

Edinburgh Tram Inquiry Office Use Only

Witness Name: **Matthew James Crosse**

Dated: 11/6/16

THE EDINBURGH TRAM INQUIRY

Witness Statement of Matthew James Crosse

Statement taken on Monday 25 January 2016, Tuesday 26 January 2016 and Wednesday 27 January 2016 by Gordon McNicoll, solicitor, and David Murdoch, solicitor, of the Edinburgh Tram Inquiry.

1. My full name is Matthew James Crosse. I am currently resident at an address provided to the Inquiry. I am director of Strategic Lines Limited. I was Project Director (PD) for the Edinburgh Tram Project from January 2007 to March 2008. I was engaged by TIE as a contractor. I was recruited for my experience in procurement, particularly as a private sector bidder. I was appointed primarily to lead the procurement phase of the project and I was to hand over to another PD once the procurement phase had finished. I took over from Andie Harper who had decided to leave the tram project after only 6 or 7 months. Andie Harper had replaced Ian Kendall. Ian Kendall was the commercial architect of the tram project. I left in March 2008 just before we had finished the procurement.
2. As PD I was in charge of the whole tram project so the system design (SDS), utilities diversions (MUDFA), advance works contracts, procurement of the trams and infrastructure (INFRACO) were ultimately my responsibility. TIE was a project management company set up by the City of Edinburgh Council (CEC) to deliver several transport infrastructure projects including the tram project. The TIE board sat over all the projects and each project had its own PD. My main roles were leadership, organisation, managing my senior team and reporting to the TIE Board and to the Tram Project Board (TPB). Soon after I had started at TIE Willie Gallagher had asked me to stay with TIE and manage the project through to the end. However my responsibilities changed slightly after the May 2007 elections. We learnt that EARL was to be scrapped and soon after the election it was decided that

Steven Bell, who was PD for EARL, would take my role. It was clear that I would go as soon as the procurement phase was concluded. As a result of the election TIE had fewer projects to manage. Willie Gallagher and other staff, such as Graeme Bissett, got more involved with the tram project and there was a change in emphasis in roles. I was to focus more on procurement while Susan Clark focused more on delivery of advanced works, such as work on the depot, and the MUDFA contract.

3. The document titled "Organisational Changes tie Tuesday 30th October 2007" (CEC01441488) contains job descriptions for TIE staff. My leadership team included the following people who reported to me: Geoff Gilbert, who was Commercial Director and leading on the procurement of Infracore; Stewart McGarrity, who was Finance Director at the tram project level and part of the TIE management team; Trudi Craggs, who was Development Director, which was a technical role; Susan Clark, who was Deputy Project Director and in charge of MUDFA. The rest of my team included Graeme Barclay, who was Construction Director and reported to Susan Clark; Alastair Richards, who was from TEL; Roger Jones from Transdev; Keith Rimmer, who was an expert in traffic management and traffic regulation orders; David Powell, who led tram procurement; and Colin Mclaughlan, who was HR and communications. That was the team that I used to run the project. They would have reported to me but some of them would have also reported to Willie Gallagher. I did not find that this dual reporting made a difference to my management of the project. I reported directly to Willie Gallagher.

4. Jim McEwan was brought in by Willie Gallagher to head up value engineering work. As Executive Chairman, Willie Gallagher could impose changes he wanted on the project. I don't know how the staff who were there when I arrived had been recruited. Graeme Bissett had a strategic role in tie and was effectively his right hand man for senior strategic matters. Andrew Fitchie was our legal counsel. Jim, Graeme and Andrew reported to Willie Gallagher. Trudi Craggs was replaced by David Crawley as technical lead. Trudi Craggs had been the lead technical person for the promotion of the Tram Bills and as a result she knew a lot about the technical nuances of the design alignment. However she was not an engineer and not really suitable for the role so we replaced her with David Crawley who effectively became

the Chief Engineer. David Crawley was hired after he was contracted to provide an opinion on SDS work.

5. The tram project had three parts to its governance structure and was quite top heavy: the TIE board, the TPB and reporting to Transport Scotland (TS) and I had to effectively report to all three. We had the Design, Procurement and Delivery (DPD) committee and the TPB. The work of those committees was a bit duplicative sometimes. The TIE board or TPB would provide reports to CEC. The principal governance board all the way through was the TPB and that was how I wanted it. I didn't think there was much value in reporting to TS or the TIE board as some of the reporting work was repeated. As my time at TIE came to an end Willie Gallagher, David McKay and Graeme Bissett considered how TIE was going to run the project downstream and how CEC was going to look after the project, so they created the structure with TEL. I had little to do with the setting up of TEL.

First Impressions

6. When I started I saw that TIE was faced with two main problems. Firstly, I noticed that the design contract was a fixed price contract with deliverables that might be interpreted differently by different people and that it wasn't a time-bound contract. So we could ask SDS for anything that might be construed as "design" but because the contract was not time-bound SDS could take as long as they wanted to deliver the design. If SDS took a long time to deliver designs they would lose money, so it was in their interest to get the design done quickly, but we couldn't hold SDS to liquidated damages. In order to get the SDS team to improve their collective performance and work closer with us we needed to change the leadership of PB so David Hutchison was replaced with Steven Reynolds.
7. Secondly, I noticed that TIE seemed to be effectively sub-contracting the checking and ownership of design to TSS rather than doing it ourselves. It almost seemed that TIE were trying to procure a tram entirely through consultants and sub-contractors. I knew that TIE had to take ownership of the design as agents of CEC, so I brought in David Crawley as chief engineer to help us achieve ownership of design and engineering.

8. CEC are not a passenger transport authority but they do have the responsibility of one. CEC was not universally supportive of the tram project but the way CEC had devised the procurement of the scheme meant that it needed to be wholly supportive of the project. Like Edinburgh, Nottingham was not a passenger transport authority (nor skilled or able to stand behind large transport delivery risks) so it procured its tram through a PPP which included turnkey contracts with full risk and responsibility transferred to a single contracting entity. Edinburgh decided not to follow that model and therefore had to take responsibilities for risks. The organisation structure was not ideal so I had to make changes in the first few months. That's why I changed the leadership of PB which I thought was ineffective and brought in David Crawley as chief engineer. Together with the effective 'tie together' campaign those were the main changes that I made in the first few months.

9. Another problem I was faced with was the design approval process. The approval process involved SDS making design recommendations to TIE that CEC had to approve. CEC were sometimes quite reluctant to make decisions on design as this was new to them, they were quite risk averse and they were afraid of future public opinion (there were some very effective campaign groups objecting to the tram), so the design process was getting stuck. I called this 'design gridlock' in some of the meetings I attended. In order to meet the programme we had to deal with this issue effectively. Design ownership meant that TIE itself understood the design issues without wholly relying on a TSS opinion. This enabled us to advise Andrew Holmes and Duncan Fraser at CEC enabling them to make decisions on design as the owning authority.

10. The procurement strategy was conceived by Ian Kendall and it was in my view, an idealised approach. If you had an established and experienced transport authority running the procurement then it might have worked well. The way the strategy was conceived was that tie would appoint an operator (Transdev was a good operator) and then a designer, who listens to the operator, designing the system for the passenger and well planned operations. You would then appoint the MUDFA contractor to deal with utility works and then finally appoint Infracore and Tramco contractors and novate the contracts together so a single contractor would

own the project at the end. The result is a tram system designed by an experienced operator. Through this procurement strategy you would potentially get the lowest cost because the council would have taken on the utility diversion risks.

11. I think it was clear what TIE's and CEC's responsibilities were. We knew what we had to put to CEC for a view. However, when I started there was arguably too much red tape around the design approval process. TIE and CEC were not responding to RFIs (Requests for Information) from SDS within the period stipulated in the SDS contract, which was something SDS could use as an excuse for not completing their work to programme. Design should be done collaboratively so through a major initiative called "tie together" I made sure that the CEC and SDS staff were working in TIE's offices in order to encourage collaborative working and CEC ownership of the project. The result was that we did work collaboratively and worked well together and we moved the design on considerably.

12. The minutes of the TPB meeting on 23 January 2007 (CEC00689788) mention the "get well" plan which was about replacing the project director of PB. We got senior PB staff to come to a meeting at which we told them that PB had to improve its performance. As a result Steve Reynolds replaced David Hutchison, which was a good result. The January 2007 minutes mention concerns about delivery to programme. There were design elements that were probably not met at that point in time and SDS was partly to blame for that. PB performance was lacking partly because the leadership was poor and there was no "vim". However some of that slippage was related to design gridlock. Design gridlock may be due to a number of factors, such as awaiting a decision from CEC or completion of modelling by TIE. Design gridlock might be the result of multiple parties being involved in the design and each party relying on the other to complete a task, which required an interim decision from TIE to progress design. David Crawley is probably best placed to explain the design process and issues.

We had a tram event at Edinburgh Castle in March 2007 called 'tie together' to enable greater collaboration. This was a successful event which focused on trying to get all sides understanding the importance of working together but there were still

issues of design gridlock at certain key sites. The peer review referred to in the January 2007 minutes probably had a lower priority than appears in these minutes.

13. When I joined the project I asked Willie Gallagher about the possibility of changing the contract structure. However he said that it could not be done. Willie Gallagher advised Parsons Brinckerhoff (PB) in an email dated 19 January 2007 (CEC01826306) that SDS was at the heart of my concerns and I would agree with that. PB leadership in Edinburgh was weak and we had to fix that. That was one aspect of the 'get well' plan (as Willie Gallagher referred to these early initiatives). We had to replace the leadership of PB and we got Steve Reynolds. The last comment in Willie Gallagher's email about the project being 'alive and kicking' was necessary because there was always doubt about funding, even at that point, and it was important to provide PB with reassurance. We did not have a firm commitment to funding at that point and bidders, including SDS, were aware of that. SDS were on a fixed price contract which was not time limited and there was a risk that the project might be scrapped after the election, which might have subconsciously affected SDS performance. However this project would have been a big project for PB (£20m-£30m) which had the principal design role. It was a high profile project and PB seemed very keen on it.

14. David Crawley produced a report on the design review process dated 9/10 January 2007 (CEC01811256 and CEC01811257). We took on David Crawley as a result of that report. David Crawley interviewed a number of TIE staff as part of his report. The result of that report was the 'get well' plan, which involved getting rid of leadership at PB and the appointment of David Crawley as chief engineer. In the report Trudi Craggs said that the programme was not sustainable and should be restarted. It was not unusual for people to make statements like that and Trudi Craggs was inclined to make quite strong statements. Trudi Craggs was worried that the design would not be finished in time for novation, which is why we needed the 'get well' programme. In the report Trudi Craggs was concerned about a lack of continuity due to personnel changes. It might have been a reference to the fact that TIE had had three tram project directors in less than a year. At this point Trudi Craggs was acting as technical lead and dealing with the SDS interface. She was not familiar with this role and we needed a chief engineer to deal with the design

process and design contractor and that's why we appointed David Crawley. Within three months of me arriving at TIE we had dealt with the problems identified in David Crawley's report.

15. Pausing the programme to allow design work to be completed was not a realistic option. The deadlines for this project had been made public and stated in the strategic business case upon which the project was approved. If we missed deadlines that would have affected the credibility of the organisations involved, the economic benefits contained in the business case and the affordability of the project. A slippage in the programme would have cost SDS money as the design contract was a fixed price contract. There was no interest in delaying the programme. David Crawley brought in Tony Glazebrook to look after the interface with CEC. My solution was to bring people together to work as a team to deal with the problems that arose. We had to move from a highly contractual approach under Trudi Craggs to a more collaborative approach under David. This is where both sides working styles and relationships are closer together, much more cooperative, and continuously aligned and focused on outcomes and benefits (because both share common project objectives).
16. Douglas Leeming said in David Crawley's report that the solution to the risk of programme slippage was fewer but better people at the right level. I would agree with that. Not everyone in TIE was perfect but every organisation is like that. There are a number of comments in the report regarding the inadequate use of TSS. TSS were a consortium of companies made up of Scott Wilson, Turner and Townsend and Interfleet. TSS were originally taken on board in part to act as a checker on SDS but I was trying to make Tie own design issues. In my view the main benefit of TSS was to bolster the engineering and project management resources in TIE.
17. The use of charrettes was part of the design process and it was a good concept but sometimes design issues could not be closed and that's when we ended up with design gridlock. I would not agree with the suggestion in the report that we should enforce the discipline of change control and manage the SDS contract as contracted. That was Ailsa McGregor's approach - she wanted to hold SDS to a

strict interpretation of the contract whereas I thought a more collaborative approach was the way forward.

18. In an ideal world all of the design would have been completed before novation. However in practice that doesn't usually happen and on this project the design was never going to be perfectly complete by then. Our aim at novation was to have design sufficiently advanced in order that BBS felt comfortable with the risk to set a price and to accept novation. There was no need to pause the programme, we simply needed to get people to make decisions on design. There was no reason why the design could not be completed within the proposed timescale. We decided to hold critical issues meetings on a Friday each week from around March 2007 to allow the gridlocked design issues to be resolved. These meetings would be attended by people from TIE, CEC, PB and TSS. The meetings were run a bit like a court; the design issues were usually presented by TIE or PB to a panel chaired by David Crawley and everyone in attendance would have an opportunity to give their views on the issue. David Crawley would sum up the situation and make a decision. These meetings represented a far more collaborative approach with all parties involved and they were very effective in quickly dealing with critical issues.

19. Critical design issues are design issues which SDS could not progress any further because they were waiting on information/decisions from CEC or TIE. It was a critical issue not because it was necessarily an important or complex design issue but simply because due to a lack of information or decision from CEC or TIE it could not be progressed. Often design elements were linked so there was a risk that the design was effectively becoming gridlocked. SDS created a map showing where the critical issues were and this was known as the critical issues map. At every TPB we reported on the critical design issues. I think we planned to try to tackle at least three critical issues a week at the critical design issues meetings until we had dealt with them all.

20. In an email from Steven Bell copied to me on 24 January 2007 (CEC01799686) in SB states that Susan Clark and I were "extremely keen to make changes and move forward". This is a reference to the changes we have discussed.

I was talking about collaborative working, changing leadership of PB and fixing the design throughput.

21. An email from Ailsa McGregor on 21 January 2007 has an attached report dated 17 January 2007 setting out improvements needed in the project (CEC01799542 and CEC01799543). I don't think there is anything in her report that wasn't true. Ailsa McGregor was the interface with SDS and we would have taken her comments seriously. However Ailsa McGregor's style was quite aggressive. She was brought in to manage the SDS contract and she tried to manage it to the letter. Ailsa McGregor's approach was to toughen up the monitoring of SDS and contract management but in my view that wasn't going to work. We needed a more collaborative approach with SDS. When you are managing a contract like this you need to stick to the contract but also understand the reasons why the design process is not working and find a solution. So we replaced Trudi Craggs and Ailsa McGregor with David Crawley and Tony Glazebrook. They managed to progress design so that high risk design work was completed to allow bidders to give a firm price. Daniel Pearson and Gavin Murray were members of the TIE design team and Ailsa McGregor wanted to replace them as she felt they were ineffective. Their approach was the polar opposite of hers. While there may be some truth in her views we needed to move the work on and my approach was to do it differently, understanding the individuals' positions and working cooperatively, avoiding silos.

CEC01799543
should be
CEC01799541

22. On my arrival at TIE the design process was underway and the MUDFA contract had been signed but utility works had yet to start. I was given a summary document on SDS prepared by DLA and I was briefed by the people who were familiar with the SDS contract, such as Trudi Craggs and Ailsa McGregor. Geoff Gilbert and Susan Clark were familiar with MUDFA and they gave me a presentation on MUDFA. In principle there was a logic to the contract structure but there was always going to be a problem with moving utilities as the precise location and number of utilities can never be accurately known until you dig up the road. Sheffield and Edinburgh had a separate contracts structure and both had suffered problems and delays with utility works. Nottingham and Croydon were turnkey projects under a PPP contract where contractors carried the risk of moving utilities, prior to

constructing the track bed. The contracts contained strong penalties (liquidated damages) imposed by the banks for delays to opening.

23. I suggested holding a 'blue skies' session in an email dated 7 February 2007 (CEC01826743). That was in response to James Stewart's suggestion in the January 2007 TPB minutes to have a peer review of the contract structure. I don't think anything of significance emerged from that meeting. The purpose of the session was to get everyone to completely understand what we were doing. It wasn't to try and change the structure and process for the sake of it because that would disrupt the programme. It was also about understanding the risks facing the programme. We knew that if novation failed TIE would be left with a lot of risk. For novation to be successful the design had to be sufficiently advanced for BBS to accept novation.

24. It is difficult to say how much design work we contemplated would be complete by the time Infraco was awarded. You want to complete as much design as possible before novation but in practice you won't get all the design finalised. At one extreme 'completed design' means all drawings issued for construction but we never expected to get to that stage before the INFRACO contract was let and design novated. Bidders will always have to do some design work on top of what SDS have produced in order to incorporate their own standard methods of construction. Designs were delivered from SDS in packages and there were some design packages that were to be more detailed than others. The detail of a design package was determined by either TIE or PB. In my view the SDS contract was not great as it lacked detail but it would be unreasonable in a contract of that type to define in full detail what the design deliverables were to be.

TIE Team

25. Willie Gallagher sent emails to TIE staff in March 2007 (CEC01813895 and CEC01813896) in which he expresses concern about the quality of a TTRO advert produced by TIE. Willie Gallagher liked to keep staff on their toes but sometimes he "shot from the hip" and was a bit impetuous at times. However, I thought he was pretty good. Willie Gallagher's role was to deal with politicians, stakeholders,

funding and the business case. I tried to get everyone from all the organisations involved in the project pulling in the same direction. I think I did things differently from Andie Harper and Steven Bell. I had to move the project on and I think I did that. When I was at TIE I think all the working relationships within TIE were good.

26. I sent an email to my team on 5 March 2007 (TIE00087949) asking for job descriptions. When I arrived there were no job descriptions. Job descriptions were necessary because we had new people joining TIE. I do this all the time with my staff. I ask people to write down what they think they do and then I look at the job descriptions to identify the skills gaps. Keith Rimmer came from CEC and was recommended by Willie Gallagher. He handled TROs and reported to Willie Gallagher as well as to me.
27. Turner & Townsend were part of the TSS contract and they were project managers and quantity surveyors. I think they were hoping for a greater role in the project than the one they had. I don't remember the names of the personnel from T&T other than Mark Bourke who was a planner. TSS included Scott Wilson, T&T, Nichols and Interfleet. TSS would give an opinion on aspects of design if they were asked to do so by TIE.
28. I am aware of an email chain between me and other TIE staff in April 2007 (CEC01623296) in which it is mentioned that Tony Glazebrook is to take over the Project Manger role from Ailsa McGregor. Ailsa McGregor was very thorough and diligent and cared about her job but she had quite an aggressive style. She was very demanding of the contractors while Tony Glazebrook was an engineer who would seek to understand issues and had a different more collaborative approach.
29. A draft report by Duncan Fraser to the CEC chief executive from June 2007 records views in which I am complementary of the TIE team. I would still stand by my views of the TIE team. We drafted this report in the aftermath of the 2007 elections and the Audit Scotland report, which was a good report on the project. Duncan Fraser's report was intended to make CEC feel comfortable about the project and the views expressed in the report were justified.

30. Section 2.2 of the minutes of the TPB in July 2007 (CEC01018359) records that I am to focus on delivering an affordable Infraco deal. This meeting of the TPB was in the aftermath of the elections. Steven Bell was joining from EARL following transfer of responsibility for the Stirling and Alloa railway (SAK). He would focus on MUDFA and VE. Susan Clark is to be responsible for programme and control and Jim McEwan is to focus on VE. I am still dealing with SDS. These minutes show TIE people from other projects getting involved in the tram project. These changes are being made because of the loss of SAK and EARL. The changes did not affect me much but I felt a loss of power and independence as Willie Gallagher was becoming more involved in the tram project. I don't know what is meant by the reference in the TPB minutes to people working in silos but I don't think this applied to the TIE team.
31. In relation to a change in my role from October 2007 I think it was just a natural progression. We were planning to finish in January 2008 and Steven Bell was to take over from me. I was having a lesser role towards the end of 2007 as senior people from other TIE projects were taking more of a role in the tram project and they were all reporting to Willie Gallagher. Willie Gallagher became more in control of the project than me. Effectively TIE had fewer big projects to manage so they go more involved in the Tram scheme.
32. Reference is made to me dealing with Tramco in the minutes of TPB meeting in December 2007 (CEC01363703). I was always dealing with Tramco as part of my role in charge of procurement. Nothing had changed here in relation to my role.

Role performed by TIE

33. TIE was the company to which my project team reported. TIE provided the resources to my project team, such as finance and HR, and were the employers of my project team. Tie was the project management body for CEC. TIE was responsible for delivering a number of projects and all the project PDs reported to Willie Gallagher. The TIE board was the company board so it dealt with company matters. The TPB was responsible for the tram project and I was answerable to the TPB. In order to deliver the project we had to work with stakeholders such as CEC.

CEC were our shareholder and we relied on CEC for technical support and sign off on certain aspects of the design. TIE needed to make sure CEC was taking ownership and responsibility for the tram project as it was the promoter of the project.

34. On 7 May 2007 Willie Gallagher sent an email which makes reference to convening a 'Council of War' in response to the election results (CEC01653467). I suspect the aim of referring to the Council of War was to get hearts and minds behind the tram project. Willie Gallagher wanted to keep the people mentioned in the email on board with the tram project. TIE staff were worried about losing their jobs if the tram project was to be scrapped. TIE no longer had any other role beyond the tram project. I don't think CEC would have contemplated folding the tram project unless it was to be scrapped by the Scottish Government. I had no role in the briefings and presentations mentioned in this email.
35. The Audit Scotland (AS) 2007 report was a good report. We also received an amber light in a Gateway Review. Both of these were very positive results as Gateway reviewers rarely give green lights to projects unless they can see the end comfortably in sight. Sometimes audits don't ask the right questions to ensure that a proper review is undertaken. AS doesn't usually have much time for a review so it is not unusual for it not to find anything wrong. A TIE internal review would have been carried out by TIE staff and would be to ensure that the project was running in accordance with company policies. I do not know who carried that out.
36. The papers for the TPB meeting in May 2007 (CEC01015822) refer to proposals for streamlining of committees. When I joined TIE I thought the project was over-governed. The DPD Committee would usually be a dress-rehearsal for the TPB, it was attended by largely the same people, so I did not understand the point of having the DPD. The attendance of the MUDFA sub-committee was also growing. In the upcoming construction phase (after I left) the bureaucracy of the governance structure would likely have caused delays. At the meeting of TPB in May 2007 I presented a paper on revised project governance to make TIE more efficient. Good governance is important but you can have too much governance and spend all your time completing or checking reports.

37. The papers for the TPB meeting in September 2007 (USB00000006) introduces the proposed new governance structure. This is not based on my paper; my paper was based on making committees more efficient. The proposals put forward at this meeting were about revising the governance structure upwards. We had to report to TS and many people thought we didn't need to report to TS. Bill Reeve probably thought we didn't need to report to TS as it wasn't a heavy rail project. It was right that TS came out of the reporting loop. I thought the TEL/TIE relationship was odd. I never quite understood the role of TEL. Lothian Buses under Neil Renilson was initially opposed to the trams. Eventually LB was forced to work with Transdev and it eventually kicked Transdev off the project. TEL is almost a transport integration body which becomes the owner of the tram asset. It meant that LB ended up operating the trams.

38. By this point SG had scrapped EARL, capped their tram contribution at £500m and withdrawn TS from the tram project governance structure so a change in the governance structure was required. The rationale for the changes are contained in the papers to the TPB in September 2007. I understood my relationship with TPB and how we worked with CEC. I was not certain about the imposition of the TEL board. I never reported to the TEL board. TEL was put in place to anticipate the integration of the tram and the buses.

Design and PB

39. An email from Geoff Gilbert to other tie staff dated 11 April which mentions the redeployment of Ailsa McGregor (CEC01623296). Ailsa McGregor was replaced by Tony Glazebrook who became the interface with SDS. We took on Tony Glazebrook and David Crawley as extra engineering management resource in TIE.

SDS Performance

40. The delay in progressing the design would have had an effect on the procurement of Infracore. The big areas of design had to be sufficiently defined to allow bidders to price the project but detailed designs were not necessary. The

preliminary designs were complete and the bidders could price within a few per cent on those designs. Where the design is incomplete bidders will make design assumptions and price on those. We would then evaluate bidders' pricing and make adjustments to the evaluation to account for the assumptions made by bidders. When Nottingham procured its tram I believe it did not have the same level of design completed as Edinburgh had by the time of contract close and novation. (Nottingham was a PPP concession, 100% privately financed. The winning PPP concessionaire let a single turnkey contract for the design and construction to a contractor consortium and a separate contract for the operations of the tramway).

41. The designs for MUDFA were complicated because they relied on the co-operation of the statutory utility companies (SUCs) to facilitate the design changes e.g. SUCs had to provide technical information to SDS. Arguably there was some failure on the part of SDS and TIE to facilitate the co-operation of SUCs who often had other priorities and were under resourced.

The three main things that were concerning us about SDS in January 2007 was their leadership, the fact that they were behind on MUDFA design, and that the big item designs necessary for bidders to price would not be finished in time. I was not concerned about the smooth implementation of the project in light of these concerns. It was early 2007 and while we recognised that design was behind schedule we did not think that designs would not have been sufficiently completed in time in order to close the contract and commence construction. Designs for other tram lines have been done in shorter amounts of time.

42. An email from TSS to me dated 19 February 2007 (CEC01799928) refers to speeding up design. In this email TSS are looking at ways to take the pressure off the design programme by re-prioritising work. Phase 1b was de-prioritised, we needed to solve problems with the TRO process in relation to on-street sections of the phase 1a track and we had to focus on designing the main structures on the tram line e.g. the A8 underpass. I can't remember whether TSS's advice in this email was implemented but I do remember changes being made to the design programme in an effort to speed up design.

19 February
2007 should
be 19 January
2007

43. In an email from Ailsa McGregor dated 12 February 2007 (TIE00205630) she says that 96% of the preliminary design is complete and she is requesting payment to SDS. This was part of Ailsa McGregor's job and I have no reason to believe that preliminary design was not 96% complete at that stage. I have seen an email from Trudi Craggs dated 9 February 2007 (CEC01826622), in which she expresses concern that TIE staff are asking SDS to prioritise / de-prioritise design work to the prejudice of other workstreams, and an email chain from March 2007 (CEC01824866) which mentions that work was to stop on a particular part of the route. Trudi Cragg's is making the observation that if we interfered with SDS too much then they will have an excuse for not delivering the total design package. It would have either been me, Tony Glazebrook or David Crawley that would have directed SDS to prioritise/de-prioritise work.

TIE had to get involved in directing utilities design work to ensure effective use of resources because SDS were behind in these regards. I remember Halcrow working (as a subcontractor to PB) on design that wasn't needed at that point. In that case, PB were not managing them properly, so TIE had to get involved. I remember meeting someone from Halcrow about this issue.

44. In a chain of emails between PB and TIE which includes emails from me from February/March 2007 (PBH00009779) there is discussion of difficulties with SDS. This email chain shows that SDS had stored up a number of claims in relation to things that had happened in the past before I had arrived. This was nothing to do with the current way we were managing the SDS contract.

45. In an email sent by me on 9 February 2007 (CEC01826635) I said there was room for improvement in the meetings between SDS and TIE. This demonstrates that we were working more closely with the PB team and fixing problems. Steve Reynolds was new in his post at PB at this time and was getting to grips with the situation.

46. I sent an email to Ailsa McGregor dated 13 February 2007 (CEC01791615) in which a counterclaim is proposed in response to SDS's claim. I can't remember the details of the basis for the SDS's claim and TIE's counterclaim. SDS's claim would

be about changes and delays and waiting for information from TIE. Our counterclaim may have been about SDS's poor performance and missed deadlines. We thought it would be diligent to prepare a counterclaim so that we could come to a deal with SDS. We knew the SDS claim was coming, we were warned by Steve Reynolds, and we knew the solution was to settle the claim with SDS, but we had to get tough with SDS first. Geoff Gilbert and Ailsa McGregor would have been involved in preparing the counterclaim. There was never an intention to pursue the claim and counterclaim.

47. I have seen an email from Tom Hickman to me dated 10 January 2007 (TIE00207603) and its attached chart (TIE00207604). The chart is a programme analysis which compares the programme with actual output. The chart makes reference to sections of the tram route. 'PD' means preliminary design and 'DD' means detailed design. 'Baseline' represents the initially forecasted start and finish dates for the design and if design misses the date then the box is coloured red. A box is coloured green if design has been completed. Boxes would be coloured red if a design was late but no reason is indicated in the chart for the lateness. This is a classic project management tool. It provides a good overview of the programme but it can be a little crude so I would treat it with caution. A number of the delays were due to site critical issues. I was initially worried about the lateness of design but I became more pragmatic about dealing with design problems.

48. The SDS contract was a strong contract in TIE's favour. TIE could have asked for anything in terms of design (because the deliverables were not defined) and SDS would have been obliged to deliver it. The only downside was a lack of time limits in the contract, so SDS could take as long as they wanted but clearly taking longer would have cost them more. We needed to work with SDS in a collaborative way to ensure better performance and certainty around deliverables. When the SDS contract was let I am not sure that it was clear what TIE/CEC wanted from the design contract. Although we didn't define the deliverables that we required from SDS or hold them to absolute time limits, novation was a fundamental part of the SDS contract.

49. An email from Trudi Craggs to me dated 13 February 2007 which refers to problems regarding SDS accepting a change in the length of the tram (CEC01826750). If the length of the tram is to be changed then it would be a formal 'change'. I suspect that this design change was done to allow more bidders to submit bids. Longer trams might require longer platforms and adjustments to the track layout but I doubt that designs were that far advanced in February 2007. This change would not have had an impact on the design programme.
50. I have seen a paper to the TPB meeting in March 2007 (CEC01359648). At paragraph 1.1 it is noted that TSS has reviewed all design because of the lack of TIE technical/engineering expertise. The paper suggests that SDS provide Design Assurance Packages with a "right first time" approach. The role of TSS at the beginning of the project was to support TIE in checking SDS preliminary designs. Preliminary designs are high level and conceptual but as design progresses it gets more technical and the 20 day design review process involving TSS was not an efficient process. So we changed the way the design review process worked. SDS would now produce the designs along with an assurance statement explaining what standards have been complied with and the reasons for key design decisions e.g. why aluminium is to be used instead of steel or why one design standard has been preferred to another. TIE would audit the designs every so often to check SDS were producing designs to the right standard. Generally, SDS were producing acceptable designs. I cannot think of any major areas where the design was not of the quality that was expected.
51. A report to the TPB in April 2007 (CEC00688584) at page 10 section 1.1.1. states that design was 50% complete. This figure would have been based on Tom Hickman's programme chart referred to in paragraph 44. By April 2007 MUDFA would not yet have started. We did not insist on all design being done and then handing over a complete bundle of designs to the MUDFA contractor. In April 2007 we might have been doing MUDFA trial digs and surveying work for location of services. The INFRACO programme would have been awaiting an update of the design specifications for the next re-bid. Once SDS had produced sufficient design information we would hold a re-bid to enable bidders to fix prices on some key expensive design issues, particularly structures. We held a few re-bids. We would

evaluate bids and our questions about the prices and technical solutions would be answered in the re-bids. In April 2007 the readiness of the design did not give me cause for concern. The design had to be satisfactorily finished in time for financial close. Fixing the problems I had identified when I arrived at TIE was the solution to progressing design. We all recognised that there was a significant amount of detailed design to do in the time available, but we thought we could do it, sufficient for the purpose of contract award.

52. At section 5.4 of the minutes of the TPB meeting in April 2007 (CEC01015822) there are references to Andrew Holmes expressing concern about whether the design programme would be met. By this point TIE had made a plan to deliver design and SDS had agreed to it. Andrew Holmes was naturally a little sceptical because he had been with the project from the beginning and he would have been quite critical of SDS. He was responsible for the trams on the CEC side and would be criticised if it went wrong. I was confident that the programme would be met because we had fixed so much in relation to the design programme since I had arrived. We had co-located teams, people were happier and we had a systematic way of dealing with the critical issues on the critical issues map. We had also improved the approval process and the collaborative approach was clearly working.

53. In April 2007 we were confident that the design programme would be delivered on time. Steve Reynolds had two Project Managers working for him and they would have known typical throughput rates for the design packages and they would have done half of the design, so they would have a fair understanding of productivity rates. We would have had to make assumptions about designs for hard design areas, such as Picardy Place, for which CEC had development plans. If those assumptions were not met then the programme would be at risk. So there were risks at the edges of the programme but productivity rates were based on a quantitative analysis of design throughput with some judgments being made on hard pieces of design.

54. Section 5.15 of the TPB April 2007 minutes mention SDS's claim and TIE's counterclaim and states that the end result would be a commercial settlement to

support clean novation. It was important to settle the claims before novation so that all parties would accept novation. The SDS claims related to the previous year, prior to me starting. At section 5.16 it is stated that settlement of claims will be linked to future performance. As part of our negotiation to settle the claims we had to get SDS to commit to future delivery according to the programme. We had recognised that initial progress on design had not been great and we wanted to put those problems behind us and move on.

55. Paragraph 4 of a note of a meeting on 20 April 2007 at which I met with Steve Reynolds (PBH00023423) mentions an intention to agree a single settlement for future claims and changes. This agreement was separate from the contract and there was no recourse to the contract under this agreement. This agreement was done in the new spirit of co-operation. A fixed price contract can be inflexible and problematic. PB was making a loss under the SDS contract and needed a recovery plan. PB were looking to claim back money where they had legitimate grounds to do so. It was in neither party's interest for this especially now that the programme was going well. So we had to find a way to settle SDS's claim and move on. We could have renegotiated the contract price but that would have re-opened the contract, which was unlikely to be quick and straight forward. The best solution was to work collaboratively to solve the problems and get the project completed.

PBH00023423
should be
PBI00000001

56. The summary of actions agreed between me and Steve Reynolds dated 30 March 2007 (CEC01670359) relates to the issues of change control and prolongation. This is an agreement to put problems behind us and move forward.

57. In an email from Jim Harries of Transdev dated 25 April 2007 (CEC01606237) Jim Harries notes the poor quality of information released to INFRACO bidders. I can't remember this email. If these comments are from Jim Harries then they will be a fair observation. I wasn't very happy with the Employers Requirements (ERs) from the beginning. It was a document that was far too long, possibly used as a convenient place to 'park' technical requirements as they emerged. We prescribed too much unnecessary detail in the ERs. That said we would have made it really clear to the bidders that this information release would have been an early draft document that had not been fully checked. This was the first time we really engaged

Transdev to work on this and they had their own way of doing things. Jim Harries' comments may have concerned us at the time but I'm certain that bidders would have been aware that this was an early draft version. The ERs were not finalised until 2008. I can't remember how the bidders responded to this information but we were able to work with the bidders using this documentation.

TIE000647487
should be
TIE00064787

58. The paper submitted to the DPD on 10 May 2007 (TIE000647487) notes that the rate of design delivery must double but that work rates do not have to increase. A lot of preparation work goes into a design package and it is not finished until it is handed over. What is being noted here is that there may be a lot of design packages that are nearly complete but have not yet been handed over. There is therefore no need to double the work rate.

59. Ailsa McGregor sent me an email on 10 May 2007 (CEC01626391) in which she appears to be saying that PB has under-resourced the project and that this has impacted on the ability to complete designs. At this point we were trying to get a view on where design stood against programme forecasts as part of the groundwork for TIE's counterclaim. This would have formed part of our general discussions we had with PB. The conclusion of Ailsa's work was that PB's forecasting was poor and that they had started slowly in 2006. The early part of the contract with SDS could have benefited from more strategic planning under David Hutchison.

60. The Draft Protocol in Respect of Agreement to the Revised Programme (CEC01628424) dated 24 May 2007 was a good plan for progression. It recognised that there was nowhere else to go. It's not a contractual agreement but is an agreement to work collaboratively on the design programme.

61. In emails between me and Stephen Reynolds dated 13 June 2007 (PBH00025580) Stephen is saying that PB cannot be blamed for every problem with the SDS contract. He makes a good point. SDS took on a tough contract, it was fixed price, it was lacking some details as to deliverables and it was not time limited. I accept that the early SDS leadership (under David Hutchison) was probably poor, that they were slow to mobilise and were slow to deliver preliminary designs but they were wholly aware of this and were now starting to recover. When I arrived we

changed the design review process, we changed the leadership and we worked collaboratively. There were problems that arose before my time and they needed to be resolved. PB had some very talented people and they worked very hard.

62. I drafted a report on delivery confidence for Duncan Fraser's report on the tram project to the council executive dated 7 June 2007 (CEC01629478). What I am saying in my report is that the design element is fixed price and PB are in the last stages of producing the designs. We are nearing the end of the design process at that stage and bidders will be able to price with more certainty.
63. On page 38 of the papers for the TPB meeting in June 2007 (CEC01552419) it is noted that there are three possible causes of design programme slippage: (1) an unresolved critical issue, (2) a change order from TIE confirming that the 'slippage' is legitimate, usually because of a scope change, (3) delay within SDS internal processes. The main cause of slippage are the unresolved critical issues.
64. At section 5.4 in the minutes of the TPB meeting in June 2007 (CEC01565576) it is noted that I said that both parties had played a part leading to the current situation in relation to the SDS claim. CEC had not been making prompt decisions about design and SDS had been submitting designs late. Typically, if SDS draft designs contained even very minor errors, such as a lack of a date, CEC were entitled to send the drafts back, which gave CEC another 10 or 20 days to review the design.
65. The papers submitted to the TPB in July 2007 appear to suggest that the design programme was slipping. It was true that the programme was late because the design was late but I was confident that the design programme would be adhered to. You only need to do sufficient design in order to run a fair competition in which bidders can make firm bids. Many turnkey contracts do not have designs completed at the same point of tender because bidders finish it off according using their own standard methods and delivery strategies. The political uncertainty caused by the election in May 2007 caused a delay of about three months.

66. In an email from me to Steve Reynolds dated 24 July 2007 (PBH00012226) I noted that MUDFA designs had not been delivered by the agreed date. This email is not representative of the design programme as a whole and the quality and timeliness of PB's work. Halcrow had failed to deliver drawings because of some missing information from the SUC. Whilst this seems very negative, on balance, this was a big project and not everything is going to progress smoothly, all the time. The Inquiry inevitably only focusses on the negative correspondence which will sometimes paint an imbalanced, inaccurate picture.
67. In an email sent by Willie Gallagher dated 25 July 2007 (TIE00035918) he expresses concern about design and the performance of Halcrow. He considers pulling the MUDFA programme. This was another example of Willie Gallagher "shooting from the hip". It was not a serious threat.
68. In the email from me dated 13 July 2007 (CEC01626473) I noted a decision to introduce standing items at critical issues meetings. This was a management meeting to deal with gridlocked design issues and we thought we should include these issues because they were important.
69. The minutes of TPB meeting in July 2007 note that Willie Gallagher said "that a line on design may to be drawn prior to full completion to allow Infracore pricing and VE savings to be firmed up" (CEC01018359). This was a pragmatic solution. Ian Kendall's idea was that the design would be completely finished and handed over to bidders - but that's not how it usually works in practice. Bidders don't get a complete package of design. Section 6 mentions the cancellation of EARL and we had to consider the implications of the EARL cancellation for the tram project. Page 8 refers to MUDFA design delays (also discussed in para 66) but all projects have delays and all reports to the TPB will refer to delays regardless of their significance. The fact that there is reference to delay does not necessarily mean the delay is of significance. Reference is made to page 12 which mentions that the production of designs to programme "remains a concern". Design was one on the main workstreams and always should be a focus for the management. We would regularly talk in such language so that senior individuals, particularly those at PB are kept on their toes, applying pressure and focus.

70. An email from Andrew Fitchie copied to me dated 17 August 2007 (CEC01629576) contains Andrew Fitchie's advice on SDS's claim and TIE's counterclaim. We knew that SDS was preparing a claim and we let SDS know that we were preparing a counterclaim. We would have discussed the claim and counterclaim with SDS and that's why the SDS claim appears to have been settled quickly.
71. I have seen the final settlement offer to SDS dated 24 August 2007 (CEC01630084). The proposed settlement refers to delivery of remaining designs on time. I don't know whether this offer was accepted by SDS. You will note the incentive mechanism in paragraph 3: SDS get incentive payments for milestones such as the delivery of MUDFA drawings and phase 1a designs. I remember the SDS claim being a dramatic moment in the project at the time but it did not turn out to be such a big deal. We acknowledged the claim where it was justified and we prepared a counterclaim and we reached an agreement with SDS. £2.5m was 10% of the contract price. If SDS had pursued this claim against TIE they may have got more money. I think this settlement deal was good value for money.
72. SUCs were key stakeholders in the development of the designs. We had problems getting agreements from them. We needed SUCs to sign off the designs and until we got those agreements we could not progress designs. There were some problems as to whether TIE or SUCs were responsible for some of the costs of the betterment of the utilities. PB relied on TIE and CEC to put pressure on SUCs to co-operate with the design process.
73. I refer to a draft letter which was to be sent to Tom O'Neill at PB in October 2007 (CEC01621849). I can't remember if this letter was actually sent but it is a well-considered letter and it was drafted at a critical time. All of the issues mentioned in the letter were concerns with SDS even though generally the SDS contract was going well and we were in quite a good position. MUDFA design was becoming a problem, the SUCs were not co-operating despite PB's best efforts. This would be an additional and new task for SUCs and they would need to employ their own designers to deal with this task along with additional management support

(as noted previously, sometimes they would not have had the resources, nor be making the Tram project their No 1 priority). There were a lot of complicated utilities in Edinburgh. However, I would say that the MUDFA issue mentioned in the letter would have hardly affected the programme. Don't read into this letter that everything was going wrong because a lot of good work was being done. We had a contract with PB and we had to make it work. The letter applies pressure.

74. The minutes of the TPB meeting held in September 2007 (CEC01357124) at page 7 record that I had reported that SDS had produced 58-60% of the detailed design. This is a good news story. The MUDFA design had been stripped out of the overall design programme so that we could micro-manage MUDFA design.

75. I have seen emails from November 2007 relating to PB's refusal to give Bilfinger Berger (BB) access to their design database (CEC01449099). It would be unusual for the contractor to have access to PB's database unless it was a design and build contract. It may be that PB had commercially sensitive previous versions of designs on the database. BB wanted access to the drawings to assist with the calculation of the final price. Giving BB access to the database would have generated questions that would have been used to change the price or prevaricate.

76. I don't agree with the conclusions in BB's Design Due Diligence report sent to TIE on 19 February 2008 (CEC01449099). This report is not surprising, BB had just won a contract for a fixed price and they would have bid for the contract on a competitively thin margin. The period between being appointed preferred bidder and signing of the contract is the time in which the bidder will try to increase the price of the contract. BB is right to say that parts of the design were incomplete or missing e.g. Picardy Place, which we carved out of the design because CEC could not make a decision on design. Some parts of the design were incomplete in the expectation that the contractor would complete them according to their own construction standards. This is an attempt by BB at increasing the price of the contract before signing.

77. In an email from Geoff Gilbert to me and others dated 21 February 2008 (CEC01474235) Geoff Gilbert is pointing out that novation can happen at any point

due to the nature of the PB contract. The final design in this project depends on the bidder's final solutions in relation to design. You can see the email discusses planning consents. It was the obligation of SDS to get planning consents but there was no guarantee that planning consents would be granted because of poor CEC involvement. It is a naïve expectation of a bidder to expect finalised designs with planning consents. BBS went through the designs looking for an excuse to increase the price of the contract before it was signed. No typical turnkey contract would have had planning consents granted before it is let, the contractor would have had to obtain them. It was wrong for BBS to raise these issues in their due diligence report, they were scratching around for extra costs. TIE were trying to create a turnkey contract through novation and TIE expected BBS to take the project through the final stages of design and obtain planning consents. If BBS could not price something accurately, such as Picardy Place, then it was carved out (removed from the obligations) of the contract. It would then be added in later. I don't think it was certain what final detailed design meant, it can mean different things to different parts of the industry, especially if it is expected that contractor will use its own designs and materials. If it is a complicated project then BB will amend the drawings to reflect their own construction methods and materials. Ian Kendall's concept, in which design would be fully completed before Infracore was let, was an idealised concept. I think his intention was to have design completed to a point where bidders could provide firm prices on the contract. Handing over an absolutely finalised design to BB was never going to happen in practice.

78. Some design work may have been undertaken on phase 1b e.g. for the purpose of the trams Bill. Where phase 1b and 1a tracks overlap, such as at Haymarket, some design works for phase 1b would have been undertaken to future proof the integration process downstream.

Design Review Process

79. On page 12 of the papers for the March 2008 TPB (CEC01246825) it notes that in some cases construction was due to commence before CEC approval had been given to design. I wasn't at this meeting as I left in March 2008 so I'm not sure what this refers to. Be careful about what you read into this. Sometimes initial

construction can start because most of the design has been approved and only the last piece of the design requires approval.

Employers Requirements

80. In an email from David Powell to me dated 6 February 2007 (CEC01781630) reference is made to concerns about how the Infraco bids relate to Employer's Requirements (ERs). It's not surprising that the Infraco bids did not exactly comply with the ERs at that time because the ERs were not complete when the competition started. That's why David Powell is asking for a clause by clause commentary against the ERs, which were due to be re-released. These were very early days and there were at least two more bids after this which would allow bidders to more closely comply with the emerging ERs. In another email sent by David Powell to me on 27 February 2007 (CEC01784677) it was noted that there was a problem in seeing how the ERs, design and Infraco bidders' proposals relate to one another. This was why we needed subsequent bids so that bidders could match proposals with ERs and design. It should be noted that the ERs are not the same as design. ERs specify the performance and quality of the assets, how the construction work is to be undertaken and the reporting requirements to CEC. ERs specify how you plan to do something and the expected performance of the delivered assets while the design relates to what it is you are expected to deliver. Civil contractors will price to the design while electrical and mechanical contractors will price more to the ERs. ERs would be more relevant to Siemens than to BB. ERs did not become a big issue for us but it was important to address them for the purposes of contract consistency meaning that the ERs and bidders' proposals did converge in the end.

81. PB were upset about different ER version numbers being issued to the bidders because they were not aware we had further developed the ERs from early drafts. The ERs were aligned with their emerging designs in all material respects, but at this stage they were not completely aligned with the design because this was continuously being developed. It was important for bidders that they could base their bids on a set of reference ERs, that don't change, and so we could make an objective evaluation. The ERs were always expected to 'catch-up' with the design

subsequently. None of the issues with the ERs were material. One of the last things I did before I left TIE was coordinating the completion of the ERs.

Novation

82. I was not substantially involved in the negotiation of the novation of the contracts but I had an interest in it. In the TPB minutes there should be reference to a division of work, including novation, between the management team. I have seen a chain of emails from January 2008 in which PB suggest that the SDS contract should not be novated (TIE00035246). I did go to meetings about novation and I helped develop a schedule of elements to be novated.

SDS did not want to change clients (which novation entailed), particularly if their new clients were going to be potentially more adversarial than TIE. SDS had built up a relationship with TIE and they were apprehensive about handing design over to BB when there was still some design work to do.

83. Infraco did not want the contract novated because they wanted the risk to remain with TIE. Novation should take place as late as possible when as much design has been completed as possible. The point at which the bidders put their final offers on the table they knew novation was not going to be clean and that the designs would not be complete. It would be a much less risky proposition for BBS if they did not have to novate the design.

84. At Wiesbaden the sole objectives were to get BBS to fix their price and get them to accept most of the risk of design completion. I do not think that a delay in contract close until design was complete would have made any difference. In many respects, the status of the design on the Edinburgh tram project at novation was in better shape than on other comparable light rail projects. The problem was that the preferred bidders were trying to find opportunities to increase the price of the contract before contract close. They were 'gaming it', rather than the designs being insufficiently complete.

Cost

85. I refer to an email from Willie Gallagher to me dated 26 January 2007 (CEC01789821) and the attached project estimate (CEC01789822). This is not the final estimate it is a project estimate update. The project estimates would be changed right up to final contract close. The project estimate says that 99% of costs are backed up by market tested prices which means that there is a high level of confidence in the costs if the specification and design don't change. It states there is a confidence level of P90 after QRA (Quantitative Risk Analysis). P90 is a statistical analysis of the probability of the estimates being representative of the final cost. It means there is 90% certainty of these estimates being correct. QRA is a risk analysis of the budget. Nowadays we also perform risk analysis on programme schedule, which is known as QSRA (Quantitative Schedule Risk Analysis). If I had my time in the tram project again I would have carried out a QSRA.

86. The Edinburgh tram project was benchmarked against other projects. It was compared to the Mersey tram project because that was the most recent one. The most recent tram project prior to Mersey would have been Nottingham. Graeme Bissett was in charge of the FBC and there would have been some technical support. I don't know where the analysis and results of the benchmarking exercise was referenced. The figures for the Edinburgh tram project were not unusual compared to tram projects elsewhere.

87. An email from Andie Harper copied to me on 12 February 2007 (CEC01790901) relates to concerns about CEC imposing requirements which added to cost. The problem is that we were doing VE but CEC planners were rejecting our VE designs for parts of the tram route e.g. in relation to the types of poles used for overhead wires. It is not uncommon for promoters to intervene particularly as the trams were going to be part of the city for a long time.

88. In an email from Stewart McGarrity to me dated 27 July 2007 in which Stewart has concerns about cost control and accountability (CEC01642181). This email mentions that CEC have decided to charge TIE for CEC's staff time which affected our well defined budget.

89. In an email I sent to Willie Gallagher on 28 September 2007 (CEC01621567) there is discussion of the DLA budget. The DLA costs were borne by TIE as a project cost. The email mentions that TIE had to obtain additional legal support at the request of CEC's legal team. CEC sometimes wanted an independent view on the project from DLA which was sometimes duplicative of their work carried out for TIE. CEC did not reimburse TIE for the extra legal costs. For example, CEC were not sure about the governance mechanics in relation to novation so CEC had to do their own checks which had extra costs. I don't know much about the extent of DLA's role in advising CEC directly.

MUDFA

90. An email chain between Trudi Craggs, Susan Clark and me in February 2007 (CEC01815022) discusses the role of Graeme Barclay. Graeme Barclay worked for Susan Clark initially. He was experienced in managing utility diversions so he was put in charge of MUDFA.

91. The 4 Week Period Reporting Pack dated 4 June 2007 (TRS00004404) discusses at page 8 revised incentivisation proposals for MUDFA contractor. I was aware of the incentivisation proposals. The MUDFA contract was negotiated prior to me arriving at TIE but we thought it would be good to provide an incentive for MUDFA so that the contractor would be motivated to finish on time.

INFRACO – Timetabling

92. When I arrived at TIE I was appraised of the Infraco procurement timetable and I thought it was reasonable. I had no doubt that simply awarding Infraco could be done within the timescales. I would have liked to have seen three companies bid for the Infraco contract. It does not surprise me that there were so few bidders as the market was not wholly confident that the project would go ahead. If there was any question about funding then bidders would not bid as it bidding is an expensive process.

93. The Financial Close Delivery Programme was a report by Graeme Bissett to TPB on 9 August 2007 (CEC01628987). At page 5 it states that no committees have formal decision-making power, which is reserved to the TPB. The powers of committees would have been set out in the project governance paper at the beginning of the project. The committees did make decisions but big decisions that might have an impact on the reputation of TIE or on capital expenditure would be referred to the TPB. Page 8 notes a concern that Government might refuse to provide further funding prior to financial close. The SG gave a commitment of £500m and not a penny more. The risk was that if there was any delay in the programme then cost overruns would not be covered by SG and would have to be borne by CEC. There is never really any certainty from government in relation to funding projects, which is one of the reasons why there was only two bidders. In this case we needed a carefully worded letter from SG which promised funding in order to reassure bidders.

INFRACO – Value Engineering

94. Value Engineering (VE) is the systematic investigation of areas of a project where costs can be reduced and quality maintained in order to save money e.g. using side poles instead of centre poles. It is commonly used in projects and there is even an Institute of Value Management. VE is specific to each project. For example, we made VE savings in relation to NR immunisation. In order that tram electrical propulsion system does not interfere with NR signals close to the tram route then all the NR signals would need to be replaced with immunised signalling control equipment. This is a very conservative approach and I suggested an alternative approach which reduced costs by circa £5m. I have seen the email from Geoff Gilbert (GG) to Neil Renilson copied to me dated 27 February 2007 (CEC01793672) and the attached VE schedule (CEC01793673) which contains VE information sent to TS. It is suggested that the project can achieve the budget if VE opportunities are achieved. For a project that has been running for this long I would expect to see VE as part of the programme. The VE came in after the preliminary design. It is not unusual for VE to be used to bring the project within budget.

95. In the papers for the TPB meeting in July 2007 (CEC01565576) I am noted as saying that VE savings of £10m to £30m might be achieved (paragraph 6.2 on page 8). VE estimation would be based on a combination of calculation and judgement based on experience and I would have used the VE schedule mentioned above to assist with the calculation. I think we got close to £20m of VE savings. In the papers I mention that VE savings are necessary to deliver project within budget (paragraph 1.3 on page 23). By this point the budget had been under pressure not least because of the delays/costs caused by the Scottish election and we were determined to stick to the budget. The business case had set the funding envelope so we had to stick to it. If we didn't secure most of the achievable VE savings we would have had to go back to our sponsors to ask for more money, which they would unlikely to be happy with. VE is an absolutely valid way of reducing project costs without reducing quality or performance.
96. In the TPB papers I describe VE as critical but Jim McEwan says that not all VE is required to achieve affordability. Both statements were true. You need a proper VE programme focusing on delivering the VE systematically in order to make the targeted savings. We wanted to achieve as much VE as possible but it would not be material to the cost of the project if all the potential VE savings were not realised.
97. In an email from Jim McEwan dated 4 October 2007 (CEC01598685) he proposes 1:1 meetings to revamp the approach to progressing VE. There was a logic in separating out the subject areas in relation to VE. Not everyone had an opinion on every item on the VE register e.g. you did not need Alistair Richards, whose areas were trams and trams stops, attending a VE meeting about structures.
98. I have seen an email from me to Julie Smith dated 30 November 2007 (CEC01479217) which refers to failures to make some VE savings relating to structures. This email was sent after BBS had been appointed as preferred bidder. Relatively speaking, BBS are now effectively in a safe place (no more competitive pressure) and this email shows BBS trying to push up the price of the contract before contract close. BBS are not interested in keeping the price down through VE as VE would potentially place cost risks on BBS. It was always going to be hard to realise

VE in this period between preferred bidder and contract close and it is a common problem. That is why it is important to seek hard contractual commitments before the preferred bidder is appointed. Once the contract had been signed, BBS will have a big interest in VE because they will be looking to realise savings within their budget.

INFRACO – Advanced Works

99. The TPB papers for August 2007 (CEC01018359) discuss contractors carrying out works in advance of full INFRACO contract award. Prior to award of the full contract, other contractors undertook advance works in order to de-risk the programme. The reference to advance works would be a reference to for example, the excavation of the depot site. The excavation of the depot was not done by BBS, it was done by other contractors.

Funding

100. I refer to emails from March 2007 about the tram funding agreement (CEC01800670) which contain notes from a meeting about tram funding. These emails were sent before the elections in May 2007. The email from Stewart McGarrity contains a note in relation to practical arrangements on funding. He was tasked with preparing the tram funding agreement. He mentions the land contribution element of funding which was the responsibility of CEC. I couldn't comment on this email any further.

101. On page 26 of the papers for the TPB meeting in October 2007 (CEC01357124) it is noted that £3.3m of CEC's contribution of £45m is land which relates to phase 1b. I don't know why £3.3m is being moved to phase 1a. This is after the election in May 2007 and so I think that the rationale for this is that we knew that phase 1b was highly unlikely to go ahead so it seems sensible to transfer the money to phase 1a. Graeme Bissett may be able to explain this better.

Peer Review

102. In the papers to the TPB of December 2007 it is recommended that a system of peer review should be established. (CEC01023764 at pages 43-44). My view was that peer review was not essential. If the tram project is well governed and advised it does not need a third party group reviewing it. I don't think a peer review group was ever implemented.

Conclusion of INFRACO/Wiesbaden

103. In February 2007 I was made part of the sub-committee negotiating INFRACO (TRS00004079). Subsequently, after the Scottish election, when EARL was scrapped, there were more senior TIE resources to take on certain work-streams. I withdrew from a detailed involvement in the management of other matters and focused on completing the procurement of INFRACO and TRAMCO. The sub-committee was set up to review the evaluation process for INFRACO and TRAMCO bids. The sub-committee could not make a decision itself but it could endorse decisions made by the procurement team. It provided assurance that the evaluation of bids had been done in accordance with the rules. It was a good piece of governance. Neil Renilson from LB attended the sub-committee because Lothian Buses was ultimately going to integrate the tram operations into the bus network, under TEL.

104. Arguably, we had kept the INFRACO bidders going for too long, we should have appointed preferred bidders earlier. We wanted to use the competitive pressure of the bidding process to deal with existing issues prior to appointing a preferred bidder, such as getting the bidders to accept VE. Once a preferred bidder is appointed then we lose our negotiating power. The disadvantages of keeping the bidding process going for a long time is that you need to maintain fairness and confidentiality throughout.

105. The minutes of the TPB meeting in October 2007 (CEC01023764) record at section 4.18 that I reported to the TPB that all the big items had been agreed prior to preferred bidder stage. You will see that this is a response to James Stewart's query in relation to work outstanding on the legal terms. By this stage the contracts were largely finalised but the schedules to the contract and other details still needed to be completed. This comment explained that we had everything but the final price

adjustments to be finalised reflecting the final schedules. At section 4.22 it is noted that the TPB rejected a suggestion from James Stewart that the contracts should be subject to an independent legal review. At that stage it was too late for a review, the contracts had not changed substantially since we began the bidding process. If any review was to be carried out on the contracts it should have happened before we started the bidding process. CEC had legal counsel and we all presumed that they would review the detail of the contract because CEC would have to assume the risk under the contract. One of the big issues was trying to get CEC legal to 'wake up' and review the paperwork. I personally was not too concerned that CEC legal didn't seem interested. As Project Director I didn't have any worries about the contracts because we were advised by DLA, the contracts were quite mature and BBS and CAF had had a chance to object and qualify the contracts.

106. In an email from Geoff Gilbert to Richard Walker dated 26 November 2007 (CEC01493250) Geoff Gilbert is concerned that BBS has not provided a number of items, including prices for the Infracore contract. TIE wanted to get CEC approval in December 2007. Our date for contract close was the end of January 2008. In order to be able to sign by end of January we needed CEC to sign off the FBC and therefore we needed final fixed prices. We could not delay the signing of the contract. The cost of the project would increase by each month that the programme slipped. The length of the construction programme had been fixed. It had already slipped by three months due to the elections in May 2007 which pushed the signing date to 28 January 2008. We did not want the programme to slip any more. We therefore needed CEC approval of the FBC at the December CEC meeting in advance of the signing date in January. The email also points out that there is a concern about the level of design BBS expects from SDS. BBS had looked at project design as part of their due diligence process and were expressing concerns about it because they were in 'gaming mode' (i.e. they were trying to inflate the contract price) and the closer we got to the signing deadline the more power BBS had to increase price. We wanted BBS to be clear as to what documents they needed in order to sign the deal.

107. In the papers submitted the TPB meeting in December 2007 (CEC01023764) at paragraph 4 on page 101 it is stated that any changes made post contract close

should be kept to a minimum to avoid cost increases. I was aware of this when I went to Wiesbaden. The majority of the contract was fixed price. During the development of the design CEC had changed its mind on a number of occasions and sometimes prevaricated. We needed to let CEC know that it could not change its mind once the contract had been signed.

108. At section 3.19 of the minutes of the TPB meeting of December 2007 (CEC01526422) it is noted that Geoff Gilbert explained the process and timescale for achieving maximum price certainty possible prior to financial close. We had not been to Wiesbaden by this point. At this meeting I assume Geoff Gilbert talked about getting BBS to agree to fixing prices on the outstanding items on the price schedule, particularly the design interfaces, and to take account of VE items in their price, and have the price schedules prepared so that they could be cleared by BBS and CEC before 28 January 2008. We could move the deadline of 28 January 2008 if negotiations were not going well. At this stage the negotiating power rested with BBS and we needed to use deadlines to manage the negotiation. Earlier in the year, we attended an advanced negotiation course which we found very useful in our negotiations with BBS. If the deal collapsed and BBS walked away then the project would be likely to be over. I wanted Edinburgh to have a tramway and as a PD I had personal pride in this project. I could see that the deal was nearly there and prices were similar to other tram projects. I wanted the tram project to happen but we were not going to agree a deal with BBS at any cost.

109. Willie Gallagher sent a letter to Richard Walker dated 11 December 2007 (CEC01481843) in which he expresses concern about BBS's lack of committal to a firm price. Myself and Geoff Gilbert had input into this letter. We both worked with Willie Gallagher quite closely during this time. This letter was sent prior to the Wiesbaden meeting. Prior to this letter Geoff Gilbert had been trying to get BBS to commit to a fixed price and accept VE savings. In order to get BBS to fix a price we pointed out that they were obliged to provide a fixed price and told them that the business case would not be signed off by CEC if it did not contain a fixed price.

110. BBS responded to that letter on 12 December 2007 (CEC01482234) with a number of outstanding issues. Not unsurprisingly, this letter made us at TIE very

concerned. At this stage BBS would have an understanding of their profit expectations, which may have been lower than at bid. BBS are therefore taking the opportunity at this stage of the process to increase the price.

When we appointed BBS Geoff Gilbert and I considered them to be less claims focused than Tramlines, the other Infracore bidder. Tramlines was a consortium of long established UK players in rail and transport who were very experienced hard-nosed contractors. BB had relatively few references in UK rail but had a good reputation generally. We knew that Siemens were the German archetypes, focussing on technology. We had people who had worked with Siemens and considered them to be less claims focused than other contractors. So when we selected BBS we thought they were likely to be a safer bet. That said, I am convinced that it would not have mattered which bidder we chose for the project and both would have tried to game after preferred bidder; if the bidders' margins were low then there would be some attempt to recover costs through the contract close process. In relation to this letter, all the bulleted items are very general issues which could be dealt with easily. This letter is an example of BBS negotiating tactics, diverting attention away from the price fixing to slow negotiations.

111. We went to Wiesbaden because we had to make it clear to BBS that they needed to commit to a firm price. With regards to preparation for Wiesbaden we would have had meetings to discuss our negotiation strategy. These meetings would have been attended by four or five TIE staff and would not have been formally minuted but those present would have taken personal notes. Final preparation would have been done very shortly before we left for Germany because we needed to be reactive to the latest BB correspondence. GG would have supplied the evidence and pricing elements to me and Willie Gallagher and I spoke to Jim McEwan about the VE. We had identified a few small items that we wanted BBS to fix at Wiesbaden. There were no big commercial items that needed to be dealt with, we were going to Wiesbaden to sort out the detail of the deal, particularly the VE. Our prime objectives for Wiesbaden were to keep the project within the budget envelope and to ensure the project adhered to the programme dates. Andrew Fitchie did not go to Wiesbaden because we were not going there to discuss contract terms, we were going to Wiesbaden to discuss numbers. When we returned we noted what

had been agreed and got BBS to confirm our agreement. That agreement was then developed into an Infraco contract schedule. Andrew Fitchie would not have added in any value in Wiesbaden.

112. One of the conclusions reached at Wiesbaden was that a price would be fixed on the basis of the design as it stood at 25 November 2007. It was known at Wiesbaden that the design would be changing but those changes would be relatively marginal. The few big problematic design areas, such as Picardy Place, were carved out of the Infraco contract but the substantive aspects of the design were in sufficiently complete enough state in order to fix the price. There was generally more design completed at this stage than typically on other previous tram schemes. The difference between those tram contracts and our contract is that BBS had probably priced its bid quite keenly in order to win and was therefore looking for all opportunities to increase its price; The list of issues from BBS in their letter of 12 December 2007 are more of a smoke screen to avoid facing our agreed agenda to fix the price. For example, in its letter BBS list the resolution of Building Fixing Agreements concerns as an issue. This a minor planning issue that all light rail projects have to deal with. If the owner does not agree to a building fixing then a pole would simply be put up on the pavement instead. That usually gets the owner to agree to a building fixing instead.

113. I have seen an email from Geoff Gilbert to me dated 11 December 2007 and its attachment called Infraco Deal Tactics (TIE00087524 and TIE00087525). The attachment is a note containing a summary of numbers to assist in our negotiation strategy with BBS. You can see it contains a project estimate budget. You can see from the document that we could trade £10m with BBS to get them to absorb some of the risks of small design changes and VE. Geoff Gilbert was Commercial Director, he had led the procurement in relation to the practical interface with the contractors, and he maintained a record of all of the price movements which fed into Stewart McGarrity's work. Geoff Gilbert was also the interface with Andrew Fitchie.

114. Wiesbaden was an important meeting and I spent some time with Willie Gallagher planning it. The day before the meeting we were close to calling it off. At the Wiesbaden meeting Willie Gallagher read out TIE's position and I would have

produced the evidence for TIE's position. I remember going through the VE items and telling BBS why we thought the delivery risks of VE items were acceptable for BBS. We gave them a chance to respond and then we had a discussion. Richard Walker from BB and Michael Flynn from Siemens were present. The aim of the discussion was to get BBS to absorb some of the VE risks and to get them to fix their price and we made significant progress on that.

115. By the end of the meeting we had got BBS to accept VE savings of about £19m, but had not discussed joint project management savings (a final target). We did this over supper and agreed on some more savings. The results of Wiesbaden would have been included in a paper to the TPB and CEC. In terms of parameters for negotiation we knew our budget and we had Geoff Gilbert's paper (mentioned in paragraph 113) but we were not restricted in our negotiations. Ultimately the deal would have to be owned by CEC but not at any price. We had freedom to negotiate and reach a deal and thereafter we could advise CEC on whether the deal reached at Wiesbaden was acceptable or not. Geoff Gilbert had prepared us well for negotiations and I understood VE, which was a big workstream at the time. I had experience of VE from time working on a project for London Underground.

116. The minutes of the TPB in December 2007 (CEC01363703) mention the results of Wiesbaden. I don't know what portions of the design were not completed by this stage. The important thing is that BBS were pricing on documents they had seen and had agreed to a fixed price contract. The contractors had more design information than they would have ordinarily done themselves by this stage. You would not normally do this much design work for a tender. There was almost too much design, which allowed the contractors to ask for the last little bits to be done. It might have been better to scale back the scope of work done by SDS and restrict it to say preliminary designs only and then let the Infracore contractor do the detailed designs. The project model did not allow this, though.

117. In the email from Geoff Gilbert to Richard Walker dated 17 December 2007 (CEC01494951) GG is contractualising what we've agreed with BBS up to that point, including our agreements at Wiesbaden. I would have gone through this with Geoff

Gilbert. I presume the contents of this email would have been developed into one of the Infraco contract schedules.

118. Richard Walker sent an email to me dated 17 December 2007 (CEC01494961) in response to Geoff Gilbert's email above. That email contains Scott McFadzen's concerns about the agreement contained in Geoff Gilbert's email. At this point Scott McFadzen does not fully understand our agreement with BBS. Generally in commercial negotiations broad agreements are reached and as you get closer to financial close the details of the broad agreements have to be discussed and agreed. While all the main issues may have been agreed there are often snags to deal with and the solutions to those may produce more snags. Every so often one party may push back against what has been agreed and we have to discuss it again. This is what Scott McFadzen appears to be doing in this email. BBS pushed back at Rutland Square and I think they pushed back one final time before financial close. Such to-ing and fro-ing in commercial negotiations on big turnkey contracts such as this is normal.

119. Section 2 of the minutes of the LAG meeting of 17 December 2007 (CEC01501051) records that Willie Gallagher reported to the LAG that the Infraco contract was 97% fixed price with BBS taking on design risk. That was a fair reflection of where we thought we were at that point. That number (97%) would have come from Geoff Gilbert and would have been based on the items in his pricing schedule and at Wiesbaden BBS had agreed to take on design risk.

120. In an email from Andrew Fitchie to me and others dated 18 December 2007 (CEC01430872) Andrew Fitchie comments on the agreement with BBS contained in Geoff Gilbert's email above. Andrew Fitchie and his team were closely involved with this project and he gave his opinion informally and formally. Neil Renilson was the officer responsible in TEL (Alastair Richards would have been deputy) and they would have got a copy of this agreement. As TEL were going to be the operators of the tram Neil Renilson would have asked for Andrew Fitchie's opinion on the agreement. Andrew Fitchie helped develop the contract suite and was involved all the time. If Neil Renilson has to sign something on behalf of TEL the fact that there was a note from Andrew Fitchie would have given him some comfort and assurance.

121. I was not aware of exchanges between Jim McEwan and Andrew Fitchie on 31 March 2008 about the terms of the agreement in which Jim McEwan suggests that TIE would simply have to fight "tooth and nail" BBS changes under Schedule 4 to the Infraco contract (CEC01465908). The email would have been sent after I had left TIE.
122. In an email sent by Richard Walker to Geoff Gilbert and others dated 19 December 2007 (CEC00547732) Richard Walker insists that the Infraco contract should be based on the designs as they stood at 25 November 2007. I think we had a meeting about this at the time. Geoff Gilbert would have spoken to Richard Walker on the phone but I don't know what was discussed. I have seen an updated copy of the agreement with BBS circulated by Geoff Gilbert on 20 December 2007 (CEC01495067). Paragraph 3.3 refers to the BBS price for civils works and it is based on the design information up to 25 November 2007. This is what I expected; the design should be linked to a point in time. This agreement reflects what was agreed in Wiesbaden but there might have been changes in the detail.
123. At section 4.2 of the minutes of the TPB meeting on 19 December 2007 (CEC01363703) it is explained by Stewart McGarrity "that a premium had been included in the contract price to firm up previous provisional sums". We had used some of the remaining sums available in the project budget (identified in Geoff Gilbert's note discussed above) to get BBS to agree to a fixed price contract. Part of the deal would be that BBS accept design risk. At section 5.4 of the minutes Andrew Holmes asked questions about the design risk being passed to BBS but I can't remember what information was given to him. At section 4.5 of the minutes it is noted that the Board considered it essential to avoid client side design/programme changes and to ensure final design approvals are not delayed. Our view was that CEC should not make changes or prevaricate with their design approvals, but we could not fetter CEC's right to do so, so all we could do is make the point at the TPB. How does that fit with the agreement at Wiesbaden to fix the design in November 2007? We know that 97% of the design was fixed, leaving 3% unfixed, but 3% of design does not always equal 3% of the price. We carved Picardy Place out of the Infraco contract and in any case that was never built. Generally, changes were

considered such that there would be no need to change construction methodology or completely re-design an area. It would not have been possible to buy out design risk completely in this style of contract.

124. I cannot really comment on the two tables containing figures in relation to the Infraco contract deal in documents CEC01546352 and CEC01546353.

Progress to Signature

125. An email from Stewart McGarrity to Geoff Gilbert dated 22 February 2010 provides a summary of the progress to financial close (CEC00618189). The email includes extracts from emails between me and Richard Walker on 19 December 2007. I do remember the definition of 'normal development' of design at paragraph 3.3. BBS had said that they were prepared for the design to be effectively fixed at 25 November 2007 subject to normal design development and some specific exclusions. We anticipated that the Infraco contract and novation would have dealt with this.

126. The progress between the FBC in December 2007 and signature in May 2008 was a bumpy journey with BBS 'gaming' at every opportunity. CAF had done a bit of 'gaming' too with exchange rates, but their contract boundaries and obligations were more readily defined. With BBS there were more 'dramatic moments' and there were some tough negotiations. This is not unusual in complex high value construction contracts.

127. In an email from me to Willie Gallagher and others dated 4 January 2008 I highlighted what needs to be done by 28 January 2008 for financial close (CEC0148851). This email provides a good summary of where we were at that time. We had worked hard to get CEC sign off on the 19 December 2007 and we now needed to get the deal completed. Geoff Gilbert would have dealt with legal and commercial matters. Novation would have been dealt with by Damian Sharpe and David Crawley. I was leading on ERs. Programme would be dealt with by Steven Bell and Susan Clarke. Project budget would be dealt with by Geoff Gilbert. Chief Executive authorisation to sign was dealt with by Susan Clark. It was a tight

CEC0148851
should be
CEC01484851

timescale to have this completed by 28 January 2008. I was involved in negotiations regarding requests from BBS for a price increase. We had a session at the DLA offices in Rutland Square which involved Siemens seeking an increase. I'm not surprised that BBS did this if their bids were made on keen margins.

128. The minutes of the TPB meeting in January 2008 (CEC01015023) record the first TPB meeting after Wiesbaden. On page 38 it states "*In broad terms, the principal pillars of the contract suite in terms of programme, cost, scope and risk transfer have not changed materially since the approval of the Final Business Case in October 2007. It is felt that the process of negotiation and quality control has operated effectively to ensure the final contract terms are robust.*" I would absolutely agree with the conclusion that the principal pillars of the contract suite had not materially changed. The design was substantially complete by November 2007. It would depend on the interpretation of "materially" but all business cases have some movement.

129. I was not involved in deciding what form the Infraco contract should take. The drafting of Infraco was done before I arrived at TIE. Sharon Fitzgerald had a lot of involvement with the drafting of the Infraco contract. Not uncommonly, I think that DLA may have used a template contract as a starting point, then made it into a bespoke contract.

130. The emails between me and David Crawley and others dated 10 January 2008 (CEC01484198) were about integration of design and tram specification. SDS would have designed the tramway to assumed specifications whereas CAF trams have slightly different specifications so there was a need to integrate the tram specifications with SDS specifications. This is not a big issue but in these emails I am requesting that David Crawley sort out the paperwork to ensure that there is no claims from BBS or SDS in relation to differing specifications downstream.

131. In an email from Graeme Bissett on 15 January 2008 (CEC01429681) Graeme Bissett appeared to contemplate that there would be changes from the Wiesbaden Agreement. In my opinion, Wiesbaden should have been set in stone.

However, if subsequent to the deal, BBS found legitimate issues with it then they could have always refused to sign the contract until changes were agreed.

132. In an email from Steve Reynolds to Damian Sharp dated 25 February 2008 Steve Reynolds says that my email about BBS civils proposals and design alignments troubles him (PBH00016981). I remember this well. By this point we are getting to the end of the process. The alignment of BBS proposals with the final ERs are small details but we had been waiting a while for BBS to get back to us with their proposals. We didn't need to have a perfect alignment of BBS proposals with ERs provided that one had precedence over the other, but BBS wanted them to align exactly. Therefore, I was asking BBS to amend their proposals and check for misalignment with the ERs. In my email I was probably just being presumptuous with Steve Reynolds. Steve Reynolds replies to Damian Sharp because Damian Sharp has followed this up with Steve Reynolds. I wouldn't read anything into this email regarding my working relationship with Steve Reynolds, who is simply protecting his team.

133. In an email from Susan Clark to me and others dated 22 February 2008 (TIE00694473) she identifies issues which must be closed down in order to successfully close the contract soon. Susan Clark divides up tasks and I am tasked with producing a list of remaining design/ER/proposal issues. I can't remember whether I was able to produce that list but I think my email to Steve Reynolds on 25 February 2008 (discussed above in paragraph 129) would have followed Susan Clark's email. The deadlines were planned but we would not be held to hard deadlines because that would affect our negotiating position. We would be proactive in planning for approaching milestones and Susan Clark was good at organising us for the milestones, as you can see from this email. If we failed to meet a milestone then we would re-plan and may set another milestone.

134. I signed the Agreement between TIE and BBS (CEC00825620) at Rutland Square on 7 February 2008. Siemens had requested that Rutland Square discussions should take place because unforeseen integration risks had arisen and Siemens were requesting an extra £20m to deal with the integration issues. Some of Siemens' issues may have been justified but I knew the integration risks quite well

and I felt that Siemens was attempting to inflate the price before contract close, so we pushed back and we reached this agreement. Normally consortiums will deal with the integration risks themselves but with this contract structure Siemens could ask for extra money to take on novation risks. The price went up by about £3m and the programme was extended. Previously BB in November/December 2007 had insisted on more money and changes while Siemens had taken a back seat as most of the discussion was related to civils design aspects. At the time of Rutland Square we suspected that Siemens and BB might be cahoots in seeking to push the price up at Rutland Square. This was a challenging moment in the project and I was proud of how we resolved the situation.

135. I have considered what is happening in the email thread dated 11 March 2008 (TIE00036309). This is TIE asking DLA to check and sign off the final version of ERs. We had pruned and changed the ERs in conjunction with SDS and BBS and we wanted DLA to check them. Sharon Fitzgerald had been involved with drafting the ERs in the early stages and had read the 650 pages of ERs. Sharon Fitzgerald was really the only person who could review the ERs but she was busy with MUDFA so Andrew Fitchie was trying make time to draft in Sharon Fitzgerald to work on the ERs.

136. In an email chain between Willie Gallagher, Andrew Fitchie and others on 6 February 2008 AF says that he has seen Schedule 4 (Pricing) to the Infraco contract for the first time that morning (CEC01501176). The Wiesbaden meeting was held in December 2007 and I am asked why schedule 4 appeared much later in February 2007. Wiesbaden was a commercial deal to fix the price and I think we all envisaged that it would be encapsulated within Schedule 4 eventually. However, we did not want to discuss contract terms at the Wiesbaden meeting, which is why we didn't take Andrew Fitchie, because we wanted to focus on getting BBS to accept the remaining risk. Schedule 4 was drafted later to encapsulate price changes. I can't remember what was done to change the wording of schedule 4 but it appears that Schedule 4 was revised (CEC01547690). There would not have been much discussion about Schedule 4, at the time of Wiesbaden, it was an appendix consolidating the details of the price/commercial arrangements.

137. I refer to BBS' Design Due Diligence Summary Report (CEC01449100) dated 18 February 2008. On page 3 it states "Contrary to the tie's original intention for this project stage, the design is incomplete and will require significant further development. Several sections are currently under re-design and the final concepts for these are unknown to us. According to the SDS document tracker more than 40% of the detailed design information has not been issued to BBS at all by the above mentioned cut-off date." When this report came to us we were surprised. It was another example of them seeking opportunities to put the price up again. Not in the spirit of the approach we were both embarked upon. We did not agree with most of the conclusions and the tone of the BBS' report. I'm not sure how BBS arrived at the 40% figure. It may be a reference to final construction design information that was not critical or not needed at this stage because it depended upon their construction solutions which may not have been yet fully detailed. It was true that a few aspects and sites for the design were incomplete; for example, the design for Picardy Place and Shandwick Place still needed to be finalised, but the important point is that BBS were wholly aware of that and they still priced the contract. The main designs had all been done by this point. In this report BBS highlight a number of risks that they knew about at Wiesbaden in December 2007 and that was why we paid BBS £8m to accept the risks. TIE were always going to take some key risks in respect of the geotechnical and earthworks design. This is just part of BBS negotiation strategy, once more gaming the opportunity in the run-up to contract close.

138. In Steven Bell's email to Geoff Gilbert and Jim McEwan dated 10 March 2008 (CEC01429610) it is noted that the contract price is to be amended upwards by £8.6m in order to get BBS to accept a number of items. Because it was so close to when I finished my term at TIE, I can't recall to what extent I was involved in these discussions with BBS. The price change is mainly about programme extensions because BBS had said that they need more time to deal with integration issues, which means more money has to be spent to keep the team going for longer. However, I remember I was involved in discussions about depot equipment as the ERs envisaged certain depot equipment being required. CEC had finally made a decision on tapered poles which would have added to the price. It was necessary to agree an increase in price because these items would have been changes to our previous agreement.

139. We had previously agreed with Siemens VE savings in relation to isolators for the overhead wires. You can see from the email from me to Jim McEwan dated 3 April 2008 (CEC01466309) that Siemens are trying to re-open the matter and insist on more expensive isolators which we did not require. This was Siemens trying to inflate the price of the contract before close, possibly because they may not have manufactured the lower cost manual isolators.

140. I refer to a record of INFRACO price changes from preferred bidder stage to March 2008 prepared by Stewart McGarrity in 2009 (CEC00132442). There should be a 'waterfall' diagram somewhere explaining the price increases and when they happened. In this summary 'delta' means 'change'. This is a very good summary and it seems consistent with other material/figures, to the best of my knowledge.

FBC and CEC Approval

141. I had very little involvement in preparing the FBC, that would have been Graeme Bissett's role. In an email from Graeme Bissett to me and Willie Gallagher dated 12 October 2007 (CEC01624078) GB suggests there should be more clarity in the FBC as to what is meant by "fixed price". Fixed price means that, subject to stated exclusions, there should be no variable elements in the contract. With the certain design carve-outs the Infraco contract was effectively a fixed price, as opposed to a contract with a price that was re-measurable (i.e. the contractor would measure the work done and bill for it). 'Fixed price' does not mean that the price won't change and the responsible officers at CEC would have known what 'fixed price' means, including that "Fixed price" does not mean no risk at all.

Relationship with CEC

142. In terms of the relationship between CEC and TIE I think CEC was slightly uncertain about its role in the tram project at the beginning. Through my period as PD there was greater certainty and the co-location of CEC staff after the 'tie together' event improved certainty. After the elections in May 2007 the sole responsibility for the project was placed at the feet of CEC and TS effectively withdrew. CEC had to

take on the risks of the project. Sometimes CEC were overly inquisitive and asked for more information than we thought was necessary. In the email from Trudi Craggs to me dated 15 February 2007 (CEC01826792) TC expresses some concern about CEC. I don't know what Trudi Craggs was concerned about. This was a period after I had taken over leadership and there needed to be a lot of necessary change to drive the project forward effectively.

143. In the minutes for the TPB in August 2007 (CEC01561047) at section 3.9.11 Andrew Holmes highlighted the need for greater support from tie / TEL to provide information to the Councillors. This was after May 2007 elections. The paper drafted by Duncan Fraser, which I had input into, to be submitted to CEC chief executive was drafted in response to AH's request. CEC also needed to be told that TS were no longer a key governance party and that CEC was responsible for the tram project. I don't think TS would have made much difference if they had remained involved in the project in the way they had been previously involved, but if TS had solely run the project directly then that might have made a difference to the outcome. For example, they would have been more responsive, more aware of the risks of disputes, and aware of the cost impact of delayed decisions. It is difficult to say that today, because they actually have very little experience of street running tramway development and construction works. It is certainly possible that TS might have been better at governing the project than CEC. Whilst I was there, when TS stopped being involved that was one less reporting line that I had to worry about.

144. There was some unhappiness when CEC advertised for a consultant in September 2007 to provide oversight of TIE proposals. CEC were checking on what we were doing. CEC had created TIE as a project management company but they seemed to be doubting us. Graeme Bissett said this was "totally cack-handed" in his email of 19 September 2007 (CEC01643076) and I would agree with the sentiments expressed in his email. I am not sure about the extent of TIE's input into reports to CEC about progress on the tram project. The CEC interface was Willie Gallagher's responsibility. TIE was asked to contribute to reports to CEC. It is likely that condensed summaries of my monthly reports were put into CEC reports.

145. In emails between Andrew Fitchie and Graeme Bisset dated 11 December 2007 (CEC01500899) AF is concerned about CEC's capacity to run with the project. I would completely agree with Andrew Fitchie's email. CEC needed to put in extra resource to satisfy BBS.

Utilities / MUDFA

146. I would not be concerned about the email sent by Susan Clark to Willie Gallagher and me on 2 March 2007 (CEC01815376). This email is illustrative of the order in which things had to be done on the tram project. It is an example of the iterative nature of the process. If the track alignment changes then that has a ripple effect on the design of other items, including utilities. Therefore, finalising the alignment was critical. I think SC was just using this as an example of how things were being done in the wrong order.

147. In emails between me and Pat Diamond dated 17 September 2007 (TIE00088386) I raise concerns about cutting the MUDFA budget at about the time MUDFA work started. I was concerned because I know that utilities is the highest risk area of a tram project I believe we had a budgeted contingency sum of over 20%. I understand the MUDFA budget had been benchmarked against other schemes and researched thoroughly. On the advice given, I was satisfied when I joined TIE that the MUDFA budget was reasonable.

Relationship with TS

148. When I joined TIE, TS was one of three reporting arms (TIE, TPB and TS) of the tram project. We had to meet TS once a month and we had different reporting requirements for TS. I worked with Damian Sharp and Bill Reeve at TS. I believe Damien Sharp ended up working for us. In an email from Graeme Bissett to me and others dated 26 January 2007 (CEC01812256) GB comments on the TS reporting template that we had to complete. Point 4 states that *"Section 2.3 should include a table for 1a / 1b. This will show negative headroom of £65m and risk of £57m. We should point out that 1b is plumb on where we expected it to be. The corollary is that there is no obvious trade off in the bids between ramping 1a and lower 1b. If we see*

any evidence of this we should mention it as it implies more fat in the 1a bids.” In relation to this point I think we were appraising TS of the revised business case prices as a result of getting bids in for phases 1a and 1b. If a bidder is required to submit a single price for construction of both phases, but knows that 1b might not happen due to a lack of funding, they will price 1a lower and 1b higher to get a better score. The last paragraph of the email expresses concerns about the implication of creating and disseminating so much detail to TS. I think Graeme is concerned about not creating overly bureaucratic reporting requirements which generates follow-up questions about things TS did not need to be concerned about at this stage. In July 2007, Bill Reeve made a comment about TIE reporting, he said it was the weakest of all their projects (CEC01628133). Bill Reeve was responsible for a number of capital projects which were very different to the tram project. Bill Reeve would be used to seeing standard Network Rail/ franchise reporting templates whereas we used tailored templates to suit our own approach. There was no case to change this. It would be inappropriate and require additional resource to create multiple sets of reports. TIE's reporting system was good. Both Audit Scotland and our OGC Gateway Reviews were content with our approach. We had a good relationship with Bill Reeve and this sounds like a throw-away verbal comment which Graeme captured.

Audit Scotland

149. Audit Scotland could look at anything to do with the tram project. They wanted to look at how the project was run so we had a number of meetings with AS and at those meetings we would give power-point presentations summarising our approach on the full range of management topics, including reporting and on how the project progressing. I thought the AS audit went really well. The material prepared for AS was useful for TIE to check and confirm its own corporate processes in use by the Tram project at that time. The same can be said of the generally positive OGC reports.

Pricing

150. As the new Project Director I was involved in reviewing the project estimates just after I arrived at TIE. The estimates were based on figures provided by the bidders. We would have had someone within TIE benchmark these figures against other projects such as Nottingham and Mersey tram. When we broke down the figures we could see that they were similar to those on previous projects and the estimates looked reasonable.

151. In an email sent by me to Colin McLauchlan dated 3 May 2007 (TIE00182130) there is a reference to costs known about in November 2006 but not included in the DFBC for "tactical reasons". This email relates to a bonus discussion. After I arrived at TIE Willie Gallagher asked me to stay and run the project through to the end. Willie Gallagher wanted to implement a bonus scheme to keep staff at TIE and wanted me to speak to Colin McLauchlan in HR about drafting a bonus policy paper. In the new financial year we had new staff coming in so the tram budget was going up. TIE still had a number of projects so I think "top-slicing" refers to moving money from other TIE budgets into the tram budget. The memo is about ensuring clarity around the bonus mechanism for and the team to whom it applied.

Risk and Optimism Bias

152. We had a risk management system, risk register and risk manager and risks would be discussed at every important meeting. We followed best practice and we were commended for it. Once the risk event passes you can take the risk off the register and the risk budget can come down. When a risk starts to materialise it becomes an "issue" and it is removed from the risk register. A risk register contains calculations of the quantum of the risk, the probability of a risk materialising and ways to mitigate the risk. I think we probably had too many items on the risk register, and there may have been too much attention to small risks. I think Nina Cuckow from Turner and Townsend was the risk manager.

153. Ultimately, as Project Director, I had responsibility for the risk of design not coming up to standard, though SDS had QA and self-assurance checks. Delays caused by CEC not making timely decisions on design should have been a risk on

the risk register. The risk register constantly changes during a project. At each phase of the project the risks are recalculated to prioritise immediate risks for that phase. The Monte Carlo simulation is a statistical risk modelling process by which you firstly estimate the best, worst and most likely case outcomes and probabilities of each risk and then the model effectively "randomly shakes all the project dice" many thousands times to work out the aggregate impact of these outcomes materialising, the results of which are the confidence levels expressed as Px (a percentage).

154. In an email from Mark Bourke to me dated 6 February 2007 MB says that additional risk may have to be borne by the public sector (TIE00051819). This email was a response to a big risk workshop at TIE level. Mark Bourke was the TIE risk manager and Nina Cuckow was the tram project risk manager. Nina Cuckow's risk register would feed into TIE's risk register. It is true that at this time the TRO was a significant risk and we did not have a solution for it at the time. TRO was an SDS responsibility but it did not have the power to get the legal instrument required for TRO. Stray current risks and mitigations would have been ultimately transferred to the contractor. At the third bullet point it says that *total* SDS novation may not present best value which could have been the case if the price for achieving had been very high.

155. Risk featured in every TPB meeting because it was a standing item, this is the same in all projects. The expectation when we started the project before May 2007 elections was that we would have two funders and it was assumed that any cost overruns would be shared by TS and TIE. As soon as the TS contribution had been capped then CEC was responsible for cost overruns and CEC were concerned about this in the months leading up to signature.

156. In the minutes of the TPB meeting in April 2007 (CEC01015822) it was noted that the risk register was taken as read at section 5.18 and David Mackay raised concerns about the risk reporting and discussion at the TPB. There were about six main risks that were discussed regularly at TPBs and they would have been part of the main agenda items at TPBs while the rest of the risk register would be discussed at the end of the meeting. If we ran out of time at a meeting and could not discuss

the rest of the risk register then we would agree to put risk at the top of agenda for the next meeting. It was not that the TPB were not discussing risk and taking it seriously. I thought risk management was good. A new project risk manager was appointed to replace T&T because Nina Cuckow went to do another job.

157. The papers for the TPB meeting in June 2007(CEC01552419) appear to show risks 870, 154 and 280 not changing despite the fact that they are materialising. If the risks had not been updated it might have just been an oversight. It might have been simply that wrong version of the risk register was attached to the TPB papers. So it may not be significant that these risk have not been updated. We had a good risk management system when I was there. Optimism bias has nothing to do with risks as we know them. An amount of OB is used in project budgets to compensate for the promoter of the project being naturally optimistic in their decisions related to cost estimates. OB comes from Treasury rules for business cases. There is a history of projects that have been underestimated because of OB. You take off OB as you get greater certainty about project estimates. I'm not sure whether or not we ever had OB in the tram business case. These were drafted before my time. Once you get firm bids in from bidders you are able to take most of the OB off. I would understand if we did not have OB included in the early business cases. As to how OB is assessed, there are rules of thumb that are applied and there are rules that ultimately come from the Government economists about the application of OB. OB is to do with the integrity of the information on which you have made your estimates. At the stage of an early strategic outline business case whatever the estimates you have, I believe you are obliged to add as much as 40% OB on top, but that figure would be reduced as you get firm bids from bidders. The use of OB is quite crude and has probably been improved, since then. If a firm of reputable of QS have priced a project, without any bids having been submitted, then arguably there is no need for OB because their professional reputation is at stake and contingency would have been added (including possibly estimating risk) as a line item.

158. In the minutes of the TPB meeting in July 2007 (CEC01018359) it was noted that the risk register should be amended to reflect the additional funding risks to CEC, to reflect the change in approach by SG after May 2007. I am sure the risk register would have been amended to reflect that. The capping of TS funding at

£500m should have been included in the risk register. The big risk would be that CEC would have to accept the burden of any cost overruns. The risk rating should increase substantially to reflect TS capping the budget. It is noted that risk allowances can move quite significantly between consecutive months. This is often because major risk events and triggers (with a high budget impact) have not materialised. I would need to look into the detail of what that particular risk related to in order to understand why the sums were reduced at the time. If the risk date passes then you would take it out the risk register which would be reflected in the risk allowance. Significant changes between months are not usually a concern if properly explained and wholly justified.

Reporting to TPB and TIE

159. In an email from Trudi Craggs to me dated 12 April 2007 (CEC01623417) she expresses concerns that MUDFA and the advanced works were becoming out of control and that TIE were running the risk of being exposed at the TPB. I'm not sure what this email relates to or why Trudi Craggs felt the need to write it. I probably did not have time to speak to her and told her to put it in an email. Trudi Craggs would have to explain this email.
160. There was an overlap in the functions performed by TIE and Tram Project Boards and beyond the May 2007 elections it became even more substantial because TIE had lost the EARL project were therefore going to be focusing mostly on the tram project. The TPB was the only important board for me (in my role). I still do not understand why we needed two boards. The TPB worked as the main board and it took the big decisions in relation to the project. I thought the TPB was generally well run. There was often duplication of reporting to TPB and TIE and we would use the same papers for both boards. I would normally stay for the first part of the TIE board and then leave the meeting.
161. I refer to the tram project risk register (TRS00003660). You can see from the table that every risk has a risk ID. You can see that there are three important columns under the heading 'Risk Description': 'Cause', 'Risk Event' and 'Effect of

Risk'. The value of the risk represents the estimated risk impact value. You can see there is a column for the treatment strategy for the risk. This a quantitative risk register and risk modelling tool which determines the probability of the risks happening and the aggregate potential impact. A risk register can be typically about 200 lines and the risks are categorised on probability and impact and colour coded accordingly. Black risks were high impact and likelihood risks.


Recruitment and leaving

162. As a rail consultant, I was engaged by TIE as a contractor. Willie Gallagher recruited me. I was introduced to WG and then interviewed by him by someone who was working on the project, who knew me well when we worked together at Bombardier. I was only ever planning to stay for the procurement phase though I might have stayed to the end of the project had TIE kept its other projects (after the election) and Steven Bell (as a permanent member of staff) not moved across to the tram project. When Steve Bell took over as PD of the tram project in January 2008, most of the staff still reported to me until I left in March.

163. There were issues about bonuses. Willie Gallagher wanted me to stay with the project and arranged for a bonus scheme to be set up to keep key people at TIE until the end of their contract. I had spent time with Colin McLauchlan getting the bonus terms clearly defined (Para 151 also refers). When I left TIE I was told by Colin McLauchlan that none of the staff were getting bonuses and therefore I and the other consultant colleagues were also not getting bonuses. This was outside the terms of the agreement which had no provision for TIE simply not paying if it didn't want to. I fell out with Colin McLauchlan about this, because I felt we were very poorly treated. I negotiated with TIE and eventually I got about half the bonus I considered I was entitled to. The bonus did not reflect my work effort and performance. Both myself and the team had worked extremely hard on this project. The bonus was based on four elements: contract close price, adherence to programme, safety and performance. I got no bonus for the programme element because we lost three months resulting from the election, and I got a reduced bonus in relation to the performance management element which I strongly objected to

(because there were no grounds). Rather than other formal courses of action, we reached an agreement in the end.

I confirm that the facts to which I attest in this witness statement, consisting of this and the preceding 55 pages are within my direct knowledge and are true. Where they are based on information provided to me by others, I confirm that they are true to the best of my knowledge, information and belief.

Witness signature. 

Date of signing. 11 June 2016