



UNSW
SYDNEY



Geotechnical Engineering

Our geotechnical engineering research spans across fundamental and applied soil mechanics, modelling of soil behaviour, rock mechanics and dam engineering. Our well-equipped laboratories contain a diverse range of soil, rock and asphalt testing equipment, along with specialist and advanced equipment used to support industry-focused research. Our researchers are award-winning and recognised globally as leaders in their field.

Competitive advantage

- The scale of our laboratory capability is not available in any other university in Australia
- Long history of working successfully with industry partners

Impact

We are internationally renowned for our excellence in experimental, theoretical and applied soil, rock and asphalt research. Our aim is to make infrastructure safer, more reliable, and cost effective.

Successful applications

The geotechnical engineering research group at CIES has received several million dollars in competitive grants, including ARC and industry funded grants. Areas of current research include:

- Cost-effective design of cut batters, soil nailing, retaining structures and foundations in low strength rocks encountered in the Upper Blue Mountain region of NSW
- Rehabilitation of Cadia Tailings Storage Facility, Orange, NSW
- Monitoring and integrity assessment of railway embankments, Wollongong, NSW
- Warragamba Dam raising
- Understanding earthquake-induced ground deformation risk to inform city resilience

Capabilities and facilities

Multiple of the most highly used equipment enable an ambitious program of industry and research experiments - completed in a timely manner.

Research facilities include:

- Calibration chamber for conducting cone penetration tests in unsaturated soils
- Equipment to test unsaturated soils, erosion of soils, instability and failure in soil and rock samples, for testing gravel, rock and sands undergoing particle crushing
- State-of-the-art soil and rock testing facilities including an Asphalt testing laboratory

More Information

Professor Nasser Khalili

Centre for Infrastructure, Engineering & Safety, UNSW School of Civil & Environmental Engineering

T: CIES Manager +61 2 9385 6853
Prof Nasser Khalili +61 2 9385 5074

E: n.khalili@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008