



# Early Careers Geoscientist Competition

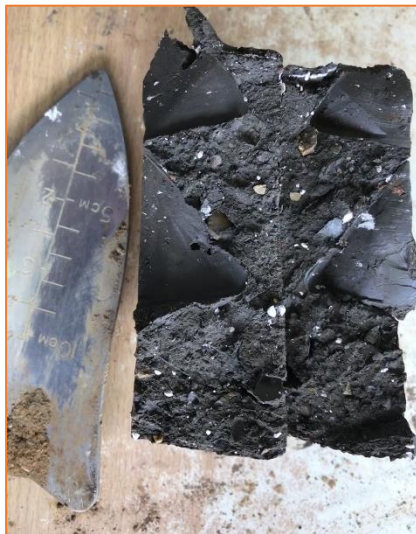
28<sup>th</sup> September 2021

6pm, Teams

**How does extreme weather affect asset management? With reference to geotechnical asset management on the M25 DBFO contract.**

**Jane Kelsey (Atkins)**

How does extreme weather and climate change impact asset management I hear you ask? Well, it impacts it greatly, more than you could imagine. The real culprit here is drainage, poor drainage increases pore water pressures, decreases stability therefore, increasing likelihood of failure of earthwork slopes. This is more of an issue on clay slopes, which we have a lot of in the south of England. So how does asset management combat this? The answer is strategies, risk management, planning and a good understanding of the assets.



**A case for extending the boundary of the Lowestoft Formation further to the south in Hatfield**

**Susie Marley (GEA Ltd.)**

The geological map covering Hatfield (Sheet 239, dated 1978) shows the southern boundary of the Lowestoft Formation to extend to North Mymms. During two ground investigations carried out at locations around 900 m and 1.9 km to the south of this boundary, anomalous ground conditions were encountered in that soils interpreted as the Lowestoft Formation were present over the Lambeth Group, where the BGS map shows that the Lambeth Group should be present from the surface. Whilst it is understood that the maps should not be taken as accurate on a small scale, a near 2 km difference is considered unusual. This presentation will present the findings from these two investigations and puts a case forward for moving the boundary of the Lowestoft Formation and updating the geological map. The presentation will conclude with recognising the limitations of the existing data and commentary on requirements for further work, in particular the need to cover areas in between these two locations sampled and between those and the BGS boundary, to determine whether these sites are anomalous or whether the Lowestoft Formation really does extend significantly further to the south in Hatfield.

**Using a 3-Dimensional Geological Ground Model in the Design Stages of a Large Construction Project**

**Roberta McAlister (Atkins)**

A 3-dimensional geological ground model was created during the basic design of the extensive temporary works for a large construction project on the east coast of the UK. The model was then developed further during the early stages of detailed design. This presentation will summarise the previous phases of ground investigation that have been undertaken across the site and will describe the site's varied geology. It will then discuss the benefits to the project that come from using a 3-dimensional geological ground model and how the model has been used by various disciplines within the design team. The general drawbacks of this type of modelling will also be discussed. This discussion will include a high-level overview of some engineering considerations for both the creators and users of the model. As part of the presentation, images and videos will be shared of Atkins' current working model.



**First measurements of geological seismic efficiency on Mars**

**Benjamin Fernando (University of Oxford)**

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**Construction supervision for the M23, Junction 11 road widening scheme**

**Adam Carr (Leap Environmental Ltd.)**

The presentation will outline the findings of a site investigation undertaken to enable widening of the motorway slip road at Junction 11 of the M23. The widening scheme involved cutting into the Upper Tunbridge Wells Sands to enable construction of a gravity cantilever retaining wall and the talk will investigate how the ground and groundwater conditions impacted the construction and briefly touches on the constraints caused by Covid.



**Join us here: [Click here to join the meeting](#)**

Join with a video conferencing device: [130865883@t.plcm.vc](mailto:130865883@t.plcm.vc) (Video ID: 125 377 387 7)

Or call in (audio only): +44 20 3787 4990 (Phone Conference ID: 496 921 605#)