

zeta

Specialist Lighting

Cornwall Council - Newquay Harbour

Zeta Specialist Lighting created a bespoke solar-powered LED lighting solution for Cornwall Council. The Zeta Solis Nano removed the requirement to dig up Newquay Harbour to install new cabling, and enabled the Council to provide the Harbour Commission with a virtually maintenance-free solution with no ongoing running costs.

The Challenge



Cornwall Council needed to replace two lights at either end of the island in the middle of South Quay Harbour, a picturesque and important piece of Newquay's history.

The mains-fed legacy double-armed columns featuring two teardrop lanterns had begun to be unreliable. The electricity cable servicing the lights was trenched through the sand, across the harbour and up the quay wall, and although it was protected by galvanised pipework, the cable had been damaged by boats banging into it when mooring up to unload their catch. With the cable now cut in half, the council was faced with the prospect of digging up the harbour to repair it, or search for an alternative solar-powered solution.

In addition, the Council required a further solar powered solution at North Quay to replace an existing lantern sited next to the fishermens' bait stores. The existing luminaire had become almost impossible to repair due to access difficulties, it was also decided to take the opportunity to reposition the light to a more accessible area.

With the new solution due to be handed over to the Harbour Commission, one of the key drivers behind choosing a solar-powered solution was to ensure there were no ongoing running costs. In addition, the Council wanted to utilise long-life LEDs to remove the requirement to replace the lamps as and when they failed, a task made more difficult on the island as it had to be conducted at low tide and required scaffolding to be erected.



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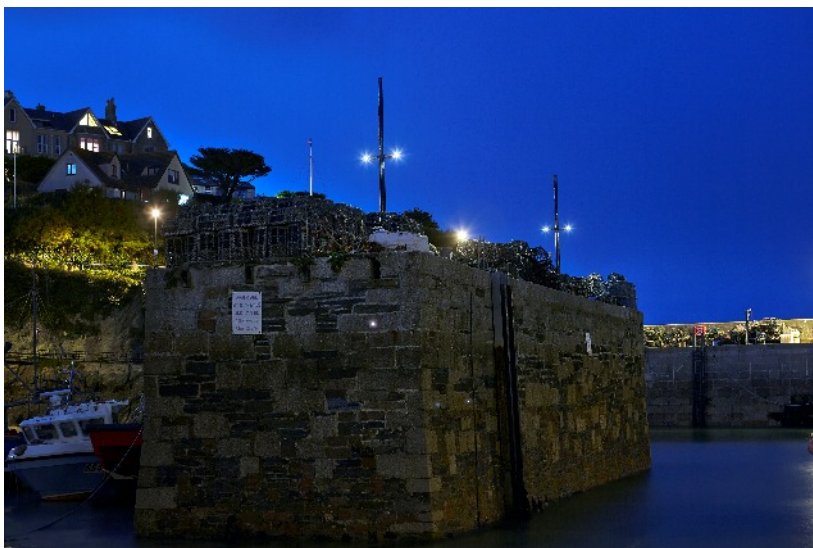
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The Solution

The Council looked at a number of options including a solar- and wind-powered solution, but this was ruled out as it was cost-prohibitive. Working in partnership with street lighting contractor, SSE Enterprise, Zeta recommended its Solis Nano, an entirely unique and versatile solar lighting solution that combines The SolisPOLE, an innovative system specifically designed to capture and store solar power and the SmartScape Nano, a lightweight, highly efficient LED street and area light.

The SolisPOLE includes technologically advanced photovoltaic cells that are incorporated into the frame of the pole and mounted vertically to provide a unique solution for optimum solar capture. Zeta's intelligent Energy Management System, also incorporated, optimises energy capture and continually monitors the maintenance-free batteries' condition to ensure year round reliability. Prior to installation the controller can be programmed with lighting on/off times (within certain parameters) to suit individual requirements and PIR sensor capability can also be integrated.

As well as providing a standard Solis Nano to be installed at North Quay, Zeta created a unique solution for Cornwall Council, reworking the existing Solis Nano to incorporate an additional head unit, so that light was emitted on two sides. Zeta built two of the specially designed poles for installation either end of the island in the middle of the harbour. All five luminaires, expertly installed by both SSE Enterprise and Zeta, deliver superior illumination and boast intelligent cooling technology that ensures optimum heat dissipation.



The Solis Nano also incorporates an intelligent PIR motion sensor which is set to a dimmed light output when no presence is detected, to conserve further energy. The sensor activates when a boat or person is detected within five metres and the light output is increased for the duration of that detection. The solution runs at just 0.25W when dimmed and 4W when bright. The extremely low power consumption of the luminaire allows the solution to operate 365 days a year, even in the winter months when solar charge is significantly reduced.

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Key Benefits

Zeta's innovative LED and solar solutions enabled Cornwall Council to meet their goal to devolve all of the lighting to the Harbour Commission, who now benefit from superior illumination that's virtually maintenance-free and which has zero running costs.

Zeta's Solis Nano removed the problems associated with maintaining the lighting on the harbour. With access to the island only during low tide, and with the relocation of the North Quay column to a new more accessible position negating the need to trench to its old position to pick up power access, a solar-powered solution was the only viable option.

Maintenance-free, SmartScape Nano utilises self-cleaning silicone lens technology and the LEDs have a long lifetime of >100,000 hours. Other benefits include improved lighting levels and reduced light pollution, and this cost and energy-efficient solution provides up to 70 per cent reduction in CO2 emissions, helping Cornwall Council meet its carbon saving targets.



"We looked at a number of options and Zeta's solution was by far the best. Custom-made and cost-efficient, it was also much more attractive to look at than some other systems as the solar technology is cleverly integrated within the pole. We are delighted that we have been able to give the Harbour Commission a 'free' solution, with no ongoing running costs or maintenance issues to consider."

Mark Vincent, ITC Operations Officer, Transport & Technology Team, Economic Growth and Development, Cornwall Council

Solution

- Zeta Solis Nano