



Case

STUDY

**STRATAWEB, TENDONS, STRATAGRID,
LANDLOK 450 AND EKOTEX 07**

Chilling 400kV Substation
Reinforcement



MARKET SECTOR:
Energy & Utilities.



LOCATION:
Chilling 400kV Substation
Hook, nr Fareham, Hampshire



CONTRACTOR:
Mitsubishi Electric



SUBCONTRACTOR:
Alpha Construction

The BACKGROUND

**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).

Our Client's REQUIREMENTS

A sustainable solution for for
slope reinforcement.

**Critically, all of the work had to be
completed within the existing site footprint
to minimise disruption to the surrounding
area and local residents.**

Our Value Engineered SOLUTION

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.

