Milborne Port

Case Study:

Energising the last mile in Milborne Port with power distribution for EV

Project Summary

Project name: Energising the last mile with power distribution for EV

Location: Milborne Port, UK

Completed: March 2019

Products used: Lucy Zodion pre-wired pillar

Installers: Plug-N-Go

Background:

Milborne Port is a large, but friendly village in the South Eastern part of Somerset, on the edge of the Blackmore Vale and close to the Dorset border.

The village has a variety of amenities that enhance the community, with facilities available to meet growing citizen requirements. With a rural landscape of fields and farms, Milborne Port is in the process of upgrading some vital elements of its infrastructure to accommodate an increase in low emission electric vehicles (EV) throughout the town, while remaining sympathetic to its scenic and historic surroundings.

As part of this, the village has recently enlisted the expertise of EV charge point company Plug-N-Go to provide an accessible charging station, in East Street Car Park, for drivers in the Milborne Port area.

Challenge:

Lucy Zodion was asked to help Plug-N-Go manage the power supply from the distribution network operator (DNO) to the charging unit.

The challenge was to consider EV industry standards and regulations, while offering a suitable solution that offers constant and safe power to the Plug-N-Go EV fast charge Point.

Key Objectives:

- Safe & Reliable – The solution should have the capacity to provide a safe supply of power from the DNO to the charge point on demand, of up to 44kW, considering the charge point is located in a public space. The solution also had to meet IET EV charging and wiring regulations.

- Longevity – The solution should last as long as, if not longer than, the EV charge point to ensure power is always available to the public for EV charging. It was also a requirement to ensure the solution was secure and hardwearing against the external environment, considering factors such as vandalism.

- Scalable – Plug-N-Go wanted a solution that was scalable to meet the evolving requirements of EV, therefore Lucy Zodion needed to consider the need for further EV charge points in the future.

* Lucy Zodion's Pillar at East Street Car Park

Solution:

Lucy Zodion designed a bespoke pillar, which was equipped by the in-house Design Centre, to supply adequate power for the provision of four EV charging points. The solution was cost effective, to match the Council's budget and was available ready to install. This ensured Plug-N-Go contractors could easily connect the EV charge point once installed, as well as providing the distribution network operator (DNO) with adequate space for the installation of a cut-out and meter. The specification of the pillar is:

- Standard F12 Fortress Pillar equipped with class II distribution, including 300mA RCCB protective device and 4 x curve B MCBs
- The pillars are also equipped with an anti-condensation heater and thermostat to prevent condensation

Results:

The pillar provides the council with a safe and secure solution that not only enables the DNO to connect to, but also acts as a distribution hub that feeds power to the four fast EV charge points installed by Plug-N-Go in East Street Car Park. It met project objectives in the following way:

- **Safe & Reliable** - Lucy Zodion helped to develop a safe and reliable solution by equipping the pillar with an incoming 300mA RCCB protective device which quickly breaks an electrical circuit toprevent serious harm from an ongoingelectrical shock. This ensures thosemaintaining and upgrading the unit areprotected in the instance shock caused byindirect contacts. Furthermore the pillarwas developed considering a Class II modular distribution solution, meaning it has been designed in such a way that it doesn't require a safety connection to electrical earth.

The pillar was also wired and built considering the IET Code of Practice for Electric Vehicle Charging Installations, 3rd Edition, as well as the IET Wiring Regulations Eighteenth Edition BS7671: 2018. These were the EV standards and legislation in force at the time of manufacture.

- **Longevity** – The shell of the pillar is made from galvanised steel. This is durable to withstand challenging external environments, as well as to protect the public from low voltage internal electrical components. The pillar was provided with tri-head locks to ensure only authorised personnel have access to the unit, which also adds another level of protection against tampering and vandalism, alongside the provision of anti-vandal hinges.

The addition of an anti-condensation heater and thermostat within the pillar means that Lucy Zodion has considered the conditions within the unit, as well as externally, to ensure the electrical equipment within performs to optimal levels even in challenging temperatures. This fulfils the need for the council to provide EV facilities around the clock.

- **Scalable** – Considering the growing requirements of EV Lucy Zodion equipped the pillar with adequate space for both a DNO cut-out and meter installation, as well as a single connection point for connection with the terminal bank for outgoing cabling.

Peter Brock, Marketing and Business Development, Plug-N-Go:

"We're very happy with the end results, and Lucy Zodion feeder pillars have been essential in enabling us to provide EV charging to sites without the existing electrical infrastructure. We aim to make EV charging accessible to businesses and local governments that wouldn't otherwise have the budget for a large installation, so being able to provide quality equipment at a competitive price is key. We also focus on future-proofing sites to ensure that they are able to cope with the rapidly developing EV market, and the feeder pillars allow us to maintain and upgrade our sites easily"

John Oldham, Former Chairman of Milborne Port Parish Council:

"Electric vehicles, including PHEVs, are a small but growing part of the country's transport portfolio. It is often the case that infrastructure lags behind a defined need. So, when approached by Plug-N-Go, we saw this as an ideal opportunity to place some infrastructure in the village to support this sector ahead of further growth in the EV market"

Conclusion:

The equipped pillar supplied by Lucy Zodion was an essential part of the Milborne Port EV project; providing an effective and efficient power supply for vehicle charging. It is made from robust materials that withstand challenging environmental conditions, with warning labels that highlight the dangers of non-trained professionals tampering with the unit. It also has a specialist lock and key to ensure only authorised personnel can access the unit, which meets Plug-N-Go's requirements for a future proof solution that considers maintenance and upgrades.

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