Lighting on Demand (LoD) is a lighting concept based on the creation of a light wave that follows users according to their movement along the public space. It can be used in different sorts of spaces, according to the distinct appropriations they foster.

The methodology within this paper seeks to assess the advantages of LoD applicability in public spaces, both in economic and environmental terms, through analytical and systematic comparisons between four theoretical scenarios: traditional lighting; LED lighting; LED lighting produced from photovoltaic panels; LoD concept. The four scenarios were applied in a case study in Tejo and Trancão Urban Park, Lisbon, Portugal.

Conclusions demonstrate significant reductions, both in terms of total annual energy consumptions as in the annual CO2 emissions. Reductions of up to 80 per cent, when comparing traditional lighting with LoD, and up to 20 per cent, when comparing LED scenarios. On the other hand, LED-based lighting fixtures also require lower maintenance levels and, therefore, maintenance costs, especially when compared to traditional systems.

This study proves its importance especially if LoD operates as a premise for an integrated public space design. Furthermore, it is a system independent from light sources and communication mechanisms currently available in the market, which proves LoD's flexibility.

This paper seeks to initiate a fruitful discussion around the role of public lighting in achieving sustainable solutions for the public space, especially when concerning its strong potential for a more dynamic linkage of public space use and lighting is revealed.

LIGHTING ON DEMAND
SUSTAINABLE LIGHTING SYSTEMS IN PUBLIC SPACE

Lighting, Light wave, Sustainability, LED, Public space

Nunes, J. (Landscape Architect - PROAP)
Jacinto, N. (Landscape Architect - PROAP)
Campos, T. (Landscape Architect - PROAP)
Caroço, F. (Lighting Technician - Schréder, Lighting S.A.
Zoilo, I., Architect (Landscape Architect - PROAP)
Authors

PROAP Landscape Architecture
Rua D. Luis I,19 - 6º
1200-149 Lisbon, Portugal
+351 213 951 724
proap@proap.pt
www.proap.pt