Contribution ID: **29** Type: **not specified**

How daylight design effects architecture and human well-being

Friday 25 August 2023 15:15 (15 minutes)

The presentation examines the effect of daylight control systems on the interior user by means of completed projects. Time-lapse videos will be shown of how the sun models the illumination of the interior over the course of a day, taking into account the position of the sun.
In order to make these optical, design effects comprehensible, the mirror optics of the light control systems and the type of glare-free light guidance within different façade zones are also discussed. The principle of bifocal blinds is explained, which have an outward focus to protect against overheating and an inward focus for better room illumination. Furthermore, systems are explained that direct the zenith light into the interior depth in the skylight area of a window and serve to save artificial lighting.
The light guidance of the mirror optics is explained by means of ray tracings as well as interior photos. The visual appearance of the systems and the façade design will be discussed on the basis of completed projects with external, internal or integrated systems in insulating glass.
Furthermore, daylight redirection technology will be evaluated from an urban climatic point of view with regard to its ability to prevent the heating up of the streets and inner-city spaces by reflecting the sun back into the sky.
As far as time permits, the health effects of improved daylight illumination are also discussed and explained on the basis of medical studies in a school as well as under the aspect of the length of stay depending on the compass direction of patient rooms in hospitals.

Keyword 1

Daylight systems

Keyword 2

Daylight redirection

Keyword 3

Room depth illumination

Keyword 4

Mirror Optics

Keyword 5

Bifocal louver design

Contact by email

I agree to get contacted by the conference organizers by email.

Author: Dr KÖSTER, Helmut (Köster Lichtplanung)

Presenter: Dr KÖSTER, Helmut (Köster Lichtplanung)

Session Classification: Presentations

Track Classification: Planning with daylight