



**REINFORCED EARTH® GEOSTRAP® SYSTEM WITH LIGHTWEIGHT AGGREGATE -  
HIGHWAY DEVELOPMENT**



LECA® Light Weight Aggregate(LWA) was utilised to form part of the Muller Road retaining wall for a highway development, which was a key area for Network Rail's ambitious upgrade plan to increase rail

capacity from two to four tracks between Dr Day's junction to Filton Abbey Wood, to the North of Bristol. This was the first project in the UK which utilised Reinforced Earth® GeoStrap® system with lightweight aggregate.

LECA® LWA was incorporated on the Muller Road retaining wall to accommodate the poor bearing capacity of the ground beneath the Reinforced Earth® structure which in total stretched approximately 130m in length. The wall was angled at ground level at the entrance and rose at around 6m high at the other end.

Specifying LECA® LWA for this project reduced the bearing pressure exerted on the foundation soil and the alternative solution would have been to employ significantly more expensive ground improvement options.

When this section of the road development was established - a combination of type 6l granular backfill material and LECA® LWA was used. Type 6l granular backfill was installed initially and at the midway point in conjunction with the wall, LECA® LWA 10-20mm was installed and compacted – creating a compacted density of 3.8 kN/m<sup>3</sup>. The two materials were effectively separated through a geotextile separation system.

## FACTS

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**Amount of material:** 1500m<sup>3</sup> of [LECA LWA \(10-20mm\)](#)

**Interesting Fact:** LECA® LWA was incorporated on the Muller Road retaining wall to accommodate the poor bearing capacity of the ground beneath the Reinforced Earth® structure

**Delivery Method:** Walking Floor

**Main Contractor:** Network Rail