



UNIVERSITY OF
BIRMINGHAM

Midland Geotechnical Society Newsletter

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Honorary Secretary:

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Meeting Venue

Lectures start: 7pm

Refreshments are available prior to the meeting

Registered Charity Number: 514610

November 7th Meeting

The use of compressed tyres on the A421

Stephen Beales of URS Scott Wilson

The talk is based on the paper which won the Fleming Award and was originally a joint award with Balfour Beatty and the Highways Agency.

NOTE

**This meeting is at the ARUP Campus at
Blythe Valley Park , Solihull
B90 8AE**

SYNOPSIS

The A421 improvements scheme near Bedford in England required construction to carry a new dual carriageway and a realigned side road over former borrow pits that had previously partially infilled with up to 20m of soft clay. The talk deals with the design of a lightweight embankment to support the realigned side road. The lightweight fill comprised a combination of 'Maxit' expanded clay aggregate and tyre bales manufactured from old vehicle tyres under a standard that produces an engineering material from a former waste product.

The talk describes the studies and investigations that revealed the history and hence the current condition of the borrow pits and provided parameters for geotechnical design and includes brief descriptions of the options considered and reasons for selecting a lightweight embankment solution. It then outlines the design of the structure and lists the benefits of the use of tyre bales as lightweight fill.

The challenging ground conditions meant that a period of surcharge with wick drains was required to reduce settlements in the long term and a temporary toe berm was necessary to provide stability during construction.

Stephen Beales joined Scott Wilson in 1989 and is a Geotechnical Specialist with over 25 years experience in geotechnical design aspects of major projects. He has been responsible for providing geotechnical advice and design input on projects throughout the UK and overseas and has over 10 years of senior managerial experience.

He has been responsible for the geotechnical works on highway schemes, land reclamation projects, airport, railway, port, commercial building and hospital developments. He has also been responsible for carrying out investigations and assessments of existing works and reporting on their condition.

Stephen is a member of the URS Scott Wilson Steering Committee for the implementation of Eurocodes and leads the Geotechnical Discipline Steering Group in the UK. He is actively involved in the application of Eurocodes on projects, most notably in connection with the £15bn Crossrail project.

This lecture has been supported by sponsorship from Geotechnics