

This note identifies the broad subject areas which we would like to discuss with you during the interview. We have tried to include all documents that may assist you in answering the Inquiry's questions. However, not all documents will be referred to when taking your statement. It would be helpful if in advance of the interview you considered the documents that are provided. The time spent in preparing for the interview is likely to result in more focused answers and the most efficient use of time, both at the interview, and when we come to prepare your statement.

**EDINBURGH TRAM INQUIRY  
NOTE TO WITNESS – ROBERT BURT**

**INTRODUCTION**

This Note covers the following matters:

- Introduction
- Delay analysis
- Carillion claims
- Infracore Extension of Time 2 claim (MUDFA rev. 8)
- Overall allocation of responsibility for delay
- Remediable termination notices
- The Mar Hall mediation
- Final points

## ***Introduction***

- 1) Can you please supply a brief CV, showing your qualifications and experience (a) at the time you were involved in the Edinburgh Tram Project, and (b) now?

**Appendix 01** contains a copy of my CV prepared in early 2009 when I became involved in the Edinburgh Tram Project

**Appendix 02** contains a copy of my current CV

- 2) Please briefly describe Acutus and the services it provides.

Acutus is a construction consultancy providing planning and commercial expertise to parties in the construction industry. Acutus' professional staff have either an engineering or quantity surveying background; with individuals generally having experience working in a contracting environment. We are regularly appointed as expert witnesses in our respective fields of expertise. For the most part, the services provided relate to either forensic planning / delay analysis or forensic quantum (cost) analysis.

- 3) Over what period were you, and Acutus, involved with the Edinburgh Tram Project?

I first became involved with the Tram Project in April 2009. That involvement continued until early April 2011 when my material involvement ended.

- 4) Please describe your role and responsibilities throughout the period you worked on the project.

### Role:

My initial role was mainly to provide my opinion to tie in relation to various matters arising under the MUDFA contract. The main issue addressed was the CUS claim for disruption. That role continued until mid-November 2010 when a mediation settled the dispute between the parties.

I was also involved on the Infraco Contract. That Infraco involvement was initially less than under the MUDFA contract until around late February 2010, when my involvement increased for a period (late February 2010 to early Sept. 2010). I then had further subsequent involvement in the Infraco contract from mid November 2010 until early April 2011. Acutus' involvement ceased during early April 2011.

### Responsibilities:

**MUDFA:** provision of opinion in relation to the quantum of the CUS disruption claims; analysis of and reporting on the various CUS disruption submissions which were issued to tie by CUS during 2009 & 2010. Preparation of a report for and attendance at a mediation between tie and CUS which was held on 9 & 10 November 2011.

**Infraco:** various activities were undertaken including providing assistance to tie at a mediation in June 2009; reviewing / proof-checking my colleagues' (Iain

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McAlister's) output in relation to various delay analysis / Programme and Delay Audit reports prepared and issued by him; coordinating programme comparison exercise (carried out by Hugo Dickson of Acutus); preparation of June 2010 report in relation to delays to elements of the Infraco works.

During the later period of my involvement I was also engaged, along with other members of Acutus staff, to carry out investigations into various RTN notices (Remedial Termination Notices) issued by tie to the Infraco contractor. That exercise commenced around mid-November 2010 and ended (prior to completion of same) on 1 April 2011.

- 5) What other individuals from Acutus were involved, and what did they do?

**Iain McAlister:** Iain was appointed by tie to investigate and prepare independent expert report(s) on various matters arising under the Infraco contract.

**Anne Connolly:** Anne was initially engaged to work on day to day commercial issues arising under the MUDFA contract. Anne later assisted me with the analysis of the CUS disruption claims.

**Hugo Dickson:** carried out a programme comparison exercise (early 2010).

**John Hughes (QS):** assisted me at various points with the investigations into the Infraco and MUDFA contracts (including the final RTN exercise).

**John Hughes (PM):** assisted me at various points with the investigations into the Infraco and MUDFA contracts (including the final RTN exercise). John also worked on the June 2010 report.

**Paul McCreadie:** provided some assistance during the latter stages of the RTN exercise.

- 6) Please explain how you, and Acutus, came to be involved in the tram project.

I had previously provided expert delay and quantum services to the Commercial Director at tie (Mr Dennis Murray) when he was the Commercial Director at construction companies. I was subsequently contacted some time after Mr Murray commenced at tie, to see if Acutus could assist in certain matters - firstly on the MUDFA Contract then on the Infraco contract.

- 7) We understand that Acutus advised tie on a number of matters concerning the Edinburgh tram project. Please provide a full list of those matters, together with a brief explanation of the scope and objective of Acutus' instruction in relation to each.

**MUDFA:**

1. Provision of QS resource: Anne Connolly was engaged to assist tie with the commercial administration of the MUDFA contract on a day-to-day basis.
2. Independent expert analysis and report on the CUS disruption claims. Draft reports were prepared and issued by myself in relation to this matter. A mediation report in relation to same was also prepared and used in that

mediation. The matter settled at mediation. Anne Connolly also assisted with this analysis and these investigations.

#### **INFRACO:**

- a) **Attendance at mediation late June/early July 2009:** I attended a mediation between tie and the Infraco Contractor during June/July 2009.
- b) **Delay analysis – MUDFA Rev8:** My colleague, Iain McAlister, drafted and prepared an independent expert report in relation to “*INTC No. 429 MUDFA programme Revision 8 Delay and Disruption Resulting from Incomplete Utility Works*”. Iain continued to provide programming and planning expertise to tie thereafter.
- c) **Delay analysis:** I was involved in the preparation of a report on investigations into delays incurred to certain elements of the Infraco Works during 2010. I was assisted by a colleague (John Hughes). See Section 1.2 of that report for full details of my instructions. Those instructions were essentially to provide an initial view on potential tie liability for delay to certain elements of the Infraco works.
- d) **Programme comparison exercise:** Hugo Dickson provided assistance to the tie planning team to carry out a programme comparison exercise (tracking changes to contemporaneous programmes issued by the Contractor).
- e) **RTN exercise (late 2010 to early 2011):** a number of Acutus staff were engaged in this exercise. Our instructions were to investigate, analyse and prepare bundles of documents and information in relation to a number of Remedial Termination Notices issued by tie to the Infraco Contractor. This exercise was not completed by the time our appointment ended.

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#### ***Delay analysis***

We understand that your work, and that of others at Acutus, included the analysis of delay in the Edinburgh tram project.

- 8) Please explain in overview and in general terms what such work involves.

In brief terms, delay analysis involves the analysis of progress and delays incurred on a project. That necessarily involves a review of (i) a contractor’s planned intent i.e. how the contractor planned to carry out the works (this ordinarily shown in bar chart programmes); and (ii) a review of actual progress, with a view to understanding where and what caused the delays to the programme and completion.

Analysis of actual progress ordinarily includes a detailed review of contemporaneous records such as updated programmes; progress reports; daily work records; weather records; plant and labour returns; progress

photographs and the like. Of crucial importance is the gaining of an understanding of the activities which were critical to Completion in both the planned programmes and actual (or as-built) condition.

- 9) What were the main issues which required to be considered in analysing delay on the tram project? Please separate them out and explain each one in overview.

It is important to point out at this juncture that I had limited involvement in the detailed investigations into the early and ongoing delays on the Infraco Contract. My colleague, Iain McAlister, was appointed to carry out the detailed independent analysis of progress and delay on that contract. While I have some knowledge of this aspect of Acutus' appointment in this respect (I was involved in certain discrete exercises), that knowledge is limited to a high-level understanding. The comments below should therefore be read in that context.

That said, I did have an involvement in other delay related exercises (as detailed within some of the questions below). In that respect, the main issues involved establishing the facts of actual progress as best we could, and hence the events which actually caused delay (both to the individual areas and the project as a whole). The contractual responsibility for those events also had to be understood. By way of example, there were many factors which had to be considered in analysing each of the areas involved in the Report dated 25 June 2010 (CEC00330652 (report)). Issues arising included questions as to the reasons for delay in construction drawing issue which we found difficult to establish; increased programme durations included in the Infraco programmes which were not explained; subcontractor procurement timescales; design check processes and the like. All of those factors contributed to the factual matrix for each area and had the potential to influence responsibility for, and the period of, delay to the areas under consideration.

In more general terms, given the complex nature of the project from a technical perspective and the numerous work areas involved, establishing true/dominant criticality was (and would always have been) a difficult matter to establish. That gave rise to questions of the method of analysis which should be adopted. This turned out to be a major difference between the respective parties. Please see further comments at question 46) below.

- 10) In terms of their impact on the cost and time of the project, which of those (from your perspective) were the most significant? Please explain why.

Clearly the MUDFA delays in various areas were significant to the project overall and would have caused significant periods of delay. However, the question of the actual measure of that delay remained a significant difference between the parties. Delays to design issue (IFC) also appeared to be a material factor. Further questions surrounding the Infraco Contractor's duty / obligation to mitigate delays also contributed to the differences between the parties' respective views of the cause(s) and measure of delay.

Fundamental differences also existed in relation to the delay analysis

methodology to be adopted (in terms of *how* the analysis of delay should be carried out). That point is addressed in answer to question 46) and subsequent related questions below.

- 11) Were there issues that gave rise to particular difficulty or uncertainty? If so, what were they? Please explain the nature of the difficulty and uncertainty they caused, and how.

In respect of the exercises in which I was directly involved, please see answers at questions 72) onwards. In particular, question 81) refers. That answer explains why definitive conclusions were not reached at that time (i.e. circa June 2010): I have included below the text at paragraph 81 for ease of reference:

*A number of factors contributed to this exercise not reaching definitive conclusions. Those included (i) it was known that further information was required in relation to document (design) issue dates and the reasons for the delay; (ii) the time within which the exercise was to be carried out meant that information provided to us had to be taken at face value without being fully verified; (iii) schedules for the IFC/INTC processes had to be developed further by the personnel as; (iv) audits were required to establish the cause of various matters; and (v) contractual matters required clarification.*

- 12) Were the issues affecting the tram project unusual in any way, when compared to other projects you have been involved in, for example, in terms of their scale, complexity or number? Please explain your answer.

I do not believe that the issues which were encountered were themselves unusual as, for the most part, those type of issues are typically experienced on many projects. However, the fact that those issues were encountered in the majority of areas or workfaces contributed significantly to the scale of the problems faced (i.e. the number of issues arising across the whole project at the same or similar times) was certainly a factor. That coupled with the fact that a large proportion of the works were being carried out in the centre of a busy city (which itself is a historical city with the resultant likelihood of a significant number of uncharted services and structures) undoubtedly contributed to the overall complexity of the works and coordination of numerous stakeholder interests. The parties' differing views of the contractual risk profile also contributed to the difficulties experienced.

- 13) To the extent there were unusual issues, to what would you attribute that?

Please see answer above.

We understand that the Infraco contract was a bespoke contract.

- 14) To what extent in your view, if at all, was that a factor in the difficulties encountered by the project?

The bespoke nature of the contract may have led to the respective parties interpreting the various provisions in a different manner. That however was a

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matter which was addressed by tie's solicitors not Acutus. Any contractual provisions affecting our work or analysis would be discussed with tie's lawyers and guidance obtained. Legal / contractual interpretation was not something upon which we could conclude.

15) To what extent did it present challenges for Acutus' work?

Matters of legal interpretation were matters for tie's lawyers not Acutus. As such, we would liaise with tie's solicitors on such matters and therefore this did not necessarily pose Acutus any specific problems.

16) Please explain your answer, with examples.

Please see comments above.

At least some of the delay issues were the subject of forensic analysis and/or were referred to dispute resolution procedures.

17) To what extent was this a complete analysis of all of the delay issues? (If a precise answer to this question is not possible, please provide your best estimate even if it is a rough one.)

The Infraco Contractor's Estimate in Respect of INTC No. 429 MUDFA programme Revision 8 Delay and Disruption Resulting from Incomplete Utility Works was referred to Adjudication during **April/May 2010**.

That was only one issue claimed to have caused delay on the project. It was therefore not a complete analysis of all delay issues. My colleague, Iain McAlister, prepared an independent expert report on same (report dated 5 May 2010). Mr McAlister concluded that the Infraco Contractor's submission was "... *incomplete, inadequate and contractually incompetent.*" Section 1.3 of that report refers.

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18) Assuming that not all such issues were the subject of such analysis, how much work and cost would have been involved in carrying out such an analysis? (Again, please provide your best estimate even if it is only impressionistic.)

There were numerous structures and sections of work across the whole of the Tram Project. For each to be forensically analysed and a detailed critical path delay analysis undertaken for same, which would then need to be pulled together to assess (or attempt to assess) the overall dominant factors affecting overall completion of the works, would have been a hugely significant and resource intensive exercise. It could and would have taken a team of consultants a significant number of months (i.e. years) to analyse in detail.

19) To put it another way, to what extent would it have been practicable for all of the disputed delay issues to have been analysed and resolved through the use of dispute resolution procedures; and what would the time and cost implications have been?

In my opinion, it would have been very difficult, if not impossible, to forensically analyse everything in detail. The costs and time implication would have been

significant.

### **Carillion claims**

We understand you were involved in helping tie defend claims by Carillion under the MUDFA contract.

20) Please explain in overview:

1. the nature of the dispute, including the issues which divided the parties;

CUS claimed delay and disruption to its resources when carrying out its works. CUS claimed varying sums, analysed in different ways at various stages. tie remained unconvinced by the CUS submissions albeit accepting that some entitlement most likely arose. It was therefore the measure of CUS' entitlement that divided the parties.

2. your role in relation to it;

I was instructed to review and analyse the claims submitted by CUS and provide my independent opinion on same.

In doing so I reviewed, along with some of my colleagues at various times, the CUS submissions and records. There were a number of meetings with CUS to discuss its submissions. I also met with tie supervisors on a number of occasions to review the contemporaneous records and issues claimed by CUS in order to understand the veracity of those claims.

3. the advice you gave in relation to it; and

An initial 4-page report was prepared by me on 27/09/2009. That report concluded that CUS had failed to provide the required extent of evidence to demonstrate its claims. [Appendix 04 attached refers]

The advice provided came in various forms – discussions, emails and reports (draft and final). Ultimately, I produced a report dated 19 October 2010 for a mediation between CUS and tie. [CEC00100004 and CEC00100005]

The draft<sup>1</sup> Executive Summary of that report stated:

1. *The current CUS claim does not appear to comply with the terms of the Agreement. The current CUS 'model' proceeds on the premise that it is entitled to re-rate all works under clause 46.6 on the basis of "fair rates and prices". It is noted however that different contractual valuation provisions apply to different circumstances. Clause 46.6 does not in my opinion apply in every instance as the*

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<sup>1</sup> The Executive Summary was ultimately removed and inserted in some form into the tie Mediation Submission



*CUS valuation 'model' and position presently imply.*

- 2. The current valuation methodology adopted by CUS attempts to set aside the whole value of the Work Order Proposal for each Work Section in respect of the labour and plant amounts. It then attempts to substitute a single factored or revised labour and plant allowance for all work in each Work Section. CUS does not attempt to revise any particular / specific rates. That process is not in my opinion sanctioned by the terms of the Agreement.*
- 3. CUS has adopted a 'global' / 'total cost' approach to its claim submission (although in this instance "total cost" should read "total value" in certain instances). The CUS claims are also highly fluid; the sum ultimately claimed being dictated by recovery elsewhere in the project account. This also points to a global / 'total cost' ('total value') type claim. In essence, the model presented merely represents a hypothetical 'total cost/total value less recovery' claim. CUS has not "... recalculated the labour and plant element of the Schedule 4 rates using appropriate multipliers to reflect the reduced productivity **caused by** the matters set out in its claim submissions in order to arrive at fair rates and prices" as it alleges.*
- 4. Importantly CUS has not separated out the reduced productivity claimed to have been caused by any one cause or event. While CUS makes the statement that the increased value claimed was caused by matters for which **tie** is allegedly responsible, it does not link, nor does it attempt to link, those matters to the alleged reduction in productivity or increase in quantum claimed. CUS merely proceeds on the overriding assumption that the increased value claimed was incurred as a result of **tie** culpability. That assumption is unreasonable because it is based on supposition rather than an analysis of fact. It is not evidenced, nor can that position be properly evidenced.*
- 5. In addition, investigations show that the multipliers and values used in the CUS valuation 'model' are not "appropriate". Those 'multipliers' and values contain errors and are incorrectly applied.*
- 6. CUS has yet to correct a number of errors, anomalies and areas of duplication identified in its analysis. However, merely correcting those errors, anomalies and areas of duplication is insufficient. To do so merely affects (i.e. reduces) the top-line gross 'value' of the CUS claims. Whilst that process is in many ways necessary*

*(since the claims at present appear to be significantly overstated), it does not consider the central questions of contractual entitlement and causation, and hence culpability, for the alleged increase in 'value' or cost.*

7. *It is noted that in recent weeks CUS has supplied some, but not all, of the information requested, and in my opinion reasonably required, by tie. Some further information has yet to be provided, the absence of which continues to prevent a sufficiently comprehensive review of the current claims.*
8. *Importantly, CUS has accepted in discussions that it cannot overcome fundamental evidential issues in respect of large proportions of its labour and plant claims. That is to say, CUS cannot establish for the most part, and cannot identify to any reasonable degree, what the various operatives and/or plant resources were doing when they are said to be on site; this problem I believe goes to the core of the CUS claim. It is therefore unreasonable in my opinion to hold tie responsible for those hours and resources, and the resultant increased 'value' / cost claimed, when CUS itself cannot establish why those hours were worked or costs incurred.*
9. *In light of the foregoing, it is my opinion that the current CUS submission fails to prove an entitlement to the sum(s) claimed. As a consequence, and in particular due to (i) the lack of evidence, (ii) the absence of a proper cause and effect analysis and (iii) the inherent errors and anomalies in the CUS claim model, it is my opinion that CUS has failed to prove any entitlement beyond the £1,200,000 allowance currently certified by tie."*

In this regard, I also prepared a further (post mediation) report to tie dated December 2010 and issued to tie in draft on 07/12/2010. That report addressed the risk/risks to tie in respect of the CUS claims and which had been discussed both prior to and during the meditation on 9 & 10/11/2010. This set out the risk profile which was thought to exist. The range of risk was analysed to be in the region of £2,741,566 to £5,431,375. [Appendix 05 attached refers]

4. the outcome.

This matter was settled at a mediation held on 9 & 10 November 2010. I understand that the final settlement on the claim was £4,645,000. Please see my comments directly above in relation to my post-mediation report and analysis. [Appendix 05 attached refers. CEC00003169, CEC00003170 & CEC00003171 also refer]

See, in particular, your expert report on Carillion's claim for delays relating to the

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period 1 October 2008 to 4 December 2009 (CEC00100005, covering email CEC00100004, 19 October 2010).

Your initial report (from September 2009), and some subsequent notes, are available too, in case they are of assistance to you: (CEC00218231 to CEC00218236). [Noted, thank you. Please see comments above.](#)

Your report refers to the parties having entered into two previous settlement agreements in respect of MUDFA delays (for the period to 30 September 2007 and the period 1 October 2007 to 30 September 2008; see para. 1.2.2).

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21) What was your understanding of those agreements, in particular what the claims had been and what the main settlement terms were?

[I had no involvement in those settlement agreements and was not asked to address the detail contained therein since they settled outstanding issues up to those points. I do not recall having been provided with details of same. My instructions were limited to reviewing the outstanding matters for the unsettled period.](#)

22) To what extent did these claims (i.e., the two referred to in the preceding box, and the third which was the subject of your report from October 2010) represent the full extent of Carillion's claims in respect of delay?

[Please see answer above. My understanding was that the first two settlements only settled claims up to the relevant dates but not beyond. It was therefore open to CUS to make subsequent claims for issues arising beyond those dates for matters which arose. CUS subsequently did submit further claims for those later periods. See para.1.2.3 from my October 2010 report.](#)

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23) What, in broad overview, did you consider to be the merits, and defects and weaknesses, in Carillion's claim?

[The CUS claims were generally able to articulate the cause of the entitlement to additional payment. However, it was the analytical and evidential elements of the claims which were problematic and lacking.](#)

24) Is it correct to infer that the most significant part of Carillion's claim concerned delay in work sections 1A, 1B, 1C and 1D?

[Yes. Please see table on page 8 of my October 2010 report. \[Doc.CEC00100005\]](#)

25) Where were those, in geographic terms?

[Section 1 was from Haymarket Terrace to Newhaven Road \(Lindsay Road\). This was subdivided into section 1A to 1D as follows:](#)

<a href="#">1A-01-01 Constitution Street</a>
<a href="#">1A-04-01 Ocean Terminal to Newhaven</a>
<a href="#">1B-01-01 Leith Walk - McDonald Rd to Balfour St</a>

1B-02-01 Leith Walk - Balfour St to Foot of the Walk	
1C-01-01 The Mound	
1C-03-01 (RAT 1C) / 1C-03-02 St Andrews Square (BT & other utilities)	
1C-04-01 Leith Walk - Broughton St to McDonald Road	
1C-05-01 Picardy Place	
1C-02-01 Princes Street - East End	
1C-01-02 Princes Street - West End	
1D-01-01 Manor Place to Haymarket	
1D-04-01 Shandwick Place	

The Executive Summary to your report of October 2010 (CEC00100005) asserts that Carillion's claim did not accord with the contractual requirements; and furthermore was insufficiently vouched. That appears to have formed the basis for your opinion that Carillion had failed to prove any entitlement beyond the £1.2m already certified by tie.

26) To what extent, so far as you were aware, were these deficiencies subsequently addressed?

These deficiencies were discussed at the mediation (which the report referred to above had been prepared for). CUS did not address those deficiencies at the mediation by production of further information. CUS insisted however at that mediation that it could be successful in its claims in more formal proceedings by a combination of the production of further evidence and analysis.

27) What was the basis for tie having certified £1.2m to be due?

I understand that this was simply a payment 'on account' allowance made by tie during the process of the works.

28) Did you agree with that assessment?

Without sight of any detailed build-up to that assessment it is not possible to say whether it was correct or incorrect. There was however sufficient evidence in terms of 'cause', to entitle CUS to some payment.

There appear to have been issues with tie's records in relation to Carillion's claim, e.g.:

- Email dated 25 November 2009, (CEC00800898):  
*"The biggest risk to tie remains that whilst CUS has only limited evidence of hours allegedly worked, tie's records (and therefore its ability to counter the CUS claims) are very much more limited. ... Whilst we will definitely be able to reduce the claim values it is likely that a third party will look sympathetically on the CUS position."*
- Email dated 27 January 2010, (CEC00596950):  
*"Is there another data source which I can use to verify which records are (more) correct? Obviously this issue goes to the credibility of each parties' records. Hence we need to be careful here to ensure that we don't criticise"*

*the CUS as-built programme/records only to find out that tie's records themselves are suspect."*

- Email chain, February 2011, (TIE00699474) [Please note that the email referred to here, relates to the Infraco Contract not the Carillion Contract].

29) What were your views on the sufficiency of tie's records in relation to this claim?

It is relevant to note in the first instance, that detailed record keeping is ordinarily a function of the Contractor carrying out the relevant works. It would therefore be expected that the Contractor when making a claim for additional payment under the contract, would and should produce the appropriate records to demonstrate its case. The Employer under that contract will not ordinarily have access to the same level of records as the Contractor (simply because it is not practical for it to do so). However, in instances where it is expected that commercial / contractual disputes are likely to arise, then we would always advise Employers to maintain as detailed records as its resources permit. This is simply a practical step to ensure that the Employer can either verify or rebut contractor's claims as / when the need arises.

tie's own records of work would be kept by its own supervisors who would keep daily diaries and record sheets. Those records would be limited in terms of the extent of detail which each individual could record (and was also dependent upon the area of works which an individual supervisor would need to cover).

tie's records also depended to a large extent on the records prepared and provided to it by CUS. Where the records available were sparse or lacking in detail it became difficult to understand what had happened on any particular day; what resources were engaged in which operations; and importantly whether CUS had other records to supplement the records provided to it by tie or to fill gaps in records which tie may not have possessed. That created risks to tie in relation to what CUS might ultimately be able to prove.

30) Did you have any concerns? Please explain your answer.

Please see answer '29' above. The absence of records (from both parties' perspectives) created risks to both the prosecution and the defence of a claim. Any such risks were better understood, identified and addressed by the availability of contemporaneous records.

In an email of 14 September 2009 (CEC00797300), you had noted that Carillion's claim as then presented:

*"proceeded on the premise that tie is responsible for any increase in hours above its tendered productivity" and were "clearly not linking cause and effect to any degree at all".*

You advised that:

*"the negative case set out above however will not be sufficient for tie to rely on in any dispute resolution forum" and that "it is essential that we develop a*

*positive case for tie*".

You went on:

*"As discussed, clearly the extent of analysis which would be required to reply to all CUS claims in all sectors is prohibitive both from a time and cost perspective. As such, we propose that a specific window of time within one sector be analysed."*

31) Please explain your advice that a positive case had to be developed.

It is often insufficient in dispute resolution forums, such as adjudication, to appear to only criticise the other parties' case (often referred to as 'negative casing') without also presenting a case which articulates what one would consider to be the 'correct' answer (often referred to as the 'positive case'). Without a positive case, the third-party dispute resolver will only have one parties' case and the other parties' criticisms but no counter position on what the correct answer is or might be.

32) Please explain your point about the time and cost of a full analysis being "*prohibitive*".

Given the range of work areas involved and periods covered by the CUS claims, the time involved (and hence the cost involved) in interrogating and analysing all areas and all records would have been significant. tie agreed with that view and agreed to the analysis of a specific time frame within one sector.

In an email of 23 June 2010 (TIE00091752), you had noted:

*"As detailed in the table below, CUS now seeks to recover £8,848,939 (in essence **£7,548,939**, excluding "Claim Preparation Costs"). This is in contrast to the previously claimed amount of £13,144,871."*

33) Please explain in overview the progress that had been made in reducing Carillion's claim.

As our investigations continued, we had a number of meetings with the CUS personnel who had prepared the claims. During the progress of those meeting we were able to show CUS where their claims were overstated, duplicated and unsubstantiated. As CUS was progressively forced to substantiate its claims by reference to contemporaneous records and a more robust analysis, the value of the sums claimed reduced. This is a normal result from such a process.

Papers for the Tram Project Board on 17 November 2010 proposed an overall final settlement of Carillion's account at £62.5m following mediation on 9 and 10 November 2010 (CEC00003169). The paper noted that an adjudication on Carillion's claim

*"would be a very complex adjudication which would require significant and expensive investment in time and expert resource from tie and our advisors. Therefore there is an element of cost avoided factored in our view of the proposed settlement."*

A more detailed paper noted that the disruption claim on which you had advised was one of several disputes between Carillion and tie (CEC00003170). It noted:

*“Carillion have provided significant quantities of substantive evidence which demonstrates actual disruption, however problems with back-up records make it very difficult make an accurate evaluation of the entitlement to additional monies. Carillion have however provided a superficially compelling argument which may provide a persuasive case if presented in adjudication. Notwithstanding that Carillion’s submission did not provide a ‘cause and effect’ analysis as required by the Contract, Acutus concluded that there still remained a risk to tie for matters such as a change in shift patterns, inefficient production; plant disruption; additional preliminary costs; and traffic management. The range of that risk was assessed as being in the region of £2,700K to £5,430K. During the DRP process Carillion produced additional vouching and other information including QC opinion. That opinion appeared to confirm that Carillion’s method of valuing their claim was not necessarily out with the terms of the Framework Agreement. In consideration of all the above and in recognition of the risks to tie if referred to a third party tie and their advisors considered that it was appropriate to settle the Claim in the range £2,000K to £6,500K.”*

A related spreadsheet (CEC0003171) noted that the settlement figure for the disruption claim was £4.645m (and, indeed, that the disruption claim was the aspect of the claim in respect of which there was the largest difference between tie and Carillion: see column headed “Delta”).

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34) To what extent was this proposed settlement in line with your advice?

Please see my comments at question 20c) above. As noted there, I had prepared a further (post mediation) report to tie dated December 2010 and issued to tie in draft on 07/12/2010. That report addressed risk to tie in respect of the CUS claims and which had been discussed both prior to and during the meditation on 9 & 10/11/2010. This set out the risk profile which was thought to exist. The range of risk was analysed to be in the region of £2,741,566 to £5,431,375. [Appendix 05 refers]

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A draft of that risk analysis spreadsheet was sent by me to tie staff the day after the mediation (at 14:38hrs on 11/11/2010) [Appendix 06 refers]. A range of risks were discussed with the tie staff during that mediation – the spreadsheet attached to my email of 11/11/2010 summarised the range of ‘risk options’ considered. I was an integral part of those discussions and risk profiling. Those ranges took into account various risk including factors such as adjudication risks generally plus an analysis of various factors affecting each claimed head from the CUS claims.

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35) Please explain your answer.

Please see answer at ‘34’ above.

36) How was settlement of the disruption claim at £4.656m consistent with your

earlier advice?

My written report prepared for the mediation, took a firm line in terms of the extent of evidence, analysis and proof that I would expect CUS to have and to provide to fully convince me, or another party, of the veracity of its claims. CUS was either unable or unwilling to provide that level of evidence prior to the mediation. That however does not necessarily mean that CUS would not be successful in, for example, an adjudication process or other dispute resolution forum. There therefore remained a risk to tie that CUS would be able to present further evidence or convince a third-party dispute resolver of its entitlement to payment greater than £1.2M.

### ***Infraco Extension of Time 2 Claim (MUDFA rev. 8)***

Doc ID:  
CEC00437606

Acutus (including, we understand, you) assisted tie in connection with the "Extension of Time 2" claim by BSC, for an extension of time arising out of revision 8 of the MUDFA programme.

37) What was your involvement (and, if different, Acutus's) in this issue?

I had very little involvement in this process. My colleague Iain McAlister carried out the analysis and report writing. As I recall, I proof-read Mr McAlister's report / draft reports for the adjudication process which unfolded but I was not close to the detail of the analysis.

38) What was your understanding of it?

My understanding is that the Infraco Contractor claimed an extension of time to its works as a result of alleged delays in the completion of utility diversion works. The process of the utility diversion works led to a revised programme being prepared and issued under the MUDFA contract. That would have been issued to the Infraco Contractor who in turn claimed an extension of time to its works.

The Infraco Contractor's claim was disputed by tie. My colleague prepared a report on same which concluded that the Infraco Contractor's submission was "... *incomplete, inadequate and contractually incompetent.*" Section 1.3 of that report refers. [CEC00437606]

As I recall the Adjudicator's decision was issued in favour of tie.

39) What were the implications of this dispute for the project overall? Please explain your answer by reference to (a) the particular dispute, and (b) any issues of principle of wider application in the project.

1. My recollection is that the works continued without interruption during and after that decision. The decision did not appear to resolve anything as the Infraco Contractor continued to press its claims in relation to MUDFA delays.

2. I cannot think of any specific implications that this particular dispute had on



the project overall.

31 July 2009  
should be  
30 July 2009

In an email dated 31 July 2009, Iain McAlister (cc'd to you, CEC00800270) made various observations following an extension of time meeting with BSC on 28 July 2009. These included:

- that BSC wanted to cut a deal in terms of time and money and did not want to get into a detailed assessment;
- his gut feel was that a 6 to 9 month extension for sectional completion C might not be too far off the mark, but that there were many concurrent delays which were BSC's responsibility;
- that whilst BSC probably wanted 9 months EoT with full time related costs, plus acceleration costs to achieve an earlier date, they would not be prepared to compromise on further EoT from numerous ongoing issues;
- there was an attraction in doing a global deal, but he had reservations

40) What was your understanding of these matters?

Please see my comment at question 37 above. I was not close to the detail of the delay analysis at that time on the Infraco contract.

41) Did you agree?

Please see my comments at question 37. I was not close enough to the detail to make any judgement on that.

We understand tie did in fact offer BSC a 9-month extension of time (see, e.g., CEC00322642, 13 November 2009) with 6 months prolongation costs, but that this was not ultimately accepted.

42) What is your understanding of that matter?

Unfortunately, it is difficult for me to answer this question. I was not close enough to the detail of that offer or those discussions.

43) Was that offer based on Acutus' advice?

As '42' above.

In an email of 2 November 2009, copied to you (CEC00818462), Iain McAlister addresses the scope for a compromise deal between tie and BSC in relation to extension of time. In that context, he said:

*"Please forgive me for repeating myself but I do think that BSC has ongoing concerns over the delivery of design and procurement of the Works. Unless I am mistaken, I don't think it will feel it is in a position to compromise very much, if indeed at all, on what it considers to be any of its means to secure the maximum EoT."*

44) What was your understanding of this point (and, in particular, the obstacles to a negotiated resolution)? (That issue was also touched upon in an earlier email – CEC00410186, 30 October 2009, said to incorporate your thoughts and

contributions.)

The Infracore Contractor had much to lose by agreeing to any compromise which might reduce its potential recovery either in terms of time (in respect of LAD's) or associated money (in respect of prolongation costs). Compromise was therefore not the Contractor's best option if it felt it had a robust case regarding entitlement. It may well have thought it had to fight on.

45) Did you agree?

Yes, I would have agreed with the sentiments expressed in Mr McAlister's email in relation to how the Contractor was likely to be thinking both commercially and strategically.

***Expert Report regarding Estimate in Respect of INTC No 429 MUDFA programme revision 8 delay and disruption resulting from incomplete utility works, 5 May 2010***

Doc ID:  
CEC00437606

Acutus produced a Report dated 5 May 2010, CEC00437606, entitled "*Expert Report regarding Estimate in Respect of INTC No 429 MUDFA programme revision 8 delay and disruption resulting from incomplete utility works*". It states it was produced for the MUDFA rev 8 adjudication (para 1.1.1). The report was prepared by Iain McAlister with assistance from, amongst others, you.

46) The report sets out its conclusions and the supporting reasons, but it would be helpful if you could summarise in overview its main findings and the key reasons for them, e.g.:

1. The defects in BSC's estimate

Please see my comments at answer '37' above. I did proof-read Mr McAlister's expert report / draft reports for the adjudication process which unfolded but I was not close to the detail of the analysis. I expect I will also have discussed certain principles regarding the analysis and methodology adopted but my input was minimal.

As is the norm with independent expert reports, they are investigated, prepared and written as independent expert opinions of the particular individual appointed.

As noted in the Inquiry's email to me dated 22/06/2017 (10:25hrs) I should not proceed further with this question at the moment.

2. BSC's inappropriate method of delay analysis

Please see answer to 46)'1.' above.

3. BSC's failure to address mitigation

Please see answer to 46)'1.' above.

Acutus' assessment of the extension of time (in section 6: that it would appear possible to mitigate all of the MUDFA rev 8 delays such that there would be no requirement to extend any of the four sectional completion dates) noted that there

was a shortage of information from Infraco.

47) Please explain in overview how this affected your ability to assess the extension of time (see, e.g., 7.1.6).

Please see answer to 46)'1' above. I did not draft that particular report and therefore it was not me personally who analysed the detail of the information provided and not provided.

Robert Howie QC's decision on the MUDFA revision 8 adjudication was issued on 26 July 2010 (e.g., CEC00407650). He concluded that the only award of extension of time he could make was of 154 calendar days for section A; and that for sections B and C, BSC had failed to prove the length of any extension of time it was entitled to because its claim had been calculated on a misapprehension of its contractual rights (and he had no evidence of the length of the delay to which the JV was exposed by reason of the notified departure when that delay was calculated on the correct basis).

48) So far as you are aware, what impact did this decision have on the parties in relation to the matter of extension of time?

As I recall, the parties remained at odds as to what the Infraco Contractor's entitlement to extension of time was.

### **Overall allocation of responsibility for delay**

In a letter of 23 October 2009 to Steven Bell of tie (DLA00001692), BSC said:

*"It is our belief that the full details required by the contract to be provided by Infraco in respect of extension of time entitlement, relief from obligations, details of costs and losses and possible mitigation measures adopted in connection with the myriad of Compensation Events notified to date cannot be ascertained until the resolution of the dispute concerning INTC429 [i.e., for delay and disruption arising from incomplete MUDFA works as a consequence of the MUDFA programme revision 8]. This is because the dominant cause of delay on the project is the delayed MUDFA Works. We are certain tie will understand that to perform any analysis against the Revision 1 Programme in respect of these secondary forms of delay would not produce any meaningful or reliable information upon which an extension of time could be agreed. It would be a categorical waste of resources for all parties. Once agreement is reached or a third party decision is declared in respect of INTC 429 we will be in a position to update the Programme."*

Cf. tie response, 19 February 2010 (DLA00001692\_3)

49) What is your understanding of these points?

I do not recall having had sight of that letter at the time of issue (my diary records do not indicate me having received / read same). However, it seems to me to indicate that there remained a disagreement (certainly from the Contractor's side)

about how Infraco's understanding of the effect of the alleged MUDFA delays were to be addressed. I understand the statement referred to above as indicating that it was the Infraco Contractor's case that issues surrounding its alleged entitlement to the effect of the MUDFA delays must be resolved before any other (subsequent or secondary) matters could be addressed.

50) To what extent do you agree with the point made by BSC?

I am unable to comment on this with researching the detailed background (the knowledge of which I do not possess as I was not directly involved in the drafting of that exchange).

**Report regarding Forensic Planning Exercise in relation to the Edinburgh Tram Project (draft), 24 December 2009**

Doc ID:  
CEC00583955

On 24 December 2009, you circulated a draft *Report regarding Forensic Planning Exercise in relation to the Edinburgh Tram Project* (CEC00583955 – report; CEC00583954 – email).

51) Who commissioned this report, and why?

This report was again drafted issued by my colleague, Mr McAlister, not myself. My records show that I did proof-read it on 22 & 23 December 2009 (for QA purposes) but I was not involved in the detailed drafting process.

The report was commissioned by Susan Clark and Dennis Murray of tie, to provide a then current / updated estimate of the extension of time to which the Infraco Contractor might be due; and to record the work undertaken by Acutus in 2009 in relation to the analysis of progress and delay on the Infraco contract.

52) What, in overview, was the report's subject matter?

Please see section 2.5 of the report. That report:

- a) summarised the work undertaken by Acutus during 2009;
- b) provided Acutus' view on the Infraco's contractual obligations in relation to programme, delay mitigation and the extent to which it has fulfilled these;
- c) discussed the relative strengths and weaknesses of the arguments being presented by both parties in respect for the other's liability for delay; and,
- d) provided Acutus' estimate of tie's potential liability for delay and the impact that has on the Sectional Completion Dates.

53) What, in overview, were its conclusions (especially insofar as they were important for the project overall)?

Section 1 of that report addressed the main extension of time claims submitted by the Infraco Contractor up to the date of that report. The observations made by Acutus at that time questioned the method of analysis (an "impacted as-planned" analysis) adopted by the Contractor (see for example, paragraphs 1.5.3 and 1.5.4 of the report). The conclusion arrived at was that the method of analysis was unreliable, that it produced overstated results and disregarded delays and lack of

progress which appeared to be the responsibility of the Contractor not tie. Attempts at 'correcting' those issues produced significantly reduced period of potential delay and/or extension of time which may have been due to the Contractor. See paragraphs 1.6.4 and Section 1.7 of the report (and, in particular, paragraph 1.7.1).

That said, the report recognised that tie was liable for, and the Contractor was entitled to, "a significant ... extension of time" (paragraph 1.7.2 refers). As at the end of 2009 it was estimated that with mitigation, the Contractor may have been entitled to circa 34 weeks as a result of MUDFA delays.

54) To what extent was this report superseded by Acutus' later reports (see below)?

Later Acutus reports maintained the position that the principal dominant cause of delay was thought to remain with the MUDFA delays. However, as matters progressed, the measure of that delay increased (as the delays increased) over time. See for example the report issued during June 2010 where the MUDFA delays continued and resulted in increased estimates of tie's liability (albeit still less than that claimed by the Contractor). At that time, the period of delay caused by MUDFA delays was estimated to be 61 weeks.

55) To what extent did this report represent an updated accumulation of work reported previously by Acutus? (See, e.g., the reports listed at 3.2 and in Appendix E.)

This report contained references to a number of reports and papers as Appendices in order to demonstrate what work and exercises had been undertaken during 2009. As such, it was to a degree an accumulation of work presented by Acutus over 2009. Part of the purpose in this regard was to demonstrate what work had been done.

56) Was there a finalised version of this report? If so, can you supply a copy?

This report was not updated to a finalised version.

57) Can you supply copies of the Appendices to this report?

Please see attached **Appendix 03** folder.

58) What were the implications of the report for the project?

The report identified that the Infracore Contractor was entitled to a substantial extension of time (paragraph 1.7.2) but that the estimates of the measure of that extension of time were less than claimed by the Contractor. That would have allowed tie to continue dialogue with the Contractor as to the measure of time properly due.

59) How did tie/CEC respond to the report?

I have no specific record of a response from tie on this report in my files. However, that is not to say that it would not have been responded to. It is likely that it would have been discussed between tie personnel and my colleague Iain McAlister.

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60)What use was made of the report?

I am not aware of how this report was used internally at tie.

At section 1.4, the report addresses tie's concerns about BSC's notification of delay for which BSC were responsible; BSC's estimates of cost and programme impact; BSC's refusal to work, including on areas where utility diversions were incomplete.

61)What was your understanding of these matters?

There was a concern within tie that, while the Infraco Contractor was reporting on and pursuing claims in respect of matters for which tie was likely to be responsible, it was not reporting on matters for which it was responsible. It was felt that this was likely to result in a one-sided / imbalanced analysis of and application for an extension of time and additional cost.

The Contractor's refusal to work in certain areas also had the potential to exacerbate early delays adding to the prolongation of the works and the completion date for same. This matter was addressed in the 2010 adjudication between the parties. The decision issued by the Adjudicator in that process was that the Infraco Contractor was not entitled to refuse to enter intermediate sections of work simply because MUDFA works were ongoing (see CEC00407650 at pages 14 to 16).

tie wanted to manage those situations to minimise the risks to the progress and completion (and cost) of the overall works.

At 1.5.3 and 1.5.4, the report is critical of BSC's method of delay analysis.

62)Please explain these criticisms.

The criticisms set out in those paragraphs relate to a method of delay analysis adopted by the Infraco Contractor (an "*impacted as planned programme analysis*") which, while often used by Contractors, is subject to many (legitimate) criticisms within the industry. It can be, and often is, a very one-sided analysis which produces results which may not reflect the actual cause of delay (since only 'employer' risk events' are impacted). When tested against what actually happened on site (including incorporation of actual progress achieved and other matters for which the Contractor might be responsible) it can produce unreliable / overstated results and conclusions as to the cause of the delay incurred.

63)Please explain, in overview, Acutus' analysis and conclusion reported at section 1.6

Acutus carried out an examination of the Contractor's delay analysis submissions. That examination raised certain concerns as to the method of analysis and the way in which the Contractor's programmes had been prepared and presented (including activity logic links used). Mitigation measures incorporated by the Contractor were also interrogated. They were found to be minimal. It was thought that other cost-effective mitigation measures could have been adopted. Doing so would have reduced the projected effect of the events

claimed by the Contractor upon completion of the works.

64) Please explain in particular the impact of MUDFA delays at section 1B (e.g., 1.6.9, 1.6.10 and 1.7.2).

The initial analysis of the 'MUDFA Rev.8' submission undertaken by my colleague returned results (after mitigation measures were incorporated) which resulted in little or no delay being shown to completion. However, following on from the cut-off point of the MUDFA Rev.8 analysis it was known that further MUDFA delays had been incurred (see paragraph 1.6.8). An initial analysis of those further delays showed that there was likely to be a dominant critical delay through Section 1B affecting the completion of the works by approximately 52 weeks (or 34 weeks with mitigation measures applied).

The report discusses three claims by BSC for extension of time: the MUDFA rev 8 claim (section 4); the EoT entitlement programme (section 5); and programme (revision 2) (section 6).

65) How (in overview) did these various applications relate to one another? For example, to what extent did they seek different extensions of time, and to what extent did they overlap?

Please refer to my colleague Iain McAlister's answer to Question 41 in his Q&A for details.

At 1.6.11, the report notes that the assessments might be subject to revision when further information became available.

66) In overview, to what extent was this report provisional and based on incomplete information?

The report and conclusions therein were necessarily provisional because the works themselves were ongoing at that time and in relation to the then 'latest' MUDFA delays, that information had only been communicated to us on 21 December 2009 (only three days before the issue of the report itself – paragraph 1.6.8 refers). In addition, the reliability and credibility of the Contractors submissions were in doubt and mitigation measures were incorporated in relatively short order (between 21 and 24 December 2009) and were therefore estimated.

67) Please summarise, in overview, the opinion and advice in section 1.7.

Section 1.7 questioned the reliability and credibility of the submissions made by the Contractor in relation to extension of time.

That said, the report recognised that tie was liable for, and the Contractor was entitled to, "a significant ... extension of time" (paragraph 1.7.2 refers). As at the end of 2009 it was estimated that with mitigation, the Contractor may have been

entitled to circa 34 weeks as a result of MUDFA delays.

At 1.7.3 to 1.7.6, the report notes that, due to concurrency, “considerable sums” of Infraco costs might fall to be excluded from their entitlement to prolongation costs associated with extended time, and emphasised the importance of comprehensive records. It discussed efforts tie had made to improve its record keeping, but that “there is still room for improvement”, with the work described in section 7 being particularly important.

68) Please explain this point in overview.

1. Concurrency and prolongation costs: in general terms entitlement to an extension of time will not always carry with it an entitlement to reimbursement of all time related costs. For example, it appears that certain areas were delayed by matters for which the Infraco Contractor was likely to be responsible. That being the case any time related costs associated with that area and those delays, would not necessarily fall to be paid by tie.
2. Record keeping: the comment concerning “room for improvement” appears to relate to the comment within paragraph 7.1.4 that “... The quality and quantity of the records varies depending on the individual [tie Project Manager] involved.” Please also see my general comments at Question ‘29’ above.

69) Had tie’s records been inadequate prior to Acutus’ advice? (see, e.g., para 7.1.4, which notes that following processes instigated in 2009,

*“the project record, as a whole, has shown a marked improvement over that previously being compiled. Much of this information is provided by, or under the direction of, tie’s Project Managers. The quality and quantity of the records varies depending on the individual involved. This has been drawn to the attention of the tie senior management who have taken an action to address this issue.”*)

Please also see my general comments at Question ‘29’ above. As noted there, detailed record keeping is ordinarily a function of the Contractor carrying out the works. The Employer under a contract will not ordinarily have access to the same level of records as the Contractor (simply because it is not practical for it to do so). However, in instances where it is expected that commercial / contractual disputes are likely to arise, then we would always advise Employers to maintain as detailed records as its resources permit. Our comments to tie would be made against that background.

Section 7 of the report in question refers back to Section 3 of the report (see paragraph 7.1.3). Section 3 in turn refers to a series of four interim reports prepared by my colleague Mr McAlister (as listed at paragraph 3.2.1).

Report 1 (24/04/2009; at paragraphs 5.1 to 5.5) recommended that tie develop a process “... for the compilation of contemporaneous records with particular focus on recording and evidencing all areas of on-site activity and inactivity.” Various suggestions / recommendations were made about where tie might enhance their records (such as progress photographs;

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requests for data from the Contractor; analysis of design issue and delays).

70) Please explain in overview Acutus' advice on record-keeping.

Please also see my general comments at Question '29' above.

Our individual and collective experience of construction and engineering disputes is that any party's position is best presented, supported and indeed defended where there is a significant volume of contemporaneous documents which can be referred to and relied upon by it. That is best collated by that party rather than relying on access to the other party's records (which may or may not be available or may not be provided by the other party). As noted earlier, often (ordinarily) that information is regularly collated by the Contractor in the normal course of its business but often less so by employers / clients due to resource limitations and the like. Our advice to a party finding itself in a commercial dispute is therefore that they compile the best evidence which they can in order to be better informed in the event that the dispute continues.

71) To what extent did tie follow that advice?

Reference to Section 7 of the report indicates that this advice was followed by tie (see for example paragraph 7.1.4 and 1.7.4) and that the quality and quantity of records had improved markedly.

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***Report on Investigations into delays incurred to certain elements of the Infraco works, 27 June 2010***

Doc ID:  
CEC00330652

On 27 June 2010, you sent to tie a report entitled "*Report on Investigations into delays incurred to certain elements of the Infraco works*" (CEC00330651 (email), CEC00330652 (report)). It is described in the covering email as "*the concurrency report*".

72) Who commissioned this report, and why?

The report was commissioned by Susan Clark at tie at a meeting on 10 March 2010. tie's objective was to obtain an initial view on potential liability for delay to the Infraco Works.

The main objectives of the report are set out in paragraph 1.2.4 of same. Please see extract below for ease of reference:

1.2.4 The main objectives of this exercise were to identify, as far as possible within the time and from the records available:-

- a) the key matters which had caused or were causing delay to the elements under investigation, including delay to commencement, progress and projected completion;
- b) to identify areas of concurrent delay and express a view on the significance of same;
- c) to express our current opinion on the extent of tie liability in respect of delay to each element and from those elements the likely liability in respect of the Sectional Completion Dates; and
- d) to identify any areas of further investigation (including possible audits of Infraco's files) which may be required.

73)What, in overview, was the report's subject matter?

The preparation of an initial view on each parties' potential liability for delay to key areas of the Infraco Works up to end of April 2010.

74)What, in overview, were its conclusions (especially insofar as they were important for the project overall)?

The Executive Summary of the report refers.

That initial view concluded that both parties likely bore some responsibility for the delays incurred. The table at paragraph 5 of the Executive Summary provide a range (lower and upper limits) of estimated liability. The table is repeated here for ease of reference.

5. For each of the Sectional Completion Dates we note the following in respect of our current estimate of liability for delay:-

1	2	3	4	5	6
Sectional Completion Date	Overall Projected Delay		Estimated tie culpability	Estimated Infraco culpability	Report Section
Section A	57 weeks	Lower Limit	25 weeks	14 weeks	Section 3
		Upper Limit	43 weeks	32 weeks	
Section B	57 weeks	Lower Limit	25 weeks	14 weeks	
		Upper Limit	43 weeks	32 weeks	
Section C	61 weeks	Lower Limit	61 weeks	0 weeks	Section 4
		Upper Limit	61 weeks	0 weeks	
Section D	61 weeks	Lower Limit	61 weeks	0 weeks	
		Upper Limit	61 weeks	0 weeks	

Note: The delay periods are measured against a mitigated view of Infraco's Revision 3 Setp 4 Issue 3 programme. Agreement has yet to be reached with Infraco as to the achievability of those dates.

75)What were the implications of the report for the project?

Consistent with previous reports, this report identified that it was likely that the Infraco Contractor was due some award of an extension of time and reimbursement of prolongation costs. The precise measure of that entitlement however required further, more detailed, analysis. Paragraphs 3, 4 6 & 7 of the Executive Summary refer.

76) How did tie/CEC respond to the report?

There was considerable engagement with tie personnel in the investigations and drafting process. In the first instance, a draft report was issued by us on 12 May 2010. Subsequent to the issue of that draft report, two meetings were held with tie personnel on 3 and 8 June 2010 where the draft comments and conclusions were discussed (tie had reviewed same in advance of that meeting). tie personnel also engaged in commenting on the draft report by providing comments by email.

We then proceeded to finalise and issue the report on 27 June 2010.

77) What use was made of the report?

I am not aware of precisely how the report was used internally within tie. My records do not indicate any further discussions with tie personnel on this particular report.

78) Please explain in overview the methods used to produce this report.

Areas and structures within Sections were identified through discussions with tie personnel as being the ones which were likely to be important to progress and delays in the relevant Sections. A total of **26 Nr.** areas / structures were identified and reviewed. See **Appendix(i)** to that report for details of those areas.

We then set out a series of information requirements for each area and structure.

Meetings were held with tie project managers, site supervisors and the like with a view to obtaining the necessary planned and actual progress data.

Tracking of design information issue dates and planned versus actual construction progress was also a subject of review.

Matters reviewed included:

1. The IFC process ("Issues for Construction") i.e. a review of the availability and/or delay in the issue of design information for construction; and, where possible, identification of the reasons for same.
2. The INTC process ("Infraco Notice of tie Change") and issues regarding timescales for that process.
3. Review of MUDFA work completion dates.
4. Subcontractor procurement periods achieved by Infraco and whether any issues arose affecting the progress of the Infraco Works. [See para. 2.5.1 of report].
5. Infraco IDR/ID process.

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6. Comparison of the construction periods included within Infraco's Rev.1 and Rev.3 programmes to establish whether / how those durations may have changed (where it was noted that Infraco had increased certain activity durations).

7. Comparison of planned and actual activity durations.

All of the above was summarised in summary charts and narratives included within Appendices 1 to 26 of the report. The charts allowed us to graphically demonstrate any delay to the various activities; which was explained as far as possible, in the summary narrative. Section 2.7 of the report refers.

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79) On what sources of evidence was it based?

A number of sources of information were used in compiling the report including:

1. Contemporaneous programme data (Infraco Rev.1 and Rev.3);
2. SDS (IFC) Approvals Tracker and other design issue information provided by tie PM's;
3. tie INTC master schedule;
4. Contemporaneous records such as Subcontractor procurement documents;
5. tie PM records of work done (in relation to progress generally and MUDFA completion); and
6. Progress photographs.

The Executive Summary, para 1, states:

*"This report has been prepared to investigate and, where possible, identify areas of culpability for delays incurred to commencement, progress and completion of certain key elements, and hence Sectional Completion Dates A, B C & D, of the Infraco Works."*

80) To what extent were you able to reach a definitive conclusion on that matter?

The purpose of the report was not to reach definitive conclusions. The exercise was agreed as being an initial view of the 26Nr. areas and structures identified for initial analysis. For that reason, it was not envisaged that definitive conclusions would, or indeed could, be reached.

81) To the extent that you were not, please explain why.

A number of factors contributed to this exercise not reaching definitive conclusions. Those included (i) it was known that further information was required in relation to document (design) issues dates and the reasons for the delay in issue; (ii) the time within which the exercise was to be carried out meant that information provided to us had to be taken at face value without being fully verified; (iii) schedules for the IFC/INTC processes had to be developed further by tie personnel as; (iv) audits were required to establish the cause of various matters; (v) contractual matters required clarification.

82) Please explain the basis on which your investigations were “prioritised” (para 1.2.1 et seq), and why that was done.

Please see response at ‘78’ above. The prioritised areas were selected following discussion with tie on the basis of those areas/structures which were likely to be critical to overall progress and completion.

In addition, it would have been wasteful in terms of resources (and hence costs) to analyse what were perceived to be non-critical areas/structures.

83) Where information was lacking, did you have any concerns about that? If so, please explain them.

One objective of the report was for us to identify areas where tie’s records could be improved. As such, concerns about missing records were raised with the aim of making recommendations as to how to improve the records available in the future (including retrospectively plugging those gaps). There are a number of recommendations made throughout the report including developing more comprehensive schedules (e.g. for IFC/INTC processes); the carrying out of audits of Infraco/SDS records; and the like. As such, it was not anticipated that the records would always have the gaps which we had identified, moving forward.

84) Please, so far as you can, give an indication of the amount of work which would have been required (and at what cost) to produce a report which definitively analysed delay on delay on the project.

The task described above is a very significant and resource intensive undertaking. To carry out a detailed forensic analysis of the delay incurred on the project (such that definitive conclusions were reached) would have taken a large team (say four / five staff) many months (quite possibly more than a year) to carry out on all areas and structures. In addition, given the fact that the project was ongoing, the exercise could not be completed until completion of the works. That too would have prolonged the full exercise.

Periodic exercises were therefore considered more prudent and allowed sense-checking against other views / exercises.

In terms of cost, an average of 1840hrs are worked in one year (46weeks times 40hrs per week). An average rate for forensic support (other than Director level) was then £138.50/hr. As such, one person for a year would cost £254,840. A Director’s rate was then £190/hour (equivalent to circa £360,000 per year). The precise total while difficult to gauge depending on actual timescales involved, would have been very significant.

Paragraph 2 of the Executive Summary states:

*“The investigations carried out to date indicate that both parties to the Infraco Contract bear some responsibility for the delays incurred. There is also the potential the SDS has contributed to those delays. Our current opinion on the parties respective culpability for delay has been summarised within ‘Appendix (i)’ attached to this report.”*

85) Please explain the remark that there was “*potential*” that SDS had contributed to the delays.

At various points in the report we had noted instances where there *may* have been periods of delay attributable to SDS. That however was noted as being unclear at that time and therefore subject to the recommendation that tie audit Infraco’s records. See for example, paragraphs 2.2.2 and 2.2.4. Specific examples include paragraph 3.2.2(i)&(iii) and 4.3.5.

86) Why was no more definitive view possible?

The information to permit that view to be finalised was not available at the time the report was prepared.

87) To what extent was work done to reach a more definitive view on that matter?

I was not personally involved in any audit process of the SDS actions and progress.

88) Please explain fully what is shown in Appendix (i), to include:

1. Analysis of late start, analysis of late finish;

Appendices 1 to 26 of the report set out our initial conclusions in respect of each of the 26Nr. areas or structures reviewed.

The “*Analysis of Late Start*” columns within Appendix(i) set out our initial conclusions in respect of each of those areas in terms of the Late Start to the area. For area 1A4 (our Appendix 1) that late start was calculated to be 72 weeks. See Paragraph E(i) of Appendix 1 and column headed “Late Start” in **Appendix(i)**.

The “*Analysis of Late Finish*” columns within Appendix(i) set out our initial views on the likely period of additional delay incurred to the finish date of each area (beyond that incurred to the late start). For area 1A4 (our Appendix 1) that late finish was calculated to be a further 18 to 54 weeks. See Paragraph E(ii) of Appendix 1 and columns headed “Late Finish” in **Appendix(i)**.

2. The upper and lower limits of liability

At the time of drafting that initial report, there were a number of areas of uncertainty as explained in the paragraphs above. As such it was deemed more appropriate to provide a range of lower and upper ranges in terms of the initial conclusions reached on liability.

In addition, ranges were also required because there remained questions as to the reasonable period required for carrying out of the works (by reference to Infraco Rev1; Rev3 and the potential for mitigation as shown in the Mitigated Rev.3 programme prepared by my colleague Iain McAlister- see paragraph 2.6.2 of the report).

3. Tie culpability, Infraco culpability and “*Poses SDS culpability*”, and how they relate to one another

These periods are explained in the various Appendices 1 to 26 within the

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report (Sections E to H refer). The periods are calculated and explained in the table at Section H of each Appendix.

In most instances, the total of the tie Lower Limits and Infraco Upper limit of liability will add up to the Late Start Period. For example, in section 1A4, the sum of 'tie culpability Lower Limit' and 'Infraco culpability Upper limit' are equal to 72weeks (allowing for rounding).

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App. Section	Description of area / structure	Late Start	Upper/Lower Liability	tie culpability	Infraco culpability
<b>SECTION 1</b>					
1	1A4 Lindsay Road RW -W1	72 weeks	Lower Limit Upper Limit	63 weeks 72 weeks	4 weeks 8 weeks

Note 1: the above is not always true in instances where there may be concurrent issues arising e.g. in area 1A4 Road and Track.

Note 2: the "Poss SDS culpability" period is not a period which should be added to the tie or Infraco culpability. That was highlighted separately for later review by tie.

4. The 'greyed out' boxes

Greyed out boxes refer to instances where entering date / periods into those boxes was not appropriate.

5. How the information in the remainder of the Appendices relates to this table

Data from the table in section H of each of the Appendices 1 to 26 is linked into Appendix (i).

Paragraph 3 of the Executive Summary identified key areas for further investigation or audit.

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89) To what extent did lack of information in these areas affect the conclusions of this report?

It meant that we had to conclude on a range of estimates of liability.

90) Why was that information not available to you when you produced your report?

In certain instances that information had not been provided to tie by Infraco (see for example, paragraph 2.2.4c) on page 8) or was being or was to be developed by tie in updated schedules for, for example, the IFC and/or INTC processes; and/or, detailed as-built data was not available as records were relatively sparse.

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91) To what extent were the further investigations carried out?

No further investigations were carried out by us in relation to this particular matter.

92) To what extent did that affect/modify the conclusions in this report?

Please see response to '91' above.

93) Was a revised/updated report produced?

No further investigations were carried out by us in relation to this particular

matter.

At paragraph 5 of the Executive Summary, a table notes your view that in respect of Sections C and D, tie's estimated culpability was for the full 61 weeks of the projected delay; and that in respect of Sections A and B, there were ranges for the share of culpability between tie and Infraco. A note to the table stated that

*“the delay periods are measured against a mitigated view of Infraco's revision 3 Setp 4 issue 3 programme. Agreement has yet to be reached with Infraco as to the achievability of those dates”.*

94) Please explain the uncertainties affecting these estimates of liability for delay (i.e., why were ranges required for sections A and B, and what was the issue with mitigation)?

### Sections A and B

Section 3 of the report narrative and Appendices 16 & 17 refer. The range of estimated periods concluded were:

1	2	3	4	5	6
Sectional Completion Date	Overall Projected Delay		Estimated tie culpability	Estimated Infraco culpability	Report Section
Section A	57 weeks	Lower Limit	25 weeks	14 weeks	Section 3
		Upper Limit	43 weeks	32 weeks	
Section B	57 weeks	Lower Limit	25 weeks	14 weeks	
		Upper Limit	43 weeks	32 weeks	

The Delay to Start was arrived at as follows:

*The significant issues affecting commencement of the earthworks were (i) water main diversion; and (ii) INTC 187.*

*The delay due to water main, causing delay to access – 01/08/08 (planned start) to 18/02/09 (when material start should have commenced). **35 week delay (tie culpability).***

*INTC 187 (delay in provision of Estimate) appears to have caused a further **6 week delay to the earthworks (Infraco culpability).***

*Thereafter there are questions surrounding Infraco performance in earthworks operations, commencement of foundations and steelwork – causing a **16 week delay** to foundations and steelwork. For the most part, excluding the water main, these appear to be Infraco culpability. That said, issues such as increased workscope in terms of earthworks volumes and foundation increased scope must be taken into account. For present purposes we have allocated a **Split liability for this 16 weeks period** (that is to say the liability for this 16 week period has been split between the parties – see Appendix 16 attached and table below).*

**Note:** *the above is slightly different from previous information supplied to us. That is, previously we understood that tie's position was that partial access was available on or around late 2008 (i.e. prior to the completion of the water*

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main). The above however is the explanation we have recently received. If however the earlier tie position is correct the balance of culpability shifts more towards Infraco as a result of a failure to commence earlier. The measure of the shift in culpability is likely to be in the region of **6-10 weeks**.

Given the above we were aware that a projected delay of 57 weeks had occurred (35weeks plus 6 weeks plus 16 weeks). The uncertainty surrounded establishing liability for those periods. There was some conflicting information in relation to the access dates which were not bottomed-out by the report date leading to the possibility of a potential 10 week reduction in tie culpability); plus uncertainty as the full reasons for the cause of the delay to the foundations and steelwork (16week delay). A range was therefore inserted to assist in tie’s deliberations at that stage. See paragraph 3.2.1(iv) of the report – table included below for ease of reference.

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Description	Opinion on tie culpability	Opinion on Infraco culpability
<b>Delay to Start</b>	<i>Range of 25 to 35 weeks</i>	<i>Range of 6 to 16 weeks</i>
<b>Delay up to Steelwork erection:</b> further 16 week delay. This may have been caused by late procurement of steelwork (hence lower range of 0 weeks); but some allowance may also be due for increased earthworks and foundation work (need more detailed as-built data to conclude). There is also a further risk regarding Depot doors.	<i>Range of 0 weeks to 8 weeks</i>	<i>Range of 8 weeks to 16 weeks</i>
<b>Lower limit:</b>	<b>25 weeks</b>	<b>14 weeks</b>
<b>Upper limit:</b>	<b>43 weeks</b>	<b>32 weeks</b>

### **Mitigation Issues**

Please see paragraph 3.3.3 and footnote 15 of the report. The uncertainty arose in respect of mitigation measures since (as noted in footnote 15) “Iain McAlister’s previous opinion on the Infraco Revision 3 Step 4 Issue 1 programme was that time (in the region of 10 weeks for the Depot Building and 23 weeks for the associated Roads & Track) could be saved. Please note, that where any of those measures are deemed to be ‘acceleration’ there may be costs implications for tie attaching to same”. As such, since those measures had not been agreed uncertainty remained.

Paragraph 7 of the Executive Summary noted that, whilst you estimated tie’s culpability for the section C delay at 61 weeks, it could be as much as 100 weeks if BSC’s interpretation of the contract were upheld.

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95)Please explain this point.

One of the key issues arising in the MUDFA Rev.8 Estimate adjudication was the method by which the Infraco Contractor had assessed the period of extension of

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time sought. Please refer to paragraphs 1.3.1 to 1.3.4 of Mr McAlister's report dated 5 May 2010 which explained that the Infraco estimate was based upon *"erroneous and unreliable information used in, and produced from, inappropriate method of delay analysis"*: *"ignores, for the most part, its obligations to mitigate delay, minimise cost and progress the Infraco Works with due expedition"* and as a result *"the projected requirements for revision of the four Sectional Completion Dates are greatly exaggerated"*.

The point made in Paragraph 7 referred to above, was that if the Adjudicator decided in favour of the Infraco methodology, the period of time estimated in our report dated 25 June 2010 could be greater.

96) Was this issue in fact the subject of decision by the adjudicator and, if so, how did he resolve it?

Certain criticisms levied by Mr McAlister were upheld by the Adjudicator; while others were not.

In relation to unmitigated delays being claimed Page 16 of the Adjudicator's reasons concluded that *"For the above-mentioned reasons, the JV's approach to the assessment of unmitigated delay in Appendix C seems to me to be erroneous as a matter of construction of contract. ... Section C of the Infraco Works, it seems to me that the objection taken by Mr McAllister in paragraph 5.2.5 is generally well-founded"*.

The Adjudicator found that *"In relation to sections B, C and D I find that the Referring Party has failed to provide its entitlement (if any) to any extension of time"*

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Paragraph 10 of the Executive Summary notes that:

*"the assessment of estimated culpability detailed above includes matters known about up to end of April 2010. Latest predictions on completion of the MUDFA Works show further slippage from the dates used in this analysis. As matters and construction progress, culpability is likely to change as the causes of delay change or responsibility moves from one party to another. It is therefore essential that tie continues to closely monitor, record and analyse progress of the various elements of the Infraco Works."*

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97) Please explain this point.

Since both the MUDFA Works and Infraco Works were ongoing the estimated periods of liability were likely to change; as were the indications of culpability where more information was made available. In addition, critical paths for the Works can often change as work progresses, as other events arise or as current events become more critical / dominant.

98) To your knowledge, in what way did subsequent events affect the conclusions of this report (in particular, on who bore responsibility for delay, and the extent of

the delay for which they were responsible)?

Please refer to response '91' above. No further investigations were carried out by us in relation to this particular matter.

99) Did tie continue to monitor, record and analyse matters in the way your report suggested?

I understand that more detailed records were maintained by tie following the issue of our report.

100) Were you, or others at Acutus, involved in that?

Not directly as I recall, although access to tie's progress records was required for the RTN exercise carried out during later 2010 and early 2011.

101) Were the results of any such work recorded anywhere? If so, can you make that available to the Inquiry?

Not to my knowledge (no further investigations were carried out by us in relation to this particular matter).

102) Please explain in overview your understanding of the matters which your report identified as "*being consistently significant in terms of progress and delays*" (2.1.1).

Paragraph 2.1.1 refers to a number of recurring themes or issues which consistently arose during our investigations. Those matters included:

1. The IFC process ("Issues for Construction") i.e. a review of the availability and/or delay in the issue of design information for construction; and, where possible, identification of the reasons for same.
2. The INTC process ("Infraco Notice of tie Change") and issues regarding timescales for that process (and whether they were thought to have been unreasonably prolonged/delayed by either party).
3. Review of MUDFA work completion dates (and how they affected Infraco commencement / progress).
4. Subcontractor procurement periods achieved by Infraco and whether any issues arose affecting the progress of the Infraco Works. [See para. 2.5.1 of report]
5. Infraco IDR/ID process (review of the SDS / Infraco design process);
6. Comparison of the construction periods included within Infraco's Rev.1 and Rev.3 programmes to establish whether / how those durations may have changed (where it was noted that Infraco had increased certain activity durations).
7. Comparison of planned and actual activity durations and availability of areas.

103) How had these factors been identified?

These factors were identified during our discussions with tie project managers

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and during our review of documentation such as planned programmes and actual dates for the relevant activities.

104) To what extent were these a comprehensive summary of the main factors contributing to delay?

Please see response at '80' above. The purpose of the report was not to reach definitive conclusions nor was it envisaged as being a comprehensive summary of the main factors contributing to delay. The exercise was agreed as being an initial view of the 26Nr. areas and structures identified for initial analysis. That said, we endeavoured to identify the key factors affecting progress in those areas.

At section 4.5, your report noted that its conclusions might be thought to conflict with Acutus' findings in the MUDFA rev. 8 report (i.e., that it would appear possible to mitigate all of the MUDFA rev 8 projected delays such that no extension would be needed of any of the four sectional completion dates: see CEC00437606 for that report). The report asserts that the two conclusions could be reconciled (4.5.2 onwards).

report dated  
5 May 2010

105) Please explain this point, and the reconciliation.

The MUDFA Rev.8 adjudication report focussed on projected delays up to **28 March 2009**. At that point, the Infraco Contractor had projected delays up to **59 weeks**.

However, the report issued on 25 June 2010 was considering further MUDFA delays forecast at **April 2010** (circa 13 months later than the MUDFA Rev.8 adjudication). At that point delays were being forecast by the Infraco Contractor of in excess of **110 weeks**. Paragraphs 4.5.4 and 4.5.5 refer.

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Mr McAlister's review of the programme current around April 2010, considered that with mitigation measures, the delay to Section C was likely to be in the region of **61 weeks** (not in excess of 110weeks as projected by Infraco). The dominant factor was considered to be MUDFA delays at that time. Paragraph 4.5.7, 4.5.8 and 4.7.2 to **5.7.4** refer.

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106) Over what period had the change in circumstances arisen which lay behind the different conclusions? (We note that the reports are dated 5 May 2010 and 27 June 2010.)

March 2009 to April 2010 (a period of circa 13 months).

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At section 4.6 of your report, you address a concern of tie's that BSC delays on the off-street section at an early stage in the project were having a knock-on effect on progress in the on-street section at a later stage; and that BSC's focus on utility delays would mask that.

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107) Please explain that concern, and your view of it.

tie's concern related mainly to the possibility of Infraco using resources in off-street areas earlier, such that they would be available for use in on-street areas

once those on-street areas were able to commence. That however required early starts and early progress on the off-street sections which was not being achieved by Infraco.

As noted at paragraph 4.6.2 this point was discussed with our Mr McAlister who had worked on preparing a mitigated version of the then current Infraco Programme. Mr McAlister explained that the resource constraints adopted by Infraco in earlier programmes had been removed in the latest programmes. That being the case the availability of resources was not seen to be driving the critical path of the on-street works and therefore the effect of tie's concern was thought to be minimal.

In section 4.7, you address issues of criticality, dominance and significance of the various causes of delay.

108) Please explain this point, and your view on it.

Section 4.7 of the report relates to Conclusions in respect of Sections C & D of the Works.

Delays to Section C were seen to focus mainly on the MUDFA / utility delays where Sections 1A, 1B and 1C were seen to be driving the critical path of the Works through to completion (without wishing to state the obvious, non-critical delays will not cause delays to Completion of the Works).

The MUDFA / utility works were therefore perceived by us as being the factors which would be viewed by a third party as being the dominant and critical factor affecting progress and delays. The perceived significance and dominance of delays were also factors held to be considered in relation to the apportionment of responsibility for delay. These were all factors which had to be considered by tie in analysing the risks to it in relation to the Infraco Contractor's claims for an extension of time.

109) Is it correct to summarise your view as being that the dominant cause of the delay at the project level was utility diversions, being a matter at tie's risk? Please explain your view. See, e.g.:

- 4.2.2: the dominant delay in sections 1A, 1B and 1C remained utility completions, and that those drove the date for completion of Section C.
- 4.3.2: the delays in section 5 were subsumed by the more extensive delays in section 1.
- 4.4.2 makes a similar comment in relation to section 7.
- 4.7.2: *"In the present circumstances, we consider that the magnitude of the early and ongoing delays to the MUDFA and utility works renders arguments about concurrent (critical) delay more difficult to prosecute. This is particularly relevant to the respective delays evident in and between Section 1 and Sections 5 & 7. Whilst there is clearly Infraco culpable delay within Sections 5 & 7, the project critical path remains firmly fixed within Section 1 (intermediate sections 1A, 1B & 1C in particular are currently seen to be driving the*

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*Sectional Completion Date to 11 May 2012).*”

- 4.7.6: “As a consequence, it is thought that the majority, if not all, of the period of delay is attributable to the late MUDFA/utility diversions.”

Yes, at the time of the report being drafted, that is correct – see response at ‘108’ above. MUDFA delays were not a matter for the Infraco Contractor, rather they were an excusable delay for which tie bore the risk. There also remained however a question as to the measure of the delay incurred and whether potential mitigation measures needed to be considered. The date of 11 May 2012 is referenced back to paragraph 4.2.3 of that report and the mitigation exercise undertaken by my colleague Mr McAlister.

110) Please explain your comment (4.7.9) that “*In relation to Sectional Completion Date ‘D’ we have assumed for present purposes that this will be 6 months after the Sectional Completion Date ‘C’.*”

Please see paragraph 4.1.3 of the report. Section D (the completion of shadow running and all tests required by the Employer’s Requirements) was originally planned to complete 26 weeks (6 months) after the completion of Section C (Phase 1a to Newhaven works). While there may have been some scope to agree to reduce that 26 week period with Infraco that had not been addressed or agreed at the point of drafting the report. As such, the shadow running and testing period was left as originally programmed.

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In various paragraphs in the Executive Summary, you discuss tie’s likely liability for prolongation costs, both on a section-specific and project-wide basis.

111) Please explain your views on this matter.

Where the Infraco was found to be entitled to an extension of time for completion of the Works then it was likely that the Infraco would also be entitled to payment of the additional costs which it incurred as a result of being on site for that period. That would involve costs in relation to general site compound / setup costs; site management costs; and in all likelihood, sub-contractor prolongation costs. Please also see comments at question 68)1 concerning Infraco concurrency and prolongation costs.

You noted that detailed analysis of the costs ultimately claimed would be required.

112) What would that analysis have involved?

Review of claims made by, and the costs incurred by, the Infraco Contractor and its sub-contractors.

113) To what extent was any such analysis carried out?

No such analysis was carried out at this time. That said, please see my comments at question 125.2’ below.

During August 2010, I had prepared a draft spreadsheet ‘model’ for Infraco prelims. That spreadsheet was issued by me on 29/08/2010 at 11:27hrs along with a lengthy (6or 7 page) explanatory email. See **Appendix 07** attached. As noted in the covering email of that date, the spreadsheet model did not contain

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any advice on the extent of prolongation costs due to Infracore – rather it provided a model for further discussion, development and completion.

That spreadsheet was not developed by us beyond the Ver03 issued on 29/08/2010. I am not aware whether that spreadsheet was used by tie to establish BSC's entitlement to prolongation costs.

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114) What conclusions were reached?

Please see comments at question '113' above.

115) Can you explain, in overview, the information that appears in the Appendices?

Please see response to questions '78' and '88' above. The Appendices to the report contain more detailed commentary on our investigations and conclusions in respect of each area/structure. Those comments are then summarised in Appendix(i).

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116) Please explain any other matters, not addressed so far, which you consider to have been important aspects of your report.

I believe the questions and points above capture the key elements of the report and issues raised.

In the production of this report (including all work preparatory to it and predecessor reports):

117) What volume of documentation had to be considered?

Due to the nature of the types of documentation reviewed this is quite difficult to gauge. For example, a lot of the information would be in electronic format (e.g. spreadsheet tracker's and lists; programme files; emails and the like). Not all information would be printed and we also spent considerable amounts of time in discussions with tie personnel. A very broad estimate would be one to two lever arch files per structure or area.

118) How much work was required (in terms of hours)?

This particular report was prepared by myself and Mr John Hughes during late February to late June 2010. My timesheet show that I spent the equivalent of around 10 weeks (circa 400hrs) on this exercise over that 4 month period. I anticipate that John Hughes will have spent a similar amount of time (I have not checked the details of his timesheet – but can do so if precise details are required). That equates to an average of only 1.5 days per area/structure.

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119) What was the cost?

The cost of the resource levels above would have been approximately £125,000.

(Where precise answers are not possible, estimates will suffice.)

## **Remediable termination notices**

You appear to have assisted McGrigors in gathering evidence in support of remediable termination notices under the Infraco contract (e.g., CEC00220108, 27 November 2010).

120) What was the purpose of this work?

The underlying objective was to collect, collate and assemble the contemporaneous evidence to support the RTN issued; and to prepare a narrative to set out and explain the principles, details and effect of the RTN. That involved review of drawings, specifications, actual progress records, design deliverables (incl. delay to same) and the like. We also met with tie personnel responsible for the affected areas / structures; liaised closely with McGrigors regarding same; and reviewed other technical expert opinion.

For each RTN it was agreed that we would review the following matters (please see attachment to my email of 11/01/2011 at 09:30hrs – my **Appendix 08**):

*“Section 2 Introduction*

*2.1 Details of [apparent/alleged] Infraco Default*

*Section 3 Design Process*

*Each heading should address both Infraco and tie obligations and actual ‘performance’/actions*

*3.1 IFC process*

*3.2 IDR/IDC*

*3.3 Design Assurance Statement*

*3.4 ‘Approval Bodies’ input*

*3.5 Contractual / Legal issues arising from earlier DRP’s*

*3.6 Legal advice sought / obtained*

*3.7 Infraco Default in respect of contractual obligations*

*3.8 Areas of potential tie culpability affecting Infraco ability / inability to progress*

*Section 4 INTC Process*

*4.1 Contractual process*

*4.2 Contractual / Legal issues arising from earlier DRP’s*

*4.3 Key / relevant INTC’s identified*

*Review of actual INTC process and current status*

*4.4 Legal advice sought / obtained*

*4.5 Infraco Default in respect of contractual obligations*

*4.6 Areas of potential tie culpability affecting Infraco ability / inability to progress*

*Section 5 Programme obligations*

*5.1 Relevant contractual obligations in respect of ‘Programme’ and progress*

*5.2 Designated Working Areas*

*5.3 Actual Progress*

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5.4 *Infraco Default in respect of contractual obligations*  
5.5 *Contractual / Legal issues arising from earlier DRP's*  
5.6 *Legal advice sought / obtained*  
5.7 *Areas of potential tie culpability affecting Infraco ability / inability to progress*  
Section 6 *Assessment of material and adverse impact of Infraco Default*  
6.1 *Assessment of material and adverse impact*  
6.2 *Contractual / Legal issues arising from earlier DRP's*  
6.3 *Legal advice sought / obtained*  
6.4 *Areas of potential tie culpability affecting Infraco ability / inability to progress*  
Section 7 *Conclusions"*

This work commenced immediately upon the settlement reached with CUS at the MUDFA mediation held on 10/11/2011. This continued through until mid-March 2011 (just after the Mar Hall mediation). At that stage, it was agreed with tie that we would take each RTN exercise to a point where it could be closed out for the time being, but at a stage where it could be picked up again in the future if that became necessary.

Please see email from Susan Clark on 24 March 2011 at 13:27hrs listing the actions agreed regarding the closeout exercise (**Appendix 09**).

Final narratives and document lists for each of the relevant RTN's were issued on 1 April 2011 (**Appendix 10**).

121) What was the result?

As noted above, this exercise was not completed due to the events at the Mar Hall mediation. Instead, 'work in progress' RTN narratives and supporting document lists were prepared and issued on 1 April 2011 (**Appendix 10**).

122) What, if any views, did you or others reach about the remediable termination notices and the prospects of a valid termination of the Infraco contract?

The prospects of success of each RTN in respect of a valid termination of the Infraco Contract were not something which we would have concluded on. It did appear to us that there were failures on the part of the Infraco to progress certain matters, but whether they would have resulted in grounds for a valid termination was not taken to a conclusion by us (that would have been a matter for tie and its legal advisors).

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## **Mar Hall mediation**

A mediation took place at Mar Hall in March 2011, involving CEC, tie and BSC, following which the parties' disputes were settled.

123) Were you (or others at Acutus) involved in the mediation itself, in preparations for it, or in dealing with its consequences?

No-one from Acutus was involved in the Mar Hall mediation itself. In addition, we were not involved in the consequences of that mediation.

We were however involved in providing some information specifically requested by tie personnel in advance of the mediation. Please see response 124 below.

124) If so, please explain your (and/or their) role.

See, e.g., your email of 23 February 2011 to Brandon Nolan of McGrigors (TIE00685750).

On 21 February 2011, I received an email from Steven Bell (email timed at 17:49hrs – **Appendix 12**). That email requested brief summaries of key topics which were raised in the tie mediation statement. Those areas included:

- “1. *Extension of Time and associated loss and expense relating to MUDFA works (INTC 429 & INTC 536)*
2. *Cessation works associated with the 99 INTCs mentioned in Infraco letter KDR6860 of 29 September*
3. *Obligations in relation to Programme Clause 60 etc. (all constituent parts; updating Rev1; incorporating progress etc.*
4. *Infraco Default:*
  - a. *On Street Trackform Design and integration*
  - b. *Princes Street works*
  - c. *Failure to progress*
  - d. *Structures in Section 5A, including necessary construction phase plan and monitoring with NR and approvals from NR*
  - e. *Failure to produce Estimates and incomplete nature of Estimates*
  - f. *Gogarburn Retaining Wall design and approvals including those from EAL, particularly in relation to flood modelling*
5. *Any other “good example” you feel you have uncovered as you have worked through the RTN study.”*

Over the course of 23 and 24 February 2011, Acutus personnel (myself, Anne Connolly, John Hughes and Iain McAlister) provided McGrigors and tie with a number of emails containing comments and explanations in relation to the above topics. **Appendix 13** refers.

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to  
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Doc ID:  
WED00000286  
WED00000287  
WED00000288  
WED00000289

Doc ID:  
WED00000248-  
WED00000270;  
WED00000272-  
WED00000295  
WED00000297-  
WED00000321

I am not aware of how or if that information was incorporated into the tie mediation statement, submission or presentations.

125) So far as you are aware, did anyone supply tie/CEC with advice for use at the Mar Hall mediation, or in relation to the settlement implemented thereafter, on:

1. Allocation of responsibility for delay which had arisen to date on the project; and/or

A draft report was issued by my colleague, Iain McAlister, on 4 March 2011 in relation to INTC 536 (item '1' in the quotation included under question 124 above). This was reissued on 31 March 2011. [Please see [Appendix 03 to Mr McAlister's Q&A](#)].

Subsequently, following a request from tie, Mr McAlister issued an email on 4 May 2011 with "... *estimated information for [tie's] use in an EoT liability risk assessment* ...". That email provided upper and lower estimates of the Employer's potential liability for EoT awards under the Infraco Contract in respect of Sections A, B C & D. Please see my **Appendix 11**.

I am not aware whether or how this information featured in the Mar Hall mediation or settlement implemented.

2. BSC's entitlement to prolongation costs in relation to that delay?

As noted above, Acutus were not specifically involved in the mediation or subsequent settlement discussions. Much earlier however, during August 2010, I had prepared a draft spreadsheet 'model' for Infraco prelims. That spreadsheet was issued by me on 29/08/2010 at 11:27hrs along with a lengthy explanatory email (**Appendix 07**). As noted in the covering email of that date, the spreadsheet model did not contain any advice on the extent of prolongation costs due to Infraco – rather it provided a model for further discussion, development and completion. That spreadsheet was not developed by us beyond the Ver03 issued on 29/08/2010. I am not aware whether that spreadsheet was used by tie to establish BSC's entitlement to prolongation costs.

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### **Final points**

126) What were your views in general on the project management and governance of the tram project?

Please see comments at question 127 below.

127) What were your views on the various bodies (and the senior personnel in those bodies) involved in the project management and governance of the tram

project (including tie, TEL and CEC)?

My involvement was limited to contact with personnel at tie. More specifically, I had regular contact with Steven Bell, Susan Clark, Dennis Murray and Fiona Dunn. I found them all, without exception, to be very professional and conscientious individuals, who cared strongly about the project, its successful completion and that the rights and obligations of each party to the Contract were adhered to. Clearly the parties possessed differing views about the terms of the Contract.

128) What do you consider to have been the most significant factors leading the Edinburgh tram project having been over budget and over programme, and having a reduced scope?

This was a complex project in an historical city with many uncharted services and existing structures. It was let under a complex bespoke Contract where the terms of risk allocation were ultimately disputed by the parties. Delays occurred for a number of reasons which themselves were disputed by the parties.

129) Are there any other issues, not covered in this note, which you consider to have had a material bearing on the cost, scope and duration of the Edinburgh tram project?

No.

130) If so, can you please explain them as precisely as possible?

Not applicable.

131) Are there any documents which you consider to be of importance to the inquiry which have not been supplied to you with this note?

Please refer to my comments in the responses above where I have referred to additional documents.

I confirm that the facts to which I attest in the answers contained within this document, consisting of this and the preceding 43 pages are within my direct knowledge and are true. Where they are based on information provided to me by others, I confirm that they are true to the best of my knowledge, information and belief.

WITNESS Robert Elliot Burt 

DATE 3 August 2017