

12. Psychic and Light Microclimate

Colors of the Internal Environment

- **The color of the indoor environment** can be expressed by:
 - Surface color and light color
 - Surface material
 - Combination of colors on multicolored surfaces
 - Size of spaces

Indoor Lighting

- Lighting can be divided in term of light sources:
 - **Daylight** - natural, scattered light and direct sunlight
 - **Artificial lighting** - artificial sources
 - **Combined lighting** - Daylight illumination supplemented with artificial light

Indoor Lighting

- The criteria used to describe the light microclimate are:
 - **Daylight factor**
 - **Illumination**
 - **Temperature of chromaticity**
 - **Color rendering index (CRI)**
 - **Glare index**

Indoor Lighting

- The **light** is a visible glow capable of inducing an immediate visual perception evaluated by normal human sight. The range of visible radiation is within the wavelength range from 380 to 780 nm.
- **The daylighting factor** is the ratio of illumination at a point on a defined plane by a direct or reflected skylight at that time to a comparative illumination of the outer, unshaded horizontal plane under the assumed or known distribution of sky brightness.
- **Light intensity (illumination)** is a photometric quantity defined as the light flux incident to the surface unit. It is therefore the ratio of light flux (lumens) and area (m^2).

Color of the Space

- **Visual perception** of colors creates feelings of warmth and cold.
- **Color** is the property of light, or the substance from which the light comes out. Color expresses a perception that is created on the retina by visible electromagnetic radiation (waves).
- **The color perception** depends on the spectral composition of the incoming light (dependence of light flux and frequency or wavelength) and its intensity relative to the background.

Effects of Psychic and Light Stress

- **Visual perception** of the internal space is closely related to the **central nervous system**.
- Light microclimate encourages feelings of anger, excitement, or joy and serenity.
- The light microclimate is defined by the **geometric dimensions of the space, the type of light sources, the number and layout of the luminaires, the uniformity of lighting, the color rendering and the contrast in space.**
- Mental fatigue can be a consequence of all components of the environment on the **human nervous system**.