

## REMEMBRANCE LIGHT AT MEMORIAL SITES

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### ABSTRACT

Everyone in Russia has been preparing to the 75th anniversary of the victory in World War Two despite the fact that the state-level commemoration events are being impeded by the global disaster which may be compared to a world war: the COVID-19 pandemic. Like a war, it will eventually end but the memory about the anniversary must and will live on. Therefore, the subject of the article is topical: commemoration light and memory in light of an eternal flame and artistic and sacral illumination (Tribute in Light, like it was in New York in 2001). Numerous issues of architectural lighting of memorial sites and monuments in different Russian cities are under consideration. Positive and negative examples of light design solutions are described. It is also noted that information on contemporary state of this area is extremely insufficient.

**Keywords:** light design, memorial sites and monuments, war, memory, light

The memory of the most disastrous war in the Russian history, the World War Two, is kept not only in people's minds and literature, fine arts, music, theatre, cinema and TV series, but also in sculptural and architectural memorial sites and monuments which have been increasing in numbers over the years. For some time now, in terms of visuals and emotions, these sites have been starting living not one, mainly daytime, life but two lives, i.e. also a man-made night time life under artificial illumination. And sometimes the visions of this second life are even more impressive, then of the first one since a site becomes a gigantic theatrical stage with dramatic effects of light. At least, this is the main goal of light-design solutions which, unfortunately, are still not implemented at all sites or the effect of their implementation has not reached the lofty objective due to poor design quality or inadequate maintenance of lighting installations.



Fig. 1. Daytime and night time images of the Broken Ring monument in memory of the Siege of Leningrad

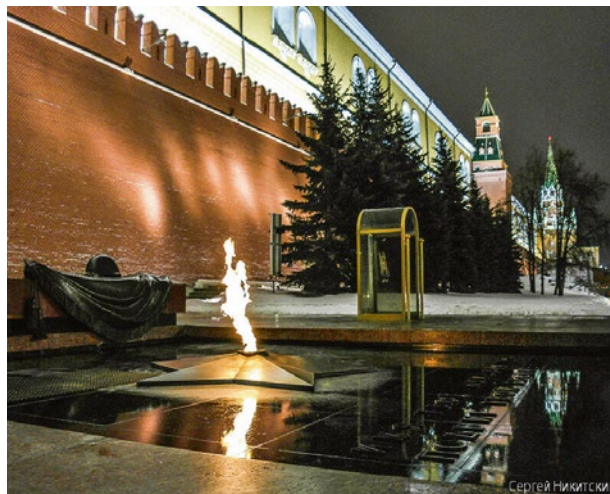


Fig. 2. The Tomb of the Unknown Soldier in Alexander garden

In the daytime, the idea to express the dramatic nature of a memorial site not only by means of conventional sculptural and spatial composition is negated by the overwhelming light from the sky and the Sun incident indifferently on all elements. It is good if the authors, a sculptor and an architect, have thought about orientation of dominant objects, axes of composition and design and main directions of perception as related to the Sun (let us remember the monument of to A.S. Pushkin in Moscow, which has lost part of poetic dramatics designed by Alexander Opekushin after it was moved to another place and rotated by 180 degrees). However, in the night time, a spectator's attention is controlled and original lighting images are created by means of electric light and it is possible to predict and calculate its parameters and, therefore, emotional reactions of visitors based on the designed script. Look at the daytime and night time photos of the Broken Ring monument commemorating the Siege of Len-

ingrad: as compared to the latter, the former looks emotionless while the latter is filled with emotions, light deliberately and confidently directs a spectator's attention to the elements of the composition, the surroundings do not deflect attention and dramatise the situation persuasively and appropriately (Fig. 1). With invention and development of LED lighting installations (LI) and programmable control systems, the kinetic adjustment of all lighting parameters has been becoming much easier. However, these features are still used only sometimes as part of temporary, one-time holiday shows. A century ago, the symbolic expression of an idea or a spirit of a memorial site was ingeniously found in the form of an eternal flame: like the flaming heart of Maxim Gorky's Danko, living flame lights the road of memory for us. The first eternal flame was lighted up in 1923 on the Tomb of the Unknown Soldier of the World War One under the Triumphal Arch at the Place de l'Étoile (now known as Place Charles de Gaulle) in Paris. The first eternal flame in the USSR was lighted up in 1957 at the Field of Mars in Leningrad near the Monument to the Fighters of the Revolution and then in 1967 at the Tomb of the Unknown Soldier near the Kremlin wall in Alexander garden, Moscow. From then on, in hundreds of large cities and small towns of Russia and former republics of the USSR, eternal flame as a small in size but the key, reverent non-material compositional and substantive dominant shines day and night at the bottom of single monuments and in focus of great memorial ensembles, at communal cemeteries and graves, in places of memorable events and heroic exploits. An eternal flame always provides any monument with a clear, obvious and sacral meaning. In these cases, the role of a material dominant is played by sculptural objects such as obelisks,



Fig. 3. Memorial to heroes of the Battle of Stalingrad on the Mamayev Kurgan in Volgograd



Fig. 4. The Brest fortress

figures, steles, arcs, pyramids, etc. To keep their dominant role in an ensemble during night time, they shall be illuminated properly. This obvious function still fights for its legit aesthetic right for implementation.

The tradition of intent symbolic and artistic illumination of memorial sites has appeared in the case of the first Tomb of the Unknown Soldier in the USSR in the Alexander garden (designed by architects D.P. Burdin, V.A. Klimov, Yu.B. Rabaev, and sculptor N.V. Tomsy). Architect V.G. Makarevich (MARKhI) has designed architectural illumination of this minimalistic (according to our today's understanding) landscape composition substantiated by historical context the main light element of which, apart from the eternal flame, was the temperate memorial lighting of the Kremlin wall with backlit somber blue spruces. Above it all, the floodlighted (based on the VNISI design) Arsenal building "floated" cheerfully (Fig. 2).

At the same time, the similar idea had been elaborated for the largest memorial site in the USSR to the heroes of the Stalingrad battle on the Mamayev Kurgan in Volgograd commissioned in 1967. Since 1965, the architectural lighting laboratory of VNISI (N.V. Gorbachyov, P.S. Evdokishkin, V.M. Tsarkov) had designed the lighting project finally implemented in 1976 [1]. Using the models of main sculptures and lens covered spotlights and reflector lamps, the workshop of the head of the design team E.V. Vuchetich designed the techniques of their lighting in order to select correct direction of floodlighting for the most spectacular presentation during night time, to clarify locations of lighting devices (LD) in the area and to experimentally define the levels of illuminance for the dominant sculpture The Motherland Calls on the top of Mamayev Kurgan overlooking the city so that it

could be seen at night time at 10 km from the city stretched along the Volga river for tens of kilometres as well as from the surrounding plains (the total height of the monument and the hill above the level of Volga is about 190 m). It is worth noting that this method of light modelling is the second best after field simulation method as compared to others, including computer-aided methods which were still unknown at that time.

Apart from the dominant, the compositional and planning structure of the memorial includes also a hierarchised system of thematic sculptural compositions and architectural objects arranged in space and terrain along the path of visitors. As compared to today's level of equipment, the authors disposed very limited lighting capabilities: just spotlights with incandescent lamps (IL) with power of up to 3,000 W. Therefore installed capacity of the main monument only equalled to 240 kW while the total capacity was equal to 480 kW!

High power consumption, short service life, operation expenses, progress in production of more ef-



Fig. 5. The Motherland monument in Kiev



Fig. 6. Kartlis Deda (The Mother of Georgia) monument in Tbilisi

efficient discharge light sources (LS) and new social and aesthetic preferences have given rise to periodic modernisations of LIs of the memorial with corresponding redesign of technical and artistic characteristics of lighting. In the 1980's, the IL-based spotlights S-60, PFS, PZS, PKN were replaced with PGC spotlights based on metal halide lamps (MHL). In the course of preparation to the 60th anniversary of the Battle of Stalingrad, Prosvet LLC designed another modernisation of LIs as a result of which the number of LDs and spotlight batteries had been reduced and light of MHL and high-pressure sodium lamps (HPSL) of different spectra was

used, which created an emotional (although it was stationary) effect of fire flashes on the sculptures rather appropriate in this area. The capacity of LIs of the dominant sculpture has reduced by more than 10 times, down to 18.8 kW, while total capacity reduced down to 26.7 kW [2] (Fig. 3).

In 2017, major reconstruction of the main sculpture The Motherland Calls with further modernisation of LI's for the 75th anniversary of the victory has started. Despite this fact, the grand nighttime show Light of the Great Victory has been conducted on Mamayev Kurgan for thousands of spectators on each 8th and 9th of May since 2016. The anni-

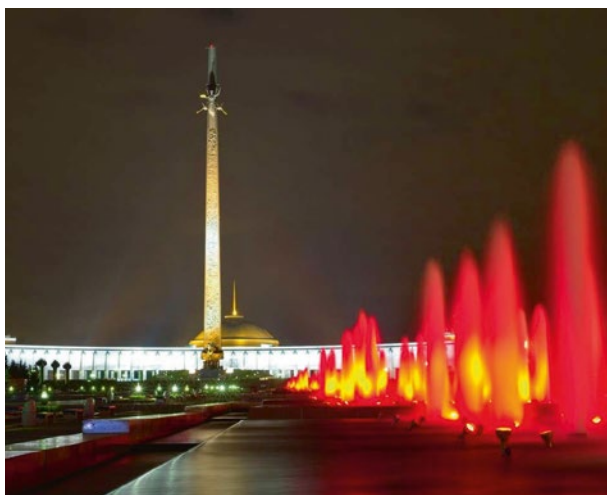


Fig. 7. The Victory Park at the Poklonnaya Hill in Moscow



Fig. 8. The monument to heroic defenders of Leningrad



Fig. 9. The monument to Panfilov's Twenty-Eight Guardsmen

versary-related improvements will be implemented before publication of this issue of the journal, and we plan to inspect them in field (if the COVID pandemic does not prevent it) and then describe our explorations. By the way, information on light design in this important artistic and ideological sphere of art and culture is extremely insufficient. The last special issue of the journal on this subject [1] was published 35 years ago and publications have been nearly absent since then. Why don't specialists share their ideas and results? Aren't memorial sites illuminated? Is light design just a method to make profit confidentially? How do previously installed LIs operate? It is difficult to find information, even in the Internet. For instance, the new large memorial is being constructed near Rzhev and its authors, architect K. Fomin and sculptor A. Korobtsov claim that they do not know who has designed its lighting arrangement presented in the Internet! How is it possible without their approval? (Fig. 12).

The Brest Fortress innovatively illuminated in the 1980's [1] does not demonstrate its tragic images during nighttime excursions nowadays due to lack of funding. It is not known whether the Red Army Glory Hill near Minsk [1] and Khatyn [2], the memorial to Panfilov's Twenty-Eight Guardsmen in Almaty and memorial to the Red Army liberated Riga from fascist invaders [4], the Motherland memorial in Kiev and Kartlis Deda in Tbilisi, etc. (although they are abroad nowadays) are illuminated today (Fig. 4–6).

Designing of memorial sites with different degree of monumentality had been initiated by Soviet architects and sculptors even before the war was over, expressing the strong faith in victory and gratitude to liberators. Tens of rather large and expressive ensembles have been created over 75 years and many of them were state-recognised: the Victory

Park on the Poklonnaya Hill, Dubosekovo station and the Glory Belt in Moscow region, memorials in Novorossiysk and Sevastopol, Magnitogorsk and Leningrad [5], Murmansk and Saratov, the Prokhorovka field [6], etc. All of them are illuminated individually with different degrees of artistic perfection (Fig. 7–11).

The decisions of the state authorities of the USSR and the Russian Federation to award honorary titles of Hero City or City of Military Glory to cities distinctive for wide-spread heroism and bravery of their defenders were more socially important for perpetuation of memory of multi-million victims of the war than local thematic monuments: in 1965–1985, by decrees of the Presidium of the Supreme Council of the USSR, the Brest Fortress and 12 cities of the USSR became hero cities, and in 2006–2009, by decrees of the President of the Russian Federation, 45 cities and towns of Russia accepted the new title of a city of military glory. Probably this list is still not completed while



Fig. 10. The monument to defenders of Soviet Arctic (the Alyosha monument) in Murmansk



Fig. 11. The Rear-front Memorial in Magnitogorsk

memories of few veterans and war workers who are still alive as well as of generations of grateful descendants about the immortal heroism and numerous victims in every family live of, while historians keep exploring the archives and enthusiasts, veterans associations and other people interested in this somber and unforgettable subject keep searching for remains of the fallen. As part of this work, we still need to find adequate ways to reflect historical events and facts appropriately.

Each monument is based on a specific event, the fate of some person or many people which affected the course of battles or reflected their terrors.

Monuments are mostly created by sculptors in cooperation with architects who embed sculptural and architectural forms into actual spatial context. However, authors rarely remember about architectural lighting at the stage of creative search and timely invite a light designer. After approval of massing usually designed under daylight and the cost estimate, light designers' hands are often tied: the authors want their monument (especially if it is a portrait) to be illuminated from above (like during the daytime), the elements of LI's to be non-visible (despite the fact that it is already impossible to embed LDs into structures) and not blinding spectators during night time, the lighting system to be nearly free, and sometimes they even cannot clearly explain what they want from the light designers. Many of these requests cannot be realised. To create, a light designer shall not only get familiarised with an object (models, presentation images) but also shall know the authors' "mythology" usually reflected in the form of some script, i.e. prediction of spectator's reaction when moving through space and time (explanatory note, presentation of the project and underlying ideas, conversations with authors, etc.).

Like an individual creator (although it will be necessary to approve a light design with the project authors), a light designer shall not only compose his/her own illumination script taking the authors' requests into account to some extent, but also,



Fig. 12. The memorial to Soviet soldiers near Rzhev

which is more important, to suggest an original visual interpretation of the authors' ideas based both on the properties of a material and spatial arrangement of an object and on aspects of visitors' adaptation to darkness while moving and perception of a monument during night time. Capacities of modern lighting equipment provide a light designer with capabilities to create a lighting composition with required distribution of luminance and chromaticity over the objects, their gradients, selection luminance and colour contrasts, multi-mode kinetics of lighting, large-scale and rhythmic light modulation of space, etc. Unfortunately, not every designer is competent enough to solve these problems which are based on selection of the most appropriate and efficient means and techniques of lighting.

Analysing the available night time photos of some memorial sites (although we cannot believe them completely due to reasons familiar to specialists but, unfortunately, we have to because we do not possess our own photo information and observations), we can define the common features of light composition:

- The most difficult to find visual dialogue between light environment and light forms is formed randomly because theory and practice usually pay attention to artistic interpretation of light forms and the light environment is created based on primitive standards of utility lighting. Scale and rhythmic modulation of nighttime environment providing perception of its depth and human scale is insufficient.

Street LDs taken from catalogues and forming the light environment are neutral relative to a memorial site architecture in the ideal case, despite the fact that there are examples of their personal, single-piece, specific design in the world.

- Although there are standards of architectural lighting (although they are not perfect) [8], no one knows actual values of object luminance individually and as part of hierarchy (dominant, accents, background objects) as well as luminance contrasts and gradients which affect major visual (artistic) evaluations. Some values rarely published [1] are either exceptions to the rules or calculated values not substantiated by field measurements. It is especially relevant to definition of the value of luminance adaptation in different observation points.

- There is even less hope about scientific data on radiation chromaticity, colour contrasts, gradients and adaptation since no one is interested in it.

- Like during the daytime, images of a memorial site on clear and overcast days, in winter and summer, during night time change not only due to different weather conditions but also due to quality of operation of LIs. They usually lose their integrity and expression over time. Proper imagination could make weather changes an element of programmable lighting kinetics.

Nevertheless, sometimes existing light-composition solutions include original techniques providing a light image of the entire memorial site or of its important element with a creative feature. In the large light ensemble of the Poklonnaya Hill, it is definitely reached by 1418 red fountain jets in five basins along the central valley, corresponding to the number of bloody days and year of the war [7], Fig. 7. In the monument to heroic defenders of Leningrad [5], the original technique of "creeping" light was used: concentrated beams of spotlights creeping radially along the pavement of the oval circus towards the central obelisk create a halo around it in the form of light "lashes". Unfortunately, they do not focus into light along the height of the dominant obelisk as its luminance is obviously insufficient (Fig. 8). The figures of soldiers of the Dubosekovo monument to Panfilov's Twenty-Eight Guardsmen (Fig. 9) are illuminated too primitively: a bright strip of light illuminates the belts of all figures while their heads sink in deep contrast shadows. The monument to defenders of the Soviet Arctic ("Alyosha") in Murmansk flooded with light of HPSL-based LD's is rather ornamentally perceived in winter against the background of cold northern landscape (Fig. 10). The moderately illuminated figures of a worker and a soldier (The Rear-Front Monument) monumentally dominate in the light silhouette of the city (Fig. 11).

In the end, we would like to share two dreams: officials of the Ministry of Culture shall pay attention (funding is desirable too) to social and aesthetic relevance of the subject and the creators (sculptors, architects, light designers) shall share their ideas and results in professional journals.

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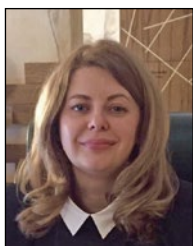
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