St Helier West Substation

Jersey 2017

Client	Jersey Electricity plc
Consultant	Peter Brett Associates
Contractor	Jayen Limited

The new JEC St Helier West Substation at Westpoint is vital to ensure and safeguard St Helier's electrical supply into the future. This environmentally sensitive project involves major earthworks for the substation structure and the design and build of soil nailed embankments and a Reinforced Earth TerraLink retaining wall using galvanized steel reinforcing strips and precast concrete facing panels.

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

The location of the substation is in the area of the old quarry. The quarry embankments are cut into the shape of a horseshoe, with the sides of the embankments standing at approximately 60°. The embankments are reinforced with soil nails and a mesh facing. The vertical faced Reinforced Earth TerraLink retaining wall is founded at 1.5m approximately, at its lowest point, away from the foot of the embankments.

Reinforced Earth Co Ltd (RECo), were employed to design and supply the materials for the TerraLink RE shored wall. RECo designed a friction link system which enables additional reinforcements to be inserted in the reinforcement layers of the TerraLink wall, which are attached to the existing soil nailed embankments. Bespoke connectors were manufactured to screw onto the ends of the soil nails and fish plates were attached to the connectors that allowed the attachment of galvanized steel reinforcing strips. The overlaps between the galvanized steel reinforcing strips for the embankments and the RECo retaining wall ensures 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 is backfilled with concrete, the rest of the retaining wall is backfilled with 6I granular fill. A crack inducing groove is cut horizontally into the facing panels that are half in concrete backfill and half in 6I granular fill. The retaining wall was topped off with an insitu concrete pedestrian parapet with the retaining wall including the parapet clad in a random granite block finish.