PROJECT PROFILE

Title	**The pre-glacial buried trench, Dublin – its mass and particle behaviour and influence on tunnelling and deep excavation**
Contractor	The Irish Centre for Research in Applied Geosciences (iCRAG)
Contact details	Dr Mike Long School of Civil Engineering University College Dublin Newstead Building
TII Mentor	Miles Freedman
Start date	Sep-16
End date	Sep-18
Status	Ongoing
Type of project	TII Research Project
Project reference	NRA04250

Description	**Sample preparation – showing lithological variation in material from LDS01**  The research focused on the study of a pre-glacial buried trench (the trench), a well known geological feature north of the river Liffey. There was a gap in knowledge of the geotechnical properties of the infill materials in particular as to how they may affect tunnelling and deep excavations. The New Metro North is set to intercept these materials for approximately 1km between the GPO and Mater hospital. The research was designed to investigate and test these materials using the most effective techniques available and provide relevant information to designers of tunnels, tunnel boring machines and deep excavations for New Metro North and any other projects that may encounter the buried trench in Dublin.
Objectives	To have a clearer understanding of the geology of the buried channel and the engineering properties of the materials. For the Metro North project, this will allow tunnellers to have greater confidence in the type of ground they are encountering in this area and adapt their tunnelling technique as appropriate.
Benefits	For the Metro North project sponsor, there will be reduced risk and greater price certainty. The project will also enhance knowledge of Dublin soils and on the north side of the Liffey in particular which will benefit any future TII projects.
Outputs	The project outputs included: • An understanding of the nature and engineering properties of the deposits with the buried channel • A 3D model of the above • Maps and electronic data sets • Project report/MEngSc thesis and journal paper • Other published papers