

OLED-LIGHTING IN ARCHITECTURE OF MODERN SHOPPING CENTERS

KSENIYA MOHOVA, master student, 6th course

NATALIA TREGUB, Candidate of Architecture, Professor, Head of the Department "Furniture Design", Architect

Kharkiv State Academy of Design and Arts

The advantages of OLED-lighting in formation of environmental object-spatial environment (an example, the shopping and office centre AVE PLAZA) are considered.

Light interior design is a multilevel system formed by different illumination devices that simultaneously solves functional, aesthetic and emotional tasks in accordance with the purpose of a room.

Three types of lamps are mainly used in the rooms. There are filament, halogen and fluorescent lamps. Those types of lighting that is closer to natural are more favorable and harmless for human vision. The future of lighting devices belongs to (light-emitting diodes) LEDs, so this study is very actual and important.

Thin and flat shape of organic LEDs makes it easy to integrate them into furniture, walls, ceilings or floors that cannot be done with other light sources. Unlike filament lamps, where light appears as a result of electric current passing through a wire or fluorescent lamps in which current is conducted through the gas, organic LED lighting works by passing electric current through one or more layers of ultrathin organic semiconductors. Such parameters as shape, size, color, lighting, lamp design can be varied and people can choose them to their taste. Organic LEDs make it possible to create ultra-thin (thickness of a sheet of paper), completely flat light sources. OLED is waterproof and airtight, it can change the brightness of the light it doesn't emit heat. Organic LEDs emit diffused non-dazzle light with high color rendering index. Unlike all other lamps, except fluorescent, OLED shine evenly, that is, they have low overall brightness. OLED are thin and flat, they can be on underlining of any shape. In addition, they are instantly turned on and consume little power that distinguishes them from other sources.

Lighting of spaces must necessarily be of two types, that is, the main and accentual. Very powerful lights that have certain characteristics and give diffused light are usually used for the main lighting. Sometimes, the beam of light is directed at the ceiling or any neutral surface, in case of reflection the scattered light appeared again, it does not tire the eyes and evenly illuminates the room.

Accentual lighting is extremely diverse. Light panels, illumination of shop windows or any other interior elements give unique charm to the mall.

Placement of small OLED-modules that are distributed in space are chosen for compositional solutions in general lighting of the atrium. These sources reflect light from the ceiling and give most of it back, dispersing evenly throughout the space. The reflected light makes the interior space weightless and transparent, and gives the impression of the most comfortable and uniform lighting. A large number of small

lights form a decorative spiral mass, covering the entire scope of multilevel interior space. This design solution is interesting for visitors of the shopping and office centre on each floor. To create different lighting scenarios that can vary, for example, depending on the season, you can place a large number of OLED-modules in the form of butterflies, flowers and snowflakes across the atrium area and adjust their brightness and position in space.

Another variant of introduction of OLED lighting in the atrium in the shopping and office centre is the principle of emphasis of functional interior elements such as escalators, elevator shafts, barriers, floors), which reveals the tectonic and structural features of the architecture. This lighting can be built in and as a continuous band. This built in lighting emphasize functional areas and make atrium visually larger. The combination of different methods of lighting shows that lighting should be used as a means of visual correction of the size and proportions of the room.

One of the variants for the introduction of OLED-technologies in lighting of shop windows is composition of OLED-modules that will serve not only for lighting and highlighting of decorative elements of the show windows, but they will act as a decorative element together with lamps. In this case, such properties of light as brightness, light rhythm and color are used. The topic of the scenario «Seasons» allows us to emphasize the picturesqueness of the shop windows. We can notice obvious advantages of moving light systems that allow you to change the emphasis. All this provides more opportunities for the combined usage of light. A lot of light points instead of one powerful lamp are used in the show window. It allows making more detailed stress. Successful light concept of the store facilitates introduction with the proposed product.

Landscape lighting is one of the most popular trends in modern design because it allows you to see the landscape and the surrounding architecture in the most favorable light.

OLED lighting with minimal design is suitable for landscape architecture, as they do not create a strong blinding effect.

LEDs are successfully used in outdoor lighting because they have a high level of protection against moisture and corrosion, resistant to vibration, impact resistant and can withstand the impact of different temperatures. In addition, they do not require special care, they are easy to operate and consume little power. In terms of design, the advantages of semiconductor light sources are good color and wide range of color temperature. Thanks to its technical characteristics they can be used in lamps of different shapes and can be built in into any surface.

For example, OLED-modules can be used to illuminate the area of the square. They will serve as a framework where decorative design lamp will be mounted.

References

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