



## FEEDER ROAD TO THE A421 | BEDFORDSHIRE



Leca® LWA is a key constituent in a unique embankment constructed for a feeder road to the A421 using discarded tyre bales which won the prestigious Fleming Award for excellence for the Balfour Beatty/Scott Wilson (now URS Scott Wilson) geotechnical team.

11,000m<sup>3</sup> of Leca® LWA was used for regulating layers between the tyre bales and also for the shallow sections of the embankment where tyre bales could not be used. The embankment carries a realigned side road to the A421 in Bedfordshire. This is the first time that tyre bales were used to form an embankment on a public road in the UK. Having only been previously used for subgrade improvement and flood defence bunds. Tyre bales are formed by lacing together about 100 used tyres which are then compressed and tied with wire. Simply placed into position, the spaces between the tyres are then filled with Leca® LWA by mechanical shovel which then tracks across the material to ensure optimum compaction.

Leca® LWA is a totally natural product. It is lightweight expanded clay formed by heating and firing natural glacial clay in a rotary kiln at temperatures up to 1150°C. This process transforms the clay into lightweight ceramic granules with a hard shell and porous core. Leca® LWA is extremely light with a dry bulk density of just 0.3 tonnes per cubic metre. Leca® LWA has excellent insulation properties, is free draining, fire resistant, frost resistant and chemically inert with no hazardous properties. Used as a lightweight aggregate fill in many civil engineering applications Leca® LWA reduces the weight on weak substrates and against retaining structures can reduce the weight-loading by 75% over traditional fill. Leca® LWA eliminates expensive settlement delays, is easily handled and quickly installed. Leca® LWA can be delivered to site in bulk in chapter 8 compliant walking-floor trailers which remove the risk of unstable tippers on uneven surfaces.

The Highways Agency awarded the Early Contractor Involvement contract to the A421 improvement scheme in Bedford to Balfour Beatty Major Civil Engineering and their designer URS/Scott Wilson in November 2005.

## FACTS

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**Amount of material:** 11,000m<sup>3</sup> of [LECA ®LWA \(10-20mm\)](#)

**Interesting Fact:** Leca® LWA was a key constituent in a unique embankment constructed using discarded tyre bales which won the prestigious Fleming Award for excellence.

**Delivery Method:** Walking Floor

**Main Contractor:** Balfour Beatty/Scott Wilson (now URS Scott Wilson)