

A1331 Elmstead Market Bypass

Case Study

Project Overview

This case study highlights the collaboration between National Highways, Octavius Infrastructure and Blue Phoenix to deliver a more sustainable subbase solution than primary aggregates for the A1331 Elmstead Market Bypass. By using Reborn Aggregates, sourced from the Tilbury Depot, the project achieved significant environmental and financial milestones.

Client	National Highways
Main contractor	Octavius Infrastructure
Application	Type 1 Road Subbase
Material supplied	Type 1 IBAA
Location	Essex
Compliance	Fully compliant with National Highways specifications

“Type 1 IBAA performed exactly like primary aggregate on the A1331 Link Road Project, delivering top-tier CBR and compaction test results while proving that we can hit low-carbon targets without compromising on build quality or the site programme.

Sandeep Gunuganti, Site engineer



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Environmental Impact & Carbon Savings

The use of **Reborn Aggregates** diverted substantial household waste from landfills and significantly reduced the project’s carbon footprint.

Criteria	Reborn Aggregates	Primary Aggregates
Compacted Density	1.7 Mg/m ³	2.2 Mg/m ³
Tonnage Required	43,500 t	52,200 t
Truck Journeys Required	2290	2748
Total CO ₂ Generated	214,501 kg (4.03 kg/t)	372.729 kg (7.14 kg/t)
Material Cost	Most-effective vs quarried	Higher unit cost per tonne

Key savings vs primary:	158,228 kg CO ₂ saved (3.56 kg/t)	52,200 t primary resources saved
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Assumptions: Distance from Primary Quarry (Ipswich Dock Depot, Brett Aggregates) to site is 22 miles
Trucks are assumed to be 100% Laden and only counted one way. Average MPG for Rigid Trucks is 8.2.
IBAA 0.29 kg CO2/t is specific to the activities & processes at the Tilbury Depot

Outcome

The A1331 Elmstead Market Bypass case study demonstrates that IBAA is a high-performance, cost-effective, low-carbon alternative to traditional aggregates.

It supports National Highways’ net-zero objectives and circular economy commitments while maintaining full technical compliance.

