

Edinburgh Tram Inquiry Office Use Only
Witness Name: Geoff Gilbert

Dated:

The Edinburgh Tram Inquiry

Witness Statement of Geoff Gilbert

My full name is Geoffrey Hancock Gilbert. My date of birth is [REDACTED]. My contact details are known to the Inquiry.

I am a Chartered Quantity Surveyor. I was engaged by TIE as the Commercial Director on the Edinburgh Tram Project between 14th August 2006 and 23rd April 2008. I handed over my responsibilities to my successor from that date but returned to Edinburgh part time for a short period on 29th and 30th April and 6th and 7th May. I provided some ad hoc support remotely for a short period thereafter. My main duties and responsibilities were to lead a small commercial team to progress the Tram and Infracore contracts to award, run the tender and negotiation process and to update the project estimate.

Statement:

Preliminary

My statement is made on the basis of a) the documentation referenced in the Inquiries letter dated 5th April 2016 and sent to me on 22nd April 2016 and the questions subsequently provided and my interpretations of those documents to the extent that I recollect them and the issues prevailing at that time and b) the transcription of Inquiry's interview with me on 9th, 10th and 11th of May 2016 to answer those questions as subsequently provided to me on 7th February 2017. If other documents have been provided to me but not referenced in the questions I have not considered them. My review of the documents referenced is not detailed and generally only to the extent as was necessary to answer the questions provided.

1. I have provided the Inquiry with a copy of my summary CV. By way of brief background, I qualified as a Chartered Quantity Surveyor in the early eighties. Since qualification, I have worked within the infrastructure sector now for the last twenty six years. Most of my time has been spent working with projects related to the London Underground. I have worked on various civil engineering, building and systems projects. I was previously employed by Dearle & Henderson. During my time there, I was involved in developing the strategy to procure the supply chain to support the London Underground JNP 'Shadow' public-private partnership ("PPP") infrastructure company London Underground. Following my work on that project, I was retained by the Tube Lines Consortium contracted by London Underground to upgrade and maintain the Jubilee, Northern and Piccadilly lines. There I assisted with implementing the strategies I had worked up. I modified the strategies to suit some of the Consortium's objectives, and worked there until around August 2006. I left that role to work on the Edinburgh Tram Project. I have been a consultant for most of my working life, but after leaving the Edinburgh Tram Project I became an employee of Transport for London in April 2010. I now have a senior commercial role there.

2. My first contact with the Edinburgh Tram Project was when I was asked to go to Scotland to attend a meeting with Andie Harper in summer of 2006. The meeting was held to discuss the prospect of Dearle & Henderson providing commercial resources to support him on the project. My time with the Consortium was coming to an end, and the Edinburgh tram project looked like an intriguing project. I then agreed to work for TIE as a consultant in the role of Commercial Director, and worked continued in that role until April 2008.

3. I never met my predecessor at TIE. I do not recall having a formal job description, but it was clear to me at the time of joining TIE that my role was primarily to lead the procurement of the Infraco and Tramco contracts as noted above. At that time, it was anticipated that that process would take between nine months and a year. I did not intend to stay as long as eighteen months, as I am London based. That said, I thought I should stay at TIE until the procurement process had been completed. However, I do not think the

contract was signed before I left. I have never seen a 'conformed' copy of the contract, by which I mean a copy that has been signed by the contracting parties.

4. My job title at TIE was 'Commercial Director'. That was in title only, to identify me as a senior member of staff. I was not a statutory Director, but essentially a senior commercial person on that project.
5. When I joined the project, I was aware that Edinburgh, generally, was wrestling with the affordability of delivering the tram scheme. Prior to my involvement, a strategy had been developed which was intended to de-risk the project procurement process. In some ways, it was quite a neat strategy that had been developed. I had not experienced or read of any such similar approach being adopted elsewhere. That is not to say that I believed at that time that the strategy was wrong; it's just that it had never really been tried before to my knowledge. In that respect it was a bit of an experiment. It had been created to bring certainty to the programme and project, through 'designing out' uncertainty and getting all of the necessary approvals in place at successive project stages. It had been intended that each of the subsidiary contracts would be novated into one single Infraco contract at Infraco contract award, with the exception of the utilities diversions contract (MUDFA). On paper, it was a very neat strategy, but it was clearly reliant upon things happening and decisions, whether they be design or approvals, being made at the right time in the design process to avoid delay.
6. There was a good team involved in the project, though perhaps a little inexperienced in major infrastructure projects. They were motivated and passionate about delivering. It was a relatively small and well integrated team. In some ways, the decision-making within the project was quite good.
7. There was quite a lot of external scrutiny of the project. During the early stages of the project there was support and oversight from Transport Scotland (TS). That support was provided through a somewhat complicated governance structure as I recall. There was also oversight from Partnerships

UK (the organisation that later became the Infrastructure and Projects Authority). We had an audit by Audit Scotland in mid-2007, which generally went well. This scrutiny should have helped the programme achieve its objectives.

8. The strategy did not really play out in the way that it was intended for a variety of reasons. As we moved forward we needed to be regularly adjusting and adapting the strategy to deal with emerging issues and maintain a path to closing the Infraco contract. That is clear from some of the documentation provided and the questions asked in respect of them as set out later in the statement.
9. With the benefit of hindsight, the broad strategy was clearly flawed. It did not take into account the complexity of the scheme. That was particularly so where the project required work to be carried out on operating infrastructure (for example, the roads in a congested city centre). Given the number of stakeholders that needed to be consulted and whose approval was required, it could be argued that this simple strategy was not really appropriate to deal with such complexities.
10. Infrastructure UK (IUK, now IPA) has since developed tools (including the Procurement Route map) for understanding defining the complexity of such projects. They have developed tools to allow a better assessment of the capabilities of both the team and supply chain, identify gaps and then adjust the strategy to deal with them. These tools allow you, in general, to work out the best approach and strategy to align market and project objectives. They also allow you to clearly understand the strengths and weaknesses of both the market and the delivery team, enabling you to address those aspects and refine your strategy from the outset. These tools did not exist in their current form at the time of the Tram Project. I think if this thinking and tools had existed, and more time had been spent on developing out the detail of the strategy, then there could have been a different outcome for the project.

11. There was a hiatus caused by the Scottish Parliament elections held in May 2007. The outcome of the election was uncertain. The position politically was that the Lib Dem/Labour alliance in power at the time supported the project but the SNP did not. We took the decision, which I think was the right decision, to suspend the procurement process pending the outcome of the election. Suspending the process was something that I felt very strongly that we should do, as bidding for these kinds of projects costs those bidding an enormous amount of money and if the scheme was to be cancelled, it would not have been right to continue. It would have damaged Scotland's, and the UK's, reputation for these types of projects. It would not have been right to allow organisations to spend that money and then either not be able to recover it or have to pay abortive costs out of the public purse. During that hiatus the project did various things to help get ready for the resumption of the tender process.
12. There was very limited experience within the UK of tram infrastructure schemes at that time, and the industry was in its infancy compared to mainland Europe. My recollection is that, prior to the Edinburgh Tram Project, there were trams in Croydon, Manchester and Nottingham, and there were a number of other schemes in progress. All the schemes in existence had been delivered in different ways. Prior to Edinburgh, the approach that was generally taken was a turnkey style risk transfer with, effectively, a design and build contract alongside a concession agreement for operation.
13. I do not think the procurement strategy, in itself, was the root cause of the problems that emerged during the procurement or the subsequent problems in delivery (from my cursory knowledge of those subsequent problems). That said, the strategy was not robust enough to foresee and deal with the issues and problems arising during the procurement phase. Therefore we had to adapt the strategy to deal with the emerging set of problems that ensued.
14. We went through a procurement exercise which was progressive in nature. Through the autumn of 2006, we asked the bidding consortiums to give us outline proposals (the initial bid). The purpose of those outline proposals as I

recall was to give the Scottish Government and the City of Edinburgh Council (CEC) confidence that the scheme was affordable, prior to committing the next tranche of funding. The design was not that mature at that stage, however, the scheme was not going to go ahead into a full tender without some form of market-informed confidence on affordability. The process was a compromise to establish affordability through an outline bid. This outline bid was subject to scrutiny from Transport Scotland's (I think) advisers. Following this step we proceeded to full tender of the Infraco and Tram contracts. As noted above this process was then suspended mid tender pending the outcome of the election. We resumed the bidding process when the Scottish Parliament election in May 2007 was over and there was confirmation from the new Scottish Government that the scheme was to proceed. . However, throughout that time, there were various problems with delivery of the design, which was not as mature as it ought to have been for a number of reasons.

15. The expectation (as per the procurement strategy) on this project was to have a level of design detail finalised to define the shape and form of the scheme before full tender and thus provide sufficient information for bidders to reliably price the scheme with limited assumptions and caveats and risk. It was expected that a completed detailed design for the scheme would be available at Infraco contract award and novation of the design contract. With the benefit of hindsight, and reflecting on the variety of issues that emerged, the design was not produced at the pace that was expected. Ultimately, we then needed to balance the potential extended cost of the project overhead with getting to a position where we had a design that we could be reasonably certain of to proceed to tender and then subsequently novation. We also had to establish a set of ground rules to progress the procurement of the scheme in a controlled fashion. We were trying to get to a position of having a bidder selected whose bid could then be updated with the information that was coming out of the design process. I cannot remember the details of exactly how that emerged. But the design progressed concurrently with some of the negotiations with the preferred bidder contractor.

16. We went through the bidding process. The bids were very close between the two consortia, and there were fractions of a percentage between the scores for the two bidders as I recall. I recall that there was a TIE Board meeting to review and endorse the tender recommendation for preferred bidder. The tender process resulted in the selection of Bilfinger Berger Siemens (BBS). A key differentiator in their bid was their proposed track form and the benefit of that trackform's constructability within the streets environment. I do not recall the technical details. That, essentially, swung it in BBS's favour. We thereafter drew all of the bid documentation up to that point together into a draft contract package and used that as the baseline for progressing negotiations. Those negotiations proceeded on a 'preferred bidder' basis.

17. Designs, and the evolution of designs, were problematic. It was in many instances difficult getting decisions from CEC, particularly on some of the critical junctions. There seemed to be a preference for on-going optioneering to gain a perfect solution, one which I doubt existed. Railway schemes are designed around the line of the track (alignment). However, if you can't fix the alignment then it has implications for finalising other parts of the design i.e designing the road and kerb alterations can't be finalised. So in that respect, CEC were not particularly helpful in supporting the strategy of de-risking the emerging design. Their delays in providing decisions on the acceptability of some of the proposals did not help maintain the progress emerging design. With the benefit of hindsight, asking a design organisation to take the risk for stakeholders' decisions, where they have no control or limited influence over those stakeholders, was a mistake. It is not something that I would do now. I do not think, generally, in the schemes I am involved with we would adopt that approach. (Note: It is now an accepted principle that clients should act in an informed way and take responsibility for the decisions that only they can or should make or are best able to influence)

18. We went through a period in the autumn of 2007, when we were trying to firm up the deal based on the emerging design. That was quite a slow process. This slow progress resulted in the so-called Wiesbaden agreement. The agreement was an attempt to try to shortcut and speed up the process of

firming up the agreement. Following the Christmas week, activity intensified to finalise terms and prices and bring the preferred bidder and SDS novation process to a conclusion.

19. During that period we also finalised the Tramco agreement and agreed outstanding issues to enable the novation of the TRAMCO contract into the Infraco contract at contract close. That process generally went fairly well. From reading the market sounding papers prepared in the early stages of the project various parties suggested that that novation process was going to be particularly problematic, but in reality it was not. That process was relatively straightforward. I recall that we did have an issue, around January/February 2008, to secure a sterling contract commitment from the selected Tramco contractor. Fortunately, we picked that up and the potential euro currency risk exposure was hedged. This included agreement on how we would deal with hedging costs if the Tramco contract was not signed. This was fortuitous given the subsequent deterioration in the sterling/euro exchange rate which would have resulted in a major additional cost in the absence of such a hedging agreement.

20. What did become particularly difficult was the novation of the SDS contract into Infraco. That could have contributed to some of the subsequent problems during delivery; (though I was not involved in the delivery phase) The SDS contract was a complicated contract. It later became apparent to me that there was effectively no completion date. This essentially meant that Parsons Brinkerhoff (PB), the SDS contractor, had the upper hand in any negotiations. Whilst we sought to come up with a pragmatic means of dealing with the issues surrounding the novation, I do not at this point remember the details. I do recall that there were many issues surrounding agreement of the process and basis for novating the SDS contract into the Infraco contract. It was a process which was hard fought and there were compromises made along the way to achieve that. I cannot really comment on whether the designs progressed adequately to support the delivery of the work. At the time I left the project there was as I recollect an agreed basis for novating the SDS contract into the Infraco contract.

21. A sequence of events arose at various stages during the procurement phase which made the finalisation and delivery of the original strategy quite difficult and more complex than envisaged at the outset. With the benefit of hindsight, I would not adopt this strategy for a scheme of this nature again. Particularly so given the complexities of the project and some of the unrealistic risk allocations involved, such as the allocation of the risk of gaining approvals from the various bodies and stakeholders to SDS. It should be noted that since the tram project more collaborative procurement models have been developed for delivery of projects of this nature.
22. I am not prepared to comment on individuals. This is, in part, because I cannot reliably remember all of the detail. It would therefore be unfair to speculate on the actions of individuals. In my opinion the tram project was populated by people who were passionate about delivering a tram scheme for Edinburgh. I would say, however, that experience of major infrastructure projects within the team, and more generally with those sitting on the Boards of various organisations we dealt with, seemed to be pretty thin. That was perhaps a function of the fact that projects of this nature had not been done in Scotland before. We were, however importing knowledge and experience from similar schemes, for example major rail, underground and light rail schemes.
23. TS, certainly in the early stages, were very supportive. They helped overcome some of the early problems with some of the Consortium bidders. CEC were well-intentioned but not experienced in schemes of this nature. They inadvertently, and I am sure not on purpose, held up some of the decision-making. This indecision had an impact on the design progress.
24. Both BBS and PB were fairly hard-nosed organisations. Consortia members often make uneasy bedfellows. I am not convinced that, from my experience of dealing with organisations and upon reflection, Bilfinger Berger (BB) and Siemens (S) were particularly aligned in their approach to their delivery of this particular project. There were difficulties in the negotiations with them and some of those difficulties might have been a result of their internal

misalignments. PB, at that time, was an independent American organisation, but they have since been taken over (firstly by Balfour Beatty and now WSP). They were very difficult to deal with all the way through the project. In the early stages (in the time that I was involved in the project), it became clear that their designs were not progressing to programme, although this was not entirely transparent in the detail at the time. The team from PB had been brought in, as I understand it, from the aborted Liverpool tram scheme. Some of their documentation seemed to be a straight lift from that project. They were clearly operating to defend their commercial position very strongly. They wanted to maximise their commercial position and at the latter stages avoid taking as much liability for the designs as possible. Arguably, that was one of the flaws in the way in which the SDS contract was configured.

25. I had some dealings with AMIS but my focus was largely on the Infracore contract. A learning point from other tram schemes was the criticality of the utilities diversions. The strategy, again very sensibly, was that the utility diversions would be delivered independently. That was so that the tram alignment path would be cleared of utilities prior to the commencement of the main tram alignment works. There was quite a substantial programme in place, with programme contingency, to deliver that. As time went on, the programme contingency was significantly eroded. When I left in the programme there was still time contingency left but at a much reduced level. Beyond that I cannot really comment on AMIS. I had limited dealings with this aspect of the project.

26. In May 2008 Tram Project audited by Audit Scotland and spent a number of days taking them through the scheme in detail. As I recall the audit was to establish the health of the project as a precursor to the new Scottish government confirming continued support of the scheme. Additionally Partnerships UK (PUK) undertook quite a number of reviews to assess project health at key project stages (OGC Gateways). As I recall, PUK were supportive of the project.

27. Projects with a large number of stakeholders can become a little frustrating. A balanced view needs to be maintained in respect of the various stakeholders interests. With the benefit of hindsight, TS withdrawing and not supporting CEC was a mistake. A lot of the problems occurred after my time but I can conceive, from my experience from other projects that not having central (Scottish) government support in the form of TS would have been detrimental to the success of the project. I think that TS's withdrawal could have hampered CEC's ability to influence the outcome by removing supporting market leverage and experience.
28. Originally the intent was to have three bidding consortia. During autumn 2007 one dropped out for reasons that were to do with the status of their own organisation. During this period there was difficulty keeping the BBS consortium involved. We undertook an awful lot of work with TS to get to the position where BBS would participate.
29. The Tram Project had a unique procurement strategy. When I joined, an OGC Gateway process was being applied as is the case with most similar government projects. At that time I think TIE were a little behind the curve compared to where they should have been in terms of progress.
30. At the project level, I think the working relationships within TIE were quite good. I am aware that there were some tensions between various members of the Board. It is inevitable that conflicts will occur where you have different organisations with different aspirations and concerns. That is not that unusual, particularly if you have a complicated governance structure. I did not feel there was anything unusual concerning the relationships within TIE when I arrived. I have previously worked for large organisations as a consultant, and there are always strong and, sometimes competing interests involved. This inevitably means management of projects can be challenging in such organisations.
31. The team members changed over the period that I was there. Stewart McGarrity, the Finance Director, and Susan Clark, who I think was a Senior Project Manager, were there throughout. I worked quite closely with Stewart

McGarrity and the successive Project Managers. Initially the Project Director was Andie Harper, who I had worked with before in a previous role. Matthew Crosse replaced Andie Harper in January 2007. I did not know him and had not worked with him previously. Latterly, I worked quite closely with Steven Bell, particularly from about November/December 2007 through to when I left in 2008. He was brought onto the Tram Project from the EARL project. I cannot recall how Matthew's and Steven's roles related to each other. When Matthew left, Steven took over the role of Project Director. Jim McEwan is the only other person that I recall working with often. He had a strong hand in the negotiations post-Christmas 2007, and latterly led most of the negotiation meetings.

32. Willie Gallagher effectively headed up TIE. Graeme Bissett sat on the Board. I am not exactly sure what his role was. Bob Dawson, who I have known for a long time, supported the procurement phase work. He came to TIE at the same time as myself, as did a cost manager.
33. Arguably there was quite a lot of change in personnel over a relatively short period of time on this particular project. I was used to being involved in projects for longer timescales. Whilst different personalities bring different approaches and skills to different project stages, but in terms of continuity and knowledge a change of personnel can be unhelpful. From my experience of other projects however, I would not say that it was particularly unusual to have such a level of turnover of staff. These sorts of projects are delivered over long timescales. People have different career aspirations. Sometimes people are only prepared to commit to a certain period or phase. It is not at all unusual for persons to sign up only to a particular period of a project. Eight years is a major proportion of anybody's career. Things were perhaps exacerbated by geography, in that many people were working away from their homes.
34. I was not involved in the recruitment process, other than the two individuals that I have mentioned. I was not involved in identifying and employing people

at TIE for any of the major roles. I would not really be able to comment on the recruitment process used to employ other persons within TIE.

35. I recall that two business, Scott Wilson Kirkpatrick and Turner & Townsend (T&T), who I think together constituted TSS, and who were engaged by TIE to provide independent scrutiny of the emerging designs produced by Systems Design Services 'SDS'. They also provided some project support to the commercial team. In particular, they provided staff to look after the estimates and the MUDFA contract. I think their (Scott Wilson Kirkpatrick) involvement was well intended but I do not think their scrutiny was particularly effective, particularly given the lack of clarity about what was missing from the designs at key stages. As already explained, the design did not evolve at the pace that was expected. I do not recall whether that came out particularly strongly from the TSS reviews. It was a hugely complicated design programme, and very difficult to understand. David Crawley arrived in January 2007. Although he had also worked for London Underground, I did not know him well before he arrived. He sought to increase the level of scrutiny and identify specific problems with the design in order to deal with them. I think that helped improve the degree of visibility of the designs. David certainly assisted in obtaining instructions and approvals more quickly from CEC to help the designs progress.
36. I have been shown an email chain dated 3 October 2007 (CEC01653742). I was not copied in to that email exchange. The first email in the chain refers to the outcome of the OGC3 Gateway Review, which I understand to be a review carried out by the Office of Government Commerce. I note that the email refers to the outcome of the review as being positive and that it complemented management capabilities. I do not recall the OGC3 Review. I would have thought I would have seen it but whether it was actually copied to me I do not know. Given that I do not really recall it, I am not able to comment on it. I think if the outcome had been negative, the project would have been stopped. I do not think that was the last OGC review. I think the project had a further one in January or February 2008.

37. There were a number of Boards for the project. I attended some of the Boards, but as an observer rather than a member. I did attend some of the Tram Project Board (TPB) meetings (as can be seen from the minutes) but I was not a formal member. It has been suggested to me that I started attending the TPB in April 2007. That would make sense, as this was the time of the Infraco bid. Infraco was the main activity at that time. Having me present at the Board when that was progressing and decisions were being discussed would have been logical. I do not think I was ever a formal Board member. Quite conceivably this explains why I was at times not included on the distribution list. Perhaps some decisions were not for my eyes.

Design

38. The original intent was that the preliminary design stage would be largely complete before Infraco was tendered. The procurement strategy intended that sufficient design would be completed by the date of Infraco tender to enable reliable pricing of the scheme and that the detailed design stage would be largely complete by the time the Infraco contract was awarded. That clearly was not the way things played out. The intention of the strategy was that the three principal elements (ie, SDS, Tramco and Infraco) would progress and then come together into one agreement through novation. In reality that did not happen easily. The approach was modified to try and bring about an alignment between those elements. Delays in SDS progressing designs and their importance in supporting the Infraco tender process and the subsequent preferred bidder and novation process made the procurement process difficult to progress to plan. We developed strategies to overcome those difficulties – see Negotiation Strategy dated July 07 ref CEC01606106.
39. We evolved different approaches to try and deal with the slow progress of the design. We had to make some compromises on the levels of risk that Infraco took around that emerging design. Taking this approach can work, with a willingness on the part of all parties. Projects proceed well where people identify the issues and resolve them quickly. Projects do not go well where

this is not done. They usually descend into conflict, which I have heard is what later happened on the Edinburgh tram project after I left.

40. Projects and programmes do develop a momentum. To effectively deliver a project you need a degree of optimism as to the outcome. There is an expectation that people will behave reasonably by identifying problems and dealing with them. Any other approach leads to delay and a cost being incurred by one or other party that they did not expect.

41. There is usually an optimism on the part of project teams. This manifests in an approach and will to try and make things work. Projects of this nature are hard to deliver and can be personally very taxing. The purpose of Boards and external scrutiny is to provide checks and balances to that momentum, enthusiasm and desire of project teams to move forward. Whether such checks and balances were applied correctly on this project is perhaps an open question. Governance and assurance regimes now adopted for major infrastructure contracts are much more extensive than those prevailing at that time. Industry has moved on and strengthened scrutiny of complex projects. See IPA/IUK guidance produced by HM Treasury. My clear remit was to tender an Infraco contract and get it awarded and that is what I was focussed on delivering. With the benefit of hindsight, should I have said 'hang on a minute'? I am not sure that we have got this quite right. I do not think that that was entirely my role to do that. The way in which we were proposing to deal with problems of progressing the procurement most certainly had to be transparent. It is the responsibility of Boards, being more detached, and third party organisations, to apply scrutiny, assurance and governance. In the early stages of the procurement TS contributed to project assurance and governance. It has experienced professional construction experts and sponsors. Personally, I think it would have been unfair to expect that level of scrutiny from CEC. They did not have that capability. With the benefit of hindsight, the lack of an exterior scrutinising body, like TS initially provided, was a flaw in the way in which the project was organised in the latter stages of the procurement phase.

42. I would not want to speculate on the reasons as to why TS withdrew support. That said, to not involve a national organisation that would normally scrutinise the delivery of a major infrastructure scheme seems to me to be a bit odd.
43. I have been shown a document entitled 'Report and Papers for Tram Project Board, dated August 2006' (**CEC01688881**). At page 48 there is a diagram which shows most, but not all, of the critical detailed design and 'majority consents' were completed at the time of award. I probably saw this document but I do not recall it.
44. I have been shown a documented entitled 'Outline Business Case, March 2006', which is marked as draft (**CEC01783327**). The document notes that the purpose of bringing the designer in at an early stage was to advance design of sensitive aspects of the route to reduce planning and estimating risks (pages 10 and 48). It notes the expectation that at Infracore signature the "overall design work" would be 60-70% complete (page 58). That was part of the strategy so self-evidently that was TIE's expectation. That section of the document does not reference a particular project stage, so I do not recall what exactly the 60-70% figure means. It could have meant a number of things in stating that 60-70% of the overall design work would be complete. I would say that 60-70% of the overall design being complete, in other words including all the working drawings, would probably have been unrealistic. The OBC does set out, at p58, the things that would be used as the basis for bid that updates would be provided during the bid period and negotiation phases and that detailed design would be largely complete by award. This is also explained by the diagram referenced in the last question. The figure for amount of design complete is more meaningful if it is broken down and expressed as progress against standard design stages.
45. I have been shown a document entitled 'Draft Final Business Case, November 2006' (**CEC01758622**). In that document, the position was updated so that it was anticipated that "the overall design work to detail design stage" would be 100% complete "when the Infracore Contract is signed" (page 12). It would be an 'apples and pears' comparison if you compared this figure to the one which

featured in the Outline Business Case from March 2006. They are not comparable statements. The OBC statements describe the level of design information required to obtain bids. This statement refers to the level of design expected by the time the Infraco Contract is signed. The OBC also makes the same statement that the detailed designs are expected to be complete by Infraco contract signature. That said the definitions aren't particularly clear. It all depends on what is meant by a complete design at any given stage. Does it mean a complete design for a particular stage or overall? This was an unusual way of expressing the completion of a design. I do not know who would have written it. The percentages would be more meaningful if the documents had referred to expected levels of completion of the preliminary design, detailed design stage, feasibility design stage etc. Even the industry standard definitions of design stages are themselves quite vague as to what constitutes completion of a particular stage, particularly when it comes to what is detailed design and what is installation design, for example. This is a common problem and it is a problem that causes difficulties in the wider construction industry, certainly on major infrastructure schemes. Designers are often incentivised to design the minimum required through lump sum design contracts. However, the project team really needs complete and buildable designs, so that procurement and delivery phases are de-risked. Determining the level to which a design is completed is a common problem. Designs for schemes of this nature consist of hundreds, if not thousands, of drawings. You can have a detailed day to day involvement and still find it difficult to realistically judge the level of completeness of a design. Completeness of design is often subject to imperfect definition.

46. I have been shown a document entitled 'Infraco Initial Analysis and Updated Project Estimate Response to Transport Scotland Queries' (TRS00003675). The document is dated 8 February 2007. I note that it is stated that the design would be completed by the SDS before the award of Infraco (pages 10 - 11). The expectation was that the detailed design would be done by Infraco award. That said, we would have anticipated that the design wasn't 100% complete to a working drawing or installation level. An example of what I am trying to describe is this: It is common for piling contractors to do the

installation design and determine the depths of the piles and the levels of reinforcement etc i.e installation design. They would carry the responsibility for that. So this stage of design would in fact be done by a specialist sub-contractor, with perhaps only the loadings given and the approximate sizes of the piles themselves provided by consultant designers. Sometimes that is done to optimise the design. Professional designers can have a tendency to overdesign. A sub-contractor who is contracted for a particular price will largely design more practically to budget.

47. I have been shown an email exchange I had with Richard Walker (BBS) dated 19 and 20 December 2007 (**CEC00573351**). This was around the time of Wiesbaden Agreement. Richard Walker (BBS) noted in that email that BBS had bid on the basis that the design would be complete upon novation. I am sure what Richard Walker meant was that the design would be sufficiently complete for Infraco to be able to define their responsibilities and therefore confirm their estimate for the cost of constructing the scheme. In other words, the design would be complete with the level of uncertainty as to shape, form and boundary of responsibility defined. If that was not the case, how would Infraco make the judgement as to what risk they should or should not include and budget for?
48. I have been shown an email exchange I had with Graeme Bissett (with others also copied in) dated 20 and 21 February 2008 (**DLA00006358**). In that email, I note that BBS expected that the designs would be complete and the consents in place before the contract award. This was an issue that dogged the novation which I have referred to earlier. I do not recall that specific email.
49. I prepared a document entitled 'SDS Novation Issues' dated 18 September 2006 (**CEC01793949**). It was prepared for the TPB, and was circulated by email to a few others for comment before it was sent to the Board (**CEC01793948**). I noted in my paper (page 1) the intention that the design would be completed by the time negotiations were concluded with Infraco. That the detailed work would then have been largely completed would have meant that the SDS contract could be readily novated. My statement was a

pretty general statement in that my understanding of the strategy, and in particular the way in which the different parts were intended to come together, was to de-risk delivery. I would have meant, and it was at a fairly early stage, that the design would have been completed in its substantive parts to the level that would be expected at the detailed design stage. I would go as far as saying that the intention, when I started working at TIE, was for the detailed design to be substantially finished at the point at which the Infraco contract was to be signed as was described in the OBC referenced earlier.

50. I have been shown an exchange of emails I had with Alan Bowen of CEC dated 28 and 29 September 2006 (CEC01795124). In that email, I refer to only preliminary design being required for initial bids. This email exchange has to be read against the background of TS wanting a market-informed position on affordability before agreeing to the scheme progressing further and funding for the next stage confirmed. It was a chicken and an egg situation and created a conundrum. The initial bid process was therefore necessary to obtain a market informed level of confidence in scheme cost. The design was, in the autumn of 2006, at a preliminary design stage. Everybody knew it was at a preliminary design stage at that time. This is where the design was when we were obtaining initial bids. However, that level of design was sufficient to be able to provide cost confidence from the market i.e. a bid, albeit an outline bid. That in turn provided some confidence in the affordability against budget. My email in September 2006 was not referring to the substantive part of the procurement. It was referring to this initial bid stage. I recognise that there is an apparent contradiction. The overall strategy talked about the end game and having a detailed design to support the final contract. The discussions in my email are about the level of information required to go to market to obtain an initial bid. I cannot recall the doubts that I had. No doubt these things do go through lots of iterations because parties are exchanging and reconciling views. It is something that I would have thought quite carefully about. This may be why I expressed some doubts. The approach we took was the only way in which we could overcome the conundrum we faced at the time. The intention was that detailed design would be complete at Infraco award. However, this earlier email exchange is referring to the earlier initial bid stage.

51. I have been shown an email to me from Roland Halliday of BB dated 23 October 2006 (CEC01795714). At an early stage of tendering, BB raised doubts about the level of detail in the drawings. In that email, Roland Halliday notes that there was a question as to whether they were sufficiently advanced to enable a *"robust and credible price"* to be prepared (para 5, page 1). I am not sure this was telling us anything we did not already know. It is actually saying they are at preliminary stage but it will be further defined in some areas. It comes back to this point about trying to get the market-informed figure. We had the design that we had. We could have lost an awful lot of time waiting for more detailed designs before obtaining initial bids. Whether it would have made a material difference to that market-informed figure, which essentially was an estimate, is debateable. If you did spend that time, you would be incurring the cost for a standing army that is put in place to deliver the civils (civil engineering works). I suspect that we would have had a dialogue about these things. I cannot recall how we responded, but I suspect that we would have given the bidding consortia some comfort as to how we were going to use their bid, without giving them the latitude to be able to say *"it doesn't matter, we'll just give any old figure."* We wanted the Consortium to go through a process of reviewing the information and coming up with an estimate and programme. We wanted to obtain an outline of delivery from the organisation. That could then be built on as the process progressed.
52. I do not know where this initial bid idea came from. I do not recall. I do remember it (the requirement for a market informed estimate) being a problem. It created this chicken and egg situation. You ordinarily would not take this approach, but for the whole scheme to progress, we needed to do something. It was a strategy that was developed in order to overcome a hurdle. The concern at that time was that the scheme would not go ahead because of the emerging political noise about the project. This preliminary stage initial bid, using the preliminary design, was a way of meeting both the government and the contractors half way. It was a way to start to try and move the project forward. We could not conceive of any other way to achieve this. The way we approached things was full of obvious imperfections. At that

stage it would have been a preliminary design. That was what we wanted out of PB. We wanted a preliminary design to inform that stage of the process.

53. There was quite an intensive period of review when the bids came back in January 2007. We did a lot of work, over a short period of time, to review the documentation and understand its credibility. I am not sure if there was a report that was produced on that at that time.
54. I do not know whether TS required a firm figure at the preliminary stage. I do not think they would have done so because you would not get a firm figure on the basis of a preliminary design. Everybody would have understood that. TS wanted a market informed figure in order to gain the confidence to secure the next tranche of funding. I think there were a series of staged approvals to get the funding for the different stages of the procurement process. There was nothing else we could do. We had to convince a market to participate, and in order to try and satisfy TS; we had to introduce a staged bid process.
55. PB had a programme, which they created, to suit their planned way of delivering the designs for the project. The intention was to set priorities for further design of certain elements that were particularly cost significant. This was done in order to get as reliable initial bids as we could with the information available at that stage. That was an unusual process in itself. PB was proceeding down a programme which, by the introduction of an initial bid process, we were interfering with i.e we needed them to divert resources to deliver our design priorities for the initial bid. Usually within a project, the project manager would set parameters. Usually you would set dates for the completion of a particular stage of the design, maybe in a particular order, depending on the circumstances. It would then be for the designer to develop their detailed programme to show what they would deliver and when. There would also be a review process built into that programme.
56. In October 2006 I indicated to PB what the detailed priorities were for design. I have been shown two documents. The first is a copy of an email chain, showing emails which I sent to a number of individuals on 23 October 2006

and 24 October 2006 (**CEC01796317**). The second is a document entitled 'Detailed Design Priorities', which I had prepared and which was attached to those emails (**CEC01796318**). I have seen an email chain showing responses to my email, with emails of response from Trudi Craggs dated 23 October 2006, 24 October 2006 and from Andie Harper 3 November 2006 (**CEC01796724**). I note that it appears that Andie Harper was sceptical about how effective this would be in his response to me. Knowing Andie, I would imagine he was sceptical that PB were able to produce what we required and/or maybe he was sceptical that the initial bid process that we outlined would actually land and inform the funding decision that it was intended to inform. I think there was a worry that PB could not deliver the designs and that they were not proceeding at the pace we would like.

57. Looking at Richard Walker's (BB) email to Gary Dalton (BB) in November 2006 (**CEC01796724**) things appear logical. I would have asked for their view as to what information they required to deliver an initial bid. I do not know what I got back. We were trying to get to the best position possible whilst juggling all of those constraints. I had forgotten about the criticality of progressing the MUDFA design. Clearly we would not have wanted to disrupt that for obvious reasons. We were trying to land in a position whereby we had got the bidder to agree that the level of information we were able to provide was sufficient to deliver an initial bid. We did our best to provide BB with that level of information. We would have got everything that was reasonably possible to BB. This period was all about balancing the available design with the need to get through the initial bid stage. That in turn allowed us to have the funding to be able to continue. It was the case that we were time bound in any event. If we did not obtain the funding for the next phase, which I have got a vague recollection was January onwards, and then we were completely stuck. It was a bit of an odd project process in some respects. Having to have a market-informed bid was unusual and difficult.
58. Projects are full of diverse personalities. It is a bit of a hothouse, and people can be very critical of each other. PB did have a habit of saying 'this is what we're going to do and that's it'. They were particularly difficult. That was

because they were in a hard money contract holding a huge amount of liability for things they could not entirely influence. I am commenting here in hindsight. Commercial organisations will behave in accordance with the contracts you foist upon them. Expecting someone to be infinitely flexible when they are bound in with obligations on all quarters is always difficult. I forget how we overcame that. I think we had a conversation, probably off the record, along the lines of 'there is not very much future in this project unless you support us to get through this stage and provide us with the information we need / we will try and be reasonable in our demands.' I vaguely recollect having that discussion. I cannot remember who I said this to, although he was on the commercial interface. He was a nice enough person but tricky to deal with.

59. There was a period of time where SDS had a programme to meet their commitments for the design for MUDFA. During this period they were not contractually bound to provide the designs that were required to be presented to the bidders and to the Government in order to get the funding. I do not think it was envisaged, when that contract was set up, that these designs would be a requirement. I cannot remember when that requirement was introduced. I think the requirement was tied up with the funding. It was not a terribly wise thing to do. It was a huge distraction. I think people should have been a little more trusting in the estimates. That might seem a bit bizarre given what subsequently transpired.
60. At the time there was a big debate about phase 1a and 1b. Several people were convinced that 1b was affordable and deliverable. The estimates that we produced were subject to detailed review. If people burnt time further down the line in delivery that is a different issue. Judged against all the benchmarks / reviews, I think our estimate was a reasonable one at that time.

SDS delays

61. Holding design contractors to a programme is often problematic. There were questions being raised in memoranda which resulted in someone suggesting

a meeting with PB because we were not sure that the programmes really represented where PB was. I forget how that then progressed. I think Willie Gallagher went to New York to see the Head of PB to get some assurances as to their commitment to the project. There were difficulties within PB's supply chain in delivering designs. PB employed Halcrow to do some of the designs. I recollect that some of those designs were brought back in-house, presumably as they were not being progressed adequately by Halcrow. That is something that SDS would probably not discuss openly.

62. Approvals from CEC were one of the causes for the delay. That is what I witnessed. There were a large number of approvals required from a wide range of bodies. Some of the approvals required were more material than others. I do not recall the extent to which particular approvals may or may not have delayed design. The areas are generally referred to in the TPB papers under "Issues" in the design section. These were still not completely resolved by 31st October 2007 – See p15 CEC01357124.

63. One of the particular difficulties in getting decisions out of CEC was around the major junctions in the tram route. Those decisions were critical to the alignment design. Everything hangs off the alignment. After Dave Crawley arrived, he set up some meetings with all parties represented i.e. between SDS, CEC and various other people who were involved in the Tram Project. I am not sure whether I attended all of them. I particularly remember a discussion about The Mound junction. That issue became particularly problematic when we were trying to get CEC to commit to and be satisfied with the design. CEC had a desire to ask for yet further options. It was inevitable because you were mixing traffic demand with the demand of the tram. There seemed to be an unwillingness to commit on CEC's part. That is perhaps not unusual for a public sector organisation. In my experience, public sector organisations are not good at making timely decisions, perhaps because they may be held to account for the consequences of them. However, you cannot progress the scheme without those decisions. It was exceedingly frustrating. The discussion referred to above was quite heated. I do not recall the outcome. I think this related to a CEC decision on a

particular junction. I do not recollect whether a decision was ultimately taken by CEC. There were a whole series of similar decisions required.

64. I recall 'charettes'. They were intended to broker the compromises between competing design objectives for certain elements of the tram scheme design. I do not think the charettes ran to a timescale that would support the programme. The charettes may not have been the entire cause of design delays, but they did not seem to drive the design process forward to the timescales required
65. It's problematic when organisations think that they have exported risk and responsibility around decisions. They do not recognise that, if they still have sanction over those decisions, they still hold the responsibility for those decisions, no matter how the contract might be configured legally. That would be my general comment from my experience of public sector organisations and the approach transfer of risk prevailing at that time.
66. You have to remember the time when the strategy was developed. From reading through the background papers when I arrived, it was apparent that the scheme was originally intended to be some form of PPP. However, ultimately that structure proved unaffordable. That resulted in this somewhat elegant strategy to de-risk the project through the progressive design stages and the procurement stages. The delivery of the strategy depended upon the right things coming together at the right time. At that time it was coming to the end of the period where PPP procurement approach was particularly popular. During that period the industry's obsession had been with risk transfer. Organisations that have a responsibility for decisions should carry the risk for making those decisions. Part of the configuration of the SDS contract and, arguably some of Infracore, was looking to pass risks that frankly those organisations were not able to control. If you read publications by IUK, they offer guidance on appropriate levels of risk transfer reflecting more modern thinking around project delivery.

67. I recall, from a conversation I had with Andie Harper in the autumn of 2006, that he had taken the design programme home with him to go through it in detail. I recall that he said that some of it seemed to refer to Liverpool and not Edinburgh. PB had used the Liverpool tram scheme as a template for their programme. Doing that would have been logical, but it did not appear that it had been updated adequately. I did not look at the programme in any detail myself. I would have trusted Andie's view on that. I think this was raised at senior level with PB to address that situation. It was my view, based solely on Andie's comments, that PB had not got their programme as developed as they should have.
68. With regards to whether the designs were sufficiently advanced, I vaguely recollect that PB had declared that they had completed the preliminary design for certain things. There was then a TSS review. I do not recall all the detail of that, but I do not think it was a smooth process. Whether there was adequate scrutiny is a debateable point. The issue of designers delivering to an expected quality and level of detail in a timely manner is a bit of an industry issue. This issue is not something that is unique to this project. It does not make it right but it is an issue that the industry wrestles with.
69. I do not recall any detail surrounding the TPB, TIE's Board or TEL's Board considering the slippage in design and the consequences. I am sure it was discussed. The reason that Dave Crawley was brought in was to try and mitigate that problem. The senior discussions with PB were undertaken to help with that too.
70. I did not attend the Board of TIE. I did not attend the Board of TEL. As I have already explained, I did attend the TPB, or some subsidiary of that. I remember attending TPB meetings attended by Andrew Holmes (CEC) and Willie Gallagher. I do not recall Graeme Bissett being there at those meetings. Andie Harper attended. So did Trudi Craggs and Stewart McGarrity. It was the senior project representatives who usually attended. The delayed design was a concern; otherwise it would not have been raised as an issue at the TPB.

71. In the early stages, in and around the preliminary design stage, the expectation was that these issues would get addressed by PB. The expectation was that they would deliver to an agreed programme and standard. At that time, there was no intention to change the overall strategy. We were still trying to follow the de-risking procurement strategy.
72. I have been shown a TPB document prepared for a meeting on 23 October 2006 (CEC01355258). The document included a monthly progress report (September 2006). At page 9, it notes that TIE wanted to “draw a line” under what had happened before in relation to design. I cannot recall specifically what was meant by that but I am sure it would have been along the lines of some of the things that I have mentioned earlier. September 2006 is earlier than Andie’s comments to me. Quite conceivably they wanted a clearer relationship so that the design could progress to programme. It could be that what is being said here is that there were delays in getting to the completion of the preliminary design stage. That said, I do not recall the specifics.
73. I have been shown a TPB agenda for a meeting on 20 November 2006, which incorporated the minutes of a Design, Procurement and Delivery and Sub-Committee meeting on 8 November 2006 (TRS00003014). I was not at the 8 November meeting but I would have received minutes. I see that Andie Harper is noted as expressing concern as to SDS performance at para 2.3 on page 9. It is no surprise to me that Andie Harper had those concerns at that stage. He and I had discussed his concerns. He was not alone in his concerns. I was not involved in the day-to-day management of the SDS contract. I took his comments at face value. I assumed that the designs were not progressing as they should. On the basis of what I was told by Andie, I would be concerned about why it got raised as an issue. My concern was about its potential impact on the overall procurement strategy. I do not recall the detail of what I specifically did about my concerns.
74. Trudi Craggs was managing the SDS contract in November 2006. Trudi is a lawyer and did not have technical engineering expertise. It was perhaps odd that there was no senior engineering representative on the senior

management team at that time. None of us were engineers. This meant that there was no one in the Tie client team to judge the adequacy of the design. The theory was that TSS would do that job and produce reports on the status of designs. I am sure they would have signed off their reports recording approval of designs or otherwise. However, that's not quite the same as having a person with engineering capability and experience in the senior team. There did not seem to be that person until Dave Crawley arrived in January 2007. If there had been that representation earlier then it might have been a little easier to manage SDS. Trudi Craggs reported directly to Andie Harper. She managed the SDS contract. Her responsibilities changed but I think that was not until the summer of 2007. She did not report through me. I would be consulted on SDS issues if they related to commercial issues. That was an important input into the delivery of the strategy. I am not an engineer so I would not have had an active involvement in managing SDS.

75. Matthew Crosse was the Project Director from January 2007. Latterly Steve Bell took this role. Matthew had an engineering background but it was in systems. He worked previously at ADTRANZ. I do not know what Steve's background was.
76. I have been shown the papers for the TPB meeting on 20 February 2007 (CEC00689788). I note the risk table at page 23. It notes that I am marked as the owner of the risk in relation to SDS performance and that micro-management was required. I do not know why my name is next to this risk. I do not recall this. Maybe the responsibilities were shared out amongst the parties. Given that I was commercially-orientated then I think that my role would have been to see what could be done to adapt the strategy to accommodate the emerging difficulties with design progress.
77. The possibility of taking firm and effective action against PB at this stage depends upon what that means. The expectation is that that once you are in a contract with an organisation, you have a strong hold over them and their performance. The reality is that probably the reverse is true. When you have committed to an organisation for a large piece of work (I vaguely recollect that

it was the order of £20m plus to support an on-going scheme) your only real sanction is termination. It is a big decision to remove the designer and then go through the process of obtaining a replacement. You have to be pretty confident that you are going to get a much better organisation. I do not think we were at that stage at that time, if ever.

78. I would agree that part of the problem appeared to be that the SDS contract did not have fixed times for delivery of design. Even if there was a completion date, I think enforcement would have had to have been by the threat of termination for non-performance. I cannot remember the detail of how the contract dealt with non-performance. Usually you go through a succession of notices and then recovery plans etc. If that fails, there is usually a right to termination. Going through that process can destroy the relationship you have with the organisation you are doing business with. They are not necessarily the strongest of sanctions. Sometimes too much emphasis is placed on the management of a contract to its terms. In my view, it is better to focus on the management of the business relationship. That is harder for one-off projects. But is easier for client organisations with ongoing programmes of work.
79. I do not recall the logistics of what happened internally when a risk was identified. I do not recall how a risk was worked through to the risk register. Some of the risks are day-to-day issues that emerge on the project. It is important to differentiate between those things that are uncertainties and those things that are risks. Sometimes, because the project or the design or the procurement does not reach to a particular stage, certain things remain uncertain. The strategy was designed to address and resolve uncertainties through the design process e.g. as the design reaches each certain stage uncertainties are resolved. Money is allocated to those risks in order to provide the funding for whatever the outcome is. It is not a perfect process given that it is predictive in nature.
80. There are things that were issues, for example the quality and delivery from SDS. I think that was an issue with PB. That is evident if you stand back and look at the train of events. The resolution of those things would have involved

some of the actions that were being taken, such as senior level meetings, putting David Crawley in place as Engineering Director, and the meetings he convened in order to try and bring about timely decision-making. I do not recall why I was allocated the responsibility for managing that risk. I am not an engineer. It seems a little bit odd. Maybe there was a rational reason at the time.

81. I have been shown the papers for the TPB meeting dated 20 March 2007 (**TRS00004079**). I note the risk table contained in the papers for the TPB, dated 6 March 2007. I note that at page 40, ARM Risk ID 870, it states in the 'Cause' column: "*SDS Designs are late and do not provide the detail Infraco requires.*" It states in the 'Event' column: "*Infraco does not have detail to achieve Contract Close.*" It states in the 'Effect' column: "*Delay to due diligence and start on site and need to appoint additional design consultants*". I do not know what the reference to the need to appoint additional design consultants is about. I note that this risk is assigned to Gary Easton in the 'Action Owner' column. I note that related risk item Risk ID 286 that "*Due diligence would be carried out by third parties*". That could be a reference to employing another organisation to review the designs. I do not recall that being done. Gary Easton could have been the nominal Head of TSS at the time. I do not recall what happened with the TSS support and agreement. Gary was a commercial person from T&T and T&T were one of the parties to TSS. This could be the explanation for the change of ownership of the risk from me to Gary Easton. Maybe the expectation was that it would come out of TSS in some or other way. Dave Crawley was the person who was liaising with TSS. I do recall that Gary was involved in the project at that time. I cannot, however, recall anything specific surrounding this.
82. I have been shown an email chain dated 21 December 2006 and 3 January 2007 (**CEC01823913**). I was one of the recipients of the email on 21 December. Attached to the email was the SDS baseline programme from December 2006 (Version 9) (**CEC01823914**). The attachment is a long and complicated programme. It speaks for itself. I expected that SDS would adhere to the programme. I have already mentioned some of the reasons why

SDS was behind. I am not sure whether I was aware of all of the reasons for the delay.

83. I have been shown an email that I sent to Nadia Savage dated 9 February 2007 (**TRS00003666**). Attached to that email was a document entitled "INFRACO Initial Analysis and Updated Project Estimate Response to Transport Scotland Queries" (**TRS00003667**). At page 3, it is noted that both the bidders changed contract conditions to protect their position as a result of the inadequate design information. These changes do not necessarily tell you anything about SDS' performance but reflect the level of information available for the initial bid. The initial bids were on the preliminary design information, when SDS was at an early stage in the design process. The changed contract terms refer to the substantive position that you would normally be in at Contract Close. BBS would have qualified their responsibility around designs based on the information they were provided with at that time, which was the preliminary design. It is not particularly surprising that BBS would seek to change the contract conditions. When they initially bid for the contract, BBS would have bid in terms assuming that the approvals for the designs progress were provided.
84. I am not an engineer so I would not expect to have an active involvement in the progression of individual parts of the SDS design. The person in February to April 2007 who had that role would have been David Crawley. He would have been feeding back to Matthew Crosse, not to me. Commercially, SDS was managed by Ailsa McGregor. Someone else took over after Ailsa left. I cannot remember who that was.
85. I have been shown an email from Ailsa McGregor to me, and others, dated 10 May 2007 (**CEC01626391**). I note that in that email, Ailsa suggests that SDS under-resourced the project. That email is pointing to the fact that there were delays to designs prior to my arrival. The concern that SDS was under-resourced was an on-going concern. It is evident from the actions that were taken from the autumn, through to when I left, that there was constant difficulty in getting progress and resolution of design issues. To what extent

that is SDS or others interfering with or not supporting their progress, I do not recall.

86. I have been shown an email chain dated 25 April 2007 and 12 June 2007 (CEC01606237). The email dated 25 April 2007 was sent to me and others by Jim Harries (Transdev). I think Transdev were one of the reviewers of designs. Alastair Richards, who was also copied in, looked after the relationship with Transdev. I note that Jim Harries states: *"We are concerned that, yet again, very poor quality information has been released to Infraco bidders with insufficient checks prior to its release. Our reviews of previous Infraco documentation releases are summarised below, and the emails referenced below are available on request..."* At this stage we would have released design information to the bidders as it emerged. At the time of Jim Harries' comments we were still in the pause period as a result of the Scottish Parliament elections. I do not remember the timescales for the election and the subsequent approval of the scheme. We set up a SharePoint site to convey information to the bidders (this was because of the size of some of the documentation). We would have notified the bidders that the information was there. That was the extent of our (commercial team) involvement. We would not have reviewed the designs. It would be for others to comment on the veracity of Transdev's comments. I think there was a previous concern about the quality of design. I do not recollect what was done about it.
87. In April 2007 it was intended that Transdev would be the operators of the tram system. There was probably a negotiation still to be had to finalise that. Alistair Richards would have been managing that. I forget the timelines for those activities. An operator will always seek to protect their position. Given this, it is not unusual for them to question adequacy and quality of information. The problem exists even with completed schemes. Handover is often very difficult.
88. I note been shown an email sent by Ailsa McGregor's to me and Tony Glazenbrook email 19 June 2007 (CEC01630532). This Email relates to an SDS progress meeting where SDS referred to the claim they had submitted

and their desire for Tie's view on it. She sent me another email on 23 July 2007 describing the reasons for SDS delay. I think this email relates to a claim which PB was pursuing under the SDS contract. I do not recollect the exact details of what the claim was about. I do not recall PB ever saying to me that they would walk away from the project. People say different things to different people depending on their intent. The claim was something that clearly needed to be resolved, and something that could not be left lingering. Ailsa took a very clear view, as is evident from her emails about the need to enforce the contract to its letter. In this circumstance, at the time, we were balancing the need to continue to progress the designs, it being a critical period for delivering the Infraco procurement, and resolving the problems of progress. We needed to resolve all these things one way or the other. This claim was in the background. We needed to take a pragmatic view on the claim. I recall that, in the end, we did resolve it. I do not think SDS got everything they wanted. I doubt that we got everything we wanted. I think that a resolution was approved at the TPB.

89. It is important that issues are dealt with in a timely fashion. If issues are allowed to fester unresolved, they tend to snowball and get in the way of a relationship. They get in the way of delivery. Contracts like the NEC Engineering and Construction Contract (NEC) recognise that it is considered good industry practice to resolve issues as you go along, rather than leaving them to fester and to be resolved at project completion.
90. I have been shown an email chain showing emails dated between 19 July and 20 July 2007 (CEC01627093). The initial emails on 19 July were forwarded to me on 20 July. I note that in its email of 19 July, PB appeared to put great store in unresolved 'critical issues' being responsible for the delays in design. The critical issues would have included the need for timely decision-making on the inputs / CEC's review of things like tram stop proposals. That is the one critical issue that immediately comes to mind. There was a list of critical issues. There were a series of design issues. The one at the Mound sticks in my mind. There were a whole series of critical issues. I have also been shown a PowerPoint presentation which I prepared with others in late December

2007 to summarise the position at that time (CEC01480233). I have also been shown an email exchange dated 3 and 4 January 2008(CEC01483760). I was copied into the email from Tom Hickman on 3 January, and responded on 4 January. In that email, I agreed with Tom Hickman that PB should be asked for a full explanation of the delay.

91. I do recall there was a sticking point surrounding getting approvals for the junctions from CEC. I sat in on a meeting where that was discussed (see above). I don't know whether the critical issues were subsequently resolved. Without looking at, and going back over the SDS claim, I suspect that some of that claim was about the delay in obtaining approvals from CEC on the critical issues. I recall from the meeting that I did attend that there was frustration around the table surrounding the failure of CEC to agree to designs. We recognised that that was causing problems and would inevitably delay design.
92. In my experience from other projects, various critical issues are allocated a 'risk'. That process is basically second-guessing the decisions that the stakeholders would make. There is a need for timely decision-making. There has to be an acceptance that compromises need to be made in designs. You are not going to get perfection (i.e. satisfaction of competing objectives) because that is often impossible. I cannot comment on whether previous iterations of particular designs had sufficient information to enable CEC to make decisions. No one was complaining about the level of the information at the meeting I attended.
93. CEC had the expectation that all the risks would be transferred to SDS. However, the way in which CEC engaged in the approval process meant that some of the risk was inevitably being passed back to them, by virtue of the fact that they were required to make or agree decisions on certain design issues. To a certain extent, CEC's engagement in approvals process did result in SDS being delayed on the critical issues.
94. I have been shown the email chain dated 29 and 30 August 2007 (CEC01682353). One of those in the chain is an email that I sent to Susan

Clark and Graeme Bissett on 30 August. At point 4 in that email, I identify that designs not being delivered to the current programme was the biggest risk to the project. I describe it as "*life or death*". This email is probably a result of me being a little frustrated at the time. I think I was trying to make a point. I am not sure why I was writing to Graeme Bissett. Looking at things now, I think CEC needed to see that it was in their interests to constructively engage in the consents process. I wrote: "*CEC need to accept that if we are to achieve to our budgets then they must lower their expectations in respect of certain structures*". There were all kinds of things being discussed surrounding the architecture being in keeping with the historic City of Edinburgh. That is a fine aspiration; however, CEC wanted a scheme within a certain figure, so compromises had to be made. I think someone was making noises at that time about wanting a particular, almost bespoke, style of tram electrification supporting pole. There was probably other stuff around some of the civil structures too, such as wanting to replicate the shape and form of some of the historic buildings. That was a fine aspiration but it was unaffordable. The progress of the design was key to the strategy being successful and the project being delivered.

95. It was important to underline to CEC, in the LAC presentation, that the approvals process was critically important to the progress of the design. Because of the nature of the contract, when you delay the progress of the design, inadvertently or otherwise, you undermine the strategy. That was my point when I used the phrase "*life and death*". It was important, and clearly that point was not coming across in the presentation. Perhaps I felt it was being glossed over and should not be.
96. I have been shown an email from Matthew Crosse to myself and Andrew Fitchie dated 3 October 2007 (**CEC01621848**). That email included a draft letter to Tom O'Neill, the CEO of PB, from Willie Gallagher (**CEC01621849**). I do not recall this letter. I am sure they sent it to me to obtain my opinion. I do not know if I responded or, if I did, what I said. Looking at the letter now, it sounds broadly like the final letter. I probably just confirmed that it was fine. The intent of the letter was that we would come to an agreement to put to bed

some of the historical issues. The intent was to enable the relationship to progress to the Infraco contract. I think that intent is fairly self-evident from the letter. The letter was drafted to explain our perception of the history of the relationship, where we had got to and our expectations for the future. I think this is particularly evident from section 3 of the draft, about supporting SDS on utilities and getting utilities information.

97. Utilities information is notoriously unreliable. It is not just an issue in Scotland, but nationally. The lack of utilities information caused huge problems on the Croydon tram project. SDS had signed up to effectively take all of that risk, so far as design is concerned. Arguably this was because we did not want to have an arrangement which would drive the kind of behaviours that you have seen here, i.e. seeking to find every opportunity to slip out of the obligation.
98. The other issue around this time was this issue about resources. PB won the support bid for the Manchester tram extension scheme. People were moving. The letter says there was a concern. We wanted a commitment that PB would provide the level of resources required to finish off the project.
99. I have been shown an email that I sent to Matthew Crosse and others dated 1 February 2008 (**TIE00079313**). I have also been shown the replies that I received, dated 1 and 2 February 2008 (**CEC01486332**). Those emails concerned the SDS Incentivisation Agreement. My recollection of the claim settlement, if that is what the compromise agreement is referring to, was that it was contingent on the provision of information and the agreement of a revised programme. I do not directly recall the incentivisation. There perhaps was some debate about the issue. Looking at my email, it appears that we had settled but that there were still concerns about PB's performance. I do not recall where the idea came from for incentivisation. We were clearly toying with the idea of giving PB a further incentive to deliver. That they were commercially not in the best place is not a great incentive for an organisation to deliver or retain staff on a project, regardless of contractual obligation. I do not remember one way or the other whether incentivisation was put in place. I

would have thought that, if it was, it would appear during this period in the documentation. It may be that we took it to the Board and they refused.

100. I have been shown a document entitled draft 'Close Report' dated 10 March 2008 (CEC01428731). From page 34, under the hearing 'Risk Overview', to page 40, there is a description of the difficulties relating to design. I do not remember who produced this report. I think in summary that it is discussing the potential impact of difficulties and that there were risks in the arrangement. It says that we had to make the best that we can of this somewhat imperfect situation. That situation was brought about by a variety of reasons, including the design not being where we would have liked it to be. We had an agreement for the design's delivery over a period of time. We had to adjust the INFRACO arrangement should any of the issues stated materialise. The report is highlighting the need for timely decision-making with a strong eye on the future progress of the designs and the impact of that upon delivery. It also highlights the process that was designed to manage the situation.
101. I think the problems and risks are clear in the Close Report and in other documentation. At this time, we were faced with the issue of the cost of TIE delaying the award of the INFRACO. We were also faced with the issue of getting the deliverer on board. We needed Infraco input into the completion of the design. They were sitting and waiting for the design to be completed. There probably were other activities from Infraco's perspective, such as mobilisation, that could take place concurrently. There is logic in doing it that way, albeit with the risks which are very clearly identified in the Close Report. It may be that nobody went back and read that document, although that is speculation on my part.
102. From February / March 2008 onwards, intensive discussions were held to try and bring about an alignment between TIE's Employers Requirements, SDS designs and Infraco Proposals. We tried to keep the SDS and the Infraco parties separate. We wanted to get as much clarity about their positions before we put them together. If put in a room together, they would inevitably find common ground to get a better position from their joint perspectives from

TIE. We were eventually faced with that regardless. We wanted to delay that meeting as much as possible.

103. Novations are a well understood legal mechanism. Having a backwards and forwards transfer of liabilities is quite hard. It looks simple enough from a legal perspective i.e. when it is written on a piece of paper. In reality delivering a negotiation around these things is quite difficult. I realise the contract refers to it being an obligation on SDS to novate, however, it was not arguably an obligation on Infraco to accept a novation. We had to persuade Infraco to accept a contract. Once you start to think about the detail of how such a complicated arrangement works, or should work, then it perhaps highlights one of the issues and problems within the concept. Whilst there might be an enforceable obligation on the part of SDS to novate, SDS could (and I don't know whether they did) argue that they were not ready to novate.
104. In reality, you are burning money when you extend the programme. There is an inflationary aspect to that process. Costs mount up. There is a judgement to be made about whether to accept the risks and issues associated with pursuing an award, whether to push ahead and finalise design or whether to just wait and accept the costs of waiting. I am sure that is what we weighed up at the time. We decided that we needed to keep momentum. We wanted to get the parties into a position where they could concentrate on doing the work rather than talking about, and arguing about, the completion of a deal. That is some of the background around this time.
105. The discussions were very difficult. Large amounts of money were being demanded by PB. That stuck in TIE's throat a little. We were trying to put in place an arrangement which brought some form of finality to that stage of the delivery of the scheme, in other words the award of the Infraco contract and the novation of SDS. One cannot force someone to do something before they have entered into an agreement to do so. It all had to be undertaken in good faith.

106. I have been shown a draft document entitled '*SDS Contract – Novation Planning*' dated 14 January 2008 (PBH00033608). That document appears to set out PB's view of the difficulties and the effect on novation. At page 26 there is a diagram which illustrates PB's view of how the misalignment of designs has come about. The table explains the views of the parties. The left hand side relates to how SDS saw things and the right hand is how the project saw things. What we were faced with was the need to get the Employer's Requirements completed and coherent with the rest of the draft contract package consistent with the strategy. Concurrently, we needed to get SDS to agree to Employers Requirements. This was because SDS were to delivering to Employer's Requirements which were, at that time, not finalised. Some of those requirements were in the technical specification of the SDS contract itself. The contract describes the overarching objectives of the scheme in terms of timing, various standards that required to be achieved and reliability requirements. We were trying to align PB's view with what we needed to do in order to give life to the contract terms in the final Employer's Requirements. It would have been a barrier to novation if the Employer's Requirements were not agreed. This was another negotiating lever that SDS was using. We recognised that at the time.
107. The technical requirements written against SDS's contract did not deal with all of the issues in the Employer's Requirements. There was a need for a handshake on alignment between the preferred bidder's final offer to deliver something and the Employer's Requirements that set out the obligations and the objectives of that delivery. The Employer's Requirements needed to go to SDS for their review and agreement. Infracore would not sign up to the Employer's Requirements until SDS had reviewed and agreed them. This draft document describes this. I vaguely remember the document. I think there is an obvious logic to it.
108. I do not think that the process of correlating the developing Employer's Requirements and PB's own technical specification, in itself, had anything to do with the delay of the designs. PB had gone down a particular path in developing the technical specifications and developing the designs. That

process was effectively a three-way handshake. There was SDS developing designs and technical specifications, there was the need for the Infraco contract to have the Employer's Requirements, and there was the delivery proposals. All three of these areas had to align. If they were not aligned then nobody would be able to come to an agreement. Why would Infraco agree to enter into a set of Employer's Requirements if they didn't align with the designer's designs and technical specifications? Similarly, why would SDS enter into an agreement with an Infraco if their proposals didn't align with SDS' design? The three areas had to come together.

109. It is too simplistic to view the Employer's Requirements as a conduit between SDS and Infraco. The three areas needed to align. Everybody needed to agree on the alignment. The alignment of the Employer's Requirements with SDS was a major issue during my time with TIE. I recall that I put a proposal to Steve Reynolds in a meeting. I forget who else was there at the time. I was seeking to set out a mechanism to achieve the alignment. I recognised the issues that I have just described. I outlined all of the reasons why we had to seek alignment and how it could be done in a straightforward fashion. The draft document entitled '*SDS Contract – Novation Planning*' was a response to that. This was, in part, PB being clear in their understanding of what needed to happen. They were looking to us for agreement. These things are not set out in any detail. I do not think it would have been much different regardless of where the design actually was. If there had been more time, it clearly would have made the process of aligning the three areas easier. However, even if the design had been complete, we would still have needed to come to an agreement on the alignment. Perhaps the fact that the design was not entirely complete meant that we ended up with an incomplete alignment of the position between the three parties, the various caveats in the final agreement related to the future design activity, future design decisions and the approvals required to complete the designs. I cannot remember further details, however.
110. This was a complex scheme. Because of that, these issues were more problematic to resolve. In conventional design and construct tendering and

contracting, one goes out with a set of Employer's Requirements that are fully complete in defining the client's requirements for the proposed scheme. This may include a design that the client has procured with technical specifications etc. That would set out the technical specifications that support the Employer's Requirements. In these situations you have already got some confidence that the technical specifications support the Employer's Requirements and that therefore tenderers' responses will align to these. When you get the bid back, it is based on those documents. The issues are then just teasing out any remaining misalignments between two parties, rather than all three (client, designer and bidder). I think the lateness of the designs did contribute to the scale of this particular problem. If we had had the designs and all the technical specifications earlier there would have been time to go through this sequentially. In other words, if the Employer's Requirements and technical specifications were fully complete by the time we went out to tender, we would have then had more time to align both the technical specification and the Employer's Requirements with the Infracore proposals. However, I do still think there would have still been discussion and negotiation before novation could be effected.

111. There would have been a benefit, if that was at all possible, in getting the Employer Requirements fully aligned with the technical specifications before selecting a preferred bidder. The designs were nowhere near sufficiently evolved at that time. I do not think the Employer's Requirements were in a suitable state either. I do not recall the reasons for that, or what the particular issues were with the Employer's Requirements. In finalising the Employer's Requirements in preparation for the alignment process I remember that there had been several drafts. Matthew Crosse had spent a lot of time going through the Employer's Requirements between Christmas 2007 and early 2008. He tried to put them into a coherent fashion. However, at the same time there were certain other disagreements with PB. PB's only obligation was to produce the technical specifications in their view. They viewed the Employer's Requirements as an entirely different issue which they said they were not obligated to deliver. Later on there came the realisation on PB's part that the three had to come together and that there needed to be a 'three-way

handshake' to bring about alignment. I do not think anybody had any intention in delaying designs. The fact that it was not managed terribly well is self-evident. I do not think I should speculate further on the nature of the design industry or its capability. I am not a designer.

TIE responsible for design delays

112. I have been shown two letters from David Hutchison (PB) to Ailsa McGregor (TIE), both dated 26 September 2006 (**CEC01794964** and **CEC01794970**). The letters appear to suggest that TIE was responsible for the delays. I remember seeing these letters. There was an obligation in the SDS contract to review designs within a certain time period. That obligation was fairly absolute but proved to be unrealistic. The letters were sent as a result of designs not being submitted. When I joined Tie, the emerging review, which was not complete, identified that the preliminary design was not complete. From memory, there were elements missing. There were also arguments about the quality of the design submitted. However, there was also an issue with TIE not providing a response on their review of the designs within the specified timescale. There was an acknowledgement of the practical problems of responding within the specified timescales. There was an acknowledgement by the project that the volume of information which needed to be reviewed resulted in the review process being quite lengthy. There was also an acknowledgement that approvals could not be given until certain things had been corrected. There was an observation that some of these things were minor corrections but that that some of the items were more significant and critical to progressing the designs. I do not know what the balance was between critical and non-critical items. It was recognised by all parties that the delay with the preliminary design process impeded the continuation of the detailed design process.
113. PB's suggestion that the approval of their designs delayed their own ability to finalise the preliminary designs and, in turn, the detailed design, is in no doubt partly correct. However, the correspondence was written to protect their interests under a pretty tough contract. It is not surprising that they would not

be willing to admit any culpability on their part for the delays. They are not going to admit to the fact that the design was incomplete. There may have been some examples where approvals were holding up design. It is quite conceivable, possibly likely, that that process impacted overall design progress. In the end, I think TIE and PB agreed a programme to complete the reviews of the preliminary design and get the corrections done. TSS was involved in this too as reviewer of the designs on behalf of Tie.

Claims made by and against PB

114. I have been shown the TPB April Report and the papers for the TPB meeting on 24 May 2007 (**CEC01015822**). At page 7, in the minute of the meeting on 19 April 2007, at section 5.15 I am noted as dealing with the SDS claims. It is noted that there would be a counterclaim by TIE. It is also noted that the anticipated end result would be a commercial agreement to support clean SDS novation to Infracore. I have been shown another version of April's TPB Minutes dated 19 April 2007 (**CEC00689792**), where the same point is recorded at page 3. I have been shown a document entitled 'SDS commercial issues resolution' which I prepared in anticipation for a meeting on 9 August 2007 (**TIE00059959**). This provides a fuller explanation. I have been shown a follow up paper which I prepared, dated 14 August 2007 (**CEC01632267**). I have also been shown a further follow up document that I prepared dated 5 September 2007 (**CEC01630445**). At that time we were preparing a counterclaim. We set out a counter-claim to aid our negotiation position in the hope that commercial settlement could be achieved. Our arguments diminished the amount that we paid to PB. We would have discussed the counterclaim as part of the negotiations. Whether we formally wrote to them, I do not recall. Given that we went on to negotiate and came to a commercial settlement, then the TPB must have agreed with this approach. We would not have done so otherwise.
115. I have been shown an email that I sent to Ailsa McGregor on 24 July 2007 (**CEC01628099**). Attached to that email was a table summarising the claim and possible counterclaim (**CEC01628100**). I have also been shown a

document which contains a summary of the TIE claim as at August 2007 in the document entitled draft "Tie Claim to SDS" dated 18 July 2007 (CEC00103624). All this was really largely just a series of questions I was asking Ailsa. The answers would have then gone on to inform the negotiation with SDS surrounding their claim. A lot of this material goes back to the period before my involvement. Ailsa arrived not long before me. When we joined, we looked to dig through the history of the project to try and obtain an understanding of previous events. I think that is all this documentation shows. In summary, I was outlining what I wanted Ailsa to look into to inform the negotiations.

116. It is likely that it was Ailsa who would have put together the table, but it also might have even been someone from DLA under Andrew Fitchie. One way or another, we needed to set out a proposition to enable us to come to a commercial agreement. We had to put the claims behind us so that we could move on. As part of that we would have always considered that we may not get to an agreement. If that was the case then we may have proceeded to formal dispute. That approach would have been taken reluctantly. We recognised that such an approach would have had an impact on the progress of the project.

117. I have been shown an email dated 16 August 2007 from Elliot Scott to me and others dated 14 August 2007 (CEC01632266). Attached to that email was the paper that I had prepared and have already mentioned on the claims for the TPB dated 14 August 2007 (CEC01632267). My paper notes at sections 2.1 and 2.2 that one of the reasons for not pursuing a claim was that there would be delay. A claim would have inevitably caused reputational damage to TIE because TIE was tasked with delivering the project, and the project would not complete for some years. Delays would also, in the broader perception of the people of Scotland, have caused reputational damage to the Scottish Government and CEC. They could have been identified, though not necessarily correctly, as the persons who caused TIE's failure to find a way through the issues. TIE was owned by CEC so inevitably any dispute would have affected CEC's reputation. CEC had been put in the position by the

Scottish Government of being the sponsor for the delivery of the programme. Edinburgh is an important city for Scotland. This was what was in my mind. The more practical point was the disruption to progress and the cost that a major dispute would bring. So the claim needed to be resolved.

118. SDS raised a number of issues and made claims. I have been shown an email exchange dated 30 March 2007 and 2 April 2007 (**CEC01670358**). I was copied into the email dated 30 March 2007. Attached to that email was a document entitled 'Summary of the Actions Needed to Address SDS Commercial Issues' (**CEC01670359**). TIE's response (at least initially) was set out in this email and attachment. This correspondence and paper were drafted during the early days of the resolution. I do not think the paper has anything to do with the resolution. The paper sets out what was practically being done to get the change process to operate in a more timely fashion. It sets out the need to get the right people involved from an engineering and a contractual perspective. I do not think this paper is anything more than that. The paper refers to a change in process and a speedier handling of the claims that are made.
119. I have been shown the Papers for the TPB meeting on 26 September 2007 (**USB00000006**). The document incorporates the minutes of the TPB meeting on 5 September 2007. At page 9, para 3.8.2, it is recorded that no formal counterclaim had been prepared and that the legal advice was that it would be difficult to achieve a quick settlement through these channels. I am noted as saying that further performance issues would be dealt with separately (including penalties for non-delivery) at section 3.8.4. The provisions for this were set out in the contract. I was perhaps making the point that the future would be dealt with in accordance with the prevailing positions at that time. I do not think there were ever any penalties for delay. A quick settlement was of importance as it would avoid delay and additional cost to the project. I was pointing out that such additional delay or cost may or may not be ultimately recoverable.

120. It is clear from the history of this project that issues had to be dealt with as soon as they arose. Resolution becomes more difficult with the passage of time. This is because the people involved move on to other projects. It is self-evident that the people who were dealing with that preliminary design issues were not there when I arrived. Recording and evidencing examples of design issues becomes more difficult as time goes on. This is particularly so where there is a large volume of information to be dealt with. That is the reason that there are major design reviews. I have been in situations where designs have not been adequate to go out to bid and would have been suited to design reviews. This, however, was on smaller scale projects. This project had a fairly unique approach. I think some of the problems emanate from that approach. In many schemes there are problems with the quality of designs, i.e. their adequacy for construction. Those problems are dealt with as best they can in the circumstances. I think that is the fairest way of putting things.
121. SDS was seeking reimbursement for changes based on their interpretation of the contract. That is not at all unusual. That approach usually stems from some or other intervention or failure to do something by a particular point in time by some or other party involved in the contract. In my view, those issues should be dealt with in a timely way. The designer is always reluctant to accept liability, particularly consequential liability. I would not say that the approach by SDS was unusual. There is often, if not always, a negotiation around these things and project delay costs. The threat of liquidated damages is often used to moderate claims.
122. I have described the situation that arises when you get into contract with an organisation. The general view is that you have all of the contractual redresses available in the event that there are problems with delivery. However, practically pulling those levers (precipitating formal dispute and litigation) is expensive, uncertain and introduces delay. Pulling those levers can also destroy a commercial or business relationship. That is why contractual redress is used with caution after a good deal of consideration of all the potential impacts. Pulling those levers potentially means you are precipitating the failure of a project. In my experience, before pursuing a

formal dispute, one should always try to understand both side's positions and the impact of such an approach on the delivery of a project.

123. What we were trying to do with the Infracore and the SDS contract was pass risk that was under the control of third parties and the client onto the contracting parties. Passing such risks can create perverse incentives undermining the project objectives.
124. We negotiated the claims as a basket of issues and came out with a figure which we agreed on. We then introduced some contingent deliverables. We made payment contingent on the delivery of those designs.
125. I have been shown an email dated 22 August 2007 from Andrew Fitchie to me (**CEC01629883**). The purpose of that email was to provide me with advice on how to include provision in any settlement with PB which ensured that TIE could withhold payments to PB in the event of it failing to deliver the required designs. I have been shown an email from me to Andrew Fitchie later that day (**CEC01629951**). Attached to my email was a document prepared by Andrew Fitchie and which I had revised setting out the proposed principles of settlement with PB (**CEC01629952**).
126. I have been shown an email dated 24 August 2007 which I sent to Steve Reynolds (**CEC01630084**). The email sets out the principles of settlement. Attached to that email was a document headed 'changes included in the claim' (**CEC01630085**). In July 2007 we talked about issuing PB with a withholding notice. These documents are part of the plan of those negotiations. We needed PB to see that we were serious. Whether we issued the withholding notice, or not, we would have discussed it with PB. The negotiation strategy is referred to in the July papers to the TPB.
127. I have been shown an email dated 4 September 2007 which I sent to David Mackay and others (**CEC01630600**). Attached to that email was a paper that I had prepared entitled 'SDS Settlement Summary' (**CEC01630601**). Also attached was a paper which I prepared which recommends to the TPB that it approves the settlement negotiated with SDS (**CEC01630602**). It is a

contemporaneous document that sets out my advice to the TPB. I knew several people involved in the final agreement to the recommendation. That was why I got involved. We did send a counterclaim to PB. That is where the letter to PB emanated from. There was a recommendation that Willie formally write to PB as noted in paragraph 4.6 of my paper..

Termination of the contract

128. I have been shown an email chain dated 21 November 2006, 22 November 2006 and 11 December 2006 (**CEC01787158**). In the first email in the chain, I asked Andrew Fitchie for his advice on the basis for terminating the SDS contract. The reply from Sharon Fitzgerald dated 22 November sets out DLA's advice. I then forwarded that advice on to Andie Harper. There were a number of attachments to Sharon's email. The first was a document entitled 'Analysis of the Inter-Relationship and content of the Contractual Provisions within the Key Contracts' (**CEC01787159**). This is mentioned in section 2 of Sharon's email. I have also been shown a document entitled 'key tenets and deliverables in the development partnering and operating franchise agreement' (**CEC01787160**). This is also mentioned in section 2 of Sharon's email. The third was an email of advice from DLA to TIE dated 13 November 2006 (**CEC01787161**). The fourth was a letter from DLA to TIE dated 11 May 2006, which was attached to the email dated 13 November 2006 (**CEC01787162**). The fifth was a letter from DLA to TIE dated 24 March 2006 (**CEC01787163**). They were referred to in section 1 of Sharon's email.
129. By December 2006 there was therefore documentation which suggests that consideration was being given to terminating the contract with PB. This was because of the concerns over PB's performance and the quality of the preliminary design. I am not sure why you would need to consider such a step. You need to first think about what sanctions you have in the contract to address the issue first. Termination is something to be considered in the circumstance of a major failure to perform. I am not sure what the advantages would have been in terminating the contract at that stage. I do not really recall why a decision was taken not to terminate. I suspect it was because we were

already heavily committed to PB and we were aware of the disruptive affect that termination would have on the progress of the project.

130. To achieve the dates in the programme that we were working towards there was a requirement for support from SDS. There were conversations going on about what we needed from them. Action was taken. Willie flew to New York and got assurances to deliver the required design outputs. He felt he could rely on them. I do not remember the decision not to terminate as being a formal decision. It might have been a meeting that I did not attend.
131. At that time, I was not aware of the intention to serve a persistent breach notice on PB. I do not recall any discussion about persistent breach notices being served at that time.
132. I have been shown an email from Andrew Fitchie to me dated 16 August 2007 (**CEC01642351**). Attached to that email was a draft persistent breach notice to be sent to PB (**CEC01642352**). I have also been shown an email from Ailsa McGregor to me and others dated 20 August 2007 (**CEC01629699**). That email shows that Ailsa McGregor had kept all the papers necessary to progress the claim. We had concluded that we needed to achieve a commercial settlement. We went to the Board. We got approval to pursue that. In parallel with that, we were looking to strengthen our position through making the threat of issuing the persistent breach notice. That would have been the first step towards termination. In summary, we wanted to show that we were serious about this. We also wanted a fall back plan in the event that the negotiations did not conclude as we would have liked. This is similarly the case with the threat of withholding payment. It was all part of the on-going tactics to support the negotiations.

Design approvals

133. I am not an engineer so it is difficult for me to comment on whether design material was available for approval on time and whether the designs were reviewed in a timely way once submitted. I was aware that designs were being

submitted and that they were being reviewed. TSS was undertaking a review of the designs. I cannot recollect who reviewed the designs after TSS departed.

134. I have been shown an email chain dated 19 and 20 July 2007 (**CEC01627093**). There was an initial email exchange which did not involve me, which was then forwarded to me and to which I responded on 20 July 2007. This email exchange shows that CEC were complaining that they were not getting packages with all the information to enable them to provide approval. I was not copied in on the specific email where this is mentioned. I feature in the email chain that eventually relates to getting to a position with SDS whereby they would submit information in a certain way. I think CEC are suggesting that they wanted everything to be completed before they would look at it. SDS was pointing out the practical difficulties of doing that. I have not much further to add than that. This isn't an area that I was involved with in any detail. We were trying to reach clarity on exactly what would be presented in terms of the completeness of the information, hence my two questions to Steve.

Novation

135. There were two novations. One was TRAMCO and the other was SDS. I do not recollect any particular problems with the novation of TRAMCO (albeit the early market consultations prior to my arrival had suggested that that was going to be particularly problematic – but the suggested issues never really materialised). It was difficult novating SDS into Infraco. The diagram that is at page 26 of the PB draft document entitled '*SDS Contract – Novation Planning*' dated 14 January 2008 and which I have already discussed (**PBH00033608**) summarises the difficulties involved in achieving that novation.
136. There were three parties involved. All those parties had the right to enforce the contractual obligation to novate. That said, novation certainly could not be foisted upon Infraco without their agreement. Infraco would not agree to accept a novation without an alignment of the three positions i.e. Infraco

contract Employer's Requirements, SDS technical specifications and the Infraco Proposals in response to those Requirements.

137. I do not recollect the particular situation whereby the Wiesbaden Agreement fixed the design in November, which meant that any change in design for the works after November 2007 resulted in a situation where the consortium was able to claim that this was a TIE change and seek additional monies.
138. I recollect the Wiesbaden Agreement. I was not there when the Agreement was negotiated. There were frustrations on the part of the TPB with the progress to award the Infraco contract. Willie and Matthew went out to Wiesbaden where BB were based. They met up with BB and S to try and broker an agreement to bring about the award of the Infraco contract in a more expeditious way. I was subsequently engaged in discussion and correspondence with Richard Walker. The issue that was of concern to BB was the extent of their responsibilities. The Wiesbaden Agreement was not intended to be legally enforceable. It was meant to be an agreed statement of an agreed position. The agreement tried to define the limits of Infraco's responsibility. The limits described were largely geographic e.g. the extent of Infraco's responsibility to make good the road surface, how far that extended beyond the tram alignment, etc. That was unclear before the agreement. I guess if one had a fully completed, fully assured design, then the design would have spoken for itself. I understood Richard Walker's concern at the time to be about physical boundaries of responsibilities to deliver work, particularly road and pavement resurfacing. This was because, in order for him to estimate the cost of the scheme, he needed to have clear limits of BB's responsibility physically for the work. What we drafted was intended to achieve that clear description of responsibility. The Agreement did not get settled until just before Christmas. I forget the reason why, but I do later remember sitting with Steve Wright from S. They wanted some wording added. I wrote that wording out, I think in my hand, at their request. That is what the Wiesbaden agreement was about. Quite how it eventually ended up relating to Schedule 4 I do not really recollect.

139. I do not specifically recall what PB's concern about the novation was. They did have their concerns. I think there was a concern around the alignment of documentation and the willingness of Infracore to accept it. That would have likely as not resulted in problems. The slippage in the designs certainly did not help.
140. In theory there was the means to compel PB to accede to novation. However, practically enforcing it would have been quite difficult. Compelling an organisation to enter into a commercial and business relationship with another party, where they did not want to do so willingly, would probably not have gone well. I do not recollect anything specific about when concerns first started to arise that one or both parties would resist the novation of the design contract. Looking at the documents it is referred to in para 1.2 of the July 07 Negotiation Strategy (CEC01606106). We started to look at this very seriously in the New Year, about January/February 2008. We may well have been thinking about it beforehand. Discussions on novation really got under way with Infracore in January / February 2008.
141. The point about the SDS contract not having a real completion date came to light very late. I remember being quite surprised by it. That might seem a little odd but it was a very complex document, even in its abbreviated form. Maybe my awareness came out of the discussions with Richard Walker. I do not recollect. Presumably there is some documentation that says BBS were concerned about the enforceability of the SDS Agreement. That being the case, then I am sure that was one of the issues at the time.
142. I have had experience in the past where a separate design contractor is appointed from the civils contractor and there is the intention that SDS would be novated into Infracore. I have had experience of similar situations where both parties are unwilling or reluctant to come together in this way. At the time of the formulation of the procurement strategy people were probably not aware of the sort of problems it caused. Novating design contracts was common at the time of the Tram Project. It was quite routine, particularly on the local authority housing schemes, although I have not dealt with any of those. However, they are much simpler schemes. From meeting people

around that part of the industry (i.e. involving housing schemes) I have heard them talk about parties' reluctance and the difficulties of getting novation. That said, I have also heard stories of those arrangements being successful..

143. Novation legally means not only forward liability but also the liability for anything that has passed. The documentation refers to a due diligence exercise which was undertaken by PB on the Infraco Proposals (I believe) from around about when Infraco were appointed as the preferred bidder. Some of PB's comments would have come out of that due diligence process. Those due diligence meetings, and meetings between the parties, facilitated that situation. It was more than just a review of the documentation.

144. Because design works on MUDFA were not completed at the signing of Infraco when SDS was to be novated, it was necessary that there be a further agreement between TIE and PB. I have been shown an email that Damian Sharp sent to me and others dated 18 February 2008 (**CEC01546477**). Attached to that email was a document entitled 'SDS Direct Contract with TIE Ltd, Scope of Services' (**CEC01546478**). The email and attached outlined to me the situation, with the consequences upon the MUDFA works of the design being late and the impact on Infraco. I have been shown an email exchange dated 22 November 2006 and 11 December 2006 (**CEC01787157**). In that email exchange, I see that I sought legal advice from DLA. I do not remember the exchange of emails with Sharon Fitzgerald or the circumstances. Infraco was not responsible for delivering MUDFA yet the SDS contract was all encompassing. Arguably, even if the designs were not outstanding, then you would need to have separation separate contract to maintain SDS liability to Tie for the MUDFA designs. It probably was not the thing that was uppermost in our minds, i.e. Infraco taking on the liability for the design consequences of something that was not in its scope. I would imagine that they clearly would not want to take on this responsibility, all the more so given it was being delivered by a third party contractor. Looking at this correspondence, I obviously asked the question back then. I was suggesting that we might need to have a separate agreement.

145. In part I think that my email exchange with Sharon Fitzgerald envisaged that there would be a requirement to access SDS by TIE post-novation to provide the services that are outlined in the email (including the completion of some utilities diversions at that time). At that time the MUDFA contract was expected to be delivered ahead of the alignment coming through. The two agreements were later envisaged to be on-going contemporaneously or overlapping. The late design issue around MUDFA made the issue more critical as time went on.
146. I have been shown an email from Steve Reynolds to me dated 20 February 2008 (**PBH00016890**). This email is related to the diagram that I discussed earlier (at page 26 of the PB draft document entitled '*SDS Contract – Novation Planning*' dated 14 January 2008 (**PBH00033608**)). This correspondence is part of the initial exchanges to get that alignment process working. Steve is flagging up the points and issues that SDS want to be taken into account. This email exchange is again about the alignment between the technical specifications, the Employer's Requirements and the Infraco Proposals from PB's perspective.
147. I have been shown an email exchange dated 18 and 19 September 2006 (**CEC01793948**). The first email is from me and attached a paper on SDS novation issues. Trudi responded, and I have been shown her marked up version (**CEC01793949**). I presume the comments in the body of the paper in the square brackets are hers. They are the questions she would have asked. I received a response from DLA dated 21 September 2006 (**CEC01794545**), which attached a further marked up version (**CEC01794546**). I note that the emails appear to acknowledge the difficulties that were arising. SDS delays meant that the design would not be finished by the then planned date of award of Infraco. You have to remember that we were working to different timescales than those that ultimately emerged. This was because, at that time, the programme was predicting that we would get to an Infraco award by about May/June of 2007. I do not even recollect whether the issue of the need for an initial bid was known then. At this stage there would have been the issue around the delays in design and the knock-on effect to the delivery of

the detailed design. Concurrently there was also the emerging uncertainty introduced by differing positions being adopted by parties in the run up to the Scottish Parliamentary election. The decision to suspend work pending its outcome pushed out the programme to the autumn of 2007. At that time, we were developing strategies and plans to progress the procurement as quickly as possible. However, for all the reasons I've just stated, forecast award dates then moved out again. At that time we did not envisage the situation as it eventually played out. We were envisaging that Infracore procurement and SDS designs would be progressing concurrently, at least for a period in time, and the need to have a separate contract. We were envisaging that we would not have a complete position whilst we were in the preferred bidder stage. We knew that there would inevitably be an overlap. We were trying to think through and anticipate the issues and what we could do to mitigate them.

148. Delay in the delivery of the detailed design and delays in price meant that we had to come to an agreement with SDS. The correspondence highlighted relates to all of the background work that we had to do to understand the situation. The documentation identifies that we would not have reached or needed a commercial settlement if there was no culpability on the part of TIE and CEC. The issues are set out in my paper. That paper was our first stab at thinking about the issues surrounding the delayed design. I do not recall what the plan was to address the issues and what ultimately happened. I cannot imagine that this paper would have been the end of it. Maybe there were other issues that took our attention away from it. I do not think the problem surrounding keeping BBS in the bid had emerged at that point in time.
149. I don't recall whether my paper went to the Board. I do note that it was copied to James Papps, who was the PUK representative, David Connelly (CEC) and Graeme Bissett. Graeme sat on the TPB. I do not recall whether Damian Sharpe (TS) sat on the TPB at that time. TS were aware of the issues surrounding late design at this stage. By virtue of them being copied and consulted with, TS knew about the issue, as did PUK, CEC and senior people within TIE.

150. I have been shown an email chain dated 27 and 29 March 2007 (CEC01622019). The last email in the chain is from me to Ailsa McGregor and others of 29 March 2007. I note the risks associated with poor SDS performance in terms of novation and the contract intentions. This email is just me confirming a point that Ailsa was making.
151. I do not really recollect why the design changed to a 'self-assured' system. I am sure someone explained it to me at the time but I do not recollect the reasons.
152. I have been shown an email exchange dated 16 and 21 January 2008 (CEC01432587). The first email in the chain is an email from Ian Laing at Pinsent Masons. Pinsent Masons were BBS' legal representatives, and the email sets out BBS' objections to the novation. Pinsents were very good. Looking at the email exchanges I note Suzanne Moore (Pinsent Masons), Philip Hecht (DLA), Andrew Fitchie (DLA) and Martin Gallagher (Siemens' lawyer) were all copied in. Looking at this email chain, I note my comment: *"We are not expecting BBS to inherit a position of SDS in culpable delay. The novation agreement will contain the programme for delivery of the remaining design that aligns with the Infraco programme. This will effectively reset SDS's programme obligations"*. I note that I have asked whether this is correct from a legal perspective. I think I have gone to the bottom email, annotated it and sent it back to Andrew Fitchie. I have annotated the email chain within the body of the emails. I do not recall what is meant by the 'plan' because Pinsent Masons' email does not refer to revised plans. It is possibly the expectation of a further more detailed position that is to be put forward by BBS. The comments in capitals are our emerging thoughts as to how we could resolve these issues with BBS, e.g. by making the programme contemporaneous and adjusting the obligations. My response was for the TIE/DLA team. Jonathan More was the TIE legal person at the time.
153. BBS were raising concerns around the novation of SDS largely on the basis of what has been referred to elsewhere. They were taking on liabilities without any recourse to SDS as SDS was already in breach of their agreement with TIE. Under novation and an unadjusted contract that would have been the

case. I make reference to resetting the time obligation to a contemporaneous programme, which would then reset their obligations to deliver. Maybe at that time I was still unsure about whether there was a real completion obligation in the SDS agreement or not. There is reference to Tom Murray. Andrew Fitchie states: *"to agree that Tom Murray's point about the unavailability of any contractual remedy being missing is wrong"*. I do not recall Andrew's logic for that statement. These are proposals that are relatively early. We were looking to flush out the issues and then work out how we could deal with them. Logically one would not expect the receiving party to take on liability for known historical performance issues under the contract that is being novated to them. Something had to be done in order to reconcile back to a neutral position at the point of novation. I think the comments are about that.

TSS

154. TSS's role, and the procedure for using them, should feature in the background documents. The strategy ought to be set out within the various business cases. TSS's role was to provide technical services these being engineering and commercial services. They were advisors and reviewers. They also provided services to deliver and update the project estimate, services to support the procurement and general commercial support . Much of that was undertaken through co-located personnel. I cannot remember all of the names of the individuals. Their roles did change with time, particularly towards the latter stages of my involvement. There came a point when Matthew Crosse told me that he was not sure that he was getting value out of this arrangement.. He then scaled back TSS's involvement. That might have been in response to a frustration with the quality and level of support that we were getting.
155. We would have welcomed the involvement of people who were more experienced. That is an easy statement to make. Arguably, in an organisation of TIE's size, one would have expected to have that depth. However, during that period of time the industry was still pretty buoyant. We had not yet hit the recession of 2009. People with the level of experience required were generally tied up elsewhere. TIE had the best experience that it could get out of the

limited amount that was available, and particularly so given its geographical location.

156. I do not recall the procedure for using TSS. Most of the persons at TSS involved were co-located and integrated into TIE's team.
157. I have been shown an email from me to Trudi Craggs dated 18 December 2006 (**CEC01787711**). Attached to that email was a document entitled: 'Requirements for Services from TSS' (**CEC01787712**). I noted in my email that I had updated the TSS requirements document and asked Trudi to review in order for us to discuss. TSS had an obligation to produce the Employer's Requirements. I do not recall exactly when Matthew Crosse scaled back TSS's involvement. I think it was autumn 2007. They were not completely demobilised and still provided resources for the finalisation of Employer's Requirements. Design validation was effectively an assurance process. I do not recall why I drafted the document attached to my email. I probably sent this document to Trudi Craggs for her approval. From reviewing the document now, I think it was drafted because we wanted the responsibilities of TSS to be clearer than perhaps were expressed within their current agreement at the time.
158. I have been shown an email from Susan Clark sent to me and others dated 1 June 2007 (**TIE00693361**). Attached to that email was a document entitled 'TSS Contract - Review April 2007' (**TIE00693362**). This document was drafted to bring clarity to what our requirements from TSS would be until the Infraco award. It also sets out our expectations as to how TSS would be managed in very broad terms. The world had moved on from the political uncertainties surrounding whether the Tram Project had political support in April 2007. I do not think that this correspondence was part of an exercise to review where TSS was in light of the result of the Scottish Parliament election. This document was just to set out what we felt our demands would be up until the award.

Costs

159. I have been shown the TPB document prepared for the meeting on Monday 23 October 2006 (**CEC01355258**). It incorporated the monthly progress report for September 2006. At page 11, it states at Table D that the cost for the whole of phase 1 was £623m. The budget is noted as £545m. I do not know whether these figures reflect a Business Case point. The Business Case was not my area. However, estimate production was the responsibility of Commercial. The £623m figure was the estimate at that time. I don't believe it was produced by TSS. SDS had an obligation to produce an estimate. In addition to that, there were estimated costs for project on costs and risk etc. I vaguely recollect the £623m figure and the £545m figure. The £545m was the budget.. This was produced quite early on before a lot of the scope uncertainties prevailing at that earlier stage had been closed out and the designs progressed further. These figures certainly came during the early stages of the project before I joined the project. There was an estimate produced and it was £623m. I do not recall any further detail than that.
160. This document (CEC01788433) at para 3.3 outlines suggestions to reduce cost. There were lots of moving parts at that time. I note that the report has a lesser price of £592.4m inclusive of risk, compared to the £623m referred to above. . The paper to the TPB explains the basis of the estimate. It may be that the original estimate was based on the assumption that 1b would follow 1a. It would have been logical to overlap them so that the management costs were minimised or optimised. I do not know if that was the case but that would be an example of how the estimates could have come down from the £623m. It is fair to say that there were varying factors involved in bringing cost estimates down from £623m but I am unable to recollect any of the detail of that.
161. There was some work done on the estimate under my auspices. The detail of that was done by John Pantony (T&T/TSS). There was some benchmarking work that was done against other tram projects. Some of that information would have come from T&T. That was the source of the information for the

costs. Things we would have looked at, for example, would have been the cost of delivering the on-street works. The off-street works would have been easier to estimate because those would be more conventional railway type works. There was a lot to consider with the on-street works. The phasing of the works, in particular, was significant. These things were looked at and compared to the Nottingham and Croydon schemes. SDS employed Corderoy International to assist in producing the estimate.

162. The costs were built up on an approximate quantities basis. Experienced quantity surveyors would have taken the preliminary design drawings, quantified the major elements of that and then applied industry rates against them. They would have done this whilst making assumptions about the way in which the work would be delivered and the sequence construction delivery. In other words, base costing was undertaken to create a bottom up estimate. The organisation that SDS used (Corderoy) to do that was quite experienced.
163. I have been shown an email chain dated 1 September 2006, 5 September 2006 and 11 September 2006 (**CEC01793334**). I was copied into, or the author of, all of the emails in the chain. It concerns the costs estimate which was to be provided by Cyril Sweett (CSP). Some of this illustrates the scale of the estimating task. At that stage there were some 800 drawings. This email chain refers to the issues that we needed to go back to the design team with. CSP were asked to prepare an independent estimate. It was undertaken on behalf of TIE and TS. CSP were the main provider of commercial support and advice to TS at that time. It was necessary to get approval for this from TS because they were providing funding. CSP was ultimately commissioned by TS to enable them to get confidence that the estimates were right. They were looking for a reference estimate for the estimate that had been produced by SDS. It is not unusual on major schemes to commission a number of estimates from differing quantity surveying practices. Ultimately those estimates provide a range.
164. I have been shown an email that I sent to John Pantony and others on 30 October 2006 (**CEC01796485**). That email and the spreadsheet attached to it

set out savings that might be made on the project. There would have been discussions within the project on potential savings. There would have been discussions about what the options were for bringing the estimated costs down closer to the budget. There is nothing unusual in this process. It has been put to me that that there was an on-going approach to squeeze the costs. I disagree. Two estimates that were produced. One was provided by SDS and the other was independently procured by TS. I know that one estimate was certainly in excess of the budget. I am pretty sure the other one also indicated a figure over the budget. Therefore we then looked at savings opportunities in order to bring costs down to the budget level. This is standard industry practice and the way that costs for emerging scheme designs are managed to budget. It is self-evident that at the £623m level the scheme was unaffordable. It has to be remembered that they represented a particular scope at that time. We would then review the scope to consider opportunities to reduce the estimate. This is what the attachment to this email is referring to.

165. I would refute that these documents are an example of the beginning stages of TIE reverse engineering i.e. contriving a process to get a convenient answer. The process outlined in 166 was followed. In any event, that process did not get the figure back to £545m budget level. Self-evidently, because the estimate was £592m over £545m budget level.

166. I have been shown a paper that I prepared for the TPB meeting on 9 November 2006 that updated the project cost estimate (**CEC01788433**). My paper notes that it was produced on the basis of the preliminary designs (para 1.2). This is just a reference to the basis of the. This report is the summary of the estimate. There would have been assumptions and qualifications that would have been included in that estimate. The paper itself explains how the estimates were produced. They were based on a quantification of the preliminary designs followed by the application of approximate estimating rates to those preliminary designs. That is standard industry process for developing estimates at that stage. The budget coding process diagram is essentially a cost breakdown structure. One defines a project in terms of its

cost elements so that it can be consistently managed in its parts. Section 5.2.1 of the paper sets out the basis of the preliminary designs in the estimate.

167. I have been shown an email from Ken Davis to John Pantony dated 22 September 2006 (CEC01794798). I am copied into the email. Attached to that email was a covering letter from Cyril Sweett dated 22 September 2006 (CEC01794800) and a Cost Plan Estimate dated 21 September 2006 (CEC01794799). I think we sent TS / CSP the design information package and all the necessary information to develop an estimate. That is how they came up with an independent figure. The reference to cost plan is an industry term for an estimate breakdown. Without digging into the detail, I am not clear how we ended up with that estimate. There is £75m to be added for trams, so I think the million plus pounds (noted for 'trams' on page 3) was probably for enabling works. That is clearly not included in that summary. I am sure we reconciled the figures somewhere but I don't recollect the detail. It would not have taken into account costs incurred to date, which were quite substantial at that stage, or the project management. The £300m is not directly comparable to the £592 or the £623 figure. Estimates are produced for the various the constituent elements of the work. The total estimate allocated to the principal elements forms the Cost Plan. You can then use that plan to control your budgets.
168. I have been shown a letter that I sent to CSP dated 17 November 2006 (CEC01797775). This confirms that we were getting an independent view of cost. We reconciled that estimate with the SDS estimates. I do not recollect the subsequent steps or the detail of that reconciliation. This letter appears to show that the reconciliation was addressed. It says in the covering letter that there was a divergence with the SDS estimate. The estimate was conceivably an amalgam of both the SDS estimate and the CSP estimate. I do not recollect the detail. The enclosure with the letter, entitled 'Reconciliation', appears to confirm that. It explains the adjustments made to derive the final estimate. There is a £31m uplift on the SDS estimate. This is perhaps not that material at that stage of the project, because they are both of the same order. Rarely will two organisations produce the same estimated cost from the same

information. This is because it is an estimate of future productivity based on a judgement by the estimator on rate selection. This document explains what differences between the two estimates. There was a lot of detailed work done to review and validate the estimate. For example the adjustment to Highways: SDS I think assumed that only a narrow strip of highways would be resurfaced where resurface the part of the street that the tracks run through. This was adjusted to allow for resurfacing of the whole of the road. We are saying here that we recognised that the SDS assumption was not right and an adjustment was made. That is where we ended up: £230m. We reviewed the information in detail and adjusted the estimate accordingly.

169. The £592m figure came out of the review of both the SDS estimate and the CSP estimate. We went through them both and looked at them in detail. We made adjustments where the SDS estimate was wrong. Those adjustments added £200m + to their figure. I think the £623m is from a different point in time. To make sense of some of these things you would need to put them on a timeline. If that is not done then it is difficult to understand the evolution of the estimate. Essentially, it was an evolving estimate at the stage. We had a figure of £623m, but I am not exactly sure where that figure came from; an earlier estimate as indicated above. Separate from that, we had the completed SDS figure. Following that we requested CSP to undertake a separate estimating exercise. We then put the SDS and the CSP estimates together. We reviewed them in the detail. We looked at the assumptions that those estimates were founded upon and made adjustments where we felt that was appropriate. That process ended up with the figure of £592m. This included project management costs and risk etc. CSP and SDS were not required to estimate these elements. Turner & Townsend (TSS) reviewed both the SDS and CSP estimates and recommended adjustments. Costs spent to date would also have been added. I remember the earlier £623m number. It was probably an earlier fairly fast and loose estimate. I do not know its origin for certain.

170. I have been shown a document entitled 'Preliminary Design Stage Project Estimate Update' dated 9 December 2006 (CEC01797263). I prepared this

9 December 2006
should be
9 November 2006

paper for the TPB. Optimism Bias is generally used, and applied to, very early stage estimates. The estimates prior to this were based on the preliminary design. Because of this, one had to make a lot of big shape and form decisions. Optimism Bias is a process developed by the Treasury. It was a means whereby percentages were added to early stage figures to counter the human tendency for optimism, i.e. looking at the most favourable outcomes. There is a guidance which sets out how much should be applied. What we did was undertake a quantitative risk assessment (QRA) approach at the P90 level, which is near certainty. The P90 level takes into account almost all the outcomes and is a very cautious level used to assess confidence. We undertook a QRA approach at the P90 level rather than applying Optimism Bias. One would not do both at the same time as it would be duplicative. So it's a proxy as stated.

171. The £375m budget featured at an early stage well before my time and well before the preliminary design. The £375m was an early stage estimate. It is appropriate to add Optimism Bias in the early stages of a project where shape and form are largely undefined. However, past that stage it is more appropriate to undertake a QRA. I would refute that ways were found to leave Optimism Bias out of the estimates. I do not think that is right. I do not think it is correct to say that the consequence was that Optimism Bias was not in fact assessed or factored in.
172. I have been shown an email that I sent to John Pantony and others dated 30 October 2006 (CEC01796485). Attached to that email was a document setting out savings I considered could be made (CEC01796486 **Note: Document not provided**). An estimate was being developed from before I arrived and continued right through to the paper I submitted to the Board in November. Clearly there was a pressure on costs. The figures were self-evidently above the £545m. We were looking at scope and opportunities to bring the cost back closer to budget. The £592m is actually nearer the £623m than it is the £545m. All this was part of the finalisation of the estimate. I think the use of the word "target" in my email is just loose language for budget, i.e. the £545m figure was a target. We were a long way from it at that stage.

173. I do not agree that the savings were not so much the result of a proper analysis of costs but more a fig leaf to justify making the numbers smaller. I come back to the point that, if that truly was the case, the estimate would have been £545m. If we were looking to inveigle that figure, then we would not have settled at figure of £592m. That figure was a long way from £545m. We went through a standard process to develop the estimates. We got independent check estimates. On review taking account of the check estimates we adjusted the SDS figure upwards. We reviewed scope etc. Clearly we are talking about scope in the 6/12 trams issue referred to in the email. All this was just part of the process of finalising an estimate. Nothing more and nothing less.

Management of Risk and Optimism Bias

174. We had a Risk Manager, Nina Cuckow. She was employed by T&T(TSS) at that time. Risk workshops were undertaken with relevant parties to identify risks. The risk management approach adopted was a fairly standardised process following industry normal practice. Risks were identified, evaluated and quantified through workshops. Risk assessment was supported by quantitative analysis of the impacts, for example cost and time would have been estimated in the normal way. The risks would have been identified through an interrogation of the stakeholder relationships, project interfaces, scope, designs and programme.

175. Risks were probably allocated to the person in the programme who could manage or mitigate the risk. That person would lead or direct how the risk should be managed. I do not recollect in detail how risks were allocated. Jim McEwan wasn't involved in this process. Jim McEwan came to the project at a later ~~much later~~ date. My first encounter with him would have been prior to the Audit Scotland review. I cannot remember his role exactly. He increasingly became more deeply involved in the negotiations with Infracore and SDS around January/ February time in 2008..

176. The process for managing risk was no different from the way it was on other projects I have worked on. Not to my recollection, I do not recall TS or CEC imposing any requirements on how risk was managed.
177. I have been shown the document prepared for the TPB meeting on 23 October 2006 (**CEC01355258**). I note that from the document at pages 13 - 15 that I signed off papers and circulated the risk register. I also nominated as designated owner for a number of risks in the risk register. My role was to develop the estimate and manage the risks component surrounding it.
178. I imagine that when a problem arose that had not been anticipated as a risk there was a draw down on the contingency and an update of the estimate at the time. Presumably the risk register was updated as well. When a risk is realised it gets removed from the risk register and programme and estimate adjusted. Similarly if the risk is not realised then it is also removed or flagged as no longer applicable. That is the standard process. A risk would get added into the risk register where a problem arose that had not been anticipated. Having said that, I could not point to a specific example of this (I don't recall that level of detail).
179. All team members have an input into the risk process during the delivery of infrastructure projects. Identifying risks is a collective exercise. The exercise then becomes development of mitigations and managing those mitigations. Just about all parties have a role. This is evidenced by the number of names on the risk register. People were engaged within the risk process as part of their delivery of their day to day role. They would then be involved in the mitigations.
180. I have been shown an email chain dated 7 February 2007 and 15 March 2007 (**CEC01791794**). The email dated 15 March 2007 is from Nina Cuckow, which was copied to me. That email notes that there had been changes in the way risk was to be managed. Mark Hamill was subsequently recruited to strengthen the management of risk as the project evolved. The decision this email is referring to in July 2006 was taken before my time. In the original

SDS contract, the management of risk was SDS's responsibility. This was probably because they had an obligation to deliver the designs but also an obligation to produce an estimate or estimates. They would not have been aware of all of the issues. It is arguable that they were not sufficiently independent to deliver this role, given that they were the designer, particularly if risks related to their own performance. I can see that there was logic in taking that decision. It is standard practice for the process of risk management to be delivered by a member of the main project team. In summary, I think Nina Cuckow is talking historically about changes that were made to the way in which risk was managed.

181. I do not think this was all part of us trying to ramp up the closing out of risk prior to the signing of Infracore. It was about where responsibility should more correctly lie. The decision was taken to take that responsibility away from SDS. I can see the logic of doing that, i.e. making sure risk is assessed independently of the organisation that is delivering the design. In my experience, it is usually a member of the core project team who has the responsibility for risk management. Nina's email probably is from the cut and thrust of the management of the contract.
182. I have been shown the papers for the TPB meeting for August 2006 (**CEC01688881**). It incorporates the monthly progress report for August 2006, and I note that at page 5 it is recorded that primary responsibility for risk management is to be taken away from SDS. I have also been shown the papers for the TPB meeting on 23 October 2006 (**CEC01355258**). At pages 13 to 15, there is a paper about the primary risk register dated 23 October 2006. These documents are referring to the change in responsibility for developing risk. One of the significant things is that the August 2006 document refers to risks and opportunities being considered together. Given that the project budget was under pressure at this time, there was clearly a need to identify any opportunities to reduce the capital costs. Reference is made to various opportunities and things that were being considered. I note that a value engineering exercise is discussed. Considering opportunities with risks and applying value engineering are standard project management

practices. That (value engineering) was intended for autumn but I think actually commenced after Christmas 2006.

183. There was a risk specialist brought on board to convene a series of meetings to identify the value engineering opportunities. There was discussion at the time about whether or not the depot should be located at Gogar or Leith. I forget the technicalities as to why one location was better than the other. In the end it was left at Gogar. Another example of one of the value engineering successes was the level of excavation of the depot. That was largely to do with the flight path into Edinburgh Airport. The level had been set through applying a contingency which required a deeper dig. That contingency was expensive. There was a substantial amount of money saved through reviewing that area and getting the agreement with Edinburgh Airport that we could raise the formation level of the depot. There was a significant change when that responsibility was brought back into the core team of the Tram Project. Opportunities were considered as well as risks. It was just really a way of formalising the process for capturing and assessing opportunities.
184. I note that in the papers for the TPB meeting in August 2006, at page 16 I am noted as being responsible for the risk of SDS deliverables, and that they are referred to as being below the quality levels required or being late. I note that page 45 appears to suggest that the slippage in design was already apparent at this time. Someone obviously allocated that risk to me just before or at the time I arrived on the project. I do not know whether I even knew about that happening. I think there was an expectation that I would be managing that contract in detail. That was not the case. I do not think I would have had a view as to whether the treatment strategy was complete or ahead of schedule in August 2006. I had only just arrived. The slippage in design was self-evidently apparent at the time of my arrival. There was a debate over the timing for provision of the preliminary design. SDS's contention was that it was due to TIE's failure to review within the set timescales. That must have been partly correct because of the fact that it was something that was taken into account in a later negotiations on the SDS claim.

185. Suggesting that nothing was done to reflect the risk of the deteriorating relationship with SDS in the risk register is at variance with the fact that, in August 2006, there was an item in the risk register about SDS deliverables being below the quality levels required and being late. Clearly there was an item in the risk register expressing concern about all of that. SDS performance was an on-going concern. I think that's evident from the documents.
186. I have been shown the document entitled 'Preliminary Design Stage Project Estate Update' dated 9 November 2006 (CEC01788433). I have already discussed issues surrounding P90 and Optimism Bias. I talked about the P90 level providing a high level of statistical confidence. I think my comment is perhaps relevant to that. I note paragraph 6.5. I should have said "*a P90 level of certainty, and therefore includes for Optimism bias*". What needs to be remembered is that the estimate was based on the preliminary design. The preliminary design set out more detail on the 'shape and form' form of the scheme. Off the back of that, the bottom up estimate was prepared and quantities were derived. We undertook a QRA to understand and identify the uncertainties within the scheme as it stood at that point in time. The estimate was based on the preliminary design. I am not suggesting that there is not a contradiction between the statements about the risks as they prevailed at that time and slippage in the delivery of the design. Certainly not in paragraph 6.5. It is not saying that, that is an incorrect interpretation of that paragraph.
187. I have been shown the papers prepared for the TPB meeting on 11 December 2006 (CEC01695695). The table of risks included within those papers at page 36 refers to the danger of cost creep (Risk ID 281). The stated way to address it includes improving the robustness of the procurement plan, finalising the estimate and applying change control. I note it states: "*Undertake further Value Engineering*" at the top of page 37. I have explained what value engineering sought to do. I note it states at page 36: "*Finalise project estimate and functional specification and apply change control*". That is essentially to update the estimate (the £592m figure in that estimate in November 2006) once value engineering opportunities had been considered. The statement: "*improve robustness of procurement of procurement plan*",

meant that we would seek to identify the issues and try to get to grips with them early on. An example of this was where we were thinking early on about how SDS could be novated and what the issues would be in that novation. It was to try and anticipate problems and have a plan for addressing them. This is not unusual in schemes of this complexity or scale. We recognised within projects, particularly in their earlier stages, that there is an opportunity to reduce costs through value engineering. I gave an example of one which was done which could then help to offset other emerging problems. All the things set out here were done. The actions set out here were on-going throughout the project.

188. All this relates effectively to value engineering. This is all a lengthy way of saying the same thing. The report is stating that the original risk treatment, including applying value engineering, was due to conclude in Sept 06. The three treatments that replaced the original were a clearer set of activities to mitigate this risk. Some work and thought had been given to this up to Sept 2006, but we recognised that, at that point in time, more needed to be done. There was quite an extensive value engineering exercise undertaken in January and February 2007, Andie Harper led this exercise.
189. "*Treatment closed and replaced above*" on page 37 means that we have replaced this one with those in the box that's above. We are essentially saying that we needed to do more value engineering to create headroom within the estimate.
190. I have been shown the PowerPoint presentation dated 15 October 2007 (CEC01358513). This presentation was given to the joint meeting of the TPB and TIE Board. At page 50, it refers to an estimate of £498m for phase 1a. That is said to include 15% risk and contingency (page 51). Miriam Thorne, who delivered this part of the presentation, worked with Stewart McGarrity. I note page 52, which dealt with risks. Generally one would look at risks based on the 'to go costs'. Clearly it is not much sense to assess risk and contingency in relation to money that has already been spent or events that have already passed. The estimate at that time was £498m. The risk

allowance is £49m. £119m is the cost that had already been spent and represented events that have already passed. If you deduct the risk allowance and the costs that had already been spent from the overall estimate you get £330m. The risk allowance, when expressed as a percentage of the overall £330m, roughly provides the 15% figure.

191. I have been shown an email from Fiona Duncan dated 18 September 2006, which is copied to me (**TRS00002788**). Attached to that email was a document entitled 'monthly progress report - to period 6' dated 18 September 2006 (**TRS00002789**). I note that the TPB noted concerns with SDS performance. Also attached to that email was a copy of the risk register (**TRS00002791**). I note that, despite the terms of the progress report, the risk register on the second row of page 6 gives a green rating to that risk. I am noted as being responsible. At the time of these documents I had only been with TIE for about a month or so. I guess I was just getting sighted on all of those issues. The way in which the reporting process worked was that Fiona would email a draft to me and Andie for review. Whether that report represented the final position following review and editing I do not recall.
192. By the time that I had arrived the updating of the project estimate was in progress. At that time, it was on an approximate quantities basis, as explained previously. It was quite detailed and prepared based on the preliminary design drawings. I do not think it was appropriate to apply Optimism Bias to an estimate that includes a P90 level of risk. A quantified risk assessment was undertaken and it is referred to in the estimate report that was sent to the Board in November 2006. Thereafter we applied a QRA at each stage. It is inappropriate to use Optimism Bias when one has a scheme where shape and form has been defined at preliminary design. Optimism Bias is largely for early stage estimating. By the time I arrived I thought that the designs were finished sufficiently to define shape and form. I thought they were because, in order to apply quantities, one needs to have drawings which show the different types of structures, the alignment and the general nature of the structures and work. The preliminary design drawings generally did show that. I had an awareness of Optimism Bias from previous projects before I started with TIE. However, I

think it was relatively new in the 2000s. It was not a factor historically that had been applied prior to that date. There was no guidance provided to me regarding its use on the Tram Project. I believe OGC produced guidance on the use of Optimism Bias. It would all now be covered in the Treasury Green Book. Optimism Bias is gradually being superseded by more refined approaches. Optimism Bias did not remain as an element of the cost up to conclusion of the contract. Clearly it did not because we did not apply it to the November 2006 estimate. I have been shown the TPB Board document dated 9 November 2006 (**CEC01788433**). Nina Cuckow carried out the Risk Analysis and QRA referred to in that document at para 6.5 on page 8.

193. I have been shown an email from Fiona Duncan dated 18 September 2006 (**TRS00002788**). I am copied into that email. There were a number of attachments. First there was a monthly TPB progress report to period 6 2006 (**TRS00002789**). Secondly, there was a spreadsheet (**TRS00002790**). Thirdly, there was a copy of the risk register (**TRS00002791**). Fourthly, there was a further chart (**TRS00002792**). I note that at page 2 of the report, it is noted that PB's performance is a key concern and that it will have an effect on transfer of risk. I note that the risk register at page 6 shows that SDS deliverables have a green light. This was a report that was issued on 1 September 2006 to TS. The risk is incorrectly indicated as being green. I was relatively new to the project. I probably was not fully aware of the issues with SDS at that time.
194. I note that in October 2006, despite all the SDS problems that were noted as affecting novation, the risk register had a green rating for treatment in August. I have been shown an email dated 12 October 2006 from Nina Cuckow (**CEC01795993**). I am copied in. Attached to the email was an updated version of the risk register (**CEC01795994**). The SDS Deliverables section (page 6) was updated, but marked as amber as at the end of September. I came to the project in August. The green rating in August would have been in the early stages of my involvement. Amber in September would have reflected our on-going review of the SDS position at that time and our emerging concerns about their performance.

195. I have been shown an email exchange which I was party to dated 21 December 2006 and 3 January 2007 (**CEC01788354**). I note that in January 2007 the intention was to close off the risk but, at Alasdair Slessor's suggestion, I kept it open. I forget Alasdair Slessor's exact role. I think he was involved in the management of SDS, maybe MUDFA, but he would have been close to their performance. I am not sure if there was a clear intention to close off the risk. Clearly a person, perhaps closer to the issues, intervened. I agreed with their conclusion that it should have been kept open, as the issues with SDS were still on-going.
196. I have been shown an email from Nina Cuckow to me dated 17 October 2006 (**CEC01796146**). Attached to that email was a document entitled 'Risk and Uncertainty' (**CEC01796147**). The paper talks about P90 and QRA. Essentially P90 and QRA was a proxy for Optimism Bias. We took that approach with the agreement of TS (that's what this note seems to say). The project applied a QRA approach in light of the stage that the scheme had reached. QRA was effectively a substitution for Optimism Bias given the stage at which the project had progressed. Most of the terms and concepts in the note refer to the QRA process. The four generic heads were taken account of within the QRA. I would point out that the paper refers to P50 being used as the normal level of confidence. This project was being cautious in applying a P90 level of confidence. That effectively increased the level of risk allowance applied to the project.
197. Base cost is the base estimate as derived from an approximate quantities estimating purpose. Contingency, quantified risk and Optimism Bias. Contingencies are unknown unknowns. Quantified risks are the items that you do know. Optimism Bias is a different approach. It is about applying a percentage to early stage estimate to allow for the human tendency to be optimistic in determining, or estimating, the outturn cost. That is explained in the note. We agreed with TS that we would take a QRA approach using a P90 confidence level. We agreed with TS that this was an acceptable approach for assessing risk and uncertainty. None of the elements were dropped. There is effectively an overlap. There is actually three aspects if you are talking about

uncertainty. Base cost clearly remains the same for each approach. Contingency, quantified risk and Optimism Bias were applied to the base cost.

198. I have been shown an email that I sent to Andrew Holmes dated 11 December 2006 (CEC01787192). Attached to that email was a document entitled 'Summary of Risk Transfer Position' (CEC01787193). The purpose of this note was to identify the risks as we saw them at that time. Further detail was included in the draft Final Business Case (which Andrew would have had access to). At that time there was no change to the risks that lay with CEC. Those risks would have been identified subsequent to CEC reviewing the project documentation and procurement strategy. I believe there were various papers produced as the project proceeded which kept CEC informed of changes to their risk exposure. We had regular meetings with representatives of CEC. I do not recall the details of what exactly was discussed or the reports that were produced. I do not know whose role it was to make sure that the Council was updated. I would imagine that that was a function of one or other of the Boards on which CEC sat. CEC operated in quite close proximity to the project. They had representatives, certainly latterly, embedded in the project team. They would have been aware of the issues around the progress of the project. The first risk in my list is very broad. It is difficult to envisage exactly what might be in the mind of CEC in terms of any changes to the scope of the project. This is highlighting that changing the scope of the work would not be particularly wise. This list effectively put CEC on notice as to the risks.
199. I note John Ramsay's email to TS dated 12 January 2007 (TRS00003506) where he states *"You might wish to note that there is a degree of residual sensitivity within tie regarding our preference for a higher level of OB at this stage (20% at least) I emphasised that this only remained acceptable so long as tie pursues a robust approach to risk management levels – something that CSP are keen to pursue and to which tie indicated a willingness to assist with over the next few weeks"*. As referred to in 200 above TIE based their estimate on a quantified risk assessment and not by adding OB to the base estimate. Not a sensitivity but more an ongoing debate as to the appropriateness of OB..

200. I have been shown an email sent by Matthew Crosse to Willie Gallagher dated 26 January 2007 (**CEC01789821**). I was copied in. Attached to that email was a document entitled 'Infraco Initial Tender Return Project Estimate Update' (**CEC01789822**). I had prepared that note. The purpose of this note was to provide a project estimate with updated figures based on Infraco tenders. The effective rate of risk is higher; the risk allowance is broadly the same as was included in the November estimates." The figure was determined through QRA. This needs to be considered in conjunction with the initial bid. These updated estimates were developed with the cost information, the programme information and the Infraco proposals that came back from both bidders in early January 2007. On the basis of those we updated the estimate. This did increase the overall estimates. There were proposals at that time to moderate increases in expenditure through value engineering. Value engineering was planned for January and was undertaken by Mike Jeffries. He was a risk specialist. Hence the adjustments to bring the scheme back closer to the available funding. We looked closely at the levels of confidence in each element of the updated estimate. There was also a more detailed project estimate summary appended which is not included here. That document would have shown the confidence levels of each of the elements. Optimism Bias was not factored in because a QRA approach was agreed to be taken with TS.
201. I have been shown an email from me to Nadia Savage of Transport Scotland dated 12 February 2007 (**TRS00003674**). Attached to that email was a document entitled 'Response to Transport Scotland Queries' (**TRS00003675**). I have also been shown a further email that I sent Nadia Savage on 12 February 2007 (**TRS00003676**). Attached to that email were the appendices relating to risk (**TRS00003677**). Finally, I have been shown an email which Nadia Savage then sent on to Damian Sharp and others dated 13 February 2007 (**TRS00003673**). The purpose of the paper attached to my initial email was to provide TS with information on how we had reviewed the initial bids from the two bidders and how we had updated the estimates to take account of the significant qualifications and assumptions.

202. Going through the documentation provided to me by the Inquiry has reminded me of how much work we actually did do on this. There was a huge amount of work that went into the review of the initial bids. There were many people helping out. There were a couple of employees and some people from TSS. Bob Dawson was the person who largely led the bidding process. My name inevitably would appear on a large number of the documents given the nature of the work that was being done.
203. I note that at paragraph 8 on page 8 of my paper, I state: "*Remind bidders of the significant buying power that Transport Scotland have...*" I discussed earlier about the changes to the governance arrangements which effectively excluded TS from further involvement with the project. It is difficult to say whether TS's withdrawal did, in itself, have an effect on the confidence of the bidders. In a negotiation people do not entirely show their cards. At the time, TIE looked at it as being a good thing that TS were not involved. Certainly with the benefit of hindsight, that was a mistake.
204. In terms of external scrutiny, I had quite a lot of respect for Nadia Savage. She was a quantity surveyor. She had a similar background to me. She was quite smart. The questions she asked were generally intelligent and to the point. I had no difficulty in being transparent when answering the questions posed. I think some of the frustration of external scrutiny is having to go round the reporting loop several times whilst producing multiple reports. All this is undertaken when you're busy trying to deal with the direct project issues and business. Your frustrations can boil over sometimes. There is always a tension between reviewing organisations and delivering organisations. I recognise now that those tensions are an inevitable consequence of external scrutiny. Your initial emotional response is to resist those things but you have to try and take a step back and be grown up about it. This was tax payers' money and therefore transparency and scrutiny were important. That seemed to get a bit lost further on. With the benefit of hindsight, CEC were not equipped to deal with something of this scale. I think that is very obvious looking back. I cannot speak for what happened in the delivery phase because I was not there. You can produce and explain things, but if an

organisation has no experience or capability in commissioning or delivering complex projects, then it is an open question whether your explanations are truly understood. It is an inevitable tension. I think there was certainly a lack of appreciation of what was being said by TS and various people.

205. The Financial Close Report identified all of the big issues that people needed to be sighted on. That was done to make sure people did not forget to address them. I do not know whether anybody referred back to the issues that were raised in that Financial Close Report or whether they were addressed.
206. I think, on an on-going basis, it would have been helpful to have TS as part of the governance process. We would have been able to capitalise on the leverage that TS had. We would have used their technical knowledge and experience to gain another perspective on the proposals and the approaches we were putting forward when dealing with the emerging issues. In my view, it was a mistake to take TS out of the picture. TS had two aspects to it: a political aspect and a technical aspect. The political side can be bamboozling, and it is not something that I understand. The technical aspect, however, was certainly something that was required on the project.
207. I have been asked about QEV (Can't see any reference to this in these documents). I am guessing that QEV is perhaps something to do with one of the ways in which you measure project progress (i.e. Earned Value). I am not sure it would have been entirely appropriate for a milestone payment type arrangement.
208. I have been shown an email chain dated 2, 3 and 4 April 2007 (**TRS00004168**). The first email in the chain was an email that I sent to Lorna Davis. Attached to my email was a document entitled 'Risk Reporting Summary' (**TRS00004169**). The reference to 'WBS' in that document stands for 'work breakdown structure'. A WBS sets out the main work elements used to construct a programme. This document explains the technical problems of breaking individual elements out of the risk allowance. When you construct a QRA, or undertake a QRA, you estimate the impact values, the impacts and

pre-mitigation and post mitigation. That gives set figures. They are then put through a Monte Carlo model. That effectively looks at each of the risks and models and applies complex statistics to derive an aggregate risk value. The number derived makes the assumption that not all risks will be realised. In a group of risks, not all risks will be realised at their input value. It is a further refinement of the input values. To deconstruct that aggregate risk value, which effectively looks at all risks in the aggregate and applies a statistical model, can only be approximated. TS were asking for the individual values and individual items grouped into a series of categories. There was a fair amount of work done in order to do that. We worked out a method to approximate the proportionate value of each of the main elements that they were asking for. The overall final risk figure had been derived from that statistical model. This was just to make it clear with TS how we would arrive at the figure. This was to make sure that everybody understood and that we had a common understanding and agreement on how we would handle that. It is not particularly relevant in the grand scheme of things. It is a highly technical document.

209. I have been shown an email chain dated 9 May 2007 (**CEC01626218**). The second email in the chain is an email to me from Nina Cuckow. This email is about sorting out the technicalities of how we would align with the TS technical requirements for reporting risk. Nina was telling me that there were issues in reconciling that with the way in which the Business Case calculations were done. Stewart McGarrity would probably have been more up to speed with those technicalities of that than me. What Nina is saying is that P50, in conjunction with Optimism Bias, produces a figure which is likely below the Business Case figure. Effectively, she is saying that there was a double counting of risk in adopting that approach. I think that is why there was concern. This is all about working through the further detail in how to align TIE's approach with TS's reporting requirements.
210. I have been shown an email exchange dated 7 and 10 September 2007 (**TIE00350211**). Both emails in that chain were sent by Mark Hamill to me and Miriam Thorne. There was an attached spreadsheet (**TIE00350212**). This

was a theoretical exercise that was run to try and forecast what the risk figures might be once we had got through the Infraco negotiations, based on the risks that would be mitigated, as anticipated at that point in time.

211. I note that right after Wiesbaden, Duncan Fraser (CEC) appears to have been concerned about allowances for risk. I have been shown an email exchange between Duncan Fraser and me dated 14 December 2007 (**CEC01397774**). In my email to Duncan there is reference to a relationship between the emerging detailed design, Employer's Requirements and the Infraco proposals. This is what the diagram which I have already discussed featured in the draft document, entitled '*SDS Contract – Novation Planning*' dated 14 January 2008 (**PBH00033608**), dealt with. Duncan is saying that we have not finally agreed anything. He is saying we have not seen all of the final detailed designs, we have not agreed yet to the closure for the duration that TIE was looking for, and therefore TIE needs to make allowance for longer periods. My response is diplomatically saying that we needed to live within our budgets. If you have a limited amount of funding, which was always the case with this particular project, then it is not reasonable to expect that provision is made for unaffordable future changes (whatever they might be). This exchange is fairly indicative of CEC's approach to the project.
212. A further risk allocation matrix was produced immediately after Wiesbaden. I have been shown an email from Philip Hecht at DLA to me and Mark Hamill dated 14 December 2007 (**CEC01430991**). Attached to that email was a clean version of the new matrix produced by DLA (**CEC01430993**) together with one which highlighted the changes from the previous version from September (**CEC01430992**). I think it is important to make a distinction between two types of risk matrixes. They are not related. There is the project risk management process, essentially a QRA, which is updated at regular intervals through the project, and a contractual risk allocation. These documents attached to DLA's email refer to contractual risk allocation. This is not a risk register, as such, in the conventional sense of a project risk register. It is a description of the allocation of risk between the parties under the contract. It is a fairly conventional way of describing allocation in public and

private sector projects. This is the matrix that I think went into the various Business Cases and their updates. I think ref 6.5 is the one that we added in. I think we introduced NEC mitigations into the agreement. That was the meetings between the senior representatives of all parties. I am not sure whether it would have included CEC but they certainly would have included senior tram project management personnel and commercial personnel.

213. The Wiesbaden agreement was borne out of one of BBS's concerns surrounding the boundaries of the work. BBS needed a clear definition of the extent of their responsibility. That ultimately was dealt with by works information, by the emerging designs and through assumptions on the emerging designs. The risk matrix anticipated what the position would be once that definition had been set. Because of this there was no reason to change the contractual risk allocation. The project definition, as defined by the Infraco proposals, would have made that clear. That was, at least, the intention at the time. This document is probably after the Wiesbaden agreement. The agreement might have been signed but the proposals and thinking had been worked up in advance. .

Procurement strategy

214. I have been shown the papers for the TPB dated August 2006 (CEC01688881). Included within the papers at pages 43 - 47 was a document which I had prepared entitled Outline of Procurement Strategy. In that document I considered the procurement strategy as set out in the Outline Business Case. I have also been shown a copy of that Outline Business Case (CEC01783327). The Outline of Procurement Strategy document was produced just after I joined TIE. It is based on my review of the existing documentation, particularly the Outline Business Case, in order to understand the strategy that had been developed. What I was seeking to do with this paper was to at least start the process of thinking about how we would deliver the strategy through the procurement. I was seeking to discuss how we would deal with the issues, some of which were emerging. It is self-evident from the

paper that, at that time, we were dealing with an accelerated timescale. We were looking to achieve award around late July 2007. This document was trying to set out an approach as to how we could do that and still maintain the principles on which the fundamental strategy was based. It was a de-risking strategy to remove the uncertainties that would otherwise place a high allowance and/or exclude or cap. Those uncertainties would effectively make the scheme unaffordable. It's really the scope finalisation and design work that gives the scheme shape and form and takes away the uncertainties of approvals that are the fundamental elements in delivering the strategy.

215. We were also starting to think about how we would deal with the two novations, both TRAMCO and SDS. I wrote, at page 46: *"Negotiate with SDS to enforce novation. It is not necessary for SDS to complete detailed design for the Infraco to effect this risk transfer..."*. It refers to discussing this with the bidders. We wanted them to explain to us the information that was critical to them for reliably pricing the scheme in the time available. 'Enforce' was perhaps not the right term. The paper was setting out how the problems in delivering a novation referred to in the paper could be resolved. However, given the turn of events and that some of the things that were not appreciated around the SDS agreement at that time, enforcing it using the contract provisions proved not to be practicable. As I have already discussed, there are particular problems associated with enforcing completion of this contract.
216. I did not develop the strategy so I am not able to comment on how it was developed. What I was told, and confirmed by what I have read in the project documents, is that it was a de-risking strategy. The strategy was to mitigate and reduce risks that would attract a premium if the project was to be undertaken in the conventional way of a PPP. It was referred to as a hybrid traditional procurement. I am not aware of this strategy being used on other projects (although there are similarities in certain elements with procurement strategies for other schemes e.g. novation of the designer, early clearing of utilities and separate procurement of vehicle).

217. Some of the tactics that I outlined in my paper which I have just referred to (CEC01688881) have, and are, routinely used. I have used some of them previously. The strategy as originally conceived was pretty high level but it did not really consider the practicalities of making it work. What my paper is doing, at least in summary form, is thinking about the practicalities of how we could deliver the strategy. We were modifying the strategy a little in that we were saying that we would seek to align the bidders' views on what they needed and prioritise the production of design.
218. I have been shown an email to me from Alastair Richards dated 8 January 2007 (CEC01764445). Attached to that email was a diagram of the procurement processes (CEC01764446). This was a further development of our thinking about all of the things that needed to be done in order to deliver the procurement. The figures in the bottom right hand corner of each box are the dates by which we planned to deliver the action. Some of these are questions, for example: "*How do we get TRAMCO into Consortia*". That question is annotated 'GG', so it was allocated to me to think about and come up with the plan. It was a project document. I probably sent the document to Alastair Richards because he had an interest in the procurement given his role in managing the future maintenance and operation of the tram network (He is noted in the schedule of evaluation teams. This relates, again, to the paper that was put to the Board back in the preceding August. This is further detailing the plan for delivering the procurement. It is an evolution of the detail.

Procurement Timetable

219. I prepared the revised timetable. I have been shown the papers prepared for the TPB meeting on 12 July 2007 (CEC01565576). My revised programme features at pages 56 to 61. The meaning of the paper is fairly self-evident. It explains the reasons for the changes in programme. Paragraph 2.2 on page 56 explains the reasons for the delay. I have noted previously that we had asked the bidders to pause and not undertake any further work on the bids whilst there was political uncertainty as to whether the Tram Project would proceed. That, in itself, created some delay. There had been delays in issuing

the price critical design information. We identified price critical design information and agreed with SDS the approach and strategy. That is outlined in this paper to the Board. The design informs the bidders estimates and, in turn, that sets the price. The programme was critical to the delivery of the de-risking strategy. The affordability of the scheme is all related to the same thing. It is self-evident from the paper why more time was required to produce an affordable scheme design if you read it in its entirety.

220. I note that a separate report within the same papers, entitled 'Procurement Milestone Status, at pages 80 - 81 explains the possibility of mitigating design delays through agreeing an adjustment formula with bidders. This would allow the price to be changed to reflect design uncertainties. The reference to 'conditional award' is I think a reference to a preferred bidder. What it is suggesting is not unusual. We would develop a process whereby we would agree the baseline price with all its assumptions. Then, as the design developed for critical elements, we would adjust the price. The price would ultimately be updated prior to contract award. This is another example where we are balancing delay with a potential increase in project costs. The costs of that delay would include a significant inflation element. The programme took into account the ways in which we could manage the development of the design in parallel with the bid negotiation process. I would disagree with the suggestion that this seems inconsistent with the idea of seeking a fixed price and it would put the risk of design changes on TIE/CEC. There is no enforceable fixed price until negotiations are concluded and the contract is awarded. To do otherwise would mean that we would be asking Infraco to allow for, or add a premium for, all the price critical things that they did not know at that time. That approach is inconsistent with the strategy. A fixed price would only be achieved following negotiations being concluded and the Infraco contract being signed. This paper makes that clear. It says that this would in effect be another condition that would need to be satisfied pending award. I would agree that there was not the intention for mitigation of design delays to continue post the award of contract.

Advance Works

221. I have been shown an email that I sent to Damian Sharp dated 10 January 2007 (TRS00003483). Attached to that email was a document entitled 'Advance Works Strategy' (TRS00003484). It appears from my email and attachment that I was the driving force behind the requirement for advance works. Advance works was part of the strategy to deliver the procurements. This is referenced in the paper I put to the TPB in August 06 – See p46 CEC0168881. This paper relates to the evolution of that strategy. It was recognised early on that this approach would be necessary to mitigate programme and costs.. The preparation of papers was a consultative process and other project members would have been consulted. We were looking for TS and CEC to agree the requirement for advance works. As noted both CEC and TS were consulted in preparation of this paper. I have discussed previously about overlapping the negotiation phase of procurement with the delivery of the emerging designs.

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222. I presume that the contract for advance works was ultimately subsumed into the Infraco contract. I do not think giving the preferred bidder the contract for advance works necessarily undermined the TIE position in discussions during the preferred bidder stage. In my view, delivering the advanced works provides no certainty that the preferred bidder would get the contract in the end. We would have retained the rights to stop those works at any time. It is not unusual to undertake advanced works prior to the bidder being awarded the contract. There are lots of examples, particularly with multi-project programmes of work, where enabling works and other ancillary works are undertaken under separate agreements in advance of the substantive contract for the programme being awarded. The works were relatively straightforward. From memory they were related largely to the Gogar Depot (securing the site, clearing the site and bulk excavations – Not all work was done by the preferred bidder. I don't recall how much was allocated to the preferred bidder).

Infraco– Getting Bids and Initial Negotiation

223. The process for getting bids for Infraco and moving to the award of the contract is set out in various documents. It is summarised in the paper that went to the Board in August 2006 (CEC0168881) and is further updated in subsequent papers (particularly the one that went to the Board in July 2007 (CEC01565576) that reflected and set out proposals for accommodating the delays to the procurement). The strategy was to run a progressive tender process whereby we obtained proposals. Subsequent to that we would then negotiate updated proposals based on the emerging detailed design.
224. I was involved with the negotiations with the bidders. I worked with Matthew Crosse, Susan Clark and Alastair Richards. Partnerships UK were not involved in the negotiations in any detail, but had reviewed the strategy set out in the 2006 TPB paper (CEC01565576). I have been shown a document entitled '*INFRACO and TRAMCO Tender Evaluation and Negotiation Guide*' dated 29 May 2007 (**CEC01606106**). The negotiation strategy is set out on pages 20 and 21 of the document.
225. I note that a record of a weekly SDS review in February 2007 (**PBH00021529**) notes that Matthew Crosse proposed pushing back the timeframe for Infraco five months. Were the PB records of these meetings made available to you at the time? Is this record accurate? What was your view on this? Why was it required and would it be a good idea? What happened to the proposal? It was accepted there that detailed design information would be necessary to enable Infraco to price. I don't recall whether I received copies of the notes from these meetings, Email records will presumably confirm. I don't recall the meeting and so can't say whether it is accurate. We did eventually push back the timeframe for Infraco procurement as is referenced elsewhere to allow for a suspension of the bid process pending the outcome of the election and I think that the programme for close of Infraco was moved further out. This would be shown on the programme appended to the July 07 Negotiation Strategy (CEC01606106) – programme is not included with that document. My view would seem to be from the document that I supported this extension.

2006 should
be 2007

The document lists the more detailed design information required to support the Infraco bids. It mentions the alignment and roads and pavings designs particularly.

Appointment of preferred bidder

226. The reason why BBS was deemed the preferred bidder in October, when it was not until after February the following year that a firm bid was received, is set out in the negotiation strategy that I have already referred to. The strategy was to negotiate with both bidders to get to the best position based on the bid information, including available detailed design. That process would effectively set a baseline from which to proceed to the next stage. I have discussed earlier the adjustment to that baseline for emerging further detailed design and the reasons for doing that. It was difficult, given the various delays that had been incurred, to sustain detailed discussions and negotiations with two bidders, through the next phase of bidding.
227. I note that in the Risk tables, Risk 282 had noted as one of its treatments that two bidders should be kept in as long as possible. I note that I was marked as the risk owner in respect of this. I note that an OGC review later recommended that a preferred bidder be appointed. I have been shown a PowerPoint presentation for the TPB dated 15 October 2007 (**CEC01358513**). This is clear from page 6. I do not think that this contradicts the strategy referred to earlier. The treatment was to keep all the bidders in as long as possible. That was identified in the risk referred to at an early stage, as it does not seem to be listed in the TPB appendices at the later stages, post circa July 07. It was not possible to sustain on-going negotiations with two bidders indefinitely. That was a decision that was endorsed by the OGC review. The PowerPoint presentation confirms that. We made the change because of the delays with the designs. I agreed with the change of approach.
228. I have been shown the papers for the TPB meeting on 31 October 2007 (**CEC01357124**). It included the minutes of a meeting of the joint board on 15 October 2007. At page 11, para 3.3, I explained that pricing was primarily

based on the preliminary design and included 30% provisional items. That assessment was a fairly crude one. For example, for the work on highways we marked up a set of drawings following consultation with our engineers (and also I think with SDS). The drawings set out the likely extent of the highway works going along the alignment. That was used as the basis for pricing. As para 3.3 states further price critical items (designs) were provided during negotiations. I think we then used that documentation to negotiate the draft deal or conformed bid (I do not recollect the exact term that we used for it). That is how we proposed to handle that. Whilst some of the items were perhaps provisional, they were not provisional sums in the sense of undefined provisional sums (i.e. they were for known scope the full details of which were to be defined). There were designs for structures. They were based on assumptions around shape and form, for example made of reinforced concrete etc. That provisional design should have been reasonably close to the final product for a fairly routine civil engineering structure of that nature. Given the state of the designs at the time, and what the bids were based on, we expected that we were going to have that level of provisional items at that stage.

Movement of cost to Phase 1b

229. I have been shown a document which included the minutes of an 'Infraco Evaluation Meeting with BBS' dated 30 August 07 (**CEC01704016**). They appear to show that £3.2m was moved from Phase 1a to 1b at section 1. This was prior to submission of the Final Business Case in December. I do not recall why this was done. I suspect it was to do with the allocation of preliminaries.
230. It appears that BBS were worried that moving funds to 1b would mean that if Phase 1b did not proceed they would lose out. I have been shown an email exchange dated 5 and 6 May 2008 (**TIE00679381**). I was forwarded the initial emails on 6 May 2008 and then exchanged emails with Steven Bell. In that email exchange, BBS noted that to get round this they required that there be a compensation payment to them if 1b did not proceed. The allocation to 1b was

to do with the allocation of contractors' project overheads. Looking at it then, this was perhaps the correct way to allocate those costs. At that time the two phases were still linked. We were going into negotiations that still included both phases. Quite naturally BBS would be concerned about that. They would want redress in the event that 1b did not proceed. The costs would have been moved so that costs were allocated to the phase where they would be incurred. This was more to do with the correct allocation of preliminaries. I do not remember the detail around that. I would not agree with any suggestion that this had the effect of understating the costs for phase 1a and overstating the costs for 1b.

231. I have been shown an email chain dated 9 and 12 January 2007 ((**TRS00003505**)). I was not a party to these emails. This is an internal TS email chain which includes the email from Nick Ruanne from KPMG at the start of the chain. Nick Ruanne states in his email that I had advised that £9.3m of costs were being shifted from 1b to 1a. As this was an internal email at TS, I did not see this email. The £3.2m and the £9.3m are not the same things. They are from two very different stages of the development of the project. I do not think it's reasonable to even link the two.
232. I have been shown an email chain dated 5 and 6 May 2008 ending with a response from David Mackay to Willie (**CEC01274976**). I was copied into the last two emails on the chain. The figure of £3.3m is referred to in these emails. I have also been shown the same chain, but with my response (**CEC01274986**). I have been shown a related chain where the initial email received by Willie was forwarded to me and others for a response, and to which I responded (**CEC01337695**). I have also been shown a further related chain of emails which I was involved with on or around the same dates (**CEC01376389**). The £3.3m is the same figure mentioned already. I am not sure what the £9.3m relates to. I left TIE in at the end of April 2008 (albeit I was still being copied into emails for a short period thereafter). I did go back for a few days after I left in early May. (See introduction for dates). The £3.3m is close to £3.2m. I imagine it was the same figure. There is no description of what it represents other than it does refer to the preferred bidder phase, so I

think it is the same figure. I do not recall the relevance of the demand for an additional £12m. I do not think I was ever aware of the £12m figure. I think I had left by that stage.

Evaluation

233. I have again been shown the document entitled 'Infraco and Tramco Tender Evaluation and Negotiation Guide' dated 29 May 2007 (CEC01606106). At page 27 there is an organogram setting out all the persons involved in the evaluation. There is a statement of their roles set out on page 28, including a statement of my role. To the best of my recollection the roles are noted accurately. My role is noted accurately. These were the roles that the individuals performed in practice (certainly when we were going through the bid process). After we had appointed a preferred bidder the roles did become a bit more generalised. This happened as some of the persons noted merged into a core negotiating team. I have been shown the papers for the TPB meeting in August 2006 (CEC01688881). My role in the evaluation of bids is set out in this document and the evaluation criteria set out at pages 48-57.
234. I have been shown a report from Scott Wilson dated January 2007 (CEC01630055). The brief from me is noted at para 4.1 on page 5. That brief appears to concern the project estimate. However, it appears that the report as a whole focuses on the tender review process. This relates to the initial bid process. As explained previously, the initial bid process informed the update of the estimate. That was then used to report to TS. It provided TS with the necessary confidence to provide the next tranche of funding. The way in which we updated the estimate is detailed in the document entitled '*Infraco Initial Analysis and Updated Project Estimate Response to Transport Scotland Queries*' dated 8 February 2007 (TRS00003675). This is the document we prepared for TS to explain how the Project Estimate was updated to take account of the Initial Bid and to explain the steps forward. The initial bid is incorporated into the estimate. This is the update of the estimate so they are related (inevitably it will talk about both – the Initial Bid and Project Estimate). I note that at page 6 of the Scott Wilson Report, it notes that the lowest tender

price was substituted for the existing Infraco works estimate. This price would not include risks and Optimism Bias because that was not included in that element of the estimate. It was "taken out" because we updated the QRA instead consistent with our approach to dealing with risk(See previous explanations of OB and QRA). I note paragraph 7.2 (of the SWK Report) where it refers to TIE putting in more risk and contingency on page 7. It notes that design was critical. What we were saying was that if the initial bids were within our estimates, given the stage that we were at, we would not update the previous estimate. Most of the design was critical. In many of the documents it explains the design was critical. Design information was clearly critical given it was the basis and foundation of the strategy and informs Infraco pricing of the works.

235. I have been shown an email from John Pantony (TSS) to me dated 13 June 2007 (**CEC01630203**). Attached to that email was a document entitled 'Edinburgh Tram Project Benchmarking' (**CEC01630204**). I have also been shown my email of 14 June 2007 to Graeme Greenhill (Audit Scotland) and others (**CEC01567444**). Attached to that email was a document entitled 'Edinburgh Tram Project, Information to Support Audit Scotland Review, Benchmarking against other Schemes' (**CEC01567445**). It is usual to benchmark estimates against costs of similar schemes. In previous documents we refer to benchmarking of the cost against both Mersey and, I think, Manchester. We also undertook some benchmarking work against Croydon and Nottingham in earlier estimates. We undertook benchmarking on the basis of the best available information. We had detailed information from Mersey by means of a connection with Brian Hannaby Associates. They were the quantity surveyors on that scheme. They had reasonably detailed knowledge of that scheme and tram schemes in general. They were commissioned to undertake a benchmarking review. Benchmarking is not perfect because you are not sighted on all of the issues of the schemes against which you were benchmarking. That said, it does provide some measure of confidence.

236. I do not think the Mersey Tram scheme proceeded into delivery but their tender costs were the best information that was available. I recall their information being much more detailed than the information we had got from other schemes e.g. Manchester, Nottingham and Croydon.
237. I have been shown my email to Richard Walker dated 26 November 2007 (**CEC01493250**). My concern was that we were, at that stage, waiting on pricing information from BBS which was not forthcoming. There are a number of issues we had that are set out in this email, including BBS's agreement to the modelling. That enabled them to confirm agreement to one of the outcome defined performance requirements of the Infraco contract (run time).
238. There was great difficulty getting firm prices from BBS in December 2007 to be able to be in a position to report to CEC. I have been shown an email exchange which I was part of dated 7 and 10 December 2007 (**CEC01494152**). I have also been shown my email exchange with Scott McFadzen of BBS dated 26 November 2007 (**CEC01493204**). I have also been shown the minutes for the preferred bidder meetings dated 6 December 2007 (**TIE00088496** for the tracked version and **CEC01494651** for the clean version). That difficulty is described in the email I wrote to Richard Walker. BBS were running into problems in quantifying the information that we had provided to them. We were finding that somewhat frustrating.
239. I have been shown an email from Bob Dawson to Trudi Craggs dated 17 December 2007 (**TIE00898202**). Three documents were attached to that email. The first was a document entitled 'Infraco - Valuation of Tie Changes' (**TIE00898203**) which I had prepared. The second was a document entitled 'Tie Change - Flow Chart for Clause 80' (**TIE00898204**). The third was a copy of Schedule 9, the dispute resolution procedure (**TIE00898205**). This email and the attachments deal with Clause 80 of Infraco. I think my note was to clarify what would otherwise be described in other construction contracts as the method for valuing changes. Clause 1.1 of my paper was the conventional approach in rate-based contracts to dealing with the valuation of changes. This document was to clarify that. I guess I prepared it because it was not

clear in the contract terms, as they stood at that point in time. I sought to do something similar for the maintenance costs. None of that is unusual in construction contracts.

240. The flowchart which was attached was not entirely linked to the agreement at Wiesbaden. It was intended to deal with the method of valuing change where there was an entitlement to recompense for a change under the contract if there was something that was outside of the boundary issues. If that was what the so-called Wiesbaden agreement was trying to get at, then that is the process that would be applied to quantify the value of such changes. For example, if those limits that I refer to, or where there was work that was required outside of those limits that I refer to, then it would be valued in accordance with that flow chart. Was the intention was to specifically avoid delay, which is what ultimately happened? The method of valuing change was not really to avoid delay but to bring clarity to the valuation of a change. The flow chart shows a fast track process for dealing with emergency instructions. For example if there is a safety issue or a condition as a result of some or other change, then that would need to be fast tracked accepting the fact that there are certain situations whereby an instruction must be issued in order to avoid delaying the programme or to deal with some or other emergency. I think we did use the term "emergency", looking back on it. Again, it is something that you would find in many contracts. That process was either drafted by me or borne out of a discussion between myself and Bob Dawson on how to deal with it. I cannot remember who prepared the flowchart. It was probably one or other of us, I am sure. Broadly it is the same, in my experience, as in other contracts.

241. I have been shown an email exchange that I was part of dated 10 and 11 January 2008 (CEC01432000). There is further consideration of mandatory TIE changes in an email from me to BBS on 11 January 2008. Most of the matters did not arise. My answer - I note the mention of what would occur where there is a variation of the Works. My comments were to inform a subsequent discussion, as per my closing sentence. I note that in my comment to clause 34.3 in my email to Tom Murray (BBS) states: "a tie

instruction which leads to the variation of the Infraco Works – We need to discuss this one". I think my concern was that it is all very well having a mandatory change but, given it is effectively CEC's money, CEC might want the opportunity to withdraw that change or instruct a different more economical solution. This is what my email was getting at. My concern was having something placed in the contract to fence off that scenario. I think it must have been something prominent in my mind because I made specific reference to it in the introduction to the email: *"The BBS concept for Mandatory tie Changes is that tie may not be able to entitled to withdraw a tie Notice of Change and, if it fails to issue a tie Change Order within 30 days of agreeing to an Estimate, the tie Change Order will be deemed to have been issued. tie also has a limited period of time in which to submit the tie Notice of Change from when the circumstances giving rise to the change arose"*. I would agree that after the signature of contract, if that provision was not in place, BBS would have potentially been able to capitalise on mandatory changes and been able to 'inflate' the amount of works that were truly required. I am not sure that the concern was that BBS were not going to get recompensed for standing still. I am not sure that would be correct.

242. I have been shown emails that I sent to Scott McFadzen dated 19 and 21 January 2008 (CEC01488908). In my email of 19 January, I refer to *"Big Banana"* issues in the heading. The issues are the ones that are listed out in the email. Quite who came up with the phrase *"Big Banana"* I am not sure. It sounds like something Scott would have said. I think *"Big Banana"* is just a euphemism for major issues that we need to get to grips with. It is probably an inappropriate choice of name. I note that the email refers to *"Ground Conditions Baseline Report"*. This was not something we agonised over. Two technical surveys were done. I cannot remember whether the interpretative reports of those surveys were prepared by SDS. Any contractor pricing ground works would be very mindful of the risks and uncertainties in the ground. They would do a ground investigation survey, based on boreholes, which would show the substrata between those boreholes. That could be different strata or obstructions. We wanted to establish a report which set the baseline for the purposes of pricing. Without some form of mechanism to deal

with that uncertainty, BBS would not take the risk or would ask for a very large premium for accepting that risk. We concluded that that was not a good idea.

243. We were involved in a negotiation with BBS. I would quite naturally look to reduce their expectations and provide them with reminders of the need for affordability. In any negotiation one would be concerned about maintaining an expectation of minimising price. This is effectively a cautionary note to Scott McFadzen. I would have done that consciously to set expectations.
244. From my memory, whilst there were many issues in those negotiations (particularly during the final negotiations), SDS was BBS's consistent concern. This was because SDS were providing the information that gave the shape and form as design information of the scheme and it was that information which informed the price and commercial position of the bidder.

Wiesbaden

245. I referred earlier to some emerging frustrations, particularly on the part of Willie Gallagher, about the pace (or lack of pace) of bringing the Infracore procurement to a conclusion. As senior people do, they always wish to accelerate that process. That is what resulted in the proposal to go and meet with the Heads of both BB and S and come to an agreement that would accelerate discussions. I was not present at Wiesbaden. I did keep in touch via phone. My role was to be in Edinburgh in the offices and be on hand to provide supporting information for the negotiations and advice as the discussions proceeded. I do not know whether there was any consideration given to taking me on the trip. I do not think I was particularly keen to go to Germany at that time, with everything else that was going on in progressing the procurement. Generally, in negotiations all parties look for parity in negotiating teams. If TIE had taken a legal advisor then BBS would have insisted on one. Whether there was any consideration to that I do not recollect.

246. I have been shown an email chain dated 7 and 10 December 2007 (TIE00087746). The emails were an exchange I had with Scott McFadzen. I forget the exact date that they went to Wiesbaden. I thought it was earlier than the dates of these E-mails. I note the email chain starts on 7 December 2007. This refers to an internal progress meeting. I do not recollect exactly the dates that they went to Wiesbaden but I am pretty sure 10 December 2007 was after they had been. It is clear from the exchanges that we were experiencing difficulty getting the updated pricing from BBS. On the face of it, they were unable to provide firm prices for the reasons outlined in the emails.
247. I have been shown the Minutes for the Preferred Bidder Weekly Progress Meeting of 6 November 2007 (CEC01476833). I note that there is reference to a pricing meeting being set up for 7 November 2007 at item 1.0. There is further reference to this issue in the later meetings which I have been shown documents for (meetings dated 13 November 2007 (item 1.0) (CEC01477879) and 20 November 2007 (item 1.0) (CEC01327960). These are not necessarily examples of us trying to get the agreement that was ultimately obtained as Wiesbaden. The process was that design information would be issued to BBS progressively for them to use to firm up prices. We were then expecting that they would provide the detailed pricing for our review and agreement in order to update the bids. Wiesbaden was more of a top down approach as I recall. I was quite possibly involved in meetings to discuss what should be done at Wiesbaden before Matthew Crosse and Willie Gallagher left, but I do not recollect.
248. I have been shown an email that I sent to Matthew Crosse and Steven Bell dated 11 December 2007 (TIE00087524). Attached to that email was notes for the parameters for a deal in Wiesbaden (TIE00087525). There was an on-going debate with Forth Ports about their demands for finishes. I think there were changes to a tram stop. It got moved further out from where it was originally intended. These documents are setting out the position in financial terms on where there was room for manoeuvre to negotiate. The figures would have come out of the prevailing Tie estimate at the time and bid price

build ups received from BBS. From the information set out in the documents I thought a deal within those parameters could be achieved at that time.

249. I have been shown several emails that I sent to Matthew Crosse dated 13 December 2007. The first was sent 10:12 (CEC00573343), the second at 13:02 (TIE00035209), and the third at 19:46 (CEC01494838). Attached to one of the emails was a document headed 'Infraco Negotiation Summary Position' (CEC01494839). This document is effectively a current cost report which sets out the financial position taking account of the negotiations to date. In the email at 19:46 and attachment, I am offering Matthew a means of calculating options to understand where those negotiating options would stand in relation to the overall budget. The email sent out at 13:02 and attachment entitled "*Infraco deal tactic*" (TIE00035209 / TIE00035210) sets out the arguments in the on-going negotiation with BBS. I do not recall what was agreed with BBS by Matthew Crosse and Willie Gallagher. It is quite possible that the outcome was discussed at following meetings which I attended. However, I do not recall attending any of the subsequent meetings.

250. I have been shown a PowerPoint presentation for the TPB dated 19 December 2007 (CEC01483731). I have also been shown the papers for TPB on 9 January 2008 (CEC01363703). I must have become aware of the outcome of Wiesbaden latterly (i.e. in early December shortly after the trip to Wiesbaden) because I am named on the PowerPoint presentation. The presentation was a summary of the things that were yet to be decided e.g. utility diversions. It became clear that some of the work assigned to MUDFA could not actually be done by them because of the strong interface with Infraco works. There were some diversions which could only be practically done when one or other of the bridges was constructed under Infraco on the off road sections. I note the mention of work in St Andrew Square outside the track alignment on page 7. There was a whole debate about, and this goes back to the extent of on road finishes, wanting to incorporate what you could argue as betterment work and whether this work was outside the track alignment. That was around in the background. Infraco were aware of that. At page 6 of the PowerPoint, it states: "*Extra over cost of work in Forth Ports*

Estate” which referred to an on-going debate about road and street finishes in Forth Ports. “*Adverse ground conditions*” (page 6) is what some of the earlier papers refer to as being contained in the Ground Conditions Baseline Report. This relates to adverse ground conditions outside of what could reasonably be interpolated from the Ground Baseline Report. “*Bernard St streetscape works*” (page 6) is probably a similar thing to this. I cannot remember what “*..frontage replacement in Leith Walk*” is about (page 6). The “*Changes at Edinburgh Airport*” (page 6) were the on-going discussions about changes to the scheme and how the tram alignment interfaces with Edinburgh Airport. I note that the headings for the slides on pages 5 - 9: “*Progress to Closing Infraco Contract*”. I suppose that this was a good deal in the context of where we were at the time. There was the idea of transferring risks subject to the envelope constraint I referred to previously. Some of the items listed on page 6 took us to a more definite position in the on-going negotiations.

251. The PowerPoint presentation for the TPB on 19 December 2007 (CEC01483731) states that BBS took on detailed design development risk (page 5). Based on the terms of the Wiesbaden Agreement clauses 3.3 which sets out what the price includes and 3.10 BBS accepted detailed design development risk (See CEC01447492). It subsequently became clear that there was more work to be done in respect of designs, but I forget the exact detail of when and how that came about. Both Infraco and ourselves were aware of the issues concerning the designs. There were what we called facilitated negotiations with BBS, TRAMCO and SDS. Those discussions were chaired by a TIE representative so that we had a record of what was said and could moderate any discussion. I do not recall what decisions were finally made around those areas. They did not really concern the major structures or the substantive elements of the alignment. Some of the discussions were about what I would call betterment and a desire to ‘prettify’ certain parts of the streetscape that the tram alignment was interfacing with. I discussed earlier on in my statement the need to avoid that if at all possible for reasons of affordability. There were changes at Edinburgh Airport. That was something to do with future development proposals by Edinburgh Airport themselves. The

intention at that stage was still that BBS took on detailed design development risk following Wiesbaden.

252. There was a need to get alignment between the Employer's Requirements, the Infraco proposals and the SDS design. (This is referred to earlier). There was a design freeze in November 2007 (This was a statement in the question and not a statement by me). This was a progressive negotiation. We were trying to establish a baseline for adjustment. I do not know whether we needed further design work to align the Employer's Requirements with the SDS technical specifications and the Infraco proposals. There may well have been. For argument's sake, it may be that in order to firm up on a particular part of the Infraco proposals, there was a need to do more work in a certain area. I do not think 'design freeze' necessarily means that we did not undertake any further design. It means that we did not exclude or add things to the scope which were different to design development. I do not think we intended to stop design development, (which is borne out by the reference to further design information being provided in the negotiation notes referred to in para 250 above). We were just sort of tinkering around the edges with the introduction of streetscape and betterment. I think one of the conditions of funding was that there was no betterment. Clearly we were still thinking about bringing about that alignment between the different parts of the deal.
253. We finalised the Wiesbaden agreement just before Christmas. I recall that I was due to fly back home from Edinburgh to London. I was quite heavily involved in documenting that agreement, hence my handwriting ended up on the final version of it. I recall that during that process (after Matthew Crosse and Willie Gallagher had been to Wiesbaden) I had a telephone conversation with Richard Walker. He had called because I had sent him an email which set out a draft of what the agreement could look like. During that phone call there was a discussion about how we could define the envelope of the design both physically and logistically. We needed to do that to bring some degree of certainty to the agreement. The design development risk was really about moving forward the designs of the alignment and the structures within the boundaries of the scheme that had been defined at that time. We were trying

to resolve how far you went up a particular street to replace surface finishes. I think we were talking about a particular tram stop somewhere, just up from Haymarket, to try and get a practical context for sorting out that definition. The definition was for the purposes of trying to define the position at that stage. I certainly did not envisage, at that time, that it would be a legal document in its own right. I believe it got referred to in a subsequent dispute. This was probably because there was uncertainty over the exact meaning. To my mind that was apparently solved then. I think the tipping point in terms of getting an agreement with BBS was having a form of words that, perhaps imperfectly, got across the principle that there was a boundary to the limits of the physical envelope of their works. That allowed them to commit to an amount of money for design development, i.e. move on the design of those things that were inside the envelope.

254. I have been shown an email that I and others received from Andrew Fitchie on 18 December 2007 (**CEC01430872**). It was about the agreement. He says he was not directly involved in negotiating the agreement and he had not seen it before. My recollection is that he went off on leave at some point over that period. He states in his first bullet point that I was: *"obliged to take a view on how to tackle the most significant outstanding contractual items, relying upon closed positions reached on others, where it would be a manifest act of bad faith for BBS to change or seek to reserve those positions on risk allocations already accepted"*. I think he was trying to get a fix on what we had achieved to create further certainty around the outcome so that we could close off some of the moving parts.
255. The thing that I remember that is of significance, and sticks in my mind, was the need to try and contain the definition of the limits of the scheme. I recall that we were trying to close off some things. We were trying to differentiate between those things which would be true design development, e.g. the structures along the alignment or things like pole fixings, and those things that were the emerging betterment aspirations in the minds of the various stakeholders. That was the big issue for BBS, particularly as they were responsible for the building and civils aspects in that deal. I remember very

clearly that conversation with Richard Walker and feeling that that was important to the deal.

256. Some of the other things referred to in that agreement is just a statement of where we were in the negotiations. There were agreements on the things that we had closed down and things that were still subject to ongoing negotiations. In some ways it was an update on what I would call the draft deal. Calling it the Wiesbaden agreement seems to assign it more status than perhaps it really had. The agreement was to try and update the baseline as to where we were and set out what the intent of all of this was. We were trying to create fixity by increments as negotiation issues were closed down, as things got priced and as the more detailed design emerged.
257. Andrew Fitchie and I worked pretty closely together. That is evident from the notes of some of the exchanges and discussions. It is clear that when Andrew and I talked, he understood what I was seeking to do. There was a collection of things in the agreement in terms of the aspiration to create fixity and limits. Andrew looked for my practical input on that. He looked for my input on anything that related to the negotiation on the commercial aspects of the conditions. He, or his people, would have been involved. I do not think, from my recollection, that there was any detailed discussion about terms and conditions in the meeting between Willie Gallagher, Matthew Crosse and BBS. The meeting was just to get an update on the scope and price baseline, . As far as I am aware, DLA would not have been involved in those discussions. They were, however, involved in all contractual discussions.
258. I have been shown an email exchange dated 12 and 13 December 2007 (TIE00077023). Attached to those emails was a contractual Risk Allocation Matrix (TIE00077024). I was sent the matrix by Philip Hecht of DLA. I do not think, in itself, that this document was intended to particularly reflect the discussions at Wiesbaden. There were regular updates to this document based on the on-going negotiations. I sent it to Mark Hamill, who was TIE's Risk Manager, to review and adjust the QRA accordingly. The QRA was the more detailed assessment that outlined the consequences of the project risks.

I note that I highlighted in my email to Mark to make sure that we cross-referenced the consents risk. I do not remember the exact detail. This matrix was incorporated into the Business Cases. Given the timing of the issue, it also informed the draft Final Business Case. I think this document was being prepared contemporaneously. This followed the same format that had been established long before I joined the project. It is a fairly standard Business Case type document. This sets out the emerging position in the ongoing negotiation of the contract. If this was the only way that risk was being managed, then that would not be a sufficient way for managing risk. Solely using a contractual risk allocation matrix is not how you would manage project risk at all.

259. I have been show an email exchange dated 14 and 18 December 2007 (**CEC01430855**). The first email in the chain was from Philip Hecht of DLA to me and Mark Hamill. Attached were two copies of the risk allocation matrix: one showed the changes since the previous version (**CEC01430856**) and the other was a clean copy (**CEC01430857**). The second email is Stewart's email to me and others. I think Stewart's saying, in reference to the contractual risk matrix that was going to form part of the Final Business Case that we needed to differentiate between what we expected the final risk allocation to be and the uncertainty in getting to that position. In terms of firming up the contractual risk allocation, there was uncertainty in relation to final risk allocation post-Wiesbaden. This was because those negotiations had not yet been concluded. This is evident from the so called Wiesbaden deal itself, because it lists what had been agreed and what had not. In terms of the project risk report, I do not know if there was a specific re-evaluation of risk in light of the changes made at Wiesbaden. The contractual risk allocation matrix of itself is not the project risk register. That would have set out the position as we saw it at the time and where we expected to end up. Stewart was talking about what the risk associated with actually getting to that final position was. I suppose that with the benefit of hindsight, we had not identified exactly what we had and had not locked down, within the contractual risk register.

260. The contractual risk matrix is a snapshot of where we were and where we expected to be. If there were further issues that were raised, subsequent to that, then clearly it would not be sighted on any of that. DLA produced the contractual risk matrices and sent them to the project for review. I think it was Philip Hecht or Sharon Fitzgerald who oversaw them at DLA. I knew Sharon Fitzgerald, Andrew Fitchie and Philip Hecht. Beyond that, I do not know who worked on it.
261. The expression "*design principle, shape and form and outline specification*" used in the Wiesbaden agreement was an attempt to try to establish and "envelope" for the physical boundaries of the design, works and the responsibility boundaries of Infraco's obligations. I discussed earlier, to illustrate that point, the extent to which street re-surfacing works might go beyond the tram alignment. You can see illustrations of where there were aspirations to do that (go beyond the alignment boundaries) in St Andrew Square. There were other examples at the time. Such definitions are very easy if you can point to a detailed design or a detailed specification that sets out exactly how a structure is meant to look. For example, in talking about shape and form, if you have a bridge then there would have been some form of outline design for that structure, i.e. it would set out the shape. In terms of the form, you can set out whether that structure was formed of reinforced concrete or steel. You can set out the main components. You can outline the load bearing requirements for that structure. That is all the headline design information. That information sets out the boundary. A change of shape would constitute something like turning the bridge into some fancy shape to replicate some adjacent historic structure. A change was intended to constitute something like changing the materials from reinforced concrete to steel. A change in outline specification would be a change to load bearing requirements etc. We were always trying to balance keeping the scheme within its affordable limits, as you would in any scheme, with the emerging design. We were always trying to differentiate between design development and what would be changes to the requirements for the scheme. I think Infraco were worried about there being no boundary definition and that that might result in assumptions being made about the extent of their

responsibility. I think Infraco were worried about the extent of the expectations of them then in delivering the scheme. They were particularly concerned that an organisation, perhaps CEC, were more than happy to try to get what, in their eyes, would be 'something for nothing'. Infraco were concerned that this would erode their margin on the scheme. Businesses are naturally going to protect their interests. That was the purpose of the wording. Whether or not the words were interpreted that way is another matter. I suspect there were a number of disputes where that was picked over in some detail; however, what I have just described was the intent. The wording was to deal with the particular issue that was most prominent in Infraco's mind at the time.

262. The difficulties in defining such things can, and do, cause problems in other schemes. In some design and construct projects scope requirements will be articulated in performance terms with specific specification on finishes etc. That can work quite well on something like a retail shed. Here we had a scheme that was much more complex. It had complex physical boundaries. It had complex boundaries of responsibility. In amongst that there were issues surrounding what third parties might or might not agree to. There were issues concerning the extent to which changes would be introduced through the final review of designs. At the time, CEC had not completed their review of the designs. There was still an issue as to whether there was a desire on the part of CEC to reopen previous design decisions. Infraco would have been very mindful of that and the need to define the design.
263. Richard Walker and I had a fairly open discussion about the issue of boundaries. We had many difficult discussions and negotiations. I thought he was pretty open and transparent about this particular issue. I understood his position. These were a form of words which we both agreed. We had long discussions of what the wording exactly meant. We were both at that time striving for the same intent and purpose.
264. I have been shown the papers for the TPB meeting on 19 December 2007 (CEC01526422). The document incorporated the minutes of the TPB meeting on 7 December 2007. At page 7, at 3.19, I am noted as setting out the

process and timescale for achieving maximum price certainty from Infraco bidders. At that time we were aiming for a contract award date at the end of January. We had talked with BBS about that. We probably were asking them about their internal governance processes and their level of confidence in getting their Board's approval. Obviously that would have been conditional upon closing the remaining issues, such as they were. This is just a statement setting out the expectation as it was at the time. It was not making any changes to the principles of the negotiation strategy to close the deal. I state: *"Additionally, it was highlighted that there was an option to extend slightly that programme if it was beneficial to the project without negatively affecting the construction programme and costs."* What that means is that we had discussed with BBS whether BBS could still hold to the completion dates if tie couldn't close for a few weeks. Clearly BBS's answer was "yes".

265. I do not think the extension of the programme was necessarily design-related. It could equally have been about the logistics of BBS getting their Board approvals. Boards ask questions. Sometimes it takes a further iteration internally to finally get approval.

Schedule 4

266. I had overall responsibility for the preparation of Schedule 4; however, I was supported by Bob Dawson and Dennis Murray (who undertook negotiations and also undertook the Quality Control Review), Stewart McGarrity, Steven Bell. We had to negotiate with Infraco to form an agreement on Schedule 4. I believe that I attended the face-to-face negotiations with Infraco on this Schedule. I think that might have been Dennis Murray and/or Bob Dawson. We needed information from the Infraco Consortium to agree Schedule 4 in respect of the build-up of their price. We also needed agreement on the cost of any emerging design. To a certain extent that was feasible through the finalisation of the things that were listed as provisional sums. I do not recall what changes were made during the negotiations or who made them. I have been shown the papers for the TPB meeting on 9 April 2008 (CEC00114831). Page 119 lists the people that assisted me on Schedule 4. There were also

perhaps others from TSS. Schedule 4 is clearly partly what the Wiesbaden Agreement was about. It is interrelated with the build-up of cost, or price, for the delivery of the scheme. I expect that Schedule 4 was updated off the back of the 'Wiesbaden Agreement'..

267. I have been shown an email from Robert Dawson to me dated 13 January 2008 (CEC01447445). Attached to that email was a version of Schedule 4 (CEC01447446). I understand that this is when a version of Schedule 4 first appears in the papers in the possession of ETI. I have been shown an email dated 16 January 2008, which I was not copied into, from Bob Dawson to Mark Hamill (CEC01513881). A further version of Schedule 4 was attached with changes (CEC01513882). From the Email's Bob Dawson drafted these versions of Schedule 4.
268. I have been shown the minutes of an Infracore contract meeting on 15 January 2008 (CEC01529968). At item 1, it is recorded that BBS were stating that they would not take any risk in respect of the SDS programme. I would not agree that this appears to be at odds with the statement in the PowerPoint for the TPB to the effect that BBS accepted all design development risk. The design development risk that the Wiesbaden Agreement referred to relates to the evolution of the detail of design itself and sets out responsibility for design development as referred to above.. At the time of the PowerPoint for the TPB, we were not in a contract with BBS. It would be somewhat difficult to hold them to an obligation around an emerging design in advance of concluding negotiations and forming a contract. At that point in time when negotiations were not concluded on SDS novation and terms of that novation. The minutes do not state that we accepted their assertion as section 2 of the minutes indicate.
269. I note that item 1 specifically records: *"BBS stated that they qualified their bid such that they would not take any risk in respect of the SDS programme (Post Meeting Note – No such Qualification found)"*. I think this statement is consistent with my points made above. There is a difference between, on contract close, taking the responsibility for the development of the detailed

designs and taking responsibility for the programme risk for the development and delivery of the designs in advance of the contract close. The documents would presumably show the extent of the risks that they did take around SDS's programme as part of the final novation negotiations. I would not necessarily be aware of the detail of this.

270. In item 2 of the minutes, it is recorded that I explained: "*details of what the contract price represents will be defined in detail in Schedule 4. Any changes from this will be a tie change.*" I do not recollect whether this was the first discussion of Schedule 4. I do not recollect what I intended by my comment or whether there was ambiguity over this issue at that time. I think that, given Schedule 4 was an emerging document (albeit drafted a few weeks before that, it seems) initially there would have been some discussion about it. The reference to changes relates to Schedule 4 setting out a process and a definition of what is included and what is not. I am flagging up that any changes from those definitions would be a TIE change. I think that my intention was just to alert people to that fact. The purpose was to bring clarity to what the price represents.
271. I have been shown an email exchange that I had with Stewart McGarrity dated 28 January 2008 (**CEC01489318**). Stewart's email appears to note that the Council was concerned that the contract was priced against a superseded design version. I reference in my email in response that there were activities, which were in hand but not yet complete, that would identify where there were any significant differences. As I have said in the email, I could not be definitive about it until those activities (which were the alignment of SDS specification, technical specifications, Employer's Requirements, reviewing Infracore proposals, SDS review of the Employer's Requirements and Infracore proposals) were complete. The activities are referred to in the diagram that I have already mentioned that is in the PB draft document entitled '*SDS Contract – Novation Planning*' dated 14 January 2008 (**PBH00033608**).
272. I have been shown an email exchange between Andrew Fitchie and Colin Mackenzie dated 30 January 2008 (**CEC01496537**). I am copied into

Andrew's reply. I note Andrew Fitchie's statement: "*tie is at the blackjack table and are playing; not sitting in an ante room considering which deck of cards to use.*" I cannot really comment on this statement. It seems that Andrew is saying that we are already in negotiations on these issues. Andrew was involved in the negotiations, most certainly from January onwards, and in part, they were conducted at DLA's offices. I do not think I can really add anything more.

273. I have been shown an email exchange dated 6 February 2008 (CEC01448355). Attached to those emails was a different version of Schedule 4, incorporating comments from Andy Steel (CEC01448356). I have already explained what the intention of the words set out in Schedule 4 was earlier in my statement.. Bob Dawson appears to have recognised that, as drafted, all risk would come back to TIE in his annotation to the clause. The document is trying to define the inclusions and exclusions from what was included within the contract price. That contract price was based on what is referred to here as 'Base Case Assumptions'. The intention is clearly that departures from those would potentially be changes. The rest of the document talks about how that would be dealt with. It cannot be just any departure or the risk will come back to TIE. I do not think he meant absolutely all risk. He probably meant the risks related to departures from the Base Case Assumptions. That is what the document was intending to define. I think 1.1 is qualified in part by 1.2 (a) and (b). A change needed to have an impact on the performance of the Infracore works and impact on programme. The intention of the document was to define the limits of the 'envelope'. I quite conceivably had discussions with Bob Dawson over the issue but I do not recollect them. Quite conceivably he had discussions with others too. The persons who would have been involved in discussions about Schedule 4 would have been Andrew Fitchie, Matthew Crosse, Stewart McGarrity, Jim McEwan, Dennis Murray and myself.

274. I have been shown an email exchange dated 5 and 6 February 2008 (CEC01501176). I was copied into most of these emails. I note that on 6 February it appears that Andrew Fitchie saw Schedule 4 for the first time. His email in response, copied to me, noted that he would need to understand the

document to make a meaningful contribution. I have also been shown an email from Bob Dawson to Andrew Fitchie dated 6 February 2008 (CEC01546351). Attached was a copy of the Wiesbaden agreement (CEC01546354) and two other negotiation summary documents (CEC01546352) and (CEC01546353). It appears from that email that Andrew Fitchie was not aware of the content of the Wiesbaden deal until then. Taken at face value, it does appear that Andrew Fitchie first saw Schedule 4 in February and that he was not brought in to consider its terms and effects. However, if you go back to discussions surrounding the Wiesbaden Agreement around 18 December then there is reference to Andrew commenting on the draft of that agreement (See CEC01430872). He saw a version of it, I don't recall whether it was the final version or not, but it must have been close to the final version given the date (of CEC01430872).

275. The Wiesbaden Agreement was signed as we finished up for Christmas. That was probably fairly close to Christmas Eve. The Agreement had iterated in negotiations for a period of time before that. I think it must have been around 10 December 2007 from the documents that I have looked at for previous sections. There would have been the break over Christmas but it was circulated beforehand. He was copied in on the signed copy on the date that Bob sent it to him.

276. I have been shown an email from Bob Dawson to Dennis Murray dated 14 February 2008 (CEC01448862). Attached to that email was a version of Schedule 4 with my handwritten comments from a meeting about Schedule 4 (CEC01448861). This attachment consists of two elements. One is an updated draft of Schedule 4, which I had received and annotated with my points following my review of it. The other is my handwritten notes from a meeting which took place between myself, Richard Walker and Scott McFadzen on 12 February 2008. I sought to change paragraph (a) (ii) of the definition of Base Case Assumption. I think my issue was around amended base date design information. I think what I was anticipating was that, by the time we got to novation, the base design would have changed. I was anticipating that it would be a developed design in accordance with the

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contract. I was anticipating that design principle, i.e. shape, form, etc., would be based on the obligations that are set out in the Employer's Requirements and aligned with the SDS technical specifications and the Infracore proposals. I was anticipating the future state as at contract close rather than aligning it back to all of the base date information. I think I was just feeling that the base date design information was the wrong starting point, certainly by the time that we got to contract close. I do not think I was looking for the whole of this clause to be deleted, as is I think clear from my annotations. I do not think that this infers that the whole of (a) (ii) was to be deleted. There was some discussion about it. I had some concerns about the way in which it was expressed. I do not recall when this version of Schedule 4 was provided by Infracore.

277. I have been shown the email exchange of 19, 20 and 22 February 2008 (CEC01449876). I was a party to these emails. Attached was a version of Schedule 4 which both parties revised (CEC01449877). I cannot really make any comment other than what the words actually said. I do not remember the detail of the discussions at that time. They were, quite clearly from the documentation, lengthy. That they were looking for a coherent document is to be expected. I do not recall what was meant by "*potential discrepancies*" identified by BBS (page 1 of the annotated Schedule 4). The use of the phrase "*normal development*" in the Schedule (for example, page 6 at clause 2.4(a)) is clearly another attempt to articulate what I have described as defining the 'envelope' or the limits of BBS responsibility for design development. I think I used the phrase elsewhere in earlier papers. It was intended to mean the development of a design within the 'envelope', i.e. development of the detailed design. I note that it states at page 6: "*The description of "normal development and completion" is not satisfactory. Input will be required by the legal teams but it would be helpful to understand what is intended to be included in such "normal development"? In any event this definition should be a definition rather than a stand-alone pricing assumption as currently presented.*" The fundamental issue was: what is normal design development? I note that someone has added the word "*form*" to clause 2.4(a) on page 6. I do not know whether it is in the same font. It is not terribly clear

from looking at that. You would need to look at the original to identify who changed what.

278. I note that on page 11 BBS rejected the TIE terms on how to approach the situation in which there was a departure from the Base Case Assumptions. Their concern was that Clause 80 required agreement to changes before works could proceed. They stated that they would not accept the cash flow risk on these matters and claimed that it has been discussed previously. I vaguely remember a discussion about this issue. Given the parties involved in the decision-making process, the process had the potential to become quite lengthy. BBS would then be left suffering the cash flow consequences of the parties' indecision. Their concern would have been something along those lines. Quite where we ended up on this I do not recall. I remember there was a discussion. BBS were very upfront about their concerns. I do not recall who was involved in that discussion. I understood the point they were making.
279. BBS were concerned that it would take a long time to come to a decision on whether or not to approve a change. They wanted, in that situation, for the money to flow through in an interim payment or for the milestone payment to be adjusted. That was their concern. All contractors are concerned about their cash flow. It was they raised and therefore it had to be dealt with. I do not recall the ultimate outcome on this issue.
280. I have been shown an email that I sent to Steven Bell and Jim McEwan dated 3 March 2008 (**CEC01450122**). Attached was a paper I prepared intending to note the parameters for negotiations in remaining matters **CEC01450123**). One of the issues considered was Schedule 4. This document sets out some of the parameters that we needed to be mindful of by differentiating between those things that must be agreed by contract award and those which could be addressed by change control post-award. It lists the issues as they prevailed at that point in time. We were still discussing the definition of 'normal design development'. We were still discussing, arguing and negotiating the form of the words to give meaning to my concept of defining the 'envelope' of responsibility for design development. BBS were looking to negotiate away

from what had been set out in the Wiesbaden agreement. We were looking for something that was closely aligned to that. We were working towards a preferred bidder position. We needed to maintain, at least in the broad principle, the strategy objectives that were set out in these documents.

281. I have been shown an email exchange between Bob Dawson and Ian Laing, and others, dated 6 and 10 March 2008 (**DLA00006382**). I was copied in. It refers to the wording for Schedule 4 that was agreed during a telephone conference that I had been involved in. Ian Laing was on the telephone conference. I do not recall any of the other attendees. I am sure there were others. Richard Walker was quite conceivably there also. I have no specific recollection of the conference call. The suggested clause 3.4 came out of the ongoing discussions to agree Schedule 4. It would be speculation to suggest that it entirely came out of the telephone conference. Some of those words are not new. They appear in earlier drafts in some form or other. Subject to the Base Case Assumptions, and other elements of Schedule 4, I would agree that it places the risk of scope change after the date of the Base Case Assumptions on TIE. I agree with that assessment of clause 3.4. I do not recall whether there were discussions about this transfer of risk.

282. I have been shown an email exchange dated 12 and 19 March 2008 (**CEC01451012**). The chain ends with an email from Ian Laing of Pinsents to Bob Dawson, attaching a revised version of Schedule 4 (**CEC01451013**). I was copied in. I think the changes to Schedule 4 do on the face of it look dramatic. The format of it has been changed. Statements in it have been moved around compared to earlier versions. That said, much of it is not wildly different from the previous versions. I know an earlier version did have the words "*inter alia*" in clause 3.5 (p13). We were trying to give meaning to the concept of a defined 'envelope' for BBS responsibility for design development. I think that was where we ended up in those discussions. There are still the statements in this version about what normal design development meant. There are changes, but I am not sure that I would agree that they are radical changes. Given the exchange of documents between the parties, the points that had been made between the parties and within parties, the negotiations

had gone on for about two months. I would agree that the change in clause 3.4 in relation to design from a statement that it includes development to one where there will be no change other than development is radical. To maintain a fixity on price and programme there should not be changes to the scope of the scheme other than design development. Infraco were very sensitive to subsequent changes being introduced or applied. They were sensitive because subsequent change would mean that they would potentially bear the costs of such changes and which were not allowed in their bid.

283. I have been shown an email from Bob Dawson to Suzanne Moir and others dated 12 March 2008 (CEC00592628). I was copied in. Attached to that email was a further version of Schedule 4 with TIE's changes (CEC00592629). This introduces the idea that in some situations there will be a Notified Departure and that that would constitute a Mandatory TIE Change. My response: This seems to sort out the apparent circularity. I do not think this is new because it is referred to in previous versions. This was brought in as part of the on-going negotiation. We were trying to bring clarity. Design development lay with the contractor. It states in clause 3.4 on page 6: *"The Infraco Construction Works Price includes for any impact thereon arising from the normal development and completion of designs based on the design intent for the scheme as represented by Base Date Design Information.... Subject to the above, the Design Prepared by the SDS Provider will not..."*. In my opinion, taken at face value this extract clearly leaves design development with the contractor.

284. I have been shown an email exchange dated 20, 26 and 31 March 2008 (CEC01465908). Part of that chain is an email dated 31 March from Andrew Fitchie to Jim McEwan and Steve Bell. Andrew Fitchie noted that if SDS could not commit to adhere to v26 of their programme, the result would be that a notified Departure would be triggered. I was not copied in to Jim McEwan's email to Steven Bell in response, but I note that he stated: *"My view is that if we pursue Andrew's steer on this we will open up the whole can of worms on the Infraco contract cost overall, and that we have to take on the chin that the programme version is not consistent, get the deal signed and then fight the notified departure tooth and nail."* Perhaps I was

not copied in because I would probably have advised a more cautious approach. I have also been shown my email dated 31 March 2008, responding to Andrew Fitchie's email which I also sent to Jim McEwan and Steven Bell (**CEC01465933**). My email is talking about programmes, and the final information needed to truly reflect where we were and what we believe could be delivered. In my reply I am recommending an approach to mitigate the issue Andrew raised that is in contrast to Jim's comment fighting "*tooth and nail*" *post award*. I would have wanted resolution of this issue rather than proceeding with it unresolved. You can see from the various correspondence and proposals that I put forward that this was my general approach. There were probably discussions taking place on this particular issue. We met fairly regularly. We met before any of the negotiation meetings so I am sure it was discussed. I do not recall what was decided in respect of the risk that this represented. I am proposing, in my email of 31 March 2008, attempting to understand the differences between potentially conflicting programmes, reconciling them and understanding how the differences between the two SDS programmes would impact upon BBS's detailed programme. BBS's lawyer, Ian Laing, in his email further down the chain (addressed directly to senior personnel at TIE) is saying 'look at this and understand'. Those emails noted that the effect of Schedule 4 would be that there would be an immediate notified departure on contract execution. I was made aware of this at the time, by virtue of Andrew's email. I think inevitably there would have been discussion within TIE on this issue.

285. I have been shown my email to Steven Bell and others of 31 March 2008 (**TIE00078982**). Attached to that email was a document entitled 'Infraco Contract - Final Negotiation Points' (**TIE00078983**). This document shows the points remaining to be negotiated. I can only assume that, because it is not included or referred to, the pricing assumption had been settled and agreed by then. However, the absence of the pricing schedule this does not definitively establish that it was.
286. I have been shown a chain of emails dated between 20 and 31 March 2008 (**DLA00006404**). I note that the emails appear to suggest that there was a

further meeting about Schedule 4 in late March. The emails appear to make it clear that because the design programme to be used was not the one in of the Base Case Assumptions, it would mean that there was an immediate notified departure on contract signature. I note that I am not copied into any of the initial emails, but the chain was later copied to me on 31 March by Andrew Fitchie. I have already discussed earlier what consideration was given to the Base Case Assumptions meaning that there would be an immediate notified departure on contract signature. I set out my view as to what should be done in my Email to Jim McEwan dated 31/3/08. I note there is an email in the chain where Jim McEwan is asking for advice directly from Andrew Fitchie. I am copied into the reply. I note that I also have replied in an email setting out how I think it should be dealt with. Andrew's email says this alignment created a notified departure so therefore it needed to be dealt with. I, at least, understood what its impact would be. That email chain does not contain the email back from Jim McEwan to Andrew Fitchie that I have referred to earlier.

287. I have been shown an email exchange dated 24 and 24 April 2008 (CEC01332193). I was a party to these emails. In my email to Andrew Fitchie and Steven Bell of 24 April 2008, I said that I was concerned that changes suggested by BBS would be more onerous to TIE than Schedule 4. This is on the basis that any design change would give rise to a mandatory TIE change. I note Suzanne Clark features in the chain. I do remember that she was very particular. Susan says she agrees. I think this email chain relates to changes to a related Schedule which dealt with the review of designs (the DMP or Design Management Plan). That was one of the mitigations to support the notified departure principle. I think I saw this as a watering down of that mitigation. I thought that, potentially, the outcome would be that BBS could put a gun to TIE's head and TIE would not really be able to refuse to accept designs that had not been assured. TIE would not be able to reject the designs for construction. The impact was that designs could be automatically treated as issued for construction. If TIE blocked that then it would become an automatic notified departure. That's what it is saying. As I say, that is too blunt. We needed to be able to control the review and release of the emerging

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design. This is referring to one of the mitigations that we put in place to try and ensure that the designs that were released were assured and it is referring to the mitigation we put in place to provide confidence that BBS would not create problems which could then become notified departures.

288. I have been shown an email exchange dated 27 February, 3 and 5 March 2008 (**CEC01463678**). I am party to those emails. I note that I, and other senior personnel within TIE, were corresponding directly with the solicitors for BBS and that I copied Andrew Fitchie in. I have also been shown two further email exchanges where this is apparent: the first dated 13, 14 and 18 March 2008 (**CEC01491097**), and the second dated 12 and 19 March 2008 (**CEC01451012**). I was party to the emails in both chains. We were in a series of meetings. Andrew was involved in those meetings (as was Ian Laing, Richard Walker, Michael Flynn, Suzanne Clark and Martin Gallagher). These emails relate to one of those meetings. Andrew probably summarised the issues and there was an action for me to respond to. If you look at the fonts in some of the email they are different. The font underneath looks like a DLA font. The ones obviously that I responded to are in the font that TIE used. Looking at this first email, my email being dated 5 March 2008, these look like very technical points rather than legal points. Quite conceivably Steven was responding to the two points that had come out of those late negotiation meetings. I am not prepared to comment further on the question asked..

Further Negotiations and Award of Contract

289. I was involved in the negotiations to close off all of the outstanding issues. In many instances I led those. Latterly Jim McEwan took this responsibility. Steven Bell led the negotiations overall during the period up to my departure. The other principal persons involved in the negotiations were: Andrew Fitchie, Steven Bell, Alistair Richards, Matthew Crosse, Richard Walker, Michael Flynn, Herbert Fettig, Ian Laing and Suzanne Moire (who were BBS's lawyers) together with a lawyer representing Siemens. Bob Dawson and Dennis Murray were involved in some of the negotiations (particularly around

Schedule 4). Examination of the records and Emails will indicate those involved through this period.

290. From the start of 2008 onwards there was an on-going programme of negotiations. Matthew Crosse was involved in the majority of those discussions. Matthew left before I did. I do not recall when. Steven Bell firmly picked up Matthews' responsibilities thereafter. Trying to remember the exact circumstances, in the multitude of issues that there inevitably are throughout a concurrent set of negotiations of this nature, is difficult. In respect of explaining the output of the Wiesbaden negotiations I received feedback from Matthew whilst he and Willie were in Wiesbaden. On their return I think the majority of the explanation fell to Matthew rather than Willie. Matthew and I certainly would have discussed the negotiations in some detail.
291. I have been shown the papers for the TPB meeting on 13 February 2008 (CEC01246826). At page 28, it is noted under item 48 that one of the risks recognised was that the price might creep up after the tender and before construction. One of the actions is noted as being that Infracore would undertake due diligence on the SDS design. I am noted as the action owner. One of the activities that Infracore undertook was to review the SDS designs during the Infracore bid period and with the preferred bidder thereafter. This is referenced in the Negotiation Strategy dated July 2007 (CEC01606106, p5 para 2.12. It was a due diligence exercise to allow bidders to review the emerging designs to confirm their acceptance of those designs (see p2 para 1.2 point 2). This would be required as one of the steps to novation. The risk is marked as complete, the due date was 1 Oct 07. BBS as preferred bidder would need to be comfortable with the designs produced before any novation could take place. The concern was that we would lose visibility of BBS's emerging thinking and views around the designs in the absence of a due diligence process and not be able to control any negotiations around price.
292. I have been shown an email from Jim McEwan to me and others dated 18 March 2008 (CEC01430245). I note that he advised that he would be managing contract close out. I do not recall why there was a change made in

March 2008 to put Jim McEwan in charge. I think at the time of this email I had made it clear that I was going to leave and Matthew was conceivably about to leave. I had made it clear that I needed to go by a certain date. Dennis Murray, who is copied into the Email, had already been appointed to take on my role. I think what Jim is saying is that he would provide the continuity from my and Matthew's departure through to the finalisation of the contract.

Later Agreements

293. There was an agreement made in March 2008 to increase the price by £8.6m. I have been shown an email from Steve Bell to me and Jim McEwan dated 10 March 2008 (**CEC01489952**) which confirms that. I have also been shown Jim McEwan's reply (**TIE00678587**). The agreement came out of the final negotiations to deal with essentially points 1 to 5 in Steve Bell's email. The significant ones were point 1 - the programme point 1, point 2 - the resolution of the Employer's Requirements (this resulting from their reconciliation I think with SDS outputs following the process outlined earlier in my statement), and point 3 - the acceptance by BBS of design quality risk and the time impact of any deficiencies in quality. I note that Jim in his reply agreed with Steven Bell's email. As part of this settlement sum BBS accepted the time and cost consequences of any deficiencies in the quality of SDS's design. I think these emails speak for themselves. I do not know how that was carried into the contract. I saw the travelling draft contract and its updates. I do not recall receiving a final copy of the actual signed agreement. I suspect that I had left TIE by the time that was agreed.
294. I have been shown an email from Stewart McGarrity to me and others dated 31 March 2008 (**CEC01546703**). The email and attachment (**CEC01546704**) referred to various price increases. This shows the reconciliation of the Infracore Bid with the Final Price. Some of this relates to the finalisation of various elements of the negotiations. There is reference to third party funded works for Forth Ports and RBS which was £5.5m. It also shows the firming up of the provisional sums, or some of them at least..

295. In response to BBS's late demand for a price increase, I have been shown my email to Steven Bell dated 1 May 2008 (**CEC01294414**). These are Andrew's points at the bottom of that email. This was us pushing back on BBS's demands. As I said, the negotiations got a bit fractious. SDS were being particularly demanding during the latter stages. As were BBS. What Andrew has outlined here, and I think it is a position that I would have agreed with, is essentially a negotiating proposition to try and push back on INFRACO's demands. We are not saying that they were not the preferred bidder, we were threatening that they would lose preferred bidder status. That would have had reputational damage for them. I think they were bidding for some fairly large roads projects with TS, so we pushed back. BBS were looking to step back on various risks. I forget the detail. This was looking to push back with a counter-proposal that they take more risk. It was an attempt to end up back in a more neutral position. In return for additional money, they should be required to accept more risk.
296. The £3.3m transferred to phase 1b was to do with the allocation of costs between the phases. Thinking about it, phase 1b joined into the phase 1a alignment somewhere around Haymarket (on the Edinburgh Airport side of it). There would have been junction work and various earthworks etc., which probably were priced into the phase 1a but they were only there by virtue of phase 1b. It was a negotiation point at preferred bidder stage. Perhaps there were also other elements around the allocation of preliminaries. I think that this is the same sum that was considered above.
297. I have been shown an email from Steve Bell to me and others dated 8 May 2008, forwarding an email that he had sent to BBS earlier that day (**CEC01275190**). A paper of conditions was attached to Steve's email (**CEC01275191**). The email and paper sets out the basis of the deal that was to be done with BBS. My response: This is where the negotiations finally ended up. I had been in Edinburgh on 6th and 7th of May and so would have input into this proposition. . Though, I do not think I was directly involved in the detail of those negotiations. The email and attachment follows on from the previous email (referred to above), and closes down various issues. From this

document, it certainly converts some of the £12m demand from BBS set out in the documents referred to in 299 above into an incentive schedule and a bonus for completion of various stages by the due dates with conditionality around other sums. What we were to obtain in return is set out in the Conditions appended to the email

Value Engineering

298. I commissioned some of the value engineering exercises, particularly the ones that happened early in 2007. I note that there are reports of workshops in which I am named as the Team Co-ordinator. That is because I had the responsibility for making sure that the value engineering actually happened. I did participate in some of those workshops. They were led by Mike Jefferys. He was a well-known value engineering manager/facilitator. The outcome of the value engineering exercise was savings against the budget, the raising of the level of the depot as referred to earlier for example.

Third Party Agreements

299. Apart from SDS, MUDFA, Infracore and TRAMCO, there were other agreements that required to be sought. There was an Asset Protection Agreement (APA) that was required with Network Rail. That was largely to do with responsibility for and mitigations of stray current from the tram electrification system and its potential impact on the NR signalling systems on adjacent tracks. There were a whole multitude of third party agreements. They should be all scheduled in the documentation. All those were with various parties that were affected by the tram project going through Edinburgh. I remember an agreement with Forth Ports, because there were some parallel negotiations with them about finishes. There was an agreement with The Gyle. Those are just two that stick in my mind. I cannot remember why The Gyle is so significant. The requirement for third party agreements are an inevitable requirement in projects of this nature and powers granted usually require that they are entered into There must be somewhere in the documentation a list of all the third party agreements, i.e. between TIE and/or

CEC and those third parties. I was not involved in the negotiations to obtain them. I believe that most were entered into before I joined the project, albeit there were still ongoing issues to be settled as part of those agreements. I recall Forth Ports were difficult because they were quite demanding about what they wanted out of the Tram Project, particularly in relation to road surface finishes.

Alignment of Contracts and Designs

300. As part of my responsibilities for delivering the procurements for ensuring alignment of SDS (including technical specifications) and Infraco contracts and the Employer's Requirements. I have discussed earlier in my statement the issues relating to the alignment of those areas. I have already discussed the alignment of Employer's Requirements, the specifications and the Infraco proposals. I discussed that under the section entitled Novation and also under other parts of the discussion on SDS. It is essentially bringing about alignment between the Employer's Requirements, the SDS technical specification and the Infraco proposals, particularly in the light of an emerging design and on-going negotiations with the preferred bidder. It was recognised in the SDS Novations Issues paper that negotiations would be required to bring about the novation (See CEC01688881). This requirement to align was described as part of the Negotiation Strategy dated July 07 (See CEC01606106).
301. TSS's contract was a contract for services and support. It does not relate to the alignment of the contracts.
302. I have been shown an email from Ailsa McGregor to me and others dated 5 December 2006 (**CEC01786334**). Attached to that email was a schedule of key clauses and comments (**CEC01786335**). In that email and attachment, she sets out her views on the misalignment between MUDFA and SDS. I have also been shown a further email from Ailsa dated 13 March 2007 and the reply that she received from Susan Clark dated 15 March 2007 (**CEC01791704**), where she makes further comments on this. I agree with Ailsa's conclusions. It was quite right that both agreements had been

executed by that time. I think one of the first things I was asked to do was to sign the MUDFA contract (which I had not been involved in the procurement of). I generally would agree with the points set out in her email on 13 March 2007, apart from point 4. It says bills of quantities in the MUDFA contract are not accurate in relation to the utilities diversion work now being designed by SDS. The bills of quantities in the MUDFA contract were effectively bills of approximate quantities. I have explained the unreliability of utility information. SDS would have needed to get information from the utilities in order to deliver the utility diversions designs. The reason that the MUDFA contract, although not initiated by me, was based on approximate bills of quantities is because effectively it was a re-measurement contract to try and bring some commercial control to what effectively was an uncertain scope of work. Ailsa's more significant point is really about the misalignment in terms of design obligations. Effectively where there was a delay in the provision of designs, MUDFA would become entitled to extensions of time and money for prolongation. They would have also become entitled in the event of any increase cost of delivering utility diversions based on the SDS designs. This would be reimbursed to MUDFA through the re-measurement of the works.

303. The need for realignment was also raised at an SDS review meeting in February 2007 (**PBH00021529**). Do you agree with what was said there? I agree with the statement that alignment of the Employers Requirements with the SDS contract system requirements (referred to in my answers as technical specifications) was required. This is referenced in other documents and referred to previously.

304. I have been shown the papers for the TPB meeting on 19 April 2007 (**CEC00688584**). At page 27, the explanation of Risk 353 assigns it to the issue of misalignment of contracts. I have referred to the Forth Ports Agreement. I do not recollect the detail of the agreement. Forth Ports had some control over the finishes by virtue of their agreement with CEC/TIE. Their aspirations for surface finishes in that area did not align with the Infraco contract scope. We were trying to align the two contracts. Trudi Craggs was looking after that particular issue. She was trying to encourage Forth Ports to

come to a decision on their requirements so that we could get them designed in timely fashion. The consequences of any misalignment were that it potentially introduced further uncertainty into the Infraco price. There were similar issues around the finalisation of the Asset Protection Agreement. Risk 353 clearly was an issue requiring attention and mitigation. We needed to be sighted on those issues and to manage their resolution e.g. intervening to bring about timely decision with third parties.

305. I have been shown an email chain dated 19 and 20 December 2006 (CEC01788103). I was copied into these emails. Ailsa McGregor's email dated 20 December 2006 notes that TIE had changed the Employer's Requirements without discussion with SDS and had then issued them to Infraco. This email was quite early on. At an early stage, I recollect that the Employer's Requirements were being produced by SDS. This I believe was a requirement of the SDS contract (See earlier reference in other questions above). The Employer's Requirements support the Infraco contract terms. Therefore TIE needed to be in control of their development and be satisfied that they defined the largely output requirements of TIE in relation to the scope, standards and constraints to be delivered by Infraco. SDS's interest would have been to produce something that aligned very closely with what they were producing. SDS conceivably could have been less concerned about things that would be important to TIE. There was a meeting where we tried to bring about an agreement on the Employer's Requirements and to draft a document to go out to bidders. I am not sure if SDS saw that or were represented. They probably did. I do not know whether SDS formally responded in relation to those. I think Ailsa is suggesting that they did not. It was all a bit of a glitch, if you like, in the original strategy, i.e. that preparation of the ERs would be left to SDS. I go back to my point that, given that this is a document which is critical to give meaning to the Infraco contract (because it sets out the requirements), TIE needed to be entirely comfortable, if not in control, of the development of it. You would of course need an input from SDS, and alignment with their design outputs, provided that those outputs were correct. In actual fact I think we were trying to achieve the reverse (which was to control it to ensure that there was no additional expense or to

minimise it to the extent that there was). I probably assigned this work to Gary Easton because it concerned the development of the Employer's Requirements. The need for alignment was recognised and was a significant element of the July 07 Negotiation Strategy as outlined above. The comment in this email is made in relation to Employer's Requirements that were issued for the purposes of obtaining initial bids. The discussions that we had with Steve Reynolds in February 2008 demonstrated that we had started an ER review and alignment process before Christmas with SDS, i.e. the alignment between technical specifications, Employer's Requirements and the Infracore proposals. What was agreed then was the way to resolve this issue.

306. I have been shown an email exchange dated 24 February 2008 that I had with Steve Reynolds (**PBH00035460**). I have also been shown an email exchange dated 27 February 2008, 3 March 2008 and 9 March 2008 between Ian Laing and Andrew Fitchie, which I was copied into (**CEC01550190**). The first email is referring to the proposals that Matthew and I put to SDS to bring about an agreement between the parties (TIE, BBS and SDS) to deal with the alignment and any gaps or misalignments. We developed a strategy to deal with that issue. There was then a series of meetings to negotiate that through. In the exchange I point out that SDS are best placed to identify any gaps between Infracore proposals and SDS designs. After all they were their designs. TIE could then review any identified misalignments and advise remedial action. Ian Laing's Email in the second document refers to this process. These were the steps that were agreed, as I recall, pre requisite to achieving the novation.

307. There was a mismatch between the obligations of PB in the SDS contract and the obligations that it was assumed they had undertaken in relation to the MUDFA contract. I have been shown Ailsa McGregor's email to me dated 13 March 2007 (**TIE00693268**). Ailsa makes that point in her email. Susan Clark was looking after this area at that particular point in time. Martin Hutchison (PB) was the Commercial Manager in the MUDFA Management Team. We were looking to bring about a practical way in which we could manage the development of the emerging designs and provide them to MUDFA so that

they could progress their works to programme. There were parallel discussions with SDS and MUDFA to facilitate this. This did not relate to Employer's Requirements. This related to the mismatch between the SDS obligations to produce MUDFA designs, particularly around production timelines and review timelines, and the terms in the MUDFA contract itself. They were misaligned as Ailsa points out. Note that the MUDFA contract would have been tendered well before SDS had produced the designs for the actual utility diversions. Hence, I believe the procurement approach that was essentially to establish a remeasurement contract.

308. I have been shown a letter from PB to tie dated 16 November 2006 (CEC01788104). In that letter, PB notes at page 5 that there had been 200 changes between the ITN information and their technical specification. I have been shown the letter from PB to tie dated 20 October 2006 (CEC01788105). This letter makes a similar point. It is quite conceivable that the letter in October 2006 is correct in what they say, i.e. that these changes were being made. I do not recall the detail of this (and it does not contain the responses from TIE) but no doubt the 200 changes included many that were minor or immaterial. We were giving them copies of the documentation that would go out to form the basis of tender for their review against their technical specifications that formed the basis of their contract. The documentation was that used to obtain the initial bids. They are saying there were lots of changes. They are also saying that would tell us exactly what the changes were later on. The changes would have come about because of the evolution of the project and clarification of TIE/CEC's requirements. I do not recall the materiality of the changes or what the effect of the changes were. It is not a natural consequence that changes, or differences must have had a cost impact. A review of the full list would indicate their materiality to scheme cost. The first⁶ bullet on page 4 for example was suggesting further clarity in responsibilities.

MUDFA

309. I have been shown the papers for the TPB meeting on 24 May 2007 (CEC01015822). They include the minutes of the TPB meeting on 19 April 2007. At page 9, section 8.1, it is recorded that I provided an update on MUDFA to the TPB. I expect this was done by means of the PowerPoint presentation at pages 33 - 51. The presentation likely considered the reports on the problems with designs, the fact that when construction had commenced more utilities were found than appeared on plans or surveys, and the fact that the utilities were not where MUDFA or the SDS designs thought they would be. I have talked previously about the unreliability of utilities information. Page 36 sets out the build-up of the contract sum in measured works. That was the level of the work to obtain rates. About 50% of the sum is for provisional sums for work not yet designed. That is how the overall contract sum was arrived at. I do not recall what the response was of the TPB to my presentation or details of how the issues identified were mitigated.
310. I would have thought that the implications for the cost of MUDFA and the time that this would be required to complete would have been discussed within the project prior to that meeting. I recall an earlier reference in Willie's letter of 4th October 2007 to Tom O'Neill (PB) (PBH00029211) where the MUDFA design performance was referenced as an issue. PB would have said that they were having problems getting accurate information from the utilities. Willie offered TIE's support to lean on the utilities to get that information. The obvious difficulty is if that information did not exist or was inaccurate. That being the case, PB would have had nothing else to base their designs on. That said, PB (via the MUDFA contract I think) did undertake trial trenches etc. to investigate and assess the accuracy of the information that was being issued. That would have been done on an emerging basis.
311. I was involved in MUDFA to the extent of trying to resolve some of the emerging contractual problems. I was not involved in the drafting of the original contract which predated my time on the project. We set out a

proposition for bringing progressive commercial certainty to the emerging work and therefore also the emerging cost of the MUDFA diversions.

312. The consequence of the uncertainty around utility asset information was that it added a cost to the project, prolonged the utilities diversion programme and put pressure on the programme buffer between completion of utilities diversions and commencement of Infraco alignment works. My PowerPoint presentation at page 41 notes the cost of MUDFA includes provision for 'risk'. What was included within this risk figure is set out in the presentation.
313. I said at the same meeting that 'pain sharing' contracts would not work (CEC01015822, page 9 point 8.2). I set out the reasons for that in the presentation itself (CEC01015822, pages 35 and 36).
314. I cannot think why we would have AMIS undertake the Infraco work. They had a different specialism. The issue was not so much to do with the performance of AMIS. The underlying issue was very much the unreliability / lack of asset information on the utilities, i.e. their locations, their depths and exactly what was there. MUDFA were selected on the basis of their capability to deliver utilities diversions and not to do the main tram infrastructure works. If you mean could they have done the diversions allocated to Infraco then this would have been unwise as those specific works were inextricably linked to the infraco works itself.
315. I think the work was transferred from the MUDFA contractor to Infraco because it was apparent that those works were inseparable from the Infraco works. It was construction practicality that determined which works went to Infraco. There would have been cost implications. I think we would have updated the estimates accordingly.
316. I do not recall being involved in any decision to terminate the MUDFA agreement with AMIS/Carillion. I think that must have happened after my time.

317. I have been shown an email chain dated 22 and 23 March 2007. The last email in the chain is an email from Sharon Fitzgerald of DLA to me and others (**CEC01621726**). Attached to that email was a marked up document referred to as 'MUDFA Contract Improvements Brief, DLA Comments' dated 23 March 2007 (**CEC01621732**). Also attached was two emails. The first was an email dated 28 March 2006 from Lorna Tweedie of DLA to Ian Kendall of TIE with the subject heading 'MUDFA - Report on Key Contractual Terms' (**CEC01621730**), which I was not a party to. Attached to that email was a document entitled Report on Key Contractual Terms of the Multi-Utilities Diversion Framework Agreement 'MUDFA' (**CEC01621731**). The second was an email chain 21 August 2006 and 20 September 2006 with the subject 'Key Commercial Issues in MUDFA' (**CEC01621727**), which I was not party to. Attached to that email was a separate email chain dated 12 and 14 July 2006, also with the subject 'Key Commercial Issues in MUDFA' (**CEC01621728**). Attached to that latter email was a document entitled 'Note on Key Commercial Issues' (**CEC01621729**). These documents all consider the issues concerning the MUDFA contract moving beyond the pre-construction phase. This email from Sharon to me in March 2007 was commenting on the proposal. I am not sure where it came from. I do not think it was me because I resisted the introduction of incentivisation into the MUDFA contract. I do not recall any incentivisation actually being put in place. I think this is what resulted in the comments in the Board presentation referred to above and included in the Board papers on 24 May 2007. The resulting practical outcome of us transferring some of the works to Infracore was that it avoided us wasting money on a flawed incentivisation arrangement.
318. I have been shown an email that I sent to Julie Smith and others dated 18 April 2007 (**TIE00087958**). Attached to this email was a PowerPoint relating to MUDFA dated 19 April 2007 (**TIE00087959**). This looks like the same presentation that is referred to later. This is the same presentation that was prepared for the TPB meeting on 24 May 2007 (**CEC01015822**). The presentation starts at page 33 of the papers.

Reporting and Relationships

TPB

319. I have been shown an email that Trudi Craggs sent to me and Matthew Crosse dated 12 April 2007 (CEC01623417). I can see that she was not happy with the reporting to the TPB on these issues and that in her view the reporting did not disclose the bad news. This email is about two things. Firstly the emerging situation in MUDFA and secondly the proposals to do advanced works. I have discussed the issues concerning MUDFA. I discussed these in the presentation to the Board. I set out the problems associated with pinning down the scope for MUDFA utilities. Pinning down such utilities scope will always be problematic and the costs uncertain for the reasons outlined earlier. This was why the contract was on an emerging costs basis, based on bills of approximate quantities. With regards to the proposals to do the advanced works, this was proposed and agreed as part of the strategy set out in August 06 TPB papers, page 4 para 6 of the strategy paper. There was a section within the overall budget which set out the costs for delivering those works. We were clear about what we were doing with the advanced works and their purpose, which was to reduce the pressure on the overall programme as per the August 06 strategy update.
320. I note that in her email Trudi wrote: *"I think the board is becoming suspicious of the way we report to the board - while we need to highlight the good news stories we need to be honest about where there are issues."* I did not feel that things were not being disclosed to the TPB. Various people will have their own opinions. I think it is fairly self-evident from the presentation that was given to the Board on MUDFA that we were clear about what the issues and problems were. There would not be any advantage in not presenting the bad news to the TPB. It was a very small programme. People were occupying the same offices. I am not sure how the TPB would not know what was going on in any case.

CEC

321. I have been shown emails that I exchanged with Miriam Thorne dated 11 September 2007 (CEC01630901) and with Graeme Bissett dated 12 September 2007 (CEC01630940). I have also been shown an email from Rebecca Andrew and Susan Clark which was then forwarded to me and others dated 12 September 2007 (CEC01630955). These emails relate to the intention of CEC to appoint a party to provide some oversight. I do not recall this but reading through the papers it seems that there was a desire on the part of CEC to appoint CSP to undertake a review on the risk position. They are noted elsewhere as supporting TS commercially in their funding to CEC for the scheme. Based on the comments in my email, I (and probably others) felt that their brief was too wide and not really addressing the points that CEC seemed to want to have some further review of. Hence I recommended a tighter brief within the three bullet points in my email to Miriam to focus on the issues that it appeared CEC wanted assurance on. We were also concerned about the comments that some of the people were putting forward. It appeared that not all had major infrastructure project experience and this and would mean that perhaps CEC would not get the level of scrutiny they required. I pointed out in my email to Miriam that the OGC reviewers were, at the same time, undertaking similar reviews of which CEC would have got the benefit. To me it seemed like a duplication of effort. There is further a practical consideration. Reviews take time to support. There is significant preparation to do and explanation require. Some of the responses for reviewers can be quite extensive where the individuals reviewing do not have major project experience or knowledge. The reference to a potential disruption to the programme in my email to Miriam was a reference to us being pretty busy with negotiations with BBS at that time and that this would distract from that task. That is the background to these emails as can be seen from their content.
322. I do not recollect there being any impression, within TIE, that CEC were of the view that insufficient information was being passed on. Duncan Fraser (CEC) was co-located within the project. I recall having quite a few conversations with Duncan about various issues. Duncan was the day-to-day representative

for CEC. Independent reports that were being provided by DLA to CEC (although I do not recollect ever seeing them) and also by OGC reviewers. Given that the project was in full flight and in an intensive period of effective negotiations, I was perhaps a little puzzled as to why we needed to have a further review. Anybody from CEC could come and look at anything they wanted at any time, subject to the points referenced below.

323. I do not recollect that commercial confidentiality was a particular issue. There is always a requirement in ongoing procurements to keep certain things confidential. The purpose of keeping ongoing procurement outputs confidential is obvious. One major reason is to avoid the situation where a particular negotiation tactic gets inadvertently leaked to another party. Those sorts of things can be expensive slips. I would have discussed that as a key concern if it was something on my radar. I do not think that was an issue here. My concern here was about multiple reviews and the extensive CSP brief which went beyond that required by CEC. That is my interpretation of what I wrote at the time.
324. Graeme Bissett seems to have shared my view given his comments in his reply to me of 12 September 2007.
325. I have been shown two emails from Graeme Bissett to me and others dated 12 October 2007 (CEC01624078). Attached to Graeme's email was a document illustrating risk (CEC01624079). In his emails, Graeme noted that it might be necessary to have come to clarity as to what was meant by 'fixed price'. I do not recollect the issue. However, reading Graeme's email, I can see that that could well be an issue of the nature of the price basis for contracts, fixed price, firm price etc., are inevitably described in technical language. I would have probably agreed with Graeme's point that we needed to be careful and clear on what we meant by fixed price and the level of certainty within the numbers being reported. I do not recollect the specific issues but the second paragraph of his follow up email talks about the different ways of looking at the levels of fixity of the various parts of the overall estimate for the project. Some of the estimate, a good proportion, was spent

costs up to that point in time. Given that they are historical 'Spent costs' are a matter of record and as such there are no significant risks or speculation as to what they might be. I cannot really comment any further on the second paragraph of Graeme Bissett's follow up email. I do not recollect what changes were made. I do not recollect that I was involved in the presentation of those figures to CEC.

326. It is inevitable that there are difficulties in explaining project costs and budget for complex schemes to the general public. It would be rather naïve to suggest otherwise. A contract, to a degree, is only the starting point and there is inevitably risk in forecasting the outcome of such projects. The more complex the project the more risks. There is also an increased chance of unforeseen future events, or combinations of events.
327. I have been shown an email from Andrew Fitchie to Graeme Bissett dated 9 March 2008 (**CEC01463884**). I was copied into the email. Attached was an updated version of the contractual risk matrix (**CEC01463885**) and an initial version of the Close Report (**CEC01463886**). I note the statement in the draft close report that there had been no material change in the Risk Allocation Matrices at page 44. I note this remained in a later version which reflected comments from the various parts of the TIE team. I have also been shown an email from Graeme Bissett to me and others dated 11 March 2008 (**CEC01428730**). Attached was a revised version of the Close Report (**CEC01428731**). The revised version of the report records at page 28 that the only material change in risk allocation was in respect of the delay in delivery of designs by SDS. It also records at page 26 that BBS had explicitly accepted design quality risk as part of the agreement of 7 March 2008. My response to the questions: From cursory review the initial version of the close report (**CEC01463886**), there are many risks noted as relating to contractual clauses and the consequences of a failure to follow those contractual clauses. There are several clauses relating to the parties needing to collaborate to deal with various potential emerging issues. That is not uncommon in contracts. The NEC, for example, was founded on the principle that the parties collaborate to deal with the emerging issues, howsoever they may have been caused.

Those are all identified on the register as a shared risk. That would mean that if one of the parties ignores those collaboration clauses, or issue resolution clauses, then that would lead them into contractual difficulties. The risk matrix was an update of the travelling risk register that had been in place largely from the start of the project when I arrived. It was updated at various stages. It was quite a lengthy document. I would have thought that I contributed to parts of the risk allocation matrix. I certainly would have reviewed it.

328. I note the statement found at paragraph 2.1 of the Close Report on page 4 that states in broad terms that costs had gone up and risk has not changed since October 2007. From my recollection of events at the time I think, in broad terms, that's probably correct. I have not compared the two documents. Throughout the negotiation of the Infraco contract, and in particular Schedule 4, there were as indicated earlier, negotiations to get to a position that bounded Infraco's responsibilities in a reasonably clear way, i.e. bounded their geographical and logistical responsibilities. That was a known issue back in October 2007. There were various mitigations proposed to deal with those issues which I have already discussed. On the assumption that all of that was reflected in the final contract, then it would be correct to say that, in broad terms, the price increased and risk had not changed since October 2007. It was quite a complex contract (as can be seen from the length of the risk allocation matrix and the size of some of the other documents).
329. I agree with the broad thrust of the statements in the Close Reports regarding the factors which compromised SDS novation negotiations with BBS as listed at page 11 of the initial version, though that is a commentary on the journey and not necessarily a statement of the final position reached I have already referred to those when discussing the SDS novation and the lengthy negotiations to settle that with both SDS and BBS. That is why the Infraco contract sum was increased, in exchange for BBS taking on SDS performance risk.
330. Paragraph 2.4 of the draft Close Report considers the difficulty in getting to an agreed position on novation. We reached an agreed novation position through

boxing off a lot of the outstanding risks and uncertainties around responsibility for design. The report goes on to outline the areas where care would need to be exercised post-award in order to hold BBS, and thereby SDS, to the terms of the deal so they were not at odds. What we were seeking to achieve was, in broad terms, the same level of transfer of risk and responsibility to Infracore as the original strategy. There were concessions that had to be made. Those concessions are detailed in the report. There were also mitigations to these positions. I believe they are outlined in the report as well, or intended to be in the points at the top of page 13 and also at para 2.15. Those parts of the report form a reminder to the project. We were putting CEC on notice that these were the areas that needed to be watched. Those areas were particularly related to the completion of the designs by SDS. I think this is also a related email (**CEC01465933**), where I pointed out the need to reconcile the BBS and SDS programmes to at least be sighted on, if not mitigate, the problems of designs becoming notified departures. I think Andrew supported my view on that. Whilst my Email is at a later date (31/3/08) it underscores the importance of mitigations. In the absence of reconciliation of the programmes and mitigating action delay in the delivery of designs would delay work delivery with associated costs.

331. I have been shown again the later version of the Close Report (v7) dated 10 March 2008 (**CEC01428731**). This is the version that I have already referred to, which was attached to Graeme Bissett's email dated 11 March 2008. As I have said, at page 28 it records that the only material change to risk allocation was in respect of the delay in delivery of designs by SDS. This was the main issue that came out of the SDS /Infracore negotiations. I do not recollect the reasons for changes from the previous version you have shown me. It has clearly been edited and the order changed, the points relating to the history of the difficulties in getting to an agreed novation are now referenced in the Appendix. On the face of it and from cursory comparison the two documents are not that different in content. The earlier drafts of the Close Report also referred to the risk issue around programme for delivery of the remaining SDS designs – see p11 notes (1) and (2).

332. This version of the Close Report is looking to describe the final agreement. The previous drafts were, I believe, statements of history and the indicating the issues that were encountered in getting to that final position. Those issues were largely closed off (with the exception of liability for design progress). I am not convinced that this resulted in a particular material change of risk allocation. Statements about the problems and the difficulty of getting to a particular point in a negotiation are not really material to the end game. I do note that the Appendix (which starts at page 33) refers to the difficulties in gaining agreement on responsibility for delays resulting from failure of SDS to obtain consents and design programme risks.
333. There are statements, whether in the draft or final versions of the Close Report, which refer to the remaining risks. For example, in the Appendix to the V7 Close Report various risks are referred to in bullet points A to F on p34, and the commentary on p35 explains the circumstances which could precipitate delays in the delivery of the designs. This I think relates to question 5 in this section which relates to the reduction in risk allowance from £49m to £32m. There is significant commentary in the Appendix relating to the risk allowance in para 8.2 to 8.6. The issue of risk allocation and whether the transfer of risk was achieved is very much highlighted within the Report (if you take the report as a whole document). I don't recollect whether I was involved in considering the phraseology used in the final Close Report. It would be logical that the sum would drop on the basis of where we finally ended up in the negotiations (particularly around the SDS novation and the mitigations which were set out in order to minimise the significant residual risk of delays to the delivery of design by SDS). The mitigations were the most important activity to manage the remaining risks rather than additional risk cost allowances.
334. The draft considers that risk transfer had been achieved in relation to design packages which had been issued and approved. This is because they are subject to novation terms. In relation to the other designs, the risks that exist are identified at page 34. The report notes that the risk presented to CEC/TIE could be heightened by actions of BBS/SDS at page 35. The measures to

control the risk supposed that TIE would work with CEC and Infraco to manage and maintain improved SDS performance (page 35). Once novation was complete, TIE would not have a contract with SDS. The overarching question that was being asked in this document (though not explicitly stated) was, given that TIE no longer had a direct contract with SDS following novation, and how could TIE have managed the design process? My response: I think a lot of the activity, and some of the scenarios that are set out in those bullet points A to F, relate to obtaining CEC's approvals for designs and TIE's influence on the progress of that. There are obligations in the contract for Tie and BBS to collaborate. TIE would/could exert its influence over SDS effectively through its relationship with Infraco. They still sat in the same building. I think SDS remained there probably for some time. Practically, influence over SDS could be done via the Infraco agreement and the agreed processes to deal with remaining consents as referred to in the Report.

335. It certainly was not the intention of the contract that BBS was not to be responsible for design or that they could bring about a state of affairs that would amount to a notified departure with TIE having no control. Nobody would consciously configure the contract that way. Interpretations after the fact are a different matter. Control was intended to be effected by the measures outlined in the report.
336. I have been shown a draft letter dated 10 March 2008 from DLA on behalf of TIE to Gill Lindsay of CEC (**CEC01428733**). At section 3.4 of the draft, it refers to the SDS novation being arduous, which it was. I note the reference to the UK urban light rail projects in section 4.1. The 'market' referred to in that section of the draft was a pretty small one given that there had been a very small number of schemes. There are a number of things which provide an explanation of the history of the negotiations in this letter. It is correct, as noted at section 4.1, that SDS insisted on an instruction to align their designs with TIE's Employer's Requirements. It is correct, as noted at section 4.1, that they maintained that alignment was an issue (although it was one that we were sighted on from the start). SDS' position was that they were only obliged to produce technical specifications to achieve the scope set out in the SDS

contract, not the Employer's Requirements. What they were really asking for was to be paid for the process of reviewing the Employer's Requirements and reconciling them against their designs and their technical specifications, and for updating their designs to ensure alignment. As referenced earlier it was anticipated that there was to be a process to bring about that alignment. I note the draft letter states at page 3: *"The project's state of technical and commercial readiness has matured since Christmas. However, the fact that work still continues on the Employer's Requirements - the project scope - at this very late stage (resulting in SDS insisting on an instruction to align their designs with tie's Employer's Requirements and the Infraco Proposals) means that technical ambiguity (and therefore delay/cost risk) is likely to exist in the interplay between design, scope and method of execution"*. I think that is a comment that relates to the position, at that time, where work had not been completed, nor the obligation fully concluded around alignment between SDS Design, Employers Requirements and Infraco Proposals.

337. I have been shown a document entitled 'Draft of DLA Report on Infraco Contract Suite' (**CEC01428734**). This was prepared around the same time as the draft letter. It records at page 2 that where risk allocation has altered, this is reflected in *"commercial compromises"*. It has been suggested that this statement seems at odds with the statement (in the same paragraph) that risk transfer has *"not changed materially"*. In my opinion they are not at odds because both statements can be co-existent. The V7 Close Report refers to the measures proposed and processes established to manage the commercial compromises and on application of these I think it was expected that the risk transfer position envisaged could be maintained. There was also a significant outstanding issue around the design progress risk but that was highlighted.

Transport Scotland

338. I have been shown the papers for the TPB meeting on 20 March 2007 (**TRS00004079**). One of the documents included, at page 87, was a paper that I prepared on project reporting. I noted my concerns as to the revised

project reporting required by TS, and how this would interact with reporting to the TPB. I do not recollect this specific issue. Paragraph 2.3 outlines the issues. The issue is one of sequence, in that TS's revised reporting policy required that information was given to them before it had been considered and scrutinised by the TPB. That caused obvious governance issues. One option to overcome that introduced quite a significant time lag. Hence my comment that it makes them rather historical and reduces their management value (particularly given this was a fast moving phase of the project). I have no recollection as to how the problem and issue was resolved. I assume that it was resolved, because I do not think we would not have disrupted the governance of the project and its supervising Boards. I assume that we compromised to adhere to the letter of TS's changed requirements. There was also the issue surrounding producing multiple formats of report. These are issues that bedevil many programmes, projects and organisations. I have faced that issue many times. In such circumstances efficient solutions are generally sought that avoid production of multiple reports and multiple presentations of the same data.

339. I am not exactly sure how effective the TS Panel for Review of the Tram Project was. I recollect having regular meetings with TS up to about May/June 2007. I forget exactly who we met. There were representative from TS's commercial advisors (Cyril Sweet). I can't remember any of the names of the individuals. I think Nadia Savage attended. She generally led the production of the reports I have commented on previously. There was a TS representative who reviewed the project risk status. There was a political liaison officer, if that is the right term, who attended. It was usually myself, Stewart McGarrity or Miriam Thorne (who worked for him), and I think Matthew Crosse that attended the TS Review Panel. Andie Harper perhaps attended before him. It was effective in terms of keeping TS informed of where we were and responding to their questions and challenges. Up until TS were stood back from active involvement in May/June 2007 there was a lot of ongoing dialogue with them. The emotional reaction would have been one of relief because reporting and meetings take a large amount of time in the preparation and delivery of these reports in translating information into different formats,

summarising and manual checking. Not having to do that we would have been seen as a relief. That said, I think it was a mistake to remove scrutiny by TS. They were the Scottish Government's transport executive. They were the people with the most knowledge around the delivery of infrastructure schemes in Scotland, such as main line rail and road projects, and critically had market leverage.

340. In February 2007 I sat on the Panel Review of Major Projects, reviewing the Tram Project. I have been shown a document entitled: "*Panel Review of Major Projects: Edinburgh Tram*" dated 23 February 2007 (CEC01642260), which illustrates this. Damian Sharp was the consistent interface with TS (certainly up until they were no longer involved). I think I attended previous reviews. Point 5 relates to the estimating work that Ken Davis (CSP) was doing in the autumn of 2006 to support the estimate update. My answers to the questions raised in respect of costs explain this process, document CEC01793334 for example. By that time, that was closed out, and in terms of updating the estimate superseded by the further update of the estimate based on the Initial Bids. This action was I think to formally write to TS and/or CSP to say that the previous work by CSP was completed satisfactorily.

Bonus

341. Up until April or May 2007 I was an employee and Director of Dearle & Henderson Group Ltd (a construction consultancy based in London). It had offices in Scotland and other parts of the country. It provided services to London Underground, Network Rail and Tube Lines in the rail infrastructure sector at that time. Up until April or May 2007 I provided my services to TIE through that company. Thereafter, Dearle & Henderson was taken over by a larger organisation and I left the company of my own volition at that time. TIE obviously did not want me to depart at that point in time and so I set up my own consultancy company to continue to provide services to the Tram Project. I latterly went on to provide some services to London Underground and others for a short time before I became an employee of TfL in 2010.

342. I do not recollect what my bonus package entitled me to. There should be records of an Incentive Agreement that sets all that out. The Incentive Agreement was not something that I had personally sought. I probably was consulted on its contents but don't believe that I contributed to its drafting or engaged on any negotiation around its terms. I do not think I said anything other than that I accepted it.
343. I would refute very strongly that the incentivisation arrangements resulted in activities or outcomes that were not in the best interests of the project. I cannot speak for other people but at no point did I ever take any decisions to favour my own financial reward over the interests of the Tram Project. I would not do that. To be honest, I will use the words Andrew Fitchie used in the draft letter I have discussed dated 10 March 2008: "*the process was arduous*". We were working 10 to 12 hours a day. Sometimes we had negotiation meetings (probably three to four a week) and reviewing large volumes of documentation. This is just the nature of negotiations. For me the objective was primarily to 'get the job done' to get to the position that we needed to get to.
344. I do not recall what I was paid as a bonus, but it was nowhere near £100,000.

Further comment

345. A lot of the questions which have been put to me by the Inquiry seem designed to consider paint a negative picture. It is stating the obvious that there was an outcome that was not the one that was hoped for. There was an awful lot that was done to set out the path for what was inevitably a negotiated procurement. There was an awful lot done by the team during the procurement phase to minimise time and cost delay and the overall cost of the project. There were a lot of parallel activities going on to bring about the implementation of the procurement strategy. The questions posed to me by the Inquiry do not really draw out any of those positive aspects. To fully

identify and understand the root causes of project failure I believe a more balanced analysis is required.

346. Reflecting on the project from review of the documentation provided to answer the questions posed and with the benefit of passage of time and hindsight a number of points come to mind. The aspiration of the strategy was a PPP level of risk transfer, or at least an expectation of that, but at a much lower level of cost than for that type of procurement. However, this was not a PPP. The core of the strategy was to avoid or ameliorate risk by managing and designing it out by driving certainty at each phase of the pre-construction phase. This meant that to be successful the strategy was contingent upon certain things happening in complete form in a specific order and schedule. This is perhaps its flaw and area of weakness in that it is inflexible to changing circumstances and external events. Such inflexibility creates problems in delivering projects with a high degree of complexity. Projects of this degree of complexity require flexibility to enable the emerging issues to be managed effectively. One of the features of the Scheme was the high proportion of work on public roads compared to other schemes at the time. Delivering major project work on operational assets, such as the Edinburgh city centre road network in this case, creates many uncertainties and flexibility in approach and in the procurement approach together with strong stakeholder management by clients is required to deal with these. The early strategy work and market sounding identified anticipated certain problems. The strategy was based on consultations with the market who given the problems on some previous tram schemes would have articulated the problems for bidders trying to assess and price the uncertainties and risk based purely on output requirements under a lump sum turnkey procurement approach. The strategy sought to avoid this by bringing certainty to design progressively up to Infraco contract award. At the market consultation stage there were some things that were identified as major issues that did not materialise. A good example of this was the perceived difficulty in novating the TRAMCO contract. This proved to be relatively easy and in the end, they became consortium members. That was probably the better outcome than that originally planned. However, novation of the designer was not as I recall identified by the market

as an area of concern. That did however, prove to be more difficult than anticipated. The inflexibility in the strategy also meant that the programme was very sensitive to design progress and associated project and external design approvals. Maintaining competition in a very buoyant market was difficult, with one shortlisted bidder withdrawing and one wavering at an early stage in the procurement, TS's market leverage proved invaluable in keeping that wavering organisation in the competition.

The uncertainty in levels of political support for the project during the procurement phase meant that we had to adapt the strategy, and no doubt participant's levels of commitment would have wavered.

347. For me, there is a more fundamental question which is whether such a strategy should be pursued in the future and, if not this way, then what way? This is a question that the Inquiry should in my view address, otherwise it will add little value to the body of Infrastructure project knowledge and guidance. However, it is not a question directly asked in the questions provided.
348. At that time there was a great deal of opposition to the tram scheme. The project was trying to deliver the scheme in that challenging environment. I think that there was an unwarranted expectation around about what the strategy would deliver. In any project you are always trying to strike a balance between having a way forward and managing the emerging issues and risks as they arise.
349. Projects develop a momentum and an inevitable confidence that you can work through the issues and deliver a scheme. A project team does not have that mind-set then it will fail. Strong governance and external scrutiny is required to balance off that enthusiasm and momentum. When you are in the thick of delivering a project like this you are focussed on the next milestone and on dealing with the emerging issues. It is hard in those situations to stand back, take the objective view and listen and learn from people who have the scars from similar situations. However, such objective views are invaluable. That is why, in most major projects of this nature, there is strong external scrutiny either through the Infrastructure Projects Authority or through some other

organisations established to provide assurance. In the intervening time since the tram project procurement phase guidance on project assurance and governance has developed significantly. Assurance regimes on major projects are now delivered following the principle of 'three lines of defence'. The process can be time consuming and require a great deal of preparation but it does tend to flush out the issues better enabling resolution. Humans are not perfect. We seek to make judgements on an informed basis with the information at hand, which is often not a complete set of facts and often relate to future events. Making project decisions is about being sighted on the potential future events, having strategies to deal with them, having provision within the estimates for those uncertainties and working within the amount of money that you have available to deliver the primary project objectives.


350. In my previous role I have presented to the RICS disputes annual conference on strategies that we developed to reduce project risks and deliver better project outcomes. The professional adjudicators and arbitrators that attended were supportive of such approaches that reduced the potential for conflict on projects. There were several presentations on that theme. This highlighted the critically of establishing highly collaborative behaviours and a measured approach to allocating responsibilities and risks between client and supply chain to establish the foundations for delivering projects successfully. For a time and certainly in the 90s and 2000s prevailing commercial thinking was to offload as much risk as possible to the supply chain. Much work has been done since then to develop more mature and pragmatic approaches to risk allocation to avoid project failure.
351. Would I do something like this in this way again? I think from what I have said in my statement you can probably gather that I would not pursue this strategy on future projects. In theory, it was a great strategy but it did not take much cognisance of the real complexity of the project. Complexity assessment of projects like this did not feature in procurement strategy development at that time. It's a relatively recent concept that has come out of the work that IUK have done around improving project delivery. It recognises that consideration of project complexity is required at an early stage before you get too far into

locking down your project strategy. There are now models that have been developed to assess the capability of project teams. They are very useful and are now used as the basis for developing procurement strategies on major projects. This is set out in the IUK (now IPA) Procurement Route map.

352. I think that the fundamental questions for the Inquiry are: (i) why wasn't the strategy successful at the outcome?; (ii) why did it run into the conflict that prevailed after I left?; and (iii) what were the root causes? I think those are fair and sensible questions to ask to understand what went wrong and to outline a more successful approaches for similar future projects. If the question is just going to stop at what went wrong then I do not really see much of the value in the Inquiry.
353. Another aspect to highlight is that when I first arrived at TIE there were very few people with significant major project experience. I was probably one of the few. Others included Andie Harper (who had been involved in delivering major schemes), Matthew Crosse, Stewart McGarrity and Steven Bell. However, I don't believe that any of the senior members of the Board had experience of such projects. That cannot have helped. I am sure that they were very capable in their respective fields.
354. There are clearly some areas of questioning that are not material to the project outcome. For example, sorting out the reporting arrangements with TS is largely irrelevant to the outcome. That was just a piece of management information mechanics. I think care needs to be taken not to interpolate cause and effect where actually there was none.
355. I hope that the outcome of the Inquiry is delivered in a timely fashion and provides recommendations on better approaches for delivering such schemes in the future. I hope that the outcome makes recommendations about better project assurance governance of future projects and the delivery vehicles for them. In recommending better approaches the Inquiry would benefit from considering whether application of the processes and guidance on major

project delivery developed by IUK in their Route maps would have avoided such problems.

I confirm that the facts to which I attest in this witness statement, consisting of this and the preceding 143 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... *1st JULY 2017*