

**REDROW HOMES DEVELOPMENT  
LUTON, BEDFORDSHIRE, UNITED KINGDOM**

**Reinforced Soil Walls and Slope Reinforcement**

**Problem**

An old Vauxhall Motors factory site was sold to Redrow Homes as a large parcel of development land in a prime location on the outskirts of Luton.

The site was heavily sloped and made up of structureless chalk. The large slope required a series of terraces to optimise the plot layouts and site efficiency.

In one location a 10m high structure would be required.

**Solution**

The excavated chalk was originally scheduled for landscaping and offsite disposal. However, contractor GDL, their designers GES and Maccaferri determined that with cement stabilisation, the chinks could be used as structural backfill to a reinforced soil slope. This would lead to environmental benefits due to the site-won material being reused, and also there would be no need to dispose of materials offsite or import new quarried materials.

Maccaferri proposed the use of the Mineral Terramesh® reinforced soil retaining wall system, to create a 9.6m high structure with a 70' front face.

ParaGrid® polymer geogrids were used in conjunction with the Mineral Terramesh® to deliver long-term stability.

The Mineral Terramesh® system used is manufactured from double-twist woven wire mesh and is Zn-Al5% galvanised steel with an additional PoliMac® polymer coating. The PoliMac® coating gives the Mineral Terramesh® system a design life in excess of 120 years and is BBA HAPAS approved. PoliMac® offers far greater technical and environmental performance than traditional PVC-coated wire mesh products.

The factory-assembled facing combines the double twist woven mesh with a Zn-Al5% Class A galvanised welded mesh with 50mm x 50mm apertures to give an architecturally pleasing aesthetic finish. This speeds up construction as there is no unit assembly other than the insertion of braces to hold the face at the correct angle during construction.

The facing system also enables the use of a smaller aggregate to be used to face up the structural fill, typically a 75mm clean stone. The Mineral Terramesh® units have integral 3m reinforcement tails enveloping the facing system in a continuous length of double-twist woven mesh.

**Client:** Redrow Homes

**Designer / Consultant:** Ground Engineering Solutions Ltd (GES)

**Contractor:** Ground Developments Ltd (GDL)

**Products used (Qty.)**

- Terramesh 719m<sup>2</sup>
- MonoAxial GeoGrids 7500m<sup>2</sup>

**Date of construction:** 04/2019 - 10/2019

[Google Maps](#)

[Google Earth](#)



Mineral Terramesh units being erected - Note MacDrain to rear



Cement improved chalk as structural backfill



Face finish of Mineral Terramesh



Mineral Terramesh nearing full height



Mineral Terramesh 3 years after construction