Sleaford Household Waste Recycling Centre was built on brownfield land underlain by very soft and variable saturated material.

Tensar®

SPECTRA®
PAVEMENT OPTIMISATION SYSTEM

Significant cost reduction with TriAx

Spectra Pavement Optimisation System saved time and money on construction of a new recycling centre in Lincolnshire.

CLIENT'S CHALLENGE

Construction of a new household waste recycling centre in Sleaford, Lincolnshire, had to deal with very soft, saturated ground. Lincolnshire County Council needed a cost-effective pavement design that would minimise total pavement thickness and also mitigate differential settlement of the trafficked areas in the waste facility.

TENSAR SOLUTION

Tensar's Spectra Pavement Optimisation System, using TriAx geogrids incorporated into recycled capping and sub-base layers, delivered a pavement design that mitigated differential settlement and removed the need for extensive excavation and replacement of the underlying soils.

Fewer imported aggregates and asphalt were required; overall pavement thickness was reduced significantly and £300,000 construction costs were cut.

Sleaford Household Waste Recycling Centre

Pavement optimisation

Sleaford, UK

BENEFITS

64%
reduction in road pavement thickness

75%
reduction in pavement construction costs

Locally-sourced
use of recycled aggregates for capping

Mitigation of
differential settlement on very weak ground

REF TEN368

TriAx incorporated under both the capping and sub-base layers delivered a cost-effective design that reduced pavement thickness and mitigated differential settlement.

PROJECT BACKGROUND

Sleaford Household Waste Recycling Centre opened in 2014, replacing the town's original facility, which was small and could no longer cope with demand.

The new centre was built on brownfield land north east of Sleaford underlain by very soft and variable saturated material, with a CBR of approximately 0.7%.

While historic surcharging had dealt with long term (total) settlement, there were concerns that differential settlement would damage the asphalt pavement of the access road, as well as the concrete pavement in the centre of the facility, where the waste is stored.

The original proposal involved excavating over 1.5m of ground and replacing it with imported aggregates to create a stable founding layer. However, this was both expensive and time-consuming, so Lincolnshire County Council's Waste Services team approached Tensar to develop an alternative value engineered design.

Tensar's Spectra Pavement Optimisation System was used to develop a design that met the technical requirements of the project in the most economical way. Two layers of TriAx geogrid were installed under both the recycled capping and good quality sub-base to create two mechanically stabilised layers that could be placed without the need for significant excavation. As a result, the combined aggregate and asphalt layers were reduced by a total of 64% and pavement construction costs were only a quarter of the original scheme estimate.

Contractor:
GF Tomlinson

Client/Consultant:
Lincolnshire County Council
(Technical Services Partnership)

"We chose Tensar's alternative design because it involved significantly less excavation, spoil handling and importing of aggregates. This cut pavement costs by 75% and meant construction was much quicker."

Ian Walker
Projects Development Officer, Environmental Services
Lincolnshire County Council

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