

“Importance of Artificial Light and Natural Light in Museum”

Ar.Prof.Pratiksha Langote, Nidhi Samra

Bachelor of architecture

Sant gadge baba amravati university amravati

Submitted: 10-05-2022

Revised: 15-05-2022

Accepted: 18-05-2022

ABSTRACT

They form a geometric definition of space as they separate physical elements such as roofs, walls, and floors that separate the interior from the external environment. The element of light that gives space three dimensions is one of the sensory elements and is designed to impress through other features such as color and texture. Although the use of artificial and natural light is an integral part of the perception of space. You can see that lighting design is part of the entire design process, from materials to organization. Light emitting diodes (LEDs) help practitioners understand the difference between LEDs and other traditional light sources. LEDs are very effective and efficient for color light applications. Unlike traditional signs and signals that use a nominally white light source and a colored glass or plastic filter or lens to create a sign or signal, colored LEDs do not require filtering. The light absorbed by the filters of traditional products is essentially wasted, and because of this waste, the luminous efficiency of LED signs and signals is often higher than that using traditional white light sources.

KEYWORDS:Artificial lighting , Natural lighting , Artifacts , Sun , Museum , Angle , Color.

I. INTRODUCTION

The museum is a temple where art and knowledge are of paramount importance. It has a balance of dedication to art. A museum is defined as a semi-formal learning place to collect, display and interpret artifacts for educational purposes. Lighting plays an important role in developing the interaction between people and museum crafts in a defined space. The museum's goal is to create an interactive experience for guests. There are usually two types of light in the environment: natural light and artificial light.

Almost all human activities depends on light. Sun is a prime natural source of light but artificial lighting plays almost main role in our

daily life. These artificial lights are produced by mechanical lamps and electrical lamps. For a museum, the role of light is an essential part of creating an atmosphere prime for discovery, while also preserving artifacts.

WHAT IS ARTIFICIAL LIGHTING :

The term artificial lighting generally refers to the lighting emitted by a light bulb. This light is artificial and can be emitted from light sources such as fire and candlelight. Artificial light is generally easy to operate achieve the desired lighting result. Light is amplified or weakened, oriented, bundled and colored. In this way, lighting can produce different effects depending on the needs of the space.

There are two basic ways to run a building. These are :

- ✓ **NATURALLY** - By sunlight received from the sky.
- ✓ **ARTIFICIALLY** - By electric lamp or other artificial light source.

NATURAL LIGHT AS TWO DIFFERENT LIGHT SOURCES :

- ✓ **SUNLIGHT** - Part of the solar radiation that reaches the surface as parallel rays after being selectively attenuated by the atmosphere.
- ✓ **SKYLIGHT** - The part of the sun that reaches the surface of the earth due to scattering in the atmosphere.

Therefore, sunlight and skylights can be considered as direct and diffuse components of natural light.

TYPES OF LIGHTING :

Lighting is categorized as general lighting, accent lighting, or task lighting, depending on its intended use. These lights are highly dependent on the distribution of light produced by the luminaire.

✓ **TASK LIGHT** : Task lights are useful for specific tasks and activities such as reading, writing, sewing, cooking, homework, and checking check balancing. Task lights should be bright enough to prevent eye strain, without distracting glare or shadows. It is convenient to set task lighting for the control separately from general lighting.

Types of lights that provide task lighting:

- Pendant light
- Portable or desk lamp

✓ **AMBIENT LIGHT** : It combines the reflection of light from different surfaces to create a uniform illumination called ambient light. Task lights cannot illuminate the rest of the space, so creating ambient lighting in the space requires another type of lighting system.

Types of lights that provide room lighting in the atmosphere

- Chandelier
- Ceiling mounted fixture
- Wall mounted fixture
- Track light
- Floor lamp

✓ **ACCENT LIGHT** : Accent lighting is the use of light focused on an area or object to create a point of visual interest. Accent lighting is often used to highlight architectural features, paintings, plants, sculptures, or collections. Accent lighting adds an extra dimension to the room, and with proper use of accent lighting, you can make the room look bigger

Types of fixtures that provide accent lighting :

- Track light
- Wall bracket

PURPOSE OF ABOVE LIGHTS IN MUSEUM

:

- ✓ Task light: Facilitates certain tasks that require more light than general lighting requires.
- ✓ Ambient light: Provides common lighting indoors for daily activities and outdoors for safety and security.
- ✓ Accent light: Attention to the features or improve the aesthetic quality of the indoor or outdoor environment.

MUSEUM SPACES :

- ✓ Most viewers are positively or negatively affected by lighting, but cannot explain why they led to a positive or negative experience.
- ✓ Ceilings, walls, floors, and other features, as well as materials and surfaces, can be a

surprising factor in the lighting of museum spaces.

- ✓ In museums, these shapes and textures are just as important to light as artifacts.
- ✓ When planning museum lighting, the lamp angle and viewing angle are taken into account.
- ✓ Two or more lights are arranged at a 30 degree angle to accentuate the 3D shape of the display.
- ✓ For 2D objects, the lights are placed at an angle of 30 degrees from the vertical, creating a minimal shadow and glare-free display.
- ✓ The 45 and 75 degree viewing angles from the horizontal to the ramp position of the fixture are measured from a point on the wall that should be 5.4 feet above the finished floor.
- ✓ For permanent objects or self-contained displays, the lamp position is ideally 60-70 degree.
- ✓ Therefore, the tilt of the lamp, the position of the lamp, and the viewing angle all contribute to the lighting design of Museum 16. The IESNA standard provides a lighting standard that allows guests to see the shape and texture.

II. CONCLUSION :

Sensitive materials should be carefully published to prevent short-term deterioration. Bringing out the details with right-angled light is essential for lighting designers to enrich their experience. LED technology seems to meet most of the requirements for this task. Sensitive materials should be protected with proper light.

REFERENCE :

- [1]. <http://www.electrical-knowhow.com/2012/03/artificial-lighting-types-and-design.html#>
- [2]. https://www.academia.edu/30627407/lighting_in_museum
- [3]. International Journal of Scientific and Technological Research Vol 4 , No 9 , 2018
- [4]. https://www.erco.com/download/content/30media/7erco_light_for_museums/erco-light_for_museums-en.pdf