

Case Study

Strataweb, Tendons, Stratagrid, Landlok 450 and Ekotex 07 Chilling 400kV Substation



Location:

Chilling 400kV Substation,
Hook, nr Fareham,
Hampshire



Client:

National Grid

Contractor:

Mitsubishi Electric

Consulting Engineer:

Alpha Construction

Chilling Substation has been part of the UK's high voltage power network for over 40 years. New equipment had to be installed to the existing facility to enable the export and import of up to 1000MW of power (enough to power 1 million homes). Critically, all of the work had to be completed within the existing site footprint to minimise disruption to the surrounding area and local residents.

Around the North Western, Northern and Southern perimeter the existing slopes were cut back into the Selsey Formation and regraded to face angles of 45-60 degrees with the slope heights varying from 1.2m to 3.2m. In order to hold seeded topsoil on the slopes, Geosynthetics Ltd designed a solution using their 150mm deep Strataweb cellular confinement system held in place with fixing pins and anchor trenches at the toe and beyond the crest. Due to the steep face angles, and frequent shortage of space at the slope crest, additional reinforcement of the system was also necessary. Geosynthetics Ltd achieved this by incorporating polyester tendons threaded through the web and anchoring them at the toe and crest of the slope.



There was also an area of fill along the eastern boundary where Geosynthetics Ltd designed a 1.2m high Reinforced Soil slope comprising Stratagrid geogrid and compacted selected Class 6F5 granular material. Because of the poor quality site material a vegetated 45 degree face angle was selected and constructed on a 300mm deep foundation pad formed from a Tenax bi-axial geogrid and compacted MOT Type 3 material.

As well as producing calculations and cross sectional drawings for the scheme elements, Geosynthetics Ltd provided technical support to assist sub-contractor, Alpha Construction.



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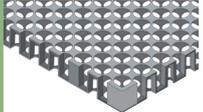
2 in 1
Landscaping Fabric



Gas Membrane
Radon, CO2, Methane,
Hydrocarbon Control



RoofCell
Sub Surface Drainage
And Water Storage



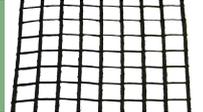
Alert®
Contamination Indicator



Geoglas®
Asphalt Reinforcement



Stratagrid
Soil Reinforcement Geogrid



AquaBlock®
Water Containment Liners



Geomembrane
Impermeable Membrane



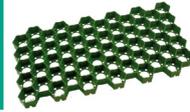
Strataweb
Slope Stabilisation



Bentotex® GCL
Geosynthetic Clay Liner



Golpla
Grass & Gravel Paving System



T-Block
Modular Retaining System



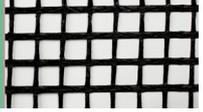
Cellweb® TRP
Tree Root Protection



Golpla Pregrown
Ready To Lay Paving System



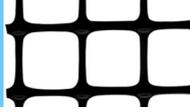
Telegrid
Woven Polyester Geogrid



DuoDrain®
Composite Drainage Product



Interlock
Extruded HDPE Geogrids



Televev
High Strength
Woven Geotextile



Erosion Control
Comprehensive Range



Knotblock®
Japanese Knotweed Barrier



Tenax
Soil Reinforcement Solutions



Ekotex®
Non Woven Geotextile



Landlok
Turf Reinforcement Mat



Total Traffic Exopave
Heavy Duty Paver



Fiberforce®
Equestrian Geotextile



Nicospan
Erosion Control



Trinter
Erosion Control Mat



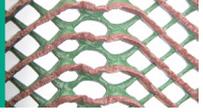
Fibertex
Non Woven Geotextile



Rhyno®
Woven Geotextile



Turfmesh
Grass Reinforcement



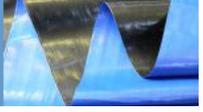
Flexitex
Textile Shuttering



RockBox
Gabion Mattresses



RootBlock
Root Barrier




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