

St. James Primary Substation

Client: Scottish Power Energy Networks

Location: Edinburgh, Scotland

Value: TBC

Dates: 16 Months



Reclaimed cobblestones were installed by specialist operatives



A stone cladding facade was incorporated into the exterior of the building

In Brief...

As part of the wider £850m regeneration of Edinburgh City Centre, Barhale was awarded the contract for the construction of a new, stone clad, 2 transformer bay and switch room primary substation in the heart of the City, by Scottish Power Energy Networks (SPEN).

The existing substation was situated inside the St. James Shopping Centre. In preparation for the demolition of the shopping centre, the substation had to be decommissioned and rebuilt at a new location outside of the shopping centre footprint. This project was viewed as one of the key steps in the overall regeneration of this part of the City and as such the project had been widely publicised in the media. As a result, Barhale's works were high profile and generated a lot of local interest.

Technical Features...

The programme required the complete construction of a new 11kV substation, which was self-contained inside an enclosed brick building. Works were delivered in 3 phases.

Phase 1 Involved:

- Diverting all existing utilities that crossed the working area
- The construction of all concrete slab foundations and supporting walls, which housed the transformer bays and switch room
- The erection of full height external and internal brick and block work to create the structure
- Installation of new fire proof doors

Phase 2 Involved:

- Client installation of the new transformers, switch room apparatus and incoming & outgoing HV cables
- Testing, commissioning and "going live" of the new substation (client operation)

Phase 3 Involved:

- Installation of stone cladding façade (to ensure the building was in keeping with the surrounding landscape)
- Construction of the timber roof trusses with a traditional style slate tiled roof
- M&E works including ventilation, lighting, heating, fire alarm system & CCTV security
- Installation of reclaimed, traditional cobblestones to fully reinstate the area around the substation to match the existing cobbled street style along Cathedral Lane
- Installation of new site drainage, including tie-ins to the existing network

All 3 phases involved close dialogue and planning with the client, as the substation was gradually commissioning throughout the various stages of the works.

The client installed the transformers, switch room apparatus and all incoming HV cables prior to the main building being fully constructed. Consequently, Barhale's team had to work around live equipment to complete the works. This was carried out safely by regularly liaising with SPEN and ensuring all Barhale personnel held SPEN accredited approvals; allowing them to work in live environments.

Specialist Restoration...

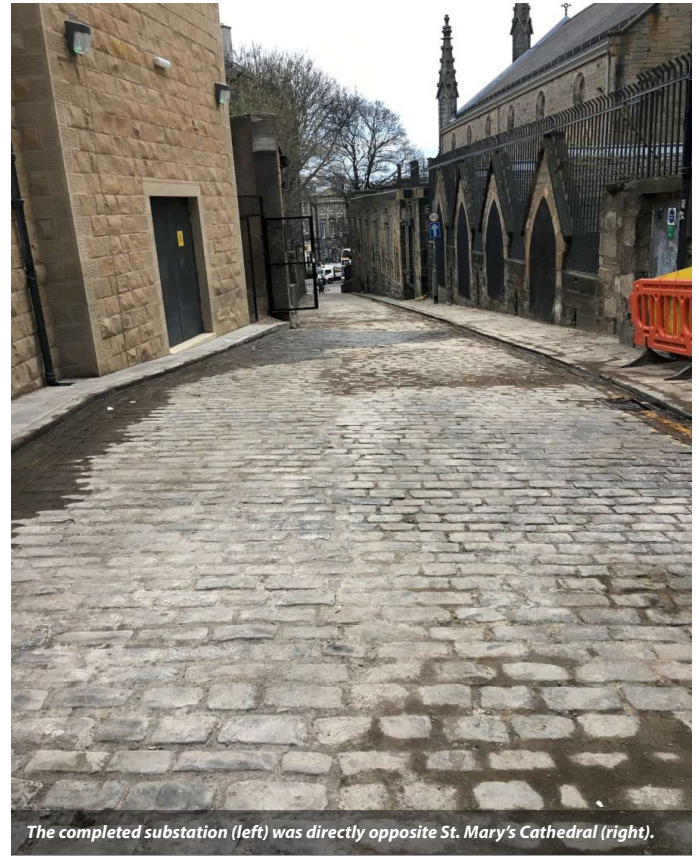
Works took place in Cathedral Lane; an historic cobblestoned street, in which is located the 200 year old St. Mary's Cathedral. For the works to be delivered successfully in this sensitive environment, the site management team had to ensure the following practices were implemented:

1. Stakeholder management; developing the programme of works in conjunction with the needs of the Cathedral and SPEN's project team
2. Sensitive restoration; to ensure the project was in keeping with the surrounding environment.

The two most challenging aspects of works were; the reinstatement of the cobblestoned street outside the substation and the construction of the stone cladding façade on the exterior walls. Both elements were of vital importance to the project because of the specialist skills required for the successful delivery and the aesthetic impact the finished product would have on the area as a whole.

To enable the successful completion of these works Barhale directly employed a qualified stone cobbler to lead this section of the programme. He was supported in his works by a team of skilled Barhale operatives, who followed his guidance throughout the operation.

The stone cladding façade and other specialist external brickwork was delivered by an accredited Stone Masonry contractor who was managed by Barhale throughout the project. Our team in Scotland had used this sub-contractor in the past and had subsequently developed a strong rapport with them, resulting in a productive working relationship.



The completed substation (left) was directly opposite St. Mary's Cathedral (right).

City Centre Working...

The project was constructed in a very tight footprint with restricted construction and storage space, as well as tight vehicular access and egress. Barhale's team displayed excellent and constant liaison with surrounding buildings and businesses to ensure minimum disruption at all times.

Planning alternative pedestrian routes and the subsequent management of these routes was also a major part in limiting any disruption to members of the public throughout the full project.

Barhale's temporary works footprint encroached onto an emergency fire escape route for a neighbouring hotel. This route was safely maintained throughout the works by collaborating closely with the hotel management and ensuring all Barhale personnel exercised due diligence to the needs of the hotel.

Customer Benefits...

Not only did Barhale's delivery team have to contend with working on a high profile site in the City Centre, they also had to ensure specialist works were managed correctly and the areas surrounding the substation were sensitively restored to ensure the brand new building and surround was in keeping with the historic location. The teams' efforts to display, extensive stakeholder management, sensitive restoration and conscientious interaction with surrounding businesses and members of the public resulted in a successful project and a satisfied client. The team developed collaborative relationships with the client and neighbouring stakeholders, which culminated in the works being highly commended by SPEN and other affected parties.