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Implementation of the Energy Performance of Buildings Directive – Lighting as part of Renovations

Introduction

The revised Energy Performance of Buildings Directive (EPBD) was published in the EU Official Journal on the 8th of May. Member States now have two years to implement the legislation at the national level.

The revised EPBD defines two distinct concepts for the renovation of buildings. These are: *major renovations* and *deep renovations*.

A major renovation refers to the renovation of a building where either:

- the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25% of the value of the building, excluding the value of the land upon which the building is situated; or
- more than 25% of the surface of the building envelope undergoes renovation.

A deep renovation refers to a renovation that focuses on the energy efficiency of essential building elements, and which transforms a building:

a) before 1 January 2030, into a nearly zero-energy building[1];
b) from 1 January 2030, into a zero-emission building[2].

Member States may choose whether to use option (a) or (b) above in their national implementation.

A deep renovation can be conducted as a 'staged deep renovation,' meaning it is carried out in a series of defined steps, as outlined in a renovation passport.

With this paper, we would like to stress that all building renovations must address lighting and share our recommendations for the implementation of the related requirements at the national level.

[1] A nearly zero-energy building is defined in the revised EPBD as a building with a very high energy performance, and where the very low amount of energy required is covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced onsite or energy from renewable sources produced nearby.

[2] A zero-emission building is defined in the revised EPBD as a building with a very high energy performance requiring zero or a very low amount of energy, producing zero on-site carbon emissions from fossil fuels and producing zero or a very low amount of operational greenhouse gas emissions.

The importance of lighting/lighting systems for renovation

In today's environmentally conscious world, energy efficiency is crucial. By incorporating energy-efficient lighting solutions, such as LED luminaires and lighting control systems that automatically adjust electric lighting based on factors like occupancy and daylight availability, refurbished buildings can significantly reduce energy consumption and operating costs. This not only benefits the bottom line but also aligns with sustainability goals, reducing the building's carbon footprint and contributing to a greener future.

Lighting directly impacts visual comfort, ensuring that occupants can perform tasks without straining their eyes, which is crucial for productivity and overall well-being. Good lighting helps occupants navigate spaces safely, identify potential hazards, and maintain security by minimizing dark areas where unauthorized activities could occur. Dark or poorly lit areas increase the risk of accidents and may create opportunities for security breaches. Additionally, lighting significantly enhances the aesthetic appeal of indoor spaces. Well-designed lighting can accentuate architectural features, highlight focal points, and create a pleasant and inviting ambiance.

Additionally, recent years have seen a growing appreciation for the critical role lighting plays in non-visual effects, including the regulation of human circadian rhythms. Natural light, or lighting that mimics natural light, can synchronize our internal body clocks, promoting better sleep patterns and enhancing mood and alertness during the day. Conversely, poor lighting quality, such as excessive flickering or glare, can cause headaches, eye strain, and fatigue, negatively impacting occupants' health and productivity. Refurbishment provides a unique opportunity to incorporate these better-understood 'new' components of good lighting into the design.

Recommendations for the implementation of the EPBD

To grasp the full benefits of better lighting, we recommend that the transposition of the EPBD at the national level includes:

- **A focus on non-residential buildings (public and commercial buildings)**, as already set out in the Energy Performance of Buildings Directive. We believe that public buildings should lead by example.
- **Mandatory minimum requirements for lighting in Indoor Environmental Quality (IEQ).** Recommendations for the required lighting of workplaces are covered by the European standard EN 12464-1. Public buildings should lead by example in all Member States.
- **The use of LED lighting, in combination with controls and sensors.** A full renovation lighting installation should include LED based luminaires, combined with controls and sensors, with a minimum Smart Readiness Indicator (SRI) level. A simple replacement of a lamp or luminaires should be avoided. Introducing a whole new lighting system, as required in EPBD, will lead to greater energy savings, a better indoor environment for occupants of buildings and ability to exchange lighting data.

Contact

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LightingEurope is the voice of the lighting industry, based in Brussels and representing 32 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 wellbeing, 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.