

Ground Stabilisation

Plant Depot, Abgrid and Terrex, Bredbury, Manchester, UK



CASE STUDY

Project Description

A piece of land was purchased by DCT Civil Engineering with the intention of constructing a new plant and equipment storage facility. A 6F2 crushed brick hardcore material was available for use as a capping layer and the final surface was to remain unpaved.

The Challenge

The contract manager's dilemma was in choosing a minimum cost method of stabilisation that could be installed quickly and be relied upon to stabilise the ground ready for use. A number of methods were considered but all appeared to have disadvantages. These included:

- Punching some of the crushed brick into the ground to stiffen the in-situ soils
- The removal of 2m depth of clay and the importation of clean fill
- An engineered geosynthetic solution

The first option was trialled on site but failed to produce the results required by the contract manager and was not pursued further. Approximately 500mm of 6F2 was punched into the soft ground but the clay still came through and the formation deformed under the vibrating roller.

The second option was discounted as it was considered to be both time consuming and very expensive due to the high disposal costs of the materials excavated from the site. The third option required confidence that relatively thin geosynthetics would be strong enough for such weak ground and coarse hardcore.

Project Information

Client DCT Civil Engineering

Contractor DCT Civil Engineering

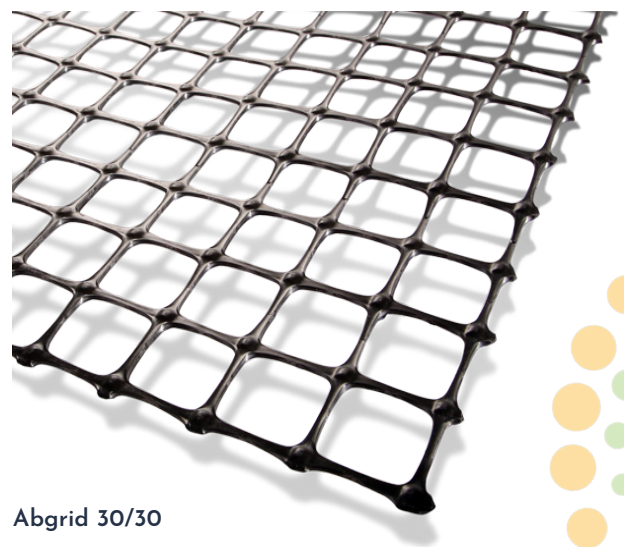
Consultant ABG

Products Abgrid 30/30
Terrex NW9

Quantity 8,000 m²

Benefits

- No dig solution
- Saved 8,000 tonnes of hardcore
- Commercial saving of £100,000



Abgrid 30/30

ABG LTD

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The Solution

DCT's contract manager approached **ABG**, whose technical team reassuringly calculated that a geosynthetic solution would be both technically viable and cost effective. ABG's calculations showed that a 400mm layer of 6F2 hardcore laid on to **Abgrid 30/30** geogrid with **Terrex NW9** geotextile underneath would create a stable surface over a weak 2% CBR ground. The **Terrex NW9** geotextile provided separation to prevent soft in-situ ground from squeezing through the geogrid into the 6F2, a solution recommended for all ground conditions of CBR <3% and saving a further 150mm of 6F2. The geogrid provided strength to enable the 6F2 layer thickness to be reduced by approximately 30%, giving a total saving of 400mm of 6F2 on this project. The **Terrex NW9** and **Abgrid 30/30** were rolled out together, a technique proving significantly cheaper than using a combined geogrid and geotextile all-in-one product.



6F2 hardcore was punched into soft and wet weak ground and was lost

The ABG Service

ABG provided full technical support, including design and installation advice.



Soft clay ground of 2% CBR was easily deformed by thumb pressure



Terrex geotextile and Abgrid geogrid supporting 6F2 hardcore over soft ground

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