



Simplicity Tomorrow - Sustainable City Light concept

Today, Philips already provides energy efficient LED lighting solutions that are both energy efficient and reduce 'light pollution' at night. Let us introduce you to the next step in outdoor lighting as we imagine it: Sustainable City Light – a pole that harnesses renewable energy during the day, and shines only the necessary light at night.

We know that street lighting is important for safety and that it enhances our sense of security. Public lighting sets the scene and beautifies our urban areas. From city landmarks to the streetlamps outside our homes, we expect night lighting to provide security and pleasure – but at what cost?

Today, over half of the world's population lives in cities. For the first time ever, more people live in urban areas than outside them. And although cities make up less than 5% of the Earth's surface, they use up to 75% of its resources. "The State of World Population 1999" report, issued by the United Nations Population Fund, predicts 61% of the world's population will be city-dwellers by 2030. Fewer and fewer places on the planet are unaffected by the dynamics of cities.

The future challenge is to create greener cities. Currently, the energy demand from cities is expected to double by 2030. So why not

create energy efficient lighting solutions that, thanks to their outdoor presence, can harness renewable energy sources such as solar and wind power, two energy sources that surround the light daily?

Outdoor city lighting has increased dramatically in recent years. Although artificial lighting has brought the ability to see our way in the dark, it has also reduced our ability to see the stars above us. It even has a significant impact on city 'wildlife', causing a false dawn that disrupt the natural behavior of birds and disturbs tree and plant habits, causing leaf fall all year long.

When well designed and properly installed, outdoor lighting improves visibility, safety and gives a sense of security. But most streetlights shine their light not only on the nearby ground where it is needed, but also miles away and skywards – and their light is always at its brightest even when not needed. This results in a large portion of the light being wasted. In

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addition, most outdoor light sources aren't energy efficient and don't make use of the potential of the natural energy sources that surround them daily, a further waste of energy.

What if outdoor lighting were more intelligent? What if we created pervasive lighting solutions that adapted to the day's rhythm or were triggered by activity? What if lighting provided accurate light effects where we need it, when we need it and supported the lifestyle of citizens, improving their quality of life and well-being?

Concept description – Sustainable City Light

Sustainable City Light transforms the personality of any community from industrial to ecological, harmonizing forces of nature and working with the planet, not against it. Sustainable City Light collects its own energy from the sun and wind by transforming its appearance throughout the day. At night, its efficient LEDs beam light only where needed – and only when needed – through proximity sensing.

Day time – Harnessing renewable energy

When the sun shines... As the sun shines, Sustainable City Light emulates nature's beauty to begin the work of collecting solar energy. First, the 'petals' of its 'bud' open slowly. Much like a sunflower continues to face the sun while it moves from east to west during the day, Sustainable City Light's petals then gradually and continuously re-orient themselves in the direction of the sun, to face it with the maximum efficiency at each moment.

When the wind blows... The intelligent Sustainable City Light also takes advantage of cloudy, windy days. As the wind starts to blow, Sustainable City Light intuitively moves its petals to an upward half-open position, allowing them to catch the wind. The petals then progressively rotate, transferring the movement to the built-in rotor that instantly converts it into energy.

And when the sun shines again, Sustainable City Light adapts itself to the new weather. The device progressively stops rotating, and opens again to catch the sun rays.

Collecting energy... Whether storing energy for its own needs or feeding it back to the grid, Sustainable City Light indicates the energy collecting flow on its 'trunk' through a decorative light feedback, further informing passers-by.

Night Time – Light where it's needed, when it's needed

When the night falls... As day fades to night, Sustainable City Light softly closes and transforms itself from a poetic

power-generating landmark to a reassuring source of light. Its LEDs shine, lighting up with precision around its foot for safety and for the prevention of unnecessary 'light pollution'. The lamp format also allows passers-by to see the stars again.

When people pass by... When no one is around, Sustainable City Light glows at the minimum level required for safety in its 'stand-by' mode. When people pass by, Sustainable City Light senses this movement and comes to life, increasing its intensity and bathing passers-by in comforting light.

Zero consumption from the grid, ultimately leading to safety

Sustainable City Light's LEDs use half of the energy of a traditional street light for the same light output. With its efficient, integrated solar cells and wind rotor, Sustainable City Light doesn't require power from the grid. It relies on itself, even through power shortages and other calamities. Sustainable City Light will keep shining at night.

Whether 'Off-Grid' or 'On-Grid', a winning solution

In remote areas, the self-sufficient Sustainable City Light doesn't require a power infrastructure. This makes it simple for rural communities to leapfrog into outdoor lighting without having to invest in a grid infrastructure, or for any architect or city planner to place lighting in areas they usually would not.

In urban areas, Sustainable City Light not only provides truly green lighting, but can actually supply power back to the grid when it overproduces electricity, making it a light pole that generates rather than consumes power.

An investment in the aesthetic landscape

Imagine the visual impact of several Sustainable City Lights all turning their petals towards the sun in slow motion, or gently rotating as the wind blows, as if in sync. Picture this along kilometers of coastline where wind blows hard, and the sun shines brightly. Imagine the effect of a row of closed Sustainable City Lights at night, altering their light intensity as people wander like a life-size crowd indicator. Picture this around a large city square where the night time character is defined by the light display.

Beyond beauty, Sustainable City Light is a tool for forward thinking municipalities and other local authorities to show the world their commitment to a greener future. The end-customers – citizens as well as visitors – will respond positively to these landmarks as a sign that local authorities are investing in making the world a better place.

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