EXTERIOR NIGHT LIGHTING OF HISTORICAL BUILDINGS: A CASE STUDY OF ERZURUM CITY

YAHYA BULUT

Ataturk University
Email: yahyabul@hotmail.com

Abstract-Urban space is used in accordance with people's need at night as well as it is used at day light. Outer space used more intensely and for longer times in summer than it is in winter. At night, lighting of outer spaces used by people gets essential for functional, aesthetic and security reasons. Night lighting of urban outdoor spaces involves the artificial lighting of important places of cities such as main and secondary roads, green areas, sport facilities, urban squares, housing regions, immediate surroundings of public buildings, important commercial buildings of cities, shopping malls, historical buildings and monuments. Lighting of historical buildings; which are the important elements of cities; is important both to emphasise the identity of the cities and to make them live at night by putting forward their cultural features. This study focuses on the night lighting of historical buildings of Erzurum, which have important cultural heritages.

I. INTRODUCTION

Today urban areas are used densely and effectively not only in daytime but also nighttime due to increasing demands of people. Depending on the development of lighting industry night lighting gained importance in cities. In especially summer months, people use outdoor areas more densely and effectively than winter months. Lighting in open green spaces in cities, squares, sportive areas, streets and the facades of historical structures can increase the use rate of such areas.

An efficient lighting in cities can fulfil several physiological and functional needs and appeal to aesthetical feelings by showing physical and cultural beauties.

Lighting historical, cultural and natural values in cities at nights can allow live and fascinating atmosphere and attract the attentions of visitors coming to cities. Thus, such an activity can contribute to tourism activities[1].Turkey is located at a very important point, which sheltered several civilisations with its deep history and culture. These civilisations have dropped a number of historical remains / structures to date which can be counted among cultural heritages reflecting their eras [2].These structures taken under protection are important for their historical, architectural, social and cultural values in the old days in addition to new missions / functions they have undertaken today. From a general perspective, structures bearing historical values play effective roles in determining the identityand past of cities they are built. In particular, the structures reflecting the architectural and artistic influence of certain periods are important because they represent the symbolic qualities of the cities, affect the city silhouetteand give the unforgettable traces in the memories related to the cities they are present [3]. Cities have undergone many changes throughout the centuries of developmental stages, and within this change process, some structures have been able to reach today by fully or partially preserving their assets for various reasons, and gaining the quality of historical monuments. Historical remains and city textures constitute important cultural and historical parts of today's cities.Historical textures make a positive contribution to the image of the city by making an increasing impact on the urban culture and it also increases the recreational and tourism potential of the city [4].

Present study was carried out in the city of Erzurum which is one of the biggest cities of Eastern Anatolia.

Some of the historical and cultural monuments in the city center were investigated at night.

In the scope of the study, night lighting conditions of some historical and cultural remains in the city centre were investigated.

II. MATERIALS AND METHODS

The city of Erzurum is located in north –eastern part of Turkeyat an elevation 1850m and 39,57 N ,41.10 E.The city is among the most important cities in the country due to its high altitude, winter sports activities and historical urban artefacts it shelters. Historical remains are concentrated mostly in the city centre.In the scope of the study, some historical monuments in the city center withintensive touristic visit capacity were examined; LalaPasaMosque, YakutiyeMadrasah, Ulu mosque, Double (Twin) Minaret Madrasah, Erzurum Fortress, NarmanlıMosque and CaferiyeMosque. In addition to these historical monuments evaluated, there are many other historical buildings, however; they are not evaluated because they are not illuminated at night.Within the scope of the study, each of the historical texts was visited one by one and night photographs were taken using a professional device.The visual effects of night lighting were evaluated considering these photographs.

III. FINDINGS

1- Double (Twin) Minaret Madrasah

Although the exact construction date of Double Minaret Madrasah, the symbol of the city, is unknown, it is estimated to be at the end of the 13thcentury since no inscription is present on its walls(Figure 1).



Figure 1.Double Minaret Madrasah

Night lighting is focused mainly on its minarets.However, unnecessary and excessive light intensity on minarets has made historical structure less effective. The building surfaces and especially the artwork in the entrance are not emphasized by lighting.Both columns are suspended in the air and their connection to the ground is not clearly seen.For this reason, lighting can provide more column surface and its effect may increase.The front courtyard of the madrasa lacks illumination at night and presents hazards in terms of safety and security.It may be more appropriate to illuminate the building for safety and security reasons by partially illuminating the front area and without diminishing the effect of building.

Erzurum Fortress

The castle, which is one of the historical values of Erzurum, is located on a hill with its inner and outer parts. Some of the outer castle walls were demolished until today and other parts were repaired later (Figure 2).



Figure 2. Fortress walls repaired later

One of the important historical monuments of Erzurum, the castle and its surroundings are now under landscaping project.The castle walls overlooking the city are not illuminated. For this reason, its architectural identity is hidden even though the castle walls have historical features.The Turkish flag in the fortress is being illuminated and brought to the foreground.

CaferiyeMosque

The historical mosque in the city center is understood to have been built in 1645 from the inscription on the entrance gate.The square planned mosque is covered with a dome that sits on an octagonal pulley.There are three small domed spaces that sit on the four rounded pillars in front of the mosque (Figure 3).



Figure 3.Caferiye mosque

It has a very weak effect in the respect of night illumination. Its architectural identity is hidden and an ordinary lighting is applied. Lighting obscures the artistic and historical features of the structure. The design lines of the mosque minarets, domes and arches are not emphasized sufficiently. The historic mosque has been abandoned to a dark ambiance and it is nearly impossible for visitors to perceive the structure at night.

LalapaşaMosque

Lala Mustafa Pasha Mosque is among the most important mosques of Erzurum remaining from Ottoman era.This mosque is an important historical monument in terms of being the first mosque the Ottoman built in Erzurum.It is located just on the eastern side of Yakutiye Madrasa in the big square on Cumhuriyet Street.The big square houses Yakutiye Madrassa built by Ilkhans in 1310 and a mosque built by the Ottomans in 1562 right next to it (Figure 4).



Figure 4.Lalapaşamosque

Located in Erzurum city center, this religious building is surrounded by a large square.It is one of the most visited mosques in especially summer months.It has a 455-year history in terms of its historical identity.The historical mosque is illuminated from all sides.Lighting is mainly made from top to bottom.The night illumination is performed in order to reveal the visuality rather than the artistic and aesthetic concerns.The architectural lines of the building were not emphasized, the surfaces were uniformly lit and ordinary lighting was made without giving depth.The yellow lighting made in the minaret is very weak and contrasts with the horizontal lines of the minaret.

YakutiyeMadrassa

The Yakutiye Madrasa, built in 1310, reflects the traditional architectural style of the Seljuk period.The madrasa has a single minaret and there are geometric motifs on the minaret (Figure 5).The historical monument, serving as an educational institution during its period, is now used as a museum. Located at the center of Erzurum, the building is home to touristic visits.



Figure 5.Yakutiye Madrassa

This historical monument is not illuminated effectively enough at night as it is in other monuments.In addition, the presence of illuminated billboards on the front surface of the historical monument damages the architecture and artistic identity. Furthermore, the lighting is solitary and architectural lines, third dimension and details are not highlighted.The motifs on the entrance door are only partly emphasized by night lighting and the perceptible character and depth are not at the desired level.

RESULTS

Some historical buildings illuminated at night were evaluated in the study. There are many historical buildings in the city not being illuminated at night.Unilluminated historical buildings were not included in the study.

When lighting and applying lighting design on buildings, some criteria should be considered in historical buildings.In this context, factors such as architectural characteristics, location, symbolic features, colour, texture, visibility, historical and aesthetic characteristics of the historical building to be enlightened should be taken into consideration.The illumination of the historical buildings in the city of Erzurum was made without considering the above mentioned points.For this reason, the result is that the applications are far from effectiveness, do not reflect identity, aesthetic and architectural features sufficiently.These historic buildings should be reconsidered within the scope of a project and night lighting should be reconsidered under the control of specialists.

REFERENCES

[1] [1]Y.Demiröz ,and B. Acarkan ,''Tarihi Yapılarda Dış Cephe Aydınlatması Ve Galata Kulesi Uygulaması''. www.emo.org.tr/ekler/e118e022026eecf_ek.pdf)

[2] [2]G.P.OĞUZ,andN.Işık, N.''Tarihi Yapılardaki Doğal Ve Yapay Aydınlatma Uygulamaları'' Kwww.emo.org.tr/ekler/95373f017b659cb_ek.pdf).

[3] [3] M.Şerefhanoğlu. Kent Aydınlatma Tarihi Yapılar,[Internet]. Lightworld. [erişim: 12 haziran 2017].

https://www.lightworld.com.tr/kent-aydinlatmada-tarihi-yapilar/

[4] [4] Y. Bulut,Ö.Atabeyoğluand N. Demircioğlu yıldız. ‘’Erzurum Kent Merkezindeki Bazı Tarihi Yapıların Çevrelerinin GIS ve UA Yöntemleri ile Değerlendirilerek Ekolojik Planlamasının Yapılması’’, TMMOB PEYZAJ Mimarlariodası,Peyzaj mimarlığı 3. Kongresi,2007 Antalya.

★★★