçlar Street and its environs.

Edirne underwent many zoning transformations from the Republican era to the present. These numerous zoning plans did not allow for a holistic plan to control and protect the historical core of the city and its immediate surroundings. In other words, conservation remained at the scale of individual structures, not the entire urban fabric. Historical, cultural, and aesthetic properties could not be revealed completely for some time, which is a travesty considering Edirne is Turkey's gateway to Europe. "Spatial transformation" projects, which are increasingly being supported, have begun to contribute to the socioeconomic development of the city by re-purposing its many historical places. One project, the "Saraçlar Street Pedestrian Zone Project", an endeavor carried out by the Trakya University Revolving Fund at the request of Edirne Municipality [19], is described below.

#### 4.2 Saraçlar Street's Position in the City

Saraçlar Street parallels the east walls of Edirne Castle, which is practically indistinguishable today. The street is approximately 700 meters long and is the most important public open space from social and commercial viewpoints. Many commercial structures possess invaluable cultural/historical assets that survive to the present day on the street (Figure 3–5).

This route through Edirne, which has been a significant thoroughway since the Byzantine era, gained more importance after being conquered by the Ottomans. Saraçlar Street is connected to New Palace through Hükümet and Karanfiloğlu Streets toward the north and to Karaağaç through Tunca and Meriç bridges toward the south. The importance of Saraçlar Street is further increased due to its link with Istanbul Road in the east, and roads opening outside of the walls coming from Kaleiçi in the west. The entire region, which was previously situated next to Saraçhane Bridge, was renamed "Yeni Saraçhane" in the late sixteenth century and features the Saraçlar Bazaar [20]. Alipaşa Covered Bazaar, which extends parallel to the street along its northern side, is a major support for commercial activity in the area (Figure 5).





Figure 4. The general appearance of Saraçlar Street in the early twentieth century.



Figure 5. Saraçlar Street and Alipaşa Bazaar (prior to pedestrianization).

### 4.3 The Problems of Saraçlar Street Prior to Urban Design

#### a) Structural problems

- Violations of building heights designated by the zoning plan (Figure 6)
- Alterations made to unique façades (Figure 7)
- Frequent changes made to the initial zoning plan
- Problems matching color, material, and dimensional complexity



Figure 6. Examples of building height violations along Saraçlar Street.





Figure 7. Façade changes along Saraçlar Street.

b) Problems related to urban fabric

- Some new structures clash with the historical silhouette of existing civil architectural structures (Figure 8)
- Visual pollution caused by advertising billboards (Figure 9)
- Visual pollution created by elements not compatible with historical structures (e.g., air conditioners, sun blinds, antennae)
- Asphalt paving on the street



Figure 8. New architectural formations along Saraçlar Street.

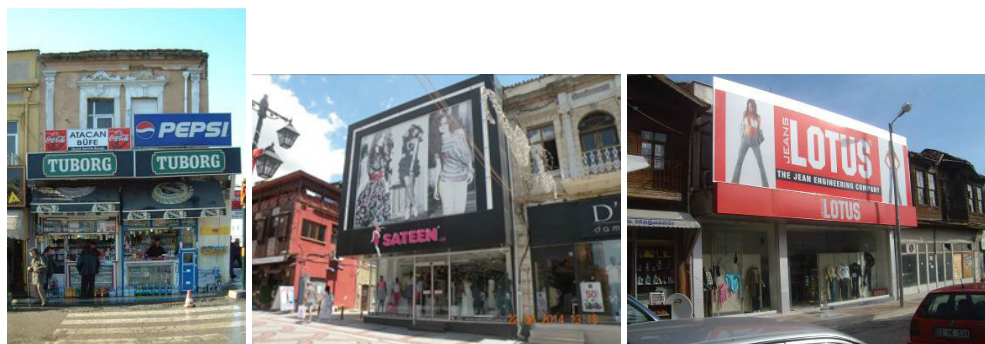


Figure 9. Visual pollution along Saraçlar Street.

c) Problems associated with transportation

- Intense vehicle traffic on the street restricts pedestrian movement and daily life (Figure 10)
- Vehicles parked on sides of the street create blockages and impair pedestrian movement (Figure 11)
- Pedestrian safety problems

d) Legal problems

- There is an inventory of “immovable cultural assets” located on Saraçlar Street
- Absence of a “development plan” prepared specifically for conservation of structures on Saraçlar Street.



Figure 10. Heavy motor vehicle traffic along Saraçlar Street



Figure 11. Parking problems along Saraçlar Street.

#### 4.4 Design Principles for Saraçlar Street

The Saraçlar Street Urban Design Project is composed of two basic fields of study that complement each other [19]. These are;

##### **Pedestrianization and pedestrian area arrangement**

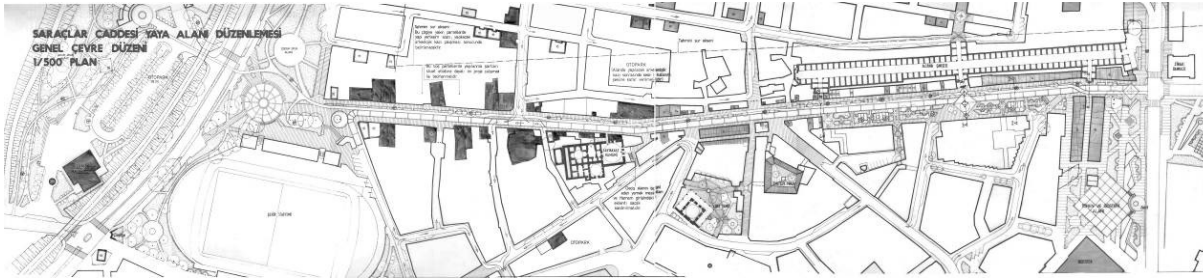
Contemporary urbanism and city planning science advocate for the conservation and planning of city centers. In general, these areas are the focal point of a city’s social, economic, and cultural activities, and there is a constant quest to improve existing structures as well as create new opportunities for sustainable urban development. Today, the worldwide trend is toward freeing city centers from vehicle traffic and creating more open space. In Europe, pedestrianization is already well underway to rescue historical city centers from the impacts of motor vehicle traffic. Municipalities in Turkey have only just started to follow this approach. For Edirne, street closures would allow pedestrian access to

cultural events and amenities; this approach has become an obligation in order for the historical city center to maintain its vitality. Planning concepts for pedestrianization included (Figure 12):

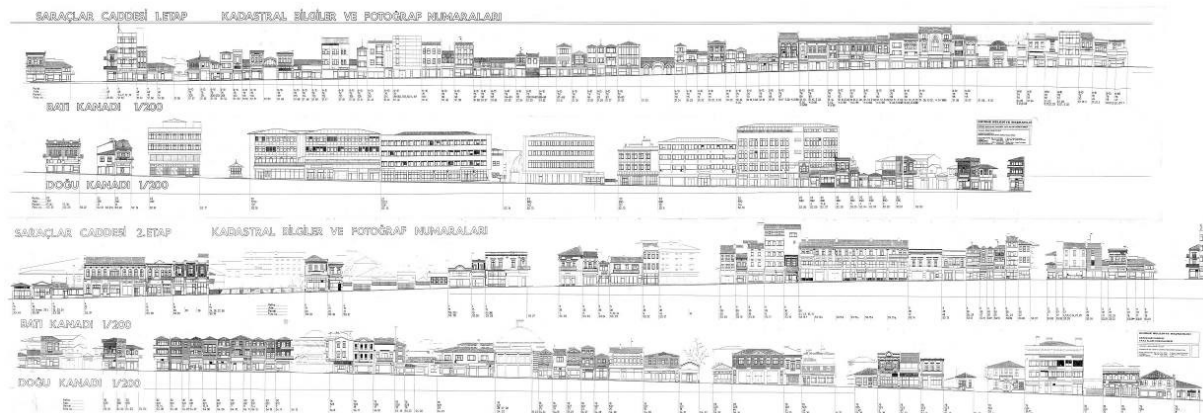
- Streets paralleling Saraçlar Street, which will be closed to motor vehicle traffic, have been designated as transportation conduits
- Bicycle paths and bicycle parking spaces will line the street
- The continuity of pedestrian circulation will be ensured by interrelating passages, courtyards, and covered bazaars
- Trees on the street will be conserved and additional new green areas will be created
- Recreation areas and outdoor cafes will be erected within walking distance of green areas.

### **Façade rehabilitation (regulation of interfaces)**

Significant architectural differences existed between the interfaces of the two wings (two sides of the road) bounding the section of Saraçlar Street that was to be pedestrianized. This condition substantially affected the spatial function of Saraçlar Street. For example, buildings with three or less stories (many of which had immovable cultural assets) had narrow façades with a width varying between 3 to 6 meters at the western wing, adjacent to Alipaşa Bazaar. On the eastern wing, other than the partially conserved regions, 4 to 5 story buildings with wide façades dominated, resulting from an arrangement for increasing the width of the street in the 1970s (Figure 13). The most important spatial problem of Saraçlar Street was façades that dominated the street in general and created a lack of harmony with opposing façades.



*Figure 12. Saraçlar Street pedestrian area arrangement*



*Figure 13. Saraçlar Street's interfaces (silhouette).*



The main objective of interface arrangement for structures bounding Saraçlar Street was to eliminate visual pollution and to reclaim lost cultural assets. To achieve this goal, the following strategy was proposed:

- *Determine the current situation:* the façade silhouette of all structures restricting both sides of Saraçlar Street was prepared at a scale of 1/100. Additionally, photographs, maps, and perspective drawings with regard to various eras were compiled into an album.
- *Perform textural, structural, volumetric, and legal analyses:* features such as horizontal and vertical traces, proportion, contrast, layout, occupancy, and material and color of each façade were revealed. Restitution for the interface on both sides of Saraçlar Street was determined by consulting the album (particularly photographs from previous eras). Similarities and differences in building elements and interventions enacted up to the present day based on urban fabric and structures were identified. As a result of the aforementioned documentation study, it was determined that many structures with immovable cultural assets had been demolished or renewed their façades so as to become unrecognizable.
- *Determine the directive design principles:* in light of the studies described above and information and documents examined, structures and parcels facing the street were classified in the following manner:
  - Structures possessing immovable cultural asset qualifications
  - Structures erected after demolition that had sufficient identifying information (e.g., photograph, building survey) regarding their façades
  - New structures and empty parcels without information in respect to their history.

The main tendencies of the “Urban Design Project” were emphasized for these three categories. Accordingly, for extant degraded historical façades it was proposed:

- To remove structural changes contrary to unique architectural elements on building façades
- To remove elements that exceeded the floor height stipulated or which were constructed in violation of the zoning plan and without license
- To remove elements like eaves, sun shades, chimneys, etc., added to façades
- To remove devices like air conditioners, antennae, etc., added to façades or to relocate them as to be invisible
- To bring advertising billboards in compliance with the “Edirne Municipality Advertising, Publicity and Promotion Regulation”
- To perform necessary repairs on structures with aesthetic problems (e.g., plaster shedding, joinery deterioration, color conflicts).

### **Preparation of design guide**

An “Urban Design Guide” containing details regarding the decisions and standards regarding Saraçlar Street and the “Edirne Pedestrian Zones Regulation” has been published. The guide specifies usage fundamentals for Saraçlar Street and other pedestrian areas in light of the aforementioned studies. The goal in producing the guide is to ensure implementation by Edirne Municipality, so as to ensure uniform rules are enacted for historical areas.

## 5. CONCLUSION AND ASSESSMENT

Public open spaces have social, physical, and symbolic dimensions. These outdoor places often serve as the focal points of historical cities, but they have ceased to be meaningful places to city dwellers due to the rapid urban changes of recent years. In many cases, public spaces have turned into faceless areas that are seldom or never used, which diminishes society and limits the social outlets of city dwellers. This situation has catalyzed a new urban planning agenda that attempts to sustain historical and cultural value through conservation. Urban design project studies that combine function with aesthetics have been launched to improve environmental quality.

Pedestrianization functions, built with the correct dynamics, are of vital importance to preserving for historical city centers that teem with commercial activities. Pedestrianized zones enhance the quality of life for citizens (by generating solutions with respect to pedestrian and vehicle traffic) as well as the entire city; when implemented correctly, pedestrian-only zones can be a very effective tool for urban planners.

Saraçlar Street, the sampling area of this study, is the center of commercial and social life in Edirne, Turkey. The street experiences intense motor vehicle traffic, giving rise to many concerns about pedestrian safety. When social, cultural, communal, and commercial activities were taken into consideration, it was obvious that human beings were the driving force of activity along the length of the street. Assuming accessibility to events and amenities is a fundamental human right, it was the obligation of city government to conserve and maintain the vitality of the city center. Accordingly, an Urban Design Project dedicated to the pedestrianization of Saraçlar Street was prepared by Edirne Municipality in 2003. The project, which provides for “city dwellers’ rights” prescribed by a “European Urban Charter” and the preservation of historical and cultural assets, was conducted with the assistance of the Trakya University Revolving Fund. Saraçlar Street was pedestrianized in 2008 in accord with the principles of the Urban Design Project. After pedestrianization, city dwellers reported experiencing diminished environmental pollution and noise as well as more events ensuring the development of social, cultural, and communal relations. Moreover, property values grew and the region became more of a nexus for economic activity in the region (Figure 14).

A questionnaire measuring the satisfaction with the transformation of the area into a pedestrian area was distributed to people using the street and shop owners. The study was conducted with two groups consisting of 50 pedestrians and 50 shop owners selected randomly. Results showed that 100% of shop owners were satisfied after pedestrianization, and 92% of users/pedestrians were satisfied [21]. Based on the findings, it was concluded that Saraçlar Street acted as a place for “socializing, sharing, recreation, wandering, shopping, and walking,” and that the pedestrianization project was in compliance with these objectives.



Figure 14. Saraçlar Street after pedestrianization.

Overall, the project was deemed a success, but there were some negative observations associated with the project going beyond its stated scope. These issues included:

- Implementation regarding the interface improvement (rehabilitation) within the scope of the Urban Design Project.
- Decorative items selected by the municipal administration performing the implementation, not those proposed by the plan, were used (seating, lighting elements, pools, etc.).
- Commercial enterprises were permitted to settle on the street haphazardly rather than in locations that were identified in the project plan.
- Cyclists riding in an uncontrolled manner pose a danger to pedestrians because the bicycle path and bicycle parking elements proposed in the project were not implemented.

The completion of interface rehabilitation work and correction of other deficiencies in accordance with the Urban Design Project and design guide will further enrich the public spaces of Edirne city.

## REFERENCES

- [1] Bilsel, A., Bilsel, G., Bilsel, C., 1991. "Kentsel Kamu Alanlarının Düzenlenmesinde Kentsel Tasarım Tekniğinin Kullanımına Planlama Bütününde Kuramsal Yaklaşım", Kamu Mekanları Tasarımı ve Kent Mobilyaları Sempozyumu, 15-16 Mayıs 1989, MSÜ-Mimarlık Fakültesi, İstanbul, s.49-51.
- [2] Özaydın, G., Erbil, D., Ulusay, B., 1991. "Kentsel Kamu Alanlarının Düzenlenmesinde Kentsel Tasarım Tekniğinin Kullanımına Planlama Bütününde Kuramsal Yaklaşım", Kamu Mekanları Tasarımı ve Kent Mobilyaları Sempozyumu, 15-16 Mayıs 1989, MSÜ-Mimarlık Fakültesi, İstanbul, s.63.

- [3] **Çubuk, M., 1989.** Kamu Mekanları ve Kentsel Tasarım, Kamu Mekanları Tasarımı ve Kent Mobilyaları Sempozyumu, 15-16 Mayıs 1989, MSÜ-Mimarlık Fakültesi, İstanbul, s.15-17.
- [4] **Rowe, P. G.,** Civil Realism, MIT Press, Massachusetts Institute of Technology, Cambridge, Massachusetts
- [5] **Keleş, R., 2012.** “Kamusal Alan, Kentleşme ve Kentlilik Bilinci”, Güney Mimarlık, Sayı:10, s.10.
- [6] **Madanipour, A., 2013.** “Whose Public Space?”, First Future Of Places International Conference On Public Space And Placemaking, Sweden 24-27 June, Stockholm, s.33-43.
- [7] **Akay, A., 1997.** Postmodern Görüntü, Bağlam Yayıncılık, İstanbul.
- [8] **Kostoff, S., 1991.** The City Shaped: Urban Pattern and Meanings Through History, Boston: Bulfinch Press.
- [9] **Şener, H. ve Yıldız, D., 1999.** “Kentsel Mimari ve Mekana Katkı”, Kentsel Tasarım: Bir Tasarımlar Bütünü-Ulusal Kentsel Tasarım Kongresi, MSÜ, İstanbul, s.32-37.
- [10] **Özaydın (Kılıçreis), G., 1993.** Kentsel Tasarım Kapsamında Tarihi Kentsel Mekanlarda Arayüzlerin Düzenlenmesine Sistemli bir Yaklaşım, Yayınlanmamış Doktora Tezi, MSÜ-Fen Bilimleri Enstitüsü, İstanbul, s.13-24.
- [11] **Erdönmez, M. E., ve Akı, A., 2005.** Açık Kamusal Kent Mekanlarının Toplum İlişkilerindeki Etkileri, Megaron, YTÜ Mim. Fak. E-Dergisi, Cilt 1, sayı.1, s.67-78.
- [12] **Konuk, G.,1989.** Kamu Mekanları Tasarımında Cephe Düzeni, Kamu Mekanları Tasarımı ve Kent Mobilyaları Sempozyumu, MSÜ, İstanbul, s.55-56.
- [13] **Özyürek, İ., 1995.** The Interface of Architectural Built Form and Urban Outdoor Space, METU, M.S. Thesis, Graduate School of Natural and Applied Sciences, Ankara.
- [14] **Yarar, L., 2003.** Planlama Kademelenmesindeki İçerisinde Kentsel Tasarım Projelerinin Yeri, Kentsel Yenileşme ve Kentsel Tasarım-Uluslar arası 14. Kentsel Tasarım ve Uygulamalar Sempozyumu, MSÜ, İstanbul, s.157-159.
- [15] **Kuban, D., 1990.** Tarlabası Yarışması ve Tarlabası'nın Geleceği, Yapı Dergisi, No: 105, s.55-59.
- [16] **Konuk, G., 1991.** Zaman ve Mekanın Bir Sentezi Olarak Kentsel Tasarım, 1. Kentsel Tarım ve Uygulamalar Sempozyumu, MSÜ, İstanbul, s.73-78.
- [17] **Rıfat Osman., 1994.** Yayımlayan: Kazancıgil, R., Edirne Rehnüması (Edirne Şehir Klavuzu), Türk Kütüphaneciler derneği Şubesi Yayınları, No:15, Edirne, s.15-27,152.
- [18] **Peremeci, O.N., 1939.** Edirne Tarihi, Resimli Ay Matbaası, İstanbul, s.10-43.
- [19] **Sirel, A. ve Sirel, Ü., 2005.** Tarihi Kentlerin Unutulan Arayüzü: Edirne-Kaleiçi'nde Saraçlar Caddesi Örneği, Dünya Şehircilik Günü Kolokyumu, Bildiri kitabı, İTÜ, İstanbul, s.408.
- [20] **Abdurrahman Hibri., 1996.** Enisü'1 Müsamirin (Edirne Tarihi), Çev: Ratip Kazancıgil, Türk Kütüphaneciler Derneği Edirne Şubesi Yayınları, No:24, Edirne, s.16.
- [21] **Akansel, S., Kaprol, T., Varlı, E., 2011.** Edirne Tarihi Saraçlar Caddesi Yayalaştırma Projesinin Kentsel Yaşama Katkıları, Mimarlık Dergisi 2011, Sayı. 359, s.49-52.

Image sources:

Figure 13: Ayşe Sirel (2014); other figures: Saraçlar Street Pedestrianization Urban Design Project, Ümit Sirel (2003).

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# Materials Used in the Construction of Village House in Van



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**Abstract:** *The decision of the building materials is very important the survival and for the healthy living. Information, material and energy were described in the 1970s as the three pillars of the modern civilization of the people. Nowadays, the materials seem to be more important day by day. Different materials are used in the buildings according to the region. One of these regions is Van where the structures in rural areas were built with materials obtained from the completely natural environment. In the recent period, as a result of the access of the industrial building materials to the region and the economic opportunities reaching the level of purchase, a change can be seen in the buildings. Within the scope of the study, the changes in the use of the building materials were examined in the village house of Van during the process. As a result of the study it can be seen that the condition related to the human health has not been provided and the organization providing plus for the living comfort has not been structured during the selection of the materials in the newly built houses.*

**Keywords:** *Housing, natural materials, materials, region, Van*

## ***Van Köy Evi Yapılarında Kullanılan Malzemeler***

**Özet:** *Yapı Malzemesi kararı, insanların hayatta kalma ve sağlıklı yaşamaları için önemlidir. Bilgi, malzeme ve enerji 1970'lerde insanların çağdaş uygarlığının üçayağı olarak nitelendirilmiştir. Günümüzde malzemenin her geçen gün daha önemli olduğu görülmektedir. Yöre özelliklerine göre yapılarda farklı malzemeler kullanılır. Bu bölgelerden biri olan Van yöresi, kırsal kesimlerinde yapılar tamamen doğal çevreden elde edilen malzemeler ile inşa edilmiştir. Endüstriyel yapı malzemelerinin bölgeye ulaşması, ekonomik imkânların satın alma düzeyine gelmesi sonucu yapılarda son dönemde bir değişim görülmektedir. Çalışma kapsamında Van köy evlerinde süreç içerisindeki yapı malzeme kullanımındaki değişim incelenmiştir. Yapılan çalışma sonucunda yeni yapılan konutlarda malzeme seçimi yapılırken insan sağlığı ile ilgili şartların sağlanamadığı, yaşam konforuna artı sağlayacak örgütlenmenin yapılamadığı görülmektedir.*

**Anahtar Kelimeler:** *Konut, doğal malzeme, malzeme, bölge, Van*

## **1. INTRODUCTION**

The city of Van located in the eastern part of Turkey is a favourable residential center where the Lake Van can be found which is Anatolia's largest river basin with productive rivers on its shore, besides its cultural wealth which has been cradled by many civilizations for centuries. Therefore, it has been a place since the ancient times of the history which was dominated by many civilizations. According to the archaeological researches the periods of Van extend before the written history B.C. 5000-3000, until the beginning of Chalcolithic period. The Hurrians are the first in 2000 B.C. who established the first state in this region. Then the state of Urartu with its capitol Tusba was established in 900 B.C. by the indigenous tribes who had followed the Hurrians in the region [1]. The Urartians had ruled the region of Van and their land was extended up in the south until Mesopotamia. The construction materials ongoing from these civilizations are observed to be continued in various regions of the city Van. The main building materials of the period can be listed as brick, wood beams and cane.

Adobe houses could be found frequently in the province of Van up to 1980 and the ratio of apartment type concrete houses was very little. With the founding of building societies after the mid- 1980s a rapid construction begun in the city and this construction continued to develop until today. The rapid development of the city center caused the reduction of the green areas in the environment and their completely or partially disappearance. In this process, how the green areas and old houses with large gardens which were located in the oldest residential areas of the city and which had an important place in the identity of the city were not protected, the existing green spaces were getting smaller or were completely destroyed. Neither the amount of green spaces nor the distribution of the urban pattern is sufficient enough to meet the demand. The result of the fact that the adobe materials were located in the education and that the building materials produced in the industry dominated the market in the city in the 1980s accelerated the transformation to concrete structure. As a result of the incidental observations it can be defined that the transformation reflected in the villages 10-15 years later or after 1990. It can be mentioned that in the years after 1990 the structure planning, plan scheme and the variety of materials changed significantly in village houses. In this context, as the subject of the study it was aimed to make an analysis study as a result of the obtained data by making examination of the changes occurred in the process in the materials used for the village houses in Van, in the field studies and in the literature reviews.

## **2. THE MAIN MATERIALS USED IN THE STRUCTURAL DESIGN OF THE VILLAGE HOUSES**

The substances produced naturally or artificially with the aim of making available bodies are called materials. Materials are essential components forming almost everything that we use in our daily life. The materials which occurred naturally or were obtained artificially can be used in any thinkable type of industry like automotive, aerospace, chemical, electronics, food production, and biomedical sectors. The materials can be divided into four basic groups. These are mainly expressed as natural inorganic materials, organic and natural materials, ceramics, glass, plastics, semiconductors and metals [2]. At the beginning of the civilization up to this time the materials together with energy raised the living standard of the mankind. A number of materials which have been used without changing from the ancient times until the present days always maintained their importance. The main of these materials can be listed as stone, adobe and wood. Nowadays in addition to these materials, briquette, concrete, glass wool and paint are used in the village houses.

### **2.1. Stone**

The natural stone which was formed for thousands of years in the nature has a high strength. So, the features of the material can remain the same [3]. The buildings made in the previous periods were

constructed on the basis of the material's strength under the pressure. In the structure building process masonry structures were made by placing the stone on each other with a particular system. Both the existing conditions and the easy providing were effective in the choice. Nowadays the new technological conditions, the desire of high structured buildings together with the decrease of stone craftsmen reduced the commitment to this material. Today, stones are preferred mostly for decorative purposes.



Figure 1. Village of Bayramli / Van/ stone school building [Irven, H.] photographed by Hakan Irven

Figure 2. Village of Hamurkesen/ Van / Adobe building

## 2.2. Adobe

Adobe; is a building material made by pouring the mixture of soil, straw and hay into moulds in the size and form of a brick (Figure 2). Adobe is a material used in every regions of our country. It is used less in the rural areas of Eastern Anatolia. Nowadays, with the increase of industrial building materials it can be said that the usage ratio of the adobe is reduced. Adobe which is a traditional material uses less energy at the stage of production and consumption. It came up again recently because it is an environmental friendly building material. Adobe which is a type of mud with a suitable consistency which was prepared by being mixed with straw in a pool and then it got the desired size by filling it into wood molds. In the structure, from the ground up to the window level, adobe which is sensitive to water gives its place to stone material. The adobe material is also known for creating an air conditioning effect in the building.

## 2.3. Wood

Wood used often as a material in every period, continues today to be a material by increasing its importance. In the past, in the structure of the village houses wooden beams were preferred due to passing the opening in the upper floor, making light roof (Figure 3) and easy manufacturing. Today, wood is used generally for decorative purposes.



*Figure 3. Village of Karahan / Van / Application of wooden roof [4]*

*Figure 4. Village of Bayramli /Van / stone foundation photographed by Hakan Irven*

### **3. THE SPATIAL TRANSFORMATION OF THE CITY OF VAN**

The city of Van which was founded on the banks of the Lake Van in the year of 855 BC; besides its historical, military and strategic importance, it has been the crossing point of significant civilizations from time to time.

Even in Assyrian sources, Van was determined as a place decorated with gardens and trees. At the end of the XIX th. century Van had the feature of sparse textured settlement between the vineyards and gardens and the walled section defined as the “Lower City” created the business and commercial center of the city of Van. Here trading establishment, government offices, mosques were located. The second part of the city, the “Upper City” which was located above the walled section was famous for its gardens, beautiful fruits and rich wine production. These gardens were watered with tea and by the canals remained from the Urartu era. This part of the town was mostly devoted to residence. From entering the gardens and reaching the main street the settlement groups were selected. The private residence of the governor of Van and of other administrators and the houses of the rich Armenian merchants were located in this area. The American mission, the French Dominican mission, the consulates of Russia, Iran and England and the schools of some countries with the important churches of the Gregorian denomination, were located in the garden section. The presence of the schools and consulates of different countries such as American schools in the city, contributed significantly to the progress of urbanizations as well as in socio-cultural aspects. The Armenian revolts between the years of 1895 and 1917 due to the Russian invasion in 1917 a significant part of the segment which held the city’s vibrancy and culture in the hand either emigrated or died in the war. This situation revealed quite grave consequences on the city’s cultural heritage and lifestyle [1]. The loss of cultural accumulation which is necessary for the development, the ceaseless wars, the prohibitions for the trade life brought by the new political boundaries, the weak economy of the city dwellers which was based on agriculture and hand craft led the city to remain self-enclosed for a long time, to get weakened and to become a province that gave many migrants to the big cities.

During the Republic period, in certain regions of Anatolia it was seen that together with the industrialization, the urbanization began also. This effect of modernism was not seen everywhere in Anatolia at the same time. In the province of Van the urbanization in modern sense has entered into a rapid period for the last 20 years due to various socio-economic reasons. Due to the disasters in the last 20 years the migration towards the city has accelerated and the development in the city turned to unplanned constructions and squatters. While on one side of the town observing modern city-specific structures and forms of life, on the other side even in the most developed villages of the region miseries can be seen.



During this process the structural elements of the individuals 'buildings who were living in the village and which were still bearing the trace of the past were maintained to build in a totally unconscious way without putting them into certain discipline. This planning and these materials were continued to be used until the 1990s. After the years of the 1990s, a new process started in the construction by getting diversity in the materials, planning and structure. In this process, as material they used brick instead of adobe in the walls, concrete plaster instead of mud, steel coating in the roof and materials similar to glass wool for heat isolation. In the planning of structure carcass or mixed system was used instead of masonry structure. In accordance with this data the structure of the village houses can be taken into two periods.

#### 4. THE CONSTRUCTION MATERIALS USED IN VILLAGE HOUSES BEFORE 1990

These are the buildings which were easily made by taking the available natural materials as reference in the course of time during the years of reign of the adverse conditions of the economy's weakness and the absence of shelter indexed aesthetic worry. These buildings were made without foreseeing a specific planning system. The m<sup>2</sup> size of the building varied depending on the number of family.

##### 4.1. The materials used in the construction of the basis

The richness of the region in stones and rocks was the main reason for the use of natural stones. Stones are placed until a certain socle elevation. Soil is put on the top of the stones as heating isolation. The surfaces are often plastered with mud (Figure 4).

##### 4.2. Exterior walls

Adobe prepared in a specific pattern was put to the surface in an obfusatory way and was obtained by coating the surfaces with mud plaster. Stone walls were also made by putting the stones to the outside surface of the adobe. The stone surfaces in a certain thickness can provide cool in the summer and warm in the winter by making air-conditioning effect for the house. At the same time it kept the house standing in a solid structure for many years until today. For many centuries stones were used in the structure as an important building material. Nowadays, it is preferred as building elements more for decorative purposes [5].

##### 4.3. Upper Floor

The poplar trees which are preferred in the region due to their cultivation and rapid growth were used as roof beams on many of the upper floors, then nylon canvas was laid down on the top of the roof beams (Figure 5). Then soil was put on the top of the nylon and so the flat roof was constructed. Sometimes cane found in the region was used as a cover at the top (Figure 6).



Figure 5. The construction of adobe wall

Figure 6. Village of Bayramli /Van/ upper wooden columns photographed by Hakan Irven



**Basic:** The foundation structures with the use of stone is very important for the strength between the ground and the building (Figure 7, 8)

**External surface:** was made by using stone and adobe. The surfaces were plastered with mud material (Figure 7, 8)

**Upper floor:** wooden beams (poplar tree) and cane are frequently used (Figure 7, 8)

In Figure 7, we can see examples from the village of Bayramli for buildings made from adobe before 1990. It was used until the earthquake occurred in 2011, after the earthquake it was abandoned. The building in Figure 8 is an example for adobe structure in the rural area of Van before 1990.

The use of the materials mentioned above in the village houses seen to be the reason for some factors. After the conducted field observation the reasons that lead for the use of materials can be listed as the following.

## **5. THE CAUSES REFERRING THE MATERIALS USED IN THE VILLAGE HOUSES BEFORE 1990**

The main reasons that lead for the use of materials can be listed as follows economic reasons, transportation, available materials within the near environment, the absent of the technical infrastructure and the cause of education [6].



*Figure 7. Village of Bayramli / Van/ structure from before 1990 photographed by Hakan Irven*

*Figure 8. Village of Ocakli / Van / structure from before 1990*

### **5.1. The industry of traditional building technology**

The individuals who have experience in the traditional building technologies do not have enough knowledge to use different materials in the structures. The situation restricts their entry to seek for something different.

### **5.2. The available materials which can be found in the near environment**

Materials like poplar tree, cane, soil and stone are preferred due to the easy transportation.

## 6. THE MATERIALS USED IN THE BUILDING OF THE VILLAGE HOUSES IN VAN AFTER 1990

Together with the rapid transformation of the city the broken connection of the villages with the city began to close. The individuals living in the villages observing the development of the city have entered into various seeks. At the same time together with the multiplication of the individuals who were educated of the transportation, infrastructure and workforce development, a noticeable transformation-change was observed in the houses of the village. During this period, in addition to the structure made before 1990 as a result of the fact that the materials arrived to the region and the economic opportunity reached the level of purchase, they started to use briquette and concrete plaster for the external walls, glass wool for the heat isolation of the upper floor, and sheet metal cover for the upper cover. In the course of time, together with the transformation of the material change, different solutions started in the spatial planning. Worry can be seen about the different colours of the external walls on the building's surfaces. In this context, in some of the buildings identity changes can be observed that occurred in the buildings of the village. Without the uniform planning of the building surfaces, besides the effort to create a number of moving surfaces, worries about the different colour of the exterior paint are seen on the surfaces (Figure 9, 10)



*Figure 9. Village of Bayramli /Van photographed by Hakan İrven*

*Figure 10. Village of Bayramli /Van / Briquettes of the external wall photographed by Hakan İrven*

After 1990 in the building of Figure 11, 12 as it is seen, briquettes were used instead of adobe, the surfaces were plastered with concrete and were painted with whitewash. The window is divided into several panes instead of using one eye window. This also shows that various aesthetic seeks entered in the buildings. It is often observed that they used sheet metal cover for the upper floor coverings. In the area where heavy snowfall occurs together with the easier commute of the materials to the village, this transformation has become an active cause in the choice.



*Figure 11. Village of Bayramli / Van/ Application of briquette structure photographed by Hakan Irven*  
*Figure 12. Village of Bayramli / Van / Application of masonry structure photographed by Hakan Irven*



*Figure 13. Village of Bayramli / Van/ building in the last period photographed by Hakan Irven*

The activities of change-transformation occurred in the village houses after the 1990s have gained speed. In the following years, the heat isolation and planning principles in the buildings have been adopted by the individuals. In this context, change and transformation can be observed within the framework of the emerging opportunities during this course of time in the rural area of the city of Van. This transformation in the countryside was not made by a plan and program; this should be done completely according to the basis of the individuals' own formats and planning (Figure 13).

## **7. CONCLUSION**

As the result of the studies made recently, the rural area of the city of Van emerges as two different periods. The first of these periods is before 1990 when the rural areas were observed to proceed by adopting the principles of planning for shelter in completely natural conditions. The individuals made the local places like house, barn with main materials such as stone, adobe, woods which could be found in natural conditions. At the development part of the location, some reasons which were mentioned before stood against them as forcing power to use these materials. The emerging opportunities and advantages after the 1990s helped the individuals to use new materials in the buildings. But unfortunately, this development did not go further than bringing the buildings one step forward only visually. During the

selection of material for the houses, a number of contrasts were continued and it is seen that the organizations that provide a plus in the living comfort have not been achieved. To give an example, while providing the heat isolation by the glass wool which is used recently under the roof cover as isolation briquettes are used on the surface of the walls which is very weak in terms of isolation. This case shows that the structures obtained are too weak in technical way. As a result, support should be given by the relevant institutions by delegating a team of experts in the context of rural development planning.

## **REFERENCES**

- [1] **Taha Orhan, 2012.** Planning Construction Engineer, Anonym company Analysis Reports of the Cities.
- [2] **Seden, A., Gürdal, E., 2003.** Yenilenebilir Bir Malzeme: Kerpiç ve Alçılı Kerpiç, İstanbul.
- [3] **Siegesmund, S., Sneathlage, R., 2014.** Stone in Architecture: Properties, Durability. Springer; 5 edition.
- [4] **Schachner, A., 2010.** Boğazköy-Hattuş Kazı ve Restorasyon çalışmaları, 33.3 KST (Ankara 2012)
- [5] **Öztürk, S., 2013.** Mud brick Bat and Natural Mud brick in the Production Techniques in Van, kerpici'13 – New Generation Earthen Architecture: Learning from Heritage International Conference İstanbul Aydın University, Turkey, 11-15 September 2013, 221-223.
- [6] **Sirel, A., 2013.** An Urban Fabric mainly Based on Adobe: The old city of Van Kerpici, kerpici'13 – New Generation Earthen Architecture: Learning from Heritage International Conference İstanbul Aydın University, Turkey, 11-15 September 2013, 315-319.
- [7] **Işık B., Helvacı G., 1999.** "Role of Culture and Tradition in the Development of Housing in the GAP Area of Turkey" IAHS World Congress on Housing "Housing Issues and Challenges for the New Millennium" San Francisco, USA, June 1-7

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## Customs and its Role in Tourism



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**Abstract:** *By transition of societies and passing pre-historical era, roads are developed and completed consistent with improvement and efficiency of other social institutes. Meanwhile some people explore east and west looking for new ways for better living and gained common achievements which became the base of peaceful relationship between human beings and human with nature over the centuries. These led to appearance of long and important roads. It became so plain that famous roads such as Silk Road created. The Silk Road, or Silk Route, is a network of trade and cultural transmission routes that were central to cultural interaction through regions of the Asian continent connecting the West and East by merchants, pilgrims, monks, soldiers, nomads, and urban dwellers from China and India to the Mediterranean Sea. Silk Road were mainly economical and were related to agricultural, industrial, handicrafts and mining merchandises. Furthermore, dealings of different nations didn't confine just to this specific domain, but cultural, social and political exchanges were also consequences of traveling in this long and continuous road which should not be overlooked.*

**Keyword:** *Silk Road, business, tourism, economy, culture, custom*

### **Gümrük ve Gümrüğün Turizmdeki Yeri**

**Özet:** *Toplumların dönüşümü ve tarih öncesinden günümüze geçerken, yollar gelişim ve diğer sosyal enstitülerin yeterliliği ile gelişmiş ve süreçlerini tamamlanmışlardır. Bu arada bazı insanlar doğu ve batıda daha iyi yaşama olanaklarını araştırdılar ve bunun ardından yüzyıllardır süregelen insan varlığı ve insanın doğa ile ilişkisi arasında barışçıl bir ilişki temeli kurdular. Bunlar uzun ve önemli yolların ortaya çıkışını sağlamıştır. Bunun sonucunda doğal olarak İpek Yolu gibi ünlü yollar ortaya çıkmıştır. İpek yolu veya İpek rotası kültürel alışverişin ve ticaretin ağını oluşturdu. İpek yolu tüccarlar, göçmenler, din adamları, askerler, göçebeler ve şehir sakinleri vasıtasıyla Batı'da Akdenizden ve Doğu'da Çin'e kadar Asya kıtası bölgeleri boyunca kültürel etkileşimlerin merkezi oldu. İpek Yolu'nda ziraat, endüstri, el sanatları, madencilikle ilgili ana değişiklikler meydana geldi. Farklı milletler arası ilişkiler bu belirli alanlarda kalmadı. Bu uzun ve sürekli yol boyunca yapılan seyahatlerin kültürel, sosyal ve politik alanlardaki alışverişlerle sonuçlandığı gözardı edilmemelidir.*

**Anahtar Kelimeler:** *İpek Yolu, İşletme, turizm, ekonomi, kültür, müşteri*

## 1. INTRODUCTION

The rapid development of the industry in recent years, the development and improvement of communication equipment and facilities different ways to travel around the world, every day has caused the number of travelers (tourists) to be added. Machine and the population density of the people living in cities and is willing to travel. Everyone, according to the financial situation, social, taste tries to use their leisure and vacation is one of the necessities of life; pay the travel and touring. All countries try various means, natural scenery, history, sport, recreation, sea, sun, summer, art, culture and other characteristics different ways to introduce yourself to the world. They festivals, conferences, seminars, competitions sports and art, camps, fairs, etc. are arranged to attract travelers and tourists cause even more closely with other nations provide, in addition to the promotion of culture and people also benefit from the economic aspect information.

## 2. METHODOLOGY

In this paper, by using the library studies and descriptive - analytical study we Examines the role of the customs and its role in tourism Van city and how it can be influenced.

## 3. ABOUT VAN CITY

Van is a city in eastern Turkey and located on the eastern shore of The Lake Van. The city has a long history since the first millennium BC, initially as the capital of Urartu in the 9th century BC. The Van Central district stretches over 2,289 square kilometers (884 square miles). The history of human settlement in Van region goes back at least as far as 5000 BC. Archaeological excavations and surveys carried out in Van province the Tilkitepe Mound, which is on the shores of Lake Van and a few kilometers to the south of Van Castle, indicates information about the oldest culture of Van.

Today the city is located at a distance of 5 km from the lake shore, on the plain extending from the Lake Van. Because of the beauty of its surrounding landscape Van has often been called "The Pearl of the East", modified by the time "*dünyada Van, ahirette iman*" or "Van for this world, faith for the next" The city is home to Van "Yüzüncü Yıl" Üniversitesi (*University*).

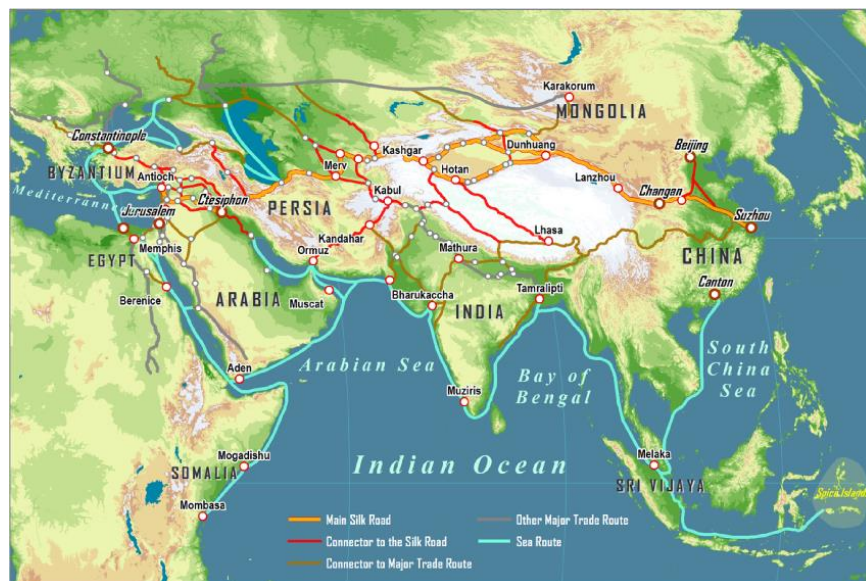


Figure1. Silk Road [1]

### 3.1. Silk Road

Human beings have always traded with their neighbors, exchanging goods, skills and ideas, while moving from place to place. Eurasia was criss-crossed with communication routes and paths of trade throughout history. Routes across both land and sea, along which silk and many other goods were exchanged between people from across the world. Maritime routes were an important part of this network, linking East and West by sea, and were used for the trade of spices in particular, thus becoming known as the Spice Routes [2].

These networks carried more than just merchandise and precious commodities however: the constant movement and mixing of populations also brought about the transmission of knowledge, ideas, cultures and beliefs, which had a profound impact on the history and civilizations of the Eurasian peoples. Travelers along the Silk Roads were attracted not only by trade but also by the intellectual and cultural exchange that was taking place in cities along the Silk Roads, many of which developed into hubs of culture and learning. Science, arts and literature, as well as crafts and technologies were thus shared and disseminated into societies along the lengths of these routes, and in this way, languages, religions and cultures developed and influenced each other. "Silk Road" is in fact a relatively recent term, and for the majority of their long history, these ancient roads had no particular name. In the mid-nineteenth century, the German geologist, Baron Ferdinand von Richthofen, named the trade and communication network *Die Seidenstrasse* (the Silk Road), and the term, also used in the plural, continues to stir imaginations with its evocative mystery [3].



Figure 2. Vision chart in unto [4].



### **3.2. Silk Road Vision**

The Silk Road Action Plan 2014/2015 works as a collaborative platform for marketing and capacity building, raising the profile of Silk Road tourism while driving development that is sustainable, responsible and internationally competitive. The Silk Road Action Plan works towards implementing the following multi-faceted vision [4]:

### **3.3. Travelling the Silk Roads**

The process of travelling the Silk Roads developed along with the roads themselves. In the middle Ages, caravans consisting of horses or camels were the standard means of transporting goods across land. Caravanserais, large guest houses or inns designed to welcome travelling merchants, played a vital role in facilitating the passage of people and goods along these routes. Found along the Silk Roads from Turkey to China, they provided not only a regular opportunity for merchants to eat well, rest and prepare themselves in safety for their onward journey, and also to exchange goods, trade with local markets and buy local products, and to meet other merchant travelers, and in doing so, to exchange cultures, languages and ideas [5].

As trade routes developed and became more lucrative, caravanserais became more of a necessity, and their construction intensified across Central Asia from the 10th century onwards, and continued until as late as the 19th century. This resulted in a network of caravanserais that stretched from China to the Indian subcontinent, Iran, the Caucasus, Turkey, and as far as North Africa, Russia and Eastern Europe, many of which still stand today.

Caravanserais were ideally positioned within a day's journey of each other, so as to prevent merchants (and more particularly, their precious cargos) from spending days or nights exposed to the dangers of the road. On average, this resulted in a caravanserai every 30 to 40 kilometers in well-maintained areas.

Maritime traders had different challenges to face on their lengthy journeys. The development of sailing technology, and in particular of ship-building knowledge, increased the safety of sea travel throughout the middle Ages. Ports grew up on coasts along these maritime trading routes, providing vital opportunities for merchants not only to trade and disembark, but also to take on fresh water supplies, with one of the greatest threats to sailors in the middle Ages being a lack of drinking water. Pirates were another risk faced by all merchant ships along the maritime Silk Roads, as their lucrative cargos made them attractive targets [6].

## **4. DEFINITION OF TOURISM**

Tourism has been defined in the dictionary: traveling in diameters of the world and traveling for recreation and that passenger goes to destination and then return to their residence. The explorers like Ibn Battuta (10<sup>th</sup> century) Marco Polo (14<sup>th</sup> century) Evliya Çelebi (17<sup>th</sup> century) and others in the past pave the way to the word of tourism, traveling to unknown lands and record them. Today in the global village, in the age of advanced communications and with a fast means of transportation, tourism hasn't such a meaning. More travelers and tourists are traveling for leisure and recreation or visit and relax or visit places of historic buildings and familiarity with the culture and customs of other nations. Most people with few resources as possible can take a few days to travel. In this era of mass tourism, and more people than ever are able to travel.



Figure 3. IOC Offshore Van Grand Prix 2010 [7]  
Figure 4. Festival of Van lake 2011 [7]



Figure 5. Power of travel [8]

#### **4.1. The Concept of Today's Tourism**

In past ages traveler dedicated the traveling "their own business". At the end of a journey itinerary was the result of travelers work. Today tourism has general aspects and everyone's journey is tourist. The word tourism today should not be considered surfing world.

Review of previous itineraries illustrate that traveling in the past was an individual and personal interests .Due to the limitations of the technology, incentive of travelers is formed often in limited and on tight space. Expert guides were selected from people who know the area and have more information without having purposeful teaching for this important task. In the age of communication, today, scientists and experts try in the field of cultural, social and economic characteristics of this period to develop new practices consistent.

Important points that can be seen in tourism definitions, the separation of person from his work and its permanent residents, and temporary nature of short trips and activities such as visiting, entertainment and fun during the trip. From economic point of view tourism represents a transfer of economic power to buy one region to another, which is striking for economic analysis of industry [6].

This vast and profound change that has changed the shape and appearance of personal trips and visits to communities and individual nations to industrial tourism and for each of the branches try to train efficient and competent professionals and planners. Tourism is the temporary, short-term visit that tourist go outside his residence or work for traveling [9].

Today tourism has general aspects and everyone's journey is tourist. Here the word tourism means a journey and travel and outdoor only and should not be considered surfing world and garlic horizons. Review of previous itineraries illustrate that traveling in the past was an individual and personal interests .Due to the limitations of the technology, incentive of travelers is formed often in limited and on tight space. Expert guides were selected from people who know the area and have more information without having purposeful teaching for this important task. Today, in the age of communication, scientists and experts try in the field of cultural, social and economic characteristics of this period to develop new practices consistent with this new age. This vast and profound change that has changed the shape and appearance of personal trips and visits to communities and individual nations to industrial tourism and for each of the branches try to train efficient and competent professionals and planners [10].

#### **5. DEFINITION OF CUSTOMS**

Customs is equivalent Customs Administration words in English and in French is Duane. According to the quote of famous scholars and historians, was derived from the Latin word "Commercial" that means trade and exchange of goods that the word itself is derived from the Greek word "Cummerx" means law belonging to the goods or merchandise. In Turkish customs is spread in the form of words "Kumruk" or "Gumruk". Due to the proximity of Iran with Turkey in the time of these words later became common in our country too.

Customs Cooperation Council, is defined Customs as: "Customs is a government organization which is responsible for law enforcement and collection of customs duties and tariffs of import and export, import, transit and export of goods."

## 5.1. Customs duties

Customs responsibilities: customs legally, is responsible for the following tasks:

- Implementation of the Customs Act and the relevant executive and general provisions of the contract, the annual import and export trade and barter agreements.
- Implementation of laws and regulations related to special economic zones and industrial markets that its implement is assigned to the customs of Iran.
- Implementation of banking and currency regulations, health regulations and quarantined, including animals and plants, the provisions of the Atomic Energy Organization, Standards Regulation and Industrial Research, rules of Islamic Ministry, regulations of Industries and Mines Ministry.
- Imposition of customs regulations about exemptions and prohibitions.
- Imposition of laws and regulations on export promotion and preservation of rare plant and animal species.
- Customs formalities for temporary import, temporary export, sabotage, transit, internal and external transit of goods and returned goods
- Customs regulation on free markets (Free shop), packages and political couriers and cargo and international couriers and Posts.
- Imposition of anti-dumping regulations and combat international organized crime
- Imposition of the rules on the protection of society from entering of goods containing radioactive materials, contaminated, dangerous and harmful and damaging the ozone layer materials
- Enforcement of provisions relating to customs fraud and smuggling and capture and storage of cargo and tracking.
- The delivery of imported and exported goods and passengers by air, land and sea and maintenance them in the places under the responsibility of customs office.
- Obtain the costs of customs and other customs which their receiving and delivering to the owner or legal representative of the owner of the goods is assigned to the Iranian customs clearance.
- The implementation of the rules on behalf of the Iranian Customs.
- Procedures and regulations relating to the abandoned and recorded goods.
- In order to verify the accuracy of the releasing and receiving documents and receipting the deduction or refund additional receipts.
- Investigating and resolving conflicts of law enforcement and customs regulations
- Investigation and making recommendations on matters relating to the World Customs Organization and implementation of the customs contracts that have been approved by the Parliament.
- Evaluation of current customs rules and regulations and the preparation of plans and corrective procedures for compliance with customs requirements and administrative reform.
- Customs formalities relating to cross-border transactions and boundary bartering
- Preparation of statistics and analysis necessary to Import and export of various goods to the obtain a suitable model of export and import
- Take the necessary measures to Evaluation of the type of incoming and outgoing goods and reporting and economic analysis to develop industrial self-sufficiency and export of goods from country.
- Making the necessary studies and preparing appropriate reports and recommendations to eliminate bottlenecks and problems in order to promote and develop exports.
- Evaluation of the customs contracts regulations in other countries, especially countries with similar conditions, to use the best systems and technologies available in the world.
- Planning the proposed budget of Iran customs and implementation of the approved budget.



- Comprehensive planning for preservation and protection of property, both movable and immovable, in order to optimal use of available resources.
  - Implementation of the provisions for the protection of intellectual property rights, consumer rights and the prevention of cheating the public against counterfeit products and inessential.
- Customs different roles: according to different customs responsibilities, it plays different roles that we bring them in the following [11].

### **5.2. Customs Role in the Development of Travel and Tourism**

Every year many passengers visit the customs of the country for various reasons. So for the reason that the costumes is first place in the country that passenger entry it so clash of the customs staff and facilities allocated to passengers has paramount importance. In this respect Iran customs to attract tourists is provided traffic facilities and decrease in waiting time of passengers as follows:

- Informing passengers about customs regulations for carry-on items during the rituals and holidays
- Creating and using red and green channels of the X-Ray machine to accelerate the passenger's transit.
- Replacement of risk assessment techniques and random checks instead of traditional methods of control [12].

## **6. THE CONCEPT OF FREE ZONES**

Term or concept of free trade and free trade zone is an old concept but talking about the new shape of it has been dramatic in the last few decades. The first free trade zone, in the basic concept was created in ancient times by beginning of an extensive trade. An example would be pointed out "Delos (Delos)", a small island such Skyla Islands (Cyclades), and the Athens government in between 315 and 166 BC, was established the first center in the Office of Commercial Affairs.

In the Middle Ages, in Europe and the towns people were given freedom to trade. These villages or cities that are called free from the eleventh century onwards from the Board received documents whereby economically autonomous mode had and could take the form of free trade for example we can cities "Hamburg" named port.

The first driving forces in the development of international trade and prosperity of the free zones, the United Nations passed a resolution in 1967 that indicating economic growth in developing countries have gone to export promotion rather than import substitution.

According to international definitions, "free zone" is protected port or other port that is not subject to country public regulation and provides facilities using the advantages such as tax credits and exemptions from customs duties and import and export regulations and by attracting foreign investment and technology absorption, foreign currency income.

Free zones are areas which, according to its natural properties (like being in a commercial thoroughfare, areas of economic and communication), have potential to be important. Some of the main institutions involved in this area (mainly the "customs and economic institutions) will be minimized in order to maximize attract investment, including banking, commercial, industrial or tourist investment as much as possible [13].

Historical experience shows that these areas was established first time in countries such as India and China, which interfere with government agencies in all areas of socio - economic were pervasive main wand, or at least the in the dominant form. This government by creating the free zones, all of which were

maritime gateway to the outside world mainly pursued two aims, the first goal was that brought up a realistic possibility to match with other economic and social system away from cumbersome bureaucratic rules, to use their knowledge's and send technology and investment to that zones.

The second goal was establishing a "crushed system" (or Microsystems) that although continued his association with "large system" (or Makrvsystem), but has a special inner workings.

This function is often a link (Hybric) between social-economic models of mainland and alien patterns. So crushed systems could continue to grow as a laboratory for social- economic reform although implementation of them in the mainland seems necessary, but could be dangerous because of the implication for large systems [14].

### **6.1. The Role of Free Zones in the Economic Development**

In the international division, countries divided into two general categories, one is developed country and second category of those countries that have been developing countries with varying degrees of underdevelopment, the fundamental difference between the two mentioned groups is that the developed countries are countries that have successfully passed the Industrial Revolution, and consequently a change in economic structures and social, cultural and political situation has changed as well. But developing countries because of historical and current problems couldn't pass "industrial revolution" successfully [15].

Developments in the world economy, the developing countries' experience in the nineteenth century and the first half of the twentieth century and the newly industrialized countries over the past three decades, showed that foreign trade can trigger the development, especially in the today's world of rapid changes and developments in technology and impressive that no country alone can't produce everything for everyone and the development without use cooperation and trade with others won't be possible.

Because one way to develop foreign trade is using the free zones, many economists, consider using this tool useful, in particular, the use of these tools can be a factor to prevent shocks caused by the process of economic transition and largely coordinate domestic policies with developments in the world economy and increase economic efficiency.

Free areas by the following ways can contribute to the development of the national economy:

Rapid providing of raw materials and components needed for domestic firms, domestic ease and speed in providing orders can save cost and reduce the cost and increase the export of goods made inside [12].

## **7. CONCLUSION**

While the path to prosperity Age and history of the ancient Silk Road tourism will help to artisans in the field of tourism. Tourism markets, healthy, clean and high-income find Silk Road areas to improve the quantity and quality of employment provides.

Conditions that climate change has created difficult conditions for the agricultural and agriculture-based economy in areas is faced with poverty. The approach of the agricultural economy based on trade and the market economy can flourish again in the increase, for local and international experts and researchers in the field of tourism. Review and understanding of the role of tourism in the development of the Silk Road is important.

There is a demand to examine the issue of tourism opportunities (industrial, cultural, health, sports etc.) on Silk Road countries such as: --Identify the role of culture and identity of the Silk Road Customs. Identify obstacles to the development of tourism among the countries of the Silk Road and solutions to overcome barriers. --Investigate and introduce tourism potentials and capabilities and investment opportunities in the countries of the Silk Road route. --The Role of tourist areas archeological cultural convergence between Iran and the countries of the Silk Road route. --Efforts to identify and take advantage of the cultural attractions, artistic and tourism Iran and route.

## **REFERENCES**

**[1] The Silk Road and Arab Sea Routes,**

<https://people.hofstra.edu/geotrans/eng/ch2en/conc2en/silkroad.html>, (accessed September 2015)

**[2] www.unesco.org, 2015.** Interactive map of the cities along the Silk Roads, <http://en.unesco.org/silkroad/network-silk-road-cities-map-app/en> (accessed September 2015)

**[3] Andrea, A.J., 2014.** The Silk Road in World History, Areview Essay, Asian Review of World Histories 2:1, 105-127

**[4] UNWTO Silk Road Program, 2011.** Experience The Silkroad Ministers's Summit, 9March 2011 at ITB Berlin,

[http://unwto.org/sites/all/files/pdf/sr\\_ministers\\_summit\\_conclusions\\_\\_progress\\_report\\_part\\_i.pdf](http://unwto.org/sites/all/files/pdf/sr_ministers_summit_conclusions__progress_report_part_i.pdf) (accessed September 2015)

**[5] Birell, C., 2015.** The Silk Routes of Central Asia, Notes - Royal Geographical Society of South Australia.

**[6] GLOBE, 1990.** 90 Conference, Tourism Stream, Action Strategy for Sustainable Tourism Development. Vancouver BC, Canada.

**[7] https://en.wikipedia.org/wiki/Van,\_Turkey** (accessed September 2015)

**[8] http://sites.utexas.edu/wildlife/** (accessed September 2015)

**[9] Burkant, A.J., Medlik, S., 1974.** Tourism: Past, Present and Future, William Heinemann Ltd

**[10] Carrying capacity in mountain and Alpine Regions, 1990.** "Madrid:WTo".

**[11] The free areas, the monthly economic, social, cultural, publication, free trade zones - February 2008** Industrial, No. 80, Iran, Tehran

**[12] The Economic Journal, 2007.** Journal of Economic Affairs and the Interior, December, No. 6.

**[13] Ali, S.A., 2010.** The Spirit of Islam: A History of the Evolution and Ideals of Islam, Cosimo Classics

**[14] Oelrichs, I., 1996.** Tourism and the Host Community (in the Context of Regional Planning), Northern Rivers Regional Development Board, Hurunui District Council, NZ.

**[15] The free areas, the monthly economic, social, cultural, publication, free trade zones - February 2008** Industrial, No. 80, Iran, Tehran

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## Search for Hidden Light in the Pyramids



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**Abstract:** *Pyramids are considered one of the symbols of human civilization. It is one of the miracles of the world. Characterized by ancient civilization of Egypt from the rest of civilizations normally highly religion. Rich with secrets that have not been disclosed so far since 4500 BC. One of those secrets is electricity. Since the discoveries have proved that the ancient Egyptians were able to really generate electricity. Discovered the symbols on the walls has shown that they made light work electromagnetic waves emitted from the earth. Also, the holes in the pyramid was to introduce Starlight to the tomb of the Pharaoh Khufu. He has Pharaohs using a special type of stone in the construction of the corridors. Where these stones work as a mirror and reflect the light. These stones also absorb and radiate the lights at night on the principle of the moon. The researches are still going on about the form of the pyramid's construction . As some scientists say the pyramid shape and location of the globe causing the emission of electric waves powerful enough to illuminate the major cities in the world.*

**Keywords:** *Electric, hidden, light, Pyramid, secret*

### **Piramitlerdeki Saklı Işığın Araştırılması**

**Özet:** *Piramitler insan uygarlığının sembolleri olarak kabul edilirler. Dünyadaki mucizelerden biridir. Mısırın eski uygarlıkları diğer eski medeniyetlerde olduğu gibi inanç odaklı topluluklardı, gizemleri M.Ö.4500 yılından bu yana şimdiye kadar açıklanmamıştır. Bu gizemlerden bir tanesi elektriktir. Araştırmalara göre Mısırlılar gerçekten elektrik üretebilmişlerdi. Duvarlarda keşfedilen semboller Mısır'lıların yeryüzünden yayılan elektromanyetik dalgalarla ilgili çalışmalar yaptığını göstermiştir. Ayrıca Piramit kesitindeki deliklerden yıldız ışığı Pharaoh Khufu'nun mezarının içerisine alınır. Pharaohs (krallar)piramit içerisindeki koridorların inşasında özel bir taş kullanırlardı. Bu taşlar ayna gibi ışığı yansıtırlardı. Ayrıca, ayın güneş ışığını depolaması ve yansıtmasında olduğu gibi taşlar da ışığı emerlerdi ve yayarlardı. Piramitlerin inşa biçimleri hakkındaki araştırmalar halen devam etmektedir. Bazı bilim adamları, Piramitlerin biçim ve konumlarına göre ürettikleri elektrik dalgalarının dünyadaki belli başlı şehirlerin aydınlatılması için yeterli olabileceğini söylemektedirler.*

**Anahtar Kelimeler:** *Elektrik, saklı, ışık, Piramit, sır*



## 1. INTRODUCTION

A reminder of glorification of life after death, Pyramids that were built in different periods reflect different architectural knowledge. Mysteries of pyramids remain unsolved. Although some believe that a lost civilization lies beneath the pyramids and despite some misleading publications and TV shows on this subject, no trace of any “lost civilization” could be found during excavation works. Instead, artifacts such as bakeries, inscriptions, and the tombs of ancient Egyptians were discovered and these shed some light on the history of ancient Egyptian civilization. Walls of tombs depict the lives of Egyptian rulers (Pharaohs) and their families. Inscriptions on the walls give us information about Egyptian religion. Mark Linz, head of The American University in Cairo Press, said, "The ancient Egyptians were a great people, people like us, but they created this wonderful civilization." Mark, who publishes the works of many prominent, recognized scholars on ancient Egypt, added that "We should learn from them instead of attributing these marvels too [1].

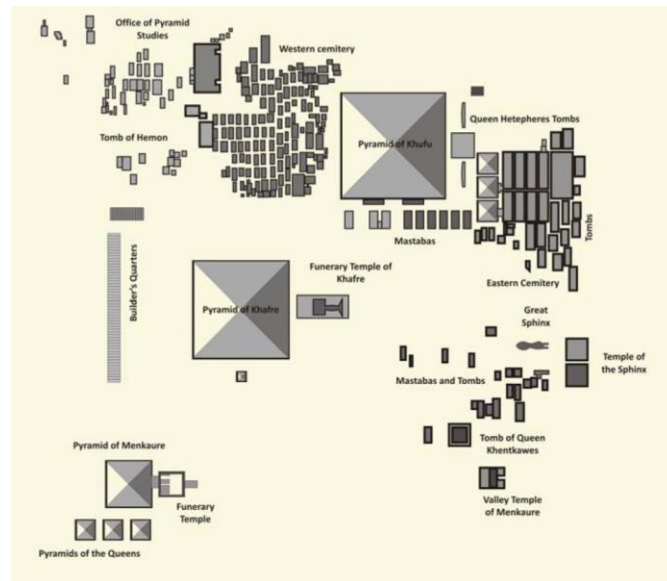


Figure 1. Giza Pyramid Complex [2]

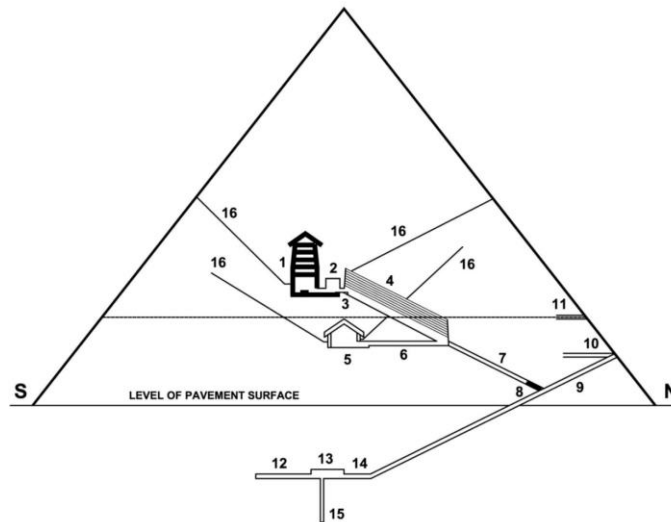
## 2. HISTORY OF THE GREAT PYRAMID OF GIZA

The three large pyramids of Giza, and especially the Great Pyramid, all date from the Fourth Dynasty pharaohs known as Khufu, Khafre, and Menkaure which began c.-2620 [3]. The Great Pyramid is the oldest, tallest, and largest of the three pyramids in the Giza Necropolis. It is most important man made structure in the history [4]. The height of pyramid is 485 feet and the base was 763 feet on a side. The base dimension is over 13 acres [5]. It contains some 2-3 million granite blocks each weighing approximately two and a half tons for a total around six million tons.

### 2.1. Construction of the Graves

Entrance is about 50 feet (15m) above the base positioned on the north face. A short, narrow descending passage leads down from the entrance. A cramped ascending passage starts upward from the descending passage about 95 feet (29m) from the entrance. Rising passage is about 125 feet (38m) long. There are

two other passages at the end. A narrow horizontal passage about 125 feet (38m) long leads to the Queen’s Chamber. The other passage name is the Grand Gallery is 157 feet (48m) long. It leads to the King’s Chamber. Directly a King’s Chamber, but not connected to it, are several small, empty chambers (Figure 2, 3) [6].



1 King’s Chamber, 2 Ante Chamber, 3 Great Step, 4 Grand Gallery, 5 Queen’s Chamber, 6 Passage to Queen’s Chamber, 7 Ascending Passage, 8 Granite Plug, 9 Entrance Passage, 10 19th Course of Masonry, 11 35th Course of Masonry, 12 Dead-End Passage, 13 Subterranean Chamber, 14 Passage to Subterr. Chamber, 15 Pit, 16 “Star Shafts”

Figure 2. The Great Pyramid Cross Section [7]

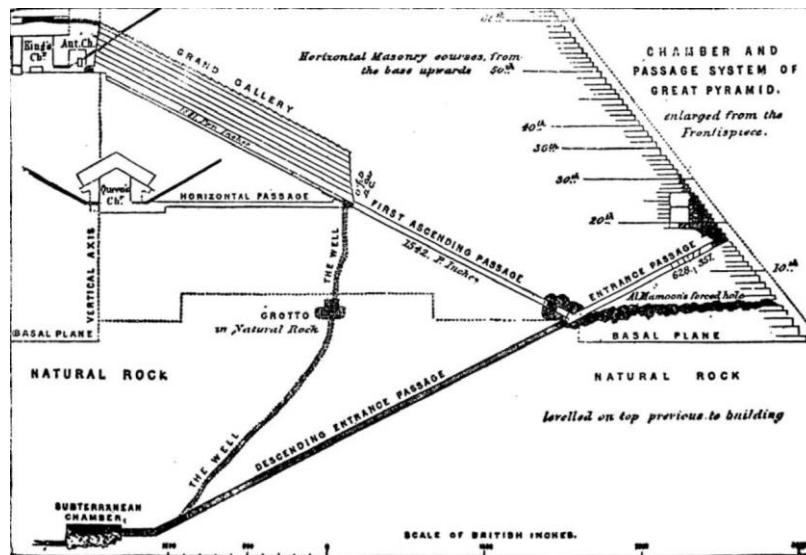


Figure 3. Chamber and passage system of Pyramid [8].

### 3. SECRET OF EGYPTION LAMP ON THE WALLS IN PYRAMID

#### 3.1. Egyption's Lamp Contain

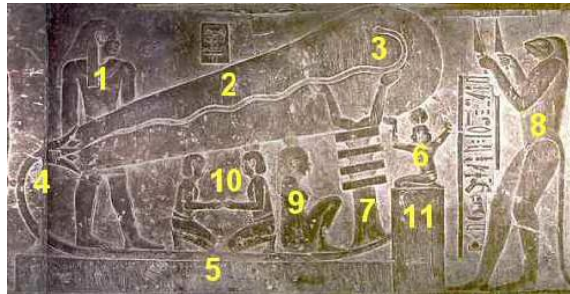


Figure 4. In the temple of Hathor at Dendera, several dozens of kilometers north of Luxor, there are reliefs interpreted by some "experts" as lamps [9.]

In Figure 6, the wall depicts human figures and bulb-like objects (lotus) with snakes in wavy lines. The Dendera Light bulb theory stems from these inscriptions. The interpretation of this theory based on the inscriptions in Temple of Hathor in Dendera uses the following terms: 1. Priest, 2. Ionised fumes, 3. Electric discharge (snake), 4. Lamp socket (Lotos), 5. Cable (Lotos stem), 6. Air god, 7. Isolator (Djed-Pillar), 8. Light bringer Thot with knives, 9. Symbol for "current", 10. Inverse polarity (Haarpolarit +), 11. Energy storage (electrostatic Generator?) (Figure 4).

Engineer W. Garn could create a device that was able to generate light based on this figure. In the book "Lights of the Pharaohs" written by Krassa/Habeck, we find the following sketch and description:

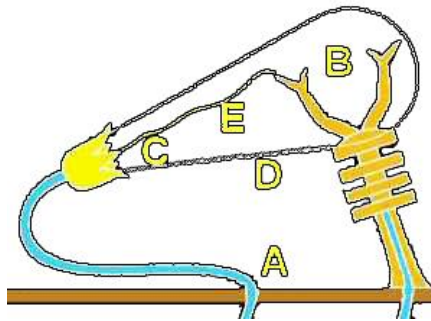


Figure 5. "If we evacuate a glass bulb with two metal parts reaching into it (B), (C), we can see a discharge at much lower levels, depending on the size of the glass balloon (D). At a pressure of about 40 t (tonnes) (40 mm of mercury) a snakelike light filament meanders from one metal part to the other (E). If we evacuate further, the light filament grows wider until it fills the whole glass balloon. This is exactly what we see in on the pictures in the subterranean chambers of the Hathor sanctuary." [9]

How so often in "fringe science" this lamp idea only "works" by omission of important details. You might have noticed that I emphasized the word "two" in Garn's comment. Why? Because "two" is the key word. Every "normal" lamp needs two electrodes to produce light, a simple light bulb or the Garn-construction.

Although this may sound logical, it does not work in practice because every lamp, regardless of type, needs two electrodes to generate light. Dendera light bulb depiction constitutes only one of the six depictions. There are depictions of similar objects around the temple, which do not include lotus or generator. The lamp that is claimed to be working is only shown once.



Figure 6. Left: With the air god Heh carrying the "lamp" are shown (one in the crypt, two in the cult room, Wright: two times this way with a djed pillar outside of the "lamp" [9].

### 3.2. Dendera - Snake Stella

Three stone reliefs depict a lotus leaf and flower and a snake is spawn from them. This snake is sometimes interpreted as bulb. Peter Krassa and Rainer Habeck could develop a real theory based on it. A snake is touching the arms on the other side and resembles a lamp. Oil lamps, candles and torches substantially emit soot and their traces should be seen on the walls or ceilings and we can see thick soot in Red Pyramid. Chambers and passages in pyramids were built in daylight. So, the existence of soot cannot be explained.



Figure 7. These objects could never had been lamps. Neither a Garn-type nor a "normal" light bulb. But it gets even worse, because there are pictures of similar objects in the chapels around the temple. Without Djed, lotus or generator: [9]

Krassa/Habeck seem to believe that the objects on the pictures are shown in their natural proportions with regard to the "priest" behind the lamp (although they are wondering, that some other people are shown smaller than the priest). If we use the priest as scale, the objects on the relief must be around 2.5 m long with the largest diameter of one meter, and the smallest diameter of 50 centimeter!

Regardless of the construction used, the bulb must have a near vacuum inside - can you imagine the air pressure resting on such a device?

### 3.3. Analysis of Egyptian's Lamp

Well, we don't need to guess, we can calculate it. With a length of 2,5 meters, the largest thickness of one meter and the smallest thickness of 50 centimeters we can calculate the volume roughly as a truncated



cone of approximately 2 m length (  $\text{Volume} = \pi * h / 3 * (r_1^2 + r_1 * r_2 + r_2^2)$  ) and a hemisphere of one meter diameter (  $\text{Volume} 2/3 \pi r^3$  ). The combined volume is around 1,12 cubic meters, the surface of the object amounts to approximately 6,3 square meters.

If the object is evacuated, a pressure of about 63 t (tonnes) would rest on a Dendera object. To withstand such an immense pressure, the object would have to be quite thick-walled, at least two to three centimeters thick. The weight of this bulb would be then approximately 750 kilograms. And this monster would be nevertheless a ticking time bomb: a small crack in the glass by uneven cooling with the manufacturing, and the Dendera lamp implodes with the force of a bomb. The fragmentation effect might be deadly in the periphery of several meters!

I for my case also know of no vacuum glass bulb of similar format from modern manufacturing, and this might have its reasons. We cannot do it - but the Egyptians could? Although they had no technical industry at all? No.

"Rubbish" one lamp-fan told me, who dropped the Garn idea in a millisecond to defend the general idea (the people in fringe science are very flexible in switching even basic assumptions to keep a "mystery" alive). I was told that the bulb could have been filled with a noble gas.

Without a real industrial technology it is impossible to get those gasses. There is no trace of a technology needed to extract them before the 20th century. Furthermore, the Dendera lamp would have to contain enough gas to fill at least 713000 halogen lamps with a lighting performance of together 14 million Watts (at one bar filling pressure). And twice may be guessed what lights up more brightly.

In both cases, the Dendera construction is characterized primarily by its uselessness. A simple bulb or a 500 W halogen lamp needs fewer resources, is simpler and safer against production defects as such a monster. It has its reasons why we use today small bulbs and no Dendera giant, even 100 something years after Edison.

We should also mention glass bulbs. Glass is for us a daily-life article, but the situation in ancient times was different. That's why we come at last to a major problem of alternative history: the event horizon. Material expert Paul Nicholson writes in the current standard book about Egyptian materials and manufacturing techniques.

#### **4. NIKOLA TESLA - THE SECREST HIDDEN IN THE PYRAMIDS OF EGYPT**

##### **4.1. Theory About Using the Electric by Ancient**

Evolutionists endeavor in convincing us that former civilizations were primitive and they gradually became more advanced. But when we consider historical references and findings with an open mind, we can see that some civilizations such as Egypt, the Mayans etc. used highly advanced technologies. Medicine, electricity and physics etc. were greatly advanced. Gold objects from Ancient Egypt were finely gold plated and this requires the use of electricity. It is also claimed that they used electric power in their weaving plants. Reliefs depict torches. Although soot was found in some areas of pyramids, corridors and tombs did not have traces of soot. Electricity may be used in these areas. The Baghdad battery and the first arc lights were used then. The arc lamp proves that electricity was used. A regular electrical source is required to supply energy to Lighthouse of Alexandria for long durations. Pyramids are regarded by some as giant power plants for electricity. White limestone has high insulating properties and the Great Pyramid was covered with white limestone. This insulation requires electricity to be

released with control. Another form of limestone was also used in pyramids. This form contained crystal and thus, could serve as an electrical conductor.

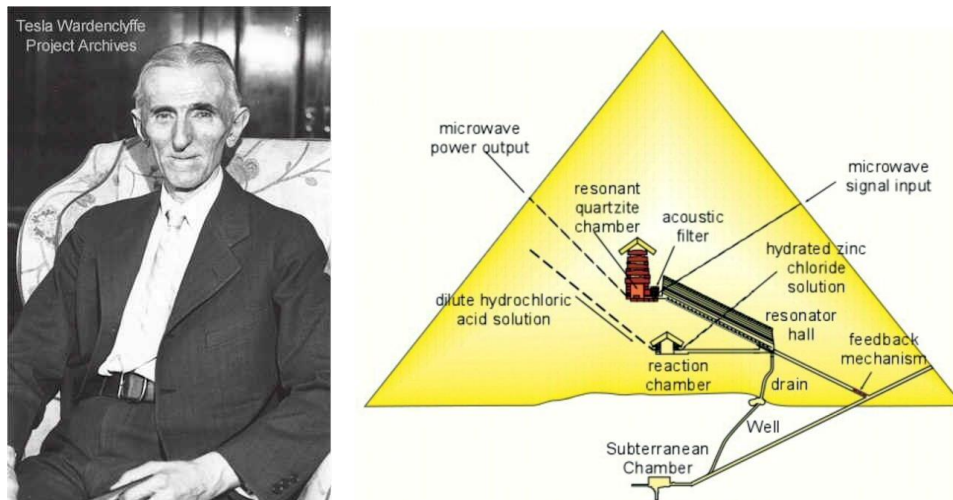


Figure 8 Left: Nikola Tesla - portrait circa 1935 [10], right: The Giza Power Plant[11]

#### 4.2. Theory About Generating Power From the Pyramids and Compare it with Cables Shape

This type of limestone also comprised a small amount of metal that allowed for maximum power transmission. Granite is a radioactive substance and conductor that was used for shafts of pyramids. Conductive and insulating properties of pyramids are remarkable. An insulated electric cable uses these conductive materials in the same manner. Pyramids are located on the Giza Plateau and this area has plenty of underground water channels. Spaces between limestone layers contain zinc water and these layers transmit electricity. When the River Nile's flow reaches a peak, the surfaces produce electric current. This electric current is conducted to granite covered chambers. A gold capstone located on the top of pyramid is an outstanding conductor. The electromagnetic field at the bottom is transmitted to the top. This capstone helped the transfer of negative ions to the ionosphere. So, a current was generated.

#### 4.3. Nikola Tesla an Inventor of Electric Technology

Nikola Tesla, an inventor of electric technology and whose "Tesla coil" is still used in radio technology, used a similar technology in his Wardenclyffe Tower where he applied the pyramid effect. The electromagnetic technology used in Tesla's tower is similar to the electromagnetic field in the pyramids. He wanted to create an artificial lightning in the tower. Generating native ions, both systems transmit them without electric cables.

Reliefs in pyramids depict hand-held bulb-type lamps. These bulbs remind us Nicola Tesla's descriptions. Tesla held a bulb in his hand and managed to light it without electrical cables by transmitting current through his body.

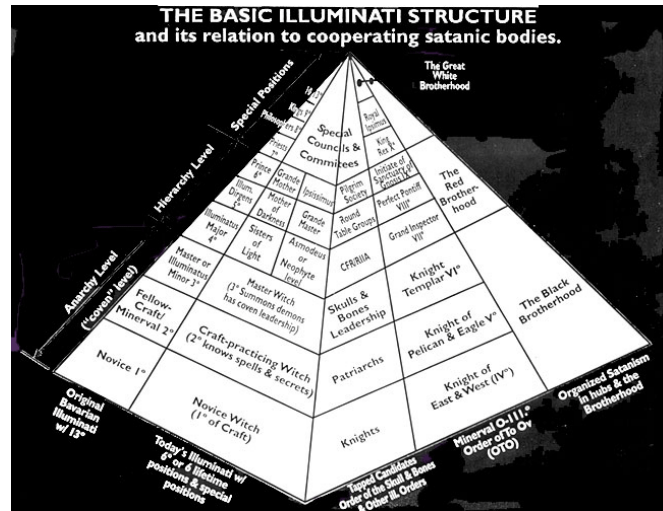


Figure 9. The basic illuminati structure and its relation to cooperating satanic bodies [12]

#### 4.4. Were the Pyramids Just Tombs for Kings?

Although pyramids are often considered merely as tombs, they appear to be functional buildings. The pyramids are electro-magnetic machines and huge capacitors. A stone chest (Ark of the Covenant; the word 'ark' means chest) is available in King's Chamber in the Great Pyramid. Ark of the Covenant is considered to be the superconductor required by the pyramid when its dimensions and location are examined.

#### 5. THE RESULT:HOW TESLA BENEFITED FROM THIS DISCOVERY IN HIS INVENTIONS

Nikola Tesla built Wardencllyffe Tower, a wireless transmission station. He wanted his tower to be high in order to increase the voltage at the top. He designed it octagonal as this shape has specific wave characteristics. Tower was able to pick a DC current. He used the Earth to conduct the currents.



Figure 10. Left: The Tesla Tower, right: Giza Pyramid [13]

“The lines of force of the electric charge added to the fields from the sun act on the walls of a pyramid. The magnetic equipotentials show a high magnetic density in the summit. The voltage of the electric field increases of 100 V per meter. The terrestrial negative field reaches its maximum value at the summit of the pyramid; at the top of the pyramid of Giza, the voltage is 14,600 V. This pyramid is itself a capacitor, it accumulates an electrical charge. If an excess load is added, a discharge occurs at the top, and, as we know currently, that top was adorned with a solid gold capstone, an excellent conductor.”



Figure 11. Left: Tesla's behemoth tower, photo by Lillian McChesney, circa 1916 [14], middle, right: The Eiffel Tower [13].

Eiffel Tower has a pyramid effect as well. It can pick DC current at the top. With its lightning rod, it can generate some electricity and transmit it to the earth.

## 6. CONCLUSION

Pyramids with their sophisticated construction and design are proof of advanced knowledge of mathematics, astronomy, physics etc. Given the location of the Great Pyramid, it can be easily suggested that Egyptians had a good knowledge of the shape and size of the Earth. The Great Pyramid of Giza is a clear source of their profound knowledge. Queen's Chamber and its passage reflect the Earth's orbit of the Sun. Escape Velocity from the Earth is reflected in the measure of Niche within the chamber. The orbital circumference of the Earth about the Sun is applied to the elevation of passage into the Queen's Chamber. Measures of the Entrance Passage match with neutral points of gravity between the Earth and the Sun. Measurements of the Entrance Passage are based on the distance to the Moon and the Lagrange point between the Earth and the Moon. Future studies and researches will contribute to solve the mysteries of pyramids.

## REFERENCES

- [1] **Hawass, Z.** The Magic and Mystery of the Pyramids And the Route of the Holy Family At Egypt's Celebration of the Millennium, <http://guardians.net/hawass/millennium1.htm> (accessed September 2015)
- [2] **Vaz, E.; Caetano, M.; Nijkamp, P., 2011.** "A Multi-level spatial urban pressure analysis of the Giza Pyramid Plateau in Egypt", Journal of Heritage Tourism, 6(2), pp. 99-108.
- [3] **Fischler, R. H., 2000.** The Shape of the Great Pyramid, Wilfrid Laurier University Press
- [4] **Huntley, N.I., 2000.** The Original Great Pyramid and Future Science, Author House Publishing
- [5] **Sweeney, E. J., 2007.** The Pyramid Age, Vol. 2, Ages in Alignment Series, Algora Publishing
- [6] **Levy, J., 2006.** The Great Pyramid of Giza: Measuring Length, Area, Volume, and Angles (Math for the Real World), Rosen Publishing Group.
- [7] **Schmitz, E., 2012.** The Great Pyramid of Giza: Decoding the Measure of a Monument, Roland Publishing.



[8] **Russell, C.T., 2000.** The Divine Plan of the Ages, Publisher Bible Students Congregation of New Brunswick

[9] **Krassa, P. & Habeck,R.** Lights of the Pharaohs.

[10] <http://www.teslascience.org/archive/descriptions/NT1935.htm> (accessed September 2015)

[11] The Giza Power Plant, <http://www.gizapyramid.com/bio-dunn.htm> (accessed September 2015)

[12] **Penre, W., 1998.** The Secret Order of the Illuminati, (A Brief History of the Shadow Government), <http://www.illuminati-news.com/moriah.htm> (accessed September 2015)

[13] **Séguin, X., 2014.** The Tesla Tower.

<http://eden-saga.com/en/science-energy-vril-tesla-inventions-wardenclyffe-tower-gizeh-eiffel-form-effect-pyramid-effect.html>, (accessed September 2015)

[14] Photo by Lillian McChesney, circa 1916.

<http://www.teslascience.org/archive/descriptions/WP010.htm> (accessed September 2015)

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