

Galawhistle Control Building

Client: SP Energy Networks

Location: South Lanarkshire, Scotland

Value: £1.1m

Duration: 13 Months



Aerial view of the full site, demonstrating how remote the works were



The newly constructed control building

In Brief...

To facilitate a grid connection for a proposed wind farm, Barhale were tasked with the construction of a new substation control building and associated civil works. Works took place to the west of the village of Douglas in South Lanarkshire.

Technical Features...

The new substation control building was a single story steel portal frame structure, which was constructed on top of a reinforced concrete floor slab. External facing bricks were constructed to a defined level, in front of which an insulated aluminium cladding façade was attached to the frame to provide the external walls. The same cladding was attached to the top of the steel portal frame to construct the roof structure.

Internal elements of the structure involved the construction of all brick and block-work walls, as well as a full fit out of the structure. This involved the installation of all doors, flooring (including raised access flooring) and paint work, as well as a full M&E fit out including heating and fire alarm systems.

The civil elements of the contract involved the installation of:

- An earthing grid mat
- Ducting for power cables
- Drainage pipework
- A 2m wide reinforced concrete footpath around the perimeter of the new control building

In line with eco-friendly engineering, the substation control building also incorporated a rainwater harvester & UV filtering system, which gathered and recycled rainwater for safe use throughout the building.

Weather challenges...

The work site was located 2km along a hardcore track road in the hills surrounding Douglas. This provided a challenge for site vehicles and deliveries, especially during the colder and wetter months of the contract. This was further compounded by the fact that a large proportion of the project was constructed through one of the worst winters this part of Scotland had seen in over 50 years.

To combat the extremely harsh weather, Barhale's project team had to incorporate critically important winter working provisions. These included:

- Daily monitoring of future weather forecasts to ensure concrete pours and machine lifts could go ahead
- Using heated aggregates
- Concrete pours and block-work mortar works were cured under the protection of electrical blankets and blow heaters, as opposed to frost blankets, which are used more typically

Emergency provisions for winter working also had to be allowed for to provide a contingency against the severe winter conditions, should any site personnel become trapped on site. Fortunately, these provisions were not required during the contract.

Customer Benefits...

- Barhale's delivery team were able to overcome the challenges of working on a remote site, in very testing weather conditions to deliver a successful project, which has enabled the power up of the wind-farm
- Key to this success was the team's ability to collaborate with the client throughout the project and adapt to several on site design changes. Barhale also assisted the client by providing several specialist design and fabrication solutions to aid the design requirements
- The team worked in conjunction with third party contractors who were carrying out separate contracts for the client on the same site. Through constant liaison with all affected parties the team were able to sequence their works in a way that enabled all contracting teams to work to their optimum