Flexible Pavement Design

ABG Geogrids, Steeple Aston, Oxfordshire, UK

Project Information	
Client	Oxfordshire County Council
Consultant	MJA Consulting
Product	ABG Geogrids
Benefits	• Reduced excavation • Decreased foundation thickness • Shortened construction time • Lower carbon footprint and cost savings

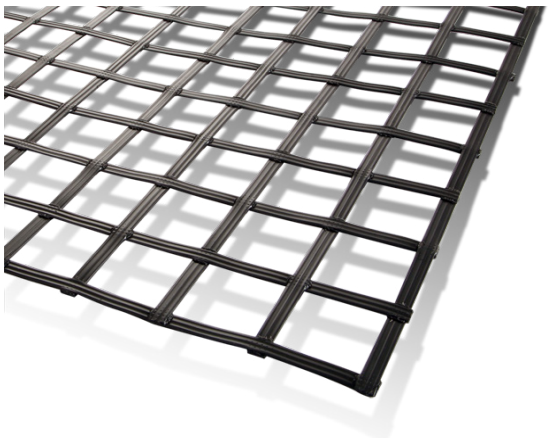
Project Description

The Townend development on South Side in Steeple Aston near Bicester is a collection of eight new homes that have been designed to blend perfectly into their village setting. As part of the enabling works a new entrance was required for site traffic and future residential access to the development.

The Challenge

Site operations revealed a weaker than anticipated subgrade strength, with a CBR value of less than 2.0%. The pavement at the entrance of the development subsequently needed to be re-designed to meet Section 278 of the Highways Act 1980 in order to obtain approval from Oxfordshire County Council.

Methods for improving the subgrade, as outlined in the Design Manual for Roads and Bridges (DMRB) document CD225 revision 1 (2020), clause 2.7, Note 2, include excavating and replacing between 500 to 1,000mm of the soft subgrade with granular fill, mechanical stabilisation (using geogrids and/or geotextiles), and soil stabilisation.



ABG Geogrids

ABG LTD

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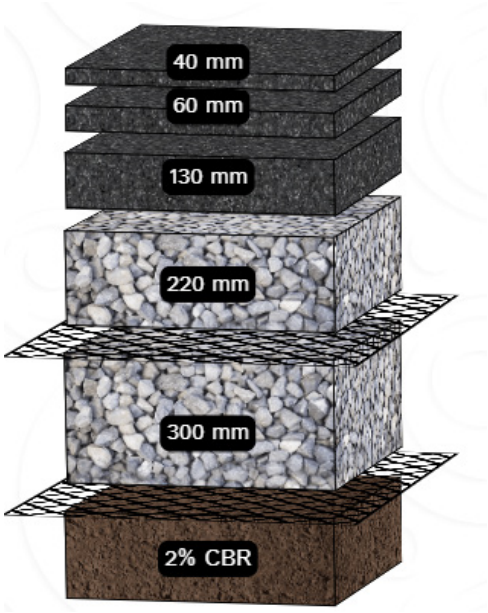
The Solution

ABG Ltd was approached by MJA Consulting to provide a solution to meet the requirements under Section 278 of the Highways Act 1980 and to avoid unnecessary site delays.

ABG Engineers proposed a stabilised road foundation utilising geogrids to improve the stiffness of the unbound layers, thereby increasing pavement life and allowing for a reduction in pavement thickness. This proposal minimised additional excavation, reduced the amount of imported stone required, and decreased construction time, carbon emissions, and overall project cost.

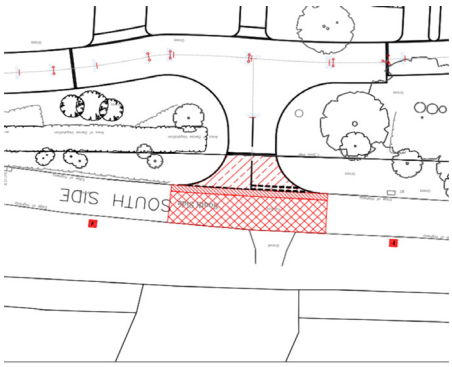
The entire road construction design was developed using our in-house software, which integrated ABG geogrids to facilitate safe construction traffic and provide a stabilised foundation for the final road construction.



Designed Pavement Section

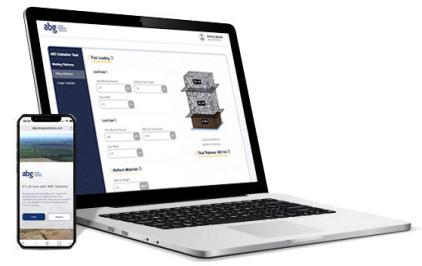
The ABG Service

The ABG engineering team provided a quick turnaround for the flexible pavement design proposal, outlined in our design submission document. The site-specific design service achieved the required performance and substantial cost, time and carbon savings compared to the traditional process.



Site entrance pavement requiring re-design.

Site entrance prepared and ready for surfacing.



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Contact ABG today to discuss your project specific requirements and discover how our past experience and innovative products can help.

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