

Safer Construction in the UK with a Geogrid-Stabilised Working Platform

Joint partnership Balfour Beatty and Vinci, known as BBV, is working to construct two key sections of HS2, Britain's new high-speed rail line connecting London in the South to Birmingham in the Midlands. Part of Phase 1 of this project includes work on 90km of tunnels, bridges, viaducts, culverts and earthworks.



At a section at Stoneleigh Park, covering around a 5,000m² area, investigations revealed the quality of the underlying ground was variable - between cohesive and granular. A robust yet sustainable solution was needed to ensure a safe temporary working environment for workers.

BBV used the Tensar InterAx geogrid solution to create a mechanically stabilised platform on which construction work can be carried out. This is a crane hardstanding which needs to support significant piling rig track pressures over a variable subgrade.

This approach resulted in significant savings in whole life construction time, cost and embodied (produced during construction) carbon emissions. The project team also aimed to substantially reduce the volumes of imported fill to be used in the platform's construction and maintenance.

Resulting sustainability benefits included:

- Around 15 days (75%) estimated reduction in construction time.
- More than 100,000kg CO₂ equivalent (75%) estimated saving in carbon emissions.
- More than 1.2m of 6F2/5 saving in stone depth across the platform's 5,000m² area. 6F2 is material sourced, produced and used on site and 6F5 is material imported to the site.

The project also reduced construction costs by an estimated £300,000 (76%).

To find out more, email tensarinfo-intl@cmc.com.

The IGS Sustainability Committee is committed to communicating the positive environmental impact of using geosynthetics, improving worldwide understanding of the sustainability benefits of geosynthetic materials, and supporting the geosynthetics industry maximize the sustainability potential of their projects. For more information, visit our webpage at www.geosyntheticssociety.org/sustainability.

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Company: Tensar, a division of CMC
Client: Balfour Beatty Vinci
Location: Stoneleigh, Warwickshire, UK
Application: Providing a stable temporary overbridge over a 5,000m² area using a mechanically stabilized aggregate layer with geogrids
Benefits: Time, cost, and carbon savings



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