



London Bridge Best Practice



Case Study Title: Reuse of platform backfill

Month/Year: November 2016

Key Benefits

- ✓ Reuse of over 6,000 tonnes of material on the project
- ✓ Carbon saving of nearly 50 tonnes of CO₂e
- ✓ £184,262 saved from eliminating both the cost of waste removal and price of importing recycled aggregates
- ✓ Removing over 600 wagons from local roads

Objectives and Targets

- ✓ CEEQUAL – Energy & Carbon Performance – Energy consumption consideration by contractor
- ✓ Sustainability Delivery Statement – To minimize the levels of carbon generated over the whole life of Thames Link Project
- ✓ Project target to reduce the amount of scope 1 & 2 emissions by 5% year on year against the 2013/14 baseline

Overview

The London Bridge Station Redevelopment Scheme is committed to identifying opportunities to reduce the amount of waste we produce and our carbon footprint. As part of the platform demolition at London Bridge Station we were required to remove 5000m³ of existing backfill to be replaced by new recycled aggregate in accordance with the design. Through a range of geotechnical testing, the site team managed to test the existing backfill to show that it was actually suitable to reuse in accordance with the design specification. By completing this extra testing this has eliminated the need to remove and dispose of the backfill and the requirement to import fresh recycled aggregate. This has provided cost, time and carbon savings to the project.



Savings Calculations

Removal of platform backfill as waste:

	Cost Saving (£)	Carbon Savings (kgCO ₂ e):
Cost of waste removal	100,200	
Transport of 334 wagons to site (0% laden)		2,481.2
Transport of 334 wagons removing waste from site (100% laden)		3,554.2
Embodied carbon of re-use of aggregates		6,004

Source: Inventory of Carbon and Energy (ICE), Hammond & Jones (2011); DEFRA Greenhouse Gas Conversion Factors 2016

Import of replacement recycled aggregate:

	Cost Saving (£)	Carbon Savings (kgCO ₂ e):
Cost of recycled aggregate	84,062	
Transport of 334 wagons to site (0% laden)		2,481.2
Transport of 334 wagons removing waste from site (100% laden)		3,554.2
Embodied carbon of aggregates		31,223

Source: Inventory of Carbon and Energy (ICE), Hammond & Jones (2011); DEFRA Greenhouse Gas Conversion Factors 2016

Total cost savings for the project = £184,262
Total carbon savings for the project = 49.3 tCO₂e

Conclusion

By taking the time to properly assess the backfill beneath the old platforms at London Bridge we have successfully saved **£184,262** and achieved a carbon saving of **49.3 tCO₂e** by not having to remove and replace the backfill. The carbon savings were achieved through the removal of **600 wagon movements off local roads** and the cost savings were achieved through not having to pay for a replacement backfill and disposal costs.