



Bunnings Warehouse, Glasson Drive Bethania, Queensland, Australia

Main Contractor: Walker Corporation Pty Ltd

Wall Contractor: Concrib Pty Ltd

Council: Logan City Council

Project Value: \$1.46 million

A new industrial and commercial development at Glasson Drive, Bethania required significantly high reinforced soil structures, some in excess of 9.0m on which a new Bunnings warehouse was to be built.

The design utilised large Stone Strong blocks with encompassed polyester geogrids extending back into the reinforced soil zone for stability. To maximise space and land value, the wall was designed to utilise a near vertical face batter of 1(H):18(V). Over 2,500m² of walling was constructed using over 18,000m² of geogrid.

The Stone Strong system was first introduced in the United States of America in the year 2001 and was launched in Australia in 2011 with the first wall being constructed for the Gold Coast City Council by Concrib Pty Ltd. The Stone Strong system consists of large modular precast hollow blocks suitable for gravity retaining structures up to 5.0m and RSS walls in excess of 15.0m.

The standard 24SF block has a chiselled granite face area of 2.24m² and has a mass of 2722kg. The smaller 6SF block has a 0.56m² face area and has a mass of 680kg. Each block is manufactured using a minimum concrete strength of 40MPa at 28 days and are internally backfilled with aggregate to provide additional retaining wall mass.

The Stone Strong blocks were founded on a 150mm concrete footing reinforced with SL82 mesh, providing a level platform. Blocks were internally filled with 20mm aggregate to provide additional retaining wall mass and act as an internal drainage layer.

Geoinventions presented a technical paper of the 9.0m high geogrid reinforced segmental block wall at the 17th Symposium on 13 Nov 2013 held by Sydney Chapter of the Australian Geomechanics Society and Engineers Australia Structural College. The technical paper can be downloaded from our website.