

GSI^{3D} Research Consortium Newsletter

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Seasons Greetings!

Welcome to the GSI3D Research Consortium newsletter where we hope to share information and developments about the GSI3D software, exciting applications and research using GSI3D; plus news from within the user community and useful knowledge about the GSI3D

Information

User Workshop 1-2 March 2011

We are holding a two-day workshop for Consortium members and those interested in finding out more about the GSI3D software. This workshop will provide a chance for you to meet and network with colleagues engaged in similar work. In addition to presentations by the core team on the future of the software there will be lectures from invited international guests and at least six slots for 20 minute presentations — so **if you wish to present your work please send us your suggested title and a 100-word abstract.**

We are organising live demos of the new GSI3D 2011 version which will be rolled-out to consortium members in April 2011, and you can visit our immersive 3D Visualisation Facility to view existing models and the BGS-Virtalis Geovisionary visualisation & interpretation system. Additionally there will be a demonstration of future developments such as bedrock modelling, and input from the user community on future developments will be welcomed.

On both afternoons our 3D technical support team will be available to help with any problems you have had in modelling, so please bring copies of any files and models you wish to discuss.

The workshop is free and to register please email us at gsi3d@bgs.ac.uk.



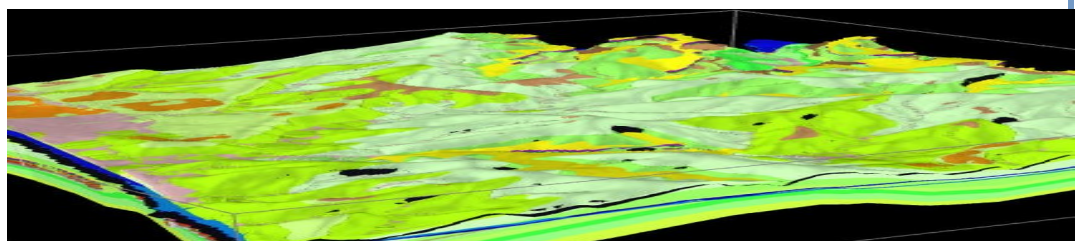
Training

If any GSI3D Consortium members would like us to provide training, please ask! Our standard v2.6 course lasts two full days and the price will depend on the number of trainees, the venue and the status of the organisation or individual.

Steve Mathers and his team of trainers run our courses. They utilize the UK example datasets that are described in the software manual. These are freely available to Consortium members for practice and familiarisation, with or without the actual course. All our courses are supported by full documentation and they can be tailored to include troubleshooting of your specific datasets or problems.

At BGS Keyworth, near Nottingham, we have dedicated state-of-the-art training facilities and a 3D visualisation suite at our disposal. If you plan to attend the GSI3D workshop next March, why not consider signing up for a two-day training course after the workshop to maximise the benefit of your visit to Nottingham?

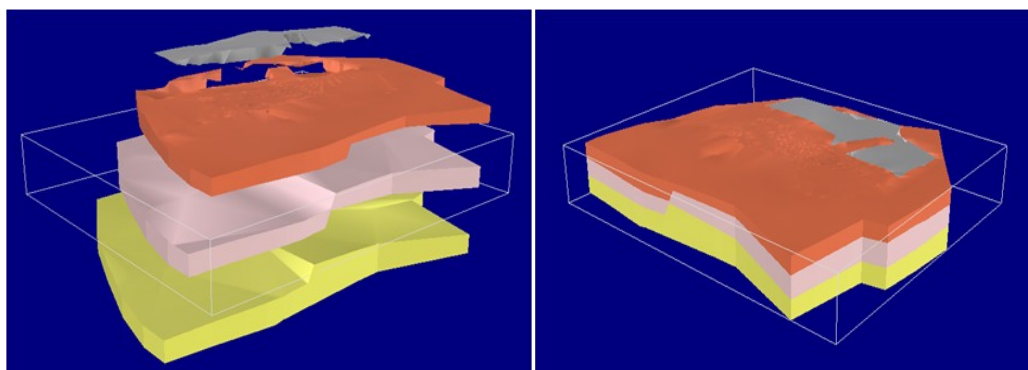
For further details or a quote please contact us at gsi3d@bgs.ac.uk.



Characterisation of the groundwater regime at a faulted landfill site using GSI3D.

Perran Hutton
University of Birmingham

'I could really tell that this programme has been developed by geologists for geologists'



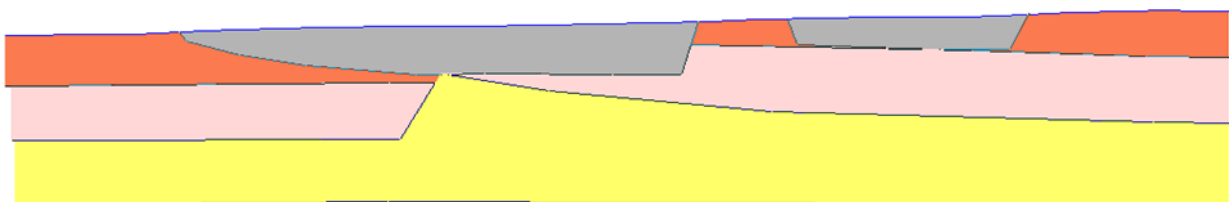
In fulfilment of my MSc Course in Hydrogeology at the University of Birmingham I undertook a summer project working with the British Geological Survey (BGS). The project involved creating an evolved conceptual model of a closed landfill site, managed by Worcestershire County Council. The site had the added complexity of a normal fault cross cutting it as well as an active landfill to the north. The project focused on the characterisation of the complex groundwater flow regime created around the fault through the sandstone aquifer as well as the movement of water in the above mudstone and siltstone layers. Groundwater flow in the vicinity of the site was considered to be influenced by dewatering of neighbouring clay pits (now an engineered landfill).

The use of GSI3D was suggested to me by my project sponsor Dr Gary Wealthall (BGS) as it could be extremely useful to help visualise the buried faulted relations, in particular to develop an understanding of the thickness of a more transmissive 'sandstone window' along the fault plane and the relationships of the geological sequence in the old and new pit excavations. I attended the BGS two day training course in the software and joined the GSI3D consortium. This along with excellent assistance from the GSI3D team at Keyworth allowed me to code up all the logged boreholes on site and add in a digital terrain model from surveying data. From here I could use the GSI3D software to start creating my 3D site model, where the interpretive nature of the cross section drawing format helped me quickly build up enough data to calculate the volumes of each layer. I could really tell that this programme has been developed by geologists for geologists, as it incorporates all the skills of manual cross section drawing and geological interpretation. The end result can be seen in the pictures below. Although the 3D viewer was essential in providing volumes and great at quantifying relationships, the cross sections taken from the model were also very useful to illustrate the hydrogeological conceptual models findings.

As with any new software I did experience a few 'glitches' and one scary moment when my work disappeared, but with good saving and backing up practices I avoided any real trouble. Ensuring that the TIN was cut carefully to the correct size would have avoided the problems I had at the end when calculating the volumes of the layers, as each layer incorrectly cut up to the surface.

I would like to say a final thanks to GSI3D team and everyone else at the BGS who helped me with my Project. I thoroughly enjoyed working with you all and have received a Merit grade for my MSc.

I am currently working for Veolia Water in the Water Resources team and am spreading the word of how useful GSI3D is as a tool for groundwater resource and pollution studies!

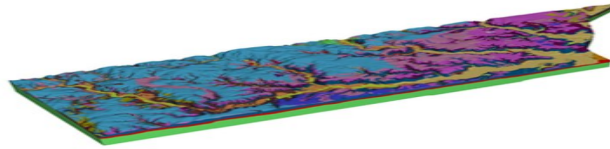




Profile

Ben Wood

GSI3D Lead Software Developer



Ben graduated in 1999 with a BSc in Geology and Physical Geography from the University of Liverpool, and in 2000 with an MSc in Computing from Keele University, and has been working in professional software development ever since. Ben first joined BGS in 2000 and, following a 1 year break elsewhere, he rejoined BGS in 2007 to work exclusively on developing 3D modelling software. Most of Ben's time is spent either actively developing the GSI3D platform or helping colleagues to deliver complex 3D modelling projects. Ben's main interests lie in developing the next generation of GSI3D capability to enable the construction of faulted/bedrock models and in developing solutions for handling large datasets. When not at the computer, Ben can be found in the workshop where he enjoys wood-working.

'the next generation of GSI3D capability to enable faulted/bedrock models'

Recent Events

GSI3D at the US Geological Survey

Holger Kessler has just returned from the USGS Reston office where he held a mini workshop presenting the GSI3D methodology by video links to over 100 USGS staff, at offices as far apart as Puerto Rico, Alaska, Denver, New Jersey and Florida. Holger answered many queries about the methodology and offered hands-on help with projects that have started to use the software. The workshop was hosted by Linda Jacobsen the USGS national geologic mapping associate program coordinator. The GSI3D team is very excited about the strong interest within the USGS and looks forward to a strong collaborative partnership.



GSI3D at the Polish Geological Survey

Steve Mathers and Ricky Terrington have just returned from Warsaw where they trained 11 Geologists from the Polish Geological Institute in the use of GSI3D and demonstrated its interaction with several other key BGS IT packages.

Thanks go to Joanna Rychel and Ewa Szykaruk at PGI who organised and hosted the course.

And finally the European Weather...

With the next Ice Age officially started in Europe Steve and Ricky managed to get home safely from Warsaw just before the onset of heavy snow in the UK. The following morning Holger returned from the USA on the last inbound flight to Heathrow before it was closed for a couple of days due to heavy snow. When his taxi driver was stranded on the motorway Holger had to scramble across London and get a train home. We hope it won't be too long before the next interglacial!

"Only simple solutions are good solutions" Dr Hans-Georg Sobisch, creator of GSI3D

The Team



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Survey

Nicker Hill

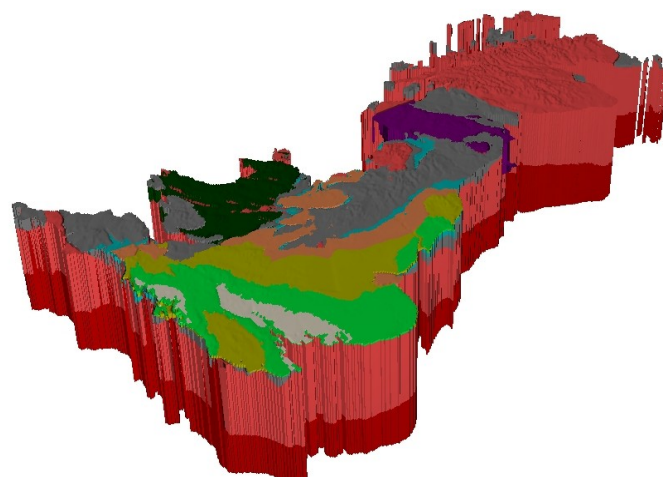
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The GSI3D Research Consortium website can be found at www.gsi3d.org.uk and for any enquiries please contact our Enquiries team on enquiries@bgs.ac.uk .

If you would like to contribute to our Newsletter, or have any comments please contact the Consortium Manager eward@bgs.ac.uk .