Vegetated Earth Retaining Systems

ABG Webwall & Abslope EM, Royal Cornwall Hospital, Truro, UK

CASE STUDY

Project Information

Client	Royal Cornwall Hospital Trust
Contractor	BAM Construction
Product	ABG Webwall & Abslope EM Systems
Quantity	82m & 30m long respectively
Benefits	• Stable, low-cost and quick installation • Attractive, vegetated earth retaining solutions • Sustainable and cost-effective, allowing for the reuse of site-won fill

Project Description

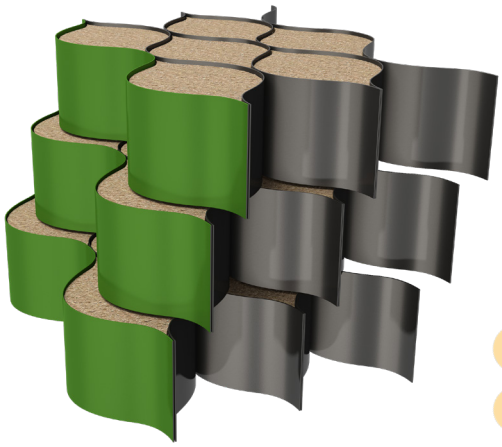
The existing Gravel Pit Car Park at the Royal Cornwall Hospital site in Truro is being extended to provide a further 181 staff parking spaces. The project forms a key part of the enabling works for the new Women and Children's Hospital building. Consulting engineers Arup and contractors BAM Construction collaborated with ABG to design a more sustainable and cost-effective solution to retain the earthworks at the western edge of the new parking area and to accommodate a 3.5m height difference.

The Challenge

The extension of the gravel car park required significant earthworks, including an 82m long x 3.5m high earth retaining structure and an adjacent 30m long access ramp. A reinforced concrete design would look too imposing against the surrounding countryside and be expensive and time-consuming to construct, whilst incurring a much heavier carbon footprint to transport to site. A vegetated earth retaining option was preferred for aesthetic reasons, especially given the height and length of the slopes required. Additionally, the Trust wanted to minimise costs by reusing all site-won fill material.

The Solution

The ABG Webwall System (partly geogrid-reinforced) formed the 70° slopes along the 82m long section in order to maximise the number of parking spaces. The Webwall solution is supplied in light-weight, easy to transport panels that are unfolded and expanded into position to quickly form each layer of the structure prior to backfilling.



ABG Webwall

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ABG Webwall abutting Abslope EM system

The ABG Abslope EM system was installed for a 30m long access ramp at the southern end of the site, joining at 90° to the Webwall. The Abslope EM system incorporates multiple layers of geogrid to reinforce the earth embankment, with a vegetation liner at the face of the slope to enable grass / vegetation to establish.

ABG's gravity and reinforced earth retaining solutions enabled the use of site-won fill in order to construct the earthworks with a natural vegetated finish. This approach greatly eliminated off-site material disposal costs and reduced the environmental impact of the project.

The ABG Service

ABG's design and supply service included detailed calculations, construction drawings and a fully indemnified project proposal.

ABG Webwall forming 90° returns to accommodate a staircase

Setting out the first row of the Webwall by expanding the panel into position

Vegetated Abslope EM section (foreground) adjoining with longer Webswall section

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