



elt 

**HUMAN CENTRIC
LIGHTING**

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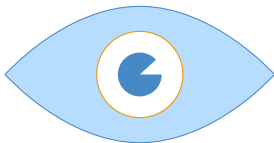
It is a concept that refers to lighting focused on the human being and the impact that artificial light has on the health, well-being and performance of the individual. It sets out to create the most appropriate setting at any given time to maximise user comfort.

Among other elements, light affects mood, rest and performance at work, requiring the right lighting for the appropriate time and place. Human Centric Lighting (HCL) provides an optimal level of light and helps create a space that resembles a natural light environment.



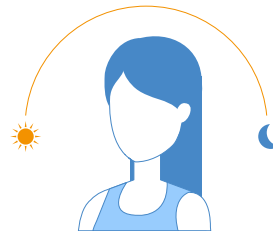
LIGHT: A SOURCE OF WELL-BEING FOR THE INDIVIDUAL

BENEFITS



Visual comfort

Improving the amount and quality of light.



Health and well-being

Helping the human body synchronise with light-darkness cycles.



Energy efficiency

Optimising energy use.

Light (whether visible or invisible) influences the biochemistry of the brain, the endocrine system and metabolic processes, among others. Generating light that improves the human experience is the main objective of **Human Centric Lighting**.

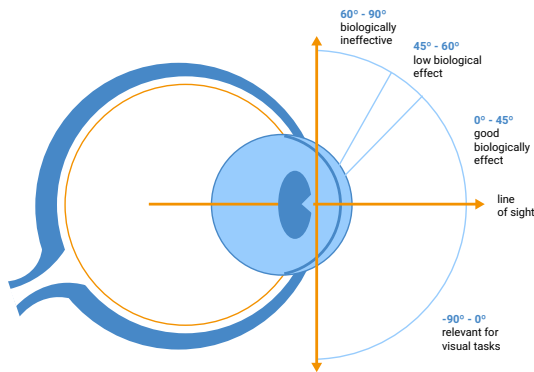
Human Centric Lighting studies focus on **three aspects** closely linked to each other: the visual, emotional and biological effects of light.

Visual effect

Relating to the **amount and quality of light**, it directly impacts on how human beings perform their daily tasks.

Emotional effect

The **brightness, colour and intensity** of the light directly act on human senses in the lit surroundings.



Biological effect

This is caused by **stimulating the photoreceptors** which regulate cortisol (the stress hormone) and melatonin (the sleep hormone, thus directly affecting the **biological clock** of the individual).

The eye also has cone photoreceptors that play an important role in the non-visual effects of light and which are highly sensitive to the shorter wavelengths of the visible spectrum.

The **non-visual effects** are those which impact on **moods**, sleep regulation and human capabilities, among other aspects.

APPLICATIONS

GOOD MORNING!



TIME TO WORK



CIRCADIAN RHYTHMS

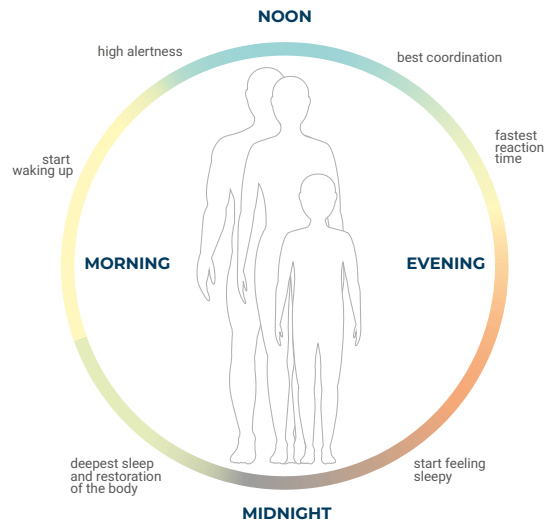
The circadian rhythms are **physical, mental and behavioural changes**, which follow a daily cycle and primarily respond to the light and darkness surrounding an organism.

The spectral composition of natural light changes throughout the day with the passing of the hours. This change stabilises our biorhythms, so that we wake with the sun and go to sleep at night.

A lighting design adapted to the circadian rhythms **controls artificial light** during the day so that it resembles natural light: colder during hours of activity and warmer when relaxing before sleep.



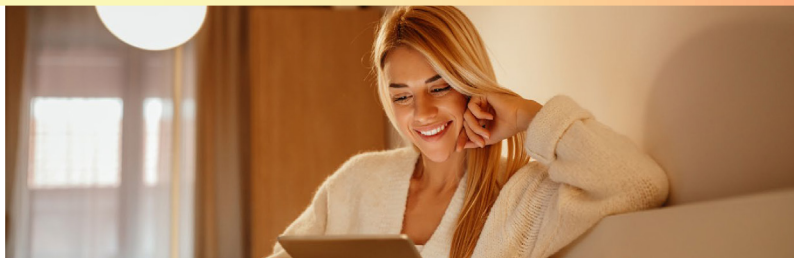
“changing everyday life”



A COFFEE?



RELAX TIME



HCL SOLUTIONS

by **ELT**

Lighting solutions adapted to the biological rhythms of individuals as they go about their daily lives, taking into account their diverse surrounding environments.

Regulating the main lighting parameters

Optimised and individualised management

Creating personalised settings and animations

CREATING RESPONSIBLE LIGHTING FOR EVERYONE



Mobile **app** with built-in Bluetooth Low Energy (BLE) technology, able to quickly and simply **adjust the light** to the personal and/or professional needs of the individual.



Smart street lighting management solution to improve the lives of cities and their inhabitants.

INTEROPERABILITY OF URBAN SERVICES





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