



A120 TRUNK ROAD | STANSTED AIRPORT, ESSEX



Engineers for a major trunk road project specified Leca® LWA to meet construction challenges and speed up progress. By using the versatile lightweight expanded clay granules, Balfour Beatty was able to reduce the amount of piling needed for bridges and to substantially cut the loading on three large diameter drains

carrying surface water from Stansted Airport.

Working on behalf of Essex County Council to designs by WS Atkins Consultants Limited, Balfour Beatty was able to reduce earth pressure on the bridge and a 9 metre embankment by some 75%, when compared with traditional fill materials (Class 1 or 6N).

Leca® LWA was used to backfill abutments of a bridge carrying the new 15-mile A120 trunk road from Stansted to Braintree with around 1,000m³ completed in just two days, using only one small excavator to spread and compact the fill.

The reduced loading achieved by using Leca® LWA allowed CFA piling to be used instead of bored piles due to the shorter length required.

This had the added advantage of eliminating the use of a support fluid which would have been necessary with bored piles. Further abutment backfilling using Leca® LWA for a second bridge took place later in the contract.

In the second stage, some 8,000m³ of Leca® LWA was used to form an embankment over three existing large drainpipes – two 1,650mm and one 1,800mm diameter – which are the main surface water outfalls from the airport. Conventional fill would have placed undue loading on the pipes with a likelihood of them collapsing.

In addition to solving the loading issues, Balfour Beatty also found Leca® LWA quicker to place and compact - with deliveries reduced to just one fifth of the number required when using conventional aggregate fill – allowing faster progress and a shorter completion schedule.

FACTS

Amount of material: 9000m³ of [LECA ®LWA \(10-20mm\)](#)

Interesting Fact: The reduced loading achieved by using Leca® LWA allowed CFA piling to be used instead of bored piles due to the shorter length required

Delivery Method: Walking Floor

Main Contractor: Balfour Beatty