Project Co-ordinator: Dr Jonathan A. Black
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Project Co-developer: Mr Sam Stanier (PhD Student)
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*Project Overview*

Geotechnical Engineering embraces the topics of soil/rock mechanics and has a pivotal role in engineering activities that underpin society and infrastructure development. In recent years, teaching and learning in the higher education sector has become increasingly student-centred and mediated by technology. As part of this transition, the geotechnical group (GEG) is dedicated to updating its current capabilities and module portfolio by developing a holistic inquiry and problem based learning approach to geotechnical design. The project co-coordinator has successfully secured funding to refurbish an existing geotechnical area/workroom to establish a state-of-the-art facility ‘**SILTS - Soil Interactions Learning & Teaching Suite**’.  

This initiative encompasses recent innovations in industrial practice complemented by advances in research by the GEG to facilitate superior understanding of complex geotechnical problems through the use of physical modelling. This will promote excellence by developing student critical and lateral thinking, embedding advanced analytical diagnostic tools, learning autonomy and complementary research interrogation skills. Integration of theory, advanced physical modelling and numerical analysis techniques will provide a coherent simulated industrial design and Research Informed Teaching (RIT) learning experience. The project seeks to embrace the proactive pedagogic learning and teaching strategies to deliver a distinctive experience in Geotechnical Engineering Education.

*Aims and Objectives*

- Establish a state-of-the-art learning environment for Physical Modelling in Geotechnics
- Embed inquiry and problem based learning and Research Informed Teaching
- Promote educational excellence amount UG/PG students
Facilities

The newly developed suite will incorporate state of the art physical modelling capabilities including:

- Several 1g plane strain test systems to model problems in geotechnics, soil-structure interaction problems, pile foundations, shallow foundations, retaining structures, tunnels, slopes etc.
- Fully automated element testing systems (triaxial, shear box etc.)
- Small scale teaching centrifuge (currently under development),
- PIV and advanced imaging capabilities
- Dedicated computer terminals equipped with the latest geotechnical numerical/analytical software.

Additional Information

Those with an interest are encouraged to contact me. You may:

- wish to stay in touch with developments;
- have completed some work or developed similar facilities;
- hope to collaborate, or visit.

Project Contact

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