

Solar Roads

Technological innovations are leading the way in new lighting and paving systems to make up for these economic and environmental constraints.



Many new paving methods equipped with smart technologies are popping up throughout the world. One called George Washington University's Solar Walk, opened in autumn of 2013 and "features solar panels incorporated into an overhead trellis, and 27 slip-resistant, semi-transparent walkable tiles. The tiles contain photovoltaic technology to convert sunlight into electricity, which in turn powers the 450 LEDs that dot their borders. " While most people think of pathways as only having one use (i.e., enhancing pedestrian mobility), the Solar Walk is also a power source and a light source.

Another innovation is the paving of paths with "special minerals that absorb UV light during the day, and emit a soft glow during hours of darkness." According to the manufacturers of these paths, "the luminosity of the pathway adjusts to compensate for the atmospheric light levels – brighter on pitch black nights, and dimmer on lighter evenings. The 'Star-path' is a treatment that can be directly applied to an existing surface without the need to take up the original path and re-lay it.... In a time when local authorities are reducing electricity consumption to save money, a new surface that acts as a light source and can be applied in a matter of hours seems like a very attractive option.

Another innovation is the Idaho-based Solar Roadways' project of paving tarmacked surfaces with solar panels, also previously reported on Planetizen. The solar energy collected by the smart surface could be used to feed the grid during the day time or even power things such as heating elements under the surface to clear ice and snow from the roads in the winter. Eventually, it might be possible to power electric cars as they drive along. This would be a huge development for electric vehicles, because with current road surfaces and charging systems, they have a limited range that precludes long-distance journeys."

Solar Roadways is working with the Missouri Department of Transportation to install a stretch of solar road that could generate enough energy to power a rest stop.

By Lisa Suhay, JUNE 24, 2016



America's iconic Route 66 is about to become part of a new solar system.

Solar roads in Europe

The use of solar panels for road surfacing may be new to the United States, but Europe is farther down the solar road.

In 2015, the Netherlands made headlines with the installation of the world's first solar road, a bike path that captured energy through glass-coated solar panels. After the first six months, the 230-foot test bike path generated 3,000 kWh, or enough electricity to power a small household for a year.

In France, the government recently announced plans to resurface 621 miles of roads with solar panels, using Wattway panels that were developed by road-building company Colas in partnership with the French National Solar Energy Institute.