

# Position Paper on Healthy Buildings

## Putting people at the centre of building construction and renovation

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Light and darkness have a direct impact on our circadian system, or biological clock. As a result, the quantity, spatial distribution, spectral properties, and cycles of light all affect our health and wellbeing. Everything from our moods to our ability to work, relax, be creative and socialize all depend on the provision of quality lighting. As the average person spends an estimated 90% of their time indoors, the benefits of lighting must be a priority during the design, construction and use of Healthy Buildings.

Although the momentum around Healthy Buildings is growing, the issue is becoming increasingly urgent. If Europe is to fulfil its 2050 climate and energy goals, 3% of its buildings will need to be renovated every year – twice as many as are being renovated today. With 97% of EU buildings in need of renovation, now is clearly the time to ensure that all buildings – both new and renovated – are fit for 21st century living and working.

By leveraging the power of Human Centric Lighting and technical building systems, we can improve productivity and contribute to inhabitants' health and wellbeing. But this needs to be reflected in European legislation in a way that benefits both citizens and organisations. That is why LightingEurope, together with various industry sectors, continues to advocate for better Indoor Environment Quality<sup>1</sup>.

## Lighting in a Healthy Building

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Although traditional electric lighting does wonders in terms of the visual, it simply lacks the intensity, timing, colour, dynamics, and other non-visual benefits that only natural light offers. This is where Human Centric Lighting (HCL) comes in. Using daylight as the baseline for quality lighting, HCL brings the benefits of natural light inside. More specifically, HCL supports the health, wellbeing and performance of humans by combining the visual, biological and emotional benefits of light<sup>2</sup>.

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<sup>1</sup> <https://www.buildings2030.com/>

<sup>2</sup> [https://www.lightingeurope.org/images/publications/position-papers/LightingEurope\\_and\\_IALD\\_Position\\_Paper\\_on\\_Human\\_Centric\\_Lighting\\_-\\_February\\_2017-modified\\_version-v2.pdf](https://www.lightingeurope.org/images/publications/position-papers/LightingEurope_and_IALD_Position_Paper_on_Human_Centric_Lighting_-_February_2017-modified_version-v2.pdf)

HCL provides the right light, at the right place and the right time for the activities we carry out each and every day. That is why a wide range of users can benefit from HCL<sup>3</sup>, including patients, residents, and staff in hospitals and nursing homes; students and teachers in schools; employees in offices; workers in manufacturing sites; and residents in their private homes. Furthermore, recent scientific developments indicate that the benefits of HCL vary depending on the application. These benefits include:

- **Visual:** good visibility, visual comfort, safety, orientation
- **Biological:** alertness, concentration, cognitive performance, stable sleep-wake cycle
- **Emotional:** improved mood, energize, relaxation, impulse control

Within the HCL design process, lighting should address the core issues of safety, task requirements and occupant needs in a coherent and integrated manner. Within the framework of a Healthy Building, this means ensuring that the HCL system is:

- **Dynamic:** that the light can vary in level and, at the very least, be ‘dimnable’ (lower light levels) and, preferably, also ‘boostable’ (higher light levels);
- **Tuneable:** light can vary in spectrum; and
- **Includes default lighting control setting:** personal control should be available so the user can influence the light settings.

The introduction of LED light sources has revolutionised the lighting industry and opened the door to many exciting new HCL-related opportunities not possible with previous technologies. For example, Intelligent Lighting Systems make indoor environments more attractive and functional, allowing users to dynamically adapt light to their specific needs. LED lights also allow for increased energy efficiency and savings, especially when used within a well-planned HCL system.

## Our recommendations

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### Add new requirements in the Workplace Directive

The current Workplace Directive (89/654/EEC) requirements only consider health within the framework of injury prevention. We urge new policymakers to revise the Directive to include new requirements that move beyond pure risk prevention and promote workplace wellbeing. These new requirements should take into consideration the ergonomics of the visual environment.

### Build on the Energy Performance of Buildings Directive (EPBD)

The revised EPBD goes beyond energy efficiency and introduces measures that address healthy indoor climate conditions and improving thermal and visual comfort when calculating the energy needs of technical building systems – both of which involve lighting.

The Directive also introduces the Smart Readiness Indicator (SRI), which aims to show to what extent a building has implemented smart solutions. Unfortunately, this indicator was only adopted as a voluntary measure. To maximise its energy savings potential and capture all the benefits it can bring to the wellbeing and performance of building occupants, the SRI must be fully adopted in a harmonised fashion across the European Union. That is why LightingEurope recommends that the SRI be made a mandatory part of the EPBD

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<sup>3</sup> <https://www.valueoflighting.eu/>

during its next review. In the meantime, we call on all Member States to implement the SRI today.

Furthermore, the recently revised EPBD strongly increases the energy efficiency requirements for technical building systems, including 'built-in lighting'. However, to fully benefit from the savings potential offered by lighting, the EPBD should shift its approach from 'built-in lighting' to (intelligent) lighting systems. Such a shift will allow for additional savings to be achieved, while at the same time ensuring increased comfort and wellbeing for building users.

Enforcement of renovation strategies at the national level, in-line with the EU's 2050 climate and energy objectives, should also be ensured. This can be done by conducting post-occupancy evaluations of buildings to confirm intended outcomes and help improve current best practices.

### **Focus on macro-benefits**

Impact Assessments of existing and new legislation should, by default, take into consideration the wider benefits of a healthy workforce. Instead of just looking at localised efficiency and productivity, this means considering a regulation's impact on the cost of social care and its secondary energy impact on a Member State. Efficiency measures that, at a micro level, reduce energy usage but result in lower productivity will, at a macro level, move energy and resource usage to the healthcare and/or domestic environments. In doing so, it will also increase resource use within the workplace by an equivalent amount.

### **Include requirements in Green Public Procurement**

A reference to Human Centric Lighting should be included in Green Public Procurement guidelines and should be a prerequisite for bids on the illumination of such public indoor spaces as public administration, hospitals and schools.

### **Put people at the centre of all building design**

One of the biggest investments of any organisation is its employees. Improving their wellbeing at the workplace not only benefits their personal health, it also increases performance. We believe that improving a building's indoor environment, and thus the well-being of its occupants, should be a priority – and one that authorities have an important role to play in. That is why we encourage authorities to join us in raising awareness about this important issue and adopting the legislation needed to make it a reality.

## **Contact**

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For further information on this topic, please contact Marion Ebel, Senior Policy Officer, at [marion.ebel@lightingeurope.org](mailto:marion.ebel@lightingeurope.org).

LightingEurope is the voice of the lighting industry, based in Brussels and representing 34 companies and national associations. Together these members account for over 1,000 European companies, a majority of which are small or medium-sized. They represent a total European workforce of over 100,000 people and an annual turnover exceeding 20 billion euro. LightingEurope is committed to promoting efficient lighting that benefits human comfort, safety and well-being, and the environment. LightingEurope advocates a positive business and regulatory environment to foster fair competition and growth for the European lighting industry.

More information is available at [www.lightingeurope.org](http://www.lightingeurope.org).