

tie
Edinburgh Tram

Utility Diversions - Strategic Review



10 April 2006



Scott Wilson Railways

"We operate a truly multi-disciplinary company with specialist project management staff trained to deliver fully integrated projects".

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1 INTRODUCTION

1.1 Background

The implementation of the proposed Edinburgh Tram Network requires extensive diversion and /or protection of utilities apparatus and equipment including, cables, pipes, sewers etc.

When work on these diversions commences it will be the first indication to the residents, visitors and frontagers of the nature and extent of disruption that the city will experience during the development of the tram scheme. Such disruption whilst inevitable must be minimised by careful planning and programming of the works restricting access to agreed zones by the utilities diversions contractor (MUDFA).

The full detailed design of diversions, scope of works, specification and programmes must be complete and agreed by all parties before works commence. It is also of significant importance that all temporary traffic and pedestrian management issues are addressed and agreed before works commence.

In October 2005 **tie** appointed Parsons Brinkerhoff Ltd as its consultant to perform and fulfil the role of System Design Services (SDS) provider. The SDS role incorporates:

“undertaking all design and to produce deliverables necessary.....”

and specifically relating to Utilities

*“shall provide assistance to **tie** with the management of an advanced utilities diversion programme”.*

Since appointment SDS has, in the opinion of **tie**, been slow to recognise and implement an appropriate methodology for the utilities diversionary works or to produce and provide the necessary resources to enable design to be completed and agreed by all parties to meet the current project programme requirement milestones of:

- Preferred MUDFA contractor appointment June (end) 2006.
- Commencement of on site diversionary works January (end) 2007.

Accordingly **tie** requested that the TSS consultant review and audit the progress made by SDS. This was to provide conclusions with appropriate recommendations to ensure the recovery of time lost thus far with regard to the utility work on the project. It was also to identify an effective solution to ensure that the diversionary works are henceforth designed managed and implemented in an effective manner.

2 OBJECTIVES OF THE REVIEW

The objectives of this strategic review are to:

- Give an outline of performance to date in a succinct manner identifying shortcomings; and
- Provide options for **tie's** consideration to reinstate and maintain the confidence in the critical issue of utilities diversions enabling works.

The terms of reference of this strategic review were agreed with **tie** prior to the work being undertaken.

During the course of the review there have been limited opportunities to raise matters of concern directly with the SDS team. However, a number of documents have been reviewed as part of the process. The list of such documents is included in Appendix A.

3 TERMS OF REFERENCE AND ISSUES

3.1 Review of Information Provided and Instructions Given to SDS.

SDS terms of reference (bid document) have been reviewed.

Sufficient clarity exists to have enabled SDS to fully appreciate their role and responsibility, in particular:

- Section 3.2 of the Scope of Services, Schedule One which particularly relates to the utilities.
- Section 4 Development, review, finalisation and delivery of the deliverables.

No documentation has been provided for the purposes of review which may qualify in any manner or amend the scope of works for which SDS are responsible. However, Section 3.2.1 of Schedule One states "that the SDS provider shall provide assistance to **tie**".

Has **tie** been specific in giving precise and unambiguous instructions as to the extent of and manner in which assistance shall be given?

It is worthy of note that in their reports (Section 9 - Utilities) SDS has in Reports 3, 4, 5 and 6 stated that it is working closely with **tie** to "provide design inputs requested by **tie**".

3.2 Utilities Workstream and Progress to Date to Assess Performance of SDS.

Whilst SDS have produced a programme (issued 29/3/06) of preliminary design, the only two items that were due for completion on the day of programme issue were not achieved. It was reported at the Progress Meeting of 6 April that an updated programme had been issued to **tie**. This revised the delivery dates of certain key deliverables.

It is noted that SDS has not to date established and agreed with all parties design parameters or criteria. This is a significant milestone that has yet to be achieved. Without full agreement successful preliminary design cannot be concluded. All outline preliminary design is at risk in the absence of agreements.

SDS may not have appreciated the inherent risk in utility companies not having available full, complete and accurate information, which indicate the location of existing services and apparatus.

The late appointment of a GPR subcontractor to "prove" certain locations is worthy of note.

3.3 SDS Resourcing

The organogram that was reviewed (undated and without identified status) did not have any team structure included for utilities.

A team leader, David Pluse has recently been appointed. The extent of his experience or full time commitment to the project has not been verified.

Has C.V., work scope been submitted to and approved by **tie** for this key team member?

A more detailed organisation chart indicating roles and responsibilities is required as a matter of urgency.

3.4 Integration of Technical Outputs into MUDFA Contract.

The refinement of the MUDFA contract to incorporate essential tramway infrastructure below ground services is eminently desirable. SDS must address this and assess the time frame of design availability for incorporation of such works into the MUDFA contract scope.

Avoidance where possible of multiple or repeated excavations of the streetscape is essential for avoidance of disruption and poor public perception of the organisation responsible (**tie**) for the tramway.

3.5 SDS Role and their Utilities Team

It is evident that SDS were not organised to deliver to the required timeframe. During this period SDS should have sought clarification if unclear over their role.

Informal discussion with PB / Halcrow revealed that " It was thought that utilities diversion works could be designed along with road works necessary for the infrastructure / street works."

This would obviously put utilities diversion design much further downstream in the overall design programme.

Programme workstream, definition is required together with resource structure referred to above in Section 3.3. This must be complementary to defined roles for a dedicated PM from tie and TSS.

The Key Managers (from tie, SDS, TSS) must have a clear mandate to manage collectively the utilities works in the short, medium and long term and must have the necessary support staff to enable them to fulfil this Project critical role.

3.6 Technical

The SDS team have not demonstrated a clear understanding of the full requirements and implications of Utilities Diversions. Design parameters, criteria and programme should have been established earlier and relationships formed with utilities PM's at the outset.

It must be remembered that diversion of their equipment is not core business. It is inconvenient to them and generates no corporate income.

As referred to in Section 3.4 above input of infrastructure work, wherever possible, should be integrated into the MUDFA scope.

It has been intimated (by PB / Halcrow) that agreements made by tie with utilities are constraining / restricting design work. This requires urgent clarification.

3.7 Communications

Communication systems, information flow charts must be agreed. The draft preliminary design flow chart prepared by SDS:

- Has no status;
- Should embrace respective roles of utilities team members; and
- Is, in its present format, far too "broad brush".

A Project Implementation Plan (Utilities) document is required urgently, it must identify " who does what, to whom, when and in what manner"

It is the feeling of certain members of the utilities " team" currently in place that tie must either have more hands on involvement or delegate authority.

3.8 Commercial Matters

The input to the MUDFA procurement strategy was, as their monthly reports clearly state, on a basis of " as requested of them by tie".

It would appear that they regarded their role as somewhat ad-hoc as it was not specifically identified or instructed by tie.

A methodology for MUDFA bid refinement with clearly identified roles and responsibilities must be established.

3.9 Current Performance

Utilities team members representing tie have become more optimistic in recent weeks having received some documentation, i.e. preliminary general arrangement designs, preliminary programme etc. It is hoped that output by SDS continues to improve. Assurance of this can only be achieved by the application of robust management resources.

A definitive programme with clear deliverables to allow proper monitoring of the progress of the work must be approved.

PB / Halcrow has said, albeit informally, that "they do not want to be associated with failure and will do all that is necessary to achieve success".

4 CONCLUSIONS AND RECOMMENDATIONS

tie has requested “options” to address the need to radically rectify recognised shortcomings in the delivery of utilities diversions.

4.1 Option 1 – SDS Removal

It is considered unrealistic if project programme dates are to be achieved to “change horses” at this critical time. It must be recognised that to do so would require a guarantee of alternative resource availability immediately. It is extremely doubtful if such a guarantee could be obtained.

Some improvement in the SDS performance has been observed although there are delivery issues. Considering the combined resources of PB and Halcrow means that they should be able to meet the required programme and quality.

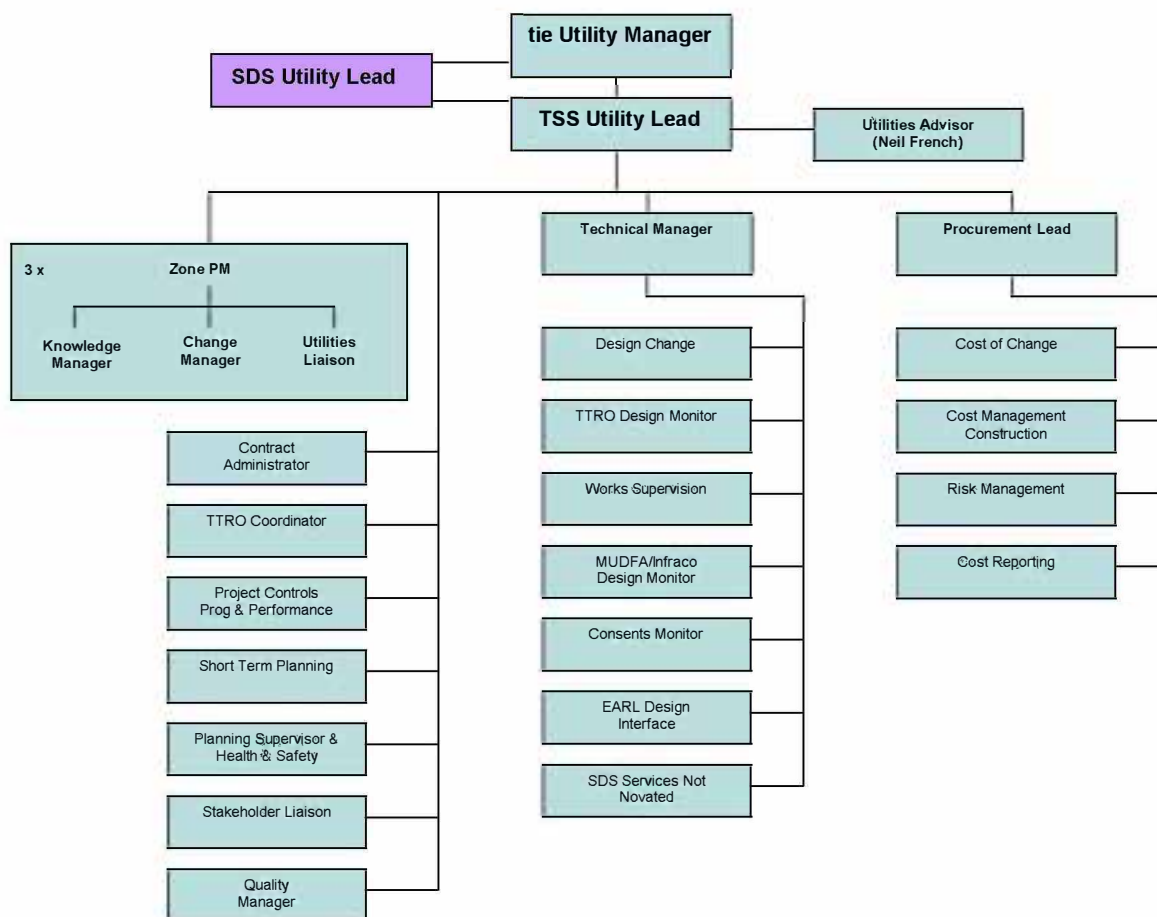
There is, it is considered, a greater risk to the project as a whole if this option were to be exercised rather than option 2.

4.2 Option 2 – Enhanced Support

It is considered that there needs to be a recognition of the major project scale of the utility diversion work and that it should enjoy an appropriate project management structure with supporting team. The second option is therefore to establish a core PM team for the utilities diversionary works from **tie**, SDS and TSS with appropriate support staff. Delegate to this team the necessary authority and responsibility.

Allow this core team to support SDS with help and assistance but not remove or adopt the full responsibility that must remain with SDS.

The Strategic Review of the approach to utilities to date has demonstrated lack of depth in management. Consideration of the issues raised and our experience elsewhere has generated the management structure indicated below:



4.3 Utilities Executive Team Structure

It is proposed to establish an Executive Team charged with managing the Utilities Project. This team will comprise:

- **tie** Utilities Manager
- TSS Utilities Lead
- SDS Utilities Lead
- MUDFA Project Manager

This team will provide the focal point for the wider structure, and will report to the Project Director and Project Board.

The team will, based on a workshop populate the above organogram. Once fully established it will meet regularly to establish priorities and to address current challenges.

Appendix 1 - Documentation Provided and Reviewed.

- TSS schedule one, scope of services
- **tie** / Parsons Brinkerhoff LTD provision of System design Services and schedule 1
- MUDFA scope of works and services (draft only)
- Parsons Brinkerhoff progress reports numbers 3, 5 and 6 (the latest, NR 6 being to 6th February 2006)
- Minutes of meetings **tie** / TSS (note no presence of TTRM) dated
 - 12th January 06
 - 9th February 06
 - 9th March 06
- TSS weekly progress report to **tie** numbers 26 (27/2/06) to 29 (29/3/06)
- G.A "example" drawing of layout of a section of work (furnished 29/3/06)
- Preliminary design flowchart (furnished by SDS 29/3/06)
- Detailed design flowchart (furnished by SDS 29/3/06)
- Preliminary design programme (furnished by SDS 29/3/06)
- Design documentation review (TSS - **tie**) dated 08/3/06
- Summary of work process (SDS) dated 21/3/06
- SDS organisation chart (undated) - (no details of utilities resources shown).
- SW proposal to **tie** for utilities - delivery team dated 16th March 2006