

ITT(2)- B6 Geotechnical Engineering and Site Investigation

Scenario

TfL are proposing to build a new extension to the railway including two new stations and a junction improvement outside one of the new stations that will involve route realignment and improved pedestrian crossings and cycle ways.

The proposal involves design and construction of new rail tracks, bridges, retaining walls, cuttings and embankments, roads and drainage. The proposed works corridor will pass through congested urban areas which require careful and targeted design and construction to minimise disruption to the communities both during construction and in the long-term.

Technical Capability

The delivery of successful **Geotechnical Engineering and Site Investigation** projects on the TfL Rail and Underground or Surface Transport network requires the following competencies as a minimum. These requirements will generally be common to both TfL Surface Transport and Rail and Underground projects, although some are more relevant to one or other of the business units. The framework applies to all stages of the project lifecycle from Outcome Definition to Handover and Suppliers should demonstrate their capabilities within each stage:

1. Verification and Validation of project requirements to ensure that it fulfils its intended purpose.
2. Working collaboratively with TfL Programme/Project Managers, Engineering, Operational liaison staff and Maintenance liaison staff throughout the Project life cycle
3. Co-ordination, integration and interface management with the other interfacing disciplines in the operational transport mode (i.e. Rail and Underground or Surface Transport).
4. Provision of competent railway and/or highway experienced Geotechnical Engineers to develop **Site Investigations** and **Geotechnical Engineering** design solutions from feasibility to detailed design and implementation.
5. Knowledge and experience of TfL Rail and Underground or Surface Transport **Geotechnical Engineering and Site Investigation** requirements, standards, and assurance requirements
6. Knowledge and experience in the implementation of innovative new technology and value added initiatives that could be utilised in the delivery of successful **Geotechnical Engineering and Site Investigation** projects on the TfL Rail and Underground or Surface Transport network. Including the capability to challenge traditional design approaches to deliver innovative solutions.

7. Carrying-out all necessary desk studies and site visits to assimilate all the necessary information to develop the site investigation and design solution
8. Capability in collection and processing of ground investigation data (using Specialist Geotechnical Softwares such as GINT or HoleBase) and interpretation of the ground investigation data to arrive at geotechnical design parameters and ground model.
9. Capability in preparation of Ground Investigation Reports (GIR) and Geotechnical Design Reports (GDR).
10. Capability in the application of geotechnical analysis and the utilisation of supporting tools and Specialist Geotechnical Analysis and Design Softwares (such as Slope/W, WALLAP, Repute, Plaxis, Flac, etc), BIM, CAD (e.g. Microstation) to assist the development of design solutions and drawings.
11. Capability in managing the delivery of a **Site Investigation** and a coordinated and buildable **Geotechnical Engineering** design within a transport environment; including explanation of your design checks, approve processes to deliver an assured product. Includes the planning, implementation and interpretation of monitoring systems.
12. Knowledge and experience of **Site Investigation** and **Geotechnical Engineering** implementation methods so that the buildability of the design is assured, including a sound knowledge of current site investigation and construction safety initiatives and best practice.
13. Knowledge and experience of maintenance methods applicable to **Geotechnical Engineering** assets so that the maintainability of the design solution is assured including a sound knowledge of current maintenance best practice applicable to the TfL Rail and Underground or Surface Transport network.
14. Provision of engineering representation during the site investigation, construction and handover phases to verify design intent being delivered and respond to change requests.

Proposal

1. In no more than 2000 words contained in a maximum of 8 sides of A4 (pictures, diagrams etc. may be included in the sides of A4 limit) describe your company's capability to provide **Geotechnical Engineering and Site Investigation** engineering services in the skill sets 1 to 12 described above including specific recent examples that have been delivered by your company.