



## A14 HUNTINGDON TO CAMBRIDGE HIGHWAY DEVELOPMENT



A new 12-mile bypass to the south of Huntingdon in Cambridgeshire, the new bypass runs between Ellington and Swavesey and is part of UK's biggest road upgrade – a project to upgrade 21 miles of the A14 between Cambridge and Huntingdon.

Leca® LWA 10-20mmR was used as backfill to the cast in situ reinforced concrete bridge abutment and reinforced concrete wing walls and for earthworks fill to provide a reduction in imposed loading.

The LWA was capped by 2m of standard MCHW fills. The reduced loading of Leca® LWA compared to MCHW standard earthworks materials helped to limit ground settlement that would have otherwise impacted on the East Coast Main Line rail infrastructure (in particular to the four tracks (Up and Down Fast plus Up and Down Slow) which operate at speeds of up to 125mph to levels acceptable to Network Rail, and consistent with no adverse maintenance requirements.

The A14 Cambridge to Huntington Improvement Scheme was named Digital Transformation Initiative of the Year, one of a number of awards the project picked up at the British Construction Industry Awards (BCIA) held at the Grosvenor House in London. The awards recognise projects that demonstrate the positive impact the British construction industry has on society.

## FACTS

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**Amount of material:** 37,000m<sup>3</sup> of [Leca® LWA \(10-20mm\)](#)

**Interesting Fact:** Leca® LWA 10-20mmR was used as backfill to the cast in situ reinforced concrete bridge abutment and reinforced concrete wing walls and for earthworks fill to provide a reduction in imposed loading.

**Delivery Method:** Walking Floor

### Limiting Settlement with Leca® Lightweight Fill

Also to limit settlement of the bridge structure and differential movement between the abutments within the 25mm design tolerances for this 34m skew span integral bridge and limit settlement of the bridge structure in order to maintain clearance to the network overhead power lines.

By using the Leca® LWA solution, the need for a Pilled reinforced concrete raft was avoided. This reduced the already substantially high number of piles to the 168 bored piles anticipated for the bridge structure itself.





The additional piles would have required additional programme time for construction which could not be readily managed by increasing plant and resources within the confined construction site and working adjacent to the ECML. East coast main line bridge section 2 was a critical path structure for the construction of the A14 Scheme. Use of Leca® LWA provided a benefit to the Structure construction programme when compared to a pile raft and enabled construction within the critical path programme whereas a piled raft did not.

The use of Leca® LWA offered cost reductions by reducing the number of piles required and time saving on construction program. Added benefit was also the reduced imposed risks to the Network Rail ECML during the bridge construction phase.