

Energy Efficient Future Electric Lighting for Buildings

ANNEX 45

More efficient use of lighting energy would limit the rate of increase of electric power use, reduce the economic and social costs resulting from constructing new generating capacity, and reduce the emissions of greenhouse gases and other pollutants. At the moment fluorescent lamps dominate office lighting. In domestic lighting the dominant light source is still the inefficient incandescent lamp. Considerations for optimising the energy efficiency of lighting include energy savings, daylight use, individual control of light, light quality, emissions during the fitting's life cycle, and total costs.

The goal of the EBC project "Energy Efficient Future Electric Lighting for Buildings" has been to identify and to accelerate the widespread use of appropriate energy efficient high-quality lighting technologies and their integration with other building systems, making them the preferred choice of lighting designers, owners and users.

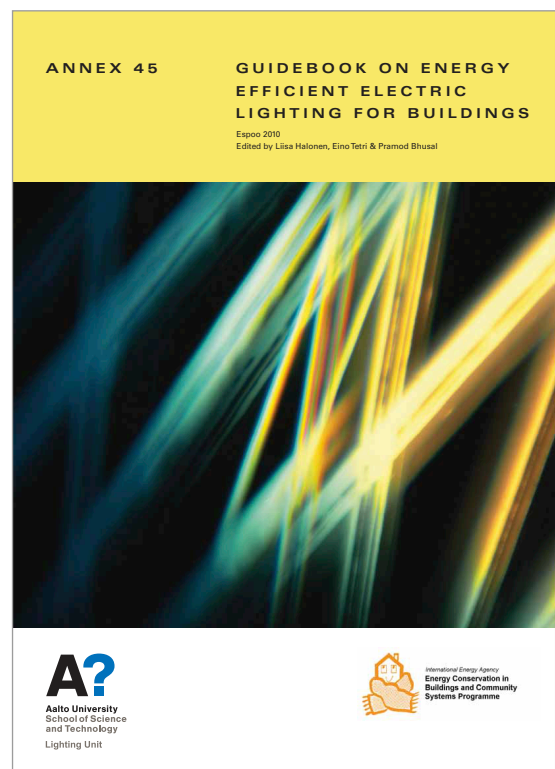
The project intended to reach its objective by means of four research areas:

- Targets for Energy Performance and Human Well-Being
 - The objective was to document the effect of design on energy use, lighting quality and human performance and give examples of good practice
- Innovative Technical Solutions - The objective was to identify, assess and document the performance, energy and economical criteria of existing promising and innovative future lighting technologies and their impact on other building equipment and systems

- Energy-Efficient Controls and Integration - The task focused on controls that enable the occupant and facility manager to modify the electric lighting according to personal needs and preferences, within acceptable building operative requirements. Based on modern communication technology, personalisation and integration of these controls with other building systems will be an important part of the subtask.

OUTCOME

- A guidebook has been published for designers on energy efficient electric lighting for buildings



INTERNATIONAL ENERGY AGENCY

The International Energy Agency (IEA) was established as an autonomous body within the Organisation for Economic Co-operation and Development (OECD) in 1974, with the purpose of strengthening co-operation in the vital area of energy policy. As one element of this programme, member countries take part in various energy research, development and demonstration activities. The Energy in Buildings and Communities Programme has co-ordinated various research projects associated with energy prediction, monitoring and energy efficiency measures in both new and existing buildings. The results have provided much valuable information about the state of the art of building analysis and have led to further IEA co-ordinated research.

EBC VISION

By 2030, near-zero primary energy use and carbon dioxide emissions solutions have been adopted in new buildings and communities, and a wide range of reliable technical solutions have been made available for the existing building stock.

EBC MISSION

To accelerate the transformation of the built environment towards more energy efficient and sustainable buildings and communities, by the development and dissemination of knowledge and technologies through international collaborative research and innovation.



Optimised daylighting with LEDs for general lighting.

Project duration

Completed (2004 - 2009)

Operating Agent

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Further information

www.iea-ebc.org