

## **[ITT2B] B10 - Road Tunnels, M&E and Systems**

### **Scenario**

#### **1. Background**

TfL operates 12 road tunnels and associated traffic systems on 90km of the Transport for London Road Network (London's Red Routes) from the London Streets Tunnel Operations Centre (LSTOC). Working closely with London Streets Traffic Operations centre, LSTOC's aim is to minimise, insofar as it can, the likelihood and impact of incidents. In so doing LSTOC plays a vital operating role in ensuring tunnel safety and minimising traffic disruption.

We also strive to maintain our tunnel and associated assets in a state of good repair and invest where necessary under a programme of continuous improvement. Mainly this results on both routine (revenue) and renewals (capital) maintenance activities, but we also invest in improvements where such will deliver real benefits to Londoners in keeping with the Mayors Transport Strategy.

We are currently, for example, investing in the LSTOC Upgrade and Integration Project. This will see a significant transformation of the Tunnel Operator user interface which will be relocated to Primary and Secondary control rooms in TfL's own offices. This fully integrated user interface (one keyboard, one mouse, one phone system and one set of monitors per operator station and a shared windows based 'video' wall use for co-ordination and information sharing purposes) is made possible by the use of a highly resilient and secure IP Network. This IP Network also enable centralised processing via Instation equipment housed in two data centres and a plug-and-play environment for Outstation equipment in the tunnel and on the open road.

Each tunnel is individually unique in age, form and use, some of which departs significantly in geometry from modern standards, requiring careful consideration of how to minimise operating risks. London is a densely populated historic city with many physical and operating constraints that limit the scope for tunnel safety improvements. Careful consideration of the life safety risks and how these should be treated can, therefore, present challenges, especially where current standards and practices cannot readily be applied. Through the application of ALARP principles, we seek to justify and ensure appropriate investment is made.

TfL is also working towards building Silvertown Tunnel under the Thames River east of the existing Blackwall Tunnels. Other possible road tunnels are being explored in concept and a means of better supporting London's future transport needs.

#### **2. The Requirement**

TfL is seeking consultancy and design specialist support of our investment programme in tunnels and the associated systems on the approach roads. This will mainly relate to significant tunnel refurbish and upgrade projects but may also span all tunnels where there is a need for a consistent approach to solving operating risks. Working closely with our programme teams and technical leads

the main requirement is to ensure TfL's legal compliance, identify hazards and manage their associated risks applying ALARP principles.

Over the lifetime of this Agreement TfL anticipates undertaking the following projects of the Structures and Tunnels Investment Programme:

- Refurbishing Rotherhithe Tunnel, with particular consideration of the safety issues with contraflow vehicles in a single bore with a legacy of allowing cyclist and pedestrians to use the same bore.
- Refurbishing George Green and Green Man Tunnels with minor safety improvements.
- Refurbishment of Blackwall Southbound Tunnel Ventilation system.

In additions we may require life safety and other engineering support to develop our use of technology to further reduce tunnel operating risks and improve network (traffic) performance.

### **3. Key Accountabilities**

Provide engineering consultancy services that fully address the inherent physical and operating constraints of the existing assets and, thereby, ensure TfL fulfils its legal obligations through the most appropriate use of engineering solutions. This will require the application of first principles where current standards are inappropriate or not yet mature enough to be adopted in part or full.

Establish and maintain good working relationships with programme team, discipline engineers, end user representatives, other third party suppliers, and any other stakeholders.

Oversee planning processes and ensure appropriate milestones are identified, robust schedules are created and maintained in accordance with corporate requirements and system. Ensure requirements and dependencies are understood and appropriately specified, managed and implemented, both within the Programme and with other Programmes and activities across the business. Ensure milestone risks and issues are actively managed in accordance with TfL procedures and escalated in a timely manner where necessary.

Provide technical input and advice to the project where required to support TfL in managing design and/or build contract services.

### **4. Response**

To demonstrate your competence you are required to, 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 organisations Tunnels Engineering capability and competency. Your proposal should consider the following:

- Life safety engineering and its application to tunnels with non-standard geometries; including how ALARP and Value for Money principles will be applied. This should include an explanation of how deficiencies in current

standards will be addressed and new best practice will be considered in the development of proposed life safety improvements.

- M&E
- Traffic Systems (design of outstation assets)
- Technology (Instation and the wider secure bubble, possibly including SIL, etc)
- Proposed programme management structure and high level governance arrangements, and approach to tracking and reporting progress.
- Your view of typical key project lifecycle risks and technical issues affecting successful delivery and an explanation of how these will be managed. This should include assurance the deliverables for client approval will be near right first time.

*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.*