**Case study title:** Thameslink - Peterborough Sustainable Use of Materials
**Month/year:** March 2015

**Business unit:** Carillion Construction Services/Rail

**Project:** Thameslink – Peterborough Spital Sidings

**In partnership with:** Network Rail (Client) and Tata Steel Projects (Designer)

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**Thameslink Sustainability Strategy - Objectives**

- ✓ Reducing cost of delivery (Objective 11)
- ✓ Minimise whole life carbon impacts (15)
- ✓ Reducing consumption of virgin materials (17)
- ✓ Reducing Waste (18)

**Background:**
Carillion is installing a new railway sidings at Peterborough as part of the Thameslink Programme to increase rail capacity and connectivity throughout the south east. The contract includes design and construction of 6 stabling roads along with a new Carriage Washing Machine, associated lighting, Controlled Emission Toilets and train crew accommodation. To meet the team's Sustainability Delivery Statement (Action Plan) target of using 25% recycled content in aggregates, an opportunity to reuse excavated materials and source recycled materials was identified.

Carillion's Materials Use Plan which prioritises the use of sustainable and locally sourced materials set up the framework for successfully tracking the key materials, such as concrete, aggregates and rebar, used during construction. By adopting the circular economy to reuse and recycle waste as viable construction materials, the team reduced carbon emissions and saved on costs.

**Key Achievements:**

- Off-site crushing of 500 tonnes of limestone arising from trenching activities
- Reusing 1,305 tonnes of soil and stones to raise levels around new TOC accommodation saving £10,000 and reducing transport related emissions by 1 tonne
- Exceeding the 25% target by achieving 28% (at March 2015) recycled content in aggregates
- Leveraging the waste hierarchy to achieve an overall diversion from landfill rate of 99% for the project
- Minimising the impact on the local community by removing traffic movements from local roads.

Carillion, in partnership with Network Rail, has also installed 3,400 concrete sleepers sourced from from Network Rail's National Supply Chain with 90% classified as serviceable (pre-used) spares. Reusing these sleepers saved the project £92,000 and helped avoid 209 tonnes of embodied carbon.

Identified savings = £102,000 and 210 tonnes of $CO_2$(e).

**Challenges:**
Local aggregate suppliers in the Peterborough area have reported a scarcity of suitable materials for crushing leading to a supply shortage of recycled aggregates. This restricted the project's ability to order recycled construction materials.

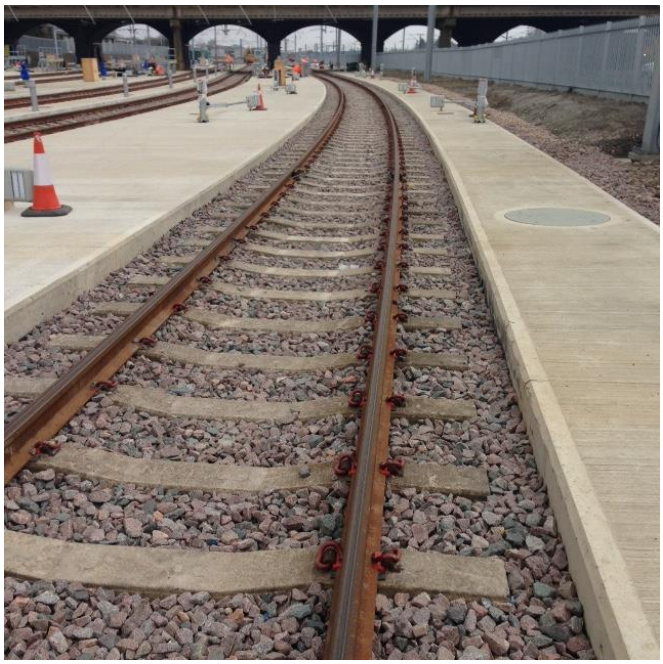

Photo 1 – Serviceable concrete sleepers installed on stabling road No1

Photo 2 – Limestone trench excavated using a mechanical trencher