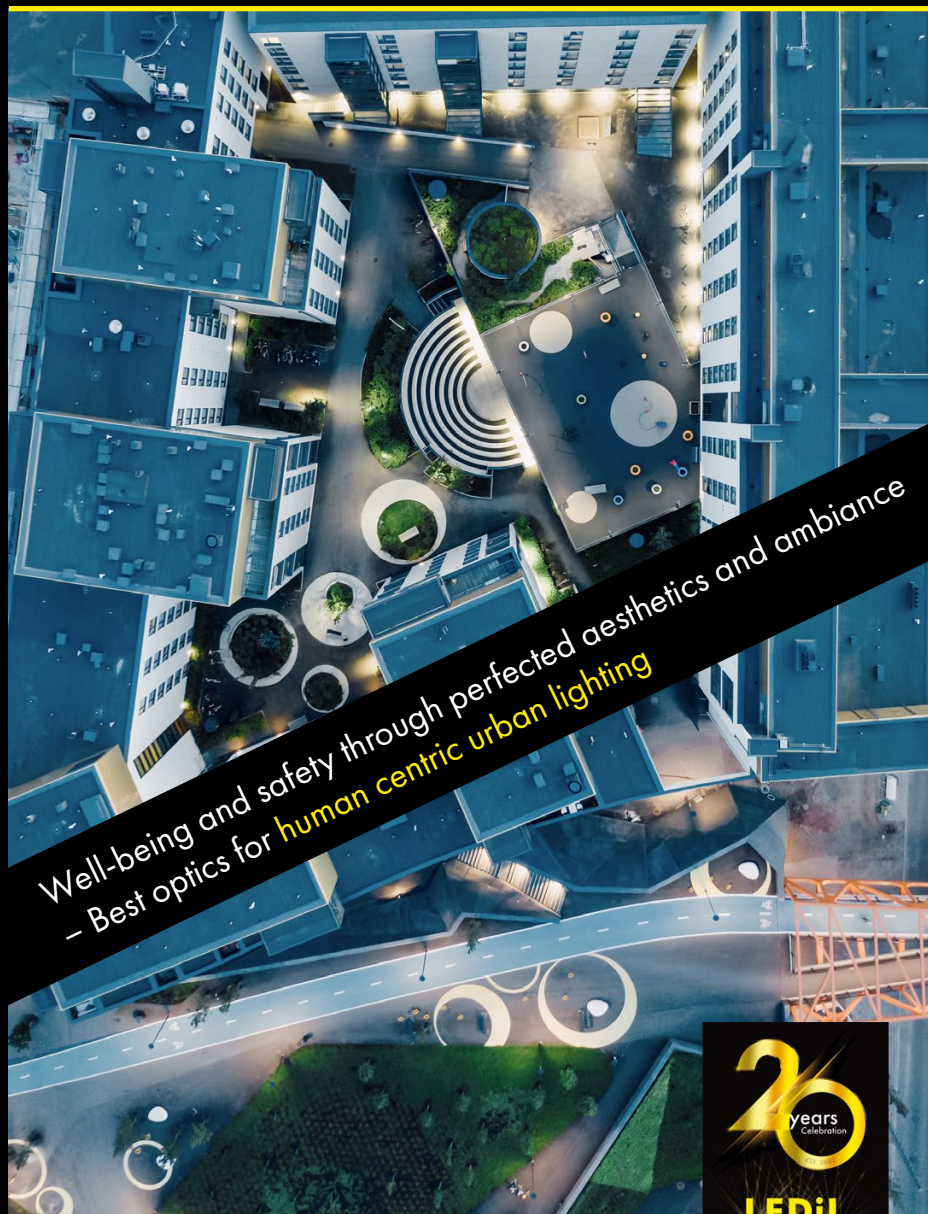


LEDiL

Guide for urban lighting optics

V1-0 / 2022



Well-being and safety through perfected aesthetics and ambiance
– Best optics for **human centric urban lighting**



Urban lighting

Light has an immense impact on our everyday lives. It guides our movements, helps us to orientate in a space, protects us from harm and makes us feel safe.

The quality and amount of light affects how well we, and the city, function together - all year around. Visual links between different areas, special needs and expectations of different people, and how pleasant and comfortable a city feels require comprehensive light planning.

In contrast, darkness is equally important to us and the lives around us. A city may never sleep, but we need to, and nocturnal animals do it when it's bright. The right balance between light and darkness makes our surroundings feel more interesting and healthier to be in.

We are diverse people living in diverse cities, and how light dresses a city affects our connection to it.

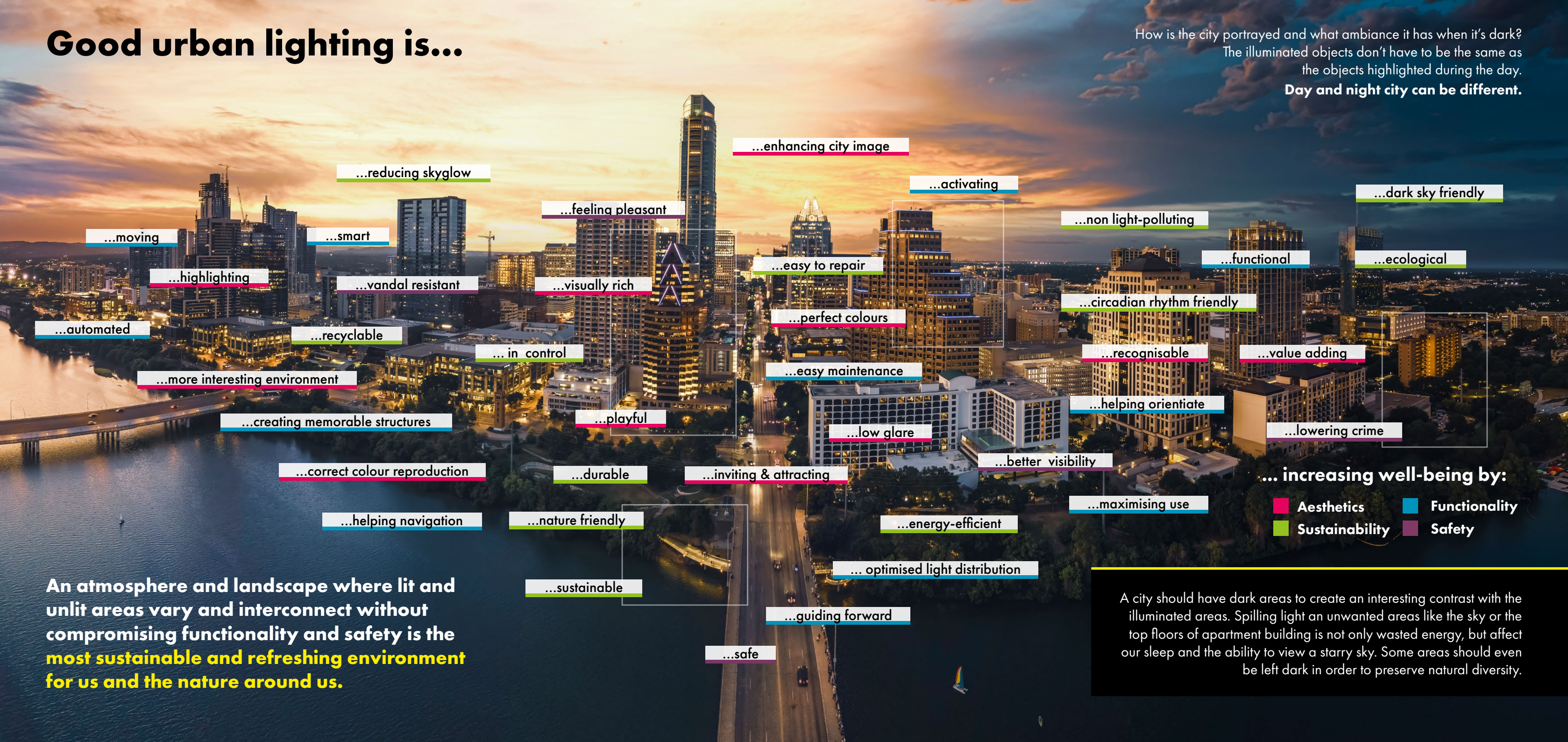


The United Nations agency for human settlements has identified lighting as one of the most important factors in modern urban planning.

**Dress the cities in new light.
To let us see the nature again.**

Good urban lighting is...

How is the city portrayed and what ambience it has when it's dark?
The illuminated objects don't have to be the same as the objects highlighted during the day.
Day and night city can be different.



An atmosphere and landscape where lit and unlit areas vary and interconnect without compromising functionality and safety is the **most sustainable and refreshing environment for us and the nature around us.**

... increasing well-being by:

Aesthetics **Functionality**
Sustainability **Safety**

A city should have dark areas to create an interesting contrast with the illuminated areas. Spilling light an unwanted areas like the sky or the top floors of apartment building is not only wasted energy, but affect our sleep and the ability to view a starry sky. Some areas should even be left dark in order to preserve natural diversity.

A comprehensive lighting plan is important to achieve the most **efficient**, most **attractive** and **safe** dark time environment.

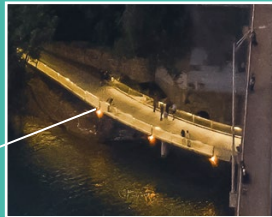


Different colours can be used to highlight important features. Playful lighting is also more interesting and refreshing.

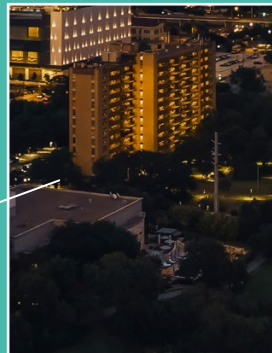


Controlled facade lighting makes the environment visually rich and enhances the value of the building and the city.

Bollard lighting can guide us and create a pleasant environment. Amber colours and dark areas are key elements for biologically sustainable lighting.



Well designed area lighting which also emphasises vertical illuminance will improve safety of the residents.



Human Centric Urban Lighting

Don't shoot for the stars - aim to minimise light pollution

Limit disturbing or unnecessary light to the sky, apartments, and the natural environment.

Light pollution not only affects how we see beyond the horizon, but can obscure important information.

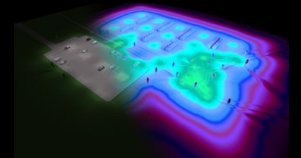
Is lighting always necessary, or does it create more disturbance or unnecessary energy consumption?



Well designed luminaires and right optics can reduce light pollution and skyglow.

Technical support

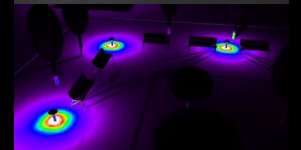
- Simulations to show optic performance in real applications
- Guides and tips for installations
- Thermal analysis for luminaire designs



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