

Connected Lighting for city resilience

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May 16, 2014



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To make lighting a key component of a city's resilience planning, you need to think of the lighting infrastructure as an integral aspect of urban planning and ecology.

Like other critical systems, resilient public lighting can be effective only when designed concurrently with other risk management and impact recovery systems.

Public lighting can be resilient when it's flexible, responsive, and integrated—that is, when it's connected and intelligent.

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Resilience describes the capacity of a system to maintain or recover functionality in the event of a disruption or disturbance.

Resilience applies to cities because cities are complex systems, or systems-of-systems and must constantly adapt to changing circumstances.

Resilience is about recovering from disruptions, reducing the risk of disruptive events, AND minimizing environmental stresses that can trigger disruptions. Unchecked energy consumption and greenhouse gas emissions, for example, exacerbate climate change, which contributes to extreme weather events that can pose risks to cities and inhabitants.

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Lighting plays a key role in the health of cities, as well as in both disruption recovery and risk reduction.

Effective street and architectural lighting supports visibility, personal interaction and exchange, aesthetics, and economic efficiency. It reduces risk for citizens by promoting visual quality and enhancing feelings of safety and well-being. When managed intelligently, public lighting can strengthen a city's social fabric, creating a sense of identity that can help communities prepare for and rebound from disruptive events.

Since lighting can account for a large percentage of a city's energy budget—up to 50% in some cases—energy-efficient lighting systems can dramatically reduce a city's carbon footprint.

→ STATISTIC: By swapping conventional street lights for LED street lights, the City of Los Angeles realized energy savings of over 60%, and reduced carbon emissions by 47,583 metric tons per year.

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Because traditional lighting operations are often insufficient for resilience planning, lighting has not yet been widely included in city risk reduction and recovery plans.

In traditional lighting operations:

- Luminaires are often obsolete and energy-inefficient
- Light points are deployed individually or in local groups, with no centralized management or connection to other critical city systems
- Light levels are determined by general worst-case considerations for safety, visibility, and comfort
- Luminaires offer a fixed set of reactive behaviors (on at dusk, off at dawn)
- Outages and operational disruptions are determined on the ground, by crews driving the streets
- Normal operations are restored manually by on-site work crews

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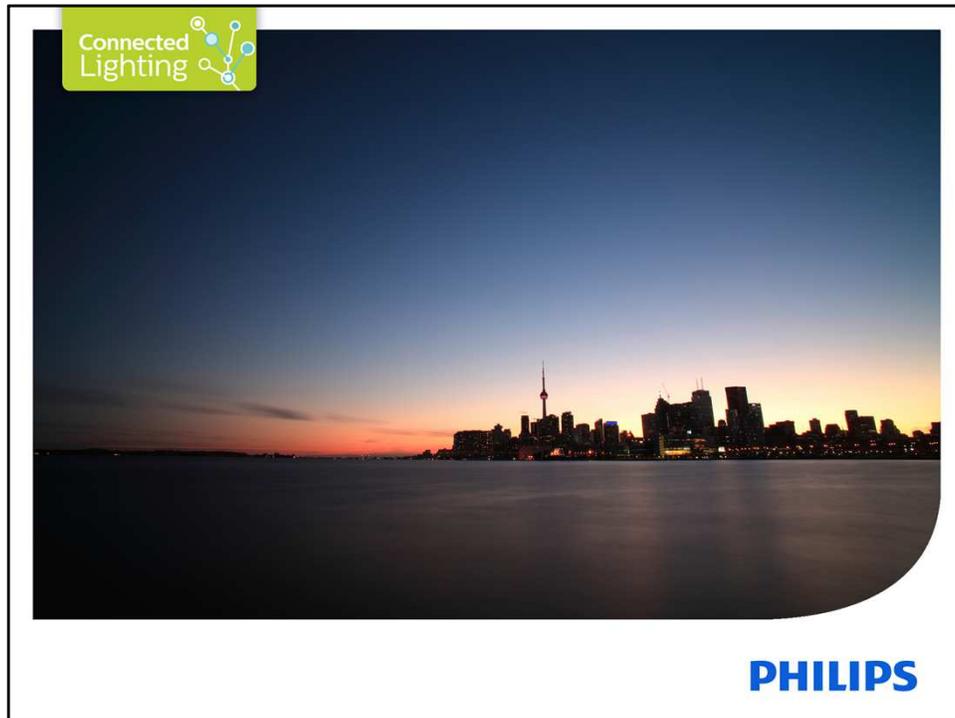
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Connected Lighting systems represent a fundamental transformation in intelligent lighting for outdoor applications.

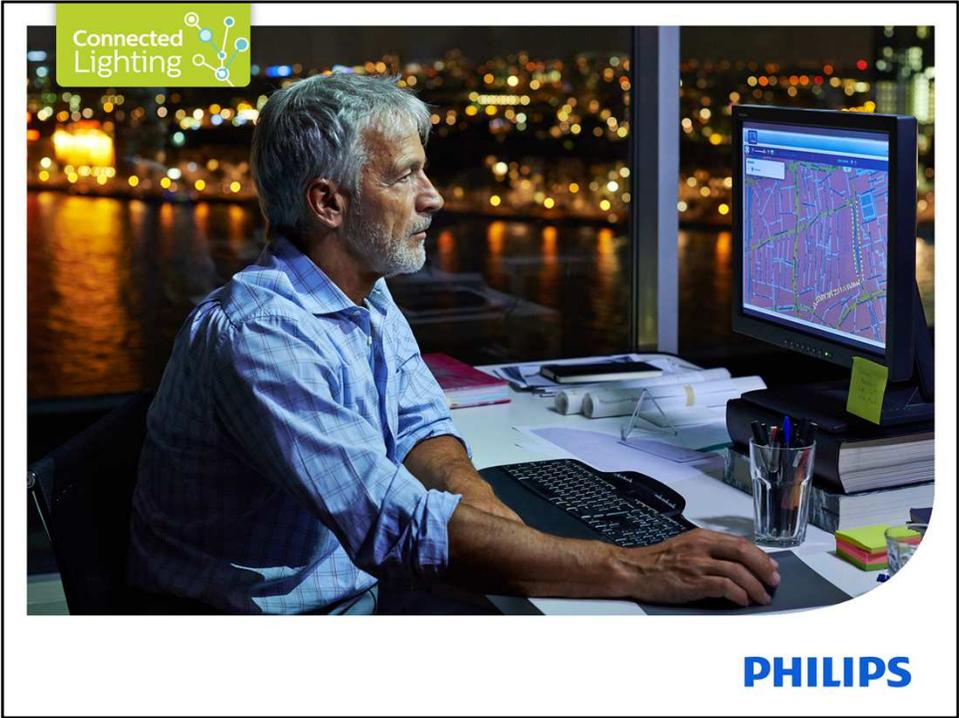
They are seamless, fully scalable, end-to-end solutions that support city resilience objectives by providing

- the most flexible, streamlined, and intelligent workflows for city managers
- the lowest impact on the environment
- and the best possible public lighting experiences for citizens.



In a Connected Lighting system:

- All public light points citywide are managed centrally
- Light points are highly energy-efficient, intelligent LED luminaires
- Remote monitoring and troubleshooting replaces many labor-intensive on-site repairs.
- Lighting integrates with other critical city systems
- Managers can deploy dynamic, targeted lighting scenes to strengthen city identity, pride, community, and commerce



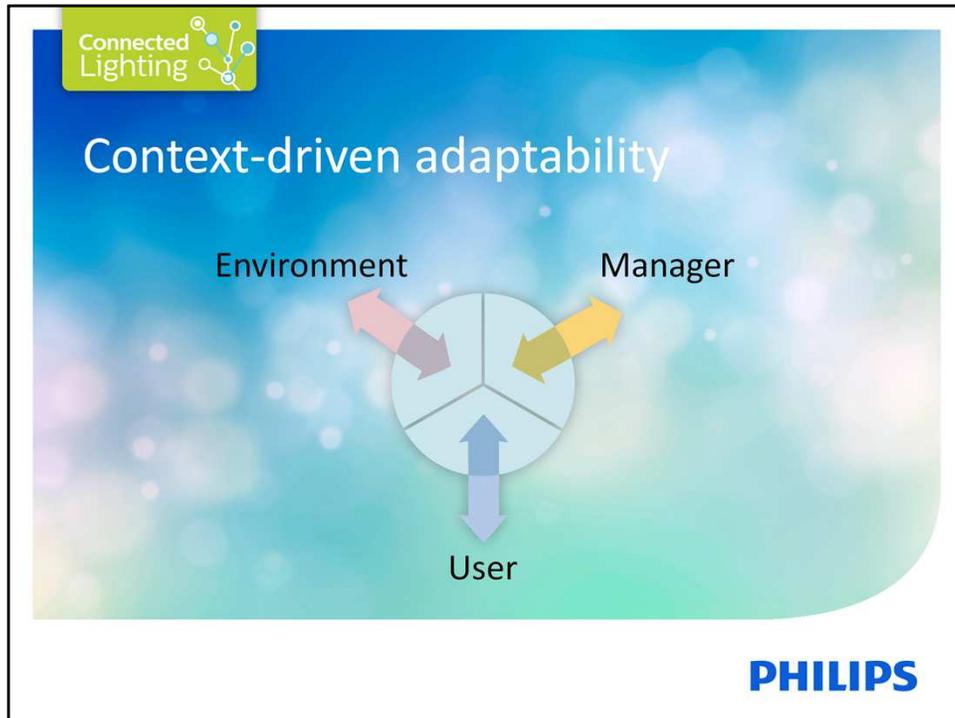


Connected Lighting systems offer *precision*: the ability to deliver exactly the right amount of light where and when it's needed.

Precision reduces a city's energy load, allowing city managers to shift resources from the lighting system to other services as and when required.

Precision is built into every aspect of a Connected Lighting system:

- Inherently directional LED lighting fixtures eliminate obtrusive light and spillage.
- City managers can centrally and automatically schedule light levels based on deep insight into the activity and traffic patterns throughout a municipality
- Remote management capabilities allow managers to rapidly respond to disruptive events and unforeseen circumstances



Connected Lighting systems also offer *context-driven adaptability*. The optimal performance of each light point is a function of the intelligent negotiation among three key elements:

- the environment
- the city's management needs
- and the needs of the people exposed to the light.

The dynamic tension among these elements can be negotiated only by means of a centralized, integrated, and *connected* lighting system.

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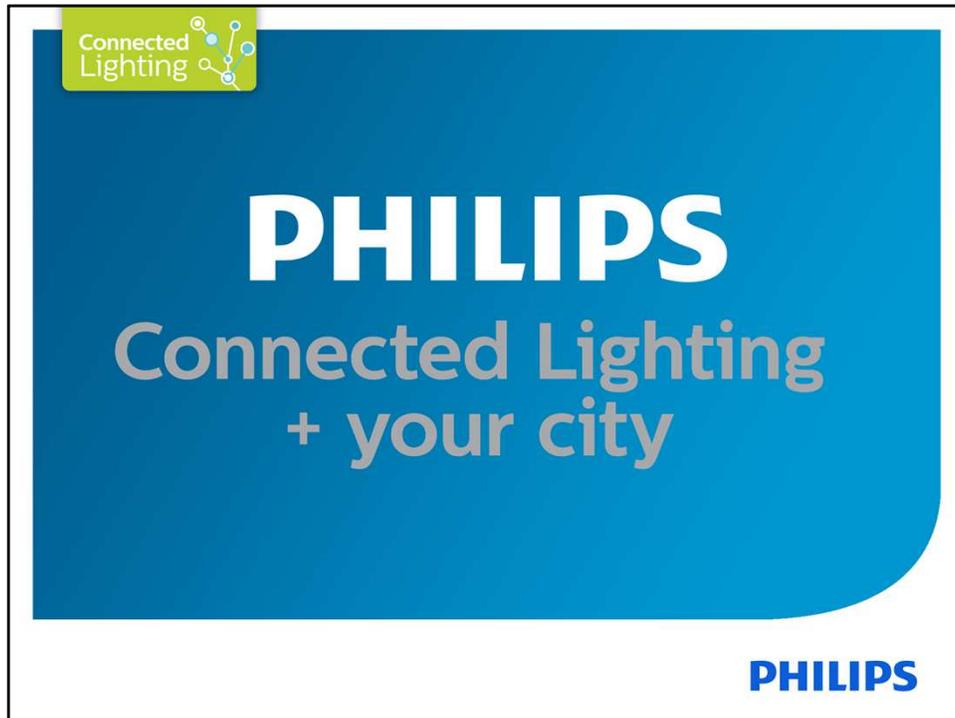


Connected Lighting systems are already delivering extraordinary benefits to major metropolitan areas today.

Systems installed in London, Rotterdam, and Prague use

- a combination of Philips CityTouch, an advanced lighting management and communications platform that gives street lighting managers detailed insight into and control over a city's street lighting network
- and intelligent, energy-efficient luminaires from Philips and other manufacturers

→ *STATISTIC: CityTouch has reduced the energy consumption in Salobre, Spain by more than 70% and cut CO2 emissions by 29 tons per year.*



Philips is the only lighting company with intelligent, adaptive Connected Lighting solutions today.

We're actively seeking partnerships with city planners and managers to make centrally managed, adaptive Connected Lighting systems a key component of the resilient city ecology.

We understand that human well-being in cities relies on a complex web of interconnected institutions, infrastructures, and information.

An active, connected approach to public lighting management reduces risk by creating sustainable well-being, visibility, safety, identity, community, social and economical efficiency, and celebration.

