
From: Matthew Crosse
Sent: 27 February 2007 09:58
To: David Crawley
Cc: Tony Glazebrook; Martin Donohoe - TSS
Subject: FW: Top 20 Engineering Issues

David/Tony

There are three of these top 20 engineering issues lists (the others are from Jim H and Roger J). Suggest you schedule a session to review, filter and even action/decide stuff. Possibly with someone from SDS? Please let me know when it is and I will try to join, else keep me informed of progress.

Thanks

Matthew

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Did you know Princes Street and other shopping streets will be reborn as trams help to transform our city by creating a more pleasant shopping environment and new opportunities for shopping...on an average Saturday in Strasbourg, the number of shoppers in the city centre rose from 88,000 to 163,000 after the opening of the two tram lines.

From: David Powell
Sent: 26 February 2007 11:45
To: Matthew Crosse
Cc: Jim Harries; Roger Jones (Transdev); 'Dorrington, Kim (Edinburgh Tram)'; Martin Donohoe - TSS; Tony Glazebrook; David Crawley; Susan Clark
Subject: Top 20 Engineering Issues

Matthew,

As part of the recently formed Project Engineering Steering Group, we agreed to independently table our individual "Top 20" issues. My contribution is as follows:

1. Wheel-rail interface – we have some definition in this area but considerably more work is needed
2. Contact wire height – this has been poorly managed with shifts in responsibility and unrealistic technical parameters developed in the design to date
3. Workshop equipment scope – this is poorly defined with contradictory documents having been provided to bidders
4. Tram length – I am conscious that PB are claiming that the information from the Tramco bids constitutes a change – this is incorrect, their designers have interpreted our requirement for a nominal 40m tram to mean 40.000m. What is clear is that their interpretation has created difficulties in a number of areas which need to be understood.

5. Tram interfaces – some are reasonably well defined, others less so. I am developing a process for managing this through the next few months – if we haven't got a credible position by the time we have both preferred bidders established, our novation strategy may be compromised.
6. Definition of RAMS targets – this has shifted significantly as the project has developed
7. Depot design – decision making needed to enable progress
8. Trackform design – PB's progress has been limited and their brief has varied over time. Infracos have been left to propose their own solutions.
9. Supervisory & communications system – this has been the source of much confusion historically. It may have improved lately but the relationship with what has been bid by Infraco needs to be examined.
10. Utilities design – I have little visibility of this, but don't believe that I'm alone in this regard!
11. Standards – the original tabulation of standards was removed from the Employer's Requirements and is being re-instated. We need to be certain that the listing is accurate, particularly as it will come as a "new" requirement to our Infracos.
12. Status of Infraco bids – generally, we have not yet sought to benchmark Infraco bidders' proposals against either the Employer's Requirements or the emerging PB design.
13. Run time – I understand that we have a mis-match between the requirements and the results of the simulation work undertaken thus far.
14. Lack of development of junction priorities – this is critical to firmly establishing run time
15. Ticketing strategy – this has changed substantially over the course of the project and remains a source of confusion
16. System integration – this has not been undertaken on a systematic basis thus far
17. Securing Infraco's acceptance of performance risk – this will not be a trivial task, particularly with a number of the aforementioned elements of work outstanding
18. Maintenance scope and definition – there are three interlocking contracts which need to be aligned and coordinated with the City's residual responsibilities. This still seems poorly defined.
19. Changing ownership of documentation – various documents have originated from PB and have been re-badged as tie's own. The most obvious example is the Employer's Requirements. This has let PB "off the hook" for a variety of issues
20. Decision making - all parties have been generally indecisive about technical issues. tie's ongoing changing of personnel and shifting emphasis on what is expected of the various parties has probably been at the root of this.

I have been reasonably blunt here and hope that this doesn't sound too negative. Unsurprisingly, my list is probably biased towards issues which affect the tram and the procurement process over the next six months or so. There are also a number of the points raised where I am not necessarily 100% up to date with the latest developments, so my comments may be out of date.

On the positive side, many of these issues could be solved without undue distress, indeed there are a number where I am aware that effort is being applied, however this is generally rather ad-hoc. The recently announced amplification of the Engineering function provides the ideal opportunity to tackle these points in a structured manner and to clearly communicate the conclusions. I would be happy to take the lead on a number of these and support others as appropriate.

Best Regards

David

Matthew

Here are my top 20 issues as requested, prepared without reference to Roger's list that he has already sent to you. Not all of these are strictly engineering issues, and they are not ranked in order of importance. Some food for thought anyway:

1. Lobby CEC and get them to decide if they totally support the project or not. If not, let's all go away, do something else and save a lot public money
2. Achieve total alignment within tie and eliminate any silo based activity
3. Implement a process to manage the emerging run time and punctuality and their implications on the business case
4. Align the SDS design with what we are requiring from Infraco. This is to avoid costly variation payments to SDS and/or Infraco and possibly programme implications to enable SDS novation to take place.
5. Define and agree performance regimes, and their integration with system acceptance tests
6. Make the Hazard Management and closeout process work.
7. Detailed Design Review – define the process and make it happen Linked to item 9

8. Use the expertise and knowledge that is available to the project in the most productive way, and eliminate all activities that duplicate or do not add value. Linked to item 15
9. Get a schedule of deliverables agreed with SDS that actually makes sense to the project, with an appropriate level of detail in the design for Infraco's purposes. Linked to item 7
10. Make decisions on stray current that impact on the system design and possibly on the MUDFA contract too.
11. Resolve the large family of issues associated with the depot. These include excavation depth, track layout, building occupancy, stabling requirements, and Value Engineering inputs
12. Critical items of depot equipment that are needed by Tramco are to be maintained by Infraco. This is silly. Change it
13. Find out SDS's proposals for the development of the specifications of all of the depot equipment
14. Empower the team to make decisions for which they will be accountable. However, they need to be able fully to understand the consequences of their decisions to be able to do this!
15. Find out what everyone in tie does and consider a 50% reduction in headcount within tie/TSS/Transdev. Linked to item 8
16. Deliver on what we say we will do. Examples follow: implementation of SMS, QMS, Extranet, Engineering expertise, PMP
17. Agree OLE wire height and pantograph heights – a classic integration issue!
18. Achieve the absolute maximum priority possible for trams at all junctions
19. Resolve CEC/TEL technical integration issues such as CCTV and PIDs
20. Make sure that the tram project is not used to fund items that are not for the tram project in order to protect the tram project's business case. A good example is the funding for the bridge over EARL and Ingliston. Any work associated with this should not be funded out of the tram project's business case.

Please discuss any or all of these if you want – I will be available on my mobile all day Friday 9 Feb and back in the office at 11:30 on Monday.

All the best
Jim Harries

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Matthew,

Interested in this one of your four key threads. I thought I'd jot down my quick top 20 -it would be interesting to compare top 20s from each of the appropriate people and see how many issues actually appear in common.

(In no specific order)

1. Depot site layout -decide the full batch of changes so that site layout can be redesigned once only
2. Depot building -resolve outstanding issues for the space and facility requirements to be included
3. Depot equipment -specification preparation
4. Foot of the Walk interchange -agree concept
5. Princes St -resolve basic cross-section (ensuring best overall for project and city, not just roads discipline)
6. Leith Walk -north end; resolve spatial allocation (ensuring best overall for project and city, not just roads discipline)
7. Leith Walk -section Picardy Place-Elm Row; resolve basic layout
8. Run times -resolve where responsibility to achieve lies; realistic update to modelling to reflect emerging design
9. Trackforms (in street and grassed) -resolve (?with Infraco bidders) the standard details
10. Drawings and Documents -understand and agree the content/level of detail to be included in each series of drawings that SDS are preparing; similarly the respective content of the documents (what lives where in the complete suite)
11. Update and fix the "Assumed Tram for Design"
12. Resolve the philosophy for stray current management with Utilities

13. CCTV integration with CEC/TEL?
14. Vehicle location information and PIDs -resolve extent of integration with TEL/Ineo
15. LV architecture -understand comprehensive approach to design, UPSs etc
16. Network Rail -access at Balgreen Road
17. Network Rail -extent and nature of immunisation
18. Achieving full priority at traffic signalled junctions; inter-relation to road layouts; particularly capacity at West End junction
19. Substations -confirm need for proposed size and need for fenced compounds
20. OLE design principles -pole sizes and layouts to minimise visual intrusion (this is possibly just me needing greater understanding!)

Also:

1. Alignment of Infraco proposals and SDS emerging design (perhaps not for this list)

Regards,
Roger

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