

SHUTTERTON PARK
DAWLISH , DEVON, UNITED KINGDOM**Basal Reinforcement****Problem**

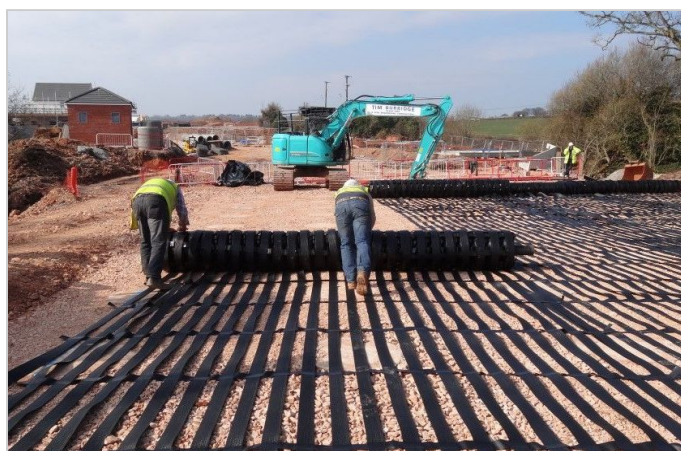
Redrow Homes proposed a new residential housing development within land off Shutterton Lane, Dawlish, Devon. The development comprises a mixture of private and affordable housing, private gardens, public open spaces, and all associated infrastructure.

Part of the infrastructure design required a new culverted road over the existing brook, connecting the two sections of the site. The proposed road crossing spans an existing brook with soft soil deposits on both banks. The site investigation works carried out in the area of the proposed crossing identified variable conditions with very soft soils including peat.

Solution

It was then proposed to use a granular material SFHW type 6N for the 300mm depth of the load transfer platform with the lower strength site-won material for the remainder of the embankment (with the exception of carriageway construction). The design of the load transfer platform was carried out to BS 8006-1:2010 using the Marston's formula. A surcharge load of 30kPa was assumed at road level and acting over the entire width of the embankment.

The load transfer platform consisted of two orthogonal layers of high strength geosynthetic reinforcement placed directly over the pile caps. The design required one layer of ParaLink® 450 in the longitudinal direction (i.e. perpendicular to the line of the concrete culvert) and a layer of 500kN strength in the transverse direction (i.e. parallel to the line of the concrete culvert). However two layers of ParaLink® 250 were selected for the transverse direction to allow the required bond length to be achieved within the available space. The properties of ParaLink® 250 and ParaLink® 450 are in accordance with the British Board of Agrément, Roads and Bridges Agrément Certificate No 03/4065.

Client: Redrow Homes**Designer / Consultant:** Wardell Armstrong**Contractor:** Harris and Harris Construction Ltd**Products used (Qty.)****Date of construction:** 03/2016 - 05/2016[Google Maps](#)[Google Earth](#)**Global view of the site - Piling configuration****Installation of the longitudinal layer of ParaLink®**



Installation of the transversal layer of ParaLink®



Layers of ParaLink® within compacted 6N material



Final compaction operation for the basal reinforcement



Finished surfacing on the road