

**HOUSING DEVELOPMENT PLOT LEVELLING
COLCHESTER, ESSEX, UNITED KINGDOM**

Reinforced Soil Walls and Slope Reinforcement

Problem

A new development by Bellway Homes comprised 145 new homes in Colchester, Essex.

Due to the sizeable project area and sloping gradient of the site, a large cut-and-fill exercise was planned to optimise the plot layouts and create a flatter landscape for the development. This in turn caused a level difference to the lower west side of the site of up to 5m where a steepened slope was incorporated into the design.

Solution

Due to the differential levels at the west end, a reinforced soil slope was utilised. A 70-degree face Green Terramesh solution was chosen as it was determined to be the most economical and environmentally friendly solution. The material on site was classed as 7D and was able to be used as structural backfill to the slope; the result was that there was no need for expensive granular fill to be brought onto the site for this element.

Due to this site-won material being wetter than optimal moisture content, it was treated with lime to improve its workability and compaction during construction.

The reinforced soil slopes were constructed using Green Terramesh and ParaGrid.

The Green Terramesh (GTM) system is vegetating slope-reinforced soil system with a BBA HAPAS-certified 120-year design life. It is made from double-twist steel mesh and a rapid-to-install fascia, all in one single unit. The fascia includes an integral matting which supports vegetation growth giving the green finish at a slope angle of 70 degrees.

The units have an integral steel mesh geogrid 'tail' which is installed within the compacted structural backfill to provide soil reinforcement. Green Terramesh units also feature a heavy-duty welded mesh panel behind the front face and bracing struts to support the face at the appropriate angle during construction, removing the need for external shutters or face support. As all these elements are incorporated into the unit at the factory, it reduces work on site and makes the installation much quicker and safer than with other 'soil bag' or wrapped face style geogrid structures.

Client: Bellway Homes

Designer / Consultant: RLT

Contractor: Ground Developments Ltd (GDL)

Products used (Qty.)

- Terramesh 342m2
- MonoAxial GeoGrids 1890m2

Date of construction: 06/2021 - 08/2021

[Google Maps](#)

[Google Earth](#)



Green Terramesh unit erected - no external formwork needed



ParaGrid placed ready for structural backfilling



Lime treated backfill placed and compacted



Green Terramesh slope gaining height - note edge protection