

Stewart McGarrity – Areas for Discussion

This note identifies the broad subject areas. We have tried to include all documents that may assist you in answering the Inquiry's questions.

The note is structured as follows:

- Introduction
- Tram Project – Overview
- Events in 2005
- 2006
- 2007
- 2008 (January to May)
- 2008 (June to December) – After Financial Close
- 2009
- 2010
- Project Management, Governance and Main Contracts
- Final Comments

Introduction

1) What was your role on the Edinburgh Tram Project (with reference to dates)?

I joined tie as Tram Project Finance Director in Feb 2005 with a specific remit to work on the business case for the Tram Project. At a later date I became tie's Finance & Performance Director with my role expanded to oversight of all budget, funding and financial control matters as well as continuing work on the tram business case.

At no time did the risk management function report to me and at no time was I directly responsible for the outputs.

I was on leave of absence from the company from August to October 2007 inclusive. I resigned in June 2010 and left the employment of tie in December 2010.

2) To whom did you report? Who reported to you?

Initially I reported to Graeme Bissett who was tie's pre-existing Finance Director before I joined. I also supported the Tram Project Director in collation and presentation of financial information and development of financial and budgetary control procedures. As Finance & Performance Director I reported to Willie Gallagher and later Richard Jeffrey when he joined as Chief Executive in 2008).

Throughout as well as the business case my primary role was collation, interrogation and presentation of information regarding the costs of the individual elements of the project and how that was changing through time. This role was necessarily depended on the inputs from the teams managing the procurements, the design, the utility diversions and the commercial aspects of the Infraco contract.

I had a finance team of between 4 and 6 reporting direct me throughout and at a point in time I also assumed responsibility for IT. As direct reports Miriam

Thorne and Pat Diamond assisted me. When Miriam Thorne left in 2008 Gregor Roberts was recruited as Deputy Finance Director. Seamus Healy was the head of IT.

3) How did you come to be involved in the project?

I got an introduction to Graeme Bissett in late 2004 who was looking to fill the role of Tram Project Finance Director.

4) What qualifications and experience did you have at that time, relevant to the role you performed on the tram project?

I was General Manager – Financial Operations for the Airport Authority in Hong Kong during the design and construction of HK International Airport from 1992 to 1997 and as part of that role was responsible for development and implementation of the control process and reporting over the development costs of the project with a budget of £4bn. Later at MEPC plc as Group Financial Controller (1997 to 2003) I was responsible inter-alia for appraisal and reporting upon a £1bn property development programme. At MEPC I was also responsible for the development, maintenance and reporting on all aspects of the Groups financial corporate plan.

5) In particular, what relevant experience did you have of high value transport infrastructure projects?

My role at the Airport Authority in Hong Kong was my relevant high value transport infrastructure project experience.

6) It would be useful if you could supply a CV.

Supplied.

7) On which of the various bodies in relation to the project did you sit, or attend; over what period(s); and what was your role in relation to each? For example:

- TIE board

- TEL board
- Tram Project Board and its various subcommittees (please name those with which you were involved)
- Others?

I do not recall actually being a member of any of the Boards or their sub-committees but widely attended the TIE Board and TPB and its sub-committees as a matter of course. I prepared and presented papers on the business case and costs of the project on a regular basis.

There was another accountant in a senior role with TIE, Graeme Bissett.

- 8) What was his role?
- 9) To what extent did your work overlap with his?

When I joined in 2005 Graeme Bissett was the existing (interim?) Finance Director at tie. Subsequently he undertook a strategic planning role with a specific remit to oversee governance matters as well as providing strategic advice and support to the Executive Chairman / Chief Executive and the rest of the management team. I do not think there was ever an overlap of role which gave rise to uncertainty of responsibilities or a gap.

The Tram Project – Overview

Procurement

In relation to the procurement strategy for the tram project:

- 1) What was your understanding of the main elements and objectives of the procurement strategy for the tram project?

The elements of the procurement strategy and its objectives is well summarised in the Draft Final Business Case (DFBC) of November 2006 (**CEC01821403**) both in the executive summary at 1.77 to 1.84 and in Section 7. In summary:

- Early involvement of an experienced tram system operator through the DPOFA (Transdev) contract – ensuring that an experienced operator of a Tram system was involved in the design and specification of the project to give assurance round operability.
- Early design work through the SDS contract (Parsons Brinckerhoff) with a view to having detailed design completed for the Infraco bidders to price - mitigate against substantial risk premia which could be expected to be priced into Infraco bids if the design information was not advanced enough.
- Early utility diversions work (MUFA) to mitigate against disruption to the follow on Infraco works arising from late running utility diversions and to mitigate against substantial risk premia which could be included in Infraco bids if the utility diversions were to fall within Infraco scope. This was a key lesson from previous tram projects as recommended in a National Audit Office report from 2004.
- Separate procurement of the tram vehicles (Tramco) from the infrastructure such that tie could choose the vehicles best suited to the Edinburgh Tram.
- Re-aggregation of Infraco/Tramco/SDS by novation such that one private sector entity was carrying most delivery risks, including design related risks, from the point of award of the Infraco contract.

The procurement strategy was developed in consultation with CEC, Scottish Executive, Partnerships UK and Transdev in 2004. The history of its development is described in the earlier Interim Outline Business Case (IOBC) of May 2005 (CEC01875335) at Appendix B.

2) How important was it to obtain a fixed price for the Infraco contract?

Obtaining a price from Infraco which was substantially fixed was at the core of the approval of the project and its procurement strategy such that all significant risks in relation to project delivery from Infraco award (except utility diversions and the risk of changes to the design) were passed to the private sector at that time. Managing a complex sequence of works and interfaces and delivering a reliable tram system the contractor would be in the best position to manage

those risks. This was and as far as I know remains consistent with the delivery of most publicly funded infrastructure projects in the UK.

- 3) Did the procurement strategy or objectives change in any way (and, if so, when and why)?

During the preparation of the business case I do not recall the procurement strategy and objectives changing in any material way. In the event the Tramco (tram vehicle supplier) CAF eventually became part of the Infraco consortium rather than being a separate contract to be novated to Infraco at contract close. Also at a later date the decision was taken to bring the tram operations role in-house with TEL and the services of Transdev were discontinued and the existing key resources of Transdev became TEL employees. I don't believe either of these changes had a material impact upon the strategy or its objectives.

- 4) In the event, do you consider that the aims of the procurement strategy were met (and, if not, why not)?

In the event the SDS design was not all completed to detailed design level by the time of the Infraco contract award and the utility diversions overlapped with the Infraco programme. Despite this at the date of Infraco contract award the management of tie had a conviction that there were adequate plans to mitigate/address both these issues and that they had been agreed contractually and commercially with the Infraco contractor (the BSC consortium). However incomplete design and late running utility diversions were subsequently at the core of the very extensive disputes with the BSC consortium so although the aims of the procurement strategy were sound it is not possible to say they were met.

Design

We understand that TIE entered into a Systems Design Services (SDS) contract with Parsons Brinckerhoff in September 2005 and that there were three main stages of design, namely, the Requirements Definition phase (provided by December 2005), Preliminary Design (provided by June 2006) and Detailed Design.

We also understand that there were difficulties and delays in progressing and completing the design for the tram project. By way of overview:

- 5) What was your understanding of the main difficulties in carrying out the design work and the main reasons for these difficulties?

As an overview I believe the main reasons for the difficulties which changed as they addressed through time:

- Sufficiency of resources deployed by SDS
- Changes to design principles after the award of the SDS contract (as I recall in 2006) emanating from CEC and 3rd party engagement
- Effectiveness of complex engagement as between SDS/MUDFA/statutory utility companies/CEC/3rd parties and tie.

- 6) What steps were taken to address these difficulties?

As well as frequent high level contractual discussions with SDS management to impress upon them the requirements and to understand what they saw as the problems they were facing I believe the main steps taken were around tie deploying additional resources and playing a much greater role in facilitating the engagement between the various parties and defining agreed processes and accountabilities to make that happen.

- 7) Were these steps successful (and, if not, why not)?

As I understand it these measures were successful in establishing the rules of engagement on design by all the parties, understanding the consequences of

not engaging effectively and greatly speeding up progress with Design.

- 8) In producing the design, the wishes and requirements of a number of different stakeholders required to be addressed (e.g. TIE, CEC, the statutory utility companies (SUCs), Network Rail, Forth Ports and BAA etc). Which body or organisation do you consider was primarily responsible for managing and obtaining the views and agreement of the different stakeholders?

I believe ultimate responsibility rested with tie but to be delivered through our contractor SDS. The challenge for tie in developing the processes outlined at Q6 and Q7 above was to ensure all the other parties understood how much the process relied on them as it relied upon them delivering on their responsibilities under that regime.

- 9) What role (if any) did TIE have in relation to design and/or approval of design and/or provision of information for design? To what extent did actions on the part of TIE hold up design (see TPB papers for 3 June 2009 in which Steve Bell said that of the SDS design, some was delayed by TIE and some by redesign (CEC01021587, page 7).

I was not directly involved in management of the design so I can't comment even in a general way as to the extent to which actions on the part of tie held up design in a general way. I believe the answer lies in the detail and in the categorisation of specific elements of the design process as to cause and effect rather than general statements.

- 10) In 2007 a decision was made to continue with the procurement process notwithstanding the incomplete design. Were you involved in this? Can you comment in the reasons for the decision and whether, in your view (with or without hindsight), it was the correct decision.

I believe the decision was made in good faith that improved management

processes being put in place would speed up the design process and that the preliminary design which was complete was adequate as a basis for continuing with the Infracore/Tramco procurement at that time.

Almost all the reports to TS note that reasons for design slippage are being reviewed and recorded each week etc (see for example **CEC00983221**, page 27). What was the point in stating this every time? What was done with the information? Do you agree that it did not appear to me making any difference? When it was apparent that the review and monitoring was not working, why was nothing else tried? Why were RTNs in respect of design issued only well into 2010?

I was not directly involved in the management of the design and would find it difficult to give a competent answer to this question. I don't recall what an RTN is.

The BDDI to IFC issue came to the fore after the contract was signed.

- 11) To what extent was there a requirement to change designs after the contract was awarded – either to get approvals or because it was determined that there was a problem with the initial designs?

My knowledge of the relative contributions of the BDDI to IFC issues beyond contract award is limited. This could only be established by detailed examination of the facts and circumstances between individual BDDI to IFC items and when the purported change took place. As I understand it BSC took design quality risk in relation to design which had been completed at contract close and this resulted in an increase to their price for doing so.

- 12) Other than BDDI to IFC issues what other design changes were required after contract close?

A number of 'client changes' were notified or instructed being changes required in general by CEC or third parties through the design approval process. I am

unable to comment on the extent to which these changes occurred after contract close but I believe in terms of value the BDDI to IFC issues dominated.

Utilities

TIE entered into the MUDFA contract in October 2006. Utilities diversion works commenced in July 2007 and were due to be completed by the end of 2008, prior to the commencement of the main infrastructure works. There were difficulties and delays in progressing and completing the utilities diversion works. By way of overview:

13) What was your understanding of the main difficulties in carrying out the utilities works and the main reasons for these difficulties?

My understanding of the main difficulties associated with utility diversions was:

- Sufficiency of resources deployed by MUDFA
- The extent of diversions required was far, far higher than was anticipated and the nature of the utilities uncovered was frequently not what was expected.
- The interfaces between MUDFA /design of utility diversions by SDS / approval of design (or redesign) became much more complicated than anticipated and in particular was taking much more time than was anticipated.
- Conflicts between the utilities programme in the detail and the approvals for necessary road closures and embargoes on work at certain times.

14) What steps were taken to address these difficulties?

As with SDS the overall approach was frequent high level contractual discussions with MUDFA management to impress upon them the requirements and to understand what they saw as the problems they were facing I believe the main steps taken were around tie deploying additional resources and playing a much greater role in facilitating the engagement between the various parties and defining agreed processes and accountabilities to make that happen.

15) Were these steps successful (and, if not, why not)?

As I understand it these measures were successful in establishing the rules of engagement by all the parties, understanding the consequences of not engaging effectively and greatly speeding up progress with utility diversions.

16) The minutes for the TPB on 9 April 2008 (CEC00079902_5, at 4.3) note that the programme dates are based on the assumption that there would be recovery in the MUDFA programme. What was the basis for thinking there would be such a recovery? What consideration was given to the position if the recovery did not materialise?

By April 2008 I believe the approach to managing the risk of late running utility diversions was focussed on managing the interfaces between the utility diversions programme and the Infraco programme on a section by section basis to mitigate against impacts on the Infraco programme. I was not responsible for management of the utility diversions programme.

Risk

17) In general, what risks were identified as requiring management and how were they managed?

I believe the main categories or risks identified and requiring management were in relation to:

- Stakeholder relationships including Government/CEC and 3rd parties
- Design in terms of sufficiency/quality of outputs and approvability and timing of consents and approvals
- Utility diversions in terms of the extent required, the relationship with statutory utility companies in timely approval of the design
- Infraco/Tramco procurement in terms of achieving the objective of substantially fixed price contract with the design contract novated such that it was a sub-contractor

- Other risk categories included achievement of traffic management orders (TTROs/TRO) and related to land assembly

18) Who was responsible for managing and monitoring risk?

Risk management was embedded in the project management routines and reporting throughout the project both within the teams responsible for the workstreams themselves (eg design, utilities, procurement) and then reported upwards to senior project management and then to the boards (tie/TPB) and their subcommittees. Individual identified risks had an owner responsible for assessing the impact of that risk, how it was being managed/mitigated and progress with successful management/mitigation.

19) Did the risk management approach differ from other contracts on which you have worked and, if so, in what ways?

The specific format of reporting varied, and indeed developed through the tram project phases, but the underlying approach was similar.

20) Do you consider that risk management was effective and can you give the reasons for your view?

I have no reason to believe that tie's risk management reporting was in any way significantly flawed or that it was ineffective. I don't believe that it was systematic flaws in tie's risk management that was the underlying cause of the project to be delayed and then the failure of the Infraco contract. I would draw attention to the OGC report on the project risk management in the autumn of 2007 which endorsed the projects risk management.

21) In this project, what was done when it became apparent that a risk would be realised and how does that compare with other projects?

In terms of the cost estimates, if a risk gave rise to a crystallised increase in one or more elements of the costs then the risk would be re-evaluated as to whether the value could be reduced, or indeed needed to be increased, and the management processes and other actions which were in place to manage that risk would be re-evaluated as to their effectiveness and action taken to improve them.

22) Did you have a role in relation to evaluation and management of risk during the project? If so, what was your role.

At no time did the risk management function report to me and at no time was I directly responsible for the outputs. Risk management was embedded in the project management routines and reporting throughout the project both within the teams responsible for the workstreams themselves (eg design, utilities, procurement) and then reported upwards to senior project management and then to the boards (tie/TPB) and their subcommittees. I had ownership or shared ownership of certain risks in relation to the business case, relationships and communication with CEC/Transport Scotland, governance matters including tie's operating agreement with CEC and the deliverability of the funding for the project.

23) How was risk evaluated and managed? How were the risks to be evaluated determined and who made the determination? What was your role in this?

Please see answers to Q18 to Q21 above. As a senior member of tie's management I was part of the team taking an overall perspective on risk management and how it was being reported. But I did not have primary responsibility myself for the risk management function. I did have a particular interest in the monetary risk allowances which was part of the overall project estimate at any point in time as reporting on the overall costs estimate and the components of it was a key role I played. I therefore had to understand the components of the risk allowance and how and why it was changing.

24) What is QRA? How was it produced and what was done with the output? Did it work well?

Quantitative Risk Analysis in outline is a statistical technique whereby each risk is given a minimum, median and maximum possible consequence and possible consequence in terms of time delay and a probability % of that individual risk crystallising in light of the assessed effectiveness of the management of that risk. A statistical technique called monte carlo analysis then determines what the outcome will be of all the aggregate risks in terms of time and money expressed as a statistical level of confidence so a P90 risk allowance gives 90% confidence that the outcome of the risks will be within the allowance determined. The outputs also provide a value for each individual risk which is useful for explaining the components of the risk allowance.

As well as being an embedded part of risk management reporting the QRA outputs formed a key component of the overall outturn estimate for the project at any point in time. I believe it works well as an evaluation technique - it necessarily relies on robust input of assumptions by the owners of each risk, review and endorsement of those inputs by management and overview of the outputs to determine whether the aggregate allowance so determined is adequate.

Not all risks are capable of being given a rational valuation in a QRA and in tie's case these included certain risks in relation to failure of stakeholder relationships and communication, governance matters and the deliverability of the funding for the project. These were given a different title/classification and were subject to separate reporting as "black" flag risks.

25) How was risk managed during the works? What allowances in term of time and money were made to reflect risk as it emerged?

For the overall approach to risk management please see my Q17 and Q18 above. In the answers to the specific questions below I've provided commentary at various times on the extent and components of the risk allowances made in the overall project estimate from the business case development through to the close of the Infraco contract.

Events in 2005

A letter to you from the Transport Division of the Scottish Executive, commenting on a draft of the Interim Outline Business Case ("IOBC"), raised queries about the cost estimates it contained (22 April 2005, TRS00008519). These included, at 2.2 to 2.6:

- whether tie's risk allowance, at 10%, was sufficient;
- that 23% optimism bias seemed quite low, and would a higher number be appropriate;
- whether it was appropriate to treat the tram project as a "standard" project for these purposes; and
- Prof Flyvbjerg's research on the "agent/principal problem, where the agent is not incentivised to report costs or timings accurately".

1) What was your understanding of, and views on, these issues?

At the time of the IOBC the base cost estimates and "specified contingency" were based upon the capital costs estimates prepared by tie's consultants to support the parliamentary bill process for Line 1 and 2 (Faber Maunsell and Mott McDonald). As I recall the specified contingency was based upon applying a % to each of the elements of the cost estimate based upon their experience. I don't have the reports from the two consultants to check all the numbers through. Subsequent work was done to determine the cost of completing both Tram Line 1 plus Tram Line 2 by eliminating the costs which were duplicated (e.g. the costs associated with the Infrastructure common to both Line 1 and Line 2) and to show the costs excluding the extension of the line 2 to

Newbridge from the Airport. This is the source of the tabulation at 8.2.1 in the IOBC appendices. These were the cost estimates current at the time of the preparation of the IOBC. The cost estimates were prepared in 2003 prices but estimates were made of the impact of inflation by applying anticipated inflation to the costs over the expected programme for the project.

In addressing Optimism Bias section 6.4.3 of the IOBC states that tie sought advice from the authors of a Mott McDonald report giving guidance on Optimism Bias in classifying the project as a Standard Civil Engineering Project. I do not have a copy of that advice. Section 6.4.3 also states that 24% was tie's assessment that from a starting point of 44% we believed the level of required Optimism Bias had reduced to 23%.

It is important to realise that one of the main outputs of the IOBC was to lay out the options for financing of the project as between grant funding from the Government or funding from CEC of which there was little identified at the time. A Hybrid PFI was rejected as being completely unaffordable. The IOBC reported that either Line 1 or Line 2 could be delivered from the available Government grant of £375m (which was at that point not indexed to include inflation), but that the entirety of Line 1 and Line 2 was not affordable. The summary of Funding and Affordability in the Executive Summary (pages 14 and 15) provides the example of delivering Line 1 as a first phase and that there was headroom of 42% between the base cost estimate of Line 1 and visible funding compared to the recommended starting point for Optimism Bias (with no mitigating actions) of 44%.

2) How (if at all) did tie address them?

See commentary above. We took all feedback from the Scottish Executive (later Transport Scotland) and their advisors very seriously both to ensure proper scrutiny of the project was being applied and to ensure we did not have a business case which was not approvable by CEC and Transport Scotland.

Following the IOBC the next major steps forward were to determine how delivery of the project should be phased and what funding package from the Government and CEC would provide the best and affordable outcome. That affordable scope formed the basis of the Draft Final Business Case of December 2006 and Optimism Bias was revisited at that time.

- 3) To what extent were you aware of, or involved in, decision-making about the treatment of risk and Optimism Bias in cost estimates for the tram project?

I was very aware of Optimism Bias throughout the business case preparation and took advice both from our own risk managers at tie and our financial advisors at the time of the IOBC PwC. I would note that by the time we got to Draft Final Business Case for the selected phasing options (1a plus 1b) in December 2006 we had agreement that there was no requirement to provide for Optimism Bias over and above the risk allowance we then had included in our cost estimates.

The letter also noted that the design contract increased public sector involvement and reduced risk transfer to the private sector (3.3). Risks arising from the separate procurement of design and construction had been raised by SE's advisers, KPMG, for discussion at a meeting you were to attend on 12 May 2005 (CEC01868356).

- 4) What was your understanding of, and views on, that issue?
5) How (if at all) did tie address it?

I do not recall the meeting at DLA offices referred to. I would observe that the early design work through the SDS contract (Parsons Brinckerhoff) was with a view to having detailed design completed for the Infraco bidders to price thereby mitigating against substantial risk premia which could be expected to be priced into Infraco bids if the design information was not sufficiently advanced at that time. The procurement strategy then provided for the SDS contract with the design work to be novated to the Infraco contract when it was

awarded such that all risks associated with the design work carried out under SDS would transfer to the Infracore on award.

The Interim Outline Business Case, May 2005 (CEC01875336; appendices, CEC01875335) included cost estimates for the project. A table at 8.2.1 set out an estimate of £581m for both lines 1 and 2. The estimate was based on Q2 2003 prices, and had been increased to take account of inflation.

- 6) Please explain how these cost estimates had been calculated.
- 7) Who had prepared them?
- 8) When?

At the time of the IOBC the base cost estimates and "specified contingency" were based upon the capital costs estimates prepared by tie's consultants to support the parliamentary bill process for Line 1 and 2 (Faber Maunsell and Mott McDonald). As I recall the specified contingency was based upon applying a % to each of the elements of the cost estimate based upon their experience. I don't have the reports from the two consultants to check all the numbers through. Subsequent work was done to determine the cost of completing both Tram Line 1 plus Tram Line 2 by eliminating the costs which were duplicated (e.g. the costs associated with the Infrastructure common to both Line 1 and Line 2) and to show the costs excluding the extension of the line 2 to Newbridge from the Airport. This is the source of the tabulation at 8.2.1 in the IOBC appendices.

In an email dated 15 June 2005 (TIE00090653), you noted that the capital cost estimates in the Interim Outline Business Case "*include specified contingency advised by our technical consultants (c. 10%) and not full optimism bias which would add another c. 14% to the cost estimates*".

- 9) Can you explain why these cost estimates had not included "*full Optimism Bias*"?
- 10) What were your views on this issue?

As above, at the time of the IOBC the base cost estimates and “specified contingency” were based upon the capital costs estimates prepared by tie’s consultants to support the parliamentary bill process for Line 1 and 2 (Faber Maunsell and Mott McDonald). As I recall the specified contingency was based upon applying a % to each of the elements of the cost estimate based upon their experience. I don’t have the reports from the two consultants to check all the numbers through. Subsequent work was done to determine the cost of completing both Tram Line 1 plus Tram Line 2 by eliminating the costs which were duplicated (e.g. the costs associated with the Infrastructure common to both Line 1 and Line 2) and to show the costs excluding the extension of the line 2 to Newbridge from the Airport. This is the source of the tabulation at 8.2.1 in the IOBC appendices.

In addressing Optimism Bias section 6.4.3 of the of the IOBC states that tie sought advice from the authors of a Mot McDonald report giving guidance on Optimism Bias in classifying the project as a Standard Civil Engineering Project. I not have a copy of that advice. Section 6.4.3 also states that 24% was tie’s assessment that from a starting point of 44% we believed the level of required Optimism Bias had reduced to 23%.

The summary of Funding and Affordability in the Executive Summary (pages 14 and 15) provides the example of delivering Line 1 as a first phase and that there was headroom of 42% between the base cost estimate of Line 1 compared to the recommended starting point for Optimism Bias (with no mitigating actions) of 44%.

CEC01873850 is a detailed spreadsheet which appears to deal with risk and Optimism Bias. There are detailed provisions on the calculation of Optimism Bias (see, e.g., tab 8).

- 11) Have you seen this, or documents like it, before?
- 12) Who prepared them?

13) What were they used for?

This is a very detailed project risk register for each of Lines 1 and Line 2 complete with an assessment of the impact of each risk, how it will be mitigated, progress in mitigation and assigning an owner. I do not recall this specific report (dated March 2005 just after I joined tie) but it appears to be very professionally put together and would form an excellent basis for identifying and monitoring progress in risk mitigation as a management discipline. This report seems to have been prepared by Mark Bourke who was tie's Risk Manager at that time.

The chart on tab 1 appeared to envisage a steady reduction in Optimism Bias over time (and, indeed, appeared to predict that it would continue to reduce in the future).

14) What was your understanding of this approach to OB by tie?

There do not appear to be any linkages in this spreadsheet from the main risk listings through to the determination of the current level of Optimism Bias on the sheet entitled "Profile of Optimism Bias". This reflects that by March 05 required CAPEX Optimism Bias had reduced to 24% and that is consistent with the level reported in the IOBC.

This approach to gradually reducing the level of required Optimism Bias by the application of mitigating actions is consistent with the guidance provided by HM Treasury in the Green Book at

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191507/Optimism_bias.pdf:

Step Three – Consider whether the optimism bias factor can be reduced

3.12 Reduce this upper bound optimism bias according to the extent to which the contributory factors have been managed.

3.13 The extent to which these contributory factors are mitigated can be reflected in a mitigation factor. The mitigation factor has a value between 0.0

and 1.0. Where 0.0 means that contributory factors are not mitigated at all, 1.0 means all contributory factors in a particular area are fully mitigated and values between 0.0 and 1.0 represent partial mitigation.

3.14 Optimism bias should be reduced in proportion to the amount that each factor has been mitigated.

3.15 Ideally the optimism bias for a project should be reduced to its lower bound optimism bias before contract award. This assumes that the cost of mitigation is less than the cost of managing any residual risks.

2006

On 26 January 2006, CEC voted to approve development of the tram project in phases, the first being the airport to Leith sections of lines 1 and 2 (with the extension from Haymarket to Granton Square forming part of the first phase if possible within the available funding) (CEC minutes, **CEC01891456_6/7**). See also the report by the Director of City Development (**CEC02083547**).

- 1) When did you first come to the view that the project would require to be built in phases due to budget constraints?

The requirement to deliver the project in phases was explicitly recognised in the Interim Outline Business Case of March 2005. This was in the context of a fixed SE contribution of £375m, total estimated costs including inflation for Line 1 plus Line 2 of £634m (or £715m including Optimism Bias) and, at the time of the report, limited capacity by CEC to make a significant contribution. It is relevant that in early 2005 a referendum rejected the introduction of congestion charging in Edinburgh and I believe that had been intended as the primary source of funding in addition to the SE contribution to fund a tram network and other public transport improvements in the city.

During the period from the IOBC through the rest of 2006 I worked with all other stakeholders including TEL/Lothian Buses, CEC and the Government to

identify the first phase of trams which would be affordable and would bring the best balance of economic benefits and be viable and profitable in its own right when integrated with bus services. During that period the Government agreed to increase its contribution of £375m up to £490m to include inflation (later increased to £500m) and CEC identified funding sources to make a contribution of £45m. The identified first phase was 1a from the Airport to Leith with the option to include 1b from Roseburn to Granton if Optimism Bias did not crystallise and it was therefore affordable within the funding envelope. This formed the basis of the development of the Draft Final Business Case through to December 2006.

In an email dated 2 March 2006 (**CEC01855109**) about the Outline Business Case, Rod Cameron of PWC said

“Given the level of de-risking is not going to be as great as anticipated due to SDS position we probably need to be careful what we say here.”

2) What was your understanding of this issue?

I don't recall this email or specifically what Rod Cameron was referring to. At that point in time it was still at the core of the procurement strategy to novate the SDS contract and therefore the design to the Infraco at award. This was in fact what happened despite the extensive disputes regarding design after the Infraco was awarded. Rod may have been referring to an outcome where novation of SDS to Infraco would not be achieved but I can't be sure.

Mark Bourke sent you an email dated 13 March 2006, about the risk section in a draft of the Outline Business Case. He addressed the issue of optimism bias and specified contingencies, and recommended the continued use of an Optimism Bias factor of 24% in light of the limited scheme design or construction development that had taken place (**TIE00054115**).

3) What was your understanding of:

a) His table, especially what it means by “*inferred*” optimism bias and specified contingency?

I don't recognise what the 'Options' 1, 2A and 3 represent. Mark has presented the outputs from a Turner & Townsend Quantitative Risk Analysis (QRA) expressed at 50% confidence (P50) and 95% confidence (P95) of being sufficient to provide for the identified and quantified risks of completing the works. These are equated with indicating the required Specified Contingency and full Optimism Bias (OB). “Inferred” OB is just the percentage which the figure in £ which is an output from the QRA bears to the 'Capex – excl inflation' line.

b) His comment about the currently reported 10% contingency having only a P10 value?

I don't have the workings but he is saying that if the required contingency at a P50 level is 16% then a 10% contingency equates to a lesser level of confidence and he is saying that is closer to P10 which is much lower level of confidence.

In context – at the time of the OBC in Q1 2006 I believe we were still working with the cost estimates prepared by Faber Maunsell and Mott McDonald as part of the Preliminary Financial Cases to support the Parliamentary bill process for Lines 1 and 2 including the Specified Contingencies estimated by those consultants as adjusted to reflect the initial phase of the project as agreed by Q1 2006 which was Ph1a from the Airport to Leith plus Ph1b from Roseburn to Granton if that proved to be affordable from available funding. Reporting in the OBC we would have reflected costs including the OB at 24% since at that time the design was not sufficiently progressed and the utility diversions had not started. As I recall the main purpose of the OBC was to map out the work plan to deliver the Draft Final Business Case (which was

delivered in December 2006) and then the Final Business Case which would be produced once the contracts and prices had been determined for Infraco and Tramco.

- c) His comment that *"We also need to move to a position where SDS deliver the QRA advice"*.

I don't specifically remember the context of this remark but conclude that the original intention was that SDS would deliver QRA advice. I don't specifically recall QRA advice emanating from SDS but that is not to say it did not in some form.

You commented on liquidated damages in the MUDFA contract in a note dated 12 July 2006 (CEC01621728, CEC01621729, item 1), noting that

"a MUDFA delay also delaying Infraco could manifest itself in claims for extra cost by Infraco and those could be very significant indeed".

- 4) Please explain this, i.e., your views at the time on the potential impact of a MUDFA delay on the Infraco Contract. To what extent was this matter discussed within tie?

Carrying out early utility diversions to avoid disruption and delays associated with the utility diversions disrupting the follow on Infraco works programme was an objective at the heart of the procurement strategy for the project. My comment here - which was in July 2006 so some time before either MUDFA or Infraco programmes were agreed/contracted - was to emphasise that if this objective was not met and the MUDFA utility diversions did overlap with the Infraco programme, and there was not a way to mitigate that disruption by changing the Infraco programme (altering the sequence in which the Infraco works were carried out without significant disruption) then on the face of it Infraco would be able to claim extra costs because they were not able to deliver their contractual work programme and incurred extra costs as a result.

The interface between the MUDFA utility diversions programme and the follow on Infraco programme was a focus for tie's project managers throughout the

project. In the event delayed MUDFA works was the subject of additional costs and disputes between tie and Infraco.

In an email to Andie Harper of 22 August 2006 (TIE00002499), you said:

“the procurement and delivery process is, and always has been, super-dependent on the performance of SDS. You would not need to send fax copies of ball-park estimates of change requests to the Board if SDS were producing a quality and timely service...”

In reply, Mr Harper said:

“Inevitably things are not always as black and white as they appear.”

5) Can you explain your remarks and Mr Harper's reply?

Carrying out early design work such that the Infraco would have advanced design information as a basis to price their bid and therefore avoid significant premia included in the Infraco bid prices for design which was not complete (or otherwise not of sufficient quality) was an objective at the heart of the procurement strategy for the project. By the middle of 2006 there were concerns about the pace and quality of delivery by SDS and steps were being taken by the project management teams to engage with SDS management, identify the specific reasons for the slow progress and put in place processes to remedy the situation. My comments here to Andie Harper were by way of encouraging that. Andie Harper's reply acknowledges the concern but I don't recall the context of his remark about things not being as “black and white as they appear”.

On 6 September 2006, Geoff Gilbert sent you a paper outlining alternatives if the cost estimates or bid returns exceeded what was affordable (CEC01792992, CEC01792993). The options were based on key assumptions, which included Transport Scotland accepting project estimates at the P90 level *“without adding any further contingency”* and not reducing available funding by applying the *“Cyril Sweett formula approach to indexation”*.

6) What was your understanding of, and views on, these assumptions?

In the lead to development of the Draft Final Business Case in autumn of 2006 the funding available for the project had been determined at £500m from Government (indexed from the original £375m to include inflation) and £45m from CEC – total £545m. This paper lays out some options if the full Ph1 (1a+1b) was not affordable within that cap. In the event Transport Scotland and their advisors did accept the P90 estimate for the contingency required – all parties agreed that this was predicated on the risk transfer objectives of the procurement strategy being met (including design risk transferred to Infracore by SDS design novation and successful completion of the utility diversions to the extent they did not impact on the Infracore works) and did not provide for any significant increase in the scope of the project principally as a result of design changes. The Draft Final Business Case was also explicit in presenting a view that should Ph1b not be affordable from the funding cap of £545m then Ph1a would be a viable first phase of the tram network standing on its own.

I have no recollection of what is meant by the 'Cyril Sweett formula' for indexation but I presume it means the way in which the Government grant would be indexed to include inflation – eventually determined as £500m.

Your email of 10 October 2006 (**CEC01802749**) discusses preparation of the Draft Final Business Case ("DFBC") and identifies the individuals who were to draft different parts. It suggests you were responsible for; *inter alia*, the parts on Governance and Financial Analysis. The latter part you said was dependent on cost estimates to emerge by 16 October. You noted that the base BCR (Benefit Cost Ratio) was 1.5 for phase 1a and 1b, and 1.0 for phase 1a alone.

7) What was your role in production of the DFBC?

My role was to project manage the production of the DFBC over a number of months (years counting the initial IOBC in 2005) with input on the key elements

on procurement strategy, costs, risks, economic appraisal (STAG), and the operational plan (TEL Business Plan) being developed by others with the requisite expertise or by updating pre-existing material. I was also primarily responsible for the distribution of the material as it emerged to all stakeholders including Transport Scotland and their advisors and CEC to facilitate review/scrutiny by those parties as the document was developed – ie by the time it was published the contents would be substantially agreed by all parties.

8) What were the cost estimates you referred to?

The cost estimates referred to were those which were eventually reported in the Preliminary Design Stage Project Estimate Update 9 Nov total £592m which is the subject of the follow on questions below.

9) Who had calculated the BCRs?

The BCRs were calculated and reported by consultants Steer Davis Gleave (SDG) as part of their report under Scottish Transport Appraisal Guidance (STAG) which is an Appendix to the DFBC.

10) Can you explain the point about the BCR for phase 1a being 1.0? That is lower than the BCR reported in the DFBC (see **CEC01821403**, paras. 1.26, 1.27, 4.44, 4.45). What implications would a BCR of 1.0 have had for the viability of the project?

The BCRs were developed in a process which took maybe a year. The principal stakeholders in the project were full involved in the process as it developed through what was called the Modelling and Revenue Stakeholders Group (MRSG) and the BCR and other outputs from SDG's modelling suite changed as various iterations were produced and reported to tie and stakeholders right up to finalisation of the figures as reported in the DFBC.

STAG requires the appraisal of a project against a number of criteria both qualitative and quantitative. The BCR is a primary quantitative indicator of whether the project represent value for money by comparing the value of quantifiable benefits to the cost of implementing the project. A project with a BCR of less than 1.0 would not be regarded as economically viable by that measure alone.

On 14 November 2006, John Ramsay of TS circulated a note which asserted there was an error in calculations of the BCR (benefit cost ratio) (TIE00002892, TIE00002893). The corrected figure, for phase 1a, was said to be well below 1. Steer Davis Gleave disagreed there was an error (TIE00737784, TIE00737785).

11) What is your understanding of this issue?

The technical response to TS concerns about the treatment of user charges is dealt with in the memo from SDG to Andy Park of Transport Scotland dated 14 Nov 06 (TIE00737785). As a non-technical overview of the issue; the question was whether the increase in amounts paid by public transport users post introduction of trams would be dis-benefit which reduced the overall benefits of the scheme. The counter is that the introduction of trams, fully integrated with Lothian Bus services, was intended inter-alia to encourage public transport use and as a means of serving predicted future increases in public transport usage. It does not seem rational to penalise the appraisal of a project by including the costs to future users as a dis benefit – those users would be making their own judgements as to the cost of travelling on public transport versus the costs or making their journey by other means. There was no additional cost to existing users of public transport (buses) using trams instead as fare parity between buses and trams was at the core of the ticketing and fare strategy in the TEL Business Plan. One of the primary objectives of introducing tram was mode shift – principally people using public transport rather than cars. Again to the extent future revenues were derived from new users of public transport it would not be rational to penalise the appraisal of the project for the extent to which it

was delivering one of its primary objectives.

12) How was it addressed?

Notwithstanding my rationalisation above, this matter was discussed and resolved as between SDG and the transport economists at TS regarding the proper technical application of the STAG guidance. TS economists were full informed and scrutinised the preparation of the STAG report throughout. There was a series of meetings between tie (and our advisors) and TS and their advisors in the lead up to final publication of the DFBC and it would have been discussed and resolved at those meetings. TS would not have accepted the economic appraisal in the DFBC otherwise.

A paper entitled *Preliminary Design Stage Project Estimate Update*, 9 November 2006 (**CEC01788433**) set out cost estimates based on the preliminary design from July 2006. These were £512.2m for phase 1a and £592.4m for phases 1a and 1b.

13) Is this the paper referred to in the TPB agenda and minutes for 20 November 2006 (which noted that a paper on the preliminary design estimate was circulated at the meeting due to its confidential nature) (see: **TRS00003014_1**, paragraph 3(g) (agenda) and **CEC01695695_7** (paragraph 06.20.10) (minutes)?

Yes I believe it was.

The paper refers to estimates for the Infracore and utilities works having been prepared by Corderoys and Cyril Sweett; and to those estimates having been reviewed and reconciled by Turner & Townsend.

14) What was your understanding of the basis for the estimates?

The basis for the estimates is explained in detail in the paper CEC01788433 at section 5.2. In outline, the estimates for utilities and infrastructure were

developed by experienced professionals based upon the preliminary design and specifications produced by SDS current at July 2006 by estimating quantities on an element by element basis and determining the prices that bidders would charge at the rates prevailing at the time or in the case of utilities the rates and prices in the MUDFA contract. I also recall adjustments being made to reflect known or anticipated changes in the design at the time.

A report by Turner & Townsend entitled "*Infraco CAPEX review – SDS/CSL Reconciliation*" was attached to your email of 23 November 2006 (**CEC01797726**, **CEC01797728** and **CEC01797727**).

15) Is that the Turner & Townsend work referred to in the TPB paper?

Yes

Whilst the TPB paper estimated the phase 1a cost at £512.2m, the Draft Final Business Case (**CEC01821403**) estimated it at £500m (e.g., 9.8). (The estimate for phases 1a and 1b together remained at £592m.)

16) Can you explain the apparent reduction in £12.2m for the estimated cost of phase 1a?

The estimate for Ph1a £512.2m included certain elements of work which was strictly related to the delivery of Ph1b. At the interface between Ph1a and Ph1b there were elements which would best be delivered as part of Ph1 to safeguard the delivery of Ph1b or because it just made sense from an efficiency of delivery perspective to carry out these activities as part of Ph1a – this would have included design associated with the junction between Ph1a at Roseburn and utility diversions in the same area necessary to accommodate the future delivery of Ph1b. In the event the cost of delivering Ph1a, if that was all that was ever constructed, was presented as excluding these Ph1b costs at £500m. As I recall this was discussed and understood as between tie's commercial

team and CEC/Transport Scotland.

An email you sent on 6 December 2006 (**CEC01786565**) suggests that there was not in fact a saving, but rather that £12m of costs had been transferred from phase 1a to phase 1b.

17) Can you comment?

See answer to the question above. This email exchange makes it clear there was an understanding as between tie's commercial team and Transport Scotland of the desire to include design and utility costs of £9.3m related to Ph1b in the scope to be delivered under Ph1a. I would anticipate that the difference between £12.2m and £9.3m was associated project management costs.

(The email says: "*on further examination of the consequences of phasing 1a and 1b, the £592m total cost estimate still stands but the split is now £500m for 1a and £92m for 1b (previously £512m and £80m)*".)

18) Was the reduction in any way connected to the expected level of funding from Transport Scotland (£500m)?

No – the reasons for the reduction are explained in the answer to question 16 above. At this time there was nothing to be gained by any attempt to make the Ph1a estimate fit with the TS funding as it was agreed that up to the funding cap of £545m TS and CEC would share the outturn costs in proportion to their total agreed contributions of £500m and £45m respectively.

The DFBC reports (**CEC01821403** at 9.9) that

"Nearly 98% of the costs have been estimated based on rates and prices from firm bids received, known rates applied to quantities or based on market rates applied to quantities derived from Preliminary Design"

19) Is that 98% figure based on the table at 3.1 in the TPB paper of 9 November?
(That table gives the following breakdown, which adds up to 98%:

- 31% of the estimate based on rates and prices derived from firm bids received or on known rates (high confidence level);
- 67% based on market rates applied to preliminary designs (medium confidence level);
- 2% based on judgment in the absence of designs (low confidence level).

Yes

The Turner & Townsend report attached to your email of 23 November 2006 (CEC01797726, CEC01797728, CEC01797727) refers to SDS and Cyril Sweett having each, in isolation, prepared capital cost estimates for the project, based on SDS Bills of Quantities. The report compared and attempted to reconcile the two estimates.

A table at 1.1 shows that Cyril Sweett's estimate (excluding trams and preliminaries) was 8.5% (£14m) higher than SDS's. The report (at 2.1) recommended an adjustment of the SDS estimate, from £198m to £230m (including trams and preliminaries), and stated that "*we believe that the SDS estimate, as adjusted, fairly represents the current Infracore Scope of Work*".

20) Why had SDS and Cyril Sweett each prepared cost estimates?

I don't recall the exact circumstances of Cyril Sweett becoming involved but I think it was at the behest of Transport Scotland as I recall Cyril Sweett were providing advice to them. In any case I would regard it as a good control and scrutiny mechanism for tie's commercial team to have two independent estimates prepared from the same base data and then to understand the implications of discrepancies which arose between the two estimates.

21) For whom were Cyril Sweett acting?

I cannot recall if Cyril Sweet were engaged by tie or Transport Scotland or who paid for their services but as stated above it was to the advantage of the project to have a second estimate prepared by experienced consultants independent of that being produced by SDS.

22) What was the purpose of the Turner & Townsend report?

The purpose of the T&T report was to provide tie's commercial team with an understanding of the significant differences between the SDS and Cyril Sweett estimates and to make recommendations on any resultant adjustments which might be made to the SDS estimate.

23) What, if anything, did tie do in response to it?

24) In particular, did tie follow T&T's advice about adjusting SDS's cost estimate?

In response to questions 23 and 24 I don't have the detail to hand as to what individual adjustments were made to the SDS estimate in arriving at the reported Preliminary Design Stage Project Estimate. However I note that in the breakdown of the total estimate of £592.4m at reflected in spreadsheet CEC01797202 the total estimate for infrastructure (including the line 'advance works packages') is £230.243m which is almost exactly the same as the recommended adjusted estimate in the T&T report of £230.273m indicating that T&T recommendations were adopted in full. These estimates are based in 2006 prices – so inflation from 2006 to the end of the then anticipated delivery programme is added to arrive at the inflated cost estimates for Infrastructure reported in the preliminary design estimate.

At a meeting of TIE, Transport Scotland and KPMG on 27 November 2006, various issues arising from the DFBC were discussed (CEC01760417; cover email, CEC01760416). These included risk and the level of contingency. The minutes

note:

“SMG confirmed that the level of contingency adopted in the DFBC to cover risk is currently 12%. This figure being adopted on the basis of bottom up cost estimates, taking into account tender prices received to date, known rates, benchmarking costs and increase levels of confidence in the estimate process as the design progresses. This is a P90 figure.”

25) What were KPMG/Transport Scotland's views about that level of risk and contingency?

There was always a natural and totally understandable tension between the risk allowances being estimated by tie and the desire of TS, advised by KPMG, to ensure that the risk allowances were as prudent as possible in the context of a general trend for publicly funded infrastructure projects to run over budget or exceed available funding. This was a healthy debate throughout the business case preparation process. In reviewing the DFBC as it was delivered, TS and their advisors were satisfied to proceed with the P90 risk allowance on the basis it was adequate on the assumption that the scope of the project did not materially change (meaning design changes emanating from any of a large number of processes including third party requirements and the design and consenting process did not result in a significant increase in the extent or quality of the project), that the programme was achievable, that the procurement of Infracore and Tramco would deliver tender prices comparable with the Preliminary Design stage estimates and that the risk transfer objectives of the procurement strategy as documented in the DFBC would be achieved, particularly with regard to design risk transfer to the Infracore and utility diversions not impacting materially on the Infracore programme.

26) Can you explain the reference to "*bottom up cost estimates*"?

Bottom up cost estimates means they were estimated from very detailed estimates of quantities/units of work from preliminary design as produced by

SDS and Cyril Sweett and reconciled by T&T. The answers to questions 13 to 19 on this process are also relevant as is the detail in the resultant report prepared by tie's commercial team Preliminary Design Stage Project Estimate Update of 9 Nov 2006 (CEC01788433).

- 27) Did you consider at the time (and do you consider in hindsight) that a 12% contingency, at a P90 level of confidence, was appropriate, having regard to the uncertainties about design and utilities prevalent at the time?

The P90 contingency allowance at the time was considered by all at tie as being adequate subject to the points made in the answer to question 25 above. However in terms of the imperative to ensure the project remained affordable in the event of unforeseen circumstances resulting in additional costs not allowed for in the risk allowance, the DFBC provided for the escape valve of a phased approach to delivering Phase 1a first then Phase 1b at a later date if and when additional funding became available. Indeed at the time of the DFBC the estimated costs of a complete Phase 1 (£592m) were in excess of the funding package available totalling £545m. The additional comfort was that in the event additional costs did arise then there was an additional £45m headroom between the estimated cost of Phase1a only £500m (including the P90 risk allowance) and the total funding package available of £545m.

The DFBC documents the principal risks to the capital cost estimate and programme (including those which were not capable of being reliably quantified in the P90 cost estimate such as failure to manage interfaces between the project and its stakeholders) and tie's strategy for managing them in the risk section 10.

With hindsight the risk transfer objectives of the procurement strategy were not met due to the widespread contractual disputes with the Infracore contractor. However based upon the facts and circumstances prevailing at the time of the DFBC submission I have no reason to believe the risk allowance was not an

adequate allowance for the completion of the project at that time predicated on the principle assumptions outlined in the answer to question 25 above.

The minute refers to cancellation fees if the project were terminated in May 2007 (bottom of page 3).

28) Was the date a reference to the forthcoming election?

29) If so, can you explain what impact that was having on the project?

As minuted it was TS who were asking for this information. I cannot recall the timing of the publication of the SNP manifesto for the 2007 elections which stated that they would redirect investment earmarked for Edinburgh Trams and Edinburgh Airport Rail link or whether this intent was known at the time of the meeting with TS on 27 Nov 2006. tie's job was to provide the information required on the cost consequences of termination, to make sure the purpose and benefits of the Tram scheme as documented in the DFBC continued to be communicated to all stakeholders and to ensure we continued to manage the risks associated with the project and maintain momentum. My own view is that tie did so in a professional and competent manner up to the election and thereafter. It is easy to conclude that the uncertainty regarding the SNP intent to cancel the project had an impact on stakeholder relationships with CEC and TS and also on progress and delivery of the project but I cannot offer any specific evidence to substantiate or quantify the effect that it had.

You explained that there could be some overlap between MUDFA works and Infraco, and that any significant delay to commencement of the MUDFA works could result in slippage of the Infraco programme.

30) How were TIE managing that risk?

I was pointing out that since delays to Infraco were a risk which tie was managing and avoiding that risk was a core objective of the procurement strategy as documented in the DFBC, then any delay to commencing utility

diversions would make the job of managing that risk more difficult. In context – in November 2006 the programme for the utility works and the way it interfaced with the Infraco works programme and indeed the intended start and sequence of the Infraco works was still very visible.

Brian Hannaby & Associates produced a report dated 29 November 2006, entitled “*Edinburgh Tram Capital Cost Review, Lines 1a and 1b*” (ADS00009). It reviewed the estimate of £592m for lines 1a and 1b, and concluded:

“...the infrastructure cost report and estimate has been competently assembled with the scope of quantification and pricing reflecting the level of design detail achieved to date for the respective scheme elements” (8.2).

Whilst some concerns were identified about “*possible shortfalls in the estimate scope coverage*”, with a recommendation that they be reviewed and adjustments made, the report continued that:

“Despite the above concerns, we consider that the projected total outturn estimate contains more than adequate compensation for the potential shortfalls in the form of allowances for unmeasured items, substantial provisional/lump sum items, level of risk contingency/optimism bias and realistic inflation uplifts. We concluded, therefore, that the infrastructure element, amounting to £283m, of the outturn project cost estimate totalling £592.4m can be considered to be robust and could be presented with confidence within the business case” (8.3).

31) Why had that report been instructed?

The report was instructed by tie’s commercial team under project director Andie Harper and I believe the primary purpose was to gain further comfort as to the adequacy of the Preliminary Design Stage Project Estimate Update totalling £592.4m and in particular to have this done by BH&A in the context of their experience of issues with delivery and the outturn costs on other light rail schemes in the UK including Merseytram.

32) What were your views on its main conclusions?

The report provided additional assurance that tie's project cost estimate at the time, as included in the DFBC, was robust in the context of a benchmarking against other light rail schemes which I think was important. I also think it's significant that their conclusion was that the overall estimate was sufficient to contain further costs which might arise from the concerns identified in their report.

33) What use did TIE make of this report?

The report was part of the totality of work carried out by SDS, Cyril Sweett and T&T, working with tie's commercial team, to deliver a cost estimate which was as robust as possible in advance of receipt of tenders for the Infraco works. The report has suggestions regarding project management, including making design an Infraco responsibility post Infraco award - which was part of the procurement strategy anyway – and maintaining control over cost increases resulting from the design and consents process and extent of highway works which I believe was an imperative for those at tie design managing the design contract with SDS and the consents process.

34) In particular, was it founded upon in producing the DFBC? (NB paragraph 2.1, which notes that the timescale for the review was restricted by the need to report by the end of November to coincide with the business case submission in December.)

The report was part of the process of producing a robust capital cost estimate for the trams which was then one of the primary inputs to the DFBC. The DFBC was a milestone in the approval of the project and so it is not surprising that delivery of the report in advance of DFBC submission was important. I can't comment on the restricted time for the review other than to say it was a review of the capital cost estimates which were not compiled till November and so this

further work followed on from that.

In an email dated 8 December 2006, very shortly before the DFBC was to be submitted to CEC (TIE00090706), Geoff Gilbert sent you an email about early works within the Infraco and Tramco scope. He said:

“The purpose of doing this is to take the pressure off the programme to give us a fighting chance of achieving the programme dates set out in Business Case. Discussion with one of the Infraco bidders confirms this requirement.”

35) What was your understanding of this issue?

Geoff Gilbert is stating the view that to minimise the programme for delivery of the Infraco contract one of the measures which could be taken would be to enter into an agreement to deliver early programme critical works in advance of award of the main contracts and therefore reduce risks associated with the Infraco programme.

In the end a limited advance works contract was signed with the Infraco (BSC) sometime at the end of 2007 or early 2008 which was after selection of BSC as preferred bidder (and the final negotiations on price and contract terms were at an advanced stage) and after approval of the Final Business Case in December 2007. This would have been a commitment made with full scrutiny as to the cost and benefits by both CEC and Transport Scotland.

It might be suggested that awarding advance contracts to the bidders increased the prospects of the project proceeding, and diminished tie's negotiating leverage over them.

36) What would your response be to that suggestion?

The project was already approved to proceed by the time the advance works contract was awarded to BSC. There is an argument that proceeding with even

limited advance works could have had some impact on the negotiating position during the subsequent period and up to Infracore award but my recollection is that the benefits to the Infracore delivery programme far outweighed that risk.

On 5 December 2006, you sent an email responding to questions from a member of the Council (TIE00090098). You noted significant programme risks around approvals, but noted these were under the control of CEC and in that context said

"The independence of the planning dept and the sanctity of the statutory roads processes weaken this argument for many - not for me though".

37) Can you explain your view?

This was an internal email to colleagues in response to questions from a member of the Council and as my email says was my comments and subject to input from the Project and Commercial Directors.

I believe my view as quoted above was specifically about the risks to programme relating to the approvals process and I was making the point that the independence of the planning department and sanctity of the statutory processes was to be 100% respected but that that should not be a barrier to timely processing of the necessary approvals with the right management processes in place and commitment of all parties, tie, CEC and our design contractors to work to that process and programme.

On utility diversions, you noted that getting on with them with *"all due haste"* was a good way of avoiding programme risk, and said there had been *"an unusually large number of surveys"* which gave TIE *"a high degree of confidence on the extent of utilities"*.

38) What was your understanding of the nature and amount of survey work that had been done?

39) Who (i.e., which company) had instructed that work?

40) Please explain your "*high degree of confidence*" about the utility works required.

The survey work was conducted by the SDS contractor under the design contract to supplement the records of the utility companies themselves as to the extent and nature of their apparatus in areas where such records were incomplete. The high degree of confidence element in the reply was based upon my understanding, as derived from the project teams with the relevant knowledge and expertise managing the SDS and MUDFA contracts, that such surveys (coupled with the existing records of the statutory utility companies) were extensive enough to give us a high level of confidence that the quantities of utilities to be diverted, coupled with the risk allowance elements for an increase in such quantities was robust.

In the run-up to CEC's consideration of the Draft Final Business Case on 21 December 2006, you drafted a response to queries from an Alison Bourne (5 December 2006; her email: **CEC01762658**; your draft reply: **CEC01762659**). The questions included one about optimism bias (paragraph 1).

41) Who, if anyone, did you consult about the answer?

42) Can you explain your answer, especially on the basis for reducing the allowance for optimism bias?

43) Was that reduction appropriate, having regard to the state of the project at the time, especially the state of progress of the design and the utility diversions?

During the project I fulfilled its responsibility to answer a very large number of questions from concerned members of the public. It has fallen to me to draft the answers to Alison Bourne's questions as they are focussed on the DFBC and having reviewed my draft answers they are consistent in all respects with the material in the DFBC itself. I don't have specific recollection of who I consulted in drafting the answer on optimism bias on this occasion but as a matter of

course we would have consulted widely within tie on the on the answers to any such questions.

The principle of reducing optimism bias as a project develops, scope clarifies and risks are managed is consistent with guidance on its application – see my answer to 2005 Q14.

My answer to Q25 in this section is also relevant - the P90 risk allowance was considered adequate on the assumption that the scope of the project did not materially change (eg design changes) that the procurement of Infracore and Tramco delivered tender prices comparable with the Preliminary Design stage estimates and that the risk transfer objectives of the procurement strategy as documented in the DFBC were achieved, particularly with regard to design risk transfer to the Infracore and utility diversions not impacting materially on the Infracore programme.

In an email dated 7 December 2006 (**TIE00064621**), you expressed amazement about the misunderstanding of Donald McGougan (the CEC Director of Finance) that TIE's involvement somehow limited CEC's risk exposure on the project. You said that the CEC city development officers held the same view.

44) Can you explain this point?

I don't specifically remember this engagement with CEC but I assume it was exactly that, a misunderstanding and maybe on my part, because my experience with engagement with all senior CEC officers was very good and that they were fulfilling their role of monitoring/ scrutinising all elements of the project. tie's responsibility was to manage project risks for CEC and to do so within the constraints of the funding available to deliver the project. However tie was a project management company without its own financial resources other than CEC and the Scottish Government funding and was not in a position to bear the consequences of cost overruns itself over and above the funding

available from CEC and the Scottish Government.

45) To what extent was this typical of CEC's understanding of the commercial realities of the project?

Whatever the circumstances behind this particular exchange I can state it was not typical in my experience of CECs understanding of the commercial realities of the project. I had the highest regard for Donald McGougan and his team and had constructive and responsive engagement with them throughout my time at tie as might be expected.

A report to Council on 21 December 2006 (**CEC02083466**) recommended approval of the Draft Final Business Case (**CEC01821403**).

The report explained that the estimated capital cost of phase 1a was £500 million (and the estimated cost of phase 1b was £92 million).

The draft FBC noted that the procurement strategy was intended to

“Transfer design, construction and maintenance performance risks to the private sector ...” (p16), that *“Following novation of SDS, the design risks pass to Infraco”* (p86), that *“Full design risk passed to Infraco post contract award”* (p95) and that *“The creation of the Infraco contract as a lump sum contract transfers the pricing risk to the private sector”* (p97).

It was noted that

“It is expected that the overall design work to Detailed Design will be 100% complete when the Infraco contract is signed” (p84) and that risks associated with novation would be mitigated by ... *“Detailed design being largely completed prior to award of the Infraco contract”* (p86).

It was noted that a rigorous Quantitative Risk Allowance had been applied and there was considered to be a 90% chance that costs would come in below the risk-adjusted level and that

“The level of risk allowance so calculated and included in the updated

estimate represents 12% of the underlying base cost estimates. This is considered to be a prudent allowance to allow for cost uncertainty at this stage of the project and reflects the evolution of design and the increasing level of certainty and confidence in the costs of Phase 1 as procurement has progressed through 2006” (paragraph 9.11).

It was further noted that

“TIE has continued to comply with the HM Treasury recommendations for the estimation of potential Optimism Bias and has determined, in consultation with Transport Scotland, that no allowances for Optimism Bias are required in addition to the 12% risk allowance” (paragraph 9.12); and that “Optimism Bias has been shown in Mott MacDonald’s Review of Large Public Procurement in the UK, to be eradicated by the current stage of FBC production, in view of greater scheme certainty and mitigation of contributing procurement, project specific, client specific, environmental and external influence areas” (paragraph 10.44).

46) Did you have any input into the report to Council or the draft Final Business Case (FBC)?

I was asked to provide comments on the drafts of many Council reports on the project which had content referring to the business case or financial information. However the reports were in all cases authored by Council officers and my role and others at tie was to assist by validating the drafts and suggesting improvements or additions to content.

47) What was your understanding at that time as to the steps that would be taken to achieve the procurement objectives in the draft FBC noted above?

The principle steps to achieve the procurement objectives, as stated in the DFBC, were to complete the utility diversions (principally through MUDFA)

ahead of the award of the Infraco contract such that the Infraco programme would not be significantly impacted by utility diversions, complete the design (through SDS) such that bids for Infraco and the final negotiated Infraco fixed price did not reflect substantial premia to allow for incomplete design and then at award of the Infraco contract novate the SDS design contract to Infraco such that the Infraco would take responsibility for the design from award.

- 48) What was your understanding of the extent to which detailed design would be complete (i) when bids were received for the Infraco contract and (ii) when the Infraco contract was signed?

At the time of the DFBC it was still expected that the design would be substantially complete by the time of Infraco award and at an advanced stage when bids were received from Infraco.

- 49) Who in TIE determined, in consultation with Transport Scotland, that no allowance for optimism bias was required in addition to the 12% risk allowance? When, and why, was that decision taken? What were your views on whether that was appropriate given the slippage in the procurement programme and the delays and difficulties with design?

The P90 risk allowance was determined by the commercial team and risk manager from the project risk register of quantifiable risks. This was a continuous process involving all the different elements of the project involved in design, utilities diversions and determining the scope of the Infraco contract. It was not a one off exercise for preparation of the DFBC cost estimates. There was extensive engagement over many months with Transport Scotland on the process for development of the P90 risk allowance. As well as various members of the tie commercial team I was involved in many of those discussions myself.

2007

In an email dated 5 February 2007 (CEC01790123), you said, about the £375m funding from the Scottish Executive:

"the truth is nobody here or at TS has a clue where the figure came from or how it was estimated".

1) Can you explain this remark?

Throughout my involvement with the project I never really found out how the original offer £375m for the funding of Trams was determined. I could find no document or analysis which showed how it related to the capital cost estimates of the project at any time. In terms of where the balance of funding would come from I believe that the Edinburgh congestion charging scheme (which was abandoned after a referendum rejected it in early 2005) was seen as a way of funding trams (including the originally planned Tram line 3 to the south west of the city) as well as other transport related improvements in the city.

On 7 February 2007, Rebecca Andrew of CEC reported that Transport Scotland had concerns about a lack of evidence for some cost assumptions made by tie in capital cost reports they had recently supplied to TS. In an email to Geoff Gilbert (CEC01790454) you said you were

"not at all surprised that the message from TS to Rebecca was that they have concerns and in her position I would be barging our door down also"

2) Can you explain this issue, and your comment?

The context for these emails is that tie had received the initial Infracore bids and our commercial team had provided analysis to Transport Scotland. Rebecca Andrew of CEC has then heard back from TS that they have concerns about some of the information submitted (not specified here) but Rebecca was not in a position herself to address those concerns as tie were managing this process

for CEC. My email to

Geoff Gilbert was to emphasise that we needed to provide the support to CEC in their engagements with TS (which as far as I am aware we always did) and it is no surprise that TS would have concerns as in their role of scrutiny over the project it was their job to have concerns. This appears to be a point in time where our commercial team had not completely addressed TS concerns re the initial bids for Infraco but throughout there was open and constructive engagement with TS and their advisors and I believe those concerns would have been addressed.

On 7 February 2007, Matthew Crosse proposed a "Blue Skies" session to review the project structure, headline risk allocation, programme, likely outcome of tenders and possible final positions of principal stakeholders and funders (CEC01826743). In response, you noted that TS were being advised by KPMG to have more risk transferred to the private sector and expressed your view that

"given we are likely to go the other way if anything it might be appropriate to get our own blue sky thoughts in order before we deal with TS or indeed CEC".

3) Can you explain your comments here about risk transfer?

As context Matthew Cross had just joined as Project Director and wanted to test the assumptions and intended risk transfer of the procurement strategy as documented in the DFBC. I believe that my comments around risk transfer may have been about KPMG wishing to see the payment mechanisms in the Infraco / Tramco contracts structured to the maximum extent possible to incentivise them for on time delivery and penalise them for late delivery or unsatisfactory initial operations of the tram. I don't recall any consideration of a change to the underlying risk transfer objectives of the procurement strategy and I can't explain why I said in this email we were "likely to go the other way". The underlying structure of the procurement strategy did not change.

4) What discussions followed on that issue?

I do not recall the engagements contemplated in this email exchange – but the underlying procurement strategy did not change as a consequence and any change would have required full approval of TS and CEC in any case and such approvals would be have had to be clearly documented.

On 1 March 2007, Willie Gallagher (in the context of an issue relating to adverts for TTROs) said he was getting extremely concerned that TIE were *"not nearly fit or professional (sic.) for the real challenges ahead"* (1 March 2007, **CEC01813895**)

5) Can you comment on this, as an observation on TIE generally?

Willie Gallagher was obviously exercised by a problem with TTRO adverts (I don't recall what that was) and was expressing that dissatisfaction to the tie management team in general. I don't believe that at any stage of the project there was a pervasive lack of professionalism or lack of quality throughout the organisation. The challenges associated with the SDS design process and MUDFA utility diversions became more and more complex as the project progressed, in general due to the nature of managing interfaces between the contractors and stakeholders/decision makers outside of tie. At every juncture tie took steps to increase or change its own resources and develop project management processes and governance to address the challenges being faced. Willie Gallagher was instrumental in championing those changes.

On 5 April 2007, Alastair Richards of TEL circulated his thoughts on TS comments on the DFBC (**CEC01622828**, covering email **CEC01622827**). TS comments included:

- (_4) That *"a risk allowance of 12% for a rail-related project just entering detailed design may be viewed as a little optimistic"*
- (_4) Cost of delay and inflation were big risk drivers and it was not clear how

they were going to be addressed.

- (_5) That the programme described *“only a best case scenario”* as it was *“based on assumptions of a right first time and on-time delivery. Edinburgh Tram Network Project is a unique project in Scotland. Therefore the assumptions and preconditions appear optimistic.”*

Mr Richards acknowledged these as *“very pertinent observations”*.

- 6) What was your view on these points?
- 7) How can they be reconciled with the comments in the DFBC that TS had agreed that there was no need for a separate allowance for optimism bias?
- 8) How did TIE address the points in the email?

The risk allowance in the DFBC (some months before this exchange) was, inter-alia, predicated on design and utility diversions being substantially complete by the time of Infracore award to achieve the risk transfer objectives of the procurement strategy and that there would be no significant increases in the scope of the project arising from design or elsewhere. The Preliminary Design stage cost estimates were considered as robust and reliable for that stage of the project's delivery and that was validated by more than one external consultant and scrutinised in detail by Transport Scotland. tie were very aware of the imperative to mitigate against delays to design or the utility diversions and throughout 2007 the resourcing of tie was strengthened and our direct involvement in managing the contractors and monitoring progress on both design and utility diversion was stepped up to address the delays in the delivery of both.

In reconciling TS comments referred to re the risk allowance to the statements in the DFBC re TS view on the level of optimism bias I can say that it was natural in any feedback from scrutiny of the DFBC that they would continue to challenge the risk allowance and they have done so here on a 'rule of thumb' basis.

One event which helped with the programme/costs risks related to design and utilities completion was the rescheduling of the award of the Infraco/Tramco contracts and the award date for Infraco / Tramco were moved back from October 2007 till early 2008 (eventually signed in May 2008).

The focus of tie management efforts in 2008, addressing all of the concerns of Transport Scotland, included actively managing the delivery of the design and utility diversions by the contractors concerned, complete the procurement of Infraco / Tramco and so reach the Final Business Case stage with prices agreed with Infraco / Tramco for the completions of the project. The risk transfer objectives of the procurement strategy were to be met by design risk being novated to Infraco – and an agreed contractual programme with Infraco - which would address TS concerns regarding the optimism or otherwise of the programme presented in the DFBC.

In March 2007, Scott Moncrieff produced an audit report for TIE on the tram project management arrangements (CEC01649895_6; cover email, CEC01649894). The report noted scope for improvement on risk management. This included a need to train project managers to improve their understanding of the active risk management system and their responsibilities for maintaining it. Without that, there was potential that tram project risks were not being fully considered.

9) What was the context to this audit being carried out?

Scott Moncrieff at this time were tie's internal auditors with a remit to conduct audits on all areas of the company's operations under an internal audit plan agreed with the Audit Committee of the tie board. Their main objectives were to identify any material weaknesses in our internal control, management processes, governance and reporting and make recommendations for improvements. Their recommendations and action plans were agreed with responsible line managers. There was subsequent follow up under the oversight of the Audit Committee to ensure the action plans had been

appropriately implemented.

- 10) Can you comment on Scott Moncrieff's observations about risk management, and whether they were acted upon?

At the time the project team were implementing software called Active Risk Manager which was a tool for managers to record risks, their possible consequences and how they were being managed. This system was intended to be a more efficient tool than the spreadsheet based risk registers which had hitherto been used but there is no conclusion that any material risks had been omitted from the existing records. As I recall all project managers were given access to the system and they were responsible for keeping it up to date. The comment in this report is that at the time there was some work to do in training project managers in its use with the Project Director taking responsibility for the action. Scott Moncrieff reported back to the Audit Committee on the implementation of the action plans and although I don't recollect the follow up on this particular action their recommendation were taken very seriously and would have dealt with.

There was a discussion about utility diversions at the TPB on 19 April 2007 (CEC01015822_5, 4.3, 8.7; see also the slideshow at _33). The slideshow noted, at _35, that utility records were uncertain, that the extent of work required was not known even after invasive and non-invasive surveys, and so utility diversion work was to be done well in advance of Infracore works to avoid potential abortive costs of Infracore standing time due to overrunning diversion works. At _40, it referred to mitigation of risk by maintaining a programme buffer between completion for each work section and Infracore section start, and dividing Infracore commencement into a larger number of sections reflecting completion of MUDFA work sections. At _45 is a flow chart showing the MUDFA design and works order process.

I think the document referenced is the papers for the 24 May 2007 TPB

11) What was your understanding of these issues?

Considerable effort had been made to mitigate the risk of finding unexpected utilities which were not reflected in the statutory utilities records or been surveyed by SDS where such records were deemed insufficient. Despite this, there was still a risk associated with the utility diversions being of greater extent or of a different nature to what was expected and tie was implementing management processes to mitigate against that.

The tie utility diversions team, working with the contractor, were by this time facing up to the increasing challenge to programme the delivery of the utility diversions work due to the complexity of the interfaces required as between the MUDFA contractor, the SDS contractor, the statutory utilities whose apparatus was to be diverted and the process of traffic management and obtaining necessary approvals for the work from CEC. tie had greatly increased its own resources for the utility diversions work and was implementing processes by which there was clear responsibility, processes and timescales to manage the design and approval of individual elements of the work as between the different parties involved and then the actual delivery of the work itself.

12) In particular, what was your understanding of tie's approach to avoiding MUDFA works causing abortive cost through Infracore delay?

Underway at that time was a very detailed exercise to re-sequence the utility diversions works on a section by section basis together with a parallel resequencing of the programme for the follow on Infracore work. By creating a buffer on a section by section basis between the utility diversion work and the programme for Infracore the risk of a delay to Infracore would be mitigated. The re-sequenced Infracore programme would be the contractual programme in the Infracore contract. Other measures included making certain utility diversions part of the Infracore scope of work such that risk of delays could be passed to Infracore.

The minutes for that meeting (CEC01015822) noted that a trial dig had found unexpected utilities, and that questions were being raised with survey providers. At the TPB on 20 March 2007 (CEC00688584_5 at 3.1) concern had been expressed about the time taken by utility companies to turn around designs.

13) What was your understanding of the process by which utility diversion designs were produced and approved?

The design process is illustrated in the flow chart at CEC01015822 page 45 of 51. This reflects a complex iterative process to get the design of the utility diversions complete to commence construction thereof and it required each party to deliver as required in a timely basis to minimise the time to start construction.

14) Were there problems with delay and, if so, why?

Yes there were and that impacted on the individual elements of the work and as I recall for a number of different reasons - the reliance on the utility companies to process design as referred to in CEC00688584_5 at 3.1 being one. I also recall a problem whereby having completed the design the nature of the actual utilities uncovered was different and so these individual elements had to go back through the design process to the extent necessary. The people managing the utility diversions design and delivery at tie had processes in place to react as quickly as possible to these problems and thereby minimise the delay.

15) How were these issues taken into account in assessing the risk retained by TIE in respect of utilities?

As per answer to Q12 above the overall approach was to mitigate the risk by developing an updated and agreed programme for the utility diversions which

would mitigate against the risk of delays by creating a buffer on a section by section basis between the utility diversions and the follow on to be contracted Infraco works programme. The component of the risk allowance for the utilities work in the risk allowance (as part of the overall project cost) recognised the residual uncertainty with regard to the extent (quantities) of utilities to be diverted with a much higher risk allowance (representing 20% above the estimated base cost of the work) than for other elements of the project.

At the TPB on 19 April 2007 (**CEC01015822_5**), David Mackay raised a concern about the level of risk reporting and discussion at the TPB, and the board agreed that detailed discussions should be held at the DPD subcommittee (5.18). This followed discussion at the TPB on 20 March 2007 about the level of detail provided in the risk register and discussion about the clarity, quality and quantity of papers going to the board (**CEC00688584_5 at 2.2 and 4.9**).

16) What was your understanding of these points?

As the project was moving into the construction phase with the commencement of utility diversions and moving into the process of contracting Infraco/Tramco, the volume of issues requiring to be reported was increasing greatly and I believe the points being made were that reporting needed to address that. If everything was included in the TPB papers themselves then it would become unmanageable.

17) How was this concern addressed?

The detailed management of individual elements of the project was delegated to the sub-committees such as the DPD (procurement) and MUDFA sub-committees - including detailed risk reporting and action. Only more significant matters and risks were to be dealt with on the TPB agenda and the TPB would have oversight and scrutiny of the sub-committee reports being brought to the TPB. This structure also allowed risk reporting and management to be tailored

as necessary to the activities which fell under the remit of each of the sub-committees.

This approach was part of the paper presented by Matthew Crosse at the TPB on 24 May 2007 (CEC01015822 from p26).

18) To what extent were there considerations and/or discussions of risk at the TPB?

Risk was specifically on the agenda and was discussed at every TPB as I recall – the reporting of risk did evolve over time to suit changing circumstances ie the stage the project was at and the risks associated with the different types of activity eg design, utility diversions and procurement (then later Infracore).

19) Was risk not a matter which required the full attention of the TPB?

Yes – and the intent was to ensure the TPB specifically dealt with the most significant risks and those where the mitigating management actions were in delay or were not being effective.

On 30 April 2007, Duncan Fraser of CEC sent to Bill Reeve of Transport Scotland CEC, TIE and TEL's response to comments Mr Reeve had made on the Draft Final Business Case (CEC01631556, attachments CEC01631557, CEC01631558 and CEC01631559).

The TS comments (in the section on risk, from _4) included:

- that they perceived a 12% risk allowance to be optimistic;
- that the QRA should be run at P50 and P80 levels; and
- a question about where the residual cost uplift for Optimism Bias would be allocated.

The CEC/TIE/TEL response referred to previous discussions with TS in 2004 and 2006, to the effect that OB would be eradicated by the time of scheme investment

and that a QRA at the P90 level could be used to cover specified risk, unspecified risk and optimism bias.

TS also had concerns about the project programme, including that it was *"tight, with little float and ... only considers a best case scenario"*.

(See also the DFBC at **CEC01821403**, e.g. at 9.9 to 9.12)

Your email of 27 June 2007 (CEC01631556) noted that there had been no feedback from TS on this response *"primarily because TS have not engaged with us in any meaningful way since then"*.

20) Did TS ever re-engage in relation to these concerns?

Yes they did and were engaged with tie continuously throughout the development of the business case. In June 2007 I can speculate that Transport Scotland were concerned about whether the project should continue at all in light of the uncertainties as to whether the Government would stop the project. From that point on the focus was to manage SDS/MUDFA effectively while progressing the Infraco procurement with a view to presenting a Final Business Case later in that year to reflect the outcome of the Infraco bidding process in terms of achieving risk transfer objectives including a fixed price and with a contractual programme. The expectancy was that these would address TS concerns about cost and programme risk and optimism bias.

21) If not, do you know why?

See answer to Q20 above – I believe Transport Scotland were by and large fully and effectively engaged with tie and CEC throughout the project.

22) Were their concerns addressed? If so, when and how?

Yes – see answer to Q20 above and my answer to Q8 in this section is also

relevant.

On 16 May 2007, you received an email from John McConnachie of John Brown Consultants, summarising issues that had been raised by Andy Malkin in a meeting about MUDFA (CEC01665272). The points included budget spiralling, poor decision-making, wholly inadequate communication between Amis and SDS, a lack of detail in drawings.

23) What was your understanding of these issues?

24) How were they addressed?

I think the issues as between MUDFA and SDS and the quality of design were part and parcel of the issues examined in the TPB of May 2007 (CEC01015822) and how that was being addressed is dealt with in my answers to Q11 to 15 in this section. Tie's approach was inter-alia to significantly increase efforts in actively managing the interface as between the SDS and MUDFA contractors to mitigate against these issues.

You attended a TIE management meeting about the procurement programme on 4 June 2007 (CEC01629344; covering email, CEC01629343). It recorded that the date for confirmation of the preferred bidder had slipped from May 2007 to October 2007, and set out proposals for addressing that. One proposal was to start due diligence of critical design items despite the design process continuing and the design therefore being subject to change. It was noted that:

"Underpinning this approach was a considered view from the Procurement team that the maturity of the design would have reached greater than pareto status by August and therefore that subsequent design changes would be modest and at any rate carry a <£10m aggregate impact (any subsequent refinement on design generating cost would have to be justified by the bidder)."

25) Can you explain why the date for confirming the preferred bidder had slipped?

I do not recall the specifics but one influence would have been delays to delivery of the SDS design outputs as these had to be provided to the Infraco bidders to carry out due diligence as part of the Infraco bidding process.

- 26) Can you explain the proposal to deal with it, and in particular the view quoted above?

The proposal was to release design information to the bidders once it had reached a stage where in the opinion of the project team procurement team, it would be reliable as a basis for pricing by the Infraco bidders without significant risk premia being added to the price by Infraco for incomplete design. Doing it this way would allow design due diligence by Infraco bidders to progress before the entire design was complete and therefore be able to keep momentum up in the procurement programme.

- 27) On what was the view based that subsequent design changes would “*at any rate*” carry an aggregate impact of less than £10m?

This figure was not produced by me but would have been arrived at by examining the elements of the Infraco work which had not yet reached a mature level of design and forming a judgement as to the extent to which subsequent changes to these items might give risk to an increase in costs.

- 28) Were any concerns expressed about design due diligence being carried out only on critical items, and at a time when the design was still subject to change?

I don't believe the intent here was for due diligence only ever to be carried out on critical items – rather to get the Infraco bidders working with design as it was and then to examine any subsequent proposed increase in bid prices arising from subsequent design outputs.

29) How fixed a price could one expect to negotiate in those circumstances?

I believe the view was that the design was sufficiently advanced for a competent and experienced contractor to provide a fixed price without including significant risk premia for incomplete elements of the design.

The same document includes a minute of a risk meeting of tie's management on 6 June 2007 (CEC01629344_5). It notes that the risk management process had formerly been managed by SDS, but was then taken under control of the tram project team because SDS's execution had been unsatisfactory. It noted that the risk allowance after adjustment at the meeting was £69m, compared to £60m quoted in the DFBC, with the principal increase being in the MUDFA area from £5.9m to £14m. It also noted adherence to the process, risk plan and toolset was

"in a patchy state with roughly 50% of project and functional managers complying".

The actions included

"Target moving aggregate risk position back to DFBC number".

30) Whilst you were not at that meeting, you did deal with risk on the project. What is your understanding of the matters noted above, in particular:

a) SDS having formerly handled risk management and the circumstances in which TIE took it under their control;

I don't actually recall SDS being the principal provider of the primary risk management information at tie but apparently they did provide QRA advice. The overall project risk register would have reflected a broader range of risks than those related to design.

b) The increase in the risk exposure from that reported in the DFBC, and why there was a target to move it back to that number

The paper says the increase was mostly due to an increase in risk allowance for MUDFA due to the additional risks arising in that area. The desire to move

the required risk allowance back down was an integral part of risk management meaning that individual risks would have action plans to mitigate those risks and therefore reduce either the probability of that risk resulting in increased costs or reducing the expected financial impact of the risk.

c) The patchy compliance with the risk process? Did that improve?

Compliance with risk management processes was central to all the project teams at tie. I think it was evolving at this stage to deal with the specific requirements and risk profile associated with each element of the project including design, utility diversions and procurement / Infracore – then consolidated to provide a whole of project view. I believe ties risk management was the subject of continuous improvement and that compliance was a priority for the project team.

You were involved in briefing Audit Scotland in relation to their review in June 2007 (e.g., **CEC01629556** and **CEC01631459**). (The Auditor General's report, *Edinburgh Transport Projects Review*, is at **CEC00785541**.)

31) What was the purpose of the Audit Scotland review?

The purpose of the review was to conduct a high level review of whether the project was progressing in line with cost and programme targets and whether the management arrangements for the project would promote completion of it. The review was instructed by the Scottish Government and included a parallel review of Edinburgh Airport Rail link.

32) What was your involvement?

I was given responsibility to manage the engagement with Audit Scotland – ensuring they had the information / key documents they required to complete their review. I also coordinated the feedback to Audit Scotland on their review

from other members of the tie management team (who they met with) and as I recall from CEC. Audit Scotland met with key members of the tram management team in addition to myself.

33) What were your views on Audit Scotland's main conclusions?

The review report gave comfort in that it found the process for developing our capital cost estimates was sound including the involvement of more than independent review of those estimates and benchmarking against other projects. However the scope of the report was not to provide assurances regarding the accuracy of those estimates.

The review also gave comfort in that it found the management arrangements to be appropriate – in particular that the governance structure involving all key stakeholders and our internal rules for delegating authority for decision making appeared sound.

Papers for the TPB on 14 June 2007 noted that TIE had with effect from 14 May 2007 appointed Mark Hamill as in-house risk manager, to replace the service previously provided by Turner & Townsend (**CEC01552419_22**).

34) Why had TIE decided to take risk management in-house?

Risk identification and management was at the heart of everything which tie did and in general I would say this is best delivered by internal resources that are embedded in and supporting the management teams themselves rather than being outsourced. From that perspective the move was rational. In fact tie had already had the services of an internal risk manager in Mark Bourke and as I recall the role of Mark Hamill was as a successor to Mark Bourke. I don't recall exactly when Mark Bourke left the project but it could have been that Turner & Townsend were fulfilling the role in an interim period.

An email you sent to Audit Scotland on 16 June 2007 attached a letter from Willie Gallagher to Malcolm Reed of Transport Scotland dated 28 May 2007 (CEC01555674, CEC01555676) recording tie's response to "*the current backdrop of uncertainty*", and referring to TS's instruction not to enter into new financial commitments on tram or EARL. That had meant, for example, that TIE had deferred the issue of statutory notices for the initial round of utility diversion work. The letter also referred to concerns expressed by bidders about the uncertainty over the project.

35) What precisely was the uncertainty, and in what ways did it affect the project?

It is well documented that part of the SNP manifesto for the 2007 elections was that they would redirect investment earmarked for Edinburgh Trams and Edinburgh Airport Rail link. It was tie's job to provide the information required on the cost and other consequences of termination if it arose and to continue to manage the risks associated with the project and maintain momentum whilst putting a hold on such expenditure as instructed. My own view is that tie handled this in a professional and competent manner. It is easy to conclude that the uncertainty regarding the future of the project must have had an impact on stakeholder relationships, including those with CEC and TS and also that it affected progress and delivery by SDS and MUDFA. Willie Gallagher's letter also relays concerns expressed by Infracore bidders. I cannot offer any specific evidence to substantiate the extent to which the project's delivery was delayed or hampered by this period of uncertainty, or if we lost a bidder as a result. I can offer an opinion that public, media and stakeholder support for the project was certainly not any easier to secure going forward.

At a working level within tie the review did result in the EARL project being cancelled with resulting redundancies. I believe the management did a very good job in retaining key staff and managing the morale of the entire staff as we went through this particular difficult period.

On 20 June 2007, you sent an email about a letter to be sent to John Swinney giving him comfort on tie's approach to utilities and why TIE were confident it was deliverable to cost and programme (CEC01650422). This was in response to specific concerns voiced by Mr Swinney on the radio. You noted that the price per unit of work was known,

“unless AMIS claim the shit out of us for current prolongation ... and I bet they will ... Incentivisation is difficult where the scope of the work cannot be defined in advance. To mitigate the consequential risk to programme and price TIE will adopt an intrusive management and supervision regime to ensure control to deliver the works within budget and programme thus mitigating the risks to the commencement of Infraco works by the due date ... We need to get on with it now or MUDFA costs and follow on infrastructure costs and risks will be much higher ... We've managed programme slippage by keeping them busy elsewhere (digging a hole in Gogar) but we are now running out of such ideas.”

36) Please explain the views you expressed in this email.

I have been asked to outline the contents of a letter to John Swinney regarding our approach to managing the risk of delays to utility diversions causing delays to Infraco. My answers to questions 11 to 15 in this section are relevant to my understanding of how tie was managing that risk. My comment about AMIS claiming prolongation costs was simply expressing a concern that if the MUDFA contractor were to incur additional management and overhead costs as a result of the contract taking longer to complete than they had expected, then they would only naturally try to attribute responsibility for an element of that to factors which were not their responsibility and seek compensation.

37) What was your understanding of, and views on:

a) The extent to which MUDFA works were threatened by delay

Physical utility diversions started in March 2007 – but the progress in the first months had been poor mostly I believe as a result of delays in producing the

design for the utility diversions.

b) How TIE had managed MUDFA programme slippage up until this point

The MUDFA utility programme was being re-scheduled on a section by section basis to integrate with a re-scheduled Infracore programme with enough of a buffer to mitigate the risk of late finishing utility diversions overlapping with the Infracore programme.

c) The lack of incentivisation on the MUDFA contractor

The nature of the MUDFA contract was that they were paid for the quantities of work done. Other than their contractual obligations to perform the work competently there were limited rewards for them to do it any quicker. I believe we did introduce a limited system whereby individual elements of the work were undertaken against an agreed costs estimate and if MUDFA delivered that element of the work under budget then they would share in the cost benefit.

d) Tie's intrusive management regime to mitigate risk

tie had greatly increased its own resources for the utility diversions work and was implementing processes by which there clear responsibility, processes and timescales to manage the design and delivery of the utility diversions involving detailed management of the interfaces between SDS, MUDFA and CEC. tie had taken up a much more active management role to mitigate delays to delivery of utility diversions.

e) The risk of delay going forward, especially to Infracore works?

The MUDFA utility programme was being re-scheduled on an area by area basis to integrate with a re-scheduled Infracore programme to be agreed with the Infracore bidders. This was the principle way in which the prospective delay risk

with Infraco was being managed.

At the TPB on 12 July 2007, there was reference to concern about the quality of the information provided in the primary risk register (CEC01018359_5 at 3.3; see also 5.5, which noted that "*the Project Risk Register needed to be strengthened for the additional funding risk to CEC*").

38) What was your understanding of this issue?

In general Mark Hamill had just started at tie and was in the process of reviewing and updating the risk registers with the full involvement of all project managers. On the specific issue regarding CEC funding risk I cannot recall exactly what that issue was or how it was addressed – but I can offer that it may have been either the risk to CEC of delivering its agreed funding of £45m for the project (which was to come from several sources including contributions from developers along the tram route) or it may have related to the risk that CEC would have to bear the cost overruns in the context of a fixed contribution to the project from the Government. In either case these risks were explicitly recognised by all and were dealt with in the affordability analysis in the DFBC and the FBC.

39) How was it addressed?

See above.

You were absent from the project for approximately three months between around August and October 2007.

40) Over what precise period were you absent, and why?

I was employed by tie primarily to help with delivery of the business case for trams although I subsequently took on wider responsibilities for the general

financial management of the company finances and providing support for the project teams in collation and presentation of financial information. The business case was by now substantially complete except to reflect the outcome of the Infraco/Tramco procurement and to conclude on how and when Ph1b would be delivered. I intended to leave the project to seek a new role. I was persuaded to take the 3 months off as leave of absence for planned travel and consider returning. In the end I did return at the end of October 2007.

41) Who covered your role in your absence? What, if any, briefing did you give them before you left?

Pat Diamond covered the corporate finance director role and Miriam Thorne covered all aspects of the business case and supporting the project teams with financial analysis and reporting. Both were fully up to speed with requirements and capable of carrying out the role.

This was a relatively important period in the project, which included the appointment of the Infraco and Tramco preferred bidders and the completion and approval of the Final Business Case, v1.

42) What impact, if any, did your absence have on the project, or your understanding of it? What briefing, if any, did you receive on your return, about developments in your absence, and by whom?

I am not aware that my absence from the project had any impact on it at all. All the key project management teams for commercial/procurement and management of the individual work streams including design and utility diversions and project controls/risk management were in place reporting ultimately to the Project Director. The continuing support of that process I had been providing was assured by the continuing involvement of Miriam Thorne. I brought myself up to speed when I returned through reading and discussions with all members of tie management.

During Your Absence

At the TPB on 5 September 2007 (USB00000006_5 at 3.2.7), it was agreed that the legal affairs committee was the correct forum to review the risk allocation per the contracts and confirm the adequacy of risk allowances.

43) Who sat on that committee?

I think this refers to what was called the Financial Commercial & Legal (FCL) committee as described in the Governance paper from page 32 onwards in the same papers USB00000006. The intended membership of that committee at the time is at page 42 although I don't recall that the membership and remit of the FCL was the same throughout its existence.

44) What was your understanding of the reasons why risk was to be reviewed in that forum rather than at the TPB?

I think what is suggested is that the risk allocation as determined from the legal drafting of the contracts would fall under FCL. Risk was very much part of the TPB remit but that the management of that and many other aspect of the project were delegated in the detail to the TPB sub-committees which then reported back to TPB. This was a the very pragmatic way of ensuring that the TPB itself could focus on critical matters requiring their attention (including key risks) – see the rationale for the agreed governance structure in page 32 onwards in the same papers USB00000006.

Also at that meeting, Donald McGougan is noted as having stressed that in light of the new administration (a reference to the SNP minority government?), the Final Business Case still needed to “sell” the project, and emphasised that message should not be understated (minutes, 3.2.11).

45) What was your understanding of this point?

I think this was a sensible reminder that potential cancellation of the project had been considered and in that context it was very important to continue to communicate the benefits of the project and its viability – through the business case.

46) Was it appropriate for the FBC to “sell” the project, rather than present it dispassionately?

I believe the business case in all its iterations was a very professional and competent analysis of the reasons for the project and its viability and contribution to a wide number of objectives as laid out in the STAG appraisal. However it was also the principal document in which the benefits of the project were laid out and to that extent it was the main way in which those benefits were communicated to all stakeholders.

47) To what extent, and in what way, was the preparation of the FBC influenced by this suggestion?

I don't believe this materially influenced the preparation of the FBC. In any case the scrutiny of the business case at every stage of its development by CEC, TEL/Lothian Buses, Transport Scotland and their advisors and the involvement of reputable external consultants in its preparation was an environment which would never allowed for it to be artificially enhanced.

A paper for the TPB on 26 September 2007, on the funding of works outside the Core Scheme (**USB00000006_47**) noted works associated with the tram project, but which fell outside of the £545m approved funding for the project. At 7.1, the paper noted that these costs were to be reported separately.

48) Who was responsible for recording and reporting these costs?

49) Where were they recorded and reported?

I recall tie had a register of possible costs out with the strict scope of the tram scheme (a number of which were termed Public Realm works) which CEC might wish to be included in the delivery of the tram scheme and also works which might be required by third parties – the major businesses along the route principally. I believe some of these items were included in the final scope of the Infraco contract, mostly as provisional sums pending definition of requirements, or elsewhere in the overall project cost estimate or otherwise were specific exclusions from the project estimate at close of the Infraco contract pending resolution of exactly what the requirements were and how they were going to be funded.

A third Office of Government Commerce (OGC) Review was carried out in September/October 2007 (CEC01562064) and resulted in a “Green” rating (i.e. “*The project is on target to succeed provided that the recommendations are acted upon*”).

The report noted the following possible matters of concern:

- While preliminary designs had been completed, only 65% of detailed designs were completed (p2).
- The entire costs of the project could not be finalised until the due diligence process with the preferred bidder, value engineering and alignment of contract terms had been completed (p4).
- The timeliness of project delivery was of concern. Both bidders had raised the concerns that the planned preferred bidder period, which included due diligence on the designs and the novated contracts, was tight (p5).
- While the tools being used by TIE to identify, monitor and manage the risks were “impressive”, “*If there is any weakness, we would note that discussions of these risks have not always been reflected in specific actions in the tram project board minutes*” (p7)

50) What was your involvement, if any, in that review?

I had no involvement in this review.

51) What were your views on the matters noted above?

The OGC review report overall supports the position tie was in and the process we were following in the Infraco procurement to reach signing of a contract with Infraco and Tramco. The timescale to get through preferred bidder stage was noted as challenging but the project team were managing that with the support of the bidders. The report endorses tie's risk management processes. I think the fact that TPB did not always minute specific actions regarding risks might be closely related to the fact that detailed consideration of the project risk registers and monitoring responsibility for managing those risks was dealt with by the TPB sub-committees who then reported back to TPB.

On 15 October 2007 the OGC review team produced a further report, "*Project Risk Review*" (CEC01496784).

The report noted that a number of risks remained with the public sector, including: the outturn price and delivery programme of MUDFA works; that the design and approvals processes delay the programme; that Financial Close was delayed and had knock on effects on approvals and programme; that the SDS novation process was not fully effective; changes of scope; third party delays; delayed and/or qualified acceptance; and project management skills and costs.

The report further noted,

"We endorse the assessment that the level of public sector risk on the capital expenditure programme is currently £49 million at a 90% confidence level. Further our best estimate of the schedule risk is currently 21 days also at a 90% confidence level. This equates to a capital expenditure risk of a sum of £2.2 million in the context of the proposed contracts". The report concluded, "We

believe that the overall headroom of £49m in the capital expenditure is a prudent provision at this stage of the project's development".

52) What was your involvement, if any, in that review?

I was not involved in this review.

53) What were your views on the matters noted above?

I think the risks highlighted were key amongst the broad range of risks being managed by tie and the objective was to have these risks transferred to the private sector to the maximum extent possible upon signing of the Infraco contract in accordance with the objectives of the approved procurement strategy.

The quote above endorses the assessed risk allowance at that stage of £49m as a prudent provision – again this was predicated on achieving a fixed price Infraco contract with the design novated and with no further significant increases in scope as reflected in the design.

A slideshow for the TIE board and the TPB on 15 October 2007 (CEC01358513_5 onwards) summarised the outcome of an OGC Gateway Review. Recommendation 6 notes that there should be "*continuing high level focus on the management and mitigation of key risks and that the very good work that is done by the risk manager **is effectively used and acted upon by senior management**" (emphasis added).*

54) What was your understanding of the issue raised in the highlighted text?

I don't take the highlighted text to mean that the OGC team did not believe that risk management outputs were not being effectively used and acted on by senior management. Risk management was part of the agenda for almost all regular meetings in the project team and it was taken very seriously indeed.

OGC was calling for a continuing high level focus.

55) Did TIE follow that advice; and if so, how?

Throughout the project tie strove to continually enhance the way in which risk was identified, reported and actioned and to adapt those methodologies to the specific activities being managed and to the stage in development the project was at. No system or management process is perfect, there is always room for improvement and tie was no different.

On 25 October 2007 the Council's approval was sought for the Final Business Case, version 1, in respect of phase 1a (Airport to Leith Waterfront). A joint report was provided by Andrew Holmes and Donald McGougan (CEC02083538).

The report to Council noted that:

- The SDS had prepared preliminary designs and were currently finalising the detailed designs. (para 3.22)
- *"It is anticipated that the SDS and Tramco contracts will be novated to the provider of the infrastructure works. This means that significant elements of the responsibility for the design and vehicle provision and the risks associated are transferred to the private sector"* (para 3.27);
- The estimated capital cost of phase 1a was £498m; *"There is detailed information behind (the) estimates, which take due allowance for risk contingency and further scope for savings, but a fuller breakdown cannot be provided at this stage for reasons of commercial confidentiality"* (para 4.2).
- *"The infrastructure costs are also based on the fixed prices and rates received from the recommended infrastructure bidder. However, there is scope for this cost to move slightly, prior to contract close as further design work is required to define more fully the scope of the works to allow a firm price to be negotiated. There is a risk allowance to take account of these variations. The price also assumes that savings can be made on the proposals through certain Value Engineering innovations proposed by ... TIE and the infrastructure bidder"* (para

4.3).

- The estimates included a risk allowance of £49m, which had been calculated based on the perceived cost and likelihood of over 400 risks in the project risk register. A statistical analysis known as Quantified Risk Assessment was carried out at a 90% probability level and had concluded that there was a 90% chance that final costs would be within that risk allowance, which “*demonstrates a higher than normal confidence factor for a project of this scale and complexity*” (para 4.10).
- It was noted that “*The risk contingency is designed to cover additional unforeseen costs, but it is recognised that there is an element of residual risk of costs exceeding current estimates. It should also be notified that the risk contingency does not cover major changes to scope. The scope of such changes will be reviewed after completion of the Tram works and commencement of Tram operations*” (para 4.32).
- “Fixed price” and contract details would be reported to the Council in December 2007 before contract close in January 2008. (para 5.3).

The Final Business Case, version 1 (**CEC01649235**) noted:

- “*The level of risk allowance so calculated and included in the updated estimate represents 12% of the underlying base cost estimates. This was considered to be a prudent allowance to allow for cost uncertainty at that stage of the project. It reflected the evolution of design and the increasing level of certainty and confidence in the costs of Phase 1 as procurement had progressed through 2006. TIE continued to comply with the HM Treasury recommendations for the estimation of potential OB and had determined, in consultation with TS, that no allowances for OB were required in addition to the 12% risk allowance above*” (paragraphs 10.13 and 10.14) (these provisions were essentially the same as the provisions on risk and optimism bias included in the draft FBC dated November 2006, **CEC01821403**, paras 9.11 and 9.12).
- “*By the time of the DFBC, OB was effectively eradicated, as per the findings explained in the Mott MacDonald Review of Large Public Procurement in the UK. This was in view of greater scheme certainty and the mitigation of factors built*

into the procurement process, as well as project specific risks and environmental and external risks. Instead of using OB, TS and CEC adopted a very high confidence figure of 90% (P90) in the estimate of risk allowances to cover for specified risk, unspecified risk and OB" (para 11.43).

56) Did you have any input into drafting the report to Council or FBC, v1?

No I did not.

57) Do you consider that the report to Council fully and accurately reported on the delays in relation to design, approvals and consents and utility works and the risks arising from these delays?

The report to Council specifically recognises the risks to CEC as the funder of last resort if risks gave rise to cost overrun in excess of the identified funding as the contribution from Government was fixed. The report deals with risk from 4.27 and references both Section 11 of the FBCv1 dealing with risk and their own risk summary at Appendix 3 to their report. The executive summary of the FBCv1 is included and it identifies the risks retained by the public sector arising from late utility diversions, changes to scope and the consents and approvals process all of which were being managed (see p36). Appendix 3 to the Council report specifically deals with utility delays, design changes and consents and approvals as the most significant risk retained and being managed by the public sector at that time.

58) What was your understanding of how the Infracore contractor could provide a fixed price, and how design risk could be transferred to the private sector, given the delay in design, approvals and consents (and given the design and TRO milestones noted at page 191 of the FBC whereby, for example, detailed design for phase 1a was not expected to be completed until September 2008)?

The position was that although not 100% complete the design was far enough

advanced for the Infraco bidders to provide a fixed price based on their judgement on how the design might change or evolve through to the final approved design outputs. I believe September 2008 was the end date but that the detailed consented designs were being delivered progressively over time to coincide with the point where the related Infraco works were programmed to start.

- 59) What were your views on the paragraphs of the FBC noted above? Did you agree that from late 2006 onwards optimism bias had been effectively eradicated and that it was appropriate to make no further allowance for optimism bias in addition to the risk allowance?

By this time optimism bias, calculated as percentage allowance on top of the estimate, had been replaced by a specific allowance for risks still inherent in the delivery of the project. In fact this had been the case since the DFBC in December 2006 and the escape valve for cost overruns was that there was still headroom between the cost estimate for Ph1a and the available funding package of £545m. The adequacy of the risk allowance was endorsed in the OGC report CEC01562064.

At a much later date (15 April 2008), you circulated a spreadsheet entitled "*Phase 1A – Budget at Financial Close*" (CEC01425551 and its attachment, CEC01425552). (You also circulated it to CEC: CEC01245223) If we understand it correctly, it shows (amongst other things) the breakdown of the £498m budget for phase 1a which had been reported in the Final Business Case (tab 1, column DT).

- 60) Do the figures in that column accurately record the breakdown of the £498.1m estimate reported in the FBC?

Yes – this spreadsheet would have been produced by me or my team mostly from reports and analyses provided by others and reflects how the estimated final cost of Ph1a of the project had evolved from the £498m in the FBC to the

AFC reported here at 31 March 2008 of £508m.

61) From where did the figures in that column derive?

There were separate analyses /control budgets for the major cost categories eg Infraco, Tramco, utility diversions, SDS design, land related costs and project management. This schedule is a collation of those estimates.

Specifically for Infraco and Tramco the figures were based upon the detailed pricing make-up of the negotiated prices at the time of preparation. The tab Infraco Financial Summary shows how the budget for the Infraco contract (excluding the Tramco) had moved from £211.2m at the time of the FBC through to the £237.9m to reflect the negotiated contract price when this report was prepared. As that tab shows, the increase reflected the negotiated settlements as part of what were called the 'Weisbaden' and 'Rutland Square' agreements which had the effect of the Infraco making previously provisionally priced items in their fixed and firm, taking items which had been previously been classified as value engineering opportunities into their fixed and firm price and also being paid a premium to take the risks associated with taking design through to detailed where that had not already been done. There is a separate tab for Tramco on the same basis.

The estimate for utilities was based upon costs actually incurred to date plus the MUDFA team's estimate to complete the work and there was also a separate risk allowance for utility diversions. Project Management and other resource costs are a mixture of costs already incurred and those estimated to complete the project based upon tie's detailed resourcing plans.

62) To what extent were these figures costs which had already been incurred; to what extent were they known costs yet to be incurred; and to what extent were they estimates?

At the time of preparation of the AFC in this spreadsheet totalling £508m costs

already incurred as reflected in the spreadsheet up the end of 31 March 2008 totalled £130m.

The CEC Full Council approved the Final Business Case, version 1 on 25 October 2007 (Minutes, **CEC02083535**, from _5; paper recommending approval, **CEC02083538**; FBCv1, **CEC01649235**).

Council Paper and Motion

A slideshow presentation for the Council meeting (**CEC02083536_17**) noted that the contracts were robust, with "*unambiguous risk allocation*".

63) What do you understand that to mean?

A robust suite of contracts which were effective in transferring risk to the private sector as intended by the objectives of the procurement strategy with clarity as to what risk was being retained by the public sector – either in principle or relating to specific elements of the project – what the possible consequences of those risks could be and how they would be managed/mitigate.

64) Did you agree with it then, and do you agree with it now?

I agreed with it then as that was what the development of the Infraco contract was designed to achieve. The widespread disputes with Infraco which subsequently arose regarding specific elements of the Infraco contract means that, with the benefit of hindsight, specific elements of the Infraco contract were not as unambiguous as was desired. However the Infraco contract was entered into in good faith and with a belief that it was effective in delivering what it was intended to.

On 25 October 2007 (**CEC01453723**), Willie Gallagher sent an email stating:

"Let no one be any doubt, we will be going back with a number of £498m for

Phase 1(a). Get cracking on whatever needs to be done.”

65) What was the context to his remark?

This remark appears to have been made in the context of discussions that were taking place with respect to value engineering (VE) opportunities being discussed with the Infracore bidder(s) at that time as identifying deliverable VE opportunities to reduce the costs of the Infracore works and agreeing them with the bidder was one of the ways to reduce the overall costs.

66) Why was there a determination for the cost estimate to be £498m?

I don't recall £498m being a benchmark which it was absolutely necessary to achieve for any reason.

67) Was it appropriate for him to specify in advance in this way the cost estimate to be reported?

I don't regard his remarks as anything other than a call to arms for the people working on the VE initiatives to deliver results.

68) Was it a *fait accompli*, regardless of any views held by others, that the cost estimate would be reported at that level?

No - tie did not operate in that manner – ie responding to top down predetermination of results. There was multi-level challenge of all outputs within the management team and very extensive and ongoing scrutiny of what we were producing from outside tie.

69) What impact did Mr Gallagher's remark have on those responsible for 'flexible' elements of the cost estimates, such as the risk contingency?

For the same reason as the answer at Q68 above I don't think it did. Regarding the adequacy of the risk allowance I refer back to the quote from the OBC review in October 2007 referred to in an earlier question (£49m being the risk allowance which formed part of the £498m estimate in the FBC

"We endorse the assessment that the level of public sector risk on the capital expenditure programme is currently £49 million at a 90% confidence level. Further our best estimate of the schedule risk is currently 21 days also at a 90% confidence level. This equates to a capital expenditure risk of a sum of £2.2 million in the context of the proposed contracts". The report concluded, *"We believe that the overall headroom of £49m in the capital expenditure is a prudent provision at this stage of the project's development".*

On 29 November 2007, you circulated a draft of a report to CEC with comments by you and Miriam Thorne (CEC01500066, CEC01500067). The draft reported on the negotiations which had been taking place between TIE and Bilfinger Berger/Siemens ("BBS"). It explained that the Infracore negotiated price was based on preliminary designs, and that an additional contingency had been included for the potential additional cost arising from changes which occurred in completing the design (e.g., paragraphs 3.3, 3.6 and 4.3).

Paragraph 4.3 noted

"The estimates however exclude additional costs arising from final detailed design or from scope changes required by the client (tie or CEC). A further contingency of £25m is recommended to cater for required any such design changes as described in 3.3 above."

You and Ms Thorne made critical comments about that.

Ms Thorne had emailed you with comments on the draft, and in particular about the £25m contingency (TIE00062379).

70) What is your understanding of the reason the text quoted above had appeared in the draft paper?

The context here is that we have been asked to comment on a draft of the CEC paper on FBCv2 and the paper has included a suggestion that additional allowance should be made for design changes for £25m which was not reflected in the FBC itself and did not emanate from the tie project management team.

71) Who had drafted it?

Council officers but I'm not sure exactly which ones contributed.

72) Please explain your reaction and Ms Thorne's.

The concern would have been at many levels, principally:

- By the time of the FBC were moving to a point where the design had matured and the objective of the procurement strategy remained to transfer responsibility for the design and its completion to the Infraco at award. There was a need to freeze the scope of the project to the maximum extent possible and to ensure that future proposed changes to scope were subject to rigorous assessment on a case by case basis as these changes would increase the overall cost of the project if incorporated. This is consistent with good practice in managing the budget and changes thereto in any project. I note that the OGC review of risk the previous month (CEC01496784_008) reported that the could not emphasis too strongly that projects become destabilised if no rigid change mechanism is put in place and that an introduction of a 'no change' culture was of paramount importance. I don't believe the project team were entirely resistant to change so long as it the cost and programme implications were thoroughly understood and impact on the overall costs of the project were recognised and funded.
- In any case a provision for future as yet unapproved scope increases of this extent was not appropriate to be including in a CEC report as this would be visible to stakeholders and to the Infraco bidder. It would have been a

concession that extensive and as yet unapproved design changes were still to come or were expected and to the Infraco bidder that this was sum of money up for grabs.

This paragraph did not appear in the final version of the CEC report (which merely said at, e.g., 8.1 that “*Some cost allowance has been made for the risk associated with the detailed design work not being completed, at the time of financial close*”: CEC02083448).

73) Can you explain why?

For the reason in the second bullet point above it would not have been appropriate to include a specific figure in the Council report which was visible to the Infraco bidder.

74) Should it have appeared in the report?

No – I don't believe it should have with a £ figure included

75) What contingency was made, if any, in the cost estimates for the cost likely to arise from completion of the design?

Provision in the Infraco cost estimates themselves included provisional sums eg for changes to traffic controls on and off the tram route required to accommodate the tram. Any cost associated with evolution of the design to 100% completion was assumed to be borne by the Infraco from award. The component of the risk allowance in the FBC relating to design was £4.313m (CEC01425552) and I would anticipate that most of this related to risks from delays in the approvals and consents process rather than changes in scope. (Note that statistically I think it is the aggregate total of a risk allowance delivered by a QRA which is important –the value of each individual risk component is also useful). The Close Report prior to the award of the Infraco

contract in May 2008 listed specific exclusions in scope which had not been included in the Infraco contract and which were subject to further definition/justification and examination of sources of funding for the additional costs.

To what extent was the desire to keep the cost estimate at £498m a factor militating against the use of such a contingency?

At the time of the FBC the £498m estimate for Ph1a was the project team's best estimate of the cost to deliver the scheme as then defined by design and other requirements and anticipating the intended risk transfer to the Infraco at award. Any increases in the scope of the project resulting from changes to design would result in that cost estimate going up.

Appendix 3 to the draft paper listed project risks (11). These included:

- MUDFA delays in handing worksites to the infrastructure contractor, possibly compounded by delay in utility companies approving designs (3);
- incorrect design assumptions being made about the incomplete parts of the design, necessitating later change (5 and 6);
- Value Engineering assumptions in the cost estimates not being achieved (7).

This risk appendix was not included in the final version of the CEC paper (CEC02083448).

76) Can you explain why?

77) Should it have been included?

I can't explain why it was not included – a similar risk paper was included as an annex to the CEC report on FBCv1 in October 2007. However I also believe all of these risks were extensively deal with in the FBCv2 itself. Regarding to changes in scope or specification in particular the exec summary of the FBCv2 (CEC01395434_20) stated that significant changes to scope or specification could have a very significant impact on deliverability of

the project.

You were involved in a presentation to the TPB on 7 December 2007 on "*Design and contractual negotiations*" (slideshow: **CEC01480233**; minutes: **CEC01526422_5**). The slideshow noted that design was still behind programme; that design prioritisation was underway to help the BBS bid programme; and that increasing the certainty of Infraco pricing was proving slower than planned.

The minutes noted these points, and in addition that: roads, tramstops and structures were the subject of provisional pricing (with roads subject to the greatest uncertainty); and that Picardy Place and Forth Ports were price critical areas for BBS.

78) Can you explain these points?

I believe the presentation reflects (with regard to design and utility diversions) that they were still behind schedule but progress was not making matters materially worse. This may be taken to indicate that the measures tie had put in place to manage design delivery and utility diversions progress was yielding results but not to understate the challenges to complete them.

79) What was your understanding of the extent to which fixed pricing for the Infraco works was being inhibited?

At the time of this presentation the fixed element of the then Infraco negotiated price was £159m out of a total of £226.4m with the balance being provisional priced items or provisional sum to be defined and instructed by the client (see spreadsheet CEC01425552, tab Infraco Financial Summary, first column). This position changed significantly as a result of the Weisbaden Agreement later in December 2007 where a large proportion of previously provisionally priced items were accepted as fixed by the bidder and a premium of £8m was added to the negotiated price to reflect that.

I recall the specific issue with roads was the extent to which the roads would require be totally reconstructed from kerb to kerb rather than just along the line of the tram tracks and the depth to which the roads would be reconstructed. This was a particular issue at major junctions which would require a lot of reconfiguration to accommodate the tram such as at Picardy Place.

The slideshow also noted delay in utility design, attributable to issues with the statutory utility companies and SDS. The Minutes record Andrew Holmes as having queried the impact of late design delivery, especially on the MUDFA programme and any change in the risk profile accepted by Infraco (3.3).

80) Can you explain this point?

As minuted Andrew Holmes has expressed concern about late design specifically as it impacted MUDFA and any consequential change in the risk profile which would be accepted by Infraco. Throughout 2007 and thereafter up to signing of the Infraco contract one focus of the project team was on delivering the utility diversions (including their design) to a programme which would not clash with the contractual programme to be agreed with Infraco. It was anticipated throughout that there would be no change to the risk profile being accepted by Infraco through this process. The interface between the MUDFA and utility programmes was being constantly adjusted as necessary as the MUDFA works progressed.

81) What discussion was there at the TPB about the impact of late design?

Is I recall at this any many other TPB the impact of late design and how that risk was being managed was a focus of extended discussions.

You are recorded as having said that, despite price pressures on the project base

costs, the ongoing review indicated no change from the previous estimate of £489m (minutes, 3.17).

82) Is that a typo for £498m?

Yes it must be.

83) Can you explain the view you expressed?

The project estimate was always under review but in overall terms the next milestone was the finalisation of the prices from the Infraco preferred bidder to reflect the risk transfer to Infraco that was part of the procurement strategy. There was no basis for changing the overall project estimate until such time as there was further clarity on this matter. The pressure on the cost estimate, as for most projects, was upwards most of the time.

Your email of 14 December 2007 (CEC01509131) refers to TIE having presented updated risk matrices to Donald McGougan of CEC. You added: *"The only substantive comment re our risk allowance (QRA) was from Duncan stating that it does not provide for a significant change in programme – and he's right it does not."*

84) Why did the QRA not provide for a significant change in programme?

The objective of the procurement strategy was to have fixed price Infraco contract with a contractual programme for the delivery of the works and where Infraco would be responsible for delivering to that programme. A substantial allowance for delays post award of Infraco would only be required in the context of failure by tie/CEC to manage the project in such a way that the Infraco programme would not be delayed due to client side factors or required changes.

The QRA did provide for specific delay risks associated with both general

delay and separately the specific delays which may arise from both MUDFA and the design consenting process. These risks were still provided for in the QRA at March 2008 (see spreadsheet CEC01425552, tab P80 risk allocation). I have counted up the valuation of individual risk which are directly related to time and they are £15m out of the total £28m QRA at that time. These represented the individual project management teams' professional estimate of the likely consequences of delay at that time across a whole range of risks including MUDFA. (Note: Statistically I think it is the aggregate total of a risk allowance delivered by a QRA which is important – the outputs for each individual risk component are useful.

The risk allowance did not provide for wholesale delay to the Infraco works as it anticipated passing responsibility to manage programme risks to Infraco from award to Infraco and that the risk of delays caused by the client side (tie/CEC), would be effectively managed through strict management of interfaces with Infraco and strict change control over client side changes to the Infraco works which would include the delay consequences of these changes – and a resulting increase in total project costs.

85) Was that appropriate, given:

- a) The state of progress with MUDFA designs and works
- b) The state of knowledge about utilities

See answer above – specific allowance was made in the QRA for the risks associated with the remaining MUDFA programme.

- c) The incomplete state of the design and the need for consents and approvals?

A focus of tie's efforts through the whole of 2007 was to actively manage the MUDFA and design delivery and consenting process very actively to ensure we continued to have both a design consents and utility diversions programme which was in alignment with the Infraco programme which would

eventually be part of the contract with Infraco. The Close Report pre-Infraco signing in May 2007 dealt extensively with how remaining consents and approvals and utility diversions at that point were to be dealt with.

d) The desire for as fixed an Infraco price as possible.

I think the above was consistent with achieving a fixed price from the Infraco but this would only be fixed in the context of a contractual programme they were to deliver to.

86) Can you explain the point raised by Duncan (Fraser?), and how, if at all, it was addressed?

I think my answers to Q85 and Q86 above explain in principle why the risk allowance did not contain a significant allowance for general Infraco delay after award of the contract predicated on achieving the risk transfer objectives of the procurement strategy. The risk allowance did include provision for specific and general delay allowing for an estimated 3 month delay to Infraco across the board with no mitigation and found to be a client side responsibility.

In an email dated 18 December 2007 (CEC01430855), you attached risk allocation matrices from DLA and said:

"CEC have already been told there is no major change in allocation to the public sector – please can we confirm amongst ourselves this afternoon that this is correct."

87) What was your understanding of this point?

The email exchanges denote that DLA had delivered an update of the detailed risk allocation matrices which reflected the risk allocation between private sector and public sector and between contractors as reflected in the contracts for SDS and MUDFA and the draft contracts for Infraco and Tramco, to

ensure the different contracts meshed in that regard and that there was clarity regarding the risks retained by the public sector. These were presented to CEC by the project team and I don't recall any specific problems at this point. My email to the senior managers in the project team was to ask that this would be reconfirmed (constantly reconfirmed) and to ask how we would record turning the pricing agreement with Infraco at this date into a contractual obligation in the context of these matrices.

The report to CEC was published on the CEC website by 17 December 2007, after the Wiesbaden negotiations but before the Wiesbaden contract had been finalised. Matthew Crosse raised concerns that if BBS saw the paper, tie's negotiating leverage would be reduced (**CEC01430496**).

88) Can you comment on this?

Throughout the project procurement, and thereafter, there was a continuing need to be very aware and that information published as part of due governance and scrutiny of the project did not in any way compromise tie's project team in conducting commercial negotiations. I don't recall what Matthew Crosses specific concerns were about this report – but having re-read it the immediate things that spring to mind are that it says we were proceeding with phase 1a at an estimated £498m versus £545m total funding available and that we had made a cost allowance for (not quantified in the report) for design / consents that would not be complete at close of the Infraco contract. One message that the Infraco bidder could have taken from both these is that there was more money to be had than reflected in their price as it stood at that point.

89) Was tie's leverage in fact affected? If so, how?

I personally can offer no substantiation that tie's leverage was impacted by this report or indeed any other report published by the Council that I can

remember.

A meeting took place between representatives of TIE and BBS at Wiesbaden, Germany, on 13 and 14 December 2007. This led to the signing of an agreement on the contract price for phase 1a of the Edinburgh Tram Network on 20 and 21 December 2007 (CEC02085660).

90) Why was this meeting held?

I believe the principal reason for the meeting was to discuss the extent to which the items which had been previously been priced provisionally by BBS at preferred bidder stage could be made firm (meaning fixed) and what remaining uncertainties could not be included as fixed and how they might be dealt with. Ultimately it was also a negotiation on what the additional price would be for making previously provisional items fixed. The agreement also reflects a wide range of value engineering opportunities which were taken into the price but subject to conditions regarding how they would be delivered.

91) Who was involved at the meeting for tie? And for BBS?

From tie I believe it was Willie Gallagher and Matthew Crosse. I'm sorry I don't recall exactly who was there from BBS but the BBS principles in the negotiations throughout were Richard Walker of Bilfinger Berger and Michael Flynn of Siemens.

92) What was your role, if any, in preparing for the meeting, or dealing with its consequences?

I don't recall having any role in preparing for the meeting. Subsequently my role overseeing the overall project estimate was to examine and understand the consequences of the agreement reached on our cost estimates for the project in consultation with the project/commercial teams to establish their

view on the additional cost certainty which had been achieved and to what extent remaining cost uncertainties needed to adjust our overall cost estimate.

93) What, so far as you understood, were the key points of the Wiesbaden agreement?

The key points as I understood were:

- Some £50m of costs which had previously been at Provisional Prices were taken into the firm (meaning fixed) price element of the negotiated price which now amounted to £208.8m of the of the anticipated final Infraco contract sum of £218.2m
- The firm element of the price above was arrived at after deducting £11m of value engineering (VE) opportunities as per Appendix 3 to the agreement with conditions. A further £2.7m of VE opportunities did not have firm prices. (Note the achievability of these VE opportunities in terms of the conditions attached was subject to an appraisal by the project/commercial team and a provision made for them not being achieved – at this stage £4m added to the Infraco budget line).
- The bases for the firm elements was spelt out – principally the version of the Employers Requirement (v3.1) and the design information which had been provided to BBS up to 25 November 2007. At 3.3 the BBS firm price is stated as including for normal design development which is the subject of Q96 below.
- Exclusions from the price were listed at 3.6 – mostly changes in scope/extent of works which they will have been aware of may happen but were not reflected in the design.
- The version of the Infraco programme their price was based on was identified at 3.10
- The understanding of how risk was to borne for late consents and approvals was set out in an email from G Gilbert at Appendix 1. This reflected tie/CEC retaining some risk for late consents and approvals beyond financial close. This was a change from the procurement strategy up to that point – and the

way that was managed for outstanding consents at actual award of the Infraco contract is dealt with extensively in the Close Report (CEC01338853).

- The resultant increase in the Infraco price, as I understood it recompense for making Provisional Prices firm and taking design development risk, was £8m. The new anticipated final contract sum is at Appendix 1 to the agreement and the way that was reflected in the budget for Infraco is tabled on spreadsheet CEC01425552 on the tab Infraco Financial Summary.

94) What was your understanding of the state of completion of the design as at 25 November 2007 (being the date of the design information drop referred to in clause 3.3 of the Wiesbaden agreement)?

The presentation to the TPB on 7 Dec 07 says detailed design was 64% complete. I'm sorry that I cannot find a document in the material provided that gives any more detail than that in respect of the areas where it had not reached detailed design at that stage or had gone through the consenting process. I was not directly involved in the management and reporting on the design process.

What I can say was that one of the areas of greatest uncertainty would have been the extent of work to the road (highways) especially at the major junctions where the extent of road reconstruction (and the depth to which that reconstruction would need to take place) was still being determined. The Weisbaden agreement reflects exclusions (at 3.6) of increases in scope in these and other areas which I took as the areas where BBS saw the greatest uncertainties at that time which may have given rise to additional costs/delay over and above what they were basing their price on. Otherwise I understood their price included for normal design development from where it was to detailed design.

95) What was your understanding of the design development risk retained by TIE

under the terms of the Wiesbaden agreement?

- See clause 3.3, which provided that the Infraco price included “*the **normal development and completion of designs** based on the design intent for the scheme as represented by the design information drawings issued to BBS up to and including the design information drop on 25th November 2007 ... For the avoidance of doubt normal development and completion of designs means the evolution of design through the stages of preliminary to construction stage and **excludes changes of design principle, shape and form and outline specification.**”*

96) To what extent was there debate between the parties about how much of the design development risk should be borne by BBS?

I was not involved in the detailed discussions as between BBS and tie at the time – It is reasonable to assume it was discussed in detail as part of the Weisbaden negotiations. I personally had very little contact with BBS during the procurement period and did not engage with them on this point.

97) What was your understanding of what (a) TIE were trying to achieve, and (b) what BBS were trying to achieve?

tie was trying to get a fixed price for the Infraco contract to the maximum extent possible with BBS taking the risk for any changes to the design from where it stood at that time through to the final design for construction. tie wanted BBS to take their own view as a competent contractor on how the design was actually likely to develop and to fix their price on the basis any normal development of the design would be accommodated in their price taking an overall view as well as addressing specific areas which required further work. I cannot offer an opinion on what BBS were trying to achieve – but it included being clear about the current bases for their price, to specify exclusions and to fix their compensation for firming up the previously provisionally priced items in the contract. This was to the benefit of both parties to understand.

A meeting within TIE was held on 18 December 2007 to discuss the Wiesbaden deal
“with especial focus on the overarching position on Risk and the facets of what sits with whom”

(email from Jim McEwan, **CEC00547722**). You sent an email about that meeting, **CEC01430850**, emphasising that

*“the end result **must** be a reasonable view of where the numbers fall for the presentation thereof to the TPB tomorrow”.*

I take it from my email that the context of this meeting from my perspective was that I was required to report to the TPB on the financial implications of the Weisbaden agreements and I needed to understand from colleagues more of what was in the agreement.

Your email identified for discussion a number of points including:

I don't remember if at this meeting the terms of the Weisbaden deal were any different to those which were actually signed so my comment on the points in my email are with reference to the final deal as concluded.

- the value engineering register linked to the deal (items 1.1 to 1.3)

The imperative was to ensure adequate provision was made in our cost estimates for some of the VE items not being deliverable due to the conditions attached. Subsequently they were reviewed in detail and provisions were made (£4m increase in the Infracore budget line).

- the level of *“design development risk they (BBS) are actually taking off our hands”* (item 3.2; emphasis in original)

I wanted us to discuss what the drafting meant as normal design development. As far as I was aware the entire tie management team believed it represented a commitment by BBS to progress the design through to

completion and they would only be entitled to extra payment in the event there was a significant change to the design of individual elements which they were unable to manage as an experienced contractor or if there was an increase in scope ie additional elements of work to do. This was the reason they were being paid an additional £8m to take that risk and it was the commercial intent.

- *“Status of risks on consents and third party agreements”* (item 3.3) and

The risk relating to consents and third party agreements was emended by the agreement such that it anticipated certain risks remaining with tie/CEC for late delivery thereof. Again the imperative would be to understand how that was going to be managed and more particularly if it would require an amendment to the risk allowance for consents and approvals included in our cost estimates. I cannot recall exactly what my issue would have been with Third Party Agreements

- *“The adequacy of our remaining risk pot to deal with uncertainties to Financial Close and remaining public sector risk thereafter”* (item 5).

At every juncture I would have questioned whether the risk allowance was sufficient to deal with remaining risks.

98) Please explain each of these points.

See text under each bullet point above.

99) How were they addressed at the meeting

100) What was your understanding on each of these points at the conclusion of the meeting?

I cannot recall exactly what was discussed at this particular meeting or what

the outcomes and actions were from that particular meeting. This individual meeting would have been one of several to discuss the consequences of the Weisbaden agreement and how it would be dealt with.

The papers for the Tram Project Board on 19 December 2007 included two tables concerning the Wiesbaden agreement (CEC01526422_10 and _11).

101) Can you explain what they show?

Slide 10 shows a summary of how the Infraco negotiated bid and the components thereof as between firm elements and provisional elements change between preferred bidder stage (the basis of the cost estimates in the FBC) and the outcome of the Weisbaden deal from £226.5m to £218.3m. The principal components of the change were previously provisionally priced items becoming firm (£49.579m plus certain items on the Infraco Normalisation line) value engineering (VE) opportunities taken into the Infraco price as reductions totalling £13.8m with conditions attached to their achievement, and an £8m premium added to the price as negotiated compensation to the bidder for making prices firm and taking the price risk of design development as documented in the Weisbaden agreement.

There was also a transfer of utility diversions work to a value of £3m into the scope of the Infraco contract (at Picardy Place). The schedule anticipates other items totalling £3.4m for Edinburgh Airport related work, maintenance mobilisation and spare parts also forming part of the anticipated final Infraco contract sum.

The infrastructure budget line in our cost estimates also included for items which were not to be procured through the Infraco contract itself. The schedule reflects that the estimate for these had reduced in aggregate from £11.3m to £7.3m as compared to the preferred bidder/FBC budget. I don't recall to what extent that was as a result of items now transferred into the

pricing of the Infraco contract itself.

Lastly a contingency was added to the overall infrastructure budget of £4m reflecting a detailed appraisal of the achievability of the value engineering items included and the conditions which attached to them at this time.

The end result was that based on the best information available at the time of presenting this information to the TPB the aggregate anticipated cost of all Infrastructure items had increased from £222.6m to £232.9m an increase of £10.4m.

Slide 11 shows the component changes in base cost elements of the overall cost estimate increase of £10.1m and impact on the risk allowance, reduction of £10.1m, resulting from the Weisbaden agreement based on what was known at that time. The movements in the base cost elements of the overall estimate included the £10.4m increase in infrastructure costs explained above, a £3.7m increase from the preferred bidder/FBC reflecting the parallel negotiation of the Tramco contract (not the subject of this presentation) and a £3m reduction in the overall estimate from MUDFA utilities to reflect the movement of certain utility diversions into the scope of the infrastructure works.

The table on Risk Allowance movements reflects that the risk allowance would be reduced by the £10.1m increased costs of the infrastructure works because the Weisbaden agreement reflected a commensurate reduction in the allowance previously made for Infraco procurement stage (ie pre signing of Infraco contract) risks specifically provided for in that risk allowance. After this reduction there remained a £6m risk allowance for further procurement stage risks which might crystallise as further price movements in the negotiated Infraco price up to contract signing.

102) Can you explain the movement of the Infraco price from the Final Business Case?

Please see answer to Q102 above.

103) Can you explain what is meant by the remark on _10 that "96.5% of the price is firm"?

a) What was meant by "firm"?

Firm meant fixed subject to the pricing assumptions and exclusions laid out in the Weisbaden agreement.

b) How was the percentage arrived at and measured, i.e., 96.5% of what?

As presented in the schedule 96.5% was the percentage of the firm costs of £213.9m over the anticipated final contract sum of £221.7m. I think the schedule is clear and transparent as to how this was calculated. Strictly the price premium agreed of £8m was also firm but conversely £11.1m of the value engineering items was also firm but subject to conditions as to whether they would be achieved.

c) What, if anything, could be inferred about the likely cost of those items in respect of which the price was not 'firm'?

The items which were not firm totalling £10.2m (provisional items) are itemised in one of the appendices to the Weisbaden agreement and most significantly included a sum of £6.3m for roads highways (roads) work at the Picardy Place junction and surrounds because as I recall the precise nature of layout of that junction was still to be decided at this time. The provisional sums would have been a best engineering estimate for the costs of the work at that junction in expectation of what the final layout would be. Provisional sums would be subject to further instruction from tie to include the work. One of the terms of the Weisbaden agreement indicates that this sum of £6.3m includes £3m in respect of utility diversions work at Picardy place transferred from the scope of the utilities diversion work.

d) Were the above matters understood by the TPB?

I have no reason to believe that they were not.

104) Can you explain the £8m premium and what it was for?

I understood it to be a negotiated premium for making previously provisionally priced items fixed and assuming responsibility for design development risk.

105) Can you explain the movement in the risk allowance (_11)?

Please see last paragraph of answer to Q102 above.

The minutes (CEC01363703_5) record you as having said that

“the contract price was based on the Wiesbaden deal, subject to certain conditions that were covered by existing contingency” and “the risk profile had been adjusted to take account for changes in the pre-Financial Close risks.”

106) Can you explain these points?

The answers to Q102 appear consistent with this minute. The new negotiated Infracore price of £218.3m agrees to the price stated in the Weisbaden agreement. The project team had examined the remaining uncertainties and were satisfied there was adequate allowance for items which were not firm and fixed either in the remaining provisional sums, allowances which had been made for other items and contingencies against non-achievement of VE taken into the price. It was also considered that the existing risk allowance for procurement stage risks had been effectively mitigated / reduced by the additional price certainty achieved by the Weisbaden agreement.

You gave a presentation to the meeting of the Tram Project Board on 19 December 2007 (slideshow, CEC01483731; minutes, CEC01363703_5; papers, CEC01526422_10 and _11).

I believe my actual role in this presentation would have been limited to the 2 slides on the cost estimates (CEC01526422_10 and _11) but I have provided answers to the following questions in any case.

The slideshow for your presentation noted that the Wiesbaden agreement was
"Based on BBS taking detailed design development risk" (_5).

It also noted, at _8:

"Why is this a good deal? Design development risk transferred to Infracore from this point on. Firms up previously provisional elements of structures, highways and drainage. Stronger commitment to VE. Reduces risk to programme for closing a contract – no need to do detailed measurement of provisional items".

107) Can you explain these comments, and what was said to the TPB about them?

The comments appear consistent with my answers and explanations at Q102 to Q106 ie new negotiated contract price £218.3 reflected the Weisbaden deal, large quantum of previously provisionally priced items now fixed and terms reflecting that the bidder was now taking the normal design development risk of those items. I believe this accurately reflected the commercial intent of the Weisbaden.

108) What was the basis for your understanding of these matters?

The basis for my own understanding was the Weisbaden agreement itself and internal discussion which had taken place to assess the impact of the agreement on the overall cost estimates and risk profile.

109) What was said to the TPB about the scope of the design development risk retained by tie?

I am sorry but I don't recall details of the specific discussions which took place

at this TPB or indeed any TPB except to the extent reflected in minutes or where context and papers allows me draw conclusions as to the nature of discussions – this I have tried to do to the best of my ability in answering a large number of the questions presented.

110) What discussion was there about the issue

See answer to Q110 above.

The slideshow also noted that the key constraint on the programme was design delay due to MUDFA and SUC completion (_10).

111) Please explain this point, and what was said to the TPB about it.

112) Was it still the case that tie's QRA did not provide for a significant change in programme (*cf.* your email of 14 December 2007 about concerns raised by Duncan Fraser **CEC01509131**)?

113) If not, why not?

In answering Q112-114 please consider my answer to Q85 above. The tie approach to manage the risk of late utilities completion impacting upon the Infraco programme was to actively manage in detail the interface between the two programmes on a section by section basis such that the Infraco works could be contracted with a programme which would not be materially impacted by late running utility diversions. The remaining areas of concern to be managed in the interface between the two programmes were dealt with extensively in the Close Report (CEC01338853) at the time of the Infraco contract award.

114) Please explain the treatment of value engineering items in the Wiesbaden deal.

The Weisbaden agreement had resulted in a wide range of value engineering

initiatives being taken into the Weisbaden price with conditions attached to them on an item by item basis (register at Appendix A3 of the Weisbaden agreement). On reviewing the register now it can be seen that the conditions for the most part revolved around incorporating the items into the design, to firm up the estimate, and approvability through the consents process or with third parties. The register has a column for the agreed BBS value reflecting that these items were considered in detail by BBS in arriving at the Weisbaden agreement. The single biggest item has a value of is £4.7m relating to Network Rail immunisation provisions and reference is made to a proposal from BBS in that regard.

115) What was your understanding of the likelihood of those conditions being satisfied? What was that view based upon?

Ties project managers/engineers/estimators reviewed the list and conditions in detail and as an output from their work an overall provision of £4m was made against the achievability of the items in the register.

116) Can you explain the contingency of £4m against the conditions not being realised (see, e.g., CEC01526422_10)?

See answer to Q116 above.

The minutes (4.4) record you as having stated that the risk profile had been adjusted to take account of changes in the pre-financial close risks.

117) Can you explain this?

Please see answer to Q102 above – last paragraph.

On 20 December a report was provided to Council (CEC02083448) along with version 2 of the Final Business Case (CEC01395434).

The report to Council noted:

- *“The cost estimates for the project reflect provision for evolution as the detailed design will be completed in the coming months. The design is completed under the Infraco contract from the point of award of that contract through novation of the System Design Services contract with Parsons Brinkerhoff to Infraco”* (para 3.2).

The total risk allowance in the FBC of £49m reflected provisions totalling £16.4m including provisions for procurement stage uncertainties associated with achieving a fixed price from the Infraco and the impact which insufficient detail in the design might contribute to that. The strategy was still to have design risk novated to the Infraco at contract award.

- *“... Some cost allowance has been made for the risk associated with the detailed design work not being completed, at the time of financial close ...”* (para 8.1).

See comment above.

- The estimate of £498m for phase 1a inclusive of a risk allowance as reported in October 2007 remained valid. The current price estimate was based on a compressed construction programme (para 8.2).

There was no justification for increasing the estimate of £498m (set at the time of FBC1 preparation) and work streams on design, utility diversions and Infraco/Tramco procurement were all progressing.

- *“The fundamental approach to the Tram contracts has been to transfer risk to the private sector. This has largely been achieved”* (para 8.10).

In overall terms the risk transfer objectives were still intact and tie was focussed on getting to a final negotiated position Infraco position and novation

of SDS whereby these objectives were met.

- *“Risks retained by the public sector and which therefore bear upon the Council are explained in the Final Business Case section 11. These risks include:*
 - *Agreements with third parties including delays to utility diversions.*
 - *Finalisation of technical and prior approvals.*
 - *The market cannot provide Professional Indemnity Insurance to TIE vis-à-vis a claim by the Council against TIE, because TIE is wholly owned by the Council” (para 8.13).*

Concluding necessary 3rd party agreements and the timing of outstanding consents and approvals now sat with the public sector. The status of remaining 3rd party agreements and outstanding consents and approvals at contract award was extensively dealt with in the Close Report in May 2008.

- *“There are additional risks such as third party agreements and consents where discussions and negotiations are continuing to reach an acceptable position in respect of allocation of risks” (para 8.15).*

As above.

- *“The risk contingency does not cover major changes to scope. It should be noted that the current construction programme is compressed to reduce the length of disruption and provide best value. Changes to the programme could involve significant costs, not currently allowed for in the risk contingency” (para 8.16).*

The scope of the project was as defined in the design and employers requirements for Infraco/Tramco (and in the Infraco proposals to meet those requirements) and in other elements allowed for in the project budget. This was the basis for the £498m estimate and any significant changes to that scope would result in the £498m estimate increasing. There was a total funding package available for £545m but any changes to the estimate arising

from scope changes would be subject to endorsement of the existing funders (CEC/TS) or be funded from other sources. The programme was that currently included in the negotiations and pricing by the bidders.

- It was anticipated that the Notification of Infraco award would be issued on 11 January 2008, the Tramco and Infraco contracts would be awarded on 28 January 2008 and that construction on phase 1a would commence in February 2008 (para 8.19).

This was the intended timing at the time of FBC preparation but subsequently slipped by 3 months.

- The Conclusions included that, *"The preferred bidder negotiations, in terms of price, scope, design and risk apportionment, give further reassurance that Phase 1a can be completed within the available funding and are consistent with the Final Business Case"* (para 9.2) and that *"The total forecast project cost is consistent with the final business case. TIE is confident that risk contingencies and the final approved design can be accommodated within the funding available"* (para 9.3).

I confirm my understanding that this statement reflects that the status of negotiations with the bidders at FBC preparation reflected that £498m would be sufficient and would also provide for completion of design but not incorporation of significant additional scope.

- Authority was sought from members for the award of the Tramco and Infraco contracts by TIE subject to price and terms being consistent with the FBC and subject to the Chief Executive being satisfied that all remaining due diligence was resolved to his satisfaction (paras 1.2 and 10.2).

119) Did you have any input into drafting the report to Council or the FBC?

Drafting of all Council reports was a matter for Council officers but they obviously consulted widely with tie on specific elements of them and I was often asked to review Council reports at draft stage. Q70 to 78 above relate to my comments provided to CEC on an earlier draft.

- 120) What was your understanding of, and views on, the provisions of the report to Council noted above?

See comments inserted under the bullet points above.

- 121) What was your understanding at that time of the extent to which the Infraco contract was for a fixed price (and the extent to which, and in what circumstances, the price was liable to change)?

The extent to which the Infraco contract price was fixed at the time of FBC was materially increased by the provisions of the Weisbaden agreement including the collective view that the design development provisions of the Weisbaden agreement would be effective. The objective of the procurement strategy remained to have the price fixed in all material respects by award of contract.

- 122) It was noted that the risk contingency did not cover "*major changes to scope*". What was your understanding of "*major changes to scope*"? Can you give examples?

Major changes in scope at a macro level would be additional works required by 3rd parties (eg Forth Ports) which would need to be funded by those third parties as well as work which CEC may regard as being desirable to do at the same time as the tram construction, including reconstruction of roads, footpath and junctions which might understandably be desirable but were not part of the tram scope as defined and would increase the total cost and have programme implications to implement. At a micro level a significant change to

the specification of individual elements including bridge and other structures and other elements required for whatever reason and which would be considered to be outwith normal development of the design and would be considered as a change.

- 123) Do you consider that the report to Council on 20 December 2007 adequately set out the delays in relation to design, approvals and consents and utility works?

I cannot find anything which does not reflect that there were indeed delays associated with each of these areas but that they were being managed actively and would be accommodated in the agreed programme for the follow on Infracore works to effectively manage the delay risk.

- 124) Do you consider that the report adequately set out the risks arising from these delays, including the risks arising from these works overlapping with the infrastructure works?

The CEC report as a summary seems to me to be adequate and further reference was to be had to the FBCv2 itself for further detail.

- 125) Did the FBC v2 take account of the agreement negotiated at Wiesbaden?

The timing of FBCv2 distribution and report to the Council was before the Wiesbaden negotiations which were concluded on 20 December 2007. The impact of the Wiesbaden negotiations is therefore not specifically mentioned either in the FBCv2 or the report to Council.

- 126) If not, to what extent (and when and how) was the Council informed about the Wiesbaden agreement before approving the FBC v2?

The minutes of the 19 Dec 07 TPB (CEC01363703) reflect the attendance at that TPB of senior Council officers. As a general comment – the timing here

was obviously not ideal but the Weisbaden deal was considered by all as a huge step in the right direction to achieve what was laid out in the FBC (notwithstanding the subsequent disputes) but it was a step in a confidential commercial process to negotiate a final contract with Infracore and I don't believe the Council's best interest would have been served by publicly available reports on the detail of those negotiations before they were complete.

The report to CEC (**CEC02083448**) said that this version of the FBC was materially unchanged from version 1 in respect of scope, programme and estimated capital cost, and that there had been no material change in the risks retained by the public sector (5.1).

127) Do you agree with that?

128) Do you agree with it, given what had been agreed at Wiesbaden?

I agree that the scope, programme and cost estimate was materially unchanged from FBC v1 to FBC v2. I believed the Weisbaden agreement was a significant step on the way to achieving the risk transfer objectives of the FBC in its commercial intent as I understood it. The Weisbaden agreement did crystallise a BBS position that responsibility for delays associated with design consent and approvals should remain with the public sector and subsequent negotiation with Infracore and SDS and the novation of the SDS contract at Infracore award was focussed on clarifying and improving that position. The Close Report of May 2008 at appendix 1 dealt with the position at contract close in respect of outstanding consents and approvals at that time.

2008 (January to May)

At the TPB on 9 January 2008, you gave an update on progress, especially on the

contract price for phase 1a, and it was noted that discussions with BBS were continuing on design risk transfer (Minutes, CEC01015023_5, paragraphs 1.5 and 3.1; slideshow, CEC01485421). The slideshow (_5) reported that BBS was

“taking design development risk which excludes “changes of design principle, shape and form and outline specification””

- 1) What was your understanding of the design development risk being taken by BBS and the exclusion noted above?

My understanding then was that the design development provisions of the Weisbaden agreement would mean to the extent the price was firm it would not increase except in respect of significant changes in the extent of the work as the design progressed to completion. My understanding was that this was understood by our commercial team and by the BBS commercial team and represented the intent of the provision and the words in quotes above would be effective in achieving this aim.

- 2) To what extent was that discussed with CEC and/or at the TPB?
- 3) Was there any discussion as to whether there was sufficient clarity of the design development risk being accepted by BBS or whether that remained ambiguous?

I don't recall a specific discussion at this TPB as to whether the exclusions were ambiguous or not. The words in my presentation were entirely based on my understanding of what the design development provisions in the Weisbaden agreement meant in respect of their price including for completion of the design except where was a major change.

Design development provisions in general

At this point I think I should provide an overview of my perspective on the design development provisions of the Weisbaden agreement as transcribed in

the eventual Sch Pt 4 of the Infraco contract as the words in this provision were obviously a significant factor in the subsequent claims of the Infraco contractor and the disputes tie had with them. They are also the subject of many of the questions which follow.

From Jan 2008 to close of the Infraco contract I believed that the design development provision in the Weisbaden agreement was effective documentation of the intent that Infraco were fixing their price for the elements of the contract denoted as such based on the design information that they had received and making their own experienced contractor judgements as to how the design would progress through to completion. I had no reason to believe that was not the commercial intent of both parties notwithstanding the subsequent legal / adjudicators' interpretation of what a "*change of design principle, shape and form and outline specification*" meant.

In taking this view I was informed by the judgements of our commercial team and other members of the project team that they believed it achieved this objective. I believed that all senior members of the project team thought it was effective and reflected the commercial intent, that the design which had been provided to and been subject to due diligence by the bidder was sufficient for the Infraco bidder to reach this position and that they would be diligent in managing the completion of the design within those parameters.

We accepted that there would be a case for additional costs if any element of the design did change significantly and that would need to be processed through the change control procedures as a change in scope having understood the circumstances necessitating the change and/or responsibilities for making the change. However my understanding was also that on novation of the SDS contract the Infraco would assume responsibility for delivery of design not completed at that date in an economic manner as an experienced contractor without unnecessary change.

I was copied or forwarded on a very, very large volume of documents

throughout the procurement process from our commercial team, from lawyers and others – to keep me informed of what was happening. I think It is reasonable to accept that I did not read large amounts of the detailed drafting material as my role was focussed on assisting the project team in tracking and reporting all element of cost of the project. Negotiating/documenting the terms of the Infraco contract was not part of my remit and was not something I was responsible for delivering.

I can say that for my part any statements I personally made to TPB, CEC, TS or reported in any document regarding these design development provisions and the extent to which the Infraco price was fixed a result were made in good faith and in the context that as far as I was aware they represented the collective view of all involved.

Also extremely relevant here is what the Infraco bidder though these words meant. I think this is a very important question for the Inquiry to explore.

You were copied in to emails concerning the early drafts of schedule part 4 of the Infraco contract, on pricing (e.g., emails and attachments from Bob Dawson: 13 January 2008 - **CEC01495585, CEC01447445, CEC01447446**; 17 January 2008 - **CEC01505638, CEC01505639**).

4) What was your understanding of the purpose, and effect, of schedule part 4, including the various Pricing Assumptions?

Schedule part 4 specified the contact price of Infraco (fixed and still provisional) and its detailed make up, including in its final form the price for the tram vehicles as the Tramco (CAF) became part of the consortium. The schedule also laid out the value engineering items and rules for each of these becoming unconditional.

The schedule contained the assumptions on which the price was based

including the design information and version of the employers requirements on which it was based and the version of the programme. There were also exclusions from the price. These were all listed in detail.

Reading the final version of the schedule (USB00000032)

The Specified Exclusions are public realm works (works which may be required by CEC outside the then defined scope), utility diversions unless specifically included and adverse ground conditions that they could not have reasonably foreseen

The Pricing Assumptions included the 'normal design development' provisions, a number of assumptions regarding their responsibility post novation for SDS work and in particular the design programme for SDS, the extent and depth of road reconstruction allowed for, the programme for utility diversions, the interface with 3rd parties and their consents and the extent of earthworks.

Departure from the Pricing Assumptions would be subject to a change in the price in according with provisions elsewhere in the contract and established with reference to rates and prices in Sch pt4.

5) How did it relate to the Wiesbaden agreement?

As I understand it the schedule is essentially a development of the Weisbaden agreement with items amended or added in the period up to contract close as agreed between the parties.

6) To what extent were you involved in developing and approving the terms of schedule part 4?

I was not involved in the detailed development of schedule part 4 – I did not

draft any part of it and was not engaged with BBS in the drafting. The detail related to specific areas of design and construction and was dealt with by the commercial team and other parts of the project team. At different times the various part of the Infracore contract suite were subject to quality control review amongst all members of the tie management team. Later I was part of quality control reviews on various elements of the contract suite including Sch pt4 and did so from the perspective of understanding what the potential impact on outturn costs would be if the Base Case Assumptions resulted in changes because there was a departure from them, what measures were in place to manage or mitigate against such changes taking place and the extent to which our overall cost and risk allowance took cognisance of the risk of changes. This was already part of the project's estimating and risk management processes and in carrying out that exercise I necessarily had to consult with the project team.

A note circulated by Susan Clark on 17 January 2008 identified CEC's requirements before approving financial close, and the TIE staff responsible for providing information (**TIE00351266**, **TIE00351267**). Your responsibilities included:

- Placing a financial value on matters excluded from the BBS contract (1.8)
- Risk (5)
- Pricing (7)

7) What was your role in relation to each of these items?

This is an early version of the Close Report responsibilities – it was not actually completed till before the contract was awarded in May 2008. The principle of the Close Report was that the material should be drafted by persons who were not directly involved in the management of the work streams concerned.

8) What did you do in fulfilment of them?

I eventually drafted section 8 "Risk Assessment of In-process and provisional arrangements" of the close report (CEC01338853) in consultation with the various members of the project team and material was contributed by them. The Close Report as it developed was widely distributed internally for verification of the material and statements made.

On 28 January 2008, you emailed Geoff Gilbert and Matthew Crosse about queries CEC wanted resolved before recommending the award of the Infraco contract (CEC01489318). You asked what specific design changes of substance had taken place since the 25 November 2007 "design drop" which formed the basis for the price agreed in the Wiesbaden agreement, and whether there had been any changes to the qualifications and exclusions as detailed in the Wiesbaden agreement. Mr Gilbert was not able immediately to answer your question.

- 9) What was your understanding of the extent to which the design changed between 25 November 2007 and financial close?

I cannot offer a substantive comment on the extent or nature of design changes that had taken place between Wiesbaden and financial close. The scope of the work was also defined in the Employers Requirements (ERs) and the Infraco Proposals (IPs) both of which are referenced in Sch pt4 3.1 as the basis for the price. The Close Report at 2.3 explains the alignment of the SDS design, ERs and IPs. The extent of road reinstatement is identified as a specific issue and that was recognised in the risk allowance at contract close. The price increases between Wiesbaden and financial close had an element related to known design changes and including an updated version of the ERs.

- 10) How, if at all, was that addressed in the cost estimates and/or the risk allowances?

The cost estimates and the risk allowance included specific provision for

areas where design change may happen including the extent of road reinstatement which was a specific issue as noted above. The risk allowance did not provide for significant changes in the design which would need to be assessed and approved as a change to the scope of the project, the cost and programme implications understood and the overall cost estimate increased.

11) Can you explain the basis on which you estimated that the cost of delaying signing of Infracore and Tramco was about £1m per month?

My email notes that this was a rule of thumb estimate for the resource costs of tie and its advisors (and maybe included CEC resources too) for 1 month. This is not the total cost of delaying award as additional construction inflation for later start/finish to the project would give rise to additional costs as might disruption to the Infracore supply chain – both of which might result in the Infracore seeking a substantial increase in price

I was not involved in the detailed development of schedule part 4 to any material degree – I did not draft any part of it and was not engaged with BBS in the drafting.

On 6 February 2008, Bob Dawson forwarded to you BBS's draft of schedule 4 (CEC00592614, CEC00592615). His comments, in blue, included:

- That having 25 November 2007 as the base date for design information was “a bit early” (_1)
- A proposed modification to the base case assumptions, such that only “material” changes from the base date design information would be excluded from the price (_2)
- Not all differences from the base case assumptions should be treated as Notified Departures (_8)

Andy Steel, in comments on the same date, noted (CEC01448355,

CEC01448356_2)

- (In relation to the assumption that there would be no change in design principle, shape, form and/or specification from the base date): *"Given that a substantial amount of design requires to be presented, reviewed etc this clearly will not happen"*.

12) What was your understanding, and view, of these comments at the time?

I agree that the addition of the word "material" may have been helpful in the context of the subsequent disputes but even that word has a subjective nature to it. Many of Bob Dawson's comments in blue are pertinent and are noted as requiring further discussions with tie's technical team. I was copied or forwarded on a very, very large volume of documents throughout the procurement process from our commercial team, from lawyers and others – to keep me informed of what was happening. I think it is reasonable to accept that I did not read large amounts of the detailed drafting material as my role was not the negotiation / documentation of contract terms.

13) What was your understanding at the time of the extent to which BBS were trying to pass back the risk of design development to tie?

I was not aware that there was a wholesale attempt to pass risk back to tie. In a commercial negotiation it was natural that the allocation of uncertainty related to specific elements would be the subject of negotiation. I believe that the exclusions and pricing assumptions in the Weisbaden agreement and eventually Sch pt4 was a statement at any point in time of the areas of uncertainty and risk to be focussed on and assessed for their potential impact. It's also true that the detailed negotiation of terms was very protracted with specific items being added, deleted or amended as negotiations progressed. I can't definitively say whether it was the deliberate tactic of BSC was to incrementally pass risk back to tie/CEC as part of this protracted process but

as it was a negotiation at a working level that is what was being sought.

14) How was TIE addressing that issue at the time?

As well as the ongoing management of the completion of the design process and utility diversions (and the respective detailed programmes for these activities and how those meshed with Infraco programme) I believe there was a focus on assessing and managing the risks associated with the individual exclusions and pricing assumptions in Sch pt4 as it developed.

15) In particular, what assessment (if any) did TIE make of the cost implications of BBS's preferred risk allocation?

The cost implications of the risk allocation as reflected in the final contract, including Sch pt4 and its exclusions and pricing assumptions, was comprehensively updated in the lead up to the Close Report before awarding the Infraco contract.

16) To what extent were these matters discussed with CEC?

Engagement with CEC was, as intended, extensive at all levels from TPB through the sub-committees and working groups dealing with design, scope programme and consents and approvals and risk allocation. I cannot cite specific examples here in relation to risk allocation but at a contractual level the risk allocation was extensively discussed and reported as between tie, DLA and the CEC legal team throughout including in the lead up to Infraco contract award and referred to in the Close Report.

A draft of schedule part 4 circulated by Pinsent Masons (25 February 2008, **CEC01449710, CEC01449711**) notes, in a comment, that significant work was needed:

**25 February 2008
should be
22 February 2008**

“to ensure that the commercial intention is appropriately expressed in a way which bears scrutiny and is sufficiently robust to avoid the potential for future

dispute. BBS position is that this schedule must ... take precedence" (over the rest of the Infraco contract) (_1).

They also noted that the definition of normal design development was

"not satisfactory (and that) it would be helpful to understand what is intended to be included in such "normal development"" (page 6, footnote 66).

The definition is almost identical to the one which appears in the final draft of schedule 4 (see clause 3.4.1, **USB00000032**).

Pinsent Masons also rejected tie's proposal that design development had to be 'material' before risks associated with it would pass back to TIE (page 7).

17) Can you comment on these points, i.e.:

a) The proposal that schedule 4 take precedence over the rest of the contract

I do not recall being aware of this proposal at the time or its significance in the context of the extensive contractual disputes which emerged later.

b) The definition of design development not being satisfactory

I think it is significant that BBS own lawyer had drawn attention to both parties, tie and BBS, to his views that the definition of design development was not satisfactory and the engagement between the two parties in addressing this concern would be of great interest in establishing commercial intent and how that was rationalised in the final wording. I was not aware of this comment from Pinsent Mason until reading it now.

18) What consideration did TIE give to these points, and what steps did they take to address them?

19) What consideration (if any) was given to the effect of schedule 4 taking precedence over the rest of the contract (in particular, in relation to the extent of

the design development risk being retained by tie)?

In response to Q18 and Q19 - I was copied or forwarded on a very, very large volume of documents throughout the procurement process from our commercial team, from lawyers and others – to keep me informed of what was happening. I think It is reasonable to accept that I did not read large amounts of the detailed drafting material as my role was focussed on assisting the project team in tracking and reporting all element of cost of the project. Negotiating/documenting the terms of the Infraco contract was not part of my remit and was not something I was responsible for delivering.

On 6 February 2008, Mark Hamill noted requests made by CEC in relation to the Close Report. These included questions about the likely cost of Infraco taking the design risk and the risk of consents issues (TIE00351263). He did not have the information to answer these questions, and you said you would deal with the matter. He then sent you an “ETN Risk Register” with comments by CEC (TIE00351265). His cover email said that

“Since last autumn they have been asking us to price black flag risks and Geoff has been understandably reluctant to do so”.

Please explain the mismatch between information CEC wanted on risk, and what had been supplied by tie

As well as specific quantifiable risks reflected in the QRA the risk register also had a number of ‘Black Flag’ risks including, the willingness by CEC/TS to enter into the contracts at Infraco award or in accordance with the timetable (due to risks retained by the public sector or any other reason), the availability of funding for tie to meet its financial commitments at any point in time, a pervasive failure in Governance and widespread loss of support for the project at public, stakeholder or political level giving rise to any of the foregoing. These were not risks which were not in general capable of being quantifiable – but related to the overall future of the project. They were a crucial part of the risk register and as I recall were a focus for specific deliberations at TPB on the various risks as appropriate.

I have been asked to be involved here because although CEC accepted they were not a normal part of a QRA they still wanted an estimate of the financial impact of these risks crystallising and specifically (per the emails) the incremental cost of cancellation at any point in time compared to the costs to complete as envisaged, cost of delays to awarding the Infraco contract and costs of buying out the risks which remained with the public sector. It's unclear the extent to which these requests emanated from the CEC representation on the TPB or at a different level of CEC officer.

I do recall at different stages attempting to provide CEC with benchmark estimates of the costs of cancellation and delayed award of Infraco based upon information available. Providing an accurate assessment of cancellation costs would have been a very large undertaking (and subject to more uncertainty than the costs of proceeding which were a natural output from the embedded cost estimating and risk assessment processes within the project) as it would necessitate estimating the cost of extracting tie and CEC from wide ranging contractual arrangements and commitments already existing.

Specifically on the request to estimate the cost of buying out the retained public sector risk on consents and approvals, the only reliable way to do this would have been to ask BBS for a price. We may have done this on individual consents and approvals but I don't think it was ever contemplated on a global basis. I don't know whether BBS would have been able or willing to put a price on it which represented value for money given the range of different public sector consents required and the fact that timing of approvals and consents would be outwith their control. The strategy remained that the timing of consents and approvals was something that the public sector could manage and was retained.

Is the attached register a typical example of tie's project Risk Register?

Yes. The exact format and nomenclature changed or was adapted over time and for different forums but I think this is typical.

Can you explain in overview what it shows?

See answer to Q20 above.

Does it report the Quantified Risk Assessment that TIE had carried out?

Risks that are quantified in the QRA are at row 269 and below and the value is in column V. The date of the report appears to be in January 2008 but I can't confirm the extent to which this QRA is draft or represents the version adopted in the cost estimates.

TIE and BBS entered into the Rutland Square Agreement on 7 February 2008 (CEC01284179).

The agreement noted a construction price of £222,062,426, subject to certain exclusions, provisional sums, assumptions and conditions.

My understanding here is based upon a rereading of the agreement now and with reference to other documents provided.

24) What was your understanding of the need for and purpose of that agreement?

The key agreements reached are: 3 month extension to the delivery programme, CAF (Tramco) would join the consortium, commitment to contract close out in March 2008 – the schedule to the agreement specified the main outstanding matters to reach contract close including recognition that the consequences of an update version of the Employers requirements were still to be dealt with, and agreement that SDS would be novated as part of contract close out.

25) What was your understanding of the extent to which the price in the agreement of £222,062,426 was fixed and firm (and the extent to which that price was subject to exclusions, provisional sums, assumptions and conditions)?

The increase in the price as a consequence of this agreement was £3.8m so

the price went from £218.3m in the Weisbaden agreement to £222m in this agreement. My subsequent analysis of this price increase on CEC0082563 is £2.5m for additional engineering resources (consistent with the agreement to novate SDS) and £1.3m for alignment of Infraco/Tramco contract terms. I can't identify where I got that breakdown from. Per CEC01425552, tab Infraco Financial Summary following the Rutland Sq. agreement the firm elements of the price were £225.7m (including the £8m increase at Wiesbaden), less £13.8m firm VE items taken into the price with conditions plus provisional sums of £10.2m subject to further refinement and instruction by tie. The specific exclusions in Sch pt4 would still apply.

- 26) What was your understanding of clause 2 of that agreement (including clauses 2.1 and 2.2)?

Clause 2 says that the price (£222m) would under "no circumstances" change except regarding 2.1 known changes to the Employers Requirements and 2.2 resolution of SDS Residual Risk Issue which in clause 4 is said to particularly relate to earthworks design which was already the subject of price assumptions / exclusions in Sch pt4.

- 27) What was your understanding of the need for and purpose of the Schedule to this agreement (including, in particular, paragraph 2.5 of the Schedule)?

The schedule lays out the main outstanding items on the Infraco contract suite to achieve contract close. Clause 2.5 specifies matters outstanding on Sch pt4 – 2.5.2 refers to items in the current drafting which were unacceptable but I do not know what they were or to which party they were unacceptable.

- 28) Did the e-mails etc attached to the document form part of the agreement?

I can't say for sure – but they are not initialled and do not appear in another copy of the agreement provided (CEC00825620) and on that basis I conclude

they did not.

- 29) In relation to the document attached to the agreement (at p26) “SDS Novation – RODs”, what was your understanding of (i) the purpose of that agreement and (ii) the following words: *“Design Growth: The design information which provided the basis for BSC’s price will be a pricing assumption under Schedule 4. The risk of design ‘creep’ accordingly lies with tie”*?

I do not believe I have ever seen/read this document before. I cannot confirm whether “design growth” or “creep” here is the same in concept or financial impact as that excluded from the definition of normal design development in Sch pt4.

You noted that TIE had undertaken to supply Gill Lindsay of CEC with a *“cogent picture of how all liabilities flow through the contracts and financial rights of redress flow through Infraco/Tramco (and related maintenance provisions) and SDS and therefore the shape and size of the risk baby they (CEC) are left holding.”* (CEC01422998, 8 February 2008)

- 30) What was the scope and purpose of this?

Sitting alongside the legal risk allocation matrices being produced by DLA, this exercise would show how the liabilities flowed through the contracts, the objective being to show how additional costs being claimed by one contractor would be offset by our recourse to another contractor in the event it was due to a failure of that other contractor. This would be done with reference to the sufficiency and matching of the liability caps in the contracts. The residual exposure would match that being retained and managed by the public sector as reflected in the risk allocation matrices. Also included was an analysis of the bonds in place (or intended to be in place) as surety for the performance of the contractors and the guarantees of performance and financial obligations from the parent companies of the contractors. This evaluation would reflect

how these factors would evolve through construction and then into the operations period where the operational reliability of the tram and contractors responsibility to make good defects would be important.

31) What was done?

I recall this exercise being carried out at regular intervals during the procurement – I can't recall the outputs produced to respond to the CEC request in this particular email – I think what I was primarily doing here was passing on the instruction to the project team and DLA.

In an email to you dated 11 February 2008 (**CEC01489953**), Mark Hamill raised concern about risk allowance figures. He added:

"Stewart, my main concerns here are that (a) we are reducing the risk allowance while the risk has not actually been transferred or closed and (b) the new risk allocation is not sufficient for the risks which TIE will retain. I cannot overstate how anxious I am to ensure that the final QRA truly reflects the actual risk profile at financial close."

32) Can you comment on this?

See answer to Q35 below. As context this email seems to be predicted on Mark not thinking he had sufficient engagement at this particular time with the project team and my request for updated QRA numbers as a basis for reporting to TPB. This was a period when the commercial team in particular were consumed by contract negotiations. Also as context the risk management function and outputs from the QRA were something I used to inform the estimation of outturn costs. Risk management did not report to me but was imbedded in the project and ultimately reported ultimately to the Project Director. I would not have interfered with that process or the outputs from it.

33) How did you respond to his concerns that the risk allocation was not sufficient

In this instance my first action would have been to raise the matter with the senior members of the project team. I do not believe this email reflects a breakdown in the principle that risk management (and the QRA outputs) was embedded in the project management and taken very seriously by all.

34) Was his concern addressed by financial close? If so, how?

A comprehensive review of the QRA was carried out by the project team in the lead up to close of the Infracore contract. I addressed that review in drafting section 8 of the Close Report in consultation with colleagues in the project team in the context that the QRA outputs at that time reflected a thorough assessment of the risk being borne by tie/CEC going into construction.

35) What did Mark Hamill mean by "*reducing the risk allowance*"?

I believe Mark is referring to the fact that as price certainty was achieved in negotiations with Infracore at Weisbaden the cost increases at Weisbaden and Rutland Sq were presented as a close out or reduction in the risk allowances for the procurement phase which had been included in the QRA. This approach was discussed and agreed as proper within the senior members of the project team. The attachment CEC01489954 does not reflect that reduction in the QRA allowances for procurement stage risks eg risk 48 price certainty not achieved (£5.5m) and risk 870 SDS design does not provide detail bidder requires (£3.9m). These allowances in this QRA are substantially unchanged from the FBC so don't yet reflect the outcome of Weisbaden.

The attachment (CEC01489954) includes a box (see cell C110) with risks from schedule 4 base case assumptions.

36) What was the purpose of this?

37) The list is rather short. Were all risks covered?

Re Q36 and Q37 – this list does not represent a thorough assessment of the pricing assumptions and residual uncertainties and exclusions in the Weisbaden agreement and later Sch pt4 so it was a work in progress at the time of this email but comprehensively reviewed subsequently.

At the TPB on 13 February 2008 (CEC01246825_5, at 6.1), you gave a presentation on the Infraco budget and the movement in the risk allowances. You are recorded as saying that the risk allowance of £30m related to £90m of non-firm future costs.

38) Please explain your understanding of the movement in the risk allowances, and in particular the reference to £90m of non-firm future costs.

The papers from the TPB of 130208 (CEC01246826) do not contain any detailed breakdown to help me provide a precise answer to this question. However in principle the non-firm future costs would have been the total of the project estimate less all expenditure to that date less the firm elements of the Infraco/Tramco contracts at that stage of negotiations less the anticipated design and utility diversion costs still to be incurred at that point.

You also explained that the budget did not include allowances for stakeholder changes to programme or scope.

39) Why not? What was your understanding of what was meant by changes to "scope". Can you give examples?

Major changes in scope at a macro level would be additional works required by 3rd parties (eg Forth Ports) which would need to be funded by those third parties as well as work which CEC may regard as being desirable to do at the same time as the tram construction, including reconstruction of roads, footpath and junctions which might understandably be desirable but were not

part of the tram scope as defined and would increase the total cost and have programme implications to implement. At a micro level a significant change to the specification of individual elements including bridges and other structures and other elements required for whatever reason and which would be considered to be outwith normal development of the design and would be considered a change in scope.

The scope of the project was as defined in the design and employers requirements for Infraco/Tramco (and in the Infraco proposals to meet those requirements) and in other elements allowed for in the project budget. This was the basis for the project estimate and any significant changes to that scope would result in the estimate increasing.

40) Did the budget include any allowance for the time and cost consequences of design completion after the 'base date' of November 2007?

The estimate did not include allowance for scope changes which might arise through that design process other than specific allowance for certain items such as the extent of road reinstatement which was to be more closely defined. The items fixed in the Infraco pricing were assumed to be just that, subject to normal design development and the Weisbaden / Sch pt 4 assumptions and exclusions. These assumptions and exclusions were subject to a comprehensive assessment of their impact (I don't think this review was completed at Feb 2008).

The major risks associated with design remaining were those in relation to the consents and approvals process and specifically the timing of these consents. The way that was managed is the subject of Appendix 1 to the Close Report. The risk allowance for the consents and approvals process was £3.3m and the individual risks and allowances are on spreadsheet CEC01425552 tab P80 Risk Alloc labelled Design and Consents. This analysis also reflects the allowance for general programme delay of £6.7m including that which may arise from the consents and approvals process.

If so, what was it and how was its adequacy assessed?

Risk allowances and their adequacy was assessed through the projects embedded risk management processes with thorough interrogation by the senior project managers and taking account of the mitigating actions and processes being taken to manage the risks throughout.

41) Did you, or others, have any concern in this context from the fact that final design packages were now expected in late 2008?

This was a risk retained by the public sector which was being actively managed. The Close Report CEC01338853 explains this as a residual risk at 8.4 and the way it was being managed is detailed in Appendix 1.

42) Did the budget include any allowance for the time and cost consequences of a MUDFA delay impacting on the Infraco works?

The approach to managing this risk was to integrate the MUDFA and Infraco programme to mitigate the impact of delays on a section by section basis. MUDFA related risk allowances totalled £8.6m and the general allowance for time delay amounted to £6.6m.

An email exchange between you and Graeme Bissett (CEC01505945, 17 February 2008) discussed concerns about the timescales attached to TS funding.

43) To what extent, if at all, did those timescales influence the decision to award the Infraco contract when it was awarded?

The concern here was to ensure the Government grant did not preclude drawing down after the end date in the draft of 31/3/11 if the project ran late or there was expenditure after that date on settling final accounts etc. This was a case of reaching that understanding with TS that the end date of 31/3/11 in

the draft grant at that stage was not fixed and it would have had no influence at all on the date for conclusion of the Infraco contract.

There were concerns about managing reporting to CEC in such a way that on-going negotiations with the bidders were not prejudiced (e.g., Graeme Bissett, **CEC01463488**, March 2008).

44) How was this managed generally?

45) How did TIE reconcile the competing requirements of clear reporting and not prejudicing negotiations?

I don't recall the March 2008 Council report on contract award actually being produced and released. I think that the report to Council went out in the first week of May 2008 which may have crossed over with the last minute and unexpected demands from BBS for further price increases as documented in the report Financial Close Process and Record of Recent Events CEC01338847. Generally I believe the correct balance was struck throughout the project with meeting the requirement to keep the Council informed and making decisions with the detail in CEC reports whilst at the same time not compromising the commercial position of the Council as the negotiations were still continuing. The full support of senior CEC officers represented on the TPB was crucial in this respect. This process became much more difficult later as extent of disputes with the Infraco emerged with the attendant cost outturn uncertainties and obvious delays to programme which created a greater appetite from elected member of CEC to receive reports on why that was happening.

Mark Hamill emailed you on 28 February 2008 about the Quantified Risk Analysis (**TIE00351419**). His email refers to the need to reduce costs where possible to get a deal done, and suggests there had been a discussion about moving to a P80 risk analysis figure instead of a P90 one. Mr Hamill recommended "*manipulating the current information to an acceptable P90 figure rather than go through the hassle of*

trying to persuade CEC of the 'benefits' of a P80 figure."

46) Can you comment on this email?

There must have been a debate at this time about moving the QRA from a P90 basis to a P80 basis. Mark Hamill is expressing worry about CEC acceptability of this move but there were regular briefings to CEC on the detail of the QRA provided by Mark and other members of the project team and I am very sure this change would not have happened without CEC officers being aware. By March 2008 the project estimate was being reported with a P80 risk allowance as per spreadsheet CEC01425552.

47) Who had suggested the use of a P80 figure, and why?

I can't say who had initiated the move to P80, which still represented a high level of confidence and as per Mark's email reduced the overall risk allowance by £3m as compared to the P90 figure.

48) What did Mr Hamill mean by "*manipulating*" the information to an acceptable P90 figure?

Whatever he was suggesting it did not happen. There was no manipulation and the risk allowance was reported as a P80 estimate.

Geoff Gilbert circulated a paper on tie/BBS negotiations on 3 March 2008 (CEC01450123). His covering email (CEC01450122) said

"there seems to be confusion on the relationship between IPs (Infracore Proposals?) and Schedule 4 – we need to be careful that we don't compromise the position for post contract by linking them too strongly."

The attached paper noted, in relation to schedule 4 (_4),

"Summary position not yet clear. There is likely to be a significant push by

BBS to either leave items very loose for future opportunities post contract award or seek a risk premium whilst still leaving opportunity for change."

The table below that comment noted that TIE should seek agreement that schedule 4 was subsidiary to the contract terms, Employer's Requirements and Infraco Proposals; and that the definition of "normal design development" agreed at Wiesbaden should stand.

49) What is your understanding of these issues, and their importance to TIE in the negotiations?

This paper details Geoff Gilbert's view on the way forward in a large number of negotiating points which needed to be resolved before contract close. The detail of many of the points relating to engineering and scope issues is not something I would have had a close understanding of then or now.

50) What is your understanding of the way in which they were resolved?

Some of them were closed at the time of the agreement reached on 7 March 2008 which resulted in an £8.6m aggregate increase and which is the subject of Q53 below – including adoption of an updated contract programme with an end date of July 2011 (at a cost of £3.5m), agreement to an updated employers requirements (at a cost of £1.4m) and the price for taking responsibility for SDS design quality (at a cost of £2.8m) – see breakdown of the £8.6m increase on CEC00825623.

Acceptance of tie's position on the SDS Novation terms appears to have been finally secured as part of the agreement reached in the Kingdom agreement (WED00000023) on 13 May 2008.

I can't recall the point about the relationship between Sch pt4 and the Infraco Proposals and ERs except that I believe the intent here was that Sch pt4 would not mean the IP/ER were not important in defining the scope of the

contract included in the price. Sch pt4 at clause 3.1 specifically says the price includes for the work reflected in the IP and ERs. As the later disputes had the precedence of Sch pt4 as a theme this is an important point.

As far as I am aware the normal design development provisions in the final Sch pt4 do mirror those that were in the Weisbaden agreement.

51) To what extent were they taken into account in setting the risk allowances

Prior to preparation of the Close Report the project team undertook a detailed review of all contractual provisions, including those in Sch pt4, in determining that these was adequate provision in the risk allowance for risks and uncertainties retained by tie/CEC. This view would have been predicated on the contract being robust in achieving the risk transfers intended and an experienced contractor executing the works in accordance with the contract as a whole and the management process to mitigate the impact of delayed consents and approvals and utility diversions being effective.

On 7 March 2008, Steven Bell and Jim McEwan agreed with Richard Walker and Michael Flynn that the contract price would be amended by £8.6m to incorporate a list of items, including:

- amending the contract programme to allow opening for revenue service on 16 July;
- all commercial impact to deliver version 3.5 of the Employer's Requirements;
- acceptance by BBS of SDS design quality risk and consequent time impact.

(See email **CEC01463888**.)

52) Whilst you were not copied in to the email, what was your understanding of

- a) the reasons why a price increase had been sought;
- b) the reasons why TIE agreed to it
- c) what TIE received in return for the price increase.

The agreement settles a number of the outstanding commercial issues identified in the paper produced by Geoff Gilbert on 3 March – see Q50 to Q52 above. My later analysis of the increase (CEC00825623) is:

- BSC take SDS Quality risk £2.8m
- Programme extension £3.5m
- Update to Employers Requirements £1.4m
- Other (inc tapered poles) £0.9m

On 10 March 2008, in an email to Rebecca Andrew of CEC (**CEC01506128**), you noted that

“...the only significant additional public sector risk compared to December is the delay in post close SDS design delivery. This would only go away if we waited for the design to complete which would in say September. Six months inflation on the programme would cost £15m to £20m alone. More likely is that either BBS or the TS funding or both would walk away and we'd have no project.”

53) Please explain your view that this was the only additional risk.

I said it was the only significant additional risk being retained by the public sector and reflected the bidder position that they were unwilling to take the risk relating to the timing of consents and approvals. Other than specific allowances made for uncertainties associated with the pricing assumptions and exclusions in Sch pt 4 I understood this to be the only material change to the principles of risk allocation as compared to the FBC.

54) Please explain your assessment here of the risks arising from delaying the project to allow completion of the design, and the basis on which it was made.

We estimated as a benchmark that the additional cost associated with construction inflation as it may be reflected in additional pricing from the Infracore plus additional project management costs for the extended period

would be around £3m per month.

At the TPB on 13 March 2008, you gave a presentation on contract prices, the project budget and risk profile (CEC00114831_5, at paragraph 10; your slideshow is at CEC01362332). The baseline estimate had risen from £498m to £508m due to Infraco price increases.

55) Please briefly explain these changes in the prices and budget (perhaps by reference to your slideshow at _15 to _17).

The slides are headed Control Budget at Financial Close but this was as anticipated because financial close had not been achieved in mid-March 2008. In particular the analysis does not reflect the increase of £4.8m in the Infraco price for section completion incentivisation as explained in the paper Financial close process and record of recent events (CEC01338847) which increased the control budget to £512m.

Slide 15 summarised how the project estimate moved from FBC (which reflected preferred bidder stage pricing for Infraco and Tramco) to the control budget at this time. The Infraco Award column is further detailed on slide 16. There was a budget transfer from MUDFA to the Infraco of £3m relating to utilities at Picardy Place taken into the Infraco scope. The net increase in the overall infrastructure budget of £17.8m was reflected in a reduction in the risk allowance arising from the close out of procurement stage risk allowances. The Tramco budget increased by £5.6m compared to preferred bidder due to the inclusion of maintenance mobilisation costs and by currency exchange differences (the bid was in Euros and there was a 7% strengthening of the Euro between preferred bidder stage and when we had permission to ask CAF to fix the rate in late December following FBC approval). Aggregate increases in other cost items was £2.2m. The updated risk allowance requirement was £33.4m so the risk allowance and the overall cost estimate went up by £10m from £498m to £508m.

Slide 16 summarises the movements in the Infraco budget from Weisbaden and also reflects that the total infrastructure budget included for infrastructure related items which would not be delivered by the Infraco contractor. Note that the Negotiated Infraco Contract price on this slide is £228.7m which is different to the £233.5m in the spreadsheet which is the subject of questions 75 to 81 below largely as a result of the inclusion of provisional sums in Infraco which had previously been included below this line – ie there was no increase to the overall budget for infrastructure of £243.8m. The commentary on the elements of the £243.8m at Q78 below is also applicable to explaining slide 16.

Slide 17 details the components of the £3.8m and £8.6m increases in the negotiated Infraco price per the Rutland Square agreement and negotiated on 7 March 2008 (see Q53 above) and consistent with the breakdown on CEC00825623.

The slideshow lists the breakdown of the £33.4m risk allowance at _18.

56) Please explain that breakdown, and in doing so explain in more detail the “*key items included in the specified risk allowance*” referred to in the minutes at 10.5, being “*significant sums for programme delays, unforeseen delivery issues, design and consent issues and MUDFA related issues*”.

My answer to Q76 below also serves as an answer to this question. The risk allowance which is the subject of Q76 (ie at as at the end of March 2008) was by then reduced to £32.3m as a result of an increase in the Tramco budget – I recall this was related to the inclusion of depot equipment in the Tramco scope by that time.

At 10.6 of the minutes, and at _19 in the slideshow, you are recorded as having said that “*95% of the combined Infraco/Tramco price is firm and the remainder had been reviewed by both TIE and BBS for adequacy*”.

Please explain your comment.

- 57) What did you mean by 95% of the price being "firm", and what do you consider the TPB understood that to mean? (NB the minute at 11.3, which notes the TPB's desire that the "*fact of fixed pricing*" be stressed in communications.)

It was the % of the negotiated Infraco and Tramco prices which was fixed and firm subject to the price exclusions and assumptions in Sch pt4 - for the scope of work defined in the design (subject to normal design development) the employers requirements, the Infraco proposals and for delivery to the contractual programme.

At _19 in the slideshow, it is noted that the risk allowance (of £33.4m) was 10.8% of the base costs to go (and, we infer, 7% of the total base costs of £474.7m: see _15).

- 58) Do you agree that the risk allowance was about 7% of the total base costs?

Yes I do. I also believe that the 10.8% figure is rational there being no risk associated with expenditure already incurred.

- 59) What was your view of the adequacy of that risk allowance?

The risk allowance was the product of the projects risk management processes and was subject to review and appraisal by the risk owners and the senior project management. I had no reason to believe the allowance was insufficient, viewed in the context of the expectancy that the Infraco contract would be robust (including the normal design development provisions), that the exclusions and pricing assumptions had been properly allowed for, that the strategies to mitigate against consents and approval delays and utility diversions delays would be effective and that the estimates did not include for significant scope changes. Maybe most significant was the expectation that Infraco would mobilise and get on with the job in an expeditious manner in parallel with the due processing and approval of such changes as emerged.

and would work to mitigate the impact of change – that did not happen.

60) Was there any discussion before the TPB about its adequacy?

There was ongoing discussion at all times with regard to the adequacy of the risk allowance as a matter of course and as an integral part of the project's management processes.

In an email of 26 March 2008 (to Stephen Bell and Jim McEwan; you were a copy recipient), Ian Laing of Pinsent Masons asked whether tie accepted that there would be an immediate notified departure when Infracore was executed, arising from the design delivery programme having moved on from v26: **CEC01451434**, 26 March 2008; and chaser on 31 March 2008 (**CEC01548431**).

61) Was that understood in tie?

Yes it was.

62) What were the likely time and cost consequences assessed to be?

I believe the amount was in the region of £1m (within the risk allowances for delay) but subject to engagement with BSC as to how elements of the programme could be managed to mitigate that extra cost. It was generally expected that following contract award there would be constructive engagement with BSC and that they would meet a contractual obligation to mitigate additional costs where it was reasonable to do so.

63) Were there other areas in which notified departures were expected to arise at or shortly after financial close?

I do not believe I was aware of any specific additional notified departures expected at that time.

64) In particular, was it expected that there would be any notified departures from pricing assumption 1, in respect of the progression of design after the base date in November 2007?

I do not believe I was aware of any expected notified departures arising from pricing assumption 1.

65) If so, what assessment had there been of the likely time and cost associated with that?

I do not believe I was aware of any expected notified departures arising from pricing assumption 1.

Ian Laing's email of 2 April 2008 (CEC01423746) attached the first version of schedule 4 to include the fuller version of paragraph 3.2 (CEC01423747), which provided:

"The Parties acknowledge that certain of these Pricing Assumptions may result in the notification of a Notified Departure immediately following execution of this Agreement. This arises as a consequence of the need to fix the Contract Price against a developing factual background. In order to fix the Contract Price at the date of this Agreement certain Pricing Assumptions represent factual statements that the Parties acknowledge to represent facts and circumstances that are not consistent with the actual facts and circumstances that apply. For the avoidance of doubt, the commercial intention of the Parties is that in such circumstances the Notified Departure mechanism will apply".

66) What was your understanding of that provision?

As I understood this provision it related specifically to the change in the design delivery programme as at Q63 to Q66 above. On reading it here it is

catch all provision designed to capture any notified departures which might arise in respect of fact and circumstances which had arisen prior to contract signature which in the event did not take place till more than a month after the date of this email.

67) To what extent did that reflect TIE understanding up to that point?

My understanding of the provision is as per Q68 above. I was not aware of any list or other document in which a number of notified departures had been communicated to tie as about to be raised immediately after contract close.

68) To what extent were these matters discussed with CEC?

I cannot recall being a party to any discussions with CEC myself on this provision.

An email from Graeme Bissett dated 11 April 2008 suggests you were shortly to attend a meeting with CEC to provide a "*schedule 4 update*" (CEC01543030).

69) Do you recall what was said in that meeting about schedule 4?

I am sorry but I cannot recall the specific of what was said on any matter at this particular meeting.

70) In particular, what was said about the extent to which TIE retained the cost and time risks of design development after the November 2007 base date?

From the email I think the discussion at this Legal Affairs Committee meeting would have focussed on what clarifying what the contents of the Close Report and separate report/letter from DLA to CEC would reflect. I don't believe the discussion at this Legal Affairs Committee would have dealt specifically with the normal design development clause in Sch pt4 which as far as I was aware

was effective in passing design development risk to BSC subject to the assumptions and exclusions in Sch pt4. The agenda provides for Geoff Gilbert to give an update on 'Infraco exclusions'.

Your email of 11 April 2008 (CEC01466954) refers to a "huge initial milestone payment" which you had spent months getting TS comfortable with, and to TIE going out of their way "to accommodate the BBS requirement to stay cash neutral".

71) Please explain these issues and how they were addressed in the contract.

I have given a full answer as to the nature and justification for the initial milestone payment at Q129 below.

72) To what extent did these factors later lead to a position under which BSC had received payments in excess of the value of the work they had completed?

Payment of the BSC price (including agreed changes) was on the basis of the initial milestones (representing 20% of the contract value) an allocation of their preliminaries (essentially management and overhead costs) over the period of the contract and the balance through a milestone based payment schedule which meant they got paid for the individual elements of work when they were certified as being complete. Because work did not progress anywhere close to the contract programme this meant that even by mid 2010 the value of work done by BB and S was still some £30m less (per CEC00111694) that what had been paid to them – principally because of the advance payments. This did not affect what would have been recoverable from BSC in respect of this overpayment in the event the contract came to an end (see CEC00111698). I can't give a substantive statement as to the extent this had an impact on tie's ability to press the contractor to proceed with the work when the extensive disputes emerged – but it seems reasonable that it would not have helped. I'm also unable to substantiate the extent to which BB and S had in fact expended or committed the initial milestone payments for

the purpose it was intended, eg securing the purchase of long lead materials and equipment, even as they were not progressing with work on the ground to programme.

On 15 April 2008, you circulated a spreadsheet entitled "*Phase 1A – Budget at Financial Close*" (CEC01425551, CEC01425552). (You circulated a similar version to CEC: CEC01245223, CEC01245224, CEC01245225.) It appears to show the breakdown of the £498m budget for phase 1A which had been reported in the Final Business Case (tab 1, column DT) and the budget as it stood at that mid-April 2008, of £508m (tab 1, column DR).

73) Is our understanding correct?

Yes – this spreadsheet was recast of the project estimate in detail and incorporated inter-alia the changes to the Infraco contract price up to and including the £8.6 increase negotiated on 7 March 2008 which at that point was considered to be the final price and formed the basis of the Close Report. This spreadsheet was prepared before the increase of £4.8m in the Infraco price for section completion incentivisation as explained in the paper Financial close process and record of recent events (CEC01338847) which increased the control budget to £512m.

74) Can you explain briefly the breakdown of the £32.3m risk allowance (tab 1, bottom), and its constituent parts (especially in relation to the provisions for Design and Consents, MUDFA and general programme delay)?

The risk allowance as an output from the QRA totalled £27.9m as detailed on the separate tab P80 Risk Allocation. (Note - the labels regarding the components of QRA risk allowance on tab 1 are misaligned – the allocation for Infraco / Tramco procurement should be zero and all the other figures moved down so the category labels match those on the P80 Risk Allocation tab). In addition to the QRA further risk allowances were made of £2m for

non-delivery of the value engineering initiatives which had been taken into the contract sum as and £2m in relation to uncertainties about the extent of road reinstatement - both of these were a carefully considered view on additional risks arising from Sch pt4 and not recognised in the QRA.

The P80 Risk Allocation tab shows the value of total risk allowance attributed to each risk and then summarised into categories.

Design and Consents risk allowances aggregate £3.3m and mostly relate to risks associated with the consequences of late delivery of design by SDS, failure of the consents and approvals to deliver approvals within the timescales required and agreed and failure to obtain timely consents from 3rd parties.

MUDFA related risk allowances in aggregate £8.6m relating to the risks of quantities requiring to be diverted being greater than expected and failure of the design delivery and approval process with the statutory utilities.

The general programme delay allowances aggregate £6.6m – as a benchmark we estimated this would allow for 3 months slippage in the overall programme for reasons not attributable to the contractor.

75) Can you explain why there is a difference between that risk allowance, and the one shown on the next tab, "Summary P12", which is £48.9m?

The allowance of £48.9m was that which existed at the time of the FBC. The QRA was under constant review but the principal reason for the reduction is the elimination of the £17.5m risk allowances at the time of the FBC for procurement stage risks (essentially the risks that Infracore/Tramco contract prices would not be concluded with the requisite level of price certainty) and by the end of March 2008 it was considered that this had been achieved with adequate allowances made for the known residual risks anticipated to be retained by the public sector in the final contracts.

76) Please explain briefly what is shown in the tab entitled "Infraco Financial Summary".

This tab shows how the negotiated Infraco contract price and the firm and provisional elements of it changed between preferred bidder £226.5m (the basis of the FBC) through to the negotiated contract price at end March of £233.5m. Other budget items included in the anticipated final payments under the Infraco contract included the cost to mobilise the maintenance phase of the project when it became operational and spare part for the maintenance phase. A further contingency is included here against the delivery of the value engineering initiatives taken into the Infraco price (in addition to the £2m risk allowance as at Q76 above).

Infrastructure items which were not delivered by the Infraco comprised £4.6m (including non Infraco costs associated with NR immunisation and required reinforcement of the power network), the £5.5m cost of the advance excavation of the depot site which was carried out under the MUDFA contract and deducting non-Infraco value engineering initiatives with value of £4.5m. The total budget for all infrastructure items at this stage was therefore £243.8m.

77) The fifth tab sets out a "P80" risk allocation report. What was this for (we note that all of the business cases referred to a P90 risk assessment)?

These are the QRA outputs totalling to a risk allowance as referred to in the answer to Q76 above. By March 09 the QRA was being incorporated into the cost estimates at a P80 level of confidence rather than P90 as previously.

78) Please explain briefly what is shown in the tabs on provisional sums, non-Infraco items and value engineering.

Provisional sums totalling £19.4m were included in the Infraco contract price

but subject to confirmation of requirements and instruction by tie. The significant elements were £6.3m for the costs associated with the final alignment and utility diversions at Picardy Place (not finalised at this point) and £5m in relation to UTC – essentially required traffic lights along the tram route. The value engineering tab details the value engineering initiatives taken into the Infraco price (with conditions) and mirrors the table included in Sch pt4. Commentary on non-Infraco items provided under Q78 above.

79) Were later versions of this spreadsheet produced?

Yes – this spreadsheet was conceived as the control budget at financial close and any future changes to any element of the anticipated final costs of £508m would only be approved through a rigorous change control process.

In an email dated 16 April 2008, Andy Conway asked Susan Clark the following question:

“The scope of the works related issues refer to the status of the design as of 25th November. Our concern is that if the design has changed, or at least developed, since then (and say a prior approval has been granted) then a change will need to be issued. Have TIE undertaken an exercise to determine the extent and cost of changes that will be required since the design freeze in November?”

You emailed Geoff Gilbert on 16 April 2008, asking him for “*competent answers*” to the questions, and asking “*Any idea why CEC are not aware of these things already – they have been sat amongst the design/engineering team for long enough*” (CEC01297236).)

80) Can you explain your comments?

Key CEC staff interfacing with the project, including those involved managing the interface between the development of the design by tie and SDS, had

been collocated with their counterparts at tie's offices with a view to keeping them better informed of developments and to help manage and facilitate the design and consents process. My email is an expression of disappointment that we had received an email (copied to me) indicating they were not as well informed as I thought they might be. I don't think that this email should be taken as an indication that the collocation arrangements were not delivering benefits because I recall that they very much did. The context here is that I often facilitated the contact between CEC officers and tie, including ensuring we dealt with their questions, as their continued support and commitment to the project as the approving and consenting authority was absolutely vital.

You signed the "Quality Control Process" form for Infracore schedule part 4 on 23 April 2008 (CEC01286695). (See DLA00006467 for the Quality Control process.) You declared you had reviewed it, but that there were significant issues to be addressed prior to signature which were summarised in attached emails.

81) What was the function of the quality control review that you carried out?

The objective of the quality control reviews was to have the constituent parts of the contract reviewed by persons independent of their development to supplement the review by DLA. The assumptions and exclusions in Sch pt4 were under constant review by the commercial/project team to assess their potential impact on outturn costs, how that impact was being managed on an item by item basis, and how that impact should be reflected in the overall cost estimates and risk allowance for the project. My review would have focussed on making sure I understood how the project team had assessed the potential impact on outturn costs if there were departures, what measures were in place to manage or mitigate against such changes taking place and that our overall cost and risk allowance took cognisance of the risk of changes.

One of the points to be addressed was for the Base Date Design Information to be inserted in appendix H. In the signed Infracore contract, appendix H of schedule part 4

(USB00000032) does not list information, but merely states "All of the drawings available to Infraco up to and including 25th November 2007".

- 82) Was any record kept which specified the drawings which formed part of the BDDI, by reference e.g. to drawing numbers? If so, where was it kept?
- 83) If such a record existed, why was it not listed in the appendix?

Re Q85 and Q86 I cannot recall how the drawings and other information which constituted BDDI was defined or agreed between tie and BSC. The definition of the drawings and other information which constituted BDDI was subsequently the subject of dispute and was dealt with extensively in the adjudication of 18 May 2010 by Mr Hunter regarding Tower Bridge (CEC00373726) and (CEC00325885),

The quality control form does not raise any concerns about the drafting of the pricing assumptions.

- 84) Did you have any concerns about pricing assumption number 1, and the way in which it was drafted?

From Jan 2008 to close of the Infraco contract I believed that the design development provision in the Weisbaden agreement was effective documentation of the intent that Infraco were fixing their price for the elements of the contract denoted as such based on the design information that they had received and making their own experienced contractor judgements as to how the design would progress through to completion. In taking this view I was informed by the judgements of our commercial team and other members of the project team that they believed it achieved this objective. I believed that all senior members of the project team thought it was effective and reflected the commercial intent, that the design which had been provided to and been subject to due diligence by the bidder was sufficient for the Infraco bidder to reach this position and that they would be diligent in managing the completion

of the design within those parameters.

85) Did your views on that change at any time, and if so, when and why?

I do not believe my own perspective on the drafting of price assumption number 1 changing until the full extent of the BDDI to IFC related disputes emerged much later and the re-examination of the wording as part of the legal and adjudication processes.

Andrew Fitchie of DLA (the firm engaged by TIE to draft the Infraco contract) appears at least initially not to have been involved in advising on or drafting the Wiesbaden agreement (**CEC00547730**, 18 December 2007).

At a much later stage in the project, Mr Fitchie said this to you about his involvement in schedule part 4 (December 2009, **CEC00605232**):

"In all this, it is very influential that Schedule Part 4 is based on the commercial arrangements that coalesced as the Wiesbaden Agreement (put together in order to construct a firm price at Preferred Bidder) and then emerged to be intentionally forced into the Contract and never really negotiated as an integrated part of it. This is what makes its fit with the normal contractual function of the ERs and Infraco Proposals very uncomfortable - the ERs which BSC were essentially refusing to recognise until SDS had stopped trying to disown them as having been developed by the Client in isolation from SDS design evolution. If it is not generally known in TIE management that DLA was not involved in any Infraco Contract negotiations from May 07 to mid-September 07 and had no role in either preparing or reviewing the Wiesbaden agreement and the production of Schedule Part 4, then I should perhaps make this clear in the right way."

86) What was the extent of DLA's involvement in relation to the Wiesbaden agreement and schedule part 4?

I can accept that DLA were not involved in the development of the Weisbaden agreement as it was a commercial agreement, predicated upon a number of technical / engineering and scope discussions between the commercial teams which at that point had not been developed into the part of the contract suite as Sch pt4. However I don't think it should be inferred that DLA were not before and after Weisbaden fully involved with tie's commercial team in the day to day development of the contract, including Sch pt4 and how it interacted with the rest of the contract. I think Andrew Fitchie clarifies that point to an extent in paragraph 6.

87) Assuming Mr Fitchie's account is accurate, why had DLA not been more involved?

If the legal representatives of both sides had been present at Weisbaden it may have made a difference in the wording of the design development provisions which ended up in in Sch pt4 but this is conjecture.

88) Do you have any other comment on Mr Fitchie's remarks?

See Q88 above.

In an email about payment for Andrew Fitchie's services (29 April 2008, CEC01336853), you said

*"What is evident is that this has turned out to be exponentially more difficult and time consuming and is closing a full 3 months plus later than was anticipated at the time you did the deal. **Our own procurement team, including the previous Project Director, and our administration of the documentation, are completely missing in action.**"*

89) Please explain the highlighted sentence. Which individuals did you describe as "missing in action" and why?

The context of this internal email is my frustration at having received an email from Andrew Fitchie regarding time he has spent on the procurement being very significantly in excess of what was contemplated at the time his secondment arrangement was concluded and requesting that DLA be recompensed. It was for the procurement team to manage Andrew's services in the delivery of the procurement. My comment underlined was reactionary and unnecessary. The procurement team worked tirelessly through many difficult months of contract negotiations and I don't think this should be taken as evidence that any of them were missing in action at all.

The meeting of Council on 1 May 2008 was provided with a report dated 23 April 2008 by CEC's Chief Executive (CEC00906940) which noted that: the cost of the project was now £508m (comprising a base cost of £476m and a revised QRA of £32m (cf. the figures in the FBC v2, being a base cost of £449m and QRA of £49m)), which increase was largely due to the firming up of provisional prices to fixed sums, currency fluctuations and the crystallisation of the risk transfer to the private sector as described in the Final Business Case; 95% of the combined Tramco and Infraco costs were fixed with the remainder being provisional sums which TIE had confirmed as adequate; and that

“As a result of the overlapping period of design and construction a new risk area has emerged which has been the subject of extensive and difficult negotiation. TIE Ltd advise that the outcome is the best deal that is currently available to themselves and the Council. Both TIE Ltd and the Council have worked and will continue to work diligently to examine and reduce this risk in practical terms” (para 3.10).

92) What were your views on the matters in the report to Council noted above?

The cost figures quoted are consistent with spreadsheet CEC01425552. The new risk is that related to design and consents and in particular the impact on Infraco construction programme from delays in obtaining consents and approvals outstanding at the date of Infraco contract award. A detailed

analysis of this risk and the way it was being managed with proper consultation with CEC is given in the close report at section 8.4 and more particularly in Appendix 1.

The report to CEC discussed the material change in the QRA, and referred to TIE having provided a written statement that they were satisfied £32m was an adequate level of risk allowance (e.g., 3.9 to 3.11).

93) Are the changes in the QRA described here as shown in more detail in your spreadsheet discussed above (*"Phase 1A – Budget at Financial Close"*: **CEC01425551, CEC01425552**)?

Yes I believe they are and are consistent with the Close Report. I have reviewed the statement in document CEC01244182 at page 500 regarding the adequacy of the risk allowance at financial close and confirm that it is consistent with my understanding at that time.

94) What was your understanding of the changes in the QRA?

Please see answers to Q76 and Q77 above which provides an answer to this question.

95) What precisely was the design risk being referred to in para 3.10?

See answer to Q92 above and reference to detailed explanation provided in Appendix 1 of the Close Report.

By e-mail dated 30 April 2008 (**CEC01274958**) Willie Gallagher noted that Richard Walker had advised that Bilfinger required an additional £12 million to conclude the deal, despite a deal having been negotiated and agreed by all parties on 14 April.

96) What was your understanding of why BSC sought a further £12 million to

conclude the deal?

The paper Financial Close Process and Record of Recent Events (CEC01338847) describes this request for an additional £12m (pages 3 and 4) and I can't add anything substantive to the matter other than what is described in that paper. I don't recall the £12m having any detailed substantiation at the time it was requested.

97) What problems did that cause?

In principle tie could not agree to a price increase of a general nature unless the benefits which tie/CEC were getting in return was clearly defined and could be regarded as good value for money. The paper CEC01338847 also describes the concern of compliance with procurement regulations.

98) What was your involvement in resolving that matter? Did TIE agree to pay the further sum sought and, if so, why?

I do not recall being directly involved in engagement with BSC in the resolution of this matter. tie did not agree to pay the sum of £12m. At a further meeting on 5 May tie agreed to pay sectional completion bonuses in aggregate £4.8m and an amount of £3.2m in the event that instruction was not given to proceed with Ph1b under the BSC contract by mid 2009. Offsetting this was a series of amendments to the contract terms with reduced or capped tie/CEC exposure in other areas. The 5 May meeting and the resolutions reached is the subject of Q99 to Q104 below.

On 13 May 2008 parties signed the Kingdom agreement (**WED00000023**), in which, *inter alia*:

- tie undertook to pay BBS an "*incentivisation bonus*" of £1.2m for the completion of each of sections A, B, C and D on programme (thus, a total of £4.8m);

- tie undertook to pay BBS £3.2m for work relating to phase 1b, if TIE unreasonably rejected BBS's estimate for that phase.

99) It would be helpful if you could explain your understanding of the need for, purpose and effect of that agreement?

The agreement reflects the outcome of further detailed negotiations, following the BSC request for an additional £12m, resulting in this agreement to deliver a mix of contractual improvements in return for the aggregate £4.8m incentivisation bonuses and the £3.2m Phase 1b payment. I'd highlight the following:

- BSC withdrawing remaining negotiating points in relation to the SDS novation and Design Management Plan for the period post award.
- Capping of the tie/CEC exposure for the extent of roads reconstruction required to £1.5m (the pre-existing risk allowance was £2m) and capping the tie/CEC cost for delays relating programme exposure for the extent of roads work as per pricing assumption 12 of Sch Pt4 to 8 weeks – assessed as £1.3m. This further mitigated general delay risk for which the pre-existing risk allowance was £6.6m.

Further details and commentary are provided in the paper Financial Close Process and Record of Recent Events (CEC01338847) at pages 4 to 6.

100) What was the rationale for TIE agreeing to pay £3.2m to BBS if phase 1B did not proceed?

The rationale was that BSC had or would incur costs in relation to the planning and preparation for Ph1b and that in the event Ph1b did not proceed then these costs, including the costs of demobilising resources and their supply chain assembled in expectation of delivering Ph1b would be abortive as they would not be recovered by them as part their price for Ph1b.

101) Was any of the incentivisation bonus in fact paid, to your knowledge?

I cannot recall if any of the incentivisation bonus was paid during my time at tie but I also do not recall any of the sectional completions being achieved so I would presume not.

102) We understand TIE did pay the phase 1b cancellation sum: is that correct?

Yes I believe we did. There was careful consideration of our legal position at the time when this payment became due in mid-2009 in the context of the widespread disputes with BSC which had emerged by that time. As I recall the outline conclusion was that being in default of making this payment would be likely to compromise tie's legal position in pursuing a resolution to the disputes.

On 13 May 2008 the Council's Policy and Strategy Committee considered a report by the Council's Chief Executive (**CEC01246115**).

The report advised that the estimated capital cost for phase 1a was now £512.2 million, plus the contingent sum of £3.2m. The report stated that:

"Offsetting the increase in cost is a range of negotiated improvements in favour of TIE and the Council in order to reduce the risk of programme delays and minimise exposure to additional cost pressures, as well as better contractual positions".

103) What are your views on the statement noted above?

The text reflects and is consistent with matters fully described Financial Close Process and Record of Recent Events (CEC01338847) at pages 3 to 6 and my answer to Q99 above is also relevant here (the Kingdom Agreement). Further details and commentary are provided in the paper Financial Close Process and Record of Recent Events (CEC01338847) at pages 4 to 6.

104) Do you agree with it? If so, what do you consider were the “improvements” and “better contractual positions” that reduced the risk of programme delays and minimised exposure to additional costs?

A number of outstanding commercial issues were eliminated by the agreement - I'd highlight the following:

- BSC withdrawing remaining negotiating points in relation to the SDS novation and Design Management Plan for the period post award.
- Capping of the tie/CEC exposure for the extent of roads reconstruction required to £1.5m (the pre-existing risk allowance was £2m)
- Capping the tie/CEC cost for delays relating to programme exposure for the extent of roads work as per pricing assumption 12 of Sch Pt4 to 8 weeks – assessed as £1.3m. This further mitigated general delay risk for which the pre-existing risk allowance was £6.6m.
- Agreement to Review and Design Management Plan which was at the core of the strategy to mitigate delay risks arising out of the post aware consents and approvals process – see appendix 1 to the Close Report (CEC01338853)

A paper by TIE entitled *Financial Close Process and Record of Recent Events* (CEC01338847, sent to CEC with the close report on 12 May 2008: CEC01338846) explained the background to the Kingdom agreement, and, from _4 to _6, the changes in the base cost and QRA (to £480.8m and £31.2m respectively, totalling £512m). The note states it had been concluded that “*there was no commercial alternative*” to the deal that was done (_7), although it was also noted that TIE would have been entitled to terminate BBS’s preferred bidder status. Tie’s negotiating position appears therefore to have been weak.

105) Do you agree?

I think that the result reflects that tie was effectively negotiating and ensuring there was value for money in all price increases given. This is reflected in the fact that from a starting point of BSC asking for an unsubstantiated £12m on

30 April 2008 to the price increase eventually agreed as £4.8m (payable on sectional completion only) in return the range of negotiating points eliminated and risk reductions/costs achieved. I think it's also a fact that in the last negotiations on a contract of this size where preferred bidder status has been given the principal is always in a weak negotiating position because the cost and time consequences of calling it off and going back to the reserve bidder are very, very significant indeed.

106) Could anything have been done to avoid that?

I think these situations are as much about the behaviours of the bidder and the extent to which they believe their reputation and future business will be impacted by that. I can offer that maybe the only way to completely avoid it would be to keep more than one bidder going up to contract close. I don't think that would have been practicable in this case and one or both bidders may have been unwilling to proceed on that basis without their own costs in the event of being unsuccessful being underwritten.

107) What was your view on BBS's negotiating tactics, and whether TIE should, in light of them, proceed to contract with them (see the section of the note entitled "*Alternative Approaches*" (from _7)?

It seems that BBS sought to turn the last three months of the contract close process into negotiation in the detail rather than a focus on the major issues. I can only offer conjecture on what were their primary motivations – they may have been seeking continuous increases in their price, altering the risk profile in the detail rather than principle and I have reflected that there may have been factors associated with their own supply chain and subcontractors and therefore their ability to deliver the work which was impacting on their ability to progress the work which meant closing later was an imperative to them. But this is conjecture.

tie did not contemplate at this time that the difficult contract negotiations would translate into BSC failure to mobilise and proceed with the work for an extended period and engage in extensive disputes over many elements of the contract before doing the work. Our own mobilisation of quality commercial and Infracore management teams gave us comfort that we would be able to manage a commercially active contractor in the period post close but not to deal with the extent of what followed.

Infracore contract close took place on 14 and 15 May 2008, as part of which a number of contracts were signed, including the Infracore contract (CEC00036952) and novation of the SDS contract to BSC.

By way of overview, what was your understanding of the following matters at contract close:

- 108) The extent to which detailed design was complete (and all necessary statutory approvals and consents had been obtained), the extent to which these matters were outstanding and when the detailed design was likely to be completed (and all approvals and consents obtained)?
- 109) The extent to which utilities diversions were complete, the extent to which these works were outstanding and when these works were likely to be completed?

Ref Q108 and Q109 I personally can't offer helpful metrics here (eg %s) of completion or if a simple % completion would be a reliable indicator of how the late running design and utility diversions was being managed in the context of the follow on Infracore programme. The strategy was to integrate the utilities and design (including consents and approvals) programme in such a way that the risk of impact on the Infracore programme would be mitigated and to manage that risk. It was a fact and explicitly understood by all including CEC that utilities diversions and design was not 100% complete at the time of Infracore award. This was reported in the Close Report (CEC01338853) on pages 6 and 30 and at Appendix 1.

- 110) The likely effect on the Infraco works and contract (and the cost of the tram project) if the outstanding design (and approvals and consents) and outstanding utilities diversion works were not completed within the anticipated timescale?

It was understood that there was a risk of both the design (and consents and approvals) and utilities programme impacting on the Infraco programme. For the utilities I conclude from reading TPB papers that they were at this point progressing reasonably well against the then current programme which I presume was the one integrated with the Infraco programme. The TPB presentation for 9 May 2008 (CEC01282186_0015) references a 2 week delay to critical path and the TPB papers of 9 April 2008 (CEC00114831_0020) refers to construction works generally being 3-4 weeks behind programme with work continuing on a recovery programme. The management of the design delivery and consents process is dealt with at Appendix 1 of the Close Report.

- 111) The provision made in the risk allowance for the above matters?

The answer to Q76 above is also relevant here.

Design and Consents risk allowances aggregate £3.3m and mostly relate to risks associated with the consequences of late delivery of design by SDS, failure of the consents and approvals to deliver approvals within the timescales required and agreed and failure to obtain timely consents from 3rd parties.

MUDFA related risk allowances aggregate £8.6m relating to the risks of quantities requiring to be diverted being greater than expected and failure of the design delivery and approval process with the statutory utilities.

The general programme delay allowances aggregate £6.6m – as a benchmark we estimated this would allow for 3 months slippage in the overall Infraco programme for reasons not attributable to the contractors.

The Close Report also states (page 27) that the risk allowances did not provide for wholesale failure of the Consents and Approvals management

process described at Appendix 1 to the report, meaning it required the continuing commitment of all the parties involved including tie, Infraco (including SDS) and CEC to the Design Management plan which formed part of the Infraco contract.

112) To what extent did TIE discuss the above matters with CEC?

As much as I can recall CEC officers were kept briefed on these issues at all times. I cannot bring to mind specific meetings I was personally involved in for that purposes other than through my attendance at TPB and relevant sub-committees.

The pricing provisions of the Infraco contract were set out in Schedule 4 (USB00000032).

113) What was your understanding of the extent to which the Construction Works Price of £238,607,664 was a fixed price?

In this the final contracted Infraco price it comprised £231.8m firm (fixed) price, less £12.6m value engineering items (of which £9.9m was also firm) but all of which were subject to conditions specified as their achievability, plus provisional sums aggregating £19.4m which were subject to further definition to confirm the cost estimate and instruction by tie to proceed with these provisional sum items.

114) What did you understand to be the main exclusions, provisional sums, assumptions and conditions?

As above the provisional sums totalled £19.4m and the value engineering items taken into the contract sum in aggregate £12.6m were subject to conditions on an item by item basis.

I understood the main exclusions assumptions and conditions to be:

Exclusions at 3.3 –

- Utility diversions other than the provisional sum for Picardy place. This was understood. Specific allowances in Infraco Delivery category of the QRA for unidentified utilities which may need to be dealt with Infraco.
- Unforeseeable ground conditions – specific provisions in the Infraco Delivery risk allowance category.
- 'Public Realm' works meaning non-tram related work which CEC may wish to procure as part of the tram project. This was understood and they are listed at section 8.3 of the close report (CEC01338853)

Pricing Assumptions at 3.4 –

- Design as per BDDI subject to Normal Design Development (no1) – my understanding at that time of this assumption had not changed since early 2008 following Weisbaden. Please see my answers to Q1 to Q4 and Q86 above.
- SDS design delivery (no 2-5) subject to the SDS programme in the novated SDS agreement – I understood these primarily related to the design and consents and approvals risk as provided for in the risk allowance and totalling £3.3m
- Ground conditions and extent of road reconstruction (no 11-18) – specific provision for identified areas made under the Infraco Delivery category of the QRA risk allowance. Additional £2m provision made in the risk allowance for the extent of road reconstruction – in respect of pricing assumption 12 this was capped at £1.5m as part of the Kingdom Agreement (CEC00825619)
- Utilities programme (no 24) - this was being managed by integration of the MUDFA and Infraco programmes on a section by section basis to mitigate/eliminate and risk to the Infraco programme. General risk allowance for delay to Infraco was £6.6m in addition to the specific risk allowances under the MUDFA category – in aggregate £8.6m.
- Utility diversions other than the provisional sum for Picardy place. This was understood - Specific allowances in Infraco Delivery category of the QRA for unidentified utilities which may need to be dealt with Infraco.

115) In what circumstances did you consider that the price was likely to change?

I expected there would be changes but that the project team had assessed the risk allowances as sufficient assuming the contract was robust, that they had the right resources and management plans in place to evaluate and mitigate changes and that the Infraco would play their part too in mitigating the cost of change. In the event that did not happen – we were presented with a very large number of changes by Infraco, in a great many cases lacking supporting documentation or analysis to evaluate, and eventually challenged some of the cornerstones of the contract terms. Meantime they did not mobilise and in general would not start work until the changes in relation to that work had been agreed on their terms.

In relation to the Value Engineering deductions shown in Appendix A of Schedule 4 of the Infraco contract (**USB00000032**):

116) What was your understanding of what would happen if the VE savings were not achieved?

If the conditions relating to a value engineering item were not met then the price would be adjusted to add the value of that item in Appendices C and D of Sch pt4.

117) What were your views as to whether the VE savings were likely to be achieved?

The VE items and their value had been agreed as between our commercial team and BSC. Our own project team reviewed the list and the conditions attached to each item and made aggregate provision of £4m for those items they believed would not be achievable. My understanding was that this was a prudent allowance.

118) In the event, were these Value Engineering savings achieved (and, if not, why not)?

I cannot recall the final outcome of the extent to which the value engineering savings were achieved or the specific reason for individual items not being achieved.

Schedule 4 of the Infraco contract (**USB00000032**) contained a number of Pricing Assumptions.

At the time of Infraco contract close:

119) What did you consider were the main Pricing Assumptions that were likely to result in Notified Departures and why?

120) To what extent did you consider Notified Departures were likely to arise?

121) What did you consider to be the likely total cost of the Notified Departures?

122) To what extent were the above matters discussed with CEC?

For Q119 to Q122 the answers I've provided to Q113 to Q117 above are the best I can offer.

Pricing Assumption 3.4 of Schedule 4 (**USB00000032**) dealt with design development.

123) What was your understanding of the meaning of that Pricing Assumption, including which party bore the cost and time risks of development of, or change in, the design from the base date of 25 November 2007?

My own understanding at that time of this assumption had not changed since early 2008 following Weisbaden. Please see my answers to Q1 to Q4 and Q86 above.

Schedule 4 defined the "Base Date Design Information" as *"the design information*

drawings issued to Infraco up to and including 25th November 2007 listed in Appendix H to this Schedule Part 4”.

Appendix H of Schedule 4, however, did not list any drawings and, instead, simply stated that the BDDI was *“All of the Drawings available to Infraco up to and including 25th November 2007”.*

124) Are you aware why Appendix H of Schedule 4 did not list the drawings comprising the BDDI?

125) Did that cause any problems at a later stage (and, if so, what problems arose and how were they resolved)?

Re Q124 and Q125 I cannot recall how the drawings and other information which constituted BDDI was defined or agreed between tie and BSC. I also can't recall if the very definition of what BDDI was became an issue in the subsequent disputes. The definition of the drawings and other information which constituted BDDI was subsequently the subject of dispute and was dealt with extensively in the adjudication of 18 May 2010 by Mr Hunter regarding Tower Bridge (**CEC00373726**) and (**CEC00325885**),

At Infraco contract close the SDS contract was novated from TIE to BSC.

126) What was your understanding in relation to who would be responsible for managing the design process after novation and for ensuring that all outstanding design was completed (and all outstanding statutory approvals and consents were obtained) on time?

From contract award responsibility for the design continued to rest with SDS as subcontractor to the Infraco. BSC took design quality risk but the risks associated with delayed Consents and Approvals remained with tie /CEC. As I understand it tie and CEC were still very much still involved in the process which was defined in the Review Process and Design Management Plan which formed part of the Infraco contract suite.

127) What responsibility and powers, if any, did TIE retain after novation in relation to managing those matters?

As I understood it tie/CEC still had visibility over the process as allowed for in the Review Process and Design Management Plan. These management processes are more fully described in Appendix 1 to the Close Report.

128) Do you consider that any problems arose from the fact that (i) changes to, and completion of, design was primarily under the control of BSC (as a result of novation of the SDS contract to BSC) but (ii) changes to design, or delay in completing design, could give rise to a departure from one of the Pricing Assumptions in Schedule 4 of the Infraco contract and, therefore, give rise to a Notified Departure (leading to a potential increase in the cost of the project)? Was any consideration given by TIE to that potential difficulty prior to SDS Novation?

I was not directly involved in the management of the design process and therefore I am unable to give a substantive answer as to whether this gave rise to design changes which were effectively outside the control of tie because design responsibility had passed to Infraco from contract award.

We understand that a mobilisation payment of £45.2 million was made by TIE to BSC.

129) It would be helpful if you could explain when the payment was made and the purpose of the payment?

The payments were made at award of the Infraco contract. As CEC00111694 reflects the £45.2m only related to Bilfinger Berger and Siemens – there was a separate element of the payments made for the tram vehicle supplier CAF. The principle of significant advance payments was established in negotiations at preferred bidder stage (I was absent from tie during the preferred bidder negotiations) and a significant reduction in pricing was achieved at that stage

to reflect that Infraco would not have to finance the significant initial costs/commitments required to meet the Infraco programme in advance of Infraco being paid by tie for those costs. There would otherwise have been a finance cost embedded in the Infraco pricing to reflect payments by them to their supply chain significantly in advance of payments from tie.

The nature of the initial costs included costs associated with mobilisation (including establishing work-sites and bringing plant, equipment and personnel to site) and very significant pre-ordering of material and equipment – eg rails and all the equipment required by Siemens for their part of the work much of which had to be ordered well in advance of requiring it for installation in the work. The schedule CEC00111700 is an analysis of these costs for BB and S aggregating £36.2m.

A paper was prepared by our commercial team to demonstrate that making the advance payments was value for money in terms of the price reductions received and de-risking the Infraco programme. Document CEC00111701 is a version of that paper updated on 20 Feb 08 and it was used to brief Transport Scotland and CEC well in advance of Contract award and to secure their agreement. The paper describes the protections TS/CEC had in the event the contract were subsequently cancelled or curtailed for any reason including recourse to the bonds provided by the contractors and the parent company guarantees. The later paper from DLA (CEC00111698) also lays out the recourse to Infraco in the event the advance payment was not reflected in the actual work done by the contractor at the time of such cancellation ie the payment in advance was not to be confused with the contractors entitlement at any point in time to payment for the value of work actually done on the ground. I think by mid-2010 we were concerned that BSC may dispute this as they had done with very many elements of the contract by then.

Because the value of work done by the Infraco was significantly behind the original contractual programme by the time of these emails in 2010, the value of work done on the ground was still significantly less than the payments

made for the items included in the initial milestones of £45.2m for Bilfinger and Siemens.

- 130) Are you aware of how the payment was accounted for in the final settlement between TIE/CEC and BSC?

I am sorry but I do not know as I left my employment with tie before the final settlement with BSC was reached.

(See, e.g. your email dated 11 October 2010 **CEC00111694** and its attachments, which may assist: **CEC00111695**, **CEC00111696**, **CEC00111697**, **CEC00111698**, **CEC00111699**, **CEC00111700**, **CEC001116701**, **CEC00111702**.)

By e-mail dated 12 May 2008, a final set of internal approval documents was circulated among TIE and CEC officers (CEC01338846). The e-mail attached the following documents, namely:

The Final Close Process and Record of Recent Events dated 12 May 2008 (clean copy, (CEC01338847), and tracked changes version, (CEC01338848);

Report on Terms of Financial Close (the Close Report) (clean copy, (CEC01338853), and tracked changes version, (CEC01338854);

Report on Infracore Contract Suite (clean version, (CEC01338851), and tracked changes version, (CEC01338852); and

Assessment of Risk of Successful Procurement Challenge (clean copy, (CEC01338849), and tracked changes version, (CEC01338850).

The Close Report concluded that the various project contract suites were acceptable for commitment (section 10, _31).

- 131) Are these the final versions of these documents?

As far as I am aware yes.

132) What was their purpose?

The purpose of the Close Report and Report on Infraco Contract Suite was to provide a comprehensive view of the principal Infraco contract terms, financial impact and describe residual risks and uncertainties and the agreed processes by which those risks were being managed. There was a parallel report from DLA.

Final Close Process and Record of Recent Events describes the circumstances behind the further increase in the contract price of £4.8m for Phase1a (not reflected in the Close Report) as a result of the Kingdom Agreement – see answers to Q99 to Q106 above.

The Close Report noted that the Infraco price had been negotiated up to £233.5m. After taking account of other items, the total infrastructure budget was £243.8m, an increase of £17.8m from the base cost reported in the Final Business Case (_4). The increase was said to be the result of “substantially achieving the level of risk transfer to the private sector anticipated by the procurement strategy” (_4). The risk allowance had reduced to £32.3m from the £49m reported in the FBC, due to the crystallisation of certain risks into contract costs and an “increase (of £9.9m) in the phase 1a risk estimate deemed necessary as a consequence of previous increases and taking cognisance of updated QRA” (_5). Following further negotiations instigated by BB, the project 1a budget had been settled at £512m (_5).

133) Can you explain how the risk allowance was broken down?

The table below summarises the components of the risk allowance in the Close Report (ref CEC01425552, tab P80 Risk Alloc for risk by risk breakdown) versus that at the time of the FBC.

£m	FBC	Close Rep	Changes
Infraco (inc Tramco) procurement stage risks	17.6	0.0	-17.6
Infraco (inc Tramco) delivery stage risks	4.0	6.8	2.8
Design & consents	4.3	3.3	-1.0
MUDFA	11.4	8.6	-2.8
Programme Delay	3.3	6.7	3.4
Land compensation	4.2	1.1	-3.1
TROs	3.2	1.0	-2.2
Network Rail	0.6	0.3	-0.3
Other	0.4	0.1	-0.3
Sub-total of QRA	49.0	27.9	-21.1
Provision against non-delivery of VE	0	2.0	2.0
Provision for extent of road reinstatement	0	2.0	2.0
Contingency	0	0.4	0.4
Total Risk Allowance	49.0	32.3	-16.7

134) Why had the risk allowance reduced from the FBC v2 (in your answer, please also explain the increase of £9.9m, and the reductions which more than cancelled it out)?

The risk allowance in the FBC reflected provisions totalling £17.6m for the uncertainties associated with achieving a fixed price from the Infraco (including Tramco). These risks were effectively closed off at contract close. The other increases and decreases are summarised in the table above.

- 135) What were the other items in the infrastructure budget shown in the table at 2.1 (£5m and £5.3m)?

The £5m included other items which were not included in the Infraco contract price but which were anticipated to be delivered by Infraco including the cost of mobilising the maintenance phase of the Infraco (£2.6m) and provision of spare parts (£1.0m). Also included was an allowance for work at Edinburgh Airport (£1m), the cost of providing power for the commissioning phase (£1m), and provision against non-delivery of value engineering of £2m (in addition to the £2m included in the risk allowance). Netted off these items was an amount of £3m representing provisional sums included in the Infraco price which would be funded by 3rd parties including RBS and Forth Ports.

The £5.3m was infrastructure items not delivered by Infraco – most significantly the cost of excavating the depot site which was carried out under the MUDFA contract.

- 136) How do the sums quoted in that table reconcile with the sums stated in schedule part 4 of Infraco ((USB00000032) clause 2.5, "Contract Price")?

The difference is the further £4.8m sectional completion incentivisation payments (the Kingdom Agreement) as described separately in the paper The Final Close Process and Record of Recent Events.

The table at 2.1 in the Close Report also notes an increase of £6.6m in the Tramco price from that quoted in the Final Business Case.

- 137) Please explain that increase?

The Tramco budget increased by £6.6m compared to FBC due to the inclusion of maintenance mobilisation, spare parts and depot equipment. Also contributing was currency exchange differences (the bid was in Euros and

there was a 7% strengthening of the Euro between preferred bidder stage and when we had permission to ask CAF to fix the rate in late December following FBC approval).

We understand that you drafted the section on risk (chapter 8, _24).

- 138) Please confirm whether you drafted this chapter and, if so, the extent to which others assisted you?

I did draft this section and received input from other members of the project team on most of it and my drafting was subject to review, clarification and endorsement by several others (as was the Close Report drafting in general). The approach with the Close Report was to have individual elements of it drafted by persons not directly involved in the day to day management of the subject workstreams.

That chapter “reviews the current status of the risks relating to the Infraco and Tramco contracts which have been identified as wholly or partly retained by the public sector beyond Financial Close”, and lists those risks (_24).

- 139) Do you consider in hindsight that this was an accurate statement of the risks retained by the public sector?

The statement was made at the time in good faith predicated on the Infraco contract (including Sch pt4) being robust in achieving the intended risk transfers to Infraco. Specific price exclusions are listed, the risk associated with value engineering items is recognised and the project team's provision against non-achievement quantified. The normal design development wording from Sch pt4 is directly quoted and I believed that it was effective in passing design development risk to the Infraco and I believe the rest of the tie management believed that too. Significant changes in scope were not allowed for as a risk allowance. The project estimate did not allow for a wholesale

failure of the management processes over consents and approvals giving rise to additional costs over and above what had been allowed for in the risk allowance.

Section 8.2 is headed up "Price certainty achieved". It notes that the Infraco price was made up of £227m of firm costs, less £12.9m for value engineering initiatives (which were subject to conditions) plus £19.4m for provisional items, giving a total of £233.5m. To address the possibility of the conditions attached to the value engineering initiatives not being fulfilled, £2m was added to the base cost estimate and £2m was added to the risk allowance.

- 140) Can you explain what elements of the price remained provisional, and why.

The value engineering items remained provisional to the extent the conditions attaching to the individual items were not met. The provisional sums were, on an item by item basis, the best estimate pending further clarification of the requirement.

- 141) The pricing treatment of value engineering initiatives seems convoluted. Why was it handled in that way?

I take this question as meaning was it appropriate for the value engineering items to be shown as a deduction in arriving at the Infraco price? I believe it was as Infraco would be responsible for design activities post close (with SDS novated) so it was appropriate that the price reflected these value engineering items at a value which had been assessed and agreed by Infraco. As I recall tie's own estimate for these items was higher in aggregate than the price in the Infraco contract so Infraco would benefit in the event the actual outturn difference in cost was higher than that taken into the Infraco price – so gave them an incentive.

- 142) Do you consider in hindsight that the pricing treatment of value engineering and provisional items was appropriate?

Yes.

At 8.3, the Close Report notes that: "The Infraco price is based upon the Employers Requirements ... Crucially the price includes for normal design development (through to the completion of the consents and approvals process – see below) meaning the evolution of design to construction stage and excluding changes if (sic.) design principle shape form and outline specification as per the Employers Requirements." At 8.4, in relation to consents and approvals, it notes that "tie/CEC will bear ... the cost and programme consequences of changes to design principle shape form and outline specification (as per the Employers Requirements) required to obtain the consent or approval." 8.4 also notes that: "The Risk Allowance does not provide for the cost or programme consequences associated with a wholesale failure of this process".

- 143) What was your understanding of the extent to which the risk of design development was borne by tie, on the one hand, and BBS, on the other?

My understanding was that the design development provisions would mean that to the extent the price was firm it would not increase except in respect of significant changes in the extent of the work as the design progressed to completion. My understanding was that this was understood by our commercial team and by the BBS commercial team and represented the intent of the provision. I accepted that if there were significant changes to the design (to the extent not allowed for in our costs estimates – eg the extent of road reinstatement required) then these would have to be analysed in terms of how and why the change had arisen, who had instructed them or caused them, the price of the change agreed and in cases where responsibility was found to be tie/CEC the cost and time consequences would be borne by

tie/CEC.

- 144) Why do these passages refer to the Employer's Requirements, when there is no such reference in schedule part 4 of Infraco (or in the Wiesbaden agreement)?

I think there must be a missing "and" between "specification" and "as" in the first paragraph under 8.3. The scope of the Infraco works and the price was also defined by the Employers Requirements and the Infraco Proposals (see clause 3.1 of Sch pt4. The process to evaluate the alignment of the design, Employers Requirements and Infraco Proposals is described in the Close Report at section 2.3.

- 145) What did you understand "wholesale failure" to mean in this context?

I understood wholesale failure to mean that one or more of the parties involved the consents and approvals processes (per Appendix 1 of the Close Report) consistently failed for whatever reason to follow their part of the process and within the timescales required and as per the Design Management Plan which formed part of the contract suite.

- 146) To what extent had TIE assessed, and quantified, the cost and time risks retained by TIE in relation to completion of the design from its state at the Base Date referred to in pricing assumption 1?

The risk transfer in respect of normal design development was regarded as resting with the Infraco contractor and had been allowed for in their price. There was no risk allowance for changes in the design outwith normal design development as these would be increases in scope which would require to be assessed in accordance with the project's change control procedure and if approved would increase the overall cost estimate for the project. The tie risks associated with consents and approvals were assessed (see Appendix 1 of

the Close Report) and in the context of how these would be managed allowance was made in the risk allowance.

At 8.6, the QRA and risk allowance are discussed. It is said that TIE had “exercised prudence in ensuring the Risk Register, QRA and therefore Risk allowance provide adequately for risks retained for the public sector including the major areas or risk assessed above”.

147) Given that, why did the risk allowance prove to be inadequate?

The risk allowance proved to be inadequate largely as a result of the commercial disputes which arose after close of the Infraco contract. I would find it impossible even with hindsight to provide a reliable view of what the outturn costs of the project would have been (and therefore the adequacy of the risk allowance) in the absence of these widespread disputes.

148) In hindsight, do you consider there were any flaws in tie's risk assessment process?

I am not aware of any material flaws in ties risk assessment process – It was adapted to meet the needs of the different stages of the projects development and for the particular demands of the different workstreams eg design (including consents and approvals), utilities diversions, Infraco procurement and Infraco construction management. I don't recall independent examination of tie's risk management processes and reporting, including the OGC gateway review in October 2007, giving anything other than an endorsement of the process.

8.6 notes that “The only material change in the Risk Allocation Matrices between Preferred Bidder stage and the position at Financial Close is in respect of the construction programme costs associated with any delay by SDS in delivery of remaining design submissions into the consents and

approvals process beyond Financial Close.” (In the Report on Infraco Contract Suite (CEC01338851), it is said that: “In broad terms, the principal pillars of the ETN contract suite in terms of scope and risk transfer have not changed materially since the approval of the Final Business Case in October 2007 ... where risk allocation has altered this has been adequately reflected in suitable commercial compromises” (CEC01338851_1).

- 149) What was your understanding of the extent to which the risk allocation had changed since the preferred bidder stage?

I believed that the principal area where the risk allocation had changed was in responsibility for the timing of consents and approvals insofar as late consents and approvals may impact upon the Infraco programme. The pricing assumptions and exclusions in Sch pt4 of the contract were assessed by the project team and where necessary allowance was made in the cost estimates or risk allowances.

- 150) What was your understanding based on?

My understanding was based upon engagement with the project teams, including those managing procurement and design management as well as our procurement lawyers DLA.

8.6 also notes that the reduction in the risk allowance (from £49m in the Final Business Case to £32m in the Close Report) primarily reflected the closure of procurement stage risks “including all the risks associated with achieving price certainty and risk transfer to the private sector as has been effectively achieved in the Infraco contract”.

- 151) Can you explain this?

The reduction was due to closure of procurement stage risk allowances

totalling £17.6m having achieved a contract price which was substantially fixed for the scope as defined in the design (subject to the normal design development provisions), the Employers Requirements, the Infraco Proposals and for an Infraco programme which had been aligned with the utilities diversions and design (including consents and approvals) programmes.

- 152) In hindsight, do you think the reduction accurately reflected the risks being borne by tie?

The changes in the risk allowance between FBC and the Close Report are summarised at Q133 above. I believe the closure of the procurement stage risks was appropriate in the circumstances and that the project teams had reviewed and adjusted remaining elements of the risk allowance. At the time there was no anticipation of the disputes which would emerge after Infraco close and we anticipated working with a contractor which would mobilise and progress the delivery of the Infraco scope in accordance with the programme.

8.6 provides a breakdown of the £32m risk allowance for public sector risks, which TIE had "assessed ... as providing adequately for the residual risk retained by the public sector arising from the Infraco and Tramco works".

- 153) Please explain each of these categories.

Spreadsheet CEC01425552, tab P80 Risk Alloc provided a risk by risk breakdown and these are subtotals of the categories of risk.

-£8.8m in respect of construction stage risks for Infraco includes £6.8m included in the QRA plus a further £2m provision for the extent of road reinstatement which would be required. The QRA total of £6.8m includes provision for the extent of work required off the main tram route to accommodate the tram, uncovering unexpected utilities during Infraco construction and unforeseen ground conditions.

-£2m provision for not meeting the conditions on value engineering items taken into the Infraco contract price which together with the £2m provision in the Infraco line of the budget made a total of £4m provision against the total of £12.9m value engineering items as assessed by the project team.

-£3.3m for delays resulting from the post award consents and approvals process but not providing for a widespread failure to manage that process in accordance with the management processes laid out in Appendix 1 to the Close Report.

-£6.6m general delay provisions – assessed as being adequate to allow for a 3 month delay to the overall Infraco programme found to be due to factors which were found not be the responsibility of or arising from failures of the Infraco.

- 154) c. £12m of the allowance is not accounted for here. What was it made up of?

The table at Q133 above summarises the components of the risk allowance in the Close Report (ref CEC01425552, tab P80 Risk Alloc for risk by risk breakdown). In the table at Q133 I've highlighted the risk categories which are included in the breakdown at 8.6 of the close report and the remaining categories are those which were not. The most significant element of the balance was risks in the MUDFA utilities diversion category totalling £8.6m, including allowance for as yet unidentified utilities which would require to be moved, arising from the design process for utility diversions and the interface with statutory utility companies.

- 155) Do you consider in hindsight that the provision in the risk allowance for these risks was adequate?

- 156) If not, what was the reason for that?

Re Q155 and Q156, the risk allowance proved not to be adequate largely as a result of the commercial disputes which arose after close of the Infraco

contract. I would find it impossible even with hindsight to provide a reliable view of what the outturn costs of the project would have been and therefore the adequacy of the risk allowance in the absence of these widespread disputes.

8.6 notes that the risk allowance did not provide for “significant changes in scope from that defined in the Employers Requirements” or “significant delays to the programme as a result of the consenting or approving authorities failing to adhere to the agreed programme”.

157) Why were these risks excluded from the risk allowance?

On scope the cost estimates for the project were based on the design, Employers Requirements and Infraco Proposals. Any changes to that scope would need to be assessed and justified through the projects change control process and would give rise to an increase in the overall cost estimate for the project rather than be provided for in the risk allowance which was for the given scope.

On consents and approvals the risk allowance was predicated on the post contract management process at Appendix 1 being effective and the risk allowance reflected the project team's consideration of the likely impact of the risk with these mitigating processes in place.

158) What did you understand was meant by “significant” changes in scope and “significant” delays to the programme?

Scope changes would include additional work required under the Infraco contract which was not reflected in the design, Employers Requirements or Infraco proposals arising from a tie/CEC/3rd party requirement and which would need to be assessed and justified through the project's change control process and if approved would give rise to an increase in the overall cost estimate for the project. Minor changes could perhaps be accommodated in

the overall cost estimate but not significant ones.

The general risk allowance for delay provided for what was assessed to be 3 months of slippage to the overall Infraco programme found to be due to factors which were found not to be the responsibility of or arising from failures of the Infraco and under the Design and Consents category totalling £3.3m for minor delays arising from delayed consents and approvals but not for a wholesale failure of the agreed management process for post Infraco award consents and approvals as per the Close Report Appendix 1.

- 159) Why was the reference point for scope changes the Employer's Requirements, rather than the base date design information, having regard to the terms of pricing assumption 1 in schedule part 4 of the Infraco contract?

The scope of the Infraco works and their price was also defined by the Employers Requirements and the Infraco Proposals (see clause 3.1 of Sch pt4). The process to evaluate the alignment of the design, Employers Requirements and Infraco Proposals is described in the Close Report at section 2.3.

9.4 discusses the MUDFA interface with the Infraco programme. It noted that the MUDFA programme was a constraint on a number of Infraco construction items, and that there would be some overlapping of work sections. Regular reviews of MUDFA progress were to be carried out to ensure no conflict with the Infraco works.

- 160) What provision was made in the risk allowance for: (a) increased costs of MUDFA works, (b) delays and cost increases of the Infraco works as a consequence of delays in completion of the MUDFA works?

The specific MUDFA related risk allowances aggregated totalled £8.6m to provide for additional quantities or different nature of utilities still to be diverted at Infraco contract close and delays to MUDFA works. (ref CEC01425552, tab

P80 Risk Alloc for risk by risk breakdown). The general risk allowance for delay £6.6m provided for what was assessed to be 3 months of slippage to the overall Infraco programme found to be due to factors which were found not to be the responsibility of or arising from failures of the Infraco including the risk of delays arising from late completion of utility diversions .

- 161) What was your understanding of these risks, and the manner in which TIE was managing them?

The potential for MUDFA delays (and the potential for consequential delays to Infraco was being managed on a section by section basis along the route and management focus and actions to prioritise utility diversions was in these specific areas with an expectation of avoiding overlap with the Infraco programme in those sections.

- 162) Do you consider in hindsight that the provision in the risk allowance for these risks was adequate?
- 163) If not, what was the reason for that?

The delay to the Infraco arising from late running utility diversions was eventually determined at adjudication by Mr Howie QC who awarded Infraco 154 days extension of time – considerably in excess of the 3 months risk allowance for general delay at contract close. Similarly the final account for utility diversions was in excess of the allowances made at contract close. In both cases I believe that the principal reasons were that the extent and complexity of utility diversions continued to be greater than was anticipated by tie's project team at the time of close of the Infraco contract. I was not directly involved in the planning or execution of the utility diversions programme and am therefore not best placed to provide more detail in my answer.

There is a discussion in Appendix 1 of tie's management of the design delivery and consent risk. It is noted that the problem of overlap between the

design and construction periods had not been anticipated when the SDS contract was awarded in 2005. The expectation, it is noted, was for the majority of design and all approvals to have been complete prior to financial close. SDS had resisted accepting liability to Infraco for the timeliness of approval submissions.

- 164) What is your understanding of the reasons why SDS were able to resist accepting that liability?

The SDS contract concluded had provided for novation but was also concluded in the context of expecting that all design and consents would be complete by the time of contract award. As I recall the contract did not provide for novation with incomplete design.

- 165) If they were able so to resist, was that a flaw in the SDS contract?

I am not able to state knowledgeably what the impact on SDS price would have been or even if they would entered into the SDS contract knowing they would be faced with considerable potential liabilities to the Infraco for delays resulting for their performance in completing the design after novation.

- 166) Put another way, why did TIE not seek any contractual remedy against SDS for failure to produce a completed design prior to the award of Infraco (especially given the comment, at __34, that "(the performance of SDS has been consistently disappointing on a number of levels)")?

I had little or no involvement myself in the management of the SDS contract or tie's efforts, at several junctures, to improve their performance through insisting on additional resourcing levels and incentivising them to deliver better performance. I can draw the conclusion that in the lead up to close of the Infraco contract the imperative was to have the SDS contract novated and for Infraco to take responsibility for managing the completion of the design. Seeking contractual remedy against SDS would be subject to uncertainty of

success, would not improve their performance and was not conducive to achieving novation.

- 167) What did you understand to be the full extent of the risk being carried by tie, arising from the overlap of the design and construction periods?

Please see Appendix 1 to the Close Report which I have read again and I can't offer a better analysis of the risks than presented in that document.

At _33, it is noted that : "It is not anticipated that the final Outstanding Packages will be delivered until Autumn 2008. The option of delaying Financial Close to eliminate the risk is therefore unattractive."

- 168) What consideration was given to delaying financial close?

See Q69 below.

- 169) Why was it considered unattractive?

From a financial perspective, a delay to financial close was assessed on the basis of the likely costs arising from additional pricing from Infracore to reflect the delay – as a benchmark I believe we were using c£3m per month but this was subject to negotiation with Infracore and might have been considerably more if it had an impact on the integrity of the supply chain arrangements they had secured to deliver the project – or they may lose those supply chain arrangements and be unable to proceed at all. These were balanced against the risk assessed by the project team as associated with both potential overlap with the MUDFA works and the risks associated with outstanding consents and approvals and the way both these risks were being managed.

Over the period prior to financial close, the Tram Project Board papers and minutes included various reports of delays or difficulties associated with the MUDFA works and designs, e.g.:

The MUDFA works were reported as being on programme and on budget at

the January TPB (CEC01246826_5 at 4.1).

TPB minutes, 13 March 2008: MUDFA slippage (CEC00114831_5 at 15.2). See also the Monthly Report (CEC01246825_10): SDS submissions to CEC for approvals were "now timed such that, in some cases, construction is programmed to commence before approval has been completed" (_12); MUDFA 3 weeks behind programme due to increasing workload being identified during works; MUDFA IFC drawings were yet to be approved by CEC, and design delay on those drawings was emerging as an issue (_17); delivery of design to meet construction programme was causing concern (_20)

TPB minutes for 9 April 2008 (CEC00079902_5): there had been a 5-week slippage in the MUDFA programme, the issues causing delay including greater than expected services congestion and utility companies' issues in locating their own assets. See also the Monthly Report (CEC00114831_10), which referred to design change at Picardy Place (_11), impact on MUDFA programme from utility congestion (_12) and a lack of IFC drawings (_16).

Project Director's report for the TPB on 7 May 2008 (CEC00079902_11): approvals were behind v31 of the design programme; MUDFA delays had caused a two-week impact on the critical path; the risk allowance remained at £32.3m.

- 170) To what extent were these problems becoming worse in the run up to financial close in May 2008?

My understanding at this particular time was the performance and progress under MUDFA had improved significantly and, with the focus on the particular sections which were at risk of overlapping with the Infracore programme, our project team were at that point confident that the position could be managed and therefore slippages rectified to mitigate clash with the Infracore works. I do not think that general statements about a number of weeks behind programme were as relevant as specific analysis of the areas where the greatest risk of overlap with Infracore existed and how these were been

remedied.

- 171) What was your view at this time of whether the MUDFA works were likely to be completed in accordance with the MUDFA programme then in place?

As I understood it at that time the overall programme was still achievable with the correct prioritisation and management processes in place.

- 172) To what extent were these matters discussed (a) within tie; (b) with CEC?

I don't recall being party to specific discussion on the MUDFA programme with CEC but there were forums for the project team to engage with a brief CEC as with other elements of the project.

- 173) To what extent was provision made for these problems in the risk allowance? (We note that the overall risk allowance reduced over this period, from £49m in February 2008 to £30m at financial close).

At financial close the risk allowance of £30m included for £6.8m related to unfinished MUDFA activities and a £6.8m provision for general delay to the Infracore programme. These allowances were assessed by the project team as sufficient for the remaining risks.

- 174) Did you have any concern, at any time, about the sufficiency of the risk allowance in respect of these matters?

I was always concerned about the extent to which additional utilities were being identified or the nature of the utilities being identified was different to what was expected. These risks appeared to me to be not wholly within our control ie there was no very effective management process to mitigate this risk. By the end of the utilities diversions the extent of utilities was very significantly more than had been allowed for in the original project estimates.

The risk allowance of £6.8m for MUDFA at financial close included £4.2m in respect of the risk of variation in quantities and consequential delays to MUDFA costs.

- 175) To what extent was there discussion or concern at the TPB about the sufficiency of the risk allowance?

As I recall the status and adequacy of the risk allowance for MUDFA works was regularly reported at TPB and the MUDFA sub-committee but I cannot recall specific conversations.

- 176) Was any thought given to pushing out the Infraco programme to accommodate MUDFA delays (either those known by this point, or later ones which the problems might give rise to)?

See answer to Q169 above.

The TIE Report on the Infraco Contract Suite (CEC01338851) described the Infraco price as follows (4):

"A substantial portion of the Contract Price is agreed on a lump sum fixed price basis. There are certain work elements that cannot be definitively concluded in price and therefore Provisional Sums are included. A number of core pricing and programming assumptions have been agreed as the basis for the Contract Price. If these do not hold, Infraco is entitled to a price and programme variation known as "Notified Departure."

- 177) What was your understanding at the time of the extent to which the Infraco price was fixed?

Please see my answers to Q113, Q115 and Q140 above which explain my understanding of the extent to which the Infraco price was fixed or otherwise subject to change.

A paper linked to the close report of 12 May 2008, entitled “Edinburgh Tram Project Assessment of Risk of Successful Procurement Challenge” (CEC01338849), included the following points:

Both Infraco bids were based on the preliminary design prevailing at the Best and Final Offer stage and were thus qualified. A number of factors had made it difficult for BBS to firm up the provisional items of their bid (structures, roads, pavings and drainage), including:

The SDS design was taking longer to complete and was finished piecemeal making it difficult to price

The design contained more differences than had been anticipated from the preliminary design stage

BBS were not sufficiently resourced to turn the designs into quantities and prices: value engineering and due diligence had distracted the team from core pricing activities

The net effect was to frustrate tie’s attempt to get a greater ‘fix’ on the price and hence the budget to progress the FBCv2 approval

In response to that, TIE asked BBS to consider fixing their price – culminating in the Wiesbaden agreement of 20/21 December 2007

BBS’s negotiating stance had hardened as TIE approached procurement milestone dates – not untypical for contractors. In each case, TIE had been prepared to move milestones to get a better deal.

_6: “The closer TIE get to financial close, the more difficult and costly it becomes for TIE to revert to Tramlines. BBS are using this vast reduction in competitive pressure to their commercial advantage.”

178) Do you agree with this as an accurate summary of the evolution of the Infraco negotiation?

Yes

179) To what extent had competitive pressure, and negotiating leverage, over BBS

declined since their appointment as preferred bidder?

It's a fact that going to preferred bidder in any situation eliminates competitive pressure except to the extent tie was willing to revert to the other bidder assuming the other bidder was willing and the time and consequences of doing so were acceptable. With the passage of time from preferred bidder into 2008 the extent of the uncertainties associated with reverting to the other bidder were increasing and tie was exposed to reduced negotiating leverage.

- 180) To what extent was that attributable to the incomplete state of the design at that stage?

See answer to Q186 below. On reflection the price fixing and design development provisions in the Weisbaden agreement – as they were understood to apply by tie at that time – were seen as a watershed in the degree of uncertainty Infraco was going to bear on incomplete design and that that was based on Infraco taking their own informed view on outcomes arising during the completion of the design as included in their price but subject to a number of understood exclusions and assumptions.

- 181) Did BBS's appointment as preferred bidder take place too early? Please explain your answer.

In answer to Q185 and Q186, I was not around when the decision to go to preferred bidder in 2007 was made and so cannot recount specific discussion. I believe that the major factors would have been the state of design progress and progress with utility diversions.

Re the state of completion of design at that time, my understanding remains that the view of the project team was that that the design was sufficiently advanced for a competent and experienced contractor to provide a fixed price without including significant risk premia for incomplete elements of the design.

With the benefit of hindsight, especially regarding the post contract close disputes regarding design that emerged (and notwithstanding the fact that in June 2008 tie believed that design risk had been substantially passed to the Infraco except timing of consents), it is very easy to conclude that preferred bidder appointment was made too early. Also with the benefit of hindsight the focus of negotiations post preferred bidder appointment was too often on detail and not on the big ticket items such as the extent of design risk being carried by the Infraco.

A paper for the TPB on 13 May 2008, entitled "Finalisation of SDS Novation" noted the "remaining costs for completion" of the SDS novation. These totalled £2m. The paper's proposals were approved (TPB minutes, CEC00080738_9 at 4.3 and CEC00079774, page 2).

182) Can you explain what these costs were?

The paper CEC00079744 reflects that SDS had negotiated a last minute increase in their own price of £2m to include for settlement of change orders, work to align the SDS design with the Employers Requirements and to meet their costs associated with the novation process.

183) How did they relate, if at all, to the settlement of SDS's claims in mid to late 2007? Were they additional to those?

Sorry I don't recall and don't have the information to answer this question but I would presume that the £2m was in addition to sums previously agreed with SDS to settle claims in mid 2007.

Your email of 24 April 2008 (CEC01293807) noted that, whilst the TPB had approved a £2.5m settlement with SDS in mid to late 2007, "What we are actually doing re the original £2.5m differs from the details of the TPB approved in one key aspect – the paper approved by TPB anticipated we

would settle £500k immediately (which we did) then provide an incentive to PB by paying the rest as final approved design is delivered (see para 4.2 of the 5/9/07 TPB paper). The negotiated SDS Novation agreement has us paying them full settlement of past and future claims prior to Novation (i.e. next week) even though the design is incomplete – part of the price of getting the novation done!”

184) Please explain this point?

I cannot recall the details on this issue at all. As my email suggests the circumstances would appear to be that we had previously agreed to pay SDS additional sums related to “claims” but had done so on an incentivised basis ie they would get the cash as they completed the work. I can only conclude that the SDS novation agreement meant we were effectively paying this sum up front. I recall SDS negotiated aggressively on the novation but it was a keystone of the procurement and risk transfer strategy that novation took place.

An email you sent much later to Richard Jeffrey (7 July 2009) attaches documents which, you said, tracked the BBS price from Preferred Bidder through to Financial Close (CEC00825618, CEC00825619, CEC00825620, CEC00825621, CEC00825622, CEC00825623). CEC00825623 shows, and explains, the development in the price between BBS’s preferred bidder appointment in October 2007 and the Construction Works Price which appears in Infracore schedule part 4.

185) Is CEC00825623 an accurate summary of the development in the price over that period?

Yes I believe it is. I don’t specifically recall the sources for the breakdown of the increases at note B and note C.

It includes a note which suggests doubt about the breakdown given for the £8m price increase agreed at Wiesbaden.

186) Can you explain that point?

I have referenced a breakdown in a letter pre-Weisbaden. I can't say whether I was aware of that letter pre contract close. In any case the £8m would have been broken out into the relevant cost elements in the detailed pricing make up in Sch pt4 rather than being a stand alone item.

2008 (June to December) – After Financial Close

General Questions

Following contract close, a major dispute arose between TIE and BSC in relation to the interpretation and application of the Infraco contract and Schedule 4. By way of overview:

- 1) What was your understanding of the main matters in dispute and the main reasons for the dispute?
 - The main matters which came into dispute (and the Infraco position changed and hardened in this respect as time progressed) were:
 - Responsibility for paying for design 'change' from the basis in the contract price and the extent to which that was outwith normal design development or otherwise the responsibility of tie to pay for
 - The extent to which tie was responsible for delays that occurred after financial close versus responsibilities of Infraco (eg due to failure to mobilise)
 - Infraco responsibility in each of the two areas above arising from their failure to provide timely and supportable estimates in accordance with the contract change mechanism, manage the design completion effectively mitigating impact of change and mitigate against the impact of delays in the first instance by engaging with tie on identifying and implementing solutions to mitigate those delays.

In total, approximately 738 INTCs were notified by BSC between Infraco contract close and Mar Hall in March 2011. By way of overview:

2) Were you surprised by the number of INTCs?

Yes – totally taken aback.

3) What do you consider were the main INTCs in terms of value and importance?

I believe the main INTCs in terms of importance and value were those related to the three bullet points in the answer to Q1 above.

4) How would you describe the initial implementation of the INFRACO works? What were the problems? What was the cause of the problems? How did the mobilisation proceed? Did you at any stage become alarmed by the lack of progress? If so, when and what triggered it?

I think I was personally alarmed by the lack of progress after 3 months or so of little or no progress and when it became clear Infraco had not mobilised or even appointed their principal subcontractors. The cause of these problems is the subject of a large number of the questions which follow below.

5) It is clear that as the contract got under way there were still ongoing delays in designs, consents and MUDFA. What was the approach of TIE/TPB to this?

As reported (eg in the Close Report) at the time of concluding the Infraco contract the overall approach with utilities was to manage the sequencing of the completion of these works to mitigate impact on the Infraco programme on a section by section basis and with design consents and approvals a full explanation of the strategy and management processes in place to manage that risk was given in Appendix 1 to the Close Report – SDS Delivery and Consents Risk Management (CEC01338853_0033)

Specific Matters

On 4 June 2008, the TPB formally approved the increase in the project budget from £498m to £512m (**USB00000005_5**, at 4.2). A breakdown of that figure given in a slideshow for the meeting (**CEC01312258_10**) shows the risk allowance as £30.3m and the base costs as £481.7m.

- 6) Whilst that still totalled £512m, the breakdown of risk allowance and base costs had changed slightly from that noted in the paper *Financial Close Process and Record of Recent Events* (**CEC01338847**, sent to CEC with the close report on 12 May 2008: **CEC01338846**). Can you explain that?

I cannot recall or find the specific reason for the difference which results in an increase in the base cost of £0.9m and a reduction in the risk allowance of the same amount. A paper prepared by David Carnegy and presented to the 4 Jun 08 TPB (**CEC00080738_0018** to **0020**) deals with the budgeted changes required to align the budget to the financial close position.

The Project Director's report for the TPB on 4 June 2008 (**CEC00080738_10**) noted that design progress was slightly behind v31 of the design programme; that MUDFA progress was 6 weeks behind programme with a 2 week impact on the Infraco programme (prior to mitigation), with greater than expected utility congestion one of the core reasons for programme slippage. The minutes for the TPB on 4 June 2008 record Willie Gallagher as saying that, in relation to MUDFA, TIE and Carillion had underestimated the complexity of managing too many worksites (**USB00000005_5** at 6.2).

- 7) To what extent was there concern at the TPB, and/or within tie, about the reporting of these delays so soon after the Infraco contract had been awarded?

I do not recall these overall delays at this time (June 2008) being materially

worse than what was being reported at financial close in May. The Project Director's report reiterates the approach of focussing on managing the interfaces between the design and utilities programmes and the Infraco programme with a view to mitigating risk to the Infraco programme on a section by section basis. There was of course significant concern within tie and at TPB that this mitigation would be effective to avoid delays to individual elements of the Infraco programme.

The slideshow for the 4 June 2008 TPB (CEC01312258_13) noted that BSC had already failed to meet a number of start dates.

8) What was your understanding of the reasons for that?

As I understood the main reason was due to Infraco failing to mobilise their sub-contractors. Discussions were ongoing between our project team and the Infraco on the reasons for that and how the delay was going to be recovered and I was not directly involved in those discussions (and therefore not best placed to explain why the delays were happening) but the delays persisted.

In May and June 2008, Graeme Bissett canvassed views on lessons learned following the close of the procurement exercise. Responses came in from you (CEC01353902), Jim McEwan and Andrew Fitchie (CEC01280055) and Steven Bell (CEC01280044).

9) With the benefit of hindsight, which of these were particularly important in relation to the cost and programme overruns of the tram project?

Of my own points I'd highlight the following:

- SDS and upfront design - The progress with design and consents and Infraco (and SDS) approach to that in the negotiation of the contract suite was at the heart of the challenges we faced in achieving an acceptable contract close position. For a number of reasons SDS design and consents did not progress well but I find it difficult to generalise on the reasons for that and I was not

involved directly in management of the design. When tie took a more direct hands-on approach to managing design and the interfaced between SDS and CEC, 3rd parties and utility companies it did appear to make a difference in this regard from the end of 2007 onwards but that does not explain the underlying problems with SDS performance throughout. At the time of providing this feedback I was not aware that issues with design delivery and consents would continue or that the design completion would manifest itself so predominantly in the disputes with the Infraco eg in the BDDI to IFC issues. I still believe that the upfront design ahead of Infraco procurement was a sound underlying principle in the procurement strategy but that execution did not work as planned and I understood that to be due in part to delays and quality issues with the SDS delivery. I find it difficult to draw a conclusion as to whether tendering detailed design as part of the Infraco contract itself, rather than being completed up front, would have resulted in a better outcome in terms of time and cost but I question how it would have been possible to achieve a fixed price contract on that basis without very significant risk premia in terms of cost and time being added.

- SDS / CEC interface – Although tie was responsible for project delivery, approval of the design was still very largely the prerogative of the various parts of CEC and although this was addressed by the time of financial close through detailed management processes (see Appendix 1 to the Close Report) I think if this had happened much earlier then the outcomes from the design process (and the leverage that gave Infraco during procurement and, ultimately, in the period post contract close) could have been different. The same comment applies to the interface between SDS and 3rd Parties who had to approve design as part of the agreements reached with them during the Parliamentary bills process and were understandably acting in their own commercial interests.
- Going to preferred bidder without the design complete – I was not around when the decision to go to preferred bidder in 2007 was made and so cannot

recount specific discussion re the state of completion of design at that time. My understanding remains that the view of the project team was that that the design was sufficiently advanced for a competent and experienced contractor to provide a fixed price without including significant risk premia for incomplete elements of the design. With the benefit of hindsight, especially regarding the post contract close disputes regarding design that emerged (and notwithstanding the fact that in June 2008 tie believed that design risk had been substantially passed to the Infraco except timing of consents), it is very easy to conclude that preferred bidder appointment was made too early. I also concur with the comments made by others that, with the benefit of hindsight the focus of negotiations post preferred bidder appointment was too often on detail and not on the big ticket items such as the extent of design risk being carried by the Infraco.

- Funding for the project post Congestion Charging referendum – From the day I joined tie in February 2005 making the cost of the project and its phasing fit with the funding available was extremely challenging and I believe this was greatly exacerbated by not having Congestion Charging revenues available. This was thereafter a matter of difficulty between the Scottish Government, CEC and tie which was always a source of tension – albeit I believe tie handled this very well.

10) Please explain, and expand upon, your answers?

As above for Q9. When Andie Harper arrived as Project Director I believe he brought with him a vastly improved management style and constructive engagement with SDS to rectify tie's management of a poor start by Parson Brinckerhoff to the SDS work from the outset. As I write I also recall that certain key management resources (individuals) that tie believed would be on the Parsons Brinckerhoff team in those early days of the contract were in the event not deployed on the project.

A point made consistently was that the preferred bidder was appointed too early.

11) What is your comment about that?

See bullet point in answer to Q9 above.

Very shortly after Infraco contract close, Willie Gallagher and Graeme Bissett raised concerns that the problems with MUDFA had not been properly reported at TPB level (3 to 5 June 2008, **TIE00679871**). Steven Bell was dismissive about Mr Bissett's remarks.

12) Can you comment on this issue?

13) How, if at all, was it resolved?

I did not have the detailed knowledge of the MUDFA works progress in the detail at any point in time to be able to answer this question competently. My role in attendance at the MUDFA sub-committee was focused on ensuring the best possible outturn estimate and risk allowances were being reported by the project team for inclusion in the overall cost estimate for the project. I recall the MUDFA works programme continuing to be very challenging and complicated during this time and as stated before the approach to mitigating impact on Infraco was to focus on the areas where the utility diversions could have an impact on the Infraco programme rather than a global metric against an overall utility programme. If Willie Gallagher and Graeme Bissett had issues with the quality and completeness of reporting to TPB itself (as opposed to the MUDFA sub-committee) on any particular area then my experience was that it would have been addressed but I do not recall the specifics in this case.

The impression for the TPB papers from June 2008 to the end of 2008 is that the project almost immediately faced problems of delay.

14) In overview, what was your understanding of the nature of these problems and the reasons why they arose?

Reading the TPB papers (and presentations) provided for this period the underlying issues were:

- Infraco mobilisation (their own resources and mobilising sub-contractors) not adequate
- Delay to the design delivery programme V26-V31 (see Q15 below)
- Further delay to the design delivery programme port contract award - V37 as reported to TPB on 19 Nov 08
- MUDFA delays from the contractual V6 programme at financial close to V7.9 as reported to TPB on 19 Nov 2008

Each of these underlying issues had complex and sometimes inter-related causes as described in the TPB papers and presentations. Performance/productivity issues with SDS and MUDFA continued (and were being addressed by tie) but there were also issues with approvals processes (both CEC and 3rd Parties) and specific issues with elements with of both the design and utilities.

The most significant thing which was not being progressed adequately was engagement with Infraco on re-sequencing or otherwise amending the Infraco programme to deal with these issues and, crucially, to mitigate against the impacts of delay – and that meant that there was no basis on which to agree the commercial impact in terms of time and cost for the project.

15) To what extent did they have their origins in matters known about at or before financial close?

The only delay I believe I was aware of at the time of financial close was the change in the design programme from V26 to V31 for which I recall the estimated cost at that time being in the region of £1m but subject to engagement with BSC as to how elements of the programme could be managed to mitigate that extra cost. I can see from the TPB papers of 19 Nov 08 (CEC01053731_0010) that the time impact of V26-V31 had been agreed as

38 days but that agreeing the commercial impact in terms of an agreed cost had still not been achieved.

- 16) Were the important matters being fully reported to the TPB (whether before or after financial close)?

Having re-read the TPB papers and presentations for this period it appears that all the principal underlying delay issues and specific causes of delay on particular work areas were being reported. What was not capable of being reported was the resolution of those issues in terms of time and cost as engagement with Infracore was not adequate in this regard.

- 17) Which problems were the most significant, in terms of their impact on (a) the programme and (b) cost?

I believed that the failure of the Infracore to mobilise adequately and therefore engagement with Infracore on re-sequencing or otherwise amending the Infracore programme to deal with these issues and, crucially, to mitigate against the impacts – was not happening in a timely fashion and that therefore the opportunity to manage the impacts of the delays (and I don't mean to suggest that there would have been no cost or time consequences) was also being lost.

- 18) To what extent were these distinct problems, and to what extent were they interrelated?

See answers to Q14 to 17 above.

Early on, there were references to discussions with Infracore to mitigate delay (e.g., Project Director's Report to TPB, 30 July 2008, **CEC01237111_14**). The mitigation discussions appear not to have borne fruit.

- 19) What was your understanding of these attempts, and the reasons why they were not successful?

I was not personally involved in engagement with Infraco in these discussions but I recall the frustrations of the project team that these discussions were not progressing as quickly as they needed to. At the 30 July 2008 TPB a target of having a revised programme agreed with Infraco by end September was being reported. On 22 October this process was being reported as starting on 20 October with a view to having it agreed by the end of the year but this would require engagement by Infraco.

There seem to have been difficulties early on in agreeing a revised programme with Infraco.

20) What was your understanding of this issue?

See answer to Q19 above.

21) To what extent was this a *consequence* of, and separately a *cause* of, delay?

As noted in the answer to Q17 above I believed that because engagement with Infraco on re-sequencing or otherwise amending the Infraco programme to deal with these issues and, crucially, to mitigate against the impacts – was not happening in a timely fashion and that therefore the opportunity to manage the impacts of the delays was also being lost.

In July 2008, you exchanged emails with James Papps about issues to be focused on in an internal audit of TIE (TIE00089194). Mr Papps made suggestions about monitoring whether the intended risk transfer under each of the main contracts was working as intended. You said:

“The question as to whether the risk transfer on paper is being delivered is a really good one and we are keeping a close eye on it. The Infraco contract and the design/approvals/MUDFA interfaces are complex and we need to be squeaky clean in our commercial management of the contract to ensure to the maximum extent possible that the edges of responsibility don’t get blurred to the advantage of the contractor e.g. where there are concurrent reasons for delay which are the

contractually allocated to both parties.”

22) Can you comment?

My email is making the point that effectiveness of risk transfer was as much about really robust management of the contracts as the contracts themselves – ie ensuring that the cost and time consequences of change are allocated correctly to the party responsible. I believe our resources responsible for management of the Infraco contract were totally professional and operated in an extended period of time without adequate engagement from Infraco on the changes being notified or the resolution thereof in terms of costs or programme consequences (which were very often omitted from the initial Infraco INTCs), mitigations and allocation of responsibility. The issue of concurrent delay mentioned in my email (ie where there is parallel causes for the delay or failure to resolve it and those causes are attributed different parties) is complex and was not my area of expertise.

It appears to have been recognised soon after financial close that the risk register was “light” on Infraco specific risks, e.g.,

- TPB 2 July 2008, Minutes, **CEC01237111_5** at 6.1;
- TPB 27 August 2008, Minutes, **CEC01053637_5** at 5.0;
- Project Director’s Report to TPB, 24 September 2008, **CEC01053637_9** at _12.

23) What Infraco specific risks was the risk register “light” on, and why?

24) What, if anything, was done to take fuller account of those risks?

I do not appear to have a copy of the full risk register from this time but reference is made in the TPB papers for 24 Sept 2008 (CEC01053637_012) and for 22 Oct 08 (CEC01210242_013) to additional risks relating to Infraco for which treatment plans had been developed namely

1. Infraco unable to commence works or works delayed or disrupted (including mobilisation of Infraco, conflicts with utility diversions completion and traffic

management interface requirements

2. Changes to final design during approvals (the design and consents work force providing the focus for identifying and addressing these items)
3. "Partnership" approach between tie and Infraco not effective
4. Shortage of competent resources within BSC to effectively deliver the Infraco works
5. Potential changes to traffic management procedures having an impact on programme.

25) To what extent were these risks which ought to have appeared in the risk register prior to financial close, and thereby taken into account in the quantified risk assessment?

Of these additional risks the risks associated with delays arising from design consents and delays to Infraco arising from conflicts with utility diversion completion did appear in the risk register and were taken account of in the quantified risk assessment at financial close. Changes to the design (ie an increase in the scope of works) was not catered for in the risk allowance at financial close other than for specific uncertainties such as the extent or road reinstatement. I believe what is being reported here is a greater focus on the treatment plans (ie the mitigating actions) being put in place by the project team to manage these risks as the likelihood of them having an impact on costs and programme has increased.

26) Please explain your answer.

As explained in the answers to Q23 to Q25 above.

Tie's reports to Transport Scotland, over a long period of time, report that TIE was working with the supplier of the ARM risk management software with a view to integrating it with Primavera for schedule risk analysis (e.g., Extract from report to Transport Scotland, in papers for TPB on 19 November 2008 (CEC01053731_27 at

5.4).

27) Can you explain this?

28) Little progress appears to have been made in achieving that integration. Why?

The risk management function did not report to me (it was embedded in the project team reporting through to the project director) and I cannot recall the specifics of why there was little progress in achieving this integration.

29) What impact did that have on tie's ability to assess the impact of events on the programme?

I am unsure as to what extent it impacted on tie's ability to do a general QRA on the schedule. It did not as far as I am aware impair tie's ability to assess the impact of specific events or uncertainties on the programme which at this time may have been of much greater use of our programmer's time than integrating ARM with Primavera. What I believe was missing was adequate engagement with Infracore on mitigating the impact on the programme of their late mobilisation alongside the on-going meshing of the design/utilities/Infracore programmes to mitigate against delays.

Throughout the period from mid to late 2008, the anticipated final cost for the project continued to be reported as £512m, and there was no increase in the risk contingency although its adequacy was said to be under constant review, e.g.

- Project Director's Report to the TPB, 19 November 2008, **CEC01053731_12** to **_14**;
- Project Director's report for the TPB on 22 January 2009 (**CEC00988028_14**).

30) Can you explain why there was no change in the risk contingency over this period?

The reason was that there was not adequate information to be able to make an informed judgement as to the extent to which the overall outturn costs and the components of it (base costs and risk allowance) was likely to be impacted by events. The project team had received a very large number of notices of change from Infraco, a large number of these did not have adequate information on cost and time impact (or the valuations were excessive or not adequately substantiated in the opinion of the tie commercial team) to be able to process them and there was inadequate engagement from Infraco to be able to process the changes including the determination of which party was contractually responsible for the change. Also as previously noted there was inadequate engagement with Infraco on the programme mitigation generally. Lastly, and maybe most importantly, at this stage tie still had a conviction that the contract provisions as understood were robust.

This situation persisted to a greater of lesser extent for the rest of my time with the project – the extent and nature of the disputes with Infraco which emerged from 2009 were such that it was very difficult indeed for the project team to make informed judgements of what the final costs and programme of the Infraco element of the project would be.

Having regard to the difficulties being encountered by the project, it might be suggested that the risk exposure would obviously be going up.

31) What is your response to that suggestion?

See answer to Q30 above.

There are suggestions in the TPB papers that TIE considered BSC's failure (or delay) to mobilise to be a breach of contract, e.g.

- **CEC01355359**, 8 August 2008
- **TIE00089196** (suggesting 26% of delay attributable to the v26-v32 issue, and

74% to late mobilisation by BSC.)

32) What was your understanding of this issue?

Both referenced documents are internal tie communications rather than TPB papers. The summary paper prepared by tie's programming team (TIE00089196) reports that, at the time of its preparation, mobilisation and commencement by Infracore including pre-construction activities and appointment/mobilisation of sub-contractors was not progressing adequately and that these activities were not constrained by the V26 to V31 design delivery programme. The paper further reports that the V26 to V31 design programme change was, on an unmitigated basis, delaying the programme by 10 weeks but that the delayed mobilisation by Infracore was delaying the programme by a further 28 weeks – so total unmitigated delay of 38 weeks.

Later in the TPB papers of 19 Nov 08 (CEC01053731_0010) the V26 to V31 impact is reported as having been agreed by Infracore as 38 days rather than the 10 weeks estimated here. On the same page in those Nov TPB papers the unmitigated delay to the end date of the project (entering into revenue service) is reported as being up to 5 months – mitigation depending upon constructive engagement with Infracore to agree a revised programme.

33) What analysis, if any, was done to assess whether (and to what extent) these mobilisation delays had an impact on the programme overall?

Sorry but I think the analysis at this time is as summarised in the paper TIE00089196 and I believe this was kept under constant review by the programmers in tie's project team.

On 17 October 2008, you circulated a note of the commercial issues affecting the Infracore contract (CEC00605558, circulated by email, CEC00605557).

(Background is available in Willie Gallagher's letter of 14 October 2008 to Richard

Walker of Bilfinger (CEC00605559); and Richard Walker's letter to which it responds (CEC00605560)

34) Please explain the issues as you saw them at that time, focussing on those issues which became most significant for the project overall.

The context here is that following the exchange of letters between Richard Walker and Willie Gallagher I have been asked to propose a structured process to resolve the significant issues between tie and Infraco. My paper, prepared after discussion with the senior members of the tie project team is a summary of the main commercial issues as I understood them but falls short of proposing a comprehensive process to resolving them as that required engagement and agreement between the tie project team and Infraco which was not adequate. My imperative was to reach a position where we could report the status of the overall £512m budget at that time in the context of all these commercial uncertainties which we were unable to do until they were adequately resolved.

I note in Richard Walker's letter that Infraco rejected a tie proposal for a comprehensive "bunker down" between the two parties to work out solutions – an example of ongoing difficulty the tie project team had in engaging with Infraco in a productive way.

The issues most significant to the project from my paper are:

- Underlying everything – lack of constructive and sufficient engagement from Infraco to resolve the issues – see also answers to previous questions above in this regard.
- Settling the V26-V31 design programme change which existed at contract close and more specifically the valuation of it in which Infraco we claiming inter-alia costs for sub-contractors who had not yet been appointed. This issue was important as at the time the project team believed that settling the V26-V31 change would significantly help to unblock progression of other changes.

- The change procedure in the contract required settlement of changes before the related work was carried out (notwithstanding Infraco's obligation to mitigate against additional costs as I understood it). Because of the very large number of changes submitted and the lack of adequate/accurate information or engagement with Infraco for the tie commercial team to progress them this meant that Infraco's position was that they were not obligated to commence work across large parts of the scope of works. Efforts were being made to establish an amended/supplementary change mechanism under which Infraco would start work before the value / responsibility for a change had been agreed. The major concern was that this failure to progress and agree changes would lead to a position where Infraco were not accountable for the programme/cost impact of their concurrent inadequate mobilisation. In retrospect I remain unable to conclude the extent to which this was a deliberate commercial tactic by Infraco.
- There were blockages to starting on a large number of the important structures (eg retaining walls, bridges and underpasses). I believe the precise circumstances varied from structure to structure, and I don't have the knowledge myself to comment on them individually, but problems with the foundations and retaining walls design and clashes with utilities was a theme. Again I am unable to generalise here on the extent to which these design issues arose from any lack of competent design by SDS (before or after novation at financial close), or changes required through the consents and approvals process and therefore whether tie/CEC or Infraco bore responsibility for the change. The devil was in the detail on a case by case basis. I also recall that the view of the tie project team was that these and other issues on the off road sections of the tram were capable of being resolved and the work started by Infraco but they were unwilling to do so.
- The paper reflects that at this time we had become aware that Infraco's intent seemed to be to submit changes with respect to design which reflected a complete re-measure and valuation of individual elements of the project

(including structures) based on the issued for construction drawings and using the rates specified in the contract and then deducting the value allowed in their agreed contract price. This approach would make no allowance for the normal design development provision in Sch pt4 of the contract whatsoever nor recognise responsibility for the change. It's also true that tie's commercial team did not have the information to identify and evaluate many of these changes in a constructive manner at this time – the paper says that changes in substance to the design of individual elements may well have taken place but the information was not available to evaluate them.

35) Why were there "*really big problems*" in starting work on structures (section 4)?

See bullet point 4 in answer to Q34 above.

36) Can you explain the point in section 5, third bullet, about design development and tie's lack of information to evaluate whether or not a change fell into that category?

See bullet point 5 in answer to Q34 above. Infraco were managing the design post contract close with their subcontractor SDS.

37) Please explain your concerns about TIE getting "*a commercial kicking*" (section 6, third bullet).

The concern was that the tie project team's inability to progress changes effectively without information and engagement from Infraco would contractually become the reason for Infraco not progressing the work and that this would supersede Infraco failures. I was also concerned that the imperative to progress the work could lead to a position where excessive commercial compromises might be considered by tie just to get the work moving on the basis that was better value in terms of cost than the delay/cost consequences associated with waiting to complete a proper assessment,

valuation and attribution of the very large number of individual changes notified.

At the TPB on 22 October 2008, there was discussion about the timing of any announcement to increase the £512m budget. After discussion, it was agreed to deal in one package with deferring phase 1b, programme, Infraco and TEL/CEC/tie cost changes. It was noted that clear analysis would be required before any formal changes were made to the budget (TPB minutes, 22 October 2008, CEC01053731_5 at 3.4, 6.15).

38) Please explain this approach?

For the reasons stated in the answer to Q30 above and elsewhere above there was not adequate information to provide a reliable update on the cost estimate at this time – that could only be done when agreement had been reached with Infraco on all material changes and a revised programme and the cost and time consequences agreed between tie and Infraco. We believed it was also highly desirable to reach a comprehensive agreement with Infraco covering all matters, including the consequences of their late mobilisation, rather than settle on individual items.

The TPB agreed an extension of the Christmas embargo to cover Leith Walk, which had time and cost implications (minutes, 4.0). The minutes also noted that the base case construction programme had assumed Infraco would have unimpeded access to Princes Street (5.0), but bus access in one direction would have to be maintained.

39) What was your understanding of these issues?

40) Why had the interests of city centre users not been taken into account in this way when setting the original programme?

I believe that the interests of city centre users were taken into account in setting the original programme but as the experience with utility diversions progressed

there was pressure from stakeholders (eg traders) on CEC to make further concessions and ultimately these were made eg the Christmas embargo being extended to Leith walk. What tie did was present a best view of the time and cost implications of doing so and CEC, through the TPB, made the decision. The same process was followed with the consideration of one way buses on Princes Street versus the original plan of a full blockade on Princes St with all buses diverted on George St which Lothian Buses now considered to present difficulties.

I would find it impossible to quantify the total cost and time impact of changes which were made to the traffic management and embargo arrangements in the on-road sections of the tram route, especially in the context of difficulties generally in agreeing a revised programme with Infraco at this time. Development and approval of traffic management arrangements and embargo arrangements was not something I was not personally involved in to any degree and details might best be provided by others.

The minutes for the next TPB (19 November 2008, **CEC00988024_5** at 3.20) note some preference for a full 'blockade' of Princes Street, but also to such intense and unrelenting pressure from stakeholders that alternatives had to be considered. (That matter was also discussed at the TPB on 17 December 2008 (minutes, **CEC01053908**, 2.18, 2.19 and 2.23).

41) Can you comment?

See answer to Q40 above.

The Minutes at 6.8 refer to discussions with BSC about "*normal design development*". This appears to be the first reference in the TPB minutes to this phrase (which comes from pricing assumption number 1 in schedule part 4 of the Infraco contract).

42) When and how did you first become aware that this was a contentious issue?

I cannot recall the exact time I became aware of the issue but it is mentioned in the paper I wrote on 17 October (Q34) so I was aware of it by then.

43) When and how was it first reported to CEC?

I cannot recall specifically when the issue was first reported to CEC or by who and to who.

On 13 November 2008, you sent an email to individuals at CEC and TS referring to a discussion about the challenges on programme and costs for phase 1a (CEC01072896). You referred to the cost arising if phase 1b did not proceed (*"on the face of it, an additional £6.2m"*) and a range of pressures which could, if unmitigated, give rise to additional increases.

44) Please explain the context to your email, and the point you were making.

The email seems to be a follow up on a meeting I have attended with the representatives of CEC and Transport Scotland to whom the email is addressed. I don't recall the specifics of the cost pressures I mentioned at that meeting but with respect of Infraco I expect it would have been the same generic areas referred to in the answer to Q30 above. At this time I was flagging these matters up but because I did not have commercial resolution of these issues through engagement and agreement with Infraco and therefore there was no reliable basis on which to update the approved budget of £512m.

45) Why was the cost of phase 1b not proceeding £6.2m? (The Kingdom agreement had been for a payment of £3.2m in that event).

The costs of not proceeding with Ph1b also included £3m of historic design costs – this was well understood by all. Amongst other places it was referred to in the paper Financial Close Process and Record of Recent Events (CEC01338847_009 in the second bullet point).

The Project Director's report for the TPB on 19 November 2008 (CEC01053731_14) noted that both the TEL CEO (Neil Renilson) and the TIE chairman (Willie Gallagher) had intimated that they would be leaving.

46) Can you comment on their departure – why it occurred, and what impact it had?

I cannot comment on Neil Renilson's departure (as I understood it he was retiring) or specific impact it had. Willie Gallagher's departure did pose challenges as it left tie without its senior executive leader until the new CEO was recruited. However in my opinion tie dealt well with departure in all material respects.

At the TPB on 19 November 2008, it was reported that an agreement in principle had been reached with the head of Bilfinger regarding critical change (CEC00988024_5 at 3.12).

47) What is your understanding of that?

The need for a supplementary change mechanism so that programme critical works could progress where they were not progressing through the existing contract change mechanism quickly enough had been recognised for some time by the tie project team and by Infraco. My understanding of that was summarised in the paper I wrote in October (CEC00605558_002) under heading 3 Supplementing the contract change mechanism. I do not recall being personally engaged with Infraco in development or agreement of the mechanism.

Various papers to the TPB, following discussion of progress in production of the design, use the following phrase:

“What is not captured in the above and the table below is the quantum of designs which are required to go through a re-design process as a result of either the approvals process or value engineering. This will be reported on in

future months but the impact is captured in the programme analysis.”

E.g., extract from report to Transport Scotland, in papers for TPB on 19 November 2008 (CEC01053731_28).

48) What was your understanding of this?

My understanding of what this means is that the analysis presented does not isolate the impact of specific designs which were (for whatever reasons) having to be re-worked as a result of change requested during the approvals process or because of value engineering initiatives. I can't comment on how widespread this problem was or on any specific instances or provide a meaningful comment on the generic causes – I was not personally involved in the design and consents process.

A slideshow for the TPB on 17 December 2008 (CEC01115646_10) noted that the underlying problem with Infraco was that BSC had not adopted an “ownership” approach to the project, and referred to programme and problem solving, approach to change, acknowledgment of deficiencies and management of SDS.

49) What was your understanding of this point?

I believe the answers I have provided to Q19,21,30,32,34 and 38 above are also relevant to this question. My understanding is that Infraco had not mobilised and progressed the works and significant delays versus the contractual programme had occurred. The tie project team did not have adequate engagement with Infraco to work together to mitigate the impacts and agree a revised programme. On change - the Infraco had submitted very large numbers of changes but as I understood it the tie project team in a large proportion of cases had insufficient information to support the change, why it had happened (and therefore contractual responsibility for it) or the Infraco view on the impact of the change in terms of time and costs. tie was therefore unable

in very many cases to process the change in accordance with the contract. Infraco would not carry out the work concerned in the absence of change agreed by tie. I believe tie expected a partnership approach from Infraco in delivering the project and finding solutions to problems which arose and we did not see that happening.

The same slideshow notes, at _17, that "*underlying contract management of change in Infraco is a continued relentless challenge*".

50) Can you comment?

Please see my comments at Q49 above and my answers to Q37 and Q34 bullet point 3.

2009

A slideshow for the TPB on 22 January 2009 (CEC00988027_7 to _12) noted a cost review. The principal assumptions included:

- the utilities and infrastructure programmes would proceed without future significant disruption as a result of unforeseen traffic management or design changes;
- that commercial engagement with Infraco and delivery impetus would improve significantly; and
- that that would lead to a revised programme with a service commencement date not significantly different to July 2011.

1) To what extent were these assumptions realistic at the time?

This cost review was carried out with respect to known or notified changes to cost items and know changes to programme where the value could be ascertained at the time of preparation. At the time it was not considered appropriate to anticipate continued problems with the programme as a result

of deficiencies in engagement with Infraco or further delays on starting work by Infraco. I don't believe it would have been possible for the project team to make an objective assessment of what the future consequences of continued poor engagement or progress by Infraco would be. Any tie/CEC changes proposed from this point onward eg in respect of design or traffic management would require to be assessed/approved through the project's change control procedures. The assumptions slide on page 7 also notes an assumption that additional costs would be shared by tie and Infraco equitably in accordance with the contract and that means as tie understood the contract.

The slide on _8 noted the estimated cost of phase 1a was now in the range £522m to £540m (being an increase in base costs of £2m to £12m and an increase in the risk allowance of £8m to £16m). Also to be taken into account were £6.2m of cancellation and design costs arising from the assumed decision not to proceed with phase 1b.

In the absence of having available the more detailed analysis of the line items, which would have existed in spreadsheets and other documents, I can only answer Q2 to Q4 based on review of the presentation slides and my best recollection of the situation at this time. As was always the case the detailed cost estimates for individual items, including the range of outcomes, would have been produced by the project team.

- 2) Can you please explain the most significant elements (in value terms) of these increases in the cost estimate?

The most significant changes to **Base Costs** were with respect to:

- **Infraco** - increases £2.9m against which opportunities ("Opps") to reduce costs of £4.4m identified. The most significant item recognised here is the costs associated with the design at Burnside Road as required by Edinburgh Airport (EAL) as the agreement reached with at EAL during the parliamentary

approval phase of the project meant that tie/CEC would bear the cost of the design here as required by EAL. A sum of £1m was allowed in the Infraco budget at financial close but the cost was now estimated at between £2.5m and £3.5m with discussions ongoing with EAL to challenge their requirements – see separate slide. Infraco Opps also includes £3m in relation targeted saving in relation to provisional sums for utility diversions by Infraco at Picardy Place and traffic controls (UTC) – the provisional sums included for these items were £3m and £5m respectively in the Infraco price but I have no recollection of the detail of the savings targeted in Jan 09.

- **Utilities** – Opps identified to reduce costs of £1.8m were in respect of opportunities to recover “betterment” costs from the Statutory Utility Cos because as a result of the replacement of their infrastructure as part of the tram project their asset base had been improved. I was not involved in the engagement with SUCs on “betterment” myself.
- **Resources** (including TSS, accommodation and overheads) – increases £8.2m against which Opps £1.8m identified. The increasing challenge of engaging with Infraco and moving the project forward meant that tie itself had to respond by deploying additional resources in terms of staff, consultants and legal support and this was being recognised in our estimates but with the proviso that a review was ongoing to secure opportunities to reduce these costs through greater efficiency. The additional costs also included for TEL, Lothian Buses and CEC resource costs being recharged to the tram project. The additional costs also included for an additional one year of office occupation and overheads.

The most significant changes to the **Risk Allowance** were with respect to Infraco and are the subject of Q4 below.

- 3) What, in broad terms, were the “*opps*” which (according to the slideshow) were the difference between the high and the low outturn estimates?

These were opportunities to reduce costs and comprised specific opportunities (eg to recover betterment costs from SUCs as explained above but also reflected a range of possible outcomes as estimated by the project team on items such as the risk allowances for road reconstruction and design changes (as per answers to Q4 below) where there was insufficient clarity as to what the eventual outcome in terms of cost would be (also in part related to insufficient information from Infraco or equitable engagement to reach agreement).

4) Please explain the significant changes in the risk allowance, i.e., the elements relating to:

- delay (£4.7m; see also the slide on _10, which refers to "*total of £10m equiv to 30 weeks Infraco delay attributable to us*"),

The existing risk allowance for general delay to Infraco was £5.3m (established at financial close) and the additional £4.7m brought that to £10m being the project teams estimate of the total delay to the Infraco programme up to this point which may be found as attributable to tie/CEC or otherwise agreed with Infraco to be able to agree a revised construction programme. The project team had estimated £10m as sufficient to cover 30 weeks of overall Infraco programme delay. There was no agreement with Infraco on a revised construction programme or the commercial attribution of the costs associated with it between tie and Infraco so this was only an illustrative best estimate of the cost to tie at this time

- change from base date to IFC (£3.1m to £6.1m; see also the slide on _11, which refers to specific exposure on structures and piling/foundations on the railway corridor), and

This analysis would be supported by an item by item estimate by the project team of the possible outcome of the design changes submitted by Infraco in terms of costs and each individual item would be presented as a range of

possible outcomes pending resolution and agreement of the cost estimates with Infraco. Exposure on structures was a particular concern but I am personally unable to summarise here the circumstances under which changes to particular structures had occurred (eg through deficiencies in the original design or changes resulting from the consents and approvals process) or the extent to which tie's own estimates allowed for normal design development. The circumstances would have to be examined on each individual case and I recall that in many cases the issues were with respect to the adequacy of the originally designed foundations, retaining walls and clashes with utilities.

- full-depth road reconstruction (up to £2.3m) and the reasons why these increases were being assumed.

The extent of full depth road reconstruction required was the subject of pricing assumptions in Sch pt4 of the Infraco contract and the cost was capped at £1.5m in the areas where it was required at financial close. The additional risk allowance £0.8m and £2.3m being included in this cost review is in respect of changes to roads design eg through the consents and approvals process or by completion of designs, where the extent of full depth road reconstruction was or may be required in other areas. I am personally unable to recall specifically what other areas were included at this time or the basis of the estimates.

- 5) Given these changed estimates, why did the Project Director's report for that meeting of the TPB still report an anticipated final cost of £512m with risk allowance of £29m **CEC00988028_14**)?

The last bullet point on the top slide on page 8 of the presentation explains that the notwithstanding this review the approved budget would only be amended when changes had been approved and that required commercial agreement with Infraco.

We understand that you and Steven Bell met with representatives of BSC on 9 and 10 February 2009 (see your note, **TIE00089656**).

6) What is your recollection of these meetings and their significance?

As I understand it the feedback reported from these meetings (which I note Infraco representatives had asked not be minuted – so the notes are internal tie notes only) made it clear that Infraco believed the project programme had become so disrupted due to the extent of the changes they had notified, including design changes, and design and utilities programmes, that they were unwilling to progress the work in any meaningful way until their changes had been agreed by tie. Their view was that they wanted to work outside the contract on a cost plus basis. They also expressed the general view that their interpretation of the relevant parts of the contract was correct and that they were able to press for this basis. I don't recall any reasonable explanation being given as to why they had hitherto been unwilling or unable to engage in a collaborative manner in finding resolutions to the problems.

7) What were the most important points, in terms of their impact on delay and the cost of the project?

As above. Infraco stated that that the extra costs to this time were £50 to £80m (BB only ie did not include S) in their view to be paid for by tie

8) Please explain the following points, and any others which you consider had an important bearing on the cost and delay in the project:

a) The difficulties faced by Infraco in estimating the cost of change

I still do not understand the difficulties that Infraco were having estimating the cost of change and I don't recall them explaining it when I was present except with regard to the large volumes.

b) Michael Flynn's observation that TIE were in need of a project management

service

I do not know what Michael Flynn was referring to and understood that tie had high quality project management resources deployed and was supplementing these to address challenges as they presented themselves.

- c) The assertion that CEC might have been misled or had misunderstood the extent of (design) risk transfer to BSC

I am not aware of any circumstances whatsoever which would suggest that tie did not enter into the contract in good faith and on the basis of the project teams understanding of the contract terms which were communicated to CEC.

- d) The assertion that progress had been attributable to a gentlemen's agreement with Willie Gallagher

I am not aware of any such 'gentleman's agreement' and find it very difficult to accept that organisations of the nature of Bilfinger and Siemens would commit costs to anything on the basis of such an informal agreement.

- e) BSC's proposal to work only on a cost plus basis prior to completion of design and utilities

tie was firmly of the view that Infraco had an obligation to progress the Infraco works in accordance the terms of the Infraco contract and there was no basis for progressing on a cost-plus basis (notwithstanding subsequent partial implementation of cost-plus working for Princes St).

- f) BSC's estimate of their exposure in the face of Notified Departures/tie changes as £50m to £80m (excluding any claims by Siemens); and the assertion that there was a "*general acceptance by TIE pre-contract that the project would cost £50m - £100m more than was in the contract at 15 May*

2008”

I remember this £50m to £80m statement and the notes of the 10 Feb 2009 meeting reflect that their bottom estimate of £50m broke up as £20m for the value of changes, £20m for prolongation to the programme and £10m for delay and disruption to the programme. If they were having such difficulty estimating the cost of individual changes I don't know how they arrived at these global estimates. As with the statements regarding CEC being misled regarding design risk transfer and the “gentlemen's agreement” there was no evidence that I was aware of at this time or subsequently which would substantiate in any way the statement that that tie (or anyone in tie) was aware of or that there was general acceptance of a significant cost overrun pre-contract.

- g) Steven Bell's point about the need to investigate concurrent delay (based on BSC's late mobilisation), and Mr Sheehan's response that BSC had saved TIE money by not mobilising

Steven Bell's point at this time is that the Infraco's failure to mobilise was a concurrent cause of delay alongside other matters such as design and utilities and the attribution of the overall delay between tie and Infraco had to be established and agreed commercially. Sheehan's response could only be relevant to situation where tie were found to be responsible for all delays and therefore additional costs incurred on preliminaries, sub-contractors etc where the work was not progressing.

In an email dated 13 February 2009 (CEC01032724), you expressed the view that BB's proposal (of stopping work until the design and utilities were completed, at which point they would provide a new price and programme) was not attractive, e.g. because they would use it as an opportunity to improve their commercial position. You referred to them having mispriced their tender.

9) Could you please explain your views on this matter?

My concerns in this internal email was that any decision (by tie) to stop work until design and utilities were complete could end up being accompanied by a contractual negotiation/settlement in which tie would be in a weak position with regard to resisting responsibility for all the delays which had occurred up to that point. I was also concerned there was insufficient evidence that such a move would result in better engagement by Infraco thereafter from a project management and commercial behaviours standpoint.

I didn't know (and I don't believe anyone else at tie did either) whether they had mispriced their tender or not and this was conjecture on my part as one of the possible reasons for failure to mobilise, the commercial impasses and the desire to adopt a cost-plus basis of working. tie had limited visibility of the civils supply chain – meaning concluded sub-contractor arrangements.

Works had been due to commence on Princes Street on 21 February 2009. On 12 January, TIE served a notice of change for the provision of a contingency bus lane for two weeks. Infraco supplied an estimate. TIE issued a change order. The treatment of preliminaries was not agreed. Infraco, on 18 February, stated they were not obliged to start work on Princes Street because (a) of the lack of an exclusive licence to the designated working area, and (b) the non-agreement of the estimate. On 19 February, TIE instructed Infraco under cl 80.15 and 80.13 to implement the change. Infraco stated that day that they did not consider themselves obliged to accept the instruction. TIE sought a declaration that Infraco were obliged to commence work from 21 February without further instruction (DRP Referral 2, **CEC01032608**, 2 March 2009).

In that context, you said the following (**CEC01032672**):

“I'm still worried about the disputes around Princes St getting resolved in short order (on Friday It felt like they would because Infraco want them to be resolved) and us facing the “leap of faith” decision to progress on Princes St

(and elsewhere) while a lengthy DRP campaign is fought and in the meantime the outturn cost and programme for the job can't be determined with the requisite degree of certainty."

10) Can you explain this concern?

The "leap of faith" I was referring to was the prospect of Infraco starting work on work which was the subject of referrals to DRP (we believed they were required to work on matters referred to DRP), that tie/CEC was then exposed to the full consequences of DRPs not being successful and that whilst the work was going on (and money spent) there would be resulting continuing uncertainty as to the overall outturn costs and programme for the project.

On 3 March 2009, BSC sought permission from TIE to release a statement to the media (**CEC01033189**). It refuted any suggestion they had demanded £50m to £80m extra in additional payment has a precondition to starting works on Princes Street. Rather, they had said that based on the latest MUDFA programme and the projected release dates for approved construction drawings, the project was likely to overrun by 16 months; that overrun, together with changes, were likely to increase costs by £50m; and, given the likelihood of other obstructions, total costs could in fact rise to £80m.

11) What were your views on this statement?

12) Did TIE authorise its publication?

I cannot recall this statement or if it was eventually released (can't find it on the Bilfinger website) or, if it was, who specifically authorised its release.

You prepared a paper for the TPB on 11 March 2009 entitled "*Infraco Options Analysis*" (**CEC00933931**). (You may find it helpful also to see the paper prepared for David Mackay around the same time to brief Ministers, entitled "*Infraco Commercial Options Analysis – A future without Bilfinger Berger?*" (**CEC00554590**).

The paper identifies the preferred strategy to be the rigorous and targeted use of the dispute resolution procedures to enforce the contract terms and expose Bilfinger's failures to the other consortium members.

I do not recall the paper CEC00554590 or what it was used for - but dates and references in it lead me to believe it was written or updated later – in the autumn of 2009.

13) Please explain the preferred strategy, and why it was preferred over the other options.

In context, this paper represented the considered views of tie management and legal support collectively at this time and was presented at a time when there was insufficient clarity and engagement with Infracore (including regarding their positions on the interpretation of the contract) to be able to deliver any degree of cost and programme certainty to our stakeholders including CEC and Transport Scotland.

Summarising from the paper and its appendices the recommended strategy was to institute targeted DRPs on urgent/programme critical elements of the work which would concurrently address the differing interpretations of the contract. We believed Infracore was required under the contract to commence works which had been referred to DRP. It was also considered that general DRPs on the contract provisions in dispute would not be as relevant or informative as those which referred to specific circumstances and elements of the work and programme.

A prolonged programme of resolving matters through DRP was not contemplated at this stage – the objective was to get the work progressing, improved engagement with Infracore and establish the correct contractual interpretations.

It was also considered that the other options being considered (which had not been discounted) would be best served by clarifying the contractual responsibilities of Infraco through targeted DRPs:

- Termination (A) – there was legal uncertainty as to whether there was sufficient grounds at this time for termination (eg persistent breaches) and the DRPs would help drive this out.
- Replacement of BB on civils work (B+C) – this would only ever happen if the other members of the Infraco consortium made it happen and for that BB failings, as tie saw them, would be highlighted through successful DRP. Also at this time many of the Infraco subcontractors had not been appointed and there was therefore no basis on which to step into those contracts which may have been subject to procurement challenge in any case.
- Negotiated settlement of all matters and/or working on a cost plus basis (D) – tie would be in a position of great weakness in any such settlement given the extent of the disagreements on the contract provisions and the Infraco stated position that extra costs so far were £50m to £80m (with insufficient detail) and that they now wished to suspend work for a further 6 months until design and utilities were 100% complete across the entire route. This was considered very likely to result in a very unaffordable outcome and lead to extensive risk transfer back to tie/CEC.

Regarding the termination option specifically, in addition to not having clear evidence of grounds to terminate at this stage, termination would result in the loss of the contract negotiated over a long period of time, the value of work which had been done by Infraco (including soft costs as well as physical work done), great uncertainty with regard to ability to re-procure and the timescales for doing so. There was also an underlying risk of Infraco challenging the termination in court and consequential long running legal proceedings. Not wholly relevant to the commercial considerations was the risk of loss of stakeholder support and in particular withdrawal of Scottish Government grant.

At _3, the paper considers options for reducing the project scope.

14) Please explain why truncating the line (a) short of the airport, and (b) at York/Picardy Place were considered unattractive.

As a general statement the Business case demonstrated the viability of the whole of Ph1a and any truncation would lead to loss of benefits and therefore be unattractive if the elements taken out were not delivered in the future. Summarising from the paper

(a) It was considered that truncation short of the airport would be highly unlikely to be acceptable to TS/Scottish Ministers since cancellation of EARL whilst maintaining rail based public transport to the airport through tram (incorporating the heavy rail interchange at Gogar) was a prerequisite for continued public grant support for the tram project by Scottish Ministers. In any case the tram had to extend to the depot at Gogar as it was not practicable to relocate the depot elsewhere.

(b) Truncation from Newhaven back to the foot of Leith walk was unattractive as the impact of the tram in stimulating and facilitating new development in Leith Docks was a key source of the benefits in the Business Case. This was true notwithstanding the fact that by 2009 the financial crisis had led to a very significant slowdown in the new development. Truncation at York/Picardy place was unattractive because the route to the foot of Leith Walk provided the greatest opportunity on route for integration of bus and tram services (with Interchange at the foot of Leith Walk) to increase reliability of travel times and reduce congestion on Leith Walk and back through the City Centre.

At _5, the paper notes that £77m had been paid under Infracore, whilst the work value was c. £40m. It also notes that TIE had no contractual right to stop payment of certifiable sums whilst the dispute was underway.

15) Please explain this point.

The main contributor to the difference between value of work done and payments to Infraco was the initial milestones and mobilisation payments made to Infraco in accordance with principles agreed at preferred bidder stage (when I was not around) – these are explained in my answers to Q74 and Q129 from the 2008 questions. The advance payments did not impact on what would be recoverable from Infraco in the event of termination where the work had not been completed.

16) Why had the contract payment milestones been set up in this way?

As explained in Q74 and Q129 from the 2008 questions. The contractor was entitled to receive certification of preliminaries (including management and overhead costs) each period in accordance with the principle of the payment schedule to leave them cost neutral established at preferred bidder stage. The remainder of the payment schedule was milestone based where the Infraco got paid on completion of individual elements of the work.

17) What impact, if any, did these matters have on tie's strategy for resolving the dispute?

I don't believe it had a material impact as contractually in the event of a termination the contractor was only entitled to payment for work done and tie could recover the balance. We had no visibility of the extent to which Infraco had by mid 2009 actually committed or expended the advance payments for the purpose they were intended including mobilisation (including sub-contractors many of which were not yet awarded) and securing the purchase of long lead materials and equipment.

At _5 and _6, there is discussion of reprocurring the infrastructure contract.

18) Why was that considered unattractive?

See answer to Q13 above.

At _10, the need for a "*complex delay analysis*" is noted.

19) What work was done to analyse project delay?

I believe tie's own programmers continued to do a professional job analysis the delays that had occurred and identifying solutions to mitigate that delay going forward. However what was absent was adequate engagement with Infraco to agree the mitigations and most importantly to reach equitable commercial settlement for the delays for which the "complex delay analysis" was required. It seemed that the Infraco's preference was to stop the work completely, to hold tie responsible for global delay across all elements/geographical areas of the project to that point and deliver a revised programme only when the design and utilities was 100% complete.

20) What was the outcome?

There continued to be extensive disputes with the Infraco regarding the development of a revised construction programme for the overall project and the individual sections of it, and the commercial attribution of responsibility between tie and Infraco for the delays.

A paper by Steven Bell for the TPB on 11 March 2009 narrated the efforts made to resolve the dispute with BSC (**CEC01001220**).

21) Were you involved in these attempts?

The paper CEC01001220 describes the DRP procedure as it would be applied in carrying out the preferred strategy adopted in accordance with the Infraco Options analysis paper also presented to the 11 Mar 09 TPB. The narrative also refers to the establishment of a "Framework Management Team" between tie and Infraco which was eventually called the Project Management Panel (PMP). I do not recall being directly engaged in either the

development of the individual DRP submissions or the in the PMP myself.

22) If so, what are your views on why they failed?

As a general statement I can only say that despite all attempts to the contrary Infraco persisted (whether at a working level or higher up the chain of command) in their approach that all delays should be to tie's account, that their interpretation of the contract provisions in dispute was correct and that they wanted to work on a cost plus basis out with the original contract terms.

23) What was your understanding of the proposal for 'surgical' DRP (_2), and the reasons why TIE selected the disputes it did?

As per answer to Q13 above, the strategy was to institute targeted DRPs on urgent/programme critical elements of the work which would concurrently address the differing interpretations of the contract. We believed Infraco was required under the contract to commence works which had been referred to DRP. It was also considered that general DRPs on the contract provisions in dispute would not be as relevant or informative as those which referred to specific circumstances and elements of the work and programme.

A prolonged programme of resolving matters through DRP was not contemplated at this stage – the objective was to get the work progressing, improved engagement with Infraco and establish the correct contractual interpretations.

You produced a "Q&A" on 17 March 2009 for David Mackay in relation to his meeting with the Ministers (Stewart Stevenson and John Swinney) (CEC01003783, CEC01003784). Question 5 addressed the question of whether or not the contract was "*fixed price*".

24) What was your view on the extent to which this had properly been understood

by CEC/Ministers prior to Financial Close?

I cannot conclude other than CEC/Scottish Ministers understood that the contract was fixed price (except provisional sums and value engineering items) for a defined scope of works and programme with conditions and assumptions as laid out (and risks of change assessed) in the Close Report at Financial Close. I believe they would also have understood that this was subject to change in respect of matters still the responsibility of the public sector eg impact of delay/changes arising from design consents and approvals and utility diversion delays which were not capable of being mitigated and were the contractual responsibility of tie/CEC. The fixed nature of the price was also predicated on the contract itself being robust both in totality (including Infracore responsibility to expedite the works, issue changes which could be processed and mitigate the impact of changes) and for specific elements such as the design risk (including normal design development) being carried by Infracore as understood at financial close. Lastly it was predicated on Infracore getting on with the job in a timely fashion.

A note of a meeting you attended with DLA and CEC on 7 April 2009 (CEC00900448), includes the following:

*"Who is liable for delays to date? TIE state that BSC has a general obligation to mitigate. BSC are of the view that until they have full and unfettered access to the various work sites they are not obliged to start work and should be given extensions of time to deliver. Any examination of the respective positions will require a factual basis detailing what sites were available and when. It is possible that DLA or a QC could provide a view to give confidence (or not) here. **The exercise of analysing delay responsibility will have to be painstakingly completed in order for there to be a rational basis for settling allocation of costs. It has always been in BSC's interests to approach this on a "global" basis, since this offers the most effective means of obscuring their own defaults and failings behind assertions***

about client- side failings.

25) Can you comment (especially on the highlighted section)?

This extract refers to the fact that the delays which had occurred were complex in terms of cause and effect and were interrelated so the process of attributing the delays to the responsibility of tie (eg design and utilities delays), and Infraco (eg in tie's view failure to mobilise and progress adequately, submit adequate information with changes and engage with tie to mitigate the impact of delays by starting work where there were no impediments to them doing so) was both complex and required a willingness to work together. It appeared to be Infraco's approach to want to deal with this on a global basis rather than engage in the detail for an equitable commercial outcome. I am not a project planner and that is the best answer I can give.

A slideshow for the TPB in April 2009 (**CEC00971385_5**) noted the supplemental agreement reached in relation to Princes Street, and the creation of the Project Management Panel for more constructive engagement between TIE and BSC.

26) Can you explain the main commercial elements of the Princes Street agreement? (**CEC00302099**)

In essence the agreement was a cost plus arrangement limited to Princes St only for the scope of works as defined in the Infraco contract on Princes Street plus costs associated with anything which would otherwise have fallen to be a change (Notified Departure or Compensation Event) under the Infraco contract. Infraco invoiced tie for the value of work done as invoiced to them by their sub-contractors and added their preliminaries measured in accordance with the Infraco contract. The value of the work on Princes St as included in the Infraco contract price was deducted from the amount payable under the agreement.

27) Why was it required, and how did it come to be agreed?

I do not recall the exact circumstances in which it was initiated, but the impetus from the perspective was that there was a time window to get the Princes St work completed before the Summer embargoes and it was important for the overall project programme to get the construction on Princes St completed during this time. The disputes with the contractor as they affected Princes St (including a change to having a bus lane open which wasn't contemplated at time of contract) meant that the Infraco was just unwilling to carry out the work under the main contract. Even if they were willing to do so there was a risk of the work coming to a halt due to failure to agree changes which emerged during the course of the work in the timescales required. It was also felt that getting the Infraco working on street under these amended terms (applicable to Princes St only) would help with fostering improved engagement as the Project Management Panel was initiated.

From the Infraco perspective they wanted to show that they could deliver work effectively on a cost-plus basis.

28) Why was that approach not used elsewhere on the project?

At this time it was considered that if it was a success (in terms of delivery and cost) it could be extended to the other on-street sections where change was most likely to emerge as the works were happening eg due to unexpected obstructions in the ground, unexpected ground conditions or changes to traffic management arrangements. It was still of the view that the off-street works should be carried out (and should have been progressing) under the agreed Infraco contract terms.

29) What was the intended function of the Project Management Panel, and to what extent did it succeed? (At the TPB on 24 March 2009, for example, you had expressed the hope that the number of unresolved INTCs would be reduced

through the PMP: CEC00888781_8 at 1.10).

The PMP had a documented remit which I don't have. In substance it was a name given to what should have been happening anyway and that was constructive engagement by two management teams each empowered to make decisions necessary to unblock changes, find solutions to problems, avoid disputes (including further referral to DRP)

It is noted in the minutes of the TPB on 24 March 2009 (CEC00888781_8) at 1.4 that the PSSA would involve "*no increase in liability to tie*".

30) Can you explain that point?

I believe the point that was being made was that based upon engagement with Infraco, the cost to tie of conducting the Princes St works was not expected to be significantly different to that is the works were carried out under the main contract terms with the assumption that changes which would have been evaluated and approved under the main contract would also be included in the cost here.

31) What was your view?

I believe it was a statement made in good faith but that it was dependent upon Infraco carrying out the works competently and cost-effectively. In the event the final cost of the works on princes street did represent a substantial premium over the allowance made in the contract price even before 'changes' effectively included in the final cost (eg for the extent of roadworks required including full depth road reconstruction/road surfacing required and the cost consequences of obstructions eg I recall ancient structures being discovered at the Mound). There were also issues with the Infraco progressing to the programme and quality issues with the completed work which required subsequent re-work. I don't have the final numbers to be able to comment here and wouldn't be the best individual

to comment on the engineering and construction issues in any case.

A slideshow for the TPB on 24 March 2009 (CEC00934643, at _6, noted that the PSSA

“Allows impact (cost and time) of any unexpected obstructions / change events to be addressed more quickly as the works progress – in essence an acceleration of mechanistic application of the Notified Departure Change or Compensation Events rules in the Contract.”

32) Do you agree with that assessment? Did it reflect a defect in the Infraco contract? If so, why were the procedures not amended for the whole project?

The agreement empowered the tie and Infraco project managers to make decisions on the ground without referring back to the contract change mechanism which was not working because of widespread ineffective engagement with Infraco in determining responsibility for changes and the value of them.

I didn't believe there was a defect in the Infraco contract with regard to change in 'normal circumstances' – the main contract change mechanism was not working due to inability or unwillingness of Infraco to apply that change mechanism in a timely and equitable manner for the sheer volume of changes submitted.

At this time it was considered that if PSSA was a success (in terms of delivery and cost) it could be extended to the other on-street sections where change was most likely to emerge as the works were happening eg due to unexpected obstructions in the ground, ground conditions or changes to traffic management arrangements. tie was still of the view that the off-street works should be implemented (and should have been progressing) under the original agreed contract terms and the very significant BDDI to IFC dispute in relation to off-road structures etc would have to be resolved before consideration of any amended ways of working off street.

The slideshow (at _8) identifies the key commercial disagreements with Infraco.

33) To the extent you have not already done so, please explain these disputes (and your views on them at the time).

I think this question relates to slide 8 of the 15 April TPB presentation (CEC0091385_008).

**CEC0091385
should be
CEC00971385**

Of the five key areas of commercial disagreements I think I've already commented on 1) design management and evolution -including BDDI to IFC, 2) liability for delays and 5) failure to provide estimates in previous answers as I understood them.

Commenting on the other 2 as I understood them:

- Preliminaries added to changes – this was the subject of DRP1 relating to what I believed was excessive preliminaries being added to changes by Infraco. At this time DRP1 was going through mediation. Review of subsequent documents would suggest that at some time this issue was wholly or partly resolved with subsequent valuation of changes reflecting lower amounts.
- Responsibility for unforeseen ground conditions – as I understood this was relevant to the BDDI/IFC issue with respect to structures/retaining walls and whether design changes issued were the result of unexpected ground conditions, whether those changes were actually necessary (competence of design) and if they were actually necessary whether they fell to be the responsibility of Infraco as they could have been foreseen by an experienced civil engineering contractor and therefore included in the price (see 3.3c in Sch pt4).

The slideshow (for the TPB on 24 March 2009 (CEC00934643) also notes that there would be difficulties with a claim by Carillion for delay and disruption due to poor

records; and notes the strategy to close down the MUDFA contract and transfer the remaining diversions to other contractors (_14). A paper presented to the May TPB (CEC00633071_26) noted that for “*performance, quality and cost reasons*” it was proposed to close the Carillion contract, and that “*Carillion admit that the complexity of moving utilities to this scale and variety has been underestimated by them.*”

34)What was your understanding of these matters?

I think the slide referred to is from May TPB presentation (CEC00971385_0014). As reported, at this time there were remaining utility diversions to be started mainly in Leith (between Newhaven and Tower Bridge) and at the airport (Burnside Road). Persistent performance and quality issues with Carillion had led the project team to a decision to re-procure these remaining utility diversion with other contractors as the impact on overall outturn costs was expected to be neutral as explained in the paper CEC00633071 from 26. My general recollection is that Carillion were happy to go but at this time there was still a claim by Carillion to be settled in respect of circumstances where they believed they had been delayed or disrupted – I believe this would have been related to issues with the design approval interface with SDS and traffic management and embargo related disruption. Allowance was made in the risk allowance for this. At the time of answering this question I cannot locate an analysis of the final outturn costs on utility diversion with Carillion in the papers provided.

You prepared a paper for the TPB on 15 April 2009, entitled “*Strategic Options – Update and Forward Planning*” (CEC01010129). It noted that the primary objective of the next two months was to produce a recalibrated programme and cost estimate, accepted by all parties, which had reasonable certainty of delivery (_5).

This paper was an update on the Strategic Options and DRP papers presented to the March 2009 TPB (the subject of Q13 to 23 above) and was

intended to provide a description of workstreams, targeted outcomes and timetable for completion of the strategy. As before the strategy was very significantly reliant on constructive and productive engagement with Infraco to deliver results. The paper was developed in consultation with all members of the project team including those with direct engagement with Infraco personnel. I don't believe any of the dates targeted for resolution in the paper were met.

- 35) Please explain the focus on these matters, and the factors which had prevented progress on them to date.

Establishment of a recalibrated programme, with commercial consequences equitably agreed with Infraco, had been a priority since late 2008 (see Q34 from 2008 post contract close) and previous answers provided in 2009 (eg Q4,7g,9,19,20,22 and 25) explain why it was so important and why progress to date with Infraco in resolution had prevented – up to and including a hard line view by Infraco that all delays were to tie/CEC account. What was changing is that the stakes were getting higher ie the overall cost of delay, however attributed/agreed between parties, were increasing all the time. Resetting the programme (including commercial agreement) and resolving the responsibility for design (incl. BDDI to IFC issues), being the two biggest commercial issues in value terms, alongside a constructive and productive working relationship with Infraco going forward, were all necessary precedents to delivering a reliable update to the outturn costs and programme for completion of the project for stakeholders.

The paper noted "*the absence of grounds so far to initiate termination of the Infraco contract*" without exposing to TIE to risks including claims by BSC (1).

- 36) Please explain this point.

As per answer to Q13 above, at this time there was legal uncertainty as to whether there was sufficient grounds for termination (persistent breaches) and

the selected strategy of targeted DRPs would help drive this out. There was also an underlying risk of Infraco challenging the termination in court and consequential long running legal proceedings.

On _3 it is noted that TIE had internally established a re-baselined programme with an open for revenue service date of 23 February 2012 (17 October 2012 without mitigation), and that the PMP had an objective of delivering an agreed programme by the end of June 2009. Reference is also made to TIE procuring "*detailed reinforcing technical analysis of responsibility for delays*" and legal opinion on BSC's obligation to mitigate delays.

37) Please explain the work done, and progress made, in this regard.

On the programme the project team did procure supplementary assistance on analysing the delays and the attribution of the causes of delay – I can see from other references in the documents provided a company called Acutus was used. The project team also sought reinforcing legal opinion on the contract terms in dispute for senior counsel (maybe more than one but I cannot recall details) through DLA who also delivered additional resources and expertise experienced in contractual disputes on construction/engineering contracts. I was not personally involved in the management of these engagements so although I would have been kept informed of outcomes I do not have recollection of the details.

38) What legal advice was TIE receiving at this stage about the disputes under the Infraco contract?

See answer to Q37

(See the minutes for the April TPB: **CEC00633071_5** at 2.8, which refers to positive advice from DLA.) (Separately, we note that tie's reporting that there was £11.7m of headroom within the £545m available funding depended on an

assumption that the principal contractual disagreements would be found in tie's favour: TPB, minutes, 24 March 2009, CEC00888781__8, 1.12).

- 39) How confident were you and others in TIE about tie's prospects on the principal areas of disagreement with BSC? How confident were you in the legal advice received by tie? Did your confidence in the legal advice change at any time (and, if so, when and why)?

I am unable to express a degree of confidence felt by myself or anyone else at tie at this time. My recollection is that the legal advice was complex and inconclusive. The fact was that tie was not in a position to achieve certainty on programme and cost other than by reaching equitable agreement (with the compromises that may involve) with Infraco or by pursuing determination of the contractual position legal position through DRP and/or legal action. At this time we were running DRP alongside attempts to engage with Infraco.

Some notes of optimism are noted at __5, on whether agreement on a programme and cost estimate was possible.

- 40) What was your view at the time on whether this was well-founded?

I think the paper explains that the advent of the PMP and arrival of new management personnel representing Infraco locally may well have been resulting in better engagement but key to the success of that engagement was that they had authority to make decisions. There was no evidence that such authority would extend to the by now entrenched position from Infraco that tie had to take responsibility for all delays since contract close and that tie had to take responsibility for all design change, regardless of circumstance in which it had occurred, and that the additional costs should be measured in accordance the principals of the BDDI to IFC changes notified.

The paper notes a critical factor in achieving success was "*reinforcement of the TIE*

commercial team with experienced and savvy people” (_6).

- 41) Can you please expand on that? (See also para 2.7 of the April TPB minutes, **CEC00888781_6.**)

**CEC00888781
should be
CEC00633071**

The issue was not with the quality of tie’s existing commercial resources – the point was that the extent of the issues and their complexity required that additional resources be mobilised by tie which were experienced in progressing the kind of contractual disputes/impasses now being faced including technical and legal expertise. This included the approach of developing robust analysis and solutions in advance of commercial agreement on the subject matters with Infraco – see last paragraph on page 2 of the paper.

- 42) Why was “*reinforcement*” required? Did it take place?

As answer to Q41.

The paper also states that the most critical issues to resolve were BDDI/IFC costs and dealing with backlog of changes (_6).

- 43) Do you agree that these were the most important issues?

I believe agreeing a revised programme and commercial agreement of how the delay costs would be shared between tie and Infraco was critical alongside the BDDI/IFC issues. It was also critically important that even if these issues were resolved that there was a way of working constructively and within the contract going forward which would give comfort that further disputes and delays were not going to re-occur going forward.

Martin Foerder was appointed as BBS’s project director in around April 2009 (e.g., **CEC00888781_13**).

44) What change, if any, did that bring?

I recall a better relationship and engagement between Martin Foerder and the project team being reported but as per Q40 above key to the success of that engagement was that he had authority to make decisions and there was no evidence that this would extend to Infraco's entrenched commercial positions on programme and design. I had very little contact with Martin Foerder personally

Richard Jeffrey was appointed as tie's chief executive on 22 April 2009 (CEC00633071_8, 8.1).

45) What change, if any, did that bring?

Richard brought a fresh perspective and renewed vigour and leadership to the engagement with Infraco and the strategies/steps being taken to resolve matters – leading in this regard where Steven Bell, myself and others had done since Willie Gallagher had resigned. He was instrumental in sourcing much of the additional legal and technical expertise tie brought on board in an attempt to progress matters from mid - 2009. His also reinvigorated tie's engagement with stakeholders including CEC, Transport Scotland and the wider community.

Importantly Richard instituted a number of initiatives efforts to improve morale, reinforce teamwork and external communications at tie – recognising that the persistent and unproductive engagement with Infraco and external criticism and scrutiny of tie was by now having an impact on tie.

Richard's appointment was very positive.

A slideshow for the TPB on 6 May 2009 (CEC01026346_10 and _11) noted that 341 INTCs had been received and 242 estimates were outstanding. Pie charts showed a

breakdown of the INTCs and the estimates received.

46) What was your understanding of the reasons why so many estimates remained outstanding?

I cannot offer an opinion on the exact reasons why so many estimates remained outstanding but I believe it was most likely to be any of or a combination of the following:

- Infraco were not ready to start the work concerned and were relying on the contractual provision whereby work did not have to start till change was agreed
- Infraco preferred to have the overall principles regarding eg responsibility for delays and design change agreed rather than progressing individual changes – believing this was to their advantage
- Infraco wanted a commercial compromise which might be considered by tie in the face of stakeholder pressure to see the project moving and have certainty of costs and programme
- Infraco was genuinely unable to put a value on individual changes because the programme consequences had become too complex, they did not have sufficient resources themselves or were not fully in control of elements of their responsibilities including completion of the design by SDS.

The minutes for the TPB on 6 May 2009 (CEC01021587_5) at 5.2 note you as saying that the reason for the cost forecast being unapproved was the change in risk profile from financial close.

47) Can you explain this point?

I do not recall saying this and in respect of the contractual risk allocation this statement was not true as at this time the interpretations of the contract terms under dispute had yet to be resolved either through DRP or legally. At this

time I think it would have been true that the financial consequences of risks which did exist at financial close eg design and utility diversion delays were on the face of it giving rise to higher costs than was provided for at financial close but that cost consequences of these were not yet clear enough to deliver a reliable update to the outturn cost estimate or programme for the project which was capable of being approved.

Donald McGougan said he wanted to ensure the £3.2m costs for the cancellation of phase 1b would not be paid to BSC as of right, because part of the reason for postponing it was the price they had quoted.

48) Please explain this point.

By this time Infraco had submitted an estimate for completion of Ph1b (details not available in documents provided) and I believe the estimate was very significantly in excess of that which had been included in their preferred bidder submissions and was used to develop the outturn estimate for Ph1b reflected in the Final Business Case. I believe that Donald McGougan was asking if the Ph1b payment of £3.2m could be resisted in light of the fact it was agreed at financial close and the cost estimates for Ph1b which existed at that time.

It appears that TIE were not successful in resisting payment of that sum (see the Report to Transport Scotland in the papers for the TPB on 26 August 2009, **CEC00739552_56**, which notes that TIE had paid Infraco £3.2m in August for the postponement of phase 1b).

49) Why was that?

50) Did TIE give any consideration to withholding payment based, for example, on alleged failures by BSC to perform its contractual obligations?

In answer to Q49 and Q50, my recollection is legal advice from DLA was

sought on the possible consequences of withholding the Ph1b payment and this was considered by tie and communicated to CEC. After due consideration the decision was made to make the payment to avoid a clear breach of contract by tie (from not making the payment) becoming an issue or frustrating attempts to resolve the widespread disputes on Ph1a delivery. Legally I don't recall there being a clear way to connect the Ph1b payment to the alleged failures by BSC to perform its contractual obligation with respect to the Ph1a scope.

51) Earlier, you had referred to a cost of £6.2m if phase 1b did not proceed. Was *that* cost in fact incurred?

The £3.2m payment to Infraco was part of the £6.2m – the balance being £3m design costs which had been incurred in respect of Ph1b prior to financial close and clearly reported as such.

You and Richard Jeffrey met with BSC on 3 June 2009. Mr Jeffrey's recollection of the meeting is recorded in an email the following day (CEC01008606).

52) What is your recollection of the meeting?

I do not have any specific recollections of the particular meeting

53) What were the key points?

With reference to Richard Jeffrey's email, the list of issues accurately reflects the major issues to be determined including delay and design responsibilities. The workshops referred to (what I presume became the mediation sessions in late June) were seen as a positive step. The tone from BB described as "broken record/table thumping" is consistent with experience up to that point on entrenched views of Infraco re delay and design responsibilities.

An "*intense mediation week commencing 29 June on the key contractual programme and commercial issues*" was agreed between TIE and BSC (Project Director's report

to the TPB, 8 July 2009, **CEC00983221_12**). BSC had supplied revised programmes which TIE had reviewed. The Project Director's report noted that

“These are provided by BSC to achieve agreement on relief/extension of time and as yet do not provide any material mitigation measures to recover the programme.”

A slideshow for the TPB on 8 July 2009 (**CEC00783725**) noted that the mediation had not delivered an acceptable outcome, and that a formal contractual approach was necessary (on the mediation, see slides _6 onwards). That was said to involve a return to the options identified in March, including:

- the reference of selected matters to dispute resolution;
- invoking the audit and best value clauses of the contract to get information, especially on programme and design management; and
- the service of breach notices on Infraco (_10).

The slideshow covered other options, including re-procuring parts of BSC's scope (_12) and reductions in the scope of the tramline (_14).

There is a recap of the mediation in Richard Jeffrey's slideshow for the July 2009 TPB at **CEC00376412_15**.

See also the TPB minutes for 8 July 2009 (**CEC00843272_5**, from 3.5 onwards), which note the TPB's approval of a formal contractual approach, but its desire for more information before issuing formal notices to BSC.

54) Who was involved in the mediation?

Senior members of the tie and Infraco project teams.

55) What role, if any, did you have?

I do not believe I had any active part in the preparation for the mediation

meetings and I do not recall being present at any of them.

56) What issues were discussed?

I believe the issues discussed were the principal barriers to progress and disagreement as per answers to previous questions and as noted on slides 6 and 8 of the TPB presentation on 8 July 09 (CEC00783725).

(The Report to Transport Scotland in the papers for the TPB on 26 August 2009 (CEC00739552_39, at _40, says that the revised programme was one of the key issues.)

57) What, if any, progress was made

58) Why did the mediation not succeed?

I believe that despite constructive engagement there was no breakthrough on the key commercial disagreements including responsibility for delays, responsibility for design (including BDDI to IFC) and provision of information to be able to process notified changes.

On 3 July 2009, you circulated a paper "*examining the dynamics of the outturn estimate*" (internal to TIE only) (CEC00766443, CEC00766444). This noted estimates that had been reported to the TPB in January 2009 (£522m to £540m) and to CEC officers on 13 April 2009 (£553.6m) (for which, see CEC00892971, CEC00892972 and CEC00892973), and noted the outcome of a further review of possible outcomes, which ranged from £584m (best) to £618.5m (worst). The most costly elements were said to be for delay (EoT 2 and future delay) and design (including BDDI to IFC). The estimates did not take into account any INTCs yet to come. The BSC position on delay costs was even greater than tie's worst assumption, at £40m (page 4). The paper noted that TIE required detailed explanations on the value of change (page 5). The latest view was that £5.5m of the value engineering savings assumed at financial close would not be deliverable

(£2.3m more than had been provided for in the risk allowance) (page 7). £5.9m extra was being assumed for MUDFA (page 8).

This paper appears to be based upon more detailed documents attached to your email the previous day: (CEC00766380). CEC00766381 showed the estimates for risk. CEC00766382 is described as a "*risk allowance tracker*". The final attachment is CEC00766383. The risk estimate (on a worst case scenario) was said to have increased to £112.3m from the £19.7m in the budget at Infraco contract close.

59) Can you explain in broad overview what these documents were, why they had been prepared and the key information conveyed by them?

At the time of preparation agreement on the commercial disputes, either in detail or in commercial/contractual principle, continued to be unachieved but nonetheless it was a requirement to develop a view of what the possible consequences for outturn costs could be in respect of known circumstances at that time both for internal purposes and for reporting to stakeholders. Based on outputs which were produced predominantly by the project team this updated range of possible outcomes was developed. As the paper says on page 1 its purpose was to inform engagement with Infraco and an understanding of the possible size of the problem we faced. The range of outcomes is stated as having the status of "scenario planning" to inform an understanding of the nature and extent of challenges and was not a reliable outturn forecast in any sense unless and until the principles and numbers were agreed with Infraco. As explained below even the low case (QS view) estimates were predicated on a measure of compromise which might be required to unlock the disputes with Infraco without judgement in this paper as to whether such compromises would be desirable, acceptable to stakeholders, acceptable to Infraco or successful in delivering better engagement and certainty in delivery of the project going forward from this point.

In June 2009, and in the absence of agreement with Infraco on the principal commercial issues of submission by Infraco of information to enable changes to be reviewed, tie's commercial / project teams (working with additional technical and commercial resources then deployed) had developed a QS (quantity surveyor) view of the possible range of outcomes to the disputes in terms of impact on outturn costs for the project based upon the best information to hand.

- **Design change** - The QS view with respect to design change was prepared by tie on the basis that, in the absence of the BDDI to IFC disputes being found in tie's favour, additional costs may need to be conceded for changes in 'principle and valuation' based on discussions which had been taking place with Infraco with respect to trying to resolve the Russell Road retaining wall BDDI/IFC dispute and applying that principal to the other BDDI/IFC notified changes which were assessed as having a significant impact. This QS view therefore represented a possible very significant concession on the BDDI/IFC issue which may need to be made to overcome the commercial impasse (and in absence of DRP adjudication of the BDDI/IFC issue). The worst case estimate was similarly produced by the tie commercial/project teams based upon an outcome where the Infraco approach prevailed (ie re-measuring the cost of the entire element of the work from the IFC drawings in accordance with the change rates in the contract and then deducting the price for that element of the work in the Infraco contract). The mid-range view was an illustrative middle ground. The QS view developed on BDDI-IFC and other notified changes is what is included in the spreadsheet CEC00766381 (tab Ranging doc – change) and the existing QRA outputs were increased on spreadsheet CEC00766382 (tab Risk tracker) to reflect the QS view. I am unable to comment on the details of how the changes which might be conceded in 'principle and valuation' in the QS were arrived at – this would need to come from the experienced engineering and construction professionals who produced the estimates.
- **Costs of Delay (“EOT1” and “EOT2”)** – EOT1 was in respect of the V26-V31 design programme slippage which existed at financial close and had

been agreed at 38 days (considerably less than that was initially claimed by Infraco) but in terms of value no agreement had been reached because tie's assessment of the costs of delay was £330k per week (£2.5m) and this was somewhat short of the Infraco assessment of the costs of delay of £763k per week as explained in the first paragraph under 4 (CEC00766444_4) which would cost £5.8m. The QS view was £2.5m and the worst case outcome assessed at £3.5m. EOT2 was in respect of all other delays up to this point since financial close plus allowance for future delays found to be to tie's account or agreed in a compromise with Infraco. The range of £15-25m was based upon an aggregate of 45-75wks of delay to be borne by tie. The paper reflects that at the time of preparation a total of 78wks of delay had occurred and that based upon the status of the internal tie work attributing delay to date (ie not agreed with Infraco) an illustrative outcome of between 33% and 50% of these delays to tie's account might be agreed with Infraco resulting in an additional cost of £6-9m at tie's assessed weekly rate of £230k. The current status of what Infraco were requesting for existing delays at that time was 52wks at their rate of £763k ie £40m. Again I am unable to comment on the details of how the range of outcomes which might be conceded was determined in any more detail and this would need to come from the experienced engineering and construction professionals who produced the estimates.

60) Some of the figures are described as being the "QS view". Can you explain what that meant, and how it, and the "mid" and "worst" figures were arrived at?

As explained in answer to Q59 above.

61) To what extent were these estimates 'robust'?

As explained in answer to Q59 above, they were based on best information available and were not intended as a reliable outturn forecast in any sense unless and until any of the principles and numbers were agreed with Infraco.

62) What possible additional costs were excluded from these calculations?

The exclusions are listed at the bottom of page 2. I am unable to form an opinion as to what the additional costs of future events would have been (eg future notified changes and delays) from this point or the nature of INTC397 and 398 listed.

63) What did you expect the likely effect on the cost estimates to be once those excluded items were taken into account?

See answer to Q62.

64) The effect of even the lowest estimate was that the project would exceed the funding envelope of £545m: do you agree?

Yes - in the context of the assumptions made in preparing the estimates as at Q59 above.

65) Was there general acceptance in TIE at the time about the magnitude of the estimated increase in the risk allowance and its breakdown (e.g., that the largest elements were for delay and design (including BDDI to IFC))?

Yes – this was piece of work delivered by and owned by all at tie on the basis of the assumptions made.

66) Were these figures reported to the TPB and CEC around that time (and, if not, why not)? (See, e.g., a **draft** slideshow for the TPB (CEC00756390, attached to CEC00756389, 6 July 2009) which, at _4, refers to a cost increase to £581m including phase 1b costs (within a range from c. £560m to £600m++.)

I am not clear as to exactly when these estimates were reported at TPB but as per Q74 to Q76 below they were being briefed in the detail to CEC in the following 2 weeks.

67) In general terms, why had the risk allowance increased so dramatically?

This paper was not intended to determine a required increase in the risk allowance - it was prepared on the basis as described under Q59 above and was not prepared as a reliable outturn forecast in any sense unless and until any of the principles and numbers were agreed with Infraco. The June 09 QS view was developed in accordance with the adopted approach of tie assessing what the possible financial implications might be of change and delay where this information had not been provided by Infraco.

68) To what extent do you consider that that increase could or should have been foreseen prior to Infraco contract close? Please explain your answer.

At financial close I had no expectation (and I have no reason believe any else did) that there was any circumstance which would lead to delays of this extent, that there would be such a number of design "changes" notified by Infraco or that Infraco would adopt a position that all of it was to tie's account - ie we believed the contract as a whole was robust and that Infraco would progress the works and work constructively with tie to resolve issues.

Tie took advice on the contractual implications of reducing the Infraco scope, re-phasing its works, etc (e.g., **CEC00783314**, **CEC00783315**, 6 July 2009, draft advice from DLA).

69) What was your understanding of this option and the challenges involved in it?

I understand the principal challenges (as detailed in the DLA paper) were that any reduction in scope (either permanent to truncate the scope or to re-procure that scope with other contractors) pursued through the contract change mechanisms would be subject to the same uncertainties as tie were facing with existing changes and the timescales to reach such agreement would also be uncertain and potentially the further delay would be very expensive. The alternative was a negotiated settlement which would involve compromises or concessions on existing disputed principles and Infraco

seeking compensation for what they had already spent on the elements of the work being eliminated from their contract and loss of profits.

Even with a negotiated outcome, re-procuring the scope eliminated from the Infraco contract was subject to uncertainties as to how long it would take and whether it might leave tie open to legal challenge eg from the other bidder for the Infraco contract.

On 8 July 2009, BSC confirmed in writing an offer they had made on 2 July, as “a platform for full and final resolution” of the matters in dispute (TIE00666105). It proposed extensions of time, and payments in respect of them; a method of dealing with BDDI to IFC changes; a method for resolving disputes about value engineering; and an On Street Works Supplemental Agreement on a cost reimbursable basis, amended from the PSSA in light of difficulties administering that agreement.

70) What was unacceptable to TIE about this offer? What were your views?

In terms of extension of time EOT2 (delay costs) the proposal was that tie accept a 12 month delay all to tie's account – valuation yet to be established. In terms of the delay agreed in terms of time associated with the V26-31 design programme (EOT1) the respective valuations of tie and Infraco were some way apart and that would have follow on implications for EOT2 which were very significant.

In terms of design change (BDDI to IFC) the proposal was for a global settlement such that an allowance of 2.5% was made for design development by Infraco regardless of the circumstances under which the change had taken place or was necessary. The 2.5% would equate to a very small proportion of the potential total cost of BDDI to IFC issues.

Infraco wanted the principle of the hybrid cost-plus arrangement adopted for the Princes St works to be abandoned for a pure cost-plus arrangement for

civil works on remaining on –street sections.

Accepting these proposals would also have significant implications for the agreement of time and cost implications of change going forward.

71) What is your response to the final paragraph of the letter?

I do not believe tie was passive in its approach – the contract required Infraco to manage the project and provide tie with the information required to process change and engage in problem solving. At this time tie was also deploying additional technical and commercial resource to deliver proposed solutions and estimates in advance of engagement with Infraco.

We understand that in the second half of 2009, discussions continued between TIE and BSC about using the Princes Street Supplemental Agreement as the basis for a further agreement about the other on-street works.

72) What was your understanding of, and involvement in, that matter?

I do not believe I was personally involved in these further discussions to any meaningful extent – but I would have been informed as part of the tie management team. The final cost of the Princes St supplemental agreement represented a significant premium over the respective components of the Infraco contract price even before allowing for 'change'. As per answer to Q70 above, Infraco wanted the principle of the hybrid cost-plus arrangement adopted for the Princes St works to be abandoned for a pure cost-plus arrangement for civil works on remaining on –street sections.

73) What were your views on whether or not that was an appropriate course?

As with the reason for adopting the original Princes St Supplemental agreement I could see merit in adopting a different approach to working on-street if that helped break the deadlock in the off-street sections and at the same time brought

about an end to the widespread disputes and better engagement. However even then the cost and risk implications of a global cost-plus approach on street would need to be reliably estimated, understood and agreed by stakeholders (including in the context of the £545m funding available).

On 13 July 2009, you circulated an update of the costs estimate spreadsheet with some additions *“for the derivation of the low outcome of £560m intimated to CEC last week”* (CEC00766675, CEC00766676). The email was in preparation for a meeting with Alan Coyle of CEC. You added: *“Don’t spare the gory details as to the level of uncertainty but make sure he knows the QS view column includes a big healthy chunk of moving towards the BSC position.”*

74) Can you explain in overview the lower figure of £560m, and why it was the one being reported to CEC?

The derivation of the lower £560m figure versus £585m 'QS view' in the range review paper (both figures including Ph1b costs) was a less conservative view on the possible outcomes – the difference of £25m comprises:

- £4.3m - Delay (existing and future) adjusted to equate to 26wks of existing delay plus 14wks for future delay at tie's estimated cost of £330k per week – revised allowance £13.2m
- £10m – design change is BDDI to IFC principle found in tie's favour and pay only for necessary design change and not development – revised allowance £10.8m
- £3.0m – ground conditions related change in relation an additional Capping Layer problem would be resolved – see CEC00766444_0006 last paragraph in section 7 for further on this issue.
- £1.5m – extent of road reconstruction not as extensive and full effectiveness of £1.5m cap included in contract for 4 areas incl Princes St.
- £3m – expected saving on provisional sums in relation to Picardy Place and off-route traffic controls.
- £1.8m – other

75) To what extent was uncertainty affecting your estimates at the time?

These were not my estimates – they were produced by the project/commercial team. The same underlying uncertainties affected the lower £560m figure as the £585m in the QS view. As per answer to Q59 above the range of outcomes presented at this time was stated as having the status of “scenario planning” to inform an understanding of the nature and extent of challenges and was not a reliable outturn forecast in any sense unless and until any of the principles and numbers were agreed with Infraco. I note that the tabulation on CEC00766676 also includes the higher range estimates from the 3 July range paper (CEC00766444) and I have suggested using the 3rd July paper to brief CEC. Michael Paterson was one of tie's senior commercial people (a QS) and would have been well able to explain the basis of the QS view in addition to what was in that paper.

76) Can you explain what you meant by the QS view including a “*big healthy chunk of moving towards the BSC position*”?

Please see my answer to Q59 above.

Also on 13 July 2009, you expressed some unease about an email you had sent a month previously, telling Donald McGougan that “*As it stands there is no reason to believe that the range of outturn costs on the project will not fall within the £545m funding envelope*”. Graeme Bissett's reply noted that “*the challenge is how to communicate the message about uncertainty without implying that matters are wholly out of control.*” (CEC00794790).

77) Can you comment?

My email to Donald McGougan was on 19th June. Following the outcome of the June mediations (and the cost range review Q59 to Q68 above) I no longer thought the statement was reliable as there was no sign of a breakthrough with Infraco and the range of cost and time implications of existing change reflected

that costs would not be contained within £545m unless tie's position in the disputes prevailed without making significant concessions to Infraco. There was insufficient certainty regarding outcomes to make any confident statement regarding the outturn costs.

On 14 July 2009, an exchange of emails between you and Graeme Bissett addressed tie's strategy for preparing to deal with all of the disputes which had arisen under the contract (CEC00855750).

78) What was your role in this process?

The context here is that I've taken notes of a meeting with the Project Director, representatives of DLA and one of the CEC lawyers. I was not any sense leading the development and execution of the strategy which would have been detailed in a document (or more than one document) as intimated in the last bullet point of slide 16 at the 29 July board meeting (CEC00376412_0016) and I don't believe I was the author of those documents as they would have been developed by the project team assisted by the lawyers (DLA) with expertise and knowledge of the specific issues and legal questions on a case by case basis.

Reporting on progress and presentation of documentation was through the Financial legal and Commercial (FCL) sub-committee of the TPB, with amended terms of reference, which I attended (I may even have been nominated the Chairman of that committee) and included attendance by legal and financial representatives of CEC. However my recollection was that FCL became in substance a forum for keeping CEC informed rather than being the driving force for development and execution of the strategy.

79) Can you describe the process TIE in fact took towards dispute resolution?

I believe the process is summarised on slides 16 to 22 of the 29 July presentation to TPB (CEC00376412). This appears consistent with and a development of the

approach as reflected in the paper 'Strategic Options update – Update and Forward Planning' which was presented to the 15 April 09 TPB (CEC01010129) at Q35 to 43 above (which in turn preceded the mediation sessions which took place in June). I'd also highlight the addition of invoking the right of audit clauses in the contract to try to obtain further information on Infraco management of elements of the contract, including design management with a view to obtaining more detailed information on why design had developed that way that it had.

80) On what basis were particular disputes selected for dispute resolution?

As per Q13 above, selection for DRPs was on the basis of urgent/programme critical elements of the work which would concurrently address the differing interpretations of the contract. We believed Infraco was required under the contract to commence works which had been referred to DRP. It was considered that general DRPs on the contract provisions in dispute would not be as relevant or informative as those which referred to specific circumstances and elements of the work and programme. The items selected, including BDDI-IFC and EOT2, are included in the slideshow for the 29 July TPB at CEC00376412_21.

(We note that your email said that “(t)he big impact issues are delay attribution and valuation, design change (incl BDDI to IFC) and getting a service out of BSC going forward”.)

The email noted that Extension of Time 2 had “*huge implications*”, and referred to a forensic analysis by Acutus.

81) What did EoT 2 relate to?

82) Why were its implications “*huge*”?

My answer to Q59 above is also relevant here. EOT2 was in respect of all other delays up to this point since financial close. At the time of preparation of the range review estimates in June/July 09, a total of 78wks of delay had occurred.

Based upon the status of the internal tie work attributing delay to date (ie not agreed with Infraco) an illustrative outcome of between 33% and 50% of these delays to tie's account might be agreed with Infraco resulting in an additional cost of £6-9m at tie's assessed weekly rate of £230k. Infraco were requesting 52wks at their rate of £763k ie £40m. The implications were therefore very significant for the total outturn costs in respect of delays which had happened but also for the attribution and valuation of further delays going forward.

83) What work was done in assessing responsibility for delay, and what conclusions were reached?

Internally tie engaged a firm called Acutus to assist in developing a detailed view on attribution of delays to date working with tie's existing planners. I was not responsible for the management of this work and do not recall the eventual conclusions reached.

Graeme Bissett's reply referred to governance in this context, and said he would draft a revised remit for the FCL subcommittee of the TPB.

84) What work did that subcommittee do in relation to disputes? What was your role in relation to it?

See answer to Q78 above.

A paper circulated by Jim McEwan on 28 July 2009 summarised his findings of an investigation into the MUDFA works. The note focused in the main on unknown or unforeseen problems with utilities which had caused, and were causing delay (CEC00762213, CEC00762214).

85) To what extent did these problems differ from those which had been assumed and taken into account in setting the risk allowance at financial close?

The uncertainties regarding the extent of utilities which would require to be diverted and the design approval process (including the role of the SUCs) were explicitly recognised in setting the risk allowance at the time of financial close but the allowances made proved to insufficient. I believe those making the judgements about the extent of allowance required at financial close did so taking a prudent view based on their detailed knowledge at that time. I think disruption due to amended or extended traffic management arrangements and embargos was not anticipated at financial close. A detailed knowledge of the MUDFA works from those who were managing that programme would be required to reach an informed view of the contribution of these factors to further cost overruns as well as the basis on which the risk allowances at financial close were set.

At the TPB on 29 July 2009, Richard Jeffrey made a number of observations about the project's problems (minutes, **CEC00739552_5**; slideshow, **CEC00376412**).

The slideshow at **CEC00376412_3** noted problems "*baked in from the beginning*", including:

- the risk management strategy
- the procurement strategy
- design/design management
- contractor appointment/behaviour and
- optimistic estimates.

See also the minutes at 2.1, which noted that the complexities associated with unknown elements underground had perhaps not been fully appreciated.

86) What is your response on each of these, as someone who had been involved in the project from an early stage?

I think it is a fact that any new Chief Executive coming into the Tram project (or any other organisation) would take a fresh view on what the shortcomings were up to that point. However as this is just a short bullet point list of problems from

Richard's perspective I can't recall or comment on any specific shortcomings he was identifying under the five headings. The procurement strategy/risk allocation strategy was largely determined even before my time at tie. The estimates in terms of time and quantities for the MUDFA utility diversions did turn out to be insufficient but I think that needs to be considered in the context of known circumstances and experience at the time they were originally set and whether the emergent circumstances (Q85) could have been anticipated by those with the experience and expertise to do so.

87) Do you agree with Mr Jeffrey's summary of the BSC strategy at _17?

I think it represents a summary of what was believed was the Infracore strategy but an element of that was supposition based on their behaviours. Infracore would not have told us this was their strategy or what was driving it.

88) What was the role of the challenge team from McGrigors (_22)?

The dispute resolution strategy required the documentation of the positions and papers by the tie project team working with our existing lawyers DLA. As I recall McGrigors were brought in to form part of the challenge team which met regularly to challenge the detail, construction and documentation of the dispute referrals as an independent legal view given DLAs involvement in the detail. McGrigors precise terms of reference would have been documented in an agreement or letter. McGrigor's role later developed to provide a very detailed analysis of the contract terms and how they had developed.

The risk register appended to the Transport Scotland update report included in the papers for the TPB on 29 July 2009, at risk 1077 (**CEC00843272_74**) notes a risk of "*lack of visibility of design changes between November 2007 and May 2008*". This suggests TIE did not know if the design had changed and, if it had, who had authorised it.

89) What is your understanding of this problem, and how had it arisen?

90) How was it addressed?

Given the nature and extent of the BDDI to IFC disputes (including the Infraco position that a remeasure was required of the IFC with tie responsible for the cost difference between that and the allowance in the Infraco contract price) obtaining visibility of precisely why those changes took place and when was critical to a full view on the exposure. Anything which originated in the period before contract close (before Infraco assumed responsibility for design management) on the face of it had more significant implications for cost to tie depending on the final determination of what normal design development meant. Part of the strategy to resolve the disputes was to obtain the detailed information.

91) Why could TIE not simply compare the BDDI drawings with the IFC drawings and take its own view on whether or not there was a change within the meaning of schedule part 4?

At this time tie was doing just that and had greatly increased its resources in the technical and commercial teams to be able to do this. The initial outputs from this were reflected in the range review estimates of July 2009 but I am personally unable to provide a commentary on the development of the design on any individual element of the work – I have already noted that in the off-street sections / structures the extent and design of required foundations, retaining walls and capping layers (all related to ground conditions) was a recurring theme.

The Project Director's report to the TPB on 26 August 2009 (**CEC00739552_12, _13**) noted that two matters had been placed into the dispute resolution procedure; that based on technical and legal advice TIE was confident of its position on the key issues, but that it was unreasonable to expect all adjudication decisions to favour tie; that it was now considered unlikely that phase 1a could be built within the funding of £545m; and that until the key issues were resolved it would not be possible to

forecast accurately a revised budget outturn.

92) Please expand on tie's confidence in its position, and the uncertainties preventing accurate budget forecasts.

Sorry but I cannot identify specifically which 2 DRPs (issued on 11 August 09) are being referred to – per CEC00376412_0021 there were 4 DRPs expected to be issued at or around this time.

I am unable to express a degree of confidence felt by myself or anyone else at tie at this time. Each DRP submitted was professionally put together and subject to robust independent challenge including legal challenge.

Please refer to my answers in Q59 to Q68 above which explain to the best of my ability why the uncertainties prevented accurate reforecasting outturn unless and until the principle commercial disagreements with Infraco were resolved in principle and in the detail, and the project was thereafter progressing satisfactorily. Achieving certainty was a primary objective of the formal contractual approach being pursued to resolve matters.

At _14, _15 there is an update on progress with Infraco works. It attributes slow progress to "*the appointment of direct BSC resource and the final appointment of the main package contractors*", and to slow estimates and the BDDI to IFC issue at various off-street locations.

93) What was your understanding of these points?

Delay in this context was assessed as being as a result of slow or incomplete mobilisation by Infraco and uncertainty regarding BDDI-IFC issues (especially off street) where Infraco would not work until the changes had been agreed – this has been a recurring theme in the answers I have given to questions from late 2007 to mid-2008.

The update suggests that difficulties with the change process (slow estimates and the BDDI-IFC issue) was by this stage the main cause of delay in the off-street sections (and, primarily, the structures there).

94) Is that understanding correct?

Yes I believe it is.

95) What was your understanding, in overview, of the way in which this issue affected the project? Were particular parts more affected than others (e.g., on street/off street; structures; particular sections)? If so, what is your understanding of the reasons why those parts were particularly affected?

I believe a recurring theme was the extent or nature of foundations and retaining walls in structures arising from ground conditions but where tie had insufficient information as to when the changes had happened or why they were required. Of the total £20.8m possible exposure to additional costs from BDDI-IFC identified in the QS view of July 08 over £13m related to these issues and as I recall progress on several of the several of these structures was critical to avoiding further delay to the programme to complete the project.

(The report to Transport Scotland included in the papers for the TPB on 26 August 2009 (CEC00739552_56, third final bullet) refers to "*change items currently 'on hold'; the majority of which are off-street works along the railway corridor*".)

A paper to the TPB on 26 August 2009 on utilities risk drawdown (CEC00739552_24) noted a drawdown from the utilities risk allowance of £6.7m to resolve Carillion claims, largely relating to the greater than expected amount of work required.

There are references throughout the papers to TIE criticisms of Carillion's work.

96) To what extent, if at all, did TIE seek to reduce payments to Carillion to reflect their perceived failings, and to what extent did they succeed in doing so?

As I understood it the MUDFA contract entitled the contractor to be paid for the work completed in accordance with a schedule of rates and there was little scope for reducing payments to the contractors for failings which did not convincingly constitute a breach of contract for which remedies were available. At this time the decision had been made to terminate the MUDFA contract and as I understood it the extent to which the contractors failings had caused delay was part of the negotiations to minimise the contractors own claims for additional costs due to disruption and delays they had experienced. I was not involved in the negotiations with the MUDFA contractor to establish the final costs.

The report to Transport Scotland included in the papers for the TPB on 26 August 2009 (CEC00739552_41) noted that, of 15 technical approvals required, only 4 were from version 31 of the design programme (which was that in place at Infraco contract close).

This suggests (a) that technical approvals identified at Infraco contract close still had not been granted; and (b) that new technical approvals, not identified at Infraco contract close, were now needed.

97) Is that understanding correct?

98) What was your understanding, in overview, of

- a) the reasons why designs and technical approvals were still outstanding after that length of time?
- b) The reasons why new technical approvals, not identified at contract close, came to be required?

Re Q97 and Q98 I'm sorry but I had no involvement in the management of the design process and my recollections are limited. I cannot offer a competent answer to either of these questions.

That report, at _59, includes a time schedule report, the colour coding of which suggests that, in large part, whilst there had been significant programme slippage, TIE considered that it could still be recovered.

99) In light of the commercial uncertainties prevailing at the time, how realistic was that?

I believe the programmers different colour coding would have represented a view on the recoverability of delays in the items listed assuming there was constructive engagement with Infracore on the programme going forward and by inference no further delays. On this basis their estimates could be viewed as unrealistic in view of the commercial uncertainties but it is hard to see how they could have adopted an alternative approach to presenting the programme in light of those commercial uncertainties.

The minutes for the TPB on 26 August 2009 (CEC00848256) record, at 3.3, the increase in the scope of utilities works over the tendered quantities (46,575m and 295 chambers, as opposed to 27,188m and 190 chambers). The scope increases were attributed to inaccurate records, unknown apparatus, congestion, resulting redesign and alternative routing.

100) What was your understanding of these matters?

The extent of the utilities requiring diversion, the nature of the utilities, the discovery of unknown utilities and other complications were all of a magnitude far higher than anticipated at the time of MUDFA award and even at close of the Infracore contract.

101) To what extent were any other factors responsible for the increased cost and time required for the utility diversions?

Delays arising from SDS design or redesign where what was found was not what

had been expected was also significant as were further developments/restrictions in the traffic management and embargo arrangements in relation to utility works which were not anticipated when the MUDFA contract was tendered.

102) Why had the tendered scope been so far short of what transpired?

The tendered scope was always subject to adjustment to payment for actual work done under the MUDFA contract terms.

103) Had sufficient utilities investigations been undertaken prior to commencement of the MUDFA works (and/or prior to the award of Infracore)?

Jim McEwan's email (CEC00762213_001) offers the view that great reliance was placed on the records of statutory utility companies and that there was an inappropriate balance between those and surveying actually carried out. I am unable to provide a considered professional view on whether the level of surveying was appropriate at the outset for a project of this nature and the view of experienced construction professionals would be required.

In an email exchange with Richard Jeffrey in September 2009 (**CEC00784192**), you explained your view of what had been agreed at Wiesbaden; and, in particular, that TIE had paid £8m for the certainty of a price for (as Richard Jeffrey's analogy would have it) all four wheels of a car.

104) Can you explain the point you were making?

The point I was making is that despite assertions from Infracore that we had only paid for 3 wheels, the whole point of the Weisbaden agreement as I understood it was to make the price firm for most of the scope, except as specifically excluded and with a series of pricing assumptions. TIE had increased the price by £8m to achieve that certainty and the increased price included for normal development of the design from that point to completion – with a view being taken by Infracore at

the time of Weisbaden on what that such completion would entail. This email was written in the absence of adjudicators or legal interpretation suggesting that the design development clause was ineffective because any change no matter how small was not allowed for. In which case why was the normal design development wording there at all and why was the £8m increase agreed between the 2 parties at Weisbaden?

A slideshow for the TPB on 23 September 2009 (CEC00848256_12; see also the minutes, CEC00842029_7 at 3.3) noted the sectional completion dates under Infraco, and the liquidated damages due per week if they were not achieved (and no extension of time were awarded).

- 105) Did TIE ever make any claim for liquidated damages against BSC, or take preparatory steps towards making one?
- 106) If not, why not?

My understanding would require legal clarification but I don't think tie would have been competent to make a liquidated damages claim for a missed sectional completion date in circumstances where any claimed extension to the sectional completion dates were not agreed with Infraco because the programme was contractually at large until such agreement was reached. To my knowledge no liquidated damages claim was ever made against Infraco.

The slideshow also notes (_18) "*measurement and valuation issues on Princes Street Supplemental Agreement being addressed with BSC*".

- 107) What was your understanding of that issue?
- 108) How was it resolved?

I believe that Infraco took a position they were exposed to change through the PSSA, despite it being payment for demonstrable costs for the original scope of works. Martin Foerders email and letters referenced below (TIE00088883 and 4)

say that the works on Princes St should have stopped to deal with these changes (in relation to a list of 7 scope areas) and that any new on-street arrangement should be on a purely cost-plus approach.

It also notes that BSC refused to start work on other on-street sections unless they secured a cost plus agreement for all works; and referred to possible resolution with a PSSA-style approach.

109) What was your understanding of BSC's position in this regard, and their basis for it? See, e.g.,

As Q108 above. Infraco were requesting a further movement in their favour away from a PSSA style agreement.

- **TIE00088883, TIE00088884**, email from Martin Foerder, 6 August 2009, in which he explained that whilst BSC had progressed change-work on Princes Street in good faith, they had then encountered difficulty in getting payment certification agreed.
- **CEC00825101**, email from Richard Jeffrey, 13 August 2009, explaining why he considered a cost plus arrangement to be unacceptable to tie

A slideshow for the TPB on 18 November 2009 (**CEC00835831_7**) referred to:

- the "*David Darcy effect*",
- agreement of Extension of Time One at £3.524m;
- an agreed way forward on the programme;
- a draft on street supplemental agreement being in fair shape; and
- to positive signs in BSC's behaviour.

The minutes at **CEC00416111_5**, 3.3, note:

- The agreement on EoT 1 concerned the impact of the change in the design programme from v26 to v31 (at Infraco contract close), and was for a 7.6 week extension of time and costs of £3.524m

The relative positions on valuation of EOT1 at the time of the June/July range estimates and (CEC00766444) were tie: £2.5m (based on £330k per week) and Infraco: £5.8m (based on £763k per week). This was now settled at £3.524m (£463k per week) but I am unable to provide a detailed explanation for the basis of the agreement on value

- It was noted that the principles for future extensions of time had also been established
- Agreement between TIE and BSC on an interim extension of time at 9 months, and 6 months responsibility for costs

I am unable to provide detail on the engagement or rationale for the agreement reached or the extent to which valuation of the interim EOT had also been agreed. The minutes of the 16 Dec 09 TPB meeting (CEC00473005_006) reflect that following a hardening of Infraco's stance by that time the TPB had instructed an investigation into withdrawal of the offer for interim extension of time.

Agreement to complete a new construction programme by end January 2010; discussions continued on BSC's obligation to mitigate delay

I don't recall a new construction programme being agreed by the end of January 2010.

- The draft OSSA was based on the PSSA, and was based on rates or demonstrable costs
-

I believe there was continuing disagreement on the terms of a revised OSSA – the Infraco proposals making it different from the PSSA – and that this disagreement continued well into 2010.

110) What was your understanding of each of these issues?

See answers under bullet points above.

The minutes also note that a decision had been issued in the Carrick Knowe and Gogarburn adjudications, on the BDDI to IFC issue (3.2) (without specifying their outcome), and that a full review of those decisions was underway. (The decisions are at **DLA00001651**, **DLA00001652**.) Kenneth Hogg asked whether tie's interpretation of the contract had changed, and whether a review of the strategy was needed. The board discussed a number of issues at length. The minutes for the TPB on 13 January 2010 (**CEC00474418_5** at 3.5) noted a detailed discussion on the DRP process, and that it was too early in the process to establish clear precedence on the points of principle in dispute.

111) What was your understanding of these matters?

I have summarised what I think are the most significant elements of the adjudicators decisions at Q114 below. It is evident that the detail of these matters, legally and technically, was complex and my answer may be incomplete or miss particularly important points requiring input from expert legal or technical perspective.

112) What was the impact of these two adjudication decisions on tie's approach to the Infraco contract?

I believe the approach from tie was not to accept the outcome of these 2 adjudications in isolation as a determination of the complex legal and technical principles involved, to go back to Infraco with detailed explanation of why tie believed the adjudications were not correct and, based on lessons learned from these two adjudications to proceed to issue further DRPs which were better targeted to establishing the legal and technical principles which tie believed were the correct interpretation of the contract.

113) What was the nature of the review that was underway?

As Q112 above.

- See, e.g.
 - CEC00810636, CEC00810637: DLA's analysis of the decision;
 - CEC00781787, Richard Jeffrey's response;
 - CEC00781833, Graeme Bissett and David Mackay's responses

114) What was your view on the extent to which the adjudication decisions favoured TIE (a) on points of principle and (b) on valuation.

Based on a re-reading of these papers (and in the context that I am neither a construction contract lawyer or technical engineering professional):

- The adjudication decisions in terms of overall outcome were that the adjudicator found in favour of Infraco that the changes concerned were notified departures to be valued and paid for by tie in accordance with the contract change mechanisms.
- The analysis by DLA was that the adjudicator had made errors on one of more points of principle and had introduced new points of principle (including whether the Employers Requirements had any relevance in determining whether a change from BDDI was normal design development or whether the Employers Requirements had any relevance in determining what was included for in the Infraco contract price at all).
- The adjudicator recognised the existence of normal design development and considered technical expert submissions from tie and Infraco regarding whether the changes represented normal design development and was in general persuaded by the Infraco submissions that they were not normal design development
- In determining whether a notified departure had taken place the adjudicators seems to find that it was irrelevant how the design change had taken place – eg even if it was a change which had happened at the behest of Infraco to accommodate ER requirements such as for the

Siemens of CAF parts of the work then that did not change the entitlement of Infracore to payment for the change. The information I have does not identify the extent to which these changes took place before or after financial close when Infracore took responsibility for the design and the adjudicator in any case seems to regard the responsibility of the Infracore for design as completely separate to that for entitlement to payment for change under Sch pt4.

- The adjudicator seemed to find that if anything was not detailed on the BDDI then it was by definition not capable of development and was therefore a change.
- The valuation of the changes in accordance with the contract was not the subject of these two adjudications.

Other than the detailed technical engineering/construction judgement on whether specific technical details fell to be normal design development, the adjudicators literal interpretations of the contract were not the understanding I had of how the contract worked at the time of financial close and taken at their worst interpretation would mean that Infracore had an entitlement to extra payment for any change to the design no matter what had led to the requirement for that change or whether that change had happened before or after financial close or whether tie had had any role in the consideration and approval of that change.

115) To what extent were these matters discussed (a) within tie, and (b) with CEC?

I believe they were discussed extensively (daily) internal at tie in conjunction with our advisors. Richard Jeffrey's email (CEC00781787_0001) makes reference to briefing stakeholders from that date (23 November) and as with all matters I believe CEC officers would have been provided with all information and documents.

In early December 2009, Graeme Bissett raised concerns that TIE were under-resourced to do what was required to resolve the disputes (CEC00585019, 1

December 2009).

116) What was your view?

Since the spring of 2009 tie had been following a strategy of using formal resolution of the main contractual disagreements through DRP sitting alongside continuing attempts to engage with Infracore constructively (including through mediation), to get the project progressing adequately and thereby establish certainty as to outturn costs and programme. I believe Graeme Bissett's email is in the context that that process was not delivering results in a timescale that was acceptable, the consequences of continuing delay were continuously increasing and a view that the patience of tie's stakeholders, including CEC and Transport Scotland, was very probably running out. A resolution needed to be reached as soon as possible, including reversion to the other strategic options considered earlier in the year. Despite the deployment of ever increasing technical, legal and commercial resources in the previous months further resources including additional legal support, QC advice and expert and resources experienced in the conduct and resolution of complicated construction contract disputes were required to meet this expectation.

I agree with this analysis and I believe all other members of tie management would too. Subsequently a much greater involvement for McGrigors on the legal analysis / support and the engagement of Tony Rush on conduct and resolution of the disputes are examples of the additional resources deployed.

On 4 December 2009, you circulated an email about CEC's wish for an updated view on cost estimates (CEC00491090; attachment CEC00491091).

The attachment listed INTCs which raised a BDDI to IFC issue, of which there were about 70. The spreadsheet noted that the "QS view" on their value had, in June 2009, been £16m, but, in December 2009, was £20.9m.

As context, at the time I wrote this email it was a request for information to inform

a scheduled meeting with senior CEC finance officers on further development of our outturn cost estimates since the July 2009 range review. In the end I do not recall comprehensive updates to the outturn costs being presented at this time and if they were they would be subject to the same extensive level of uncertainties as the July 2009 range reviews (in the absence of resolutions with Infracore and agreed programme and ways of working going forward) and I would have been unable to characterise them as any more reliable than the July 09 range reviews.

117) What was the explanation for the £4m increase in their estimated value?

A direct comparison with the spreadsheet used for the Jun 09 review (CEC00766381) shows that nearly all of the increase is in respect of BDDI to IFC changes where the assessed QS view in June 09 was zero but there was now a value in the QS view column. This analysis was again produced by the tie commercial team and I do not have the detailed knowledge to explain the increases on an item by item basis or even to generalise except to the extent the assessment may have been informed by the outcomes of the adjudications on Gogarburn Bridge and Carrick Knowe bridge in November 2009.

118) To what extent was this a full list of all IFCs raising a BDDI-IFC issue?

I have no reason to believe this was not the full list.

119) Approximately how many such INTCs, and at what value, were there by the time you left the project?

I do not have the recollection or the information to be able to answer this question.

The email refers to "*literally hundreds*" of INTCs which did not fall into any of the other categories, and referred to an allowance of £3m having been made for them in

June 2008.

120) What, in broad terms, were the nature of these INTCs?

The INTC's considered by the tie commercial team for the June 2009 review is what is included in the spreadsheet CEC00766381 (tab Ranging doc – change). These have been summarised by category at the end of that spreadsheet and other than descriptions provided for each individual INTC on that spreadsheet I am not personally able to generalise as to the nature of the individual items not so classified.

121) What was their estimated total value by the time you left the project?

I do not have the recollection or the information to be able to answer this question.

The email refers to the need for an explanation why the Princes Street works cost so much more than the tender allowance, and to an extrapolation of the cost of completing the rest of the on-street works by a supplemental agreement similar to the PSSA.

122) What was the outcome of that exercise?

Detailed reconciliations and commentary on the outturn costs for the PSSA versus allowance in the original contract price exist but I cannot find them in the documents provided. The analysis would have been produced by others (the tie commercial team) rather than myself. My recollection is that the outturn costs were a multiple of the allowance in the contract price but that a large proportion of that was due to matters which would have been a change – I refer to the list in the left hand column of item 1 at the top of CEC00491090_002.

The email referred to the settlement of the first Extension of Time claim at £3.5m, and to an allowance for further prolongation costs at £17.5m (based on an

assumption of 9 months at the EoT agreed rate of £450k per week). You asked questions about the basis for that estimate, including the extent to which TIE were culpable for delay.

123) What answers did you get?

124) What were your views?

I have no recollection of the answers I got to these questions. At this time a revised programme had still not been agreed and neither had the commercial attribution of delay to date had not been agreed.

The minutes for the TPB on 16 December 2009 (CEC00473005_5) at 2.1 noted:

- a "*hardening*" of BSC's commercial position;
- that agreement was yet to be reached on the OSSA for the stretch from Haymarket to Newhaven;
- that the TPB instructed Richard Jeffrey to investigate withdrawal of the offer to BSC, approved at the TPB on 18 November, for an interim extension of time award of 9 months with 6 months costs; and
- that Richard Jeffrey had engaged Tony Rush.

125) What was your understanding of these matters?

Regarding the development of an acceptable further OSSA please see my answers to Q108 and in the bullet points above Q110. For my understanding of the offer for interim EOT please also see my answers in the bullet points under Q110. The engagement of Tony Rush was in the context of matters covered under Q116. The hardening of Infraco's commercial position is the subject of Q126 below.

126) To what extent was the "*hardening*" of BSC's position a response to the outcome for the Carrick Knowe and Gogarburn adjudication decisions?

I was not involved to any significant extent with discussions with Infraco personnel and can't offer an informed view on whether their apparently hardening stance was due to the adjudication outcomes. It is a fact that despite the detail and principles in the adjudications that were being further examined, the adjudicator had found in favour of Infraco's position and it is reasonable to assume Infraco were encouraged by that at different levels in the respective organisations.

The Project Director's report to the TPB on 16 December 2009 (CEC00416111_14) noted that TIE had instructed works under clause 80.15 for the structures which had been referred to dispute resolution; and that, as a result of senior intervention with BB principals in relation to EoT1 and programme, work had started at another six locations.

127) Can you explain the basis on which progress was being made with these works?

I do not believe the agreement of EOT1 was contractually connected with the progress of works on structures but that it was regarded that agreement on EOT1 (which seemed to be very important to Infraco) was a means to unblock some progress on these structures and other issues by way of compromise.

128) To what extent were TIE able successfully to instruct work using clause 80.15?

I do not recall this being universally successful – if Infraco were unwilling to work on a structure until change had been agreed. I don't recall invoking 80.15 as being universally effective and indeed 80.15 itself may have been under dispute (either at this point or subsequently).

129) What was the connection between agreement on EoT1 and the programme, and the commencement of work in the other locations?

As answer to Q127 above.

The report to Transport Scotland included in the TPB papers for 16 December 2009 (CEC0041611_48) noted that £5.5m of change had been agreed with Carillion, but that they continued to introduce new requests. The report for the following month (CEC00473005_48) noted that an exit agreement was now in place with Carillion, and that agreement on their final account was progressing but Carillion's position had hardened on their entitlement for monetary entitlement for disruption.

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130) What was your understanding of this issue?

Since the autumn of 2009 and the decision, with the agreement of Carillion, to terminate the MUDFA contract, considerable effort was being made to resolve and agree the final account for the MUDFA contract. I understood it to be a very detailed and painstaking exercise. Although I was not personally involved in the discussions/negotiations, I would have been kept well informed of progress and the potential impact on outturn costs as matter progressed.

2010

In January 2010, Richard Jeffrey noted that the board felt strongly that launching an action to clarify the scope of schedule 4 should be pushed (CEC00551040). Reference to litigation on schedule part 4 was also mentioned by Andrew Fitchie (CEC00655862, 26 January 2010).

- 1) What steps, if any, did TIE take towards litigating that issue?
- 2) Why was the matter not litigated?
- 3) Why were no other matters litigated?

In the first quarter of 2010 a comprehensive review of the contractual positions in dispute was carried out by McGrigors, incorporating QC opinion, which as I recall included examination consideration of how an action (whether litigation or

otherwise) to establish the interpretation of Sch pt 4 in the context of the whole of the Infraco contract. Richard Jeffrey's email notes that this would take some considerable time (his email mentions an estimate of 8 months). I don't recall litigation being discounted as an option at any time. In the meantime the strategy was to progress with the existing strategy, refer matters to DRP and thereby continue to attempt to bring about an overall resolution under which Infraco would deliver the project.

You sent an email on 22 January 2010 (**CEC00554138**; attachments **CEC00554140**, **CEC00554139**) raising, within TIE, concerns about the approval of draw-downs from the risk allowance.

4) Please can you explain your concerns?

My concern in outline was that whilst continuing widespread uncertainties/disputes still left tie unable to provide a reliable updated estimated of outturn costs and programme, tie and TEL (and the TPB) still had an obligation to operate within the delegated authority defined in the respective operating agreements between CEC and tie/TEL. Until this point approval of any increases in budget over £512m were matters reserved to CEC. At this point aggregate changes which had been approved by tie and reported to TPB meant there was only £2m left in the aggregate risk allowance included in the approved £512m budget.

5) How were they addressed?

At or around the time of this email a revised TEL operating agreement (CEC00554140 is an undated or signed draft) increased the "Baseline Cost" delegated to TEL by CEC to £545m (letter CEC00554139). However TEL still had an obligation to report to CEC and actual or reasonably expected circumstances where costs would exceed £545m.

Subsequent TPB minutes refer to revised governance proposals being presented to the TPB on 13 Jan 2010 which I don't appear to have. I believe the substantive

change was that TEL became responsible for managing tie and take ownership of tie. TPB was a sub-committee of the TEL board.

The email also refers to "a plan to take all of the pain of budget reset in one hit".

- 6) What was your understanding of any such plan? When was it discussed and agreed (and between whom)?

I believe it was widely understood and agreed by all including CEC and Transport Scotland that any interim resetting of the budget at this time would lead to circumstances where the reset would be incomplete and unreliable in its own right as it would not reflect agreement / resolution with Infraco on a revised programme or a resolution of the principle disagreements with Infraco until that had been achieved. This had been the case for some time and was the context of the range review estimates in June 2009.

- 7) Would that "budget reset" have had to include an allowance in respect of known and anticipated INTCs?

Yes.

- 8) Would the plan to take the budget reset in one hit, together with the use of the risk allowance for costs not provided for in it, inevitably lead to underreporting and/or delaying the reporting of the increasing costs of the project?

Whilst tie/TEL were not able to present a reliable update to the outturn costs or programme, I believe the uncertainties and possible consequences in terms of costs and programme continued at all times to be briefed in detail to both CEC and Transport Scotland eg:

- Consistently reported in TPB papers and in period reports to CEC that "...given commercial uncertainties with the Infraco and continuing delays to the project it is now considered unlikely that the full scope of Phase 1a will be completed within the available funding envelope of £545m. Until the key

issues are resolved through the contractual and legal process, it will not be possible to accurately forecast a revised budget outturn” – eg CEC00473005_0014

- Regular briefings being provided to CEC and Transport Scotland to keep them informed of implications for outturn costs and programme eg CEC00474418_0047
- Reference to the actual briefings to TS themselves eg on 10/12/09 (CEC00473005_0014), on 18/1/10 (CEC00474418_0047) and minuted reference to tie attendance at a series of detailed reviews of the current financial position with CEC and Transport Scotland (CEC00420346_0007)

9) To what extent, if at all, were these matters discussed with CEC?

See Q8 above. For my part I kept senior CEC finance officers apprised at all times of the status, uncertainties and range of possible outcomes in terms of outturn costs and programme based on the best information I had.

The Report to Transport Scotland included in the papers for the TPB on 10 February 2010 (CEC00474418_26) noted that no Infracore onstreet work was taking place due to a lack of agreement on the programme and that utility diversions continued at Haymarket, Leith Walk, York Place and Newhaven (_27); but that progress with the off-street works was underway at Haymarket viaduct, Russell Road retaining wall, Carricknowe Bridge, Edinburgh Park Viaduct, the depot, Gogarburn Bridge and Hilton Hotel (_31 at 2.5).

10) What was your understanding of the reasons for progress off-street, but none on-street, at this time?

I believe the main reason was failure to agree the terms of a revised On Street Supplemental Agreement with Infracore on terms which were acceptable to tie. I cannot comment on whether Infracore would have been in position to commence the on-street work if such an agreement had existed.

Around this time, there appear to have been issues with the design programme: v51 was submitted 12 weeks late, and contained a significant increase in activities due to the inclusion of Siemens' design (CEC00474418_29); and versions 52, 53 and 54 were not issued to TIE (Project Director's report to TPB on 10 March 2010 (TIE00894384_13). An increase in the number of IFCs, technical approvals and prior approvals was reported at this time (report to Transport Scotland in papers for 10 March 2010 TPB: TIE0894384_30).

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- 11) What is your understanding of these issues?
- 12) What, if any, impact did they have on the progress of the project?

I was not involved in the management of the design and other than limited recollection now of what was being reported in tie management meetings and being reported to TPB and can provide very limited comment on the details. The extent to which design changes and delays were to accommodate Siemens design may be significant in the context of the disputes around responsibility to pay for these changes not instructed by tie.

The minutes for the TPB on 10 February 2010 (TIE00894384_5 at 3.4) noted a mechanism under which an independent quantity surveyor would be involved where the only item in dispute related to value.

- 13) Please briefly explain this.
- 14) What progress, if any, did it lead to?

This was one of a number of initiatives to try to break the deadlock on agreeing estimates (where valuation only was disputed) and where both parties would submit to an independent valuation by a third party QS – which would only be successful if it was binding on both parties. I have no recollection of whether the initiative yielded results generally nor can I recall specific applications.

In February 2010, you were involved in investigations to gain a full understanding of the circumstances in which the Wiesbaden agreement on design development risk had been reached, and its translation into schedule 4.

15) What was the context for that investigation?

I believe the context of the investigation was a comprehensive piece of work being produced by McGrigors examining all aspects of the Infraco contract and that also included a forensic analysis of the circumstances in which the specific provisions in the contract which were under dispute had been developed – the latter I believe is what was called the factual matrix as per number 22 on CEC00542536_003.

16) What conclusions were reached?

I recall the McGrigors report was very comprehensive but I am unable to provide a precise of the analysis or the conclusions reached. I recall it being complex and senior QC opinion was also sought on many aspects.

17) What decisions, if any, were taken to act on the outcome of the investigation?

I believe the McGrigors report was used to inform tie's subsequent consideration of the options available including legal challenge of the contract outwith the DRP mechanism and the possibility of a competent termination of the Infraco contract.

A draft note of a conference call on 24 February 2010 (**CEC00542536**) notes that the discussions at Wiesbaden were conducted by Willie Gallagher and Matthew Crosse.

18) Was that consistent with your understanding?

Yes

19) What attempts were made to obtain their accounts of the discussions?

I cannot specifically recall how and by who Willie Gallagher and Matthew Crosse were contacted as part of the McGrigors forensic exercise – but it seems likely that they would have been contacted. I recall my own role in this process included assisting McGrigors and others managing the commercial disputes and strategy to resolve them by searching for and providing copies of correspondence and documents in tie's records which were relevant to the exercise.

On 19 February 2010, Gregor Roberts emailed you about an apparent failure by TIE to follow the Delegated Authority Rules in relation to £8.8m worth of change (**CEC00627586** and attachments).

20) Can you explain this issue and how it was resolved?

Notwithstanding the enormous difficulties tie was having agreeing changes with Infraco it was important that we continued to process and approve change internally in accordance with a comprehensive set of Delegated Authority Rules (DARs). The finance team had ownership of and responsibility for observing compliance with the DAR's across all elements of the project – not just Infraco. I can't comment on the detail which would have been behind the summary totals in the email. The DARs did provide exceptions whereby change orders to Infraco could be made before formal approval of budget changes if they were necessary for progressing the works and then catching up on the approval of the paperwork at the change panel thereafter – it may have been that a number of the change orders fell into that category. I would be confident that this was only a timing issue, that the project team at a senior level would have been very aware of the change orders and have approved them. I take the obvious anxiety expressed in the emails as evidence of how seriously the sanctity of the DARs was taken by all at tie.

On 22 February 2010, you sent an email to Dennis Murray and Gregor Roberts

"really as an aide memoir to myself and a dump in one email and attachments of everything I know or have about BB and S pricing make-up".

You attached correspondence from Bilfinger in February 2008, and noted that
"the total of the schedule is £218,262,426 – i.e. the price after Wiesbaden"

You then gave your view on the breakdown of that price into, e.g.:

- the Airport/Haymarket and Haymarket/Newhaven sections;
- the BB and Siemens elements of the price

(References: **CEC00555847**, **CEC00555848**, **CEC00555849**, **CEC00555850**, **CEC00555851** and **CEC00555852**).

21) Please explain, in broad terms, why you sent this email and what is shown in the attachments.

One of the workstreams in process at this time was to evaluate and present the likely costs of a truncated tram to be delivered as a first phase (ie not the whole of Ph1a) given the £545m funding cap. I think that this email and attachments was part of that work. The starting point was the detailed make-up of the Infraco contract price (including by geographical section and separately for the civils -BB and systems - Siemens) as reflected in the detailed schedules sent by Infraco (Scott McFadyen) to tie (Dennis Murray) in the period up to contract close which is what the attachments are and is what I have based my analysis in this preliminary email on.

On 4 March 2010, Alan Coyle circulated a note based on (as he put it) *"the numbers that are being produced by Stewart"* (**CEC00474750**, **CEC00474751**).

These estimated the cost of various options, including termination (at £388m) and completing phase 1a under various approaches (e.g., with OSSA and without) (from £644m to £673m).

The prolongation risk was noted to have increased substantially from the £21m indicated in December 2009 for 9 months extension of time. The dominant factor was said to be utilities delay.

The note recorded that "*Stewart McGarrity has committed to including optimism bias in the presentation of the numbers*".

It also noted that "*It seems, based on the information coming from tie, that we have very little contractual levers to make BSC get on with the work or to force them off the job.*"

22) Can you comment, in overview, on the prolongation risk and how the value of any prolongation claim was calculated (both by TIE and BSC)?

I do not have the detailed spreadsheets from which these figures were derived and there is no breakdown of the "Existing BSC Risks/Uncertainties line" so I can only comment generally on what is in the tables. As context, despite the continuing lack of agreement with Infracore on principal disputes it was a continuing requirement of CEC that they be provided with a best view of outturn estimates for the options under consideration based on information which was available and that is what this table would have presented. Also as context these are not numbers which in the detail were being produced by me in isolation – all the estimates for Infracore change including prolongation were delivered by and agreed by the broader project team.

Prolongation costs (referred to elsewhere as EOT2) had been included in the range review of June 2009 (CEC00766444_0004) as between £15m and £25m allowing for an aggregate of between 45wks and 75wks of current and future delay costs to be paid for by tie with the results of the analysis by tie in June 2009 suggesting between £6m to £9m (39wks to 52wks) allowance for existing delays at that time. Alan Coyle's paper refers to £21m delay costs allowing for 9mths/39wks indicated in Dec 09 but I have no papers other than this one which refer to Dec 09 estimates which the paper states were based on a Oct 2012

project completion - the June 09 review was based on a project completion date of Feb 2012. The £38.9m referred to in Alan Coyle's paper seems to be based on an Oct 2013 project completion, anticipating significant future delays arising from continuing unresolved disputes with Infracore, and I believe an assumption that tie would carry a significant proportion of the additional costs of that further delay. I assume the statement that the dominant item was assumptions about responsibility for utility delays is accurate.

As with the June 09 estimates I don't think the estimates in this paper could be regarded as reliable in the absence of agreement with Infracore on the significant uncertainties, including commercial responsibilities for delays and a revised programme.

23) Can you explain the substantial increase in the prolongation risk?

I have done so to the best of my knowledge in Q22 above.

24) Why was optimism bias being considered again, given that the view at financial close (and for many months before hand) was that no provision in respect of it was required?

I do not think it is 'optimism bias' as such that was being contemplated – rather it was a desire to see that estimates prepared on whatever basis were as conservative as possible (eg regarding tie liability for existing and future delay as Q22 above) to reflect the confidence in being able to achieve an outcome on different matters which might be different for eg design related issues compared to that for an expectation that engagement/delivery by Infracore would improve – as per penultimate paragraph on CEC00474751_0005.

25) Do you agree with the comment about the lack of contractual leverage over BSC? What advice had TIE obtained in that regard?

I believe the strategies being followed by tie to pursue contractual leverage over Infracore and the progress with such were well documented and reported to TPB, CEC and Transport Scotland on a very regular basis and tie was pursuing these strategies with endorsement. The project had a large number of expert legal and technical resources and experts in the conduct of construction disputes mobilised for that purpose.

What is evident is that, despite all efforts, the progress with resolving the disputes was not happening as quickly as was necessary to obtain the necessary clarity on tie's position in the disputes, progress the work, agree a programme to complete the project and deliver a reliable view on outturn costs and programme to completion of the project which CEC and other stakeholders required.

The minutes for the TPB on 10 March 2010 (CEC00420346_5, 2.1) report on detailed work done to address the project's problems. The TPB approved a strategy of continuing to enforce tie's rights under the contract with vigour, and to seek acceptable resolution of the main disputes.

26) Was this in substance a decision to continue with the strategy evolved previously?

In summary yes, with an explicit recognition that "matters need to be brought to a head". The minutes refer to the additional work which had been done to further analyse and support tie's position in early 2010 and that ".....independent legal and Council's advice has been analysed and that this has affirmed tie's approach to these matters". This would have included the work which had been completed and was the subject of a comprehensive report by McGrigors.

27) If there were changes, can you clarify what they were?

As Q26 above. tie was also actively addressing the affordability and incremental delivery options – ie given the uncertainties and the likelihood that the whole of

Ph1a could not be delivered within the £545m funding cap, examining the options for a truncated tram route which could be affordable but which might also be operationally and financially viable.

On the programme, it was noted that BSC's latest submission was for a 68 month construction phase, compared to 38 month period at contract close; and that BSC had not demonstrated that they had effectively sought to mitigate delay. The minutes refer to independent analysis which supported tie's position, although it was acknowledged that utility diversions, which were to tie's account, had caused substantial delay to the construction programme.

28) What were your views on these matters?

I cannot comment further other than to note that tie was taking independent advice to support its position on the programme and considered that the 68 months did not reflect any attempt by Infracore to mitigate the delays which had already incurred, including those caused by late running utility diversions which, to the extent they could not be mitigated, would be for tie to pay for.

29) What was the independent analysis referred to? Who had carried it out, and what were its conclusions about the extent to which delay was tie's responsibility?

I cannot recall the party which had carried out the independent analysis and was not involved in the management of that work – nor do I have any recollection of the contents of any reports which would have been produced as part of that work. I note that we had earlier engaged a firm called Acutus to analyse programme delay.

The Project Director's report to the TPB on 14 April 2010 (CEC00420346_9), at _13, noted that some structures work had begun in on-street areas.

30) Why had structures work, but not other aspects of the work, begun in on-street areas?

I understand that the principle reason was the absence of agreement on acceptable terms for a revised On Street Supplemental Agreement (which was in turn the only way forward as Infraco refused to work on-street without such an agreement). The minutes (CEC00420346_0007 – top of page) note that amongst other things reverting to a purely cost plus arrangement on street would expose tie to a potential breach of procurement regulations and would not offer best value. Also noted that tie was preparing a counter proposal.

It also noted that the mediation on the MUDFA rev 8 programme (held on 16/17 March 2010) has been unsuccessful.

31) Were you involved in that mediation?

32) Why had it been unsuccessful?

I was not involved in that mediation and do not have specific recollection of why it was unsuccessful. My recollection is that tie had wanted to get the MUDFA issue into adjudication sooner – but as the minutes say it had first of all been put on hold following the offer of interim extension of time made in late 2009 and I believe it may have been Infraco's desire to see it go to mediation rather than straight to adjudication.

The Minutes for the TPB on 14 April 2010 (CEC00245907_5) at 4.1 noted that TIE had written to BSC instructing them under clause 80.13 to commence work on all areas which BSC deemed held up by an outstanding change.

33) What happened in response to that?

34) Why had such an instruction not been issued before?

Ref Q33 and Q34 - I believe clause 80:13 (CEC00036952_194) relates only to

changes which were tie instructed the change rather than an Infraco notified change. The clause permits tie to withdraw the tie change and instruct Infraco to implement the change but Infraco was entitled to reasonable costs for doing so in the absence of agreement on the tie change. I do not recall if such an instruction had been given before – but if the risks/costs of proceeding on this basis were judged to be less than the consequences of continued delay as a consequence of failure to submit or agree an estimate then it would be a reasonable thing to do.

I do not recall the extent to which these instructions were successful – but note from the TPB minutes around this time that work was starting in many of the off-street sections albeit not in accordance with an overall agreed programme for completion of the project.

At 4.2, the minutes record a change register update and note that when comparing agreed changes against the original BSC submissions, TIE had achieved around a 50% reduction in cost.

35) Can you comment?

I do not recall the specifics of any individual case where the agreed estimate was much less than the original Infraco submission or the detail of the reasons why would need to be provided by the tie commercial resources which were processing the changes. I can't recall the saving in terms of value which would relate to the 50% saving stated. The comment is consistent with the position that tie had taken throughout that the Infraco cost estimates, to the extent they had been submitted, were often overstated.

At 5.3, the minutes record approval of an increase in the project budget to £530m by adding £17.9m to the risk allowance. The minute also notes the delegated authority from TEL to the TPB to use the £545m funding envelope.

36) What was your understanding of the likely outturn cost of the project at that

time, compared to the approved funding of £545m?

The formal approval of a control budget increase to £530m was necessary to comply with Delegated Authority rules (ie such that known and agreed increases in costs could be processed within the increased budget) and to comply with the TEL operating agreement which had delegated authority to increase the budget up to £545m. However this increase was for compliance with budgetary control mechanisms and did not reflect a view on what the outturn costs would be for which tie had no reliable estimate. As per answers to similar questions, the TPB papers and briefings to CEC and Transport Scotland continued to report that notwithstanding the approved budget it was considered unlikely that the full scope of Phase 1a would be completed within the available funding envelope of £545m.

The estimates under different scenarios which are referred to in CEC00474750, CEC00474751 and are the subject of Q22 to Q25 above are to the best of my knowledge the best estimates tie had at this time but due to continuing widespread uncertainties were not presented as reliable outturn estimates.

You circulated a spreadsheet on 26 April 2010 which summarised estimates of costs for incremental delivery options (**CEC00332138**; attachment, **CEC00332139**). These estimates included:

- a line from the airport to Haymarket for c. £522m;
- a line to York Place for c. £546m to £566m; and
- a line to Ocean Terminal for c. £625m to £651m.

Your cover email noted that the cost estimates might be viewed as "*conservative*".

37) Can you explain in broad terms the purpose of these calculations, and the basis on which they were made?

There was an ongoing work steam to develop estimates of what it might cost in

outturn terms to deliver less as a first phase in recognition of the funding cap of £545m. As with all of the estimates which I collated and presented much of the content was delivered by the tie commercial team of experienced construction professionals and estimators. These estimates were still being prepared in highly uncertain certain circumstances where there was no agreed programme, unresolved commercial disputes and no agreed way of constructive working going forward with Infraco and were clearly very dependent on such matters being resolved sufficiently to allow reliable estimating and forecasting.

The incremental delivery options were costed for delivery of a first phase from the Airport to each of Haymarket, York Place, Foot of Leith Walk and Ocean Terminal.

The tabulation in this document presents estimated outturn costs for each in relation to commercial outcome options being considered; tie step in to re-procure and manage the delivery of the on-street civil works (2B2) and carrying on with Infraco under the existing contract but with new provisions entered into the contract to govern work going forward which would avoid further disputes and facilitate delivery (3C). The output of the analysis taken at face value reflects that only Airport to Haymarket could be deliverable within the £545m funding cap.

Specific comments on the analysis:

- The existing Infraco price including changes agreed at that point was allocated to each of the incremental delivery options based on the breakdown of the makeup of the Infraco contract price which was available.
- In each of the incremental delivery options there was a sunk cost in relation to the part of the network which would not be delivered in the reduced first phase – eg the cost of utility diversions completed across 100% of Ph1a is the same in each case and if the tram did not go any further than Haymarket then the costs of the Infraco work already done on Princes St were still included.
- An assumption was made that to the extent the tram vehicles being delivered by Infraco (CAF) were not required to operate the reduced first phase then the surplus vehicles would be taken up by another light rail project.

- For commercial option 2B2 an estimate of the cost of the civils work to be re-procured at market rates was made – this being zero in the case of stopping at Haymarket as no further on-street works would be required.
- For option 2B2 additional allowances were made for claims (eg for loss of profits) by Infraco in relation to the truncation of scope. Also additional allowance was made with respect to the risks associated with the execution of the strategy including the fact the tie would be directly bearing the risk of the interface with the systems (Siemens) work in the remaining on-street sections.

Other uncertainties implicit in the analysis were whether Infraco would be willing to negotiate/engage on either 2B2 or 3C at all and in the case of 2B2 whether the revised risk allocation would be acceptable to stakeholders/funders ie CEC and Transport Scotland.

In addition to the outturn costs, the operational and financial viability of each incremental delivery option needed to be assessed, primarily with TEL/Lothian Buses, to assess the expected patronage (revenues) and operating costs of each including a revised assessment of how the reduced first phase would integrate with bus services. The paper I presented in spring of 2009 (CEC00933931) is also relevant in addressing the impact of truncation/incremental delivery on benefits as described in the business case.

By e-mail dated 2 May 2010 (CEC00348327) you noted certain concerns in relation to the reporting of the utilities final costs (following an email dated 13 April from Gregor Roberts, in the same chain, attaching a spread sheet setting out the utilities costs, CEC00348328).

38) It would be helpful if you could explain, by way of overview, what the spreadsheet showed?

The spreadsheet shows the total of all utility diversion related costs whether it was to be delivered by the MUDFA contractor or delivered separately by Infraco

(BSC) or by new procurements being managed by the Infraco team following the decision to bring the MUDFA contract to an end. The estimated final costs under the MUDFA contract (AFC) are reported at the date this spreadsheet was prepared as £58.5m - that included for £5.3m for excavation at the depot which was separately budgeted in the Infraco budget. Importantly a significant element (several million pounds) of the costs were being treated as “betterment”, ie enhancements to the assets of the Statutory Utility Companies, which were recoverable from those SUCs. I cannot determine how these betterment costs are reflected in this spreadsheet or the extent to which they were recovered from the SUCs.

At the time of this report the current approved budget (CAB) for MUDFA was £51.1m so the forecast outturn (AFC) of £58.5m was £7.4m higher – I anticipate that would have been largely related to the estimated cost of the final settlement with MUDFA which still being negotiated at this time. I note that in the TPB papers in December 2010 (TIE00896978) the final account for MUDFA is noted as agreed at £62.5m. I am unable without the supporting analysis to comment on what the components of the increase to the final settlement were.

39) It would be helpful if you could give an indication, even in very general terms, of the extent to which the increased cost of the utilities work was due to (i) diverting additional and unexpected utilities and (ii) other factors including e.g. the delay in Parliamentary approval, problems with IFC designs (i.e. delay and quality), stakeholder requirements and traffic management issues.

I am sorry but I do not have the information to be able to answer this question – I believe diverting a vastly greater number of utilities than was originally anticipated would be the dominant cause. The TPB Papers in December 2010 refer to a detailed briefing for CEC on the final costs (not by me) and I would expect that the answers to this question might be in the papers which supported that briefing.

40) Can you explain your concerns about reporting on utilities costs and how, if at

all, they were addressed?

The estimated outturn for the utilities costs was constantly changing as issues emerged and were addressed all the way through the utilities programme – I believe those managing the MUDFA programme were in a very difficult position indeed in trying to estimate the cost of as yet unknown issues at any point in time. The main point of my email was to make sure that because utility costs were being reported in separate parts of the project costs (ie it was not all under MUDFA) to avoid misunderstanding we had to be clear when briefing and reporting to TPB/ CEC and other stakeholder whether we were just talking about MUDFA or the total of all utility diversion costs and how the betterment costs were being treated for reporting purposes.

At the TPB on 2 June 2010 (CEC00223543_5 at 9.1), you presented a paper about compliance with the TIE and TEL operating agreements, and the TS grant conditions. The TPB approved that paper, and the members of the TEL board authorised David Mackay to send a letter to CEC confirming a reasonable expectation that the costs of delivering the whole of phase 1a would exceed £545m. The letter, at _11, noted that it was not possible to provide accurate details of potential final costs or a date for the opening for revenue service.

41) Please explain in broad terms the content of your paper.

The paper records the outputs from a review of compliance with the TEL and tie Operating Agreements with CEC and concludes that the main matter to be addressed was formal reporting to CEC by way of a letter that the baseline cost of the project was now likely to exceed the £545m funding cap. This notification letter to CEC was formalisation of the situation which had existed for some time that as required to be notified to CEC under the TEL operating agreement. See my answers to Q5 and Q8 above which are relevant to this question.

42) Why was this matter being formally reported only at this stage (having regard,

for example, to the report to CEC in August 2009 that it would be very difficult to deliver phase 1a for £545m)?

See answer to Q41 – the matter had been consistently reported to the TPB (of which the CEC TMO was a member) and to Transport Scotland since mid-2009 – this letter was by way of formal notification by letter as required by the operating agreement. See my answers to Q5 and Q8 above which are relevant to this question.

The Tram Project Board met on 30 June 2010.

The minutes (**CEC00244400**) noted (page 7, para 2.1), under Workstream A (Termination of the contract), that the Board authorised the issue of a Remedial Termination Notice to BSC.

It was noted, under Workstream B (whereby BSC completed part of the project and TIE re-procure the remainder on an incremental basis), that intensive negotiations were ongoing with BSC, including in relation to obtaining a Guaranteed Maximum Price (GMP) and programme.

43) Do you have any comments on these matters?

I believe the initiative whereby Infracore would submit a GMP proposal is what was termed the Project Carlisle offer – that and counter proposals by tie are the subject of Q45-47, 48-50 and 52 below.

The Tram Project Board met on 28 July 2010.

The minutes (**CEC00013703**) noted (page 7, para 2.2) that, in relation to Workstream A (Termination) a consultation had taken place with Senior Counsel on 8 July and TIE was in a position to progress to issue of a Remedial Termination Notice. Work was underway to prepare estimates for the costs associated with termination.

In relation to Workstream B it was noted (para 2.3) that BSC would submit a Guaranteed Maximum price by the end of July and that BSC had confirmed that the

design was sufficiently progressed to allow a fixed price to be established.

44) Do you have any comments on these matters?

I believe the initiative whereby Infraco would submit a GMP proposal is what was termed the Project Carlisle offer – that and counter proposals by tie are the subject of Q45-47, 48-50 and 52 below.

The minutes of the 30 June TPB meeting (CEC00244400_007) reflect Richard Jeffrey saying that the issue of a Remedial Termination Notice did not constitute an intention to cancel the project and that authority for tie to actually terminate the contract if it ever came to that would be matter reserved to a Full Council decision. I do not recall the specific breaches of contract which were the subject of the notice.

By letter dated 29 July 2010 (TIE00885457) Martin Foerder sent BSC's "Project Carlisle 1" proposal (CEC00183919) to TIE.

Under the proposal BSC offered to complete the line from the Airport to the east end of Princes Street for a Guaranteed Maximum Price of £433,290,156 and 5,829,805 euros (less the amounts previously paid), subject to a shortened list of Pricing Assumptions.

BSC's proposal was rejected by TIE by letter dated 24 August 2010 (CEC00221164), in which TIE responded with a counter-proposal of a construction works price (to BSC) for a line from the Airport to Waverley Bridge of £216,492,216, £45,893,997 to CAF, the amount to SDS to be determined and a sum of just under £4,922,418 in respect of Infraco maintenance mobilisation, Tram maintenance mobilisation and Infraco spare parts.

45) Which party instigated the Project Carlisle proposal and why?

I cannot be 100% sure but my recollection was it was tie as a further attempt to secure a solution which would provide a reliable estimate of outturn costs and

programme to complete the project, albeit in a first phase from the Airport to St Andrew Square.

- 46) To what extent were you involved in the Project Carlisle proposals and discussions?

I believe the commercial development of the Project Carlisle proposals in terms of legal detail were being led by the specialist construction experts that tie had engaged (including Tony Rush) working with tie's lawyers (DLA) and the commercial resources in tie's project team. I would have been involved in internal meetings and discussions and I believe my primary role would have been in providing information to the team particularly regarding our existing estimates and incorporating other elements of the project other than the Infraco scope. I was not involved in any discussions with Infraco that I can recall. This had been the case increasingly during 2010 when the commercial disputes and strategy for resolution was being led (quite rightly) by the specialist resources engaged for the purpose. With respect to the timing of Project Carlisle my diary reflects that I was on leave from 25 July 2010 till 15 August 2010 inclusive.

- 47) What were your views, in general, on the Project Carlisle 1 proposal and why it did not resolve the dispute?

I cannot provide a meaningful commentary on the different contractual provisions either in the submission by Infraco or in the tie counter proposals. In terms of a comparison of the proposal to tie's April 2010 (CEC00332138) cost estimates; tie's estimate for incremental delivery to Haymarket, (which assumed significant compromise in reaching agreement with Infraco) this was:

£167m from the existing Infraco contract price make-up plus approved changes

£76m for resolving all change, disputes and claims from Infraco (including loss of profits from truncation)

£38m for tram vehicles

£34m for SDS

£315m total

The proposed GMP from Infraco (although not wholly comparable in scope) was **£433m**.

On 20 August 2010 CEC officials were given a high level summary of TIE's Project Carlisle Counter Offer (**CEC00079797**).

The cost of a proposed phase 1 (Airport to St Andrew Square) was estimated at between £539m and £588m, the cost of a proposed phase 2 (St Andrew Square to Foot of the Walk) was estimated at between £75 million and £105 million and a combination of these phases was estimated at between £614 million to £693 million.

48) How and by whom were these estimates arrived at? What part, if any, did you play?

I do not recall anything about this presentation but it seems reasonable that it would reflect my input regarding the costs of the project other than the Infraco price and I would have engaged in comparing the figures to tie's existing outturn estimates.

49) What were your views on these estimates?

By comparison with the estimated I helped to compile and present in April 2010 (CEC00332138) the total outturn estimates look to be broadly consistent; in April tie had estimated an outturn cost of £566.3m for delivery to York place with re-porcurement of on street civils – the range in this presentation is £539m to £588m albeit to St Andrew Sq only. The estimate to complete the whole of phase 1a in April 2010 was £671m – the range in this presentation is £614m to £693m.

50) Did you attend the presentation? Can you recall the response of CEC's officials to these estimates?

I have no recollection of being present at the presentation

The Tram Project Board met on 25 August 2010.

The minutes (**CEC00013818**) noted, in respect of Change Requests and Risk Drawdown (page 9, para 3.2) that draw downs and future commitments to planned payments to the end of Period 5 2010/11 now totalled £47,519,184 and that the remaining risk balance based on the approved QRA plus the additional funding was £800,000.

The Board were asked to, and did, approve a recommendation in the Period 5 Change Paper to increase the Project Control Budget by a further £5m to October 2010.

51) It would be helpful if you could explain that entry, including, the Project Control Budget (i.e. how much was it, when and why was it fixed), the process by which drawdowns were made on the risk balance, the effect of that on the Project Control Budget and why approval was sought from the Board at that stage to increase the Project Control Budget by a further £5 million?

Please see answer to Q36 above as the same principles to comply with Delegated Authority Rules applied here. The matter is explained in the paper presented to the TPB on 25 August 2010 at CEC00013703_0020 whereby the Project Control Budget was increased from £530m to £535m.

By letter dated 11 September 2010 (**TIE00667410**), BSC submitted its "Project Carlisle 2" proposal to TIE, in which BSC offered to complete the line from the Airport to Haymarket for a Guaranteed Maximum Price of £405,531,217 plus 5,829,805 euros, subject to the previously suggested shortened list of Pricing Assumptions.

By letter dated 24 September 2010 (**CEC00129943**), TIE rejected BSC's proposal.

Mr Foerder responded by letter dated 1 October 2010 (**CEC00086171**).

52) What were your views in general on the Project Carlisle 2 proposal and why it did not resolve the dispute?

Please see my answer to Q45 to Q47 above. This revised proposal in terms of value was £28m less than the first offer but tie would have been unable to conclude it represented value for money and it was unaffordable within the agreed funding package.

On 18 August 2010, Donald McGougan of CEC asked you to begin evaluation of the potential financial impacts of contract termination (CEC00130404, CEC00130405).

53) In overview, what work was done in response to this request?

In terms of the immediate financial analysis work – I believe this was the development of the spreadsheet CEC00113763. Legal analysis of termination was separate.

54) Was the output of that the spreadsheet referred to as "deckchair" (e.g., CEC00113758, 12 November 2010)?

Yes – and that is the subject of Q64 to Q66 below.

55) Incidentally, that email refers to your "*hidden notes*". What were they?

They were cell comments (not in any sense "hidden") I had left in the spreadsheet CEC00113763 to assist Gregor Roberts and others to explain the assumptions in developing this initial view on termination alongside other options – the comments are included in the pdf of the spreadsheet CEC00113763. See Q64 to Q66 below.

The Project Director's report to the TPB on 22 September 2010 (CEC00013818_13 at _15) noted that the dispute resolution procedure had reduced BSC's claims from £18.2m to £7.6m for those claims where a financial settlement had been reached.

There is no report of the cost implications if the principles decided at adjudication were to be applied to the contract more generally (e.g., on the BDDI to IFC issue).

Adjudication decisions which had been reached up to that point included:

- 13 October 2009, Mr Howie QC, Hilton Hotel car park works (**WED00000026**)
- 16 November 2009, Mr Hunter, Gogarburn Bridge (**CEC00479432**) and Carrick Knowe Bridge (**CEC00479431**).
- 4 January 2010, Mr Wilson, Russell Road Retaining Wall Two (**CEC00034842**).
- 18 May 2010, Mr Hunter, Tower Bridge (**CEC00373726**) and (**CEC00325885**),
- 24 May 2010, Mr Coutts QC, Section 7A-Track Drainage (**TIE00231893**)
- 4 June and 16 July 2010 Mr Howie QC, Delays Resulting from Incomplete MUDFA Works (**CEC00375600**) and (**CEC00310163**)
- 7 August 2010, Lord Dervaird, Murrayfield Underpass Structure (**BFB00053462**)
- 22 September 2010, Mr Porter, Depot Access Bridge (**BFB00053391**).

56) What were your views at the time on the outcome of these adjudications?

The adjudicators' decisions were very detailed in examining the interpretation of the contract terms and how they should be applied in the detailed design and construction. Even at the time I would not have had the knowledge and expertise to interpret them without the help of the expert legal and technical resources deployed by tie. I am sure that that the implication of each of the adjudications was documented by those resources.

I am also sure that tie's commercial resources would have assessed the cost implications if the principles decided at adjudication were to be applied to the contract more generally.

Where adjudication has resulted in a determined value for design related issues (Russell Road Retaining Wall, Tower Bridge, Depot Access Bridge, S7a Track Drainage) the value of the change is significantly less than the value placed on the change by Infracore – but in no case was it zero. I can't see in these adjudications

an analysis of what caused the change / why it was necessary other than references to ground conditions in relation to foundations.

The MUDFA Rev 7 EOT adjudication awards Infraco 154 days extension of time – this is in the context of Infraco's request for 1 year extension of time as of June 2009. It is not clear to me in that case the extent to which the adjudicator has taken account of any obligation by Infraco to mitigate delays.

57) To what extent, if at all, were these adjudications intended to establish principles of wider application, or provide guidance, in relation to the other matters in dispute?

I believe the selected adjudications were intended to establish contractual interpretations, provide a means by which urgent work could be started by instruction and establish valuation. It was expected that the principles could be applied to the rest of the work.

The Russell Road Retaining wall adjudicator seems to conclude that the price did incorporate the Employer Requirements and was not solely determined by BDDI. He goes on to say the design development provisions in schedule pts 4 have been worded wrong if the interpretation of them is they are meaningless – and offers his own interpretation of what the commercial intent was. The Tower Bridge adjudication deals extensively with dispute and uncertainty over what information constituted BDDI in the first place.

58) To what extent did you consider these decisions favoured TIE or BSC (both on issues of principle, and on value)?

59) Did these decisions give you any pause for thought as to whether TIE's strategy, including its understanding of the contract, was correct?

In terms of value the adjudicators decisions generally find in favour of tie – meaning the adjudicated values are much less than Infraco was claiming. I am

unable to conclude in general whether the issues of principle are generally in tie favour and there will be supporting technical and legal analysis of the extent to which they did.

It appears that, under the payment milestone structure under the Infraco contract, TIE had, by 2010, certified far more as due for payment than construction had been completed. The explanation lay in TIE having paid certain sums up front, and paid preliminaries even though construction work had not been progressing satisfactorily (see, e.g., your email of 11 March 2010 (**CEC00556759**). By October 2010, it appears the discrepancy between payments certified and value of work done was c. £30m (see, e.g. your email of 11 October 2010, **CEC00111694** and its attachments (numbered in sequence to **CEC00111672**).

**CEC00111672
should be
CEC00111702**

- 60) Can you explain this issue?
- 61) Were there concerns about tie's ability to recover this sum if the Infraco contract were to be terminated?
- 62) To what extent, if at all, did this issue influence tie's approach to resolving the disputes?
- 63) Did the extent of the 'overpayment' affect tie's negotiating leverage? Please explain your answer.

Re Q60 to Q63 please see answers to previous questions which explain the background to this situation and the legal view of it; Q74 and Q129 from 2008 and Q15-17 from 2009.

On 12 November 2010, Gregor Roberts circulated a "*deckchair cost options sheet*" (**CEC00113758** (email), **CEC00113762** (Mr Roberts' accompanying note), **CEC00113763** (spreadsheet)).

- 64) Can you explain in overview what the spreadsheet shows?

The spreadsheet presents a view of what outturn costs could be for the whole of

Phase1a (not for incremental delivery) for the options presented. Affordability (funding availability) and stakeholder acceptance (CEC support and continuing Government grant support) is not addressed in this analysis.

Continuing as is:

Column B (£639.9m) - The control estimate of for "pitchfork" option 3C where agreement was reached to resolve issues to date and agreed better way of working contractually going forward with Infraco – this agrees to the estimates from April 2010 (CEC00332139)

Column C (£821.1m) – The cost of continuing with Infraco as is ie with no significant resolution as hitherto anticipated and continuing disputes and poor delivery by Infraco until the end of the project.

Carlisle

Column D (£662.5m) – using tie's Carlisle proposal

Column E (817.9m) – using Infraco's Carlisle proposal

Termination and reprourement:

Column F (£669.5m) – where the termination and reprourement was in parallel with litigation but tie was successful in the litigation

Column G (£823.3m) – as above but tie was unsuccessful in the litigation

Column H (£763.3m) – as above but settle out of court rather than proceed to litigation

Terminate and postpone:

Column J (£724.4m) – where reprourement was after successful litigation

Column K (£514.9m) – where the project was cancelled after unsuccessful litigation

As general comments:

- Column B was no longer realistic – there was no sign of an acceptable way forward with Infraco on the basis of this estimate from April 09 which assumed preserving the existing contract. Column C was also an unlikely outcome as it would have meant continuation with Infraco as is with no prospect of achieving certainty on costs and programme or even of getting the project completed at all – no an outcome which could be contemplated by tie, stakeholders (CEC

- and TS) or very likely Infraco.
- The option to terminate and re-procure immediately (F,G and H) would be a very significant call for the stakeholders to make and would need to be fully informed by the strength of the legal case and in any case open to the uncertainties associated with any litigation. An out of court settlement would perhaps have been the only way to deliver certainty in the short run. In each case there would be additional costs in relation to interim works during the reprocurement. In each case the assumption was that tie would call the bonds in the Infraco contract to cover the amounts paid to Infraco which were in excess of the work actually done.
 - In the case of litigation legal fees were estimated at £30m (from DLA based on 2 years with costs to tie account). The successful litigation case assumed tie would recover £88.8m being 75% of the difference between outturn costs in column F before such recovery (£758.3m) and the costs of completion under column B. In the unsuccessful litigation case it assumes tie would pay Infraco loss of profits and litigation costs of £65m. The costs of an out of court settlement were assumed as £35m payable to Infraco.
 - Many of the assumptions made in producing these figures these were illustrative, subject to further interrogation and development by those experienced in such litigation and did not recognise an outcome whether the litigation did no deliver a clear outcome in favour of one party. This initial financial analysis would require very significant legal and commercial input before it could be presented as a reliable statement of the cost and time consequences of the options presented to stakeholders.

65) What was it to be used for?

This was an initial financial analysis of the costs to terminate the Infraco contract under different circumstances as requested by CEC. This initial financial analysis would require very significant legal and commercial input before it could be presented as a reliable statement of the cost and time consequences of the options presented to stakeholders.

66) Can you explain briefly the figures which appear on the first tab for:

From my comments and Gregor Robert's paper:

- a) existing change ("Princes Street" and "other");
- b) existing prolongation;

The QS view (our commercial team's best estimate) of the total costs of change associated with all works was now £45.3m (in column C) compared to that in April 2010 of £39.5m (in column B). This would have included a current view on all BDDI to IFC issues. The existing prolongation (EOT) estimate of £21m is the subject of Q22 above. The Princes St change was derived from the outturn costs of the works on Princes St including changes to scope on Princes St including such as extent of excavation, road reconstruction and road surfacing.

- c) further on-street change; and

An extrapolation of the experience of Princes St (including scope changes such as extent of excavation, road reconstruction and road surfacing) to the remaining on-street works if carried out by Infraco.

- d) further allowance for risks and delay (especially the £150m figure: column E).

The £150m comprised an assumption that in the absence of resolution Infraco would not continue without tie accepting the costs of all future delay (3yrs = £80m) plus very large additional costs arising from future change notified by Infraco in relation to on-street works in particular. I think the £150m estimate might be regarded as not much more than a guess as there was no basis for estimating what future claims from Infraco might be or what the end date of the project would be if we carried on as we were without agreement on outstanding principles and an agreed programme to complete the project.

The Project Director's report to the TPB on 17 November 2010 (CEC00014175_14)

noted (at _15, "Progress") that the cumulative completion for Infraco construction works was 26.9% and that total project completion "as a financial metric" was estimated at 70%.

67) Can you explain this? Did it mean that whilst 26.9% of the work had been done, 70% of the budget had been spent?

I do not have the numbers to verify the detail, but the 26.9% refers to physical completion of Infraco construction works. The Infraco construction works represented less than 50% of the total budget for the project at financial close. The Infraco construction element of the budget of itself would necessarily include significant costs being incurred in advance of the physical work being completed on street.

At _16, it was noted that TIE had issued 10 Remediable Termination Notices and 2 Underperformance Warning Notices under Infraco. Four rectification plans had been received from Infraco, and TIE had rejected all of them. Two others were under review.

68) Please explain in overview tie's strategy in serving these notices.

69) To what extent was the strategy supported by legal or other technical advice?

70) To what extent did tie, whether based on advice or otherwise, consider it had good grounds for terminating Infraco?

71) To what extent did TIE consider in fact doing so?

72) To what extent did you consider that, from BSC's perspective, there was a realistic prospect of TIE doing so? Please explain your answer.

I cannot offer an informed view on any Q68 to Q72. The overall strategy included bringing pressure to bear on Infraco by all means possible under the contract and tie had robust legal and technical advice to support these notices. The legal advice relating to grounds for termination was the subject of very detailed legal advice supported by QC advice and part of the strategy in serving these notices was to build that case – in addition to attempting to get Infraco to comply with the

contract and progress the works.

The risk drawdown paper for the TPB on 15 December 2010 (TIE00896978_23) noted that the Carillion final account had been agreed at £62,500,757. To reconcile the budget with the final cost, a drawdown from the risk allowance was required of £8.3m. The minutes for the TPB on 17 November 2010 (TIE00896978_6 at 3.3) noted that the arrangements were shared with the board, but they were not reported in the minutes.

73) What was your understanding of the nature of the settlement with Carillion?

I understand that the settlement included for all the work actually done by MUDFA together with settlement of their claim for disruption to their programme (through eg traffic management and design related issues) but I can't recall any of the detail of how the final account was analysed.

You left TIE in around December 2010.

74) Why did you leave tie?

I resigned in June 2010 but agreed to work the 6 mths notice in my contract, primarily to ensure an effective handover of my records and knowledge to others. The original reason I joined tie to deliver on the business case was long since gone. There was no prospect of working on the development of the case for new infrastructure including extensions to the tram. We had been unable for more than a year to present a reliable and affordable estimate for the outturn costs of the project – which it seems reasonable to accept as being core to the role. The ongoing commercial strategy and attempts at resolutions were, quite rightly, being led by experienced experts in that area.

75) What were your views on the state of the project when you left?

There was still no clear picture of when certainty would emerge – the commercial engagement was yielding results in getting the Infracore works moving off street but no sea change which indicated a resolution. The team managing the commercial strategy continued to do a very professional job with full visibility of TPB and CEC who endorsed the steps being taken.

You had left TIE before the mediation at Mar Hall in March 2011, the subsequent resolution of the parties' disputes and the completion of a truncated version of the project for £776m (being on the revised budget and inside the revised programme).

76) Do you have any comments or observations on that project outcome, having regard to what you knew about it from your involvement at an earlier stage?

I cannot provide informed comment regarding any events, agreements or financial outcomes which happened after I left tie.

Project Management, Governance and Main Contracts

- 1) What was the relationship between TEL, TIE and the Tram Project Board? What role/remit did each body have and how did they interact? Was one the client for the other(s)?
- 2) What was the role or function of TIE?
- 3) You were employed by TIE. What dealings did you have with TEL and/or TPB? Which body was "in charge"?

Re Q1 to Q3 – I believe the development and documentation of the governance structure is very well documented. The major change to the governance structure was in mid 2006 when TEL assumed the role of primary responsibility for oversight and execution of the project with that control delegated from CEC under an operating agreement which inter-alia defined the extent of delegation, matters which were reserved to CEC and reverting lines back to CEC. TEL had

responsibility for the eventual operation of the tram as integrated into the public transport network of Edinburgh including Lothian Buses. The TPB was established as a sub-committee of the TEL Board (and the TPB in turn had its own sub-committees). From mid-2006 tie was the delivery company, entering into the contracts, employing the staff and other resources and carrying out the activities necessary to deliver the project including engagement with the various parts of CEC and Transport Scotland. tie also had an operating agreement with CEC.

CEC had overall responsibility for the project and it was CEC who was the party to the grant agreements with Transport Scotland (or more accurately Scottish Ministers) – the grant agreements in turn contained conditions and reserved matters which CEC needed to comply with. Within the terms of the TEL Operating Agreement, CEC delegated its responsibilities to TEL (exercising these responsibilities through the TPB) and the TPB in turn delegated authority to tie to execute. I believe the formal delegation was to the tie Executive Chairman/CEO who in turn delegated to the Tram Project Director.

Changes in the governance structure from mid-2006 were I believe in substance further developments of the outline above where membership and remits of boards and sub-committees were amended to reflect the stage project was at with the significant reviews at close of the Infraco contract and in late 2009 to reflect an increasing focus on preparing for operations. At this time I believe the legal ownership of tie was amended to reflect the reality that tie was primarily accountable in the first instance to the TPB and ownership of tie was transferred to TEL. Also in 2009 the governance regime was amended to include a Tram Monitoring Offer as the senior CEC officer responsible for oversight of all tram related matters.

In practice the way this structure worked was that tie reported in the first instance to the TPB and in turn acted for the TPB in fulfilling obligations under the TEL operating agreement and under the grant agreement with government. For instance in my role at tie I engaged directly with TS in the administration of the

grant agreement and drawing down the funding which came direct to tie. Required regular reporting to TS was prepared and delivered by tie.

In relation to TIE:

- 4) To what extent do you consider that TIE were responsible for managing and co-ordinating the different contracts and works (including, in particular, the design, utilities and Infracore works) and the interfaces between these contracts and works?

tie was responsible for managing and coordinating the different contracts and works acting under delegated authority from the TPB and reporting back to the TPB on all matters of significance and direction.

- 5) Which body or organisation do you consider was ultimately responsible for ensuring that the contracts and works were properly managed, including the interface between the different contracts and works?

The day to day management of contractors and interfaces was executed by tie acting under authority delegated from TPB and with responsibility to report back to TPB on all matters of significance and direction.

- 6) Did you have any concerns at any stage in relation to TIE's project management of the tram project or the performance of any of TIE's senior personnel or Board members?

In overall terms I did not have any concerns regarding tie's project management which would have led me to believe there were fundamental flaws or weaknesses in anything tie was doing. tie as an organisation sought to anticipate and respond to the increasing challenges it faced by securing additional resources and amending or enhancing management processes necessary and with the oversight of the TPB. I do not have cause to single out any individuals in tie's senior

personnel or board members in relation to concerns about performance.

In relation to CEC:

- 7) How were important matters relating to the tram project reported by TIE to CEC (including by whom and to whom)?

First and foremost reporting was through the TPB which had CEC representation both actually on the board and regular attendance by non-board members. In parallel there was very extensive engagement and briefing between tie and CEC officers on particular matters in parallel with or in preparation for TPB (or its sub-committees) on specific subject areas eg utility diversions, design consents and approvals, traffic management, Infraco works etc. For my part I was in constant liaison with and provided information as requested to senior finance officers at CEC.

- 8) How were the views and requirements of CEC fed back to TIE?

Primarily through the TPB (or its sub-committees or through direct engagement on specific subject areas as per answer to Q7 above.

- 9) How did CEC exercise control over tie?

Primarily through the TPB and formally through compliance with the TEL and tie operating agreements.

- 10) Did you have any concerns at any stage in relation to the performance of senior CEC officials or councillors?

I do not have cause to single out any individuals in CECs officers or councillors in relation to concerns about performance.

11) Did you have dealings with the CEC Tram Sub-committee? It was said to have an oversight function. How did that function compare to or sit alongside the functions of TIE, TEL and TPB?

I did not personally have any direct engagement with or prepare material for the CEC Tram Sub-committee. I did from time to time answer questions or produce information for CEC officers in relation to their own preparation for the committee – particularly in relation to costs. I believe in practice the CEC Tram Sub-committee sat directly above TEL/TPB in the governance structure.

In relation to the Tram Project Board (TPB):

12) How were important matters relating to the tram project reported by TIE to the TPB (including by whom and to whom)?

At each meeting of the TPB a comprehensive report on the project was submitted to TPB under the name of the Project Director and when TS left the governance structure the separate but consistent report to TS was also provided. Specific matters requiring the attention of or decisions by the TPB were the subject of separate papers presented by the individual of group at tie most appropriate to the subject matter. TPB also received reports summarising action taken by eg the Project Director under delegated authority such as the approval of budget changes. Most TPB were led by a presentation regarding significant matters and progress.

13) How were the views and requirements of the TPB fed back to TIE?

Formal feedback was through minuted approvals and actions. In parallel feedback was received through engagement and briefing between tie and CEC officers on particular matters as per answer to Q7 above.

14) Did you have any concerns at any stage in relation to the performance of the

TPB or any members of the TPB?

I do not have cause to single out any individuals on the TPB or the TPB as a whole in relation to concerns about performance.

In relation to TEL:

- 15) How were important matters relating to the tram project reported by TIE to TEL (including by whom and to whom)?

The TPB was a committee of the TEL board and TEL oversight of tie was through the TPB as per answers to questions above.

- 16) How were the views and requirements of TEL fed back to TIE?

See answer to Q15.

- 17) Did you have any concerns at any stage in relation to the performance of TEL or any members of TEL?

See answer to Q15.

In relation to Transport Scotland (TS):

- 18) How were important matters relating to the tram project reported by TIE to TS (including by whom and to whom)?

Formally this was different before and after TS were no longer part of the governance structure and were no longer represented on the TPB in 2007. Thereafter a formal written report was prepared by tie to submit to TS each period in accordance with requirements of the grant agreement with Scottish Ministers. At a working level tie continued to engage with TS officials throughout with the persons engaging dependent on the subject matter. For my part I had extensive

(daily sometimes) engagement with TS and their advisors all the way through the preparation of the different versions of the business case. I also engaged directly with TS finance officers on matters relating to the grant agreement and drawdown of the funding.

19) How were the views and requirements of TS fed back to TIE?

Regular briefings were carried throughout the project. Where necessary there would have been formal exchanges of correspondence. In appropriate circumstances the briefings were carried out at ministerial level by the tie CEC/Chairman.

20) Did you have any concerns at any stage in relation to the performance of TS or any senior officials of TS?

I do not have cause to single out any individuals at TS or TS as a whole in relation to concerns about performance.

At the TPB on 9 August 2007, it was noted that Transport Scotland had advised of their intention to resign from the TPB in anticipation of new governance arrangements (CEC01561047_5, at 2.1; see also 3.9.1).

21) What was your view of TS's decision to withdraw from participation in the TPB?

At the time I thought it was unusual that TS had chosen to withdraw from the formal governance of a project for which they were delivering the vast majority of the funding.

22) What was your understanding of why that occurred?

As I understand it the reasoning was that as the Scottish Government was not the funder of last resort (the £500m grant being fixed with CEC bearing the risk of all overruns) that they considered it inappropriate to be directly involved in the TPB but that CEC remained responsible for ensuring proper value for public money in

accordance with the conditions of the grant agreement.

23) What impact, if any, did it have on the governance of the project?

I think TS had a lot of expertise and experience which they could have continued to bring to the tram project by direct involvement. It's also relevant to note that they may have been able to bring a broader perspective to the disputes with the contractor eg Bilfinger Berger were also working on at least one other major project being delivered by TS. I am unable to conclude objectively on the extent to which the decision by TS to withdraw from the TPB may have had an impact on project outcomes, if any.

At the TPB on 12 July 2007, James Stewart had said that "*despite the recent funding announcement, TS would remain responsible to assure prudent spending of taxpayers' money. This should require continued attendance at the TPB...*".

24) What was your view of that?

See answers to Q21 to Q23 above.

In relation to the Scottish Government (SG) (including, in particular, the Minister for Finance and the Minister for Transport):

25) How were important matters relating to the tram project reported by TIE to the SG (including by whom and to whom)?

The primary conduit for reporting was through TS who I assume briefed Ministers accordingly. Where appropriate tie (at Chairman/CEO level) provided direct briefings to Ministers on progress and particular issues affecting the project.

26) How were the views and requirements of the SG fed back to TIE?

Again primarily through engagement with Transport Scotland.

27) Did you have any concerns at any stage in relation to the performance of the SG or individual Ministers of the SG?

I do not have cause to single out any Minister or SG as a whole in relation to concerns about performance.

In relation to the inter-action between the different bodies and organisations involved in the project management and governance of the tram project:

28) How were important matters relating to the tram project reported between these different bodies and how, and by whom, were decisions taken in relation to these matters?

I have tried to explain this in outline in the answers to Q1-27 above.

29) What were your views in relation to the governance arrangements for the tram project including, in particular, the effectiveness of the governance arrangements?

I cannot single out an instance where something went wrong with the project and the cause was a failure of governance. I think there may well have been opportunities to make governance more efficient – see my comments re CEC01190735 at Q33 below.

30) Did you have any concerns at any stage in relation to the governance arrangements?

See answer to Q29 above and comments re CEC01190735 at Q33 below.

31) Do you consider the respective roles, responsibilities and reporting requirements of the different bodies involved in the management and governance of the project were sufficiently clear?

I think there was inevitable overlaps in an environment with so many stakeholder groups. However, I don't believe the governance was at any time unclear as to render it ineffective.

32) Which body or organisation do you consider was ultimately responsible for ensuring that the tram project was delivered on time and within budget?

In any analysis it would be difficult to conclude other than tie, reporting to the TPB, was ultimately responsible for the day to day delivery of the project – but to do so on time and within budget it needed wholesale support from the project owner (CEC), the funder (TS) and the wider support of stakeholders in Edinburgh. Perhaps even more importantly, tie as a project management company needed performance and a service from its principle contractors, MUDFA, SDS and Infracore to deliver the project on time and within budget.

In an email on 3 December 2009 about governance and future operational structures (CEC00617854), you said:

"I found the discussion around governance and future operational structures to be very difficult indeed this morning, partly because I was speculating with a lot of it and partly because I have been unable since the days of the Business Case to exercise any significant influence over or bring certainty to the resolution of the situation (which I sure as hell had no part in creating). This is about much more than just clear business models and leadership – it's also about the dark world of politics and getting people to share their toys."

In the context of a proposal by Graeme Bissett to revise the governance model (CEC01190735, 19 January 2009), you said:

"Maybe a more refined view of the opportunity/challenge is that there are currently too many Boards and management teams (as opposed to just legal entities) and, whilst you are right to say it is in general working, there are historically embedded tensions to deal with, blurred edges of actual or perceived accountabilities and we might not be optimised in terms of one team strategy, decision making or resource efficiencies (either now or leading up to

and through commencement of operations) ... the challenge would be to ensure there is no perpetuation of historical tensions, brick walls and operations planning is effective and efficient.”

33) Can you explain the problems you were referring to here?

Re CEC00617854 – This was an internal email to the members of my own Finance and ICT team at tie. In context by this time the problems the project was facing and lack of timely progress to resolution was becoming very stressful for all and tie was subject to extensive criticism externally. This was difficult at a personal level for staff – many of whom had been involved in the project for years - and they wanted to know what the future for tie and for them was – I was unable to provide them with the clarity they wanted.

tie was now the delivery arm for TEL and there was no clarity around whether there was a role for anybody at tie beyond completion of the project and into operations where many of them felt they had a role they could play. There was no clear prospect of a continuing role for tie or further projects beyond the first phase of tram.

This was an environment in which tie management had a significant challenge in maintaining morale and retaining resources and I believe we did that very well throughout.

Re CEC01190735 – I agree with the appraisal that the project governance worked reasonably well throughout. I believed it was effective – but could be improved by reducing or focussing the number of reporting points both within the formal structures and outwith. I always felt there was room for improvement in the efficiency of the whole structure to rebalance the resources whose role was or was perceived to be scrutiny with those whose role was delivery and thereby make the whole more efficient. An example of the advantages would be to reduce the effort which tie management put into preparing reports for different purposes but with similar content and preparing for and attendance at briefings and so leave

a greater proportion of time for managing the project. It may be the conclusion that the multi-stakeholder environment in which tie was delivering the project only left so much flexibility to achieving this. Any remaining embedded tensions I was referring to were historic arising at the time tie was set up as an "arms-length" company (but because it needed so much support and approvals from its stakeholders the extent to which it was arms-length was limited) and because at the time it was set up the governance arrangements did not reflect the underlying requirement to integrate the tram project into the public transport network in generally.

(It may be helpful also to refer to **CEC00680385**, a paper to the TPB on 23 September 2009, which, in section 1, asserted that the project governance was "*working reasonably well*" but identified areas needing improvement.)

In relation to the main contractors involved in the tram project:

34) Did you have any concerns at any stage in relation to the performance of any of the main contractors, or the senior personnel employed by these contractors?

The concerns tie had around the performance of its main contractors including MUDFA, SDS and Infracore are the subject of a great many of the questions I have already addressed and are difficult to summarise here. I had relatively little in the way of dealings with specific persons who worked for these contractors and I personally do not have cause to single out any individuals who worked for these contractors in relation to concerns about performance.

35) If so, what were your concerns and what did TIE do to address them?

See answer to Q34.

It appears that the Consortium never undertook any on-street works under the contract. Princes Street was under a supplementary agreement, some were under instructions and the remainder waited until after the Mar Hall agreement.

36) Do you agree?

Yes.

37) What was your view and that of the TPB generally on this refusal? How were the consortium able to behave in this way?

The Infraco's refusal to work on the on-street sections under the contract is the subject of a great many of the questions I have already answered.

Tie Bonuses

We understand that TIE ran a bonus scheme for staff and contractors. In November 2010, you sent a "complete download" of material on bonuses to Gregor Roberts (CEC00114348). The email notes that bonus payments to consultants and Andrew Fitchie in 2008 were of particular interest at that time.

38) Why did you send all this material to Mr Roberts?

I resigned from tie in June 2010 but agreed to work the 6mths notice in my contract in part to effect a handover – this email is just one of a large number of emails which had the title HANDOVER to Gregor Roberts and others in the organisation.

39) Please explain the particular interest in bonuses paid in 2008.

The context I believe is that Richard Jeffrey had asked me to review historical expenditure which could be seen negatively in the future (CEC00114368_001) and the bonuses paid at the time of close of the Infraco contract fell into that category because of the widespread commercial issues tie had had ever since that time. Bonuses to staff for the 15 mths to 15 Mar 08 were significantly larger in aggregate than prior or future years as reflected on spreadsheet CEC0014362 tab Summary. These totals exclude the payments made to contractors who were not on payroll.

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CEC00114362

40) What were the criteria for paying bonuses? Who decided what would be paid to whom?

The criteria for paying bonuses to staff were through a well documented and understood assessment scheme – which I do not have a copy of. The determination of bonuses in accordance with the scheme was administered by the HR Director, reporting to the Executive Chairman and to my knowledge all bonuses (including for contractors) were approved through the Remuneration Committee of the tie Board at this time. I did not have access to Remuneration Committee papers and just because I did not have that evidence as part of my HANDOVER email doesn't mean it did not exist. I had no role myself in the determination or approval of any bonuses - I conducted annual appraisals of the staff who worked in the Finance & ICT team against agreed and understood objectives.

41) To what extent, if at all, did CEC exercise control or oversight over TIE bonuses?

As far as I am aware CEC were informed of all proposed bonus payments at senior executive level by the tie Executive Chairman.

42) What control or oversight was exercised by tie?

Ultimately control was exercised by the Remuneration Committee of the tie Board. Later (2009?) I believe TEL assumed oversight of all remuneration arrangements in tie.

43) Did you have any concerns at any stage about the bonus scheme? If so, what were they?

My only concern was to ensure that there was a proper process in place to authorise all bonuses and incentives before payment was made. Like Richard Jeffrey I was concerned about the optics of having paid bonuses in the context of a project which was by not progressing satisfactorily at all.

44)The email refers to "*incentive arrangements which had been agreed with externals*" in your absence. Please explain this.

I believe these are the 4 contractors as listed on CEC00114414_0001. I believe these arrangements were concluded when I was on leave of absence in the second half of 2007 – which doesn't mean in any way they were not properly documented and approved in any way.

45)What incentives (if any) included in the bonus scheme related to the achievement of the financial close of the Infraco contract in May 2008? Please explain what they were; broadly, how many staff received bonuses; in particular, how that bonus scheme applied to individuals in senior roles; and the approximate sums paid.

I believe the higher bonuses for the 15mths to March 08 were reflective of the efforts required to get to financial close and the fact of getting to financial close. I am not aware that the timing of financial close was a determinant of staff bonuses. The table attached to Colin McLaughlan's email of 10 March 2008 (CEC00114414_001) leads me to believe that there was an element of the incentive payments which related to achievement of financial close by 31 March 2008 but that was not achieved and so that element of the maximum bones entitlement was not paid. All staff bonuses for the 15mths to March 08 are itemised on spreadsheet CEC00114362 on tab 15 Mar 08.

46) Was the bonus scheme in your view a factor in Infraco financial close taking place when it did, on the terms it did?

No – I have no reason to believe it was a factor in any way.

See, e.g., **CEC00114413**, **CEC00114414** (10 March 2008), **CEC01491920** (21 March 2008).

The email suggests information released by Colin McLaughlin about bonuses was inconsistent with your records, and did not include the payments to contractors.

47) What is your understanding of that matter?

I do not recall the context of this comment but it could be that information which had been made public (eg as a result of a request under FOISA) did not include the incentive payments to contractors.

An email exchange between Colin McLauchlan and Mike Connelly (April 2009, **TIE00170086**) referred to a retrospective salary increase.

48) What was your understanding of that matter?

The background here seems to be representations being made to the Chairman David Mackay about proposed salary changes in the stakeholder management team. I have no idea why my name is being mentioned in the emails or if the Chairman approved these changes (this was at the time between Willie Gallagher's departure and Richard Jeffrey's arrival).

49) What was your understanding of the bonus paid to Andrew Fitchie?

Andrew Fitchie was on secondment from DLA to tie in the period up to financial close. My email to Gregor Roberts indicated that I had sight of a secondment agreement (unsigned) and there were incentive arrangements in it – what was unusual about the payment was that it was made to Andrew Fitchie himself rather than DLA. Colin McLauchlan's email to me of 23 July 2008 (CEC00114412_0001) makes it clear that DLA were aware and that this was the correct way to make payment. My email to Richard Jeffrey of 2 Sep 2010 (CEC00114368_0001) seems to indicate I had checked with the then HR manager that it was all properly documented and agreed. However my email to Gregor Roberts of 17 Nov (CEC00114348_0001) seems to bring the DLA awareness of that back into doubt – that doubt would only have been expressed to me by Richard Jeffrey.

50) How did this relate, if at all, to Mr Fitchie's request for payment in excess of the agreed daily secondment rate for the work done in the procurement phase? (See, e.g., your concerns **CEC00114368**, 2 September 2010), **TIE00036467** 29 April

2008, TIE00132541 17 July 2008, CEC00114412 23 July 2008).

I am not aware it had any relationship to that at all. I believe an additional settlement was made with DLA to reflect the efforts on secondment being greater than was anticipated but I cannot recall the details.

Your email to Gregor Roberts (CEC00114348, November 2010) refers to DLA claiming not to have been aware of the bonus paid to Andrew Fitchie.

51) What is your understanding of that matter?

I believe any re-emerging doubt about DLA awareness of the payment would have come to me from Richard Jeffrey. I am sure I had no engagement with DLA myself on this issue.

Staff Turnover

It might be suggested that there was a high degree of turnover of senior staff at tie, and at critical times (e.g., the departures of Ian Kendall, Andie Harper and Matthew Crosse as tram project director, and of Geoff Gilbert, all prior to Infracore financial close; the departure of Willie Gallagher in late 2008; your departure, Graham Bissett's and David Mackay's in late 2010).

52) Can you comment?

I believe the nature of project organisations is that personnel/contractors do turnover as the project goes through its different phases. However the departure of 3 project directors was unhelpful and I think there was a similar level of turnover in their counterparts at project director level in the main contractors, MUDFA/SDS/Infracore. For my part I don't think my departure impacted on tie as matters were largely out with my influence by that time – and I'd been with the project for nearly six years.

53) To what extent do you consider this had an impact on the project?

I think Andie Harpers departure was unfortunate at a time when I thought he was making a difference in the management of the design process. I think Steven Bell was exactly the right person to take the project into the construction phase.

Final Comments

1) By way of final thoughts:

a) How did the Edinburgh Trams Project compare with other comparable projects you have worked on (both previously and subsequently)?

The other major Infrastructure project I worked on was Hong Kong International Airport. In context I think the major differences between that and Edinburgh Trams were:

- The tram route took it through the middle of a busy city centre with very wide ranging traffic, business and other stakeholder implications – these escalated as the project progressed.
- The airport was well funded from the outset
- The airport was procured by awarding a large number of contracts to specialist contractors (including up front design by several design contractors) and the risk of interfaces was borne by the employer. No one contractor dominated.
- There were disputes and claims from contractors on the airport – but they got on with the job in the meantime

b) Do you have any views on what were the main reasons for the failure to deliver the project in the time, within the budget and to the extent projected?

I believe that all other problems could have been overcome if Infracore had got on with the job whilst engaging constructively with the client on commercial issues and provided a project management service. Instead it was almost immediately about their interpretation of the contract. I also believe the role of SDS in terms of the

competence of the design which formed the basis of the Infraco price and the causes of design change thereafter (and Infraco role in that) are important.

I also believe it is relevant to examine the intent of Infraco – ie to what extent was the decision to engage in a commercially aggressive way pre-meditated before or at the time of contract award and to what extent did it develop post award in response to other issues they have having, their interpretation of the contract being the means to push those issues back on tie.

- c) Do you have any comments, with the benefit of hindsight, on how these failures might have been avoided?
- d) Are there any final comments you would like to make that fall within the Inquiry's Terms of Reference and which have not already been covered in your answers to the above questions?

I have reviewed the areas the enquiry will examine on the website and I think they are the correct ones.

I confirm that the facts to which I attest in the answers contained within this document, consisting of this and the preceding 325 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.

WITNES

DATE 8/6/17.