

(ITT 2B) B1 - Electrical and Mechanical Services Engineering

Scenario

Competencies

The delivery of successful Electrical and Mechanical Services designs requires the following competencies:

1. Verification and validation of project requirements.
2. Liaising closely with all Transport for London mode specialist electrical and mechanical services engineers, maintenance staff, cyber security specialists and sponsors during the design process.
3. For BMS, provision of secure data management systems and procedures so that TFL data is protected from unauthorised access from both internal and external parties.
4. Interfacing with other interfacing disciplines e.g. premises, fire, civil / structural, communication systems, signals, track, power engineering and operations, etc.
5. Carrying-out any necessary site visits to survey existing systems and structures.
6. Carrying-out any necessary site visits for all verification and validation activities (i.e. factory acceptance testing, commissioning, etc).
7. Provision of competent and Transport for London modes experienced resources to design, check and approve designs (i.e. London Underground, Surface, road tunnels).
8. Interfacing with Fire & Safety professionals, providing technical support to Qualitative Design Reviews (QDR), Hazop review sessions or similar.
9. Knowledge of or obtaining knowledge of all Transport for London mode associated electrical and mechanical design standards and assurance arrangements.
10. Knowledge of construction installation methods so that the constructability of the design is assured.
11. Knowledge of maintenance methods so that the maintainability of the design is assured.
12. Knowledge of innovative new technology that could be utilised on the Transport for London network.
13. Provision of whole life cost analysis so that the design is optimised not only solely for the capital cost expenditure but also for

the associated operational cost expenditure (i.e. maintenance costs and energy consumption).

14. Availability of the supporting tools e.g. CAD, Software Development tools, calculation software (Amtech, Hevacomp, SES, FDS etc.), or other modelling tools, to support the production of the designs and drawings.
15. Delivering all documentation to ensure the works can be built, installed, tested, commissioned and maintained over its design life.
16. Technical support and management of the above (i.e. 1 to 14).

Response:

In no more than 1500 words contained in a maximum of 4 sides of A4 (pictures, diagrams etc. may be included in the sides of A4 limit) describe your company's capability to provide electrical and mechanical engineering services in the skill sets 1 to 17 described above.

Your response should consider, but is not limited to, the following:

- Proposed resources of key personnel giving evidence of appropriate skills, knowledge and experience. Please ensure this reflects a realistic project team that you would expect to put in place for a project of this scale;
- Your view of key lifecycle risks and technical issues that could affect successful delivery. How are these managed?
- Your understanding of critical success factors (acceptance criteria) and how these are validated.
- What key standards and governance would you consider applicable to Electrical & Mechanical engineering within the project.

Note:

Bidders must not cite examples of previous completed works within their response as this formed the basis of the SSQ evaluation and as such references to completed case studies will not be subject to evaluation.

Bidders are encouraged to structure their submission by clearly setting out their response against each of the competencies via specific headings for each competency; the headings will not be included in the word count limitations.

