

St Helier West Substation

St Helier, Jersey

Client

Jersey Electricity plc

Contractor

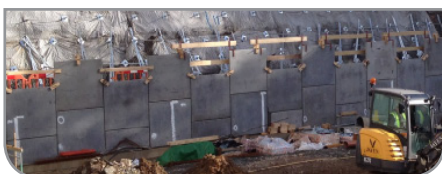
Jayen Limited

Consultant

Peter Brett Associates

Works Completed

2017



The new £17m JEC St Helier West Substation at Westpoint will ensure and safeguard electrical supply to over 13,000 customers in the south, north and west of St Helier.

The environmentally-sensitive project required major earthworks for the substation structure and the design and build of soil nailed embankments, and a Reinforced Earth retaining wall using galvanized steel reinforcing strips and precast concrete facing panels.

The new retaining wall will act to protect the facility and also blend into the surrounding landscape, providing a public viewing platform overlooking St Aubin's Bay north of the substation.

The substation is located on an old quarry site. The quarry embankments have been cut into the shape of a horseshoe, with the sides of the embankments standing at approximately 60°. The embankments have been reinforced with soil nails and a mesh facing. The vertical faced Reinforced Earth retaining wall is founded at 1.5m approximately, at its lowest point, away from the foot of the embankments.

Reinforced Earth Co Ltd (RECo) was employed to design and supply the materials for the Reinforced Earth retaining wall. RECo designed a friction link system (Terra Link™), which allowed for the construction of new Reinforced Earth walls connected to existing stabilised slopes by linking soil reinforcement in the Reinforced Earth fill to secondary reinforcement attached to the slope face. This link can be made either through a friction connection or direct connection.

The overlaps between the galvanized steel reinforcing strips for the embankments and the RECo retaining wall ensured their frictional connection on both sides of the structure. Due to the close proximity of the embankments to the base of the RECo retaining wall, the initial 2.25m high of retaining wall was backfilled with concrete and the rest of the retaining wall backfilled with 6l granular fill.

The retaining wall will be topped off with an insitu concrete pedestrian parapet with the retaining wall including the parapet clad in a random granite block finish.