

March 2014

Public strategy – (Day)Lighting Design Research Group

Research focus

(Day)lighting design research focuses on the relationships between the visual and thermal comfort, health and well-being of the building occupant as well as the energy consumption and sustainability aspects, and the luminous environment and general indoor climate.

Subject explanation

(Day)lighting is affected by different conditions: The design of the building envelope and building geometry, especially its openings for daylight, sunlight and view provisions, and the design and operation of electric lighting installations, including their control systems. Of considerable interest are the resulting consequences for energy consumption and sustainability associated with the provision of comfortable and indoor environment conditions. This requires collaboration with experts outside architectural engineering at national and international level.

Applications

- new concepts for integrated design of building envelope systems for high-quality (day)lighting
- new lighting quality metrics for use in (day)lighting design and tools for the advanced assessment of lighting quality
- new methods for assessing the impact of views from buildings and visual environment inside buildings on occupant well-being, health etc.
- simple methods and tools for establishing realistic building occupancy patterns for the determination of lighting and shading control strategies
- simple methods for accurately determining the energy consumption of daylight-linked lighting systems.

Disciplines

- Daylighting systems
- Daylight-linked electric lighting
- Electric lighting systems
- (Day)lighting retrofits
- Lighting system assessment
- Lighting assessment tools and methods
- Visual performance
- Visual comfort
- Visual perception
- Visual ergonomics
- Light and health
- Energy efficiency and sustainability in lighting design