

Evaluation of the visual environment

[Design](#), [Architecture](#)



EVALUATION OF LIGHTING (The Visual Environment) of (affiliation)

EVALUATION OF LIGHTING Light is essential to humans, which is why most activities are done during the daytime, when light is still around. This was before the discovery of fire, before candles got manufactured, and before electricity was also invented, by which light can be summoned even during night time at the person's convenience. Electricity provided modern-day conveniences, such as appliances like television and cameras, but more importantly, it allows people to work even when sunlight is no longer around, due to artificial lighting. It gives people absolute freedom from darkness at the flip of a switch. This assignment discusses some important characteristics and features of light, more specifically regarding electric lighting in a modern architectural site. Architectural design utilizes light to maximum effects, whether for interiors or exteriors. Its twin objectives are for functionality and aesthetics, using interactions between light and surfaces. It takes into consideration the human vision system (camera-type eyes) and its reaction to light. There are about six different vision systems in the animal world, two examples of which are the eyes of the insects, and another are the eyes of the cat family. The human vision detects light on the rod and cone cells in the retina, allowing for conscious perception of both depth and distance, and also color differentiation (up to ten million colors) due to photopigments (Land & Nilsson, 2012, p. 38). Scientific knowledge of the properties of light and vision, together with the interplay of light on various types of surfaces has enabled many practical applications, such as in architectural lighting to enhance the human living experience. The paper enlightens how this knowledge is used in modern living conditions to best

effect. It delves into the concepts of reflection, transmission, and absorption, all pertaining to light. This knowledge also is applied to other modern concerns, such as energy efficient lighting (Sumper & Baggini, 2012, p. 230).

Architectural space in greater detail – the space I am describing here pertains to my own bedroom, which is located on the second floor of the house. It is approximately 4 meters by 6 meters, a bit luxurious for a bedroom but it was originally designed for two people (intended to be sleeping quarters for me and my brother but he has since left home and now lives separately). There is a big-sized mirror on one side of the wall, a window each on either of the two sides, and has a portion of the roof in glass (near the edge), to let sunlight in during daytime. The electric lighting can be described as partly functional and partly for mood purposes, as there are a number of electric bulbs on the ceiling, which I can select which to turn on, at what particular time of the day or night, to suit my mood and my purpose. There is one big light bulb at the center of the white-painted matte ceiling, the floor is of parquet hardwood materials, with a carpet of light brown color but it only covers half of the room floor, underneath the bed itself. Reflection – the big mirror on one wall provides reflected light during daytime, so there is no need for an electric light, plus the light coming from outside through the two windows. The lighting is considered adequate during daytime, as the newly-painted white matte ceiling provide a diffused reflectance value of perhaps about 0.75, per my rough estimation. Except for a mirror, there are no other surfaces or materials which give specular reflection within the room. Transmission – the two sides or walls of my room each has a big French window, which provide enough light transmission, maybe in the vicinity of .

75 transmittance value, since glass on them are clear, the glass is likewise not colored. This means the room feels airy during the day and provides an ambiance of being in the outdoors; refraction is only very minimal, I think. It can be noted the lower third of the windows are fitted with frosted glass with some designs. Absorption – the floor carpet absorbs both light and heat, preventing any reflected light from causing glare to the eyes. When using my laptop, I make it a point to be facing away from the mirror, so the luminance from the laptop screen is reduced. Besides the big light bulb at the center of the ceiling, there are two smaller lights, with the luminous flux much lesser as these are made of translucent material, with illuminance on the mirror reduced too. Most luminaire today are designed to give maximum luminous efficiency, utilizing the least electrical energy but gives optimum illumination possible with new green technologies (Weinstein, 2010, p. 225) like LED. References Land, M. F. & Nilsson, D. E. (2012). *Animal eyes*. Oxford, UK: Oxford University Press. Sumper, A. & Baggini, A. (2012). *Electrical energy efficiency: Technologies and applications*. Hoboken, NJ: John Wiley & Sons. Weinstein, N. (2010). *Green streets and highways 2010: An interactive conference on the state of the art and how to achieve sustainable outcomes*. Reston, VA: American Society of Civil Engineers (ASCE) Publications.