



**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

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