Combigrid®

Temporary working platform

Project name
Portside East Development, Hamilton, Queensland, Australia

Client
Global Synthetics Pty Ltd, Virginia, Queensland, Australia

Contractor
Mainland Civil Pty Ltd, Shailer Park, Queensland, Australia

Technical consultant
Geoinventions Consulting Services (GCS), Underwood, Queensland, Australia

Developer
Brookfield Residential Properties, Calgary, Canada

Products
Combigrid 40/40 Q1 GRK 4 C
Secugrid 40/40 Q1

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Fig. 1: Covering Secugrid® with subbase material

Fig. 2: Completed working platform

The Gallery House development at Portside East is a luxurious apartment project in Hamilton, Queensland, Australia. The project features a 19 and a 20 storey building with approximate 169 apartments and 1100m^2 retail space. The building will offer easy access to the inner city and stylish waterfront living.

Challenge

The scope was to design a sufficiently thick working platform to prevent any punching or bearing failures during the piling operations.

As the construction site is adjacent to the Brisbane River, the existing loose to medium dense sand subgrade did not have the required bearing capacity to withstand the proposed 370kPa piling pressures exhibited during operations.

Solution

In order to achieve the required bearing capacity, the consultant designed a platform using a combination of Combigrid® geocomposite and Secugrid® geogrid. The geogrid component in Combigrid® provides reinforcement whilst the integrated geotextile component provides a positive separation and filtration function.

The Combigrid® geocomposite was placed on top of the weak subgrade and the Secugrid® geogrid layer was placed in the middle of the 800mm thick platform.

By using a geocomposite, the consultant provided value engineering by reducing the thickness of the platform compared to conventional working platform designs commonly provided in the industry. This provided material savings and reduced the overall construction timeframe for the construction of these platforms.

By using reconstituted subbase material for the platform reinforce fill, the consultant also reduced the need for utilising processed quarry material and additional transport which further reduced the carbon footprint of this project.

Fig. 3: Combigrid® and Secugrid® reinforced working platform