

VISUALIZING OF MONUMENT DESIGN ILLUMINATION

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Though that in settlements regular evening illumination carried out by spotlights and bulbs on supports, which are regulated by norms, lighting of buildings, historical monuments and other lineups take a very important part in the evening life of the city. Artificial lighting of buildings performs the aesthetic, ecological and economic task of environmental improvement of the city and its artistic design. To emphasize the atmospheric contribution of the historical building in the evening period the design of monument illumination was created and visualizing of this scene was performed.

Artistic illumination in Europe developed under the influence of two factors: the fashion and the expansion of the power industry. Over the past decades the role of outdoor lighting has increased several times. In modern life evening illumination performs not only the service function with the scattering of darkness, but also represents a means of architectural and artistic image. There are different types of facade illumination [1]. The book [2] shows various lighting techniques of the city. In [3] the basic information about the subject of designing is given - the environment, its typology, tasks and features of the organization of the design process in general during working with environmental forms.

To create 3Dmodel of historical construction was decided to use the technique of 3D scanning. Photogrammetry determines from researched object images its shape, size and position in space by given coordinate system [4]. There are many methods and rules for taking pictures of an object [5] to get a completed realistic 3D model. Some of them were using during photo process with researched monument.

Based on the analysis of many types of different 3D scanning programs [6], the software complex Agisoft PhotoScan has chosen. By this program the model were constructed, but it had many admissions in the structure. The model was imported in the software complex Autodesk Maya, where it has been fixed and completed.

After receiving the correct monument 3D model a process of illumination setting has begun.

Most architectural companies and professional sources advise to try to model monuments illumination natural - daylight [7]. During the lighting setting the types of spotlights [9], percentage assessment of the full building illumination [8], combination with the surrounding lighting of the city and other rules that indicate the requirements of streets, houses, monuments and other elements of the city lighting were taken into account [10]. The figure 1 represents the variant of monument illumination, which has chosen by criterions.



Fig. 1. - An example of illumination design

As a result the 3D model of the monument was created by using photogrammetry. With the help of the Autodesk Maya software system the visualization of monument design lighting was constructed.

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