

International Geosynthetics Society United Kingdom Chapter



IGS/Bath ICE Branch
JOINT MEETING
Tuesday 17th November 2015
1 West 2.104, University of Bath, Claverton Down, Bath, BA2 7AY
6.00pm for 6.30pm

Geosynthetic Drainage in Highway Engineering and Earthworks

Mike Stephen, Technical Manager, ABG Ltd.

Geosynthetic drainage products have many potential applications in highway engineering, both in new build and refurbishment or upgrading of existing assets. Most of those applications are also relevant to all projects involving earthworks, such as railways and site development.

Those applications include:

- Starter layers and drainage blankets
- Improvement of poor ground
- Drainage at subgrade level
- Fin drains and under-channel drainage
- Cut-off, counterfort, slope and verge drainage
- Drainage of reinforced soil structures
- Drainage behind retaining walls, abutments and tunnel linings

Geosynthetic drainage offers considerable benefits to the environment by reducing the need for quarried aggregates and their transport to and within site. Being thin, compared to an aggregate layer of similar drainage capacity, they may offer economies in earthwork quantities, both excavation and disposal, especially if they are incorporated at the design stage. In addition, the materials are light, easily transported around site and can be placed using a minimum of plant and labour.

There are many geosynthetic drainage products on the market, some better than others. What to look for in terms of construction and performance of geosynthetic drainage, and how to specify it, will be outlined. This is important and not always well understood.

Biographical notes

Mike Stephen is a chartered civil engineer specialising in geotechnics and geosynthetics. He started his working career in highways, with the South Western RCU, before joining Soil Mechanics Limited in 1977. After becoming chartered, he worked mainly in their geotechnical consultancy division and took a year out to study for an MSc in Engineering Geology at Imperial College. In 1990, Mike joined Surrey County Council as Geotechnical Team Leader where he remained for 16 years and contributed to a number of major schemes including A331 Blackwater Valley Route and A244 Walton Bridge. He developed an inspection and management regime for the county's roadside slopes and was responsible for the investigation of and remedial works to a large landslide. Between 2006 and 2010, Mike worked for various consulting engineers, principally on geotechnical aspects of major highway schemes and landfill engineering. In January 2011 he joined ABG Ltd as Technical Manager, responsible for most aspects of engineering design with geosynthetics and also for aspects of product development. Mike is currently Secretary of the IGS UK Chapter and has authored or co-authored five published papers.

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