

PROJECT: GROUND INVESTIGATION
LOCATION: EXCEL PHASE 3, LONDON DOCKLANDS
VALUE: £100K

BACKGROUND

The site investigation took place in the eastern car park of ExCel Exhibition Centre in order to provide information on ground conditions to inform foundation design, contamination assessments, and any remedial measurements required for the construction of a two-storey, 40,000m² extension.



ExCel Exhibition Centre & eastern car park

The site was immediately adjacent to the Royal Victoria Dock, and had an extensive industrial history with multiple historical foundations. It also had a very high UXO risk, with more than 8 bomb strikes recorded as having occurred on-site and a further 5 within 25m.

The geology consisted of made ground over superficial deposits including cohesive and granular soils and peat overlaying Lambeth Group deposits.

At the time of the investigation, Covid-19 restrictions were in place and the ExCel Centre was host to a Nightingale Hospital.

SCOPE OF WORK

The site investigation included:

- 14no. cable percussive boreholes up to 30m in depth
- 11no. combined magnetometer-cone penetrometer tests, including 7no. dissipation tests
- 22no. machine excavated trial pits
- 2no. falling head permeability tests



Site plan showing intrusive investigation positions

- Regular ground gas and water monitoring, with collection of groundwater and gas canister samples
- Continuous gas and groundwater monitoring at two locations.

The site was set up and ran to facilitate Covid-compliant social distancing, with measures such as additional welfare facilities put in place.



Welfare facilities & Covid-19 compliance. Health and safety methods adopted to work successfully with social-distancing & to minimise cross-contamination risk

The project had tight time-restrictions due to the need to finish intrusive works before a filming project was scheduled. To meet the deadline, Harrison organised multiple aspects of the investigation to be carried out simultaneously and used multiple rigs, which required tight organisation and supervision by our engineers.



Typical machine-excavated trial pit

The site also presented numerous challenges that put further pressure on the deadline, including blowing sand, gross hydrocarbon contamination, and breaking through historical obstructions, which in some places involved more than a metre of concrete and caused several locations to be terminated early and relocated. This was also the case for a further three borehole positions, working on the advice of a specialist UXO engineer, due to high UXO readings.

OUTCOME

Despite numerous challenges, the intrusive works were completed on time, allowing filming to commence undisturbed and for full delivery of the required content to the client.