



## WAKEFIELD EASTERN RELIEF ROAD



Leca LWA was specified for the Wakefield Eastern Relief Road with the aim of reducing congestion and air pollution and to increase the commercial growth of the region – providing access routes for future development. This included the construction of a rail bridge over a new road and the need to be completed

within a 56 hour window over the Christmas period.

During the design of the Wakefield Eastern Relief Road – it was discovered that the rail bridge foundations would need to be built offline, whilst not impacting the use of the existing rail timetable for passengers travelling through the region. This eliminated the time intensive (3 months) and cost heavy (£500k) requirement for foundation construction from the critical path.

## FACTS

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**Client:** West Yorkshire Combined Authority & Wakefield Council

**Contractor:** Buckingham Group Contracting Ltd & Hochtief Construction (Joint Venture)

**Delivery Method:** Walking Floor

**Product:** [Leca LWA \(10-20mm\)](#)

It was during this phase of developing a robust groundwork support for the rail line, that Leca LWA was specified and installed. The key benefit of the use of Leca LWA was the speed of install during this critical – time dependent phase of development. The lightweight nature of the material ensured that swift delivery could be easily achieved. A typical walking floor can carry up to 4 times more per delivery compared to traditional type 1 fill.

Furthermore, the geotechnical benefits of the application of Leca LWA as a groundwork solution included the ability to be applied to repair settlement defects, to increase levelling and to improve bearing capacity. By lightening the embankment in rail development with Leca® Lightweight Expanded Clay Aggregate, subsoil strengthening and lengthy settlement can be reduced or even avoided altogether. Using Leca® Lightweight Expanded Clay Aggregate on large scale cut and fill operations and construction on soft soils or bad ground can overcome stability problems, reducing the risk of landslide and deformation.



To achieve certainty that the structure would be ready for the possession, the developers maximised the offsite pre-construction of the deck structure and this included the assembly of the 1200t structure offline ready to be lifted in a fully operational state following the groundwork preparation with the use of Leca LWA.

For the installation phase of the bridge, a Self-Propelled Modular Transporter (SPMTs) was utilised, replacing the need a crane, which mitigated the risk of high winds in the area preventing the installation. The bridge was then successfully lifted and installed on jacks above the SPMTs before the bridge was placed.

The works were completed withing the possession time and the track was handed back with no issues – avoiding the closure of the rail line.