



UNIVERSITY OF  
Southampton

# UKCRIC National Infrastructure Laboratory

## Bolderwood Innovation Campus

Brief update October 2021

Academic Leads: Dave White, David Richards  
Lab Managers: Duncan Crump (LSTL), Andy Robinson (TSRL),  
Harvey Skinner (Geomechanics/Centrifuge)

UKCRIC: UK Collaboratorium on Research for Infrastructure and Cities [ukcric.com](http://ukcric.com)



# UKCRIC National Infrastructure Laboratory



Opened in 2019, funded by UKCRIC & UoS

Home to ~120 staff, researchers and PhD students, visited by more

Four labs & informal learning space



# Testing and Structures Research Laboratory (TSRL)

Material testing lab widely used for industry, research and teaching

- Static, cyclic and high strain rate testing
- Imaging and thermography for deformation, strain and stress mapping
- Non-destructive testing
- Ultrasonic monitoring
- Composites manufacturing

Used by >150 researchers and students annually



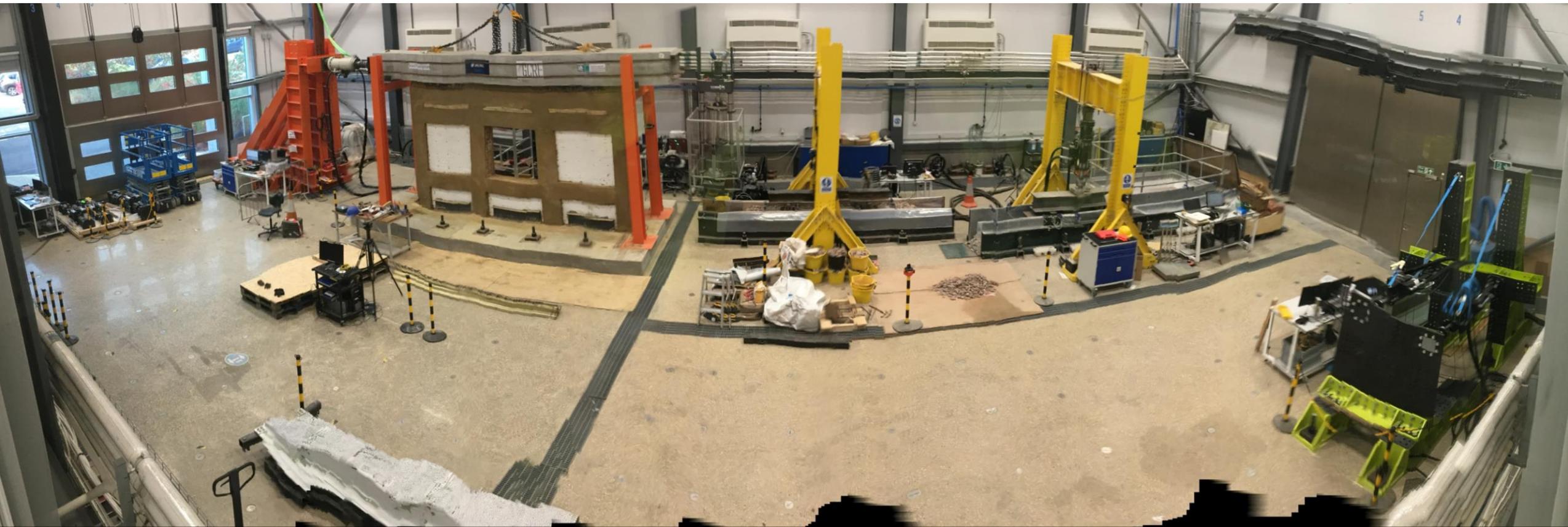
# Large Structures Testing Laboratory (LSTL)



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Large hall for structure and sub-structure testing

- Realistic multi-axis loading
- Data-rich: imaging and sensor networks

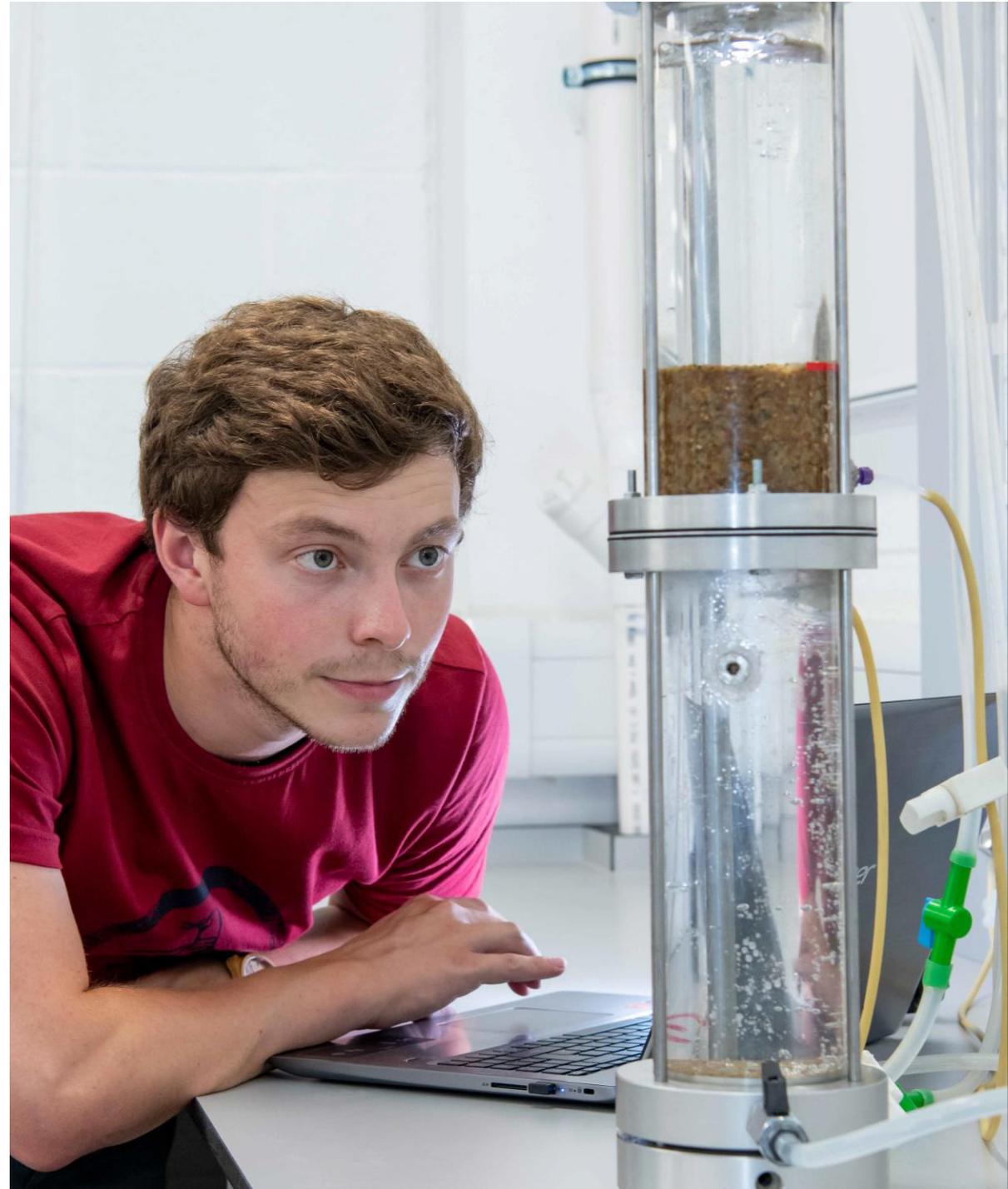


# Geomechanics Laboratory

Element testing and model testing of geomaterials

- Triaxial, oedometric, simple shear, hollow cylinder devices
- Temperature-controlled environment for gas hydrate generation and testing
- Staging for fieldwork: sensor development, calibration and field preparation
- Tank for ROV-based seabed testing

Used by >150 students for teaching and research projects annually



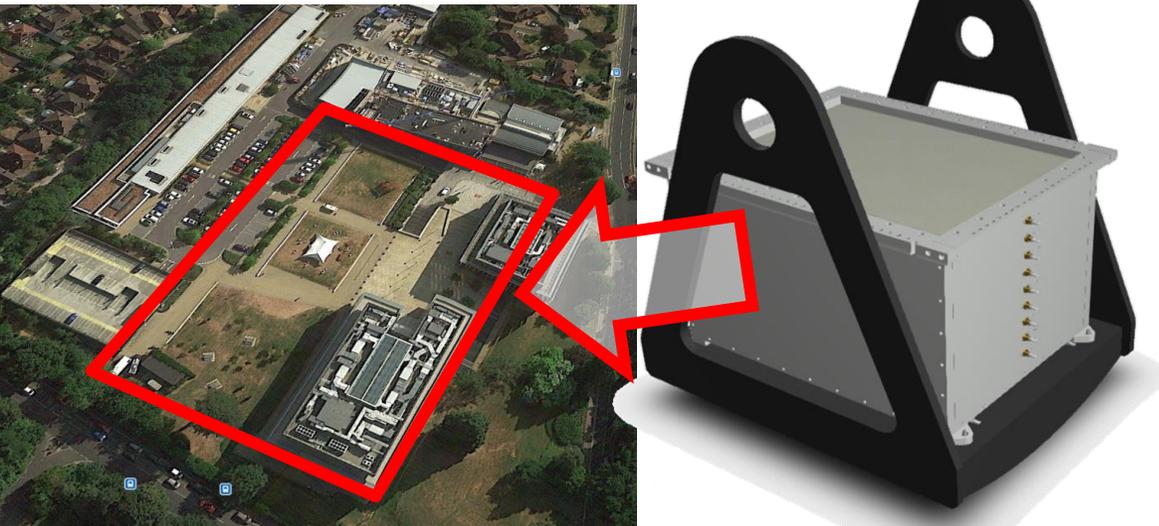
# Geotechnical Centrifuge



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Accelerated model testing of geomaterials via high gravity environment

- 6m-diameter, 130g acceleration
- 1 day test = up to 40 years
- Robotic multi-axis actuation
- Whole life simulation of loading and environmental forcing



# Snapshot of NIL usage

(Updated from 2021 UKCRIC reporting)



Funding for projects using facilities: >£10M

Total of users/usages: >1000 by end 2021

## University visitors

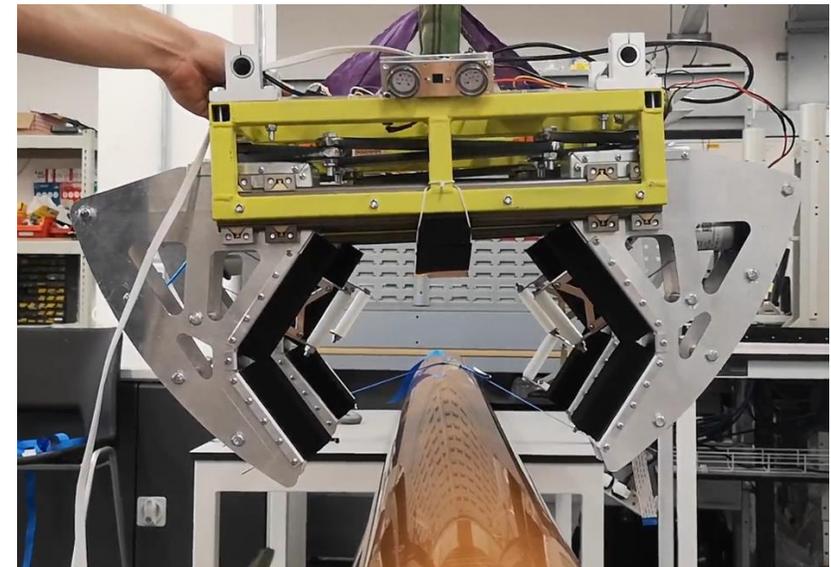
- Bath
- Bristol
- Hamburg
- Ecole Centrale de Nantes
- TU Denmark
- Porto
- Anna Univ., India

## Funding agencies

- UKRI / EPSRC
- RAEng
- EU H2020

## Industrial partners

- Network Rail
- BAE systems
- ABP
- Airbus
- Siemens
- Norwegian Geotech. Inst.
- Bylor (Bouygues-L'Or)
- Diamond Light Source
- and 19 others







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