



## RAMP EMBANKMENT | BELVEDERE, SOUTH EAST LONDON



Over 3,750m<sup>3</sup> of LECA® LWA was used in the construction of a ramp embankment that will carry the access road for waste vehicles entering and leaving the new Riverside Resource Recovery Facility, the largest energy from waste facility to be built in the UK.

Leca® LWA is an expanded clay aggregate formed by heating and firing natural glacial clay. It is inherently light therefore reducing ground bearing pressure in areas of difficult soil conditions. Here at Belvedere, on the edge of the River Thames, the conditions are 'made ground', peat and alluvial grade soils.

Construction of embankments over weak and compressible soil deposits, where loading causes soil consolidation and settlement, is common.

By lightening the embankment with use of Leca® LWA, subsoil strengthening and lengthy settlement periods can be dramatically reduced or avoided altogether.

Completion of the ramp embankment by main contractor Costain Limited, for Von Roll Environmental Technology Limited, required delivery of almost 63 loads of 60m<sup>3</sup> of LECA® LWA 10-20mm aggregate. The fill was loose-tipped onto a geotextile membrane which separates the fill from the underlying soil to avoid migration of fines.

## FACTS

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**Amount of material:** 3,750m<sup>3</sup> of [LECA® LWA \(10-20mm\)](#)

**Interesting Fact:** LECA® LWA was used in the construction of a ramp embankment that will carry the access road for waste vehicles entering and leaving the new **Riverside Resource Recovery Facility**, the largest energy from waste facility to be built in the UK.

**Main Contractor:** Costain Ltd

This amount of LECA® LWA would equate to almost 315 loads of traditional hardcore fill, the transportation of which would have had substantial environmental impact and expense.

Application of the free-draining material at Belvedere was quickly and easily tracked into position by a dozer in 1m compaction layers, with only 3 - 4 passes of the vehicle. This achieved a considerably faster build process, in comparison to traditional infill materials, with the inherent labour cost savings.





Elsewhere on this busy site LECA® LWA was used to ensure that the roadways and hardstanding areas could withstand the heavy surface loadings of fully laden trucks moving around the site. Ground investigations found that, in many areas, the subsoil was a soft, organic, silty material, unsuitable for road formation. A sub-formation layer of LECA® LWA has been provided after excavation of the poor quality subsoil. The stability of the Leca® LWA once placed and compacted, reduces the risk of future settlement of the roadway surfaces. Delivery of the material was expedited quickly and accurately by the use of ‘walking-floor’ bulk trailers.

Gareth Doran, section engineer, Costain Limited, said: “The ground on site is very poor and the benefits of LECA® LWA, being lightweight, high volume and very easy to handle, have really helped us press on with the ramp embankment.

The additional locations where we have used the product on this site include roadways and loading bays.”