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INVISIBLE SOLAR POWER SHINES A LIGHT ON HISTORIC BUILDINGS



PROPERTY & CONSTRUCTION

The technology allows listed buildings to invest in renewables without detracting from a site's aesthetic value

Spotted: Smart Pompeii is one of the world's first [connected](#) heritage sites. The city uses Internet of Things (IoT) technology, drones, and a robot watchdog as part of its approach to better caring for and preserving the area's history. Bringing renewable energy to such sites would help improve sustainability. However, most energy sources are difficult to camouflage, particularly in a historically accurate manner.

Italian lighting specialist Dyaqua has a solution for this. The company created a method for adding solar power to terracotta roof tiles, opening up a vast new energy source for millions of old buildings worldwide. Called Invisible Solar, the technology can be made to look like terracotta, wood, stone, and other materials. The PV cells are inside the tile or stone, with the top layer of the piece made from a non-toxic polymeric compound that looks opaque but is transparent to sunlight.

All Invisible Solar materials are recyclable, and some pieces are made from recycled building materials. The compound that allows sunlight to be absorbed is also photocatalytic, meaning that it uses light to clean the surrounding air and the surface of the tile or stone.

Invisible Solar pieces are artisanal-made and made-to-order, making every piece unique. The handcrafted nature of the materials makes them particularly well-suited for retrofitting historical buildings for renewable energy. And for listed buildings, the invisible nature of the solar cells makes them suitable for use in locations that otherwise would be inaccessible to updates. Part of Pompeii's transition to a smart archaeological park included [the installation](#) of Invisible Solar roof tiles.

Decarbonising the built environment is a multi-faceted project, with innovations in Springwise's database showcasing technologies that range from retrofitting existing buildings with a second skin

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Takeaway:

The invisible Solar pieces are versatile and strong enough for use as [flooring](#) and on walls, as well as roofs. Broadening the types of surfaces that generate renewable energy makes it more likely that entire sites can make dramatic reductions in their carbon emissions. Retrofitting older, more inefficient buildings with new technologies makes it possible for communities to improve their sustainability without investing vast amounts in new building projects and without needing to resort to demolition. And for sites with historic value, energy sources that do not detract from the aesthetic are particularly appealing.