GES — GEOTECHNICS, EARTHQUAKES AND STRUCTURES · UNIVERSITY OF BRISTOL

SoFSI — Soil-Foundation-Structure Interaction Laboratory

UKCRIC NATIONAL FACILITY · LANGFORD, BRISTOL

Prototype-scale, holistic testing of complete soil-foundation-structure systems: shaking table, instrumented soil pit and strong floors on one centreline — a combination unmatched in the UK.

Funded by EPSRC as part of UKCRIC and commissioned in 2021-22, SoFSI is open to academic and commercial users for seismic, dynamic and large-scale geotechnical testing, from feasibility studies to qualification campaigns and bespoke R&D; programmes.

Biaxial shaking table

Platform	**6 m x 4 m**
Payload	**50 t**
Peak acceleration	**2 g**
Max frequency	**50 Hz**

Soil pit & strong floors

Pit	**6 m x 5 m, 4 m deep (120 m3 of soil)**
Pseudostatic actuators	**2 x 1 MN, 1000 mm stroke**
Dynamic actuator	**1 x 1 MN, 500 mm stroke**

Hexapod & infrastructure

Hexapod platform	**1.2 m diameter, 6 DOF**
Hexapod acceleration	**8 g, all three axes simultaneously**
Hexapod payload / frequency	**1 t / 0-100 Hz**
Gantry crane	**30 t, 8 m lift height**

Designed for

Monopiles and pile groups · integral bridges, embankments and retaining walls · nuclear SSI and seismic qualification · railway and HS2 applications · offshore wind and marine structures · foundation and SSI testing (e.g. pull-out resistance of pylon foundations) · in-situ construction of near-scale foundations in the pit.

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