



Energisation is planned well ahead of the scheduled opening of the shopping centre in summer 2010

Independent's day

IDNO Energetics is breaking new ground with the installation of a 33kV primary substation at The Rock in Bury. Steve Hobson reports

Energetics is completing the first 33kV primary electricity sub-station to be installed by an independent distribution network operator (IDNO) at The Rock, a prestigious 47,000sq m shopping and retail centre being constructed in Bury, Lancashire.

Energetics has also laid 1.5km of 33kV cabling from the local Bury sub-station to The Rock, which will be adopted by the incumbent distribution network operator (DNO) Electricity North West (ENW) upon completion of the project.

The £3 million project will see Energetics design, install, own and operate two 23MVA 33kV/6.6kV British-made Brush transformers, with onsite distribution consisting of 2.4km of 6.6kV cable and 12 distribution substations to cater for the projected load of 14MVA. Energetics decided to install larger primary

transformers because the neighbouring sub stations are running close to capacity, this investment means Energetics will be able to pick up even more load within the Bury area as other developments arise.

AHEAD OF SCHEDULE

The electrical installation is planned for energisation in June this year, well ahead of the scheduled opening of the shopping centre in summer 2010. Marks & Spencer and Debenhams will be the anchor tenants for the £300 million town centre development, which will also include a 10-screen cinema, bowling alley, restaurants, over 400 residential homes and a multi-storey car park. The project is being built by main contractor Laing O'Rourke on behalf of the client Thornfield Properties.

Energetics secured the contract in competition with ENW because they offered a more

competitive price, a bespoke compact design and installation proposal and a responsive and flexible service, according to projects manager David Thomson.

"Our design fits in a smaller area of the car park, rather than a traditional design which would occupy a significant area of prime land," says Thomson. "We have freed up that space, which has obvious commercial benefits to the developer."

According to Thomson, Energetics came up with a schedule to install the electricity system that aligned with the main contractor's programme. Traditionally main contractors have very little influence over the incumbent as to when they will be connected to the network, this fresh approach has been greatly appreciated by the main contractor and the client, as it de-risks the build programme.

"Late delivery of utilities is a major risk for

developers," says Thomson. "Traditional DNOs won't usually establish on site until construction is almost complete but we are eight months ahead of schedule giving the developer confidence we will be ready to energise the primary substation when they need power."

Each transformer is designed to supply 11.5MVA in normal operating mode, but this can be boosted to 23 MVA when cooled with the oil to air heat exchangers, so either unit can support the whole of the centre's maximum 14MVA power load and more. If necessary, an automated load sharing and shedding system will detect a fault in either transformer and drop non-essential loads until the other transformer can pick up the supply.

"Initially, Thornfields had been advised that there was no spare capacity at the Bury sub-station and the developer would have to fund a new sub-station and connect the shopping centre



Marks & Spencer and Debenhams will be the anchor tenants for the £300 million development

to the National Grid's 132kV transmission system at an additional cost of £1.5 million," says Thomson. "We felt there was an alternative to this approach and after significant research and design review, within ten days, we were able to come back to the client with a 24MVA solution with a connection cost of £240,000."

ULTRA-COMPACT

In addition, the Energetics design team came up with an ultra-compact layout for the primary sub-station to fully enclose both transformers side by side within a fire-rated 20 x 20 metre basement room next to the shopping centre loading bay access. Discreet louvered grilles cover the forced air fan outlets and ensure sufficient access to swap out a transformer if necessary. An Innogen automatic fire suppression system is also being installed which would instantly detect and snuff out a fire in the

transformer room, in the unlikely event this was required.

Another innovation on this project is a shared secondary substation that houses both ENW's switchgear and Energetics' transformers and distribution equipment, which supply the new Bury Primary Care Trust health centre constructed by Thornfield as part of its planning consent. The Moorgate Primary Care Centre has already opened and ENW's equipment will be adopted by Energetics when The Rock's main infrastructure is complete. ■

Energetics is the UK's leading IDNO with more than 500 separate electricity and gas networks. In addition to The Rock in Bury, it is installing electricity networks at some of the highest profile projects in the UK, including the Media City development in Manchester's Salford Quays and the Edge Lane mixed use development in Liverpool.