
Expert Report on Quantum

regarding

Carillion Utility Services Limited's
Schedule 4 Rates and Prices Submissions

in relation to the

Multi-Utilities Diversion Framework Agreement
for the Edinburgh tram Network

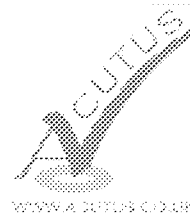
Prepared by: **Robert Burt** BSc(QS) LLM (Const Law) DipArb MRICS MCI Arb

Assisted by: **Anne Connolly** BSc(QS) LLM (Const Law) MRICS MCI Arb

On behalf of: **tie** Limited

Acutus
Merlin House
Mossland Road
Hillington Park
Glasgow
G52 4XZ

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Section 1 Introduction

1.1 Formal details

1.1.1 This report has been prepared by **Robert Elliot Burt** (BSc(QS) LLM (Const Law) DipArb MRICS MCI Arb), Director of Acutus, Merlin House, Mossland Road, Hillington Park, Glasgow G52 4XZ. I have been assisted in the investigations by **Anne Connolly**, BSc(QS) LLM (Const Law) MRICS MCI Arb, also of Acutus. Notwithstanding the assistance provided by Anne Connolly I confirm that any opinion expressed within this report is my own.

1.2 Synopsis of the dispute

1.2.1 On 4 October 2006, **tie** Limited ("**tie**") entered into a Multi-Utilities Diversion Framework Agreement with Carillion Utility Services Limited ("**CUS**") relating to the Edinburgh Tram Network.

1.2.2 During the course of the carrying out of those Works delays occurred. Two settlement agreements have been reached by the parties in respect of the following periods:-

- a) The period up to and including 30 September 2007; and
- b) The period from 1 October 2007 up to and including 30 September 2008.

Comment [RB1]: Tie to confirm that these dates are correct

1.2.3 Further delays have been incurred to the MUDFA Works for matters which occurred beyond the dates covered by the above settlement agreements. As a consequence, CUS has submitted further claims to **tie** for alleged delay and disruption incurred during the period from 1 October 2008 until 31 May 2009. Those CUS claims are entitled "*Submission re: Schedule 4 Rates and Prices to Work Section Resulting from matters which entitle the Contractor to additional payment*".

1.2.4 Four such claim submissions have been issued by CUS, in relation to the following Work Sections:-

- a) 1C-03-01 York Place to South St Andrew Street;
- b) 1D-01-01 Haymarket Place to Shandwick Place;
- c) 2A-01-01 Haymarket Yards; and
- d) 1C-01-01 The Mound.



1.2.5 During recent discussions with CUS (see section 1.6 below) it became apparent that whilst the text of the claim submissions related to the period to 31 May 2009, the quantum of those claims has been calculated to 30 April 2009. As a consequence, CUS revised the quantum of its claims to include the period up to 31 May 2009. Those revised claim sections were subsequently submitted by email on 14 September 2009 and by paper copy on 17 September 2009.

1.3 Instructions and Issues to be addressed

1.3.1 My instructions are to review and provide an independent opinion on the following elements of the CUS claims for delay and disruption.

- a) CUS claims in respect of additional Work Section preliminaries;
- b) CUS claims in respect of Work Section 'rated' works.

1.3.2 For the avoidance of doubt this initial report does not include an analysis or review of the matters which CUS contends caused the delay. That exercise is presently being carried but is incomplete. The report is therefore restricted to consideration of the principles adopted by CUS in evaluating the claimed "entitlement" to an increased value.

1.3.3 In this regard, I note that both parties accept that some disruption will have been incurred by CUS during the period from 1 October 2008 to 31 May 2009. This is evidenced by the fact that tie has certified an 'on account' interim payment in respect of same in the amount of £950,000. The current difference between the parties relates to the method of assessment and measure of that disruption.

Comment [RB2]: Tie to confirm amount is correct

1.3.4 For ease of reference this report has focussed on the CUS claim relating to work Section 1C-03-01 (York Place to South St Andrew Street). That said, it is apparent from review of the other claims submitted by CUS, that the principles adopted apply to each Section. As such my comments throughout this report apply equally to the other Work Section claims.

1.4 Disclosure of interest

1.4.1 I confirm that I know of no actual or potential conflicts of interest that exist which preclude me from acting as expert witness in this matter.

1.5 Documents inspected

1.5.1 ...



1.6 Meetings held

- 1.6.1 Meetings were held with CUS representatives on 3, 9, 15 & 17 September 2009, during which the quantum and contractual basis of CUS' claims were discussed.

1.7 Additional documents requested

- 1.7.1 ...



Section 2 Contractual basis of claim

2.1 CUS alternative contractual arguments

2.1.1 Section 3 of the CUS claims refers. As noted therein, CUS' case is predicated on the basis of three alternative contractual arguments, summarised as follows:-

- a) CUS Primary argument: based on the provisions of Clause 51 and paragraphs 2.36 and 3.3 of Schedule 1 to the Agreement;
- b) CUS Secondary argument: based on the provisions of Clause 46 of the Agreement
- c) CUS Tertiary argument: based on the provisions of Clauses 14 & 10.4 of the Agreement.

2.2 Comment

2.2.1 I accept that the provisions of the Agreement provide in certain instances for the revision of the Schedule 4 rates and prices where for example, *"the item of work varies materially from the work described in the Bills"* (Schedule 1 paragraphs 2.36/3.3); or in respect of **tie** Changes (Clause 46). In addition, the Agreement also provides for payment of additional or extra cost where caused by the occurrence of certain events such as adverse physical conditions or artificial obstructions (Clause 10.4).

2.2.2 In such instances the terms used within the Agreement in my opinion envisage, and indeed require, that the measurement and valuation process will be carried out on specific 'items of work' and the specific rates and prices applicable thereto. For example, paragraph 3.3 of Schedule 1 provides that:-

*"Where the MUDFA Contractor considers that **an item of work** varies materially from the work described in the Bills of Quantities, the MUDFA Contractor shall provide details, including estimates of labour, plant and materials from the original Bills of Quantities for the proposed item of work, for approval by tie" (emphasis added)*

2.2.3 Similarly Clause 46 provides that the valuation of any **tie** Changes shall be carried out as follows (where clause 46.6.1 does not apply):-



"46.6.2 if such rates and prices do not apply by measurement and valuation at rates and prices deduced therefrom insofar as it is practical to do so;

46.6.3 if such rates and prices do not apply and it is not practicable to deduce rates and prices therefrom by measurement and/or valuation at fair rates and prices; or

46.6.4 if the value of the tie Change cannot properly be ascertained by measurement and/or valuation, the value of the resources and labour employed thereon, as appropriate, in accordance with the basis of rates for provisional work set out in Schedule 4 (Bills of Quantities)"

2.2.4 I understand the various provisions quoted above to mean that CUS will provide details of revised rates and prices for the items of work affected by any qualifying event or issues. It is notable that different contractual provisions apply to different circumstances as set out above.

2.2.5 In addition, I note that Clause 51.5 requires that the following information will be provided by CUS in support of its valuation exercises:-

*"51.5 The MUDFA Contractor shall furnish to tie's Representative such **records, receipts and other documentation as may be necessary to prove amounts paid and/or costs incurred.** Such returns shall be in the form and delivered at the times tie's Representative shall direct and shall be agreed within a reasonable time" (emphasis added)*

2.2.6 Clause 51 relates to the whole process of measurement and valuation under the Agreement. As such it applies to clause 10.4, 46 and the provisions of paragraphs 2.36 and 3.3 of Schedule 1. From the information made available for my inspection I note that CUS appears to have failed to provide the substantiation required by Clause 51.5 (please refer to, for example, Section 3 below).

2.2.7 The process set out above however is *not* the process of valuation or substantiation actually adopted or presented by CUS.



- 2.2.8 The current CUS assessment attempts to set aside the whole value of the Work Order Proposal for each section in respect of the labour and plant amounts. It then attempts to substitute a hypothetical calculation of a factored / revised labour and plant allowance.
- 2.2.9 This does not, in my opinion, comply with the contractual provisions relied upon by CUS. It does not comply with Clause 51.5. Nor does it provide the details required by Schedule 1 paragraphs 2.36 or 3.3. For example, plant details are required to be submitted under those Schedule 1 provisions. No such details have been provided by CUS in this regard (see, for example, Section 3 and also paragraph 4.7.5b) below).
- 2.2.10 Similarly the CUS submission does not comply with Clause 10.4 of the Agreement. CUS' entitlement under the Agreement where adverse physical conditions or artificial obstructions are encountered is to the payment of the direct additional cost incurred as a result of same, not a re-rating exercise. It cannot therefore roll-up all claims into a hypothetical rating exercise.
- 2.2.11 I also note that the CUS process does not attempt to revise any given / specific rates. Instead, at best, it attempts to revise *all* Work Order Proposal rates by this hypothetical output factor. The implication of same being that all operations within that Work Order / Section were disrupted to precisely the same extent. That, in my opinion, is not a reasonable assumption or conclusion which could be drawn from the CUS submissions.
- 2.2.12 The absence of the detailed records, receipts and other documentation required by Clause 51.5 also prevents any other party from carrying out a review of the reasonableness, or otherwise, of the CUS claims.
- 2.2.13 Whilst CUS has stated that it is entitled to revise the Schedule 4 rates and prices, even where that position is correct in the appropriate circumstances, it must do so in accordance with the Agreement. For the reasons stated above and further addressed below, it is my opinion that it has failed to do so.



Section 3 CUS claim in respect of Work Section Preliminaries

3.1 Generally

3.1.1 CUS claims a total "entitlement" of **£860,666** in respect of the 'value' of additional preliminaries for the Work Sections which are the subject of its 'Schedule 4 Rates and Prices' claims. That total is set out in the revised claims submitted by CUS via email on 14 September 2009. This sum is 'split' by CUS between the various Work Sections as follows:-

1 Section	2 "Total Cost"	3 "Actual Recovery"	4 "% of Total"	5 Prelims Proposed
1A-01-01	616,853	132,625	6.99%	60,131
1B-01-01	612,249	49,440	2.60%	22,416
1B-01-02	1,266,168	169,430	8.93%	76,818
1C-01-01	973,769	215,546	11.35%	97,726
1C-03-01	1,794,414	574,845	30.28%	260,628
1C-04-01	862,482	212,662	11.20%	96,419
1C-05-01	291,879	54,309	2.86%	24,623
1D-01-01	1,257,721	263,833	13.90%	119,619
2A-01-01	482,460	145,486	7.66%	65,962
5B	107,810	23,106	1.22%	10,476
5C	268,381	57,014	3.00%	25,850
Total	8,534,186	1,898,296	100.00%	860,666

CUS Factor: 4.50

(total of '2' "Total Cost" divided by '3' "Actual Recovery")

3.1.2 The revised¹ sum claimed in respect of Work Section 1C-03-01, as at 14 September 2009, was **£260,628** (see column 5 in the highlighted row in the table above).

3.1.3 I set out below my observations and conclusions in respect of this claim head.

3.2 CUS methodology

3.2.1 The basis of assessment of the CUS additional preliminaries claim is set out at section 5.0 of its original submission(s). A further explanatory narrative was provided by CUS on 8 September 2009 under the heading of "Appendix 1".

3.2.2 As I understand those submissions, it is CUS' case that where the 'value' of labour and plant in the sections claimed has allegedly increased, CUS is entitled to a commensurate / corresponding increase in the Work Section preliminary 'values'. The measure of increase

¹ The original claim submitted by CUS for Work Section 1C-03-01 was **£149,698**.



claimed by CUS is calculated by reference to a “factor” derived by CUS. That “factor”² has been assessed by comparing (i) the alleged increase in labour and plant ‘value’ to (ii) the ‘value’ of labour and plant allegedly recovered by CUS under the tie certification process. The “factor” is then applied to the amount of preliminaries apparently certified by tie during the period from 1 October 2008 and 31 May 2009. The amount claimed by CUS is then calculated as follows:-

		Calculated Cost	Entitlement	Bill Ref
Traffic Management	£157,621 [b]	£708,616 [a x b]	£550,895 [Calculated Cost - b]	MS 3 & 2 Item 6
Site Transport	£12,690 [b]	£57,005 [a x b]	£44,325 [Calculated Cost - b]	F12
Lifting/Hoisting Plant	£6,800 [b]	£30,571 [a x b]	£23,771 [Calculated Cost - b]	F13
Road Cleaning Brush	£17,000 [b]	£76,427 [a x b]	£59,427 [Calculated Cost - b]	F20
Portakabins/Survey/Canteen	£10,135 [b]	£45,563 [a x b]	£35,428 [Calculated Cost - b]	Portion D2 raming costs
		Sub-Total	£713,947	
		Add indices 10.8%	£777,106	
		Sub-Total	£791,053	
		Add MUDFA Margin 5.8%	£840,613	
		Total	£890,666	

3.2.3 In essence this claim appears to relate to a claim for thickening of Work Section preliminary resources, inasmuch as the claim reconciles the sums paid by tie during the prolonged Work Section period. Within the narrative document submitted by CUS on 8 September 2009 CUS states:

“In essence this factor says that as a weighted average for the Work Sections and period in question the labour and plant has been delayed and disrupted by 359%”³

3.2.4 I note that CUS’ use of the term “delayed” in respect of its preliminary claims is a misnomer. I understand that CUS accepts that it has been paid for additional time related preliminary costs (this itself is apparent from its calculation shown at paragraph 3.2.2 above). As such this current claim CUS appears to relate to alleged thickened Work Section preliminary costs.

3.2.5 It should be readily apparent however that the CUS claim / calculation as set out above is a hypothetical calculation. It is *not* founded on an analysis of actual resource utilisation and/or the increased cost of same. I note that this point is accepted by CUS. During recent discussions with CUS it was put to me that this claim represents an assessment of its

² The CUS revised claim of 14 September 2009 assessed the preliminaries factor as 4.50 (see table at paragraph 3.1.1 above)

³ The percentage claimed by CUS was subsequently revised by CUS on 14 September 2009 to 450% overall (i.e. an increase of 350%)



alleged 'entitlement' rather than demonstration of actual cost or loss. However, for the reasons stated at Section 2 above, it is my opinion that the current CUS assessment does not comply with the requirements of the Agreement. In particular, it does not demonstrate that any loss or increase in costs has actually been incurred, nor is it based, in my opinion, on a fair or reasonable assessment of revised rates or prices. In addition, it relies on a number of assumptions / hypothesis which are either unsubstantiated or appear to be incorrect. This is discussed further below.

Alleged increase in labour and plant 'values'

- 3.2.6 It is relevant to note that the 'values' used by CUS in its preliminaries claim *do not* relate to increased costs or resources actually incurred / committed to the Works.
- 3.2.7 At the initial meeting held on 3 September 2009, CUS explained that the "Total Cost" amounts inserted in column 2 of the table at paragraph 3.1.1 represented the total *actual cost* incurred by CUS in respect of labour and plant in the Work Sections listed. CUS has since corrected that position stating that the sums included under the heading "Total Cost" are *not* in fact representative of the total labour and plant costs incurred. Rather, those amounts are taken directly from the CUS delay and disruption calculation. That element of the CUS claims is addressed in **Section 4** below. For the reasons stated therein, it is my opinion that those calculations appear to be unreliable and for the most part unsubstantiated, the result of which is a claim which appears to be overstated. They cannot therefore, in my opinion, be used as a basis for a claim for an alleged increase in entitlement to Work Section preliminaries.
- 3.2.8 Similarly, the 'value' allegedly recovered by CUS through the Agreement certification process is a hypothetical calculation. This is addressed in Section 4.10 below. From the comments noted therein, it is apparent that this 'value' is *not* based on the operations actually carried out by CUS during the relevant period. It is an average calculation based on Work Order allowances rather than an analysis of the actual operations or bill and variation items certified.
- 3.2.9 It is therefore my opinion that the use of those hypothetical 'values' to arrive at a factor for assessment of an alleged entitlement to an additional preliminary 'value' is both unreasonable and invalid.



Work Section Preliminary Costs

3.2.10 In addition I note that for the most part Work Section preliminary costs are *generally / more likely* to relate to time⁴ than to alleged disruption. That said, I accept that it is possible that there may be a need to increase some preliminary resources as a result of alleged disruption to operations within different Work Sections. However, it is not reasonable in my opinion to apply a hypothetical calculation in the assessment of what is claimed to be a 'fair and/or reasonable' increase in entitlement under the Agreement. In my opinion this does not comply with the valuation process set out within the Agreement (Section 2 above refers).

Analysis of actual Work Section preliminary resources

3.2.11 In this regard, it is submitted that any increase in Work Section preliminary entitlement (whether by adjustment of rates and prices or payment of additional / extra cost) should be underpinned by an analysis of the resources actually utilised and the actual cost of same.

3.2.12 That type of analysis would in my opinion go some way to demonstrating the extent of increased (or thickened) preliminary resources, if any, actually committed to each Work Section. Further analysis could then be undertaken to understand and evidence the reasons for any increase.

3.2.13 At present, however, no such analysis has been submitted or made available by CUS. On **10** September 2009, I requested details of the actual Work Section preliminary resources utilised by CUS. CUS has declined to provide this information, confirming that it would instead provide a further explanatory narrative of its position in respect of the application of the 'factor' applied. I await a copy of that further explanatory narrative.

Reconciliation of sums claimed or recovered 'elsewhere'

3.2.14 **Discuss where else CUS claims or recovers Work Section prelims**

3.3 Preliminary cost heads claimed by CUS

3.3.1 In respect of the specific preliminary items claimed by CUS, I note that following.

⁴ i.e. prolongation on site



3.3.2 Traffic Management (net amount of £550,995 claimed):

- a) This element of the CUS claim represents 77% of the CUS Work Section preliminaries claim.
- b) No details have been provided by CUS in respect of how or in what way the traffic management resource has allegedly increased to 4.50 times the amount allegedly recovered. In my opinion this cannot reasonably be inferred or deduced from the present hypothetical analysis of labour and plant resources claimed for the Work Section activities (as is CUS' present case).
- c) It is, in my opinion, insufficient for CUS to claim an increased traffic management resource commitment or entitlement, without any demonstration of same. To do so in my opinion fails to satisfy the burden of proof placed upon CUS and fails to establish whether the sum claimed is in fact reasonable.
- d) I also note that CUS accepted, at the meeting on 9 September 2009, that this claim is duplicated with a separate 'traffic management' claim submitted by CUS under Change Control item ~~XX~~. I understand that the separate CUS TM claim is based on a factual analysis of resources committed and costs incurred. In my opinion CUS should not be claiming the same sums twice. To do so clearly overstates its Anticipated Final Account and the sums claimed. *I have not yet received a copy of that variation claim from either party and therefore cannot comment on same further.*
- e) *Similarly I understand that tie has undertaken an analysis of the traffic management operations which CUS has actually undertaken and compared that with the original CUS obligations. tie advises that this exercise shows that CUS has been involved in less traffic management activities than originally required. I have not yet received a copy of that analysis and therefore cannot comment further on same.*

3.3.3 Site Transport (net amount of £44,325 claimed): As noted at paragraph 3.2.10 above, I would generally expect that this type of resource was a time related cost. No details have been provided by CUS in respect of how or in what way the site transport resource has allegedly increased to 4.50 times the amount allegedly recovered. Absent any analysis of actual resources, in my opinion this cannot reasonably be inferred or deduced from the



present hypothetical analysis of labour and plant resources claimed for the Work Section activities (as is CUS' present case).

3.3.4 Lifting/hoisting plant (net amount of £23,771 claimed): please see comments at paragraph 3.3.3 above.

3.3.5 Road cleaning brush (net amount of £59,427 claimed): please see comments at paragraph 3.3.3 above.

3.3.6 Portakabins/Survey/Canteen (net amount of £35,428 claimed): please see comments at paragraph 3.3.3 above.

3.3.7 I have summarised my conclusions in respect of the CUS Work Section additional preliminaries claim(s) at section 5.1 below.



Section 4 CUS claims in respect of Work Section 'rated' works

4.1 Generally

4.1.1 As noted at paragraph 1.2.5 above, CUS revised the quantum of its claims on or around 14 September 2009. The current CUS claim totals for 'delay and disruption' to the rated works in those Work Sections which have been the subject of detailed submissions from CUS are as follows:-

Work Section	Maximum Claim
1C-01-01	667,091
1C-03-01	1,534,268
1D-01-01	1,198,550
2A-01-01	361,915
Total	3,761,824

data received 18/09/09

4.1.2 I have not yet received claims for the other Work Sections which I understand may/will be claimed by CUS.

4.1.3 I set out in the report sections below my observations and conclusions in respect of this element of the CUS claim(s) under the following headings:-

- a) CUS methodology generally (section 4.2 below);
- b) CUS analysis of Work Order Proposal (section 4.3 below);
- c) CUS claims re increased rate per hour (section 4.4 below);
- d) CUS adjustment for 10hr shift versus an 8 hr shift (section 4.5 below);
- e) CUS contentions regarding actual team days worked (section 4.6 below);
- f) CUS contentions regarding average actual work section output, factor and new rate (section 4.7 below);
- g) CUS contentions regarding Entitlement Calculation (section 4.8 below);
- h) CUS claim regarding Reinstatement works (section 4.9 below);
- i) CUS reconciliation of recovery under Work Order and Change Control process (section 4.10 below).



4.2 CUS methodology generally

- 4.2.1 As noted at **Section 2** above, I accept that the provisions of the Agreement provide in certain instances for the revision of the Schedule 4 rates and prices where for example, *"the item of work varies materially from the work described in the Bills"* (Schedule 1 paragraphs 2.36/3.3); or in respect of **tie** Changes (Clause 46). In addition, the Agreement also provides for payment of additional or extra cost where caused by the occurrence of certain events such as adverse physical conditions or artificial obstructions (Clause 10.4).
- 4.2.2 Whilst CUS has stated that it is entitled to revise the Schedule 4 rates and prices, even where that position is correct in the appropriate circumstances, it must do so in accordance with the Agreement. For the reasons stated within **Section 2** above and further addressed below, it is my opinion that it has failed to do so.

CUS 'global' approach to delay and disruption claims

- 4.2.3 It is apparent that CUS has adopted a 'global' / 'total cost' / 'total value' claim approach to the present submissions. That is to say, the sum claimed has been assessed at a global level and then claimed against any matters
- 4.2.4 CUS has not separated out the costs claimed against any one item. It is therefore not possible to identify what additional value and/or additional costs claimed attach to any one issue or event which CUS claims is the responsibility of **tie**. In addition, rather than CUS building up its claim(s) by assessing the measure and disruption incurred by each individual event it has proceeded on the assumption that all costs claimed have been incurred as a result of the matters contended. For the reasons included above and as further explained below that assumption is not necessarily correct.
- 4.2.5 Issues such as sufficiency (or insufficiency) of tender, contractor or sub-contractor inefficiencies / errors, costs incurred as a result of neutral events and the like are all masked by such global claims. These matters are addressed further below. For this reason however, it is submitted that the present CUS approach does not demonstrate the actual measure of disruption incurred and is therefore inappropriate.

Fluidity of CUS present claims

- 4.2.6 It is also noted that the sums presently identified and claimed within the CUS Schedule 4 Rates and Prices submissions are dependent upon recovery elsewhere. That is to say, if the



CUS recovery reduces within the Change Control process, the CUS delay and disruption claims will increase by a corresponding amount. Similarly if the CUS recovery increases in the Change Control process the delay and disruption claims will reduce.

4.2.7 This point was accepted by CUS during the recent dialogue.

4.2.8 As such CUS claims are not strictly delay or disruption claims. They are more 'fluid' than establishing the actual loss incurred as a result of certain events. In my opinion, whether this has occurred by design or by default, the CUS claims do not establish the true measure of CUS' entitlement for the matters for which tie is responsible.

4.3 CUS analysis of Work Order Proposal

4.3.1 In compiling its current claim, CUS extracted the total labour and plant allowances from its analysis of the original Work Order rates and prices. The total of those two elements is then divided by the length of the utility diversions included in that Work Order. The resultant average rate per linear metre is what CUS contends is the average labour and plant allowance per linear metre for all work included throughout the relevant Work Section.

4.3.2 Whilst this average rate may be indicative of the tender allowance (subject to CUS' analysis of the Work Order Proposal analysis being correct), caution must be exercised when / if attempting to apply such an average rate to any other analysis. This is so because such an average rate 'presumes' the carrying out of each and every item of work included in the overall Work Order, on a consistent basis throughout the period of construction. That is rarely the case in any construction / engineering project. I understand from tie that it was not the case in this project.

4.3.3 Application or use of an overall average rate does not and cannot in my opinion recognise that different operations will be completed at different times. As a consequence, application of an average rate to a measurement of the actual meterage of diversion work undertaken at a point in time will not reflect the actual operations or resources utilised carried out during that given period. It will therefore produce results which are unreliable and likely to be incorrect.

4.3.4 Since CUS' claims relate only to a specific window of time (1 October 2008 to 31 May 2009) during which many different operations will be carried out with varying *proportions* of



labour and plant resources, the application of an average overall rate will in my opinion be unlikely to apply since it cannot represent the operations actually carried out during any time window.

4.3.5 This point was put to CUS during recent discussions. The response received was that whilst this is a valid issue which requires consideration, the effect of same on the CUS claim was "*unlikely to be significant*".

4.3.6 Notwithstanding the CUS reply to this point, it is my opinion as recorded throughout this report, that disruption should be assessed by reference to the actual reduction in productivity of the actual operations affected; it should not be based on a hypothetical analysis based on average tendered productivity for all operations which is subsequently multiplied by a meterage of diversions which does not properly recognise the other operations actually carried out. Such a hypothetical analysis cannot arrive at the correct measure of actual disruption incurred.

4.3.7 In this regard I note that this average rate is the basis upon which the remainder of the CUS claim is predicated. For the reasons stated above I consider this to be an unsound basis upon which to formulate a disruption claim.

Thomas - *Can we show that the recent rate analysis is incorrect? Take a couple of examples and check.*

4.4 CUS claims regarding increased rate per hour

4.4.1 CUS has claimed an increase in the average hourly labour rate. The CUS' position is set out at paragraph 5.4.4 of its original submission in respect of Work Section 1C-03-01, which states:-

5.4.4. On the basis that Carillion originally planned to use their own labour which had to be disbanded due to the late design in 2007, the tender labour rates have been increased for the extra over cost of using specialist sub-contract labour to give an enhanced labour and plant rate per lm (e.g. for 1C 03 01 the relevant figure is £189.42 per lm).

4.4.2 CUS also provided copies of two letters (dated 13 July 2007 and 27 August 2007 respectively) setting out its position.



4.4.3 CUS letter of 13 July 2007: I note the following in respect of this letter:

Comment [RB3]: Note: I understand that no response was issued by tie. Instead this was dealt with in the settlement agreement to 30/9/07.

- a) CUS has not explained its reliance on this particular letter in respect of the current disruption claims. In this regard, I note that the CUS letter relates to specific Work sections 1AWSI003/001, 1AWSI003/002 and 1AWSI004/001. The letter states:-

"To fulfil the current 'quick start' requirements and enable the mobilisation and commencement of the Tower Street to Rennie's Isle Bridge Worksite AMIS MUDFA procured labour exclusively from external sources"

- b) The above appears to me to be a discrete issue concerning an earlier start in one specific work section requiring external labour resources. From the information provided, this appears to have been a request from tie to achieve a quicker start than previously provided for. On that basis this would be a matter for which tie is responsible.
- c) I am also advised that this matter was addressed and included within the settlement agreement for all issues up to and including 30 September 2007. As such any CUS entitlement in relation to this particular matter has already been dealt with and in terms of that agreement I understand that it cannot be re-opened.
- d) For the avoidance of doubt, I also note that I do not understand the above to set a precedent whereby all increased costs of all externally sourced labour would be a matter for which tie was responsible. In my opinion each cause / issue must be reviewed and assessed on its own merits. As such any agreement to pay the increased costs of outsourcing in respect of this discrete issue cannot in my opinion render tie responsible for all other outsourced labour.

4.4.4 CUS letter of 27 August 2007: I note the following in respect of this letter:

Comment [RB4]: Note: I understand that no response was issued by tie. Instead this was dealt with in the settlement agreement to 30/9/07.

- a) This letter sets out CUS' position in relation to the claim for increased labour costs. In particular I note that the CUS letter confirms the following:-

"At the Commercial Meeting of 28th March 2007, held in Verity House, Mr. Steve Hudson, AMIS Commercial Director, advised tie Limited that the critical resources 'ring fenced' for MUDFA were the subject of a potential TUPE transfer to SGN, who were in-sourcing the mains replacement works.



Mr. Steve Hudson gave tie Limited the opportunity to accept the resources, absorbing the associated additional and unproductive costs, or allow the transfer to proceed. After an internal review tie Limited elected to allow the transfer to proceed, with the notification provided week commencing 2nd April 2007, against AMIS better judgement."

- b) From the above it appears to me that the reason for the revision to CUS labour resourcing (and the resultant increase in cost) was the TUPE transfer of its employees to SGN. Although CUS appears to rely upon an 'offer' made to tie to transfer the CUS employees to tie, I do not consider this to be a relevant factor. CUS is responsible for the resourcing of its works. The fact that its employees were TUPE transferred from CUS to another employer is not in my opinion a matter for which tie bears the risk. That is a matter for CUS.
- c) I am also advised that this matter was addressed and included within the settlement agreement for all issues up to and including 30 September 2007. As such any CUS entitlement in relation to this particular matter has already been dealt with and in terms of that agreement I understand that it cannot be re-opened. In this regard, I also note that the detailed breakdown of that settlement sum, which CUS accepted, included 'Nil' against this particular claim item. It is therefore inappropriate for CUS to use the £20.00/hour labour rate in its re-rating exercise.
- d) It is also relevant to note that part of the £20.00/hour rate claimed by CUS includes an increased element of NPO for the revised (increased) working hours agreed between CUS and its sub-contractors. I understand that the decision to work longer working days was taken solely by CUS in negotiations with its sub-contractor(s). The extra over cost of same is therefore a matter for which CUS is responsible. It cannot in my opinion claim this cost directly from tie.

Comment [RB5]: Note: there may well be an issue that if CUS approached the disruption claim from a 'cost' basis, that it could recover £20/hr for the disrupted labour. This is because although CUS is responsible for the undisrupted £20/hr labour, tie is responsible for putting CUS back in the position it would have been had CUS not been disrupted. This probably means paying £20/hr for the loss actually incurred.

4.5 CUS adjustment for 10hr shift versus an 8 hr shift

- 4.5.1 Following the adjustment of the average labour and plant rate to account for the increased labour cost per hour, CUS then adjusts the productivity per team day to account for its decision to work a 10 hour shift per day rather than the tendered 8 hour shift.



4.5.2 The alleged effect of this adjustment is to reduce the number of team days required (for example, in section 1C-03-01 this is shown by CUS to decrease the team days from 935 to 738).

4.5.3 In respect of section 1C-03-01, CUS contends that this in turn results in a required output of 5.43 m per team day as opposed to the planned 4.35 m per team day as originally planned.

4.5.4 I note that this is something which CUS accepts it elected to do. It is not something which CUS contends was instructed by **tie**.

4.5.5 In this regard I note the following:-

- a) Effect on plant cost/value: the CUS calculations maintain the same cost / value of plant allowance despite the fact that the number of team days has reduced. In my opinion this is incorrect under explanation as follows.

The majority, if not all, of the plant included by CUS in its rates analysis appear to be either daily or weekly rated items. As a consequence, as the number of days required reduces, the cost of that plant should also be reduced. CUS however has not reduced the plan cost/value.

As such, and notwithstanding the fact that I disagree with the CUS method of valuation, I note that where the CUS assessment is held to valid in principle, this oversight or error would have to be corrected.

- b) CUS assumption regarding productivity: the CUS calculation at this point 'assumes' that productivity would remain the same during a longer 10 hour working shift as was planned for the original 8 hour shift. That however is not necessarily correct. Research has shown that productivity generally decreases as the working hours increase.

In this regard, I refer to the publication entitled "*Effects of accelerated working, delays and disruption on labour productivity*" published by the CIOB. The following extract is relevant to this issue:-



"1. There is a 5% loss in productivity for every 5 hour increase in the length of the working week. The more prolonged the period of overtime working the greater the loss in productivity.

2. The balance of evidence suggests that financial incentives have no long-lasting effect on productivity. However, the high level of pay associated with accelerated working may cause an increase in absenteeism resulting in additional labour costs of between 2.5% to 7%."

Since the decision to increase the working day to 10 hours was a CUS decision, it must bear the responsibility (i.e. cost) for any resultant loss of productivity. In this instance this could well account for a loss in productivity in the region of 10-17%. It is also noted that the longer the overtime is worked the higher the loss of productivity.

The current CUS assessment takes no account of this matter. In my opinion it should and must. Not to do so renders tie responsible for a matter which is not its responsibility.

4.6 CUS contentions regarding actual hours / 3 man team days worked

Generally

- 4.6.1 The CUS claims are essentially based on the position that the actual labour hours, and hence '3 man team days', expended by it were disproportionately higher than it had planned for the Works.
- 4.6.2 The revised CUS submission (dated 14 September 2009) calculates the additional labour hours/man team days expended on work section 1C 03 01 as follows:

Work Section 1C 03 01	Description	No of 3-man team Days
Actual Team Days Worked based hrs/3man	Work Site Specific Labour (hrs from "allocation sheets")	1585
team/10hrs/day for Oct 08 to May 09	Hiab Drivers (not included in Work Site "Allocation Sheets") (@10% calc from WO Build-ups)	158.50
	Total Actual Team Days	1743.5



4.6.3 It is CUS's position that the alleged additional hours were incurred as a result of disruption caused by matters for which tie is entirely responsible. As noted at paragraph 4.2 above the CUS claims are predicated on a 'global' / 'total cost' approach. Importantly no attempt has been made by CUS to either analyse or link any causes of alleged disruption to the actual labour hours/man team days it alleges it expended as a result of the 'causes' it relies upon.

"Actual" Team Days

4.6.4 In order to arrive at the alleged actual hours/team days expended, and thereby the extent of any alleged disruption, CUS has proceeded on the basis of the following assessment:-

- a) A summary of labour hours which it alleges were expended in the Work Section based on weekly labour and plant return summary sheets. It is relevant to note at this point that no details have been provided by CUS to demonstrate what activities those resources were undertaking on a daily basis. This is a major concern in relation to the evidence which CUS has failed to present in substantiation of its claims;
- b) The hours expended are then converted to "No. of 3 man team days", in order to establish an "average productivity output" based on a linear meterage, a hypothetical actual output which can be compared to CUS's hypothetical anticipated Work Order output;

Separately, CUS makes reference to the exclusion or re-work hours from the above. However, the process adopted by CUS is not at all transparent and therefore questions remain concerning the precise deduction made in this regard. CUS has provided a summary of labour hours expended on BT snagging works, however this applies to all work sections and is not readily apparent or particularised so as to demonstrate what remedial works were being undertaken at any point in time on any given work section; and

- c) A hypothetical addition in respect of Hiab drivers.

4.6.5 For the reasons stated within the sections above and as further detailed below, I consider the CUS "analysis" to be flawed. Furthermore, in my opinion there are a number of errors and inconsistencies in CUS's assessment of the alleged disruption suffered.



4.6.6 It is relevant to consider those matters, and CUS's claims in respect of labour hours, under the following headings:-

- a) Weekly Summary Labour and Plant Returns;
- b) CUS revised (September 2009) Submission;
- c) Remedial Works;
- d) Labour only Sub-contractors;
- e) Variation Works/Change Controls;

Weekly Summary Labour and Plant Returns

4.6.7 To arrive at the total of "Actual Team Days Worked.....Work Site Specific Labour" CUS refers to and relies upon what it terms as its "allocation sheets". CUS relies upon those sheets as its record of the labour hours/team days expended on the work site.

4.6.8 Firstly, it is my opinion that to refer to these records as "allocation sheets" is incorrect and potentially misleading. For the avoidance of doubt CUS advises that it does not have any daily allocation sheets.

4.6.9 During a review with CUS (on 15 September 2009) of examples of these records it was established that the records were actually entitled "Weekly Summary Sheets – Plant and Labour Returns" and not "allocation sheets" as referred to by CUS.

4.6.10 It is also evident that the records relied upon are devoid of the sort of information which would be consistent with a typical labour allocation sheet; that is to say, information which relates to the work being undertaken by particular individuals on a daily basis.

4.6.11 The weekly summary sheets presented to me during the two meetings with CUS (the first of which was 9 September 2009 and the second 15 September 2009) contained either no information at all or, at best, a general statement applied to all of the work undertaken by all operatives in that particular week.

4.6.12 In my opinion this type of record cannot reasonably be referred to as an "allocation sheet". The information included in the sheets is not sufficient to establish what operatives were doing on a particular day. The implications of the absence of this type of information



cannot in my opinion be overstated. Without detailed contemporaneous records of what each of the operatives were doing and when it is not possible to establish the extent of disruption incurred with any degree of accuracy. It is however in my opinion unreasonable for CUS to adopt the position, as it presently does, that **tie** must be responsible for the hours recorded when it cannot demonstrate precisely what those operatives were or were not doing.

4.6.13 To date CUS has been unable to provide any satisfactory evidence that the hours recorded on the weekly summary sheets are all hours for which **tie** are responsible.

4.6.14 In this regard I note that this issue was highlighted in tie's letter dated 9 April 2009, issued following an audit on 2 April 2009. That audit raised concerns about the recording and sub-contractor payment / billing process. Having discussed those matters with CUS, the issues and concerns raised after that audit are valid and for the most part remain.

Total Hours/Team days claimed

4.6.15 Notwithstanding the foregoing, it is CUS's position that the "Actual Team Days Worked", as derived from its weekly summary sheets, is the basis from which any actual productivity should be measured.

4.6.16 In its "Appendix 1 to 4 – Diagrammatic Explanation for MUDFA Delay Disruption Calculation"⁵ CUS includes the following comment regarding the "Actual Team Days Worked.....Work Site Specific Labour":

Hours from allocation sheets which are summarised and corresponded to tie on a weekly basis and excludes those hours expended on CUS re-works. All hours including those spent on CUS re-works are included in the corresponding weekly reports which also details the hours expended against each Work Section.

4.6.17 I have a number of concerns with the approach adopted by CUS in ascertaining the actual team days allegedly affected by disruption.

4.6.18 In my opinion CUS' assessment of the alleged disruption to its works is superficial. The actual labour hours/team days allegedly expended by CUS, which it purports were subject

⁵ as issued under cover of the CUS "Further Quantum Narrative and Logic" received 8 September 2009 in respect of its August 2009 submission



to disruption caused by tie, have not been, and apparently cannot be, adequately evidenced.

4.6.19 Detailed below are the observations and conclusions I have formed during the course of my review:

- a) In reviewing the September 2009 submission it became apparent that there were a number of inconsistencies between this and the CUS claim submission of August 2009. Specifically the total number of hours/man team days claimed by CUS changed between its August 2009 submission and its revised September 2009 submission;
- b) The information provided by CUS in support of (a) above also contains inconsistencies for which CUS has yet to provide an explanation;
- c) The information from the weekly summary sheets is not, in the first instance, sufficiently detailed to permit assessment of any likely disruption to the Works and, secondly, to identify matters for which CUS is itself responsible for. It is CUS's position that no further detailed information exists;
- d) It is not possible to establish with any degree of certainty that the weekly summary sheets were completed contemporaneously. Specifically I note that in a number of instances revisions (both additions and omissions) can be seen to have been made after the initial sheet has been prepared. No adequate evidenced explanation which is capable of verification has been provided by CUS re same. In this regard, CUS' process of record keeping is not auditable or transparent;
- e) There are instances when it is the labour only sub-contractor's FLM signature which appears on the summary sheet. In particular, the weekly summary sheet presented by CUS during the course of our meeting on 9 September 2009 did not include a signature from a CUS employee;
- f) CUS has still to satisfactorily demonstrate how the hours associated with remedial works and the like have been recorded, evaluated and reconciled against the "Actual Team Days Worked". Again the process of recording remedial works is not transparent;



g) CUS acknowledged during discussions (15 September 2009) that its claim in respect of "Actual Team Days Worked" includes hours worked and claimed through variations. It appears CUS has not considered the hours/team days associated with variation/change control works during its assessment (see paragraphs **x to x** below).

4.6.20 In light of the foregoing, it is my opinion that CUS's assessment of the alleged disruption to its works is unreliable and has not been properly evidenced or substantiated. Further comments in respect of the above are noted below.

September 2009 Revised Submission

4.6.21 As noted at paragraph 1.2.5, during an initial meeting with CUS (on 9 September 2009) to discuss the quantum of its claims, it was noted that the period covered by the explanatory narrative was inconsistent with the period assessed by CUS in respect of the quantum. The narrative relates to the period 1 October 2008 to 31 May 2009. The quantum appeared to cover the period from 1 October 2008 to April 2009.

4.6.22 CUS acknowledged this anomaly and advised that this was an oversight which it has now amended. On 14 September 2009 CUS revised the quantum of its claim to bring it into line with its explanatory narrative and submitted this to tie.

4.6.23 On my initial review of the CUS revised claim (specifically in respect of work section 1C 03 01) I expected the difference between the "Actual Team Days Worked" as recorded in the August 2009 submission to be as a result of the team days expended during the additional month (May 2009) previously overlooked by CUS. However, upon closer inspection of the supporting information provided by CUS it became obvious to me that further adjustments had been made by CUS without explanation. It is worthy of note that the differences identified do not follow any particular pattern which could be easily identified; that is to say, in some instances the hours have been increased and in others they have been decreased.

4.6.24 Examples of the relevant submissions are included below and I have highlighted the differences between the submissions (excluding May2009) in yellow:

CUS August 2009 Submission

t/e Limited, Edinburgh Tram Network

Initial Report on MUDFA Contractor's Schedule 4 Rates and Prices Submission
 CUS claims in respect of Work Section 'rated' works



Actual meters	2,830					Actual hours	34,635		
	Week 1 hours	Week 2 hours	Week 3 hours	Week 4 hours	Week 5 hours	TOTAL	Metreage	Team Days (Note 1)	
October 2008	420	170	450	270	370	1,680	-	70	
November 2008	1,878	1,144	515			3,537	865	147	
December 2008	-	-	-	-		-	-	4	
January 2009	832	875	884	649		3,240	113	135	
February 2009	1,162	1,878	2,177	1,520		6,737	157	281	
March 2009	1,420	2,066	2,035	2,772		8,293	442	346	
April 2009	2,705	2,047	1,486	2,522	2,388	11,148	1,257	465	
TOTALS	8,417	8,180	7,547	7,733	2,758	34,635	2,830	1,443	
Actual team days for 10hr shift								1,154	

CUS September 2009 Submission

Actual meters	3,404					Actual hours	47,550		
	Week 1 hours	Week 2 hours	Week 3 hours	Week 4 hours	Week 5 hours	TOTAL	Metreage	Team Days (Note 1)	
October 2008	1,400	1,350	1,110	1,330	1,480	6,670		278	
November 2008	1,020	825				1,845		77	
December 2008	-	-	-	-		-	-	-	
January 2009	782	875	860	619		3,136		131	
February 2009	1,078	1,878	2,027	1,520		6,503		271	
March 2009	1,420	2,066	2,035	2,772		8,293		346	
April 2009	2,705	2,047	1,486	2,522	2,388	11,148		465	
May 2009	2,565	3,093	1,676	2,622		9,956		415	
TOTALS	10,970	12,134	9,194	11,385	3,868	47,550	3,404	1,981	
Actual team days for 10hr shift								1,585	

4.6.25 As previously, noted it is CUS's position that the total hours recorded in the above referenced tables are derived from its weekly summary sheets.

4.6.26 When questioned on the differences between its August 2009 submission and its September 2009 submission in respect of the total hours recorded each week, CUS advised that the differences were primarily in relation to the amendments made in respect of May 2009. CUS also confirmed that other amendments had been made by it in October and November 2008 in respect of works carried out under the "RAT 1C" Work Order.

4.6.27 In this regard CUS provided a summary of the hours recorded against RAT 1C works and explained that these hours had been erroneously entered into the table in August 2009 rather than the total hours as recorded on the weekly summary sheets for the same period. I have not yet received any evidence supporting the summary hours provided in relation to RAT 1C and therefore cannot comment further on the validity or otherwise of same.



4.6.28 Notwithstanding the above, I accept that an error could have been made in terms of the data processing. The total summary hours provided for RAT 1C are the same as the hours noted in the August 2009 submission for weeks 2, 3, 4 and 5 of October 2008. The exception to this is week 1 in October 2008 and in this regard the hours in respect of RAT 1C and the hours included in the summary table above do not appear to relate.

4.6.29 In my opinion it is reasonable to assume that an error may have occurred in respect of the four weeks identified in October 2009. However, this would only account for 4 out of the 13 weeks which were identified as having been adjusted by CUS (excluding May 2009). No explanation has been provided by CUS to date in respect of the remaining 9 weeks.

4.6.30 Without further information explaining the reasons for any of the adjustments it has made and also how it has arrived at its assessment of those adjustments it is not possible for me to establish the validity or otherwise of CUS's assessment in this regard. This however does not satisfy the lingering concerns noted at paragraph X above in relation to the absence of daily allocation sheet data.

CUS spreadsheet re section 1C-03-01 hours

4.6.31 The further information provided by CUS as the detail underlying the hours recorded in the above referenced summary table also contains inconsistencies. This information was provided in spreadsheet format (CUS File ref: 1C-03-01 Hours 2009-05-29) which CUS has created to allow it to collate the hours recorded on the weekly summary sheets relative to each work section.

4.6.32 The total hours recorded on the spreadsheet provided are not entirely consistent with the total hours that are carried forward to the summary table above. Again, no explanation has been provided by CUS in this regard.

Remedial Works

4.6.33 CUS in its 'Appendix 1 to 4 – Diagrammatic Explanation for MUDFA Delay Disruption Calculation' (issued to tie on 8 September 2009) contends that the "Actual Team Days Worked.....Work Site Specific Labour" excludes hours expended on CUS reworks.



- 4.6.34 I have been unable to verify by reference to any contemporaneous records whether in fact CUS has properly reconciled hours spent on reworks for which CUS is responsible. This is again as a result of the absence of daily labour allocation sheets.
- 4.6.35 Within divider 7 of the CUS 'Further Quantum Narrative' submission (received 8 September 2009) there is a document referred to by CUS as a 'Consolidated Overview'. CUS contends that this document represents a summary of the labour hours expended by it on all work sites during the week ending 24 April 2009. CUS further contends that this document also records the number of hours it has expended that week on 'Re-works'.
- 4.6.36 CUS advised that the summary labour hours included by it in its Consolidated Overview are derived from the weekly summary sheets for each of the work sections.
- 4.6.37 CUS further advised that the hours expended on re-works are recorded on separate weekly summary sheets specifically for this purpose. I have not yet seen evidence supporting this statement and therefore cannot comment further on the validity of it.
- 4.6.38 The comment recorded by CUS in the Consolidated Overview in the column entitled 'Re-works' is "*TBA (please also see CC184)*". This comment is made against all Work Sections. This was explained to me by CUS as the change control reference CC184 against which it records all of the re-works it has undertaken in all work sections for a particular week. It is relevant to note that CC184 is referred to as 'BT Snagging' in the Consolidated Overview. CUS also advised that other re-works are included in these hours, however I have not yet received any evidence which would support this statement.
- 4.6.39 In this regard, the CUS assessment of re-works in respect of CC184 appears only to relate to 'BT Snagging'. CUS has not demonstrated whether or in what way it has considered any other re-works in respect of other utility diversions: gas, water, electricity and the like.

Comparison of CUS records carried out on 15 September 2009 in conjunction with CUS

- 4.6.40 During the meeting on 15 September 2009 CUS demonstrated the various records and spreadsheets referred to and relied upon by it in respect of the labour hour totals carried forward to the Consolidated Overview. This exercise presented inconsistencies between the various CUS records.
- 4.6.41 The table below summarises my findings:



Comparison of CUS labour hour data in respect of w/e: 24 April 2009

1 Contract	2 CUS Payment Sheet/Claim	3 CUS Weekly Summary Sheet	4 MUDFA			7 Total	8 CUS Contractors	9 CUS Contractor Payments	10 Contractor's Summary Sheet
			5 Rate	6 Rate List	6 Rate & Rate				
1A-01-01	664.00	664.00	610.00	-	-	610.00	664.00	335.00	335.00
1A-02-01									
1A-04-01									
1B-01-01	367.00	367.00	571.50	-	-	571.50	367.00	367.00	571.50
1B-02-01	260.00	260.00	Incl. above	-	-	Incl. above	260.00	260.00	Incl. above
1C-01-01	1,035.00	1,062.00	574.00	280.00	188.00	1,042.00	1,035.00	1,035.00	1,035.00
1C-03-01/02	2,522.00	2,422.50	2,046.00	250.50	-	2,296.50	2,522.00	2,522.00	2,296.50
1C-04-01	880.00	780.00	590.00	-	-	590.00	880.00	880.00	590.00
		100.00	<i>Added in later on sheet</i>						
1C-05-01									
1C-02-01									
1C-01-02									
1D-01-01	1,074.00	1,077.50	250.00	737.00	73.00	1,060.00	1,074.00	1,074.00	1,060.00
1D-04-01									
2A-01-01	343.00	343.00	-	133.50	171.00	304.50	343.00	343.00	304.50
5B									
5C									
CC184	188.00	198.00							
Totals	7,333.00	7,274.00	4,641.50	1,401.00	432.00	6,474.50	7,145.00	6,816.00	6,192.50

4.6.42 From my review it was apparent that differences existed between: the Consolidated Overview and the Weekly Summary Sheets; the Weekly Summary Sheets and the Sub-Contractor Payments; the Sub-Contractor Payments and the CUS spreadsheet; the CUS Claim for the week and the Summary of hours traceable through the available records.

4.6.43 The table was issued to CUS on 17 September 2009. CUS has still to provide an explanation of the discrepancies between its records and its claim.

4.6.44 In advance of this table being issued CUS, on 16 September 2009, advised that changes required to be made to the information it had demonstrated to us on 15 September 2009. Specifically that changes were possibly to be made in relation to sub-contractor payments (columns 5 to 7 in the table above). However, to date I have received no information from CUS in this regard.

4.6.45 The above demonstrates a lack of transparency in the changes made to the various records kept and collated by CUS. The fact that there is no auditable trail of records which explains the anomalies raises questions about the reliability of those records and hence the CUS



claims. I have yet to receive satisfactory and auditable explanations for the differences highlighted in the table above.

4.6.46 The number of inconsistencies which have been identified in the information presented by CUS coupled with its failure to demonstrate that it has properly considered other matters for which it is responsible (for example snagging generally, non-conformances and the like) in my opinion renders the present CUS submission unreliable and unsubstantiated.

Labour only Sub-Contractors

4.6.47 The following observations are of particular note in relation to the labour only sub-contractor hours for the week ending 24 April 2009 (see table at paragraph 4.6.41):

- a) In every work section reviewed the total hours paid to the labour only sub-contractors as demonstrated by CUS were not in line with the Weekly Summary Sheet totals claimed. CUS has provided no auditable explanation for this. Compare columns 3 & 7 in the table at paragraph 4.6.41.
- b) I requested an explanation from CUS on how any adjustment would have been ascertained prior to paying the sub-contractor, particularly when CUS has stated that the weekly summary sheets are the only records available to it. CUS has provided no explanation for this.
- c) In the examples presented to me during meetings with CUS it was apparent that in almost all cases the hours recorded on the weekly summary sheets were entirely consistent for each operative. I accept that this is a possibility, but in my experience this scenario is highly unlikely. Invariably operatives will not all start and finish at exactly the same time. This would infer that the weekly summary sheets are more likely used as an administrative tool for payment of sub-contractors, based on contractual agreements, and not as an accurate record of the hours actually worked. This matter was also highlighted by tie during the audit carried out on 2 April 2009.
- d) There is evidence to suggest that the sub-contractor is itself responsible for signing the weekly summary sheets. In particular, the sample weekly summary sheet presented to me during a meeting with CUS (8 September 2009) did not include any signature on behalf of CUS, but instead contained the sub-contractor's signature only. I am advised by tie that this situation is not uncommon.



- e) There is a possibility that supervisors hours could have been erroneously included in CUS's assessment of "Actual Team Days Worked.....Work Site Specific Labour", in which case this may be duplicated with prelim claims in this regard. This has been highlighted to CUS and requires further investigation.

4.6.48 For the reasons stated above and in previous sections, I do not consider CUS' reliance on the information contained within the weekly summary sheets as appropriate to support its claim. Clearly, based on the findings above CUS itself relies on other information not yet disclosed to ascertain the value of payments due to its sub-contractors. As noted throughout the above, in my opinion further evidence is required to demonstrate what the various operatives were doing during the increased labour hours claimed and why those hours were incurred. The default position adopted by CUS that tie must be responsible for those hours even in the absence of this evidence, is in my opinion unreasonable and unsustainable.

Variation Works/Change Controls

4.6.49 During discussions with CUS it acknowledged that the "Actual Team Days Worked.....Work Site Specific Labour" were inclusive of all hours claimed in respect of works carried out on variations and the like. CUS also advised that the value of any recovery made in this regard had been abated in value from the overall sum claimed in respect of delay and disruption.

4.6.50 I accept that CUS has in its claim abated a value in respect of works carried out based on its recovery through the interim certification process for variations and the like. However, I note that this value is based on a hypothetical calculation and is predicated on the basis of the certification at a particular point in time (section x refers) which is likely to change as agreements are reached.

4.6.51 Notwithstanding the above CUS does not appear to have considered the direct hours associated with variations and the like when evaluating its hypothetical actual work section output based on the "Actual Team Days Worked.....Work Site Specific Labour".

4.6.52 As such CUS is not comparing like for like in terms of its comparison with its Planned Work Order Output. In my opinion CUS, by including the hours associated with variations in its



"Actual Team Days Worked.....Work Site Specific Labour", overstates the hours it alleges were affected by disruption.

4.7 CUS contentions regarding average actual work section output, factor and new rate

4.7.1 The CUS claims rely upon its assessment of the actual work section output to arrive at what it terms a "New rate" for the Work Section.

4.7.2 In respect of Work Section 1C-03-01, CUS calculates the new rate thus:-

Average (planned) productivity for a 10hr day	5.43m per team day	Please refer to section XX for errors in this calculation
Average (alleged) Actual Work Section Output	1.95m per team day	Please refer to section XX for errors in this calculation
CUS Factor (5.43m / 1.95m)	2.78	
Labour and plant rate per m based on 10hr day	£189.42/m	Please refer to section XX for errors in this calculation
Revised rate (being the result of rate for a 10 hr day multiplied by the CUS factor)	£527.15/m	This factored rate compounds all of the errors and inconsistencies explained within the previous sections.

4.7.3 It is important again to note that the Schedule 4 Rates and Prices forming part of the Agreement *do not* contain any one single rate for all labour and plant in a Work Section. As such, and for the reasons stated at sections Section 2 and 4.2 above, I consider the CUS calculation and exercise to be invalid in terms of the Agreement.

4.7.4 In addition, for the reasons stated at section 4.3 to 4.6 above, I note that there are manifest errors, unexplained anomalies and invalid assumptions within the CUS calculations leading to this calculation of this revised rate.

4.7.5 CUS' position also relies upon the following assumptions which in my opinion are invalid:-

- a) Labour hours: CUS assumes that **tie** must be responsible for all increases in labour hours and hence all labour costs claimed. CUS does not however demonstrate the extent to which the matters complained of actually disrupted its activities. Rather, CUS proceeds on the assumption that unless it has specifically deducted hours for



remedial works the balance of the labour hours claimed must be to **tie's** account. That in my opinion is unreasonable.

In my opinion CUS must demonstrate what additional time was incurred as a result of matters for which **tie** is responsible. This information / analysis has not been provided.

Unfortunately CUS has been unable to demonstrate what its labour resources were doing on a daily basis (section 4.6 above). CUS cannot therefore reasonably presume that any alleged increase in labour hours is to **tie's** account.

- b) Plant: CUS also proceeds on the assumption that the 'factor' (which is derived solely from the CUS labour analysis) applies in precisely the same way and to precisely the same extent to its plant resource / value.

This matter was discussed at length during the meetings held with CUS. It was put to CUS that in my opinion, and in particular, absent any analysis of actual plant resources, it was *not* reasonable to proceed on the basis that any labour 'factor' applied directly to plant.

As a consequence, I requested copies of any detailed analysis carried out by CUS on the actual plant resources committed to each Work Section. I was advised that in terms of the current claims, no analysis had been carried out by CUS on plant resources.

CUS advised however that a broad analysis had been carried out. CUS undertook to provide that if it could be located. I await a copy of same.

tie however did provide me with a copy of an analysis of actual plant resources carried out in conjunction with CUS during January and July 2008 (refer to email from John Casserly of tie to O Hughes of CUS dated 17 September 2009). This showed that the actual plant utilised on site was 80.9% of the tendered plant levels / allowances. I note however that this period is outwith the period of the current CUS claims and is therefore of limited value in assessing the present claims.

- 4.7.6 As a consequence, in my opinion CUS must demonstrate by reference to actual records the level of labour and plant resources utilised in the various Work Sections. It is those records



which will upon further analysis demonstrate the level of disruption incurred. In my opinion this is what clause 51.5 of the Agreement requires. Absent that information it is not possible to establish the correct or reasonable measure of disruption incurred.

4.8 CUS contentions regarding Entitlement Calculation

4.8.1 In arriving at its alleged entitlement CUS uses the new / revised rate referred to above and multiplies it by the linear measurement of diversions which it allegedly recovered through the certification process during the period in question (i.e. from 1 October 2008 to 31 May 2009).

4.8.2 For the reasons stated at section 4.3 above (and in particular paragraphs 4.3.3 to 4.3.7), the use of a linear measurement to attempt to establish an entitlement to 'value', when the work content will inevitably vary, is incorrect. The resultant total is purely hypothetical.

4.8.3 In addition, for the reasons stated in the earlier sections of this report it is my opinion that the 'new rate' is hypothetical and compounds errors and invalid assumptions. As such it cannot in my view be considered to be a measure of, either (i) CUS' entitlement to a re-rating exercise; or (ii) a measure of the disruption incurred solely as a result of the matters for which tie is responsible.

4.9 CUS claim regarding Reinstatement works

4.9.1 CUS has based its claim for delay and disruption to the reinstatement works on the basis of a percentage addition to the total 'entitlement' calculation. That percentage addition is based upon the percentage of reinstatement works in relation to the original Work Order Proposal values.

4.9.2 This element of the CUS claim appears to proceed on the assumption that the reinstatement works were disrupted to the same extent as alleged for the diversions works. CUS confirmed during the recent meetings that this was its position.

4.9.3 No evidence however has been presented by CUS to attempt to demonstrate the extent of disruption, if any, which was actually incurred.

4.9.4 This position does not in my opinion comply with any of the provisions of the Agreement.



4.9.5 In terms of Clause 51.5 CUS is required to provide "*such records, receipts and other documentation as may be necessary to prove amounts paid and/or costs incurred*". Without any such information, data or analysis CUS claims are in my opinion unreasonable and unfounded.

4.9.6 In this regard, on 10 September 2009, I requested that CUS consider demonstrating the actual disruption incurred to the reinstatement works. CUS has declined to provide this information, confirming that it would instead consider providing a further explanatory narrative of its position in respect of the application of the 'factor' applied. I await a copy of that further explanatory narrative.

4.10 CUS reconciliation of recovery under Work Order and Change Control process

4.10.1 Notwithstanding my fundamental disagreement with the global approach adopted by CUS in the preparation of its claims I note that following in respect of the above. Please also refer to section **XX** (paragraphs **XX to XX** above).

CUS Recovery under Works Order / certification process

4.10.2 For the reasons stated at sections **XX & XX** above I do not consider it appropriate to use an average Work Section linear labour and plant rate as a means of establishing the actual recovery of labour and plant during any particular period. As noted therein such an average rate cannot be expected to reflect the actual mix of operations which will have been carried out during any given window of time. Similarly, reduction of all work to a linear measurement cannot properly reflect the actual scope carried out.

4.10.3 As a consequence, use of such an average rate and superficial measure produces only a hypothetical answer to the question of what work and operations were actually carried out and against which a claim for disruption is directed.

4.10.4 In any event, in my opinion, and as noted above, CUS must demonstrate by reference to actual detailed records the level of labour and plant resources utilised in the various Work Sections. It is those records which will upon further analysis demonstrate the level of disruption actually incurred.

Recovery under Change Control



4.10.5 In attempting to reconcile the amount of labour and plant recovered via the Change Control process, CUS has applied a percentage (47.82%) to the value of those changes. That percentage is apparently derived as the average labour and plant allowance within the CUS Work Order Proposals / Schedule 4 Rates and Prices.

4.10.6 This however does not necessarily reflect the labour and plant recovered through the Change Control process. CUS should be able to accurately identify for each Change Control item the precise labour and plant amounts recovered. I am advised by tie that the labour and plant percentage recovered via that process is greater than the 47.82% allowed by CUS. I have not however been able to verify that statement.

4.11 CUS claim for addition of amount for indexation

4.11.1 The CUS claims also include an amount for the addition of fluctuations (based on a percentage of 7%). In this regard, I note the following.

4.11.2 CUS adds the percentage claimed to the net amount of all sums claimed after reconciliation of other sums recovered. Notwithstanding my disagreement with the formulation of CUS' claims, on the basis of CUS case this is incorrect. CUS presently claims £20.00/hour for all labour. This was confirmed by it at the meeting held on 3 September 2009. I understand that this is the current rate paid by it to its sub-contractors. It cannot therefore add a further 7% to that element of its claims. To do so is to further overstate the amount claimed.



Section 5 Conclusions

5.1 Conclusions in respect of CUS Work Section Preliminaries claim

5.1.1 I have summarised below the following conclusions in respect of the CUS claim for **£860,666** in respect of Work Section preliminaries (section Section 3 above refers):-

- a) The current CUS claim is a hypothetical calculation and is *not* founded on an analysis of actual resource utilisation or the increased cost of same. CUS accepts this point, preferring to rely upon a hypothetical assessment of its alleged 'entitlement'.
- b) This approach however does not, in my opinion, demonstrate that any loss or increase in cost has actually been incurred by CUS. As a consequence, it does not demonstrate an entitlement to either revised rates and/or prices, or payment for additional cost which may or may not have been incurred.
- c) In addition, the CUS assessment relies on a number of assumptions / hypothesis which are either unsubstantiated or appear to be incorrect (**Section 4** refers).
- d) I note that for the most part Work Section preliminary costs are *generally / more likely* to relate to time than to alleged disruption. Whilst I accept that it is possible that there may be a need to increase (thicken) some preliminary resources as a result of alleged disruption to operations within different Work Sections, it is not reasonable in my opinion to apply a hypothetical calculation in the assessment of what is claimed to be a 'fair and reasonable' increase in entitlement under the Agreement.
- e) Absent any robust analysis of actual resources utilised and/or costs incurred, the alleged entitlement to payment on the basis of a "factor" of 4.50 cannot in my opinion reasonably be inferred or deduced from the present claim.
- f) I also note that the CUS claim for traffic management (making up 77% of this claim head) is direct duplication of a separate claim for this same operation under Change Control item **XX**.

5.1.2 In my opinion, with the information presently submitted by CUS, it is not possible to arrive at an assessment of the extent to which the CUS Work Section preliminary resources have been increased as a result of matters for which **tie** is responsible.



5.1.3 Unless and until CUS provides reliable preliminary resource usage and cost data which is transparent, verifiable and capable of analysis, it will not be possible to arrive at such an assessment. As noted, CUS has declined to provide this information thereby preventing a reasonable assessment from being undertaken by either party. That position however appears to be contrary to the terms and requirements of the Agreement.

5.2 Conclusions in respect of CUS Work Section labour and plant claims

5.2.1 The CUS claim submissions contain considerable detail on the 'cause' of the alleged disruption. Those claims however are distinctly lacking in analysis or substantiation of the 'effect' of those matters in terms of the loss, additional cost or additional 'value' claimed by CUS.

5.2.2 For the avoidance of doubt, I do not consider that the present CUS claims demonstrate a reasonable measure of disruption incurred as a result of the matters for which **tie** is responsible. As set out above, I fundamentally disagree with the hypothetical 'global' approach taken by CUS in the quantification of its alleged entitlement. I do not consider that approach to be sanctioned by the terms of the Agreement.

5.2.3 I have set out below my more detailed conclusions in respect of the following headings:-

5.2.4 CUS methodology generally (section 4.2):

- a) From the information made available for my inspection I note that CUS appears to have failed to provide the substantiation required by Clause 51.5;
- b) The current CUS assessment of alleged entitlement attempts to set aside the whole value of the Work Order Proposal for each section in respect of the labour and plant amounts. It then attempts to substitute a hypothetical calculation of a factored / revised labour and plant allowance. This does not, in my opinion, comply with the contractual provisions relied upon by CUS. It does not comply with Clause 51.5, 10.4, 14 or 46; nor does it provide the details required by Schedule 1 paragraphs 2.36 or 3.3.
- c) It is apparent that CUS has adopted a 'global' / 'total cost' / 'total value' claim approach to the present submissions. As such, issues such as sufficiency (or



insufficiency) of tender, contractor or sub-contractor inefficiencies / errors, costs incurred as a result of neutral events and the like are all masked by such global claims. For this reason, it is submitted that the present CUS approach does not demonstrate the actual measure of disruption incurred and is therefore inappropriate.

- d) The CUS claims are not strictly delay or disruption claims. They are more 'fluid' than establishing the actual loss incurred as a result of certain events. In my opinion, whether this has occurred by design or by default, the CUS claims do not establish the true measure of CUS' entitlement for the matters for which tie is responsible.

5.2.5 CUS analysis of Work Order Proposal (section 4.3)

- a) Whilst the average labour and plant rate calculated by CUS may be indicative of the tender allowance, caution must be exercised when / if attempting to apply such an average rate to any other analysis. This is so because such an average rate 'presumes' the carrying out of each and every item of work included in the overall Work Order, on a consistent basis throughout the period of construction. That is rarely the case in any construction / engineering project. I understand from tie that it was not the case in this project
- b) The application or use of this overall average rate for the whole Work Section does not and cannot in my opinion recognise that different operations will be completed at different times. As a consequence, application of an overall Work Section average rate to a measurement of the alleged actual meterage of diversion work undertaken at a point in time will not reflect the actual operations or resources utilised carried out during that given period. It will therefore produce results which are unreliable and likely to be incorrect.

5.2.6 CUS claims re increased rate per hour (section 4.4):

- a) It appears to me from review of the evidence presented that the reason for the revision to CUS labour resourcing (and the resultant increase in cost) was the TUPE transfer of its employees to SGN. Although CUS appear to rely upon an 'offer' made to tie to transfer the CUS employees to tie, I do not consider this to be a relevant factor. CUS is responsible for the resourcing of its works. The fact that its



employees were TUPE transferred from CUS to another employer is not in my opinion a matter for which **tie** bears the risk. That is a matter for CUS.

- b) It is also relevant to note that part of the £20.00/hour rate claimed by CUS includes an increased element of NPO for the revised (increased) working hours agreed between CUS and its sub-contractors. I understand that the decision to work longer working days was taken solely by CUS in negotiations with its sub-contractor(s). The extra over cost of same is therefore a matter for which CUS is responsible. It cannot in my opinion claim this cost directly from **tie**.

5.2.7 CUS adjustment for 10hr shift versus an 8 hr shift (section 4.5):

- a) I note that this change in the working pattern is something which CUS accepts it elected to do. It is not something which CUS contends was instructed by **tie**.
- b) Effect on plant cost/value: the CUS calculations maintain the same cost / value of plant allowance despite the fact that the number of team days has reduced. In my opinion this is incorrect. The majority, if not all, of the plant included by CUS in its rates analysis appears to be either daily or weekly rated items. As a consequence, as the number of days required reduces, the cost of that plant should also be reduced. CUS however has not reduced the plan cost/value.

CUS assumption regarding productivity: the CUS calculation 'assumes' that productivity would remain the same during a longer 10 hour working shift as was planned for the original 8 hour shift. Research has shown that productivity generally decreases as the working hours increase. Since the decision to increase the working day to 10 hours was a CUS decision, it must bear the responsibility (i.e. cost) for any resultant loss of productivity. It is also noted that the longer the overtime is worked the higher the loss of productivity. The current CUS assessment however takes no account of this matter. In my opinion it should and must. Not to do so renders **tie** responsible for a matter which is not its responsibility.

5.2.8 CUS contentions regarding actual team days worked (section 4.6):

- a) To date CUS has been unable to provide any satisfactory evidence that the hours recorded on the weekly summary sheets are all hours for which **tie** are responsible.



- b) Without detailed contemporaneous records of what each of the operatives were doing and when it is not possible to establish the extent of disruption incurred with any degree of accuracy.
- c) It is not possible to establish with any degree of certainty that the CUS weekly summary sheets were completed contemporaneously. Specifically I note that in a number of instances revisions (both additions and omissions) can be seen to have been made after the initial sheet has been prepared. No adequate evidenced explanation which is capable of verification has been provided by CUS re same. In this regard, CUS' process of record keeping is not auditable or transparent.
- d) CUS has still to satisfactorily demonstrate how the hours associated with all remedial works and the like have been recorded, evaluated and reconciled against the "Actual Team Days Worked". Again the process of recording remedial works is not transparent.
- e) Inconsistencies were identified between the various records kept by CUS. Those inconsistencies have yet to be explained by CUS.
- f) An audit held on 2 April 2009 raised concerns about the recording and sub-contractor payment / billing process. Having discussed those matters with CUS, in my opinion the issues and concerns raised after that audit are valid and for the most part remain unresolved.
- g) In my opinion further detailed evidence is required to demonstrate what the various operatives were doing during the increased labour hours claimed and why those hours were incurred. The default position adopted by CUS that tie must be responsible for those hours even in the absence of this evidence, is in my opinion unreasonable and unsustainable.

5.2.9 CUS contentions regarding average actual work section output, factor and new rate (section 4.7):

- a) CUS assumes that tie must be responsible for all increases in labour hours and hence all labour costs claimed. CUS does not however demonstrate the extent to which the matters complained of actually disrupted its activities. Rather, CUS proceeds on the assumption that unless it has specifically deducted hours for remedial works the



balance of the labour hours claimed must be to **tie's** account. That in my opinion is unreasonable.

- b) CUS also proceeds on the assumption that the 'factor' (which is derived solely from the CUS labour analysis) applies in precisely the same way, and to precisely the same extent, to its plant resource / value. In my opinion, and in particular, absent any analysis of actual plant resources, it is *not* reasonable to proceed on the basis that any labour 'factor' applies directly to plant.
- c) I note that in terms of the current claims, no analysis had been carried out by CUS on plant resources. CUS advised however that a broad analysis had been carried out. CUS undertook to provide that if it could be located. I await a copy of same.
- d) In my opinion CUS must demonstrate by reference to actual records the level of labour and plant resources utilised in the various Work Sections. It is those records which will upon further analysis demonstrate the level of disruption incurred. In my opinion this is what clause 51.5 of the Agreement requires. Absent that information it is not possible to establish the correct or reasonable measure of disruption incurred.

5.2.10 CUS contentions regarding Entitlement Calculation (section 4.8):

- a) For the reasons stated in the earlier sections of this report it is my opinion that the 'new rate' is hypothetical and compounds errors and invalid assumptions. As such it cannot in my view be considered to be a measure of, either (i) CUS' entitlement to a re-rating exercise; or (ii) a measure of the disruption incurred solely as a result of the matters for which **tie** is responsible.

5.2.11 CUS claim regarding Reinstatement works (section 4.9):

- a) This element of the CUS claim proceeds on the assumption that the reinstatement works were disrupted to the same extent as alleged for the diversions works. No evidence however has been presented by CUS to attempt to demonstrate the extent of disruption, if any, which was actually incurred.



- b) This position does not in my opinion comply with any of the provisions of the Agreement. Without the required information, data or analysis CUS' claims are in my opinion unreasonable and unfounded.
- c) In this regard, I requested that CUS considering demonstrating the actual disruption incurred to the reinstatement works. CUS has declined to provide this information, confirming that it would instead consider providing a further explanatory narrative of its position in respect of the application of the 'factor' applied. I await a copy of that further explanatory narrative.

5.2.12 CUS reconciliation of recovery under Work Order and Change Control process (section 4.10):

- a) I do not consider it appropriate to use an average Work Section linear labour and plant rate as a means of establishing the actual recovery of labour and plant during any particular period. As noted therein such an average rate cannot be expected to reflect the actual mix of operations which will have been carried out during any given window of time. Similarly, reduction of all work to a linear measurement cannot properly reflect the actual scope carried out.
- b) As a consequence, use of such an average rate and superficial measure produces only a hypothetical answer to the question of what work and operations were actually carried out and against which a claim for disruption is directed.
- c) In my opinion, CUS must demonstrate by reference to actual detailed records the level of labour and plant resources utilised in the various Work Sections. It is those records which will upon further analysis demonstrate the level of disruption actually incurred.
- d) The CUS calculations do not necessarily reflect the labour and plant recovered through the Change Control process. CUS should be able to accurately identify for each Change Control item the precise labour and plant amounts recovered.

5.2.13 CUS claim for addition of amount for indexation (section 4.11):

- a) CUS adds the percentage claimed to the net amount of all sums claimed after reconciliation of other sums recovered. Notwithstanding my disagreement with the



formulation of CUS' claims, on the basis of CUS case this is incorrect. CUS presently claims £20.00/hour for all labour. This was confirmed by it at the meeting held on 3 September 2009. I understand that this is the current rate paid by it to its sub-contractors. It cannot therefore add a further 7% to that element of its claims. To do so is to further overstate the amount(s) claimed.

5.2.14 As a result of the foregoing, in my opinion, with the information presently submitted by CUS, it is not possible to arrive at an assessment of the extent to which the CUS Work Section labour and plant resources were disrupted as a result of matters for which **tie** is responsible.

5.2.15 Unless and until CUS provides reliable labour and plant resource usage and cost data which is transparent, verifiable and capable of analysis, it will not be possible in my opinion to arrive at such an assessment. As noted, CUS has declined to provide this information. That position however appears to be contrary to the terms and requirements of the Agreement. In other instances CUS has stated that it is not available. This however in my opinion prevents its claims from being properly evidenced and hence assessed.

Do we need to make comment that there has been mention of applying conclusions from one section to another? If necessary I can make the comment that this is inappropriate as different issues and events will affect different sections to varying degrees (as can already be seen from CUS' claims e.g. factor in 1C-03-01 is allegedly 2.78 whilst in 1D-01-01 it is 4.26 and in 1C-01-01 it is 4.07).



Section 6 Declaration

1. I confirm that my report includes all facts which I regard as being relevant to the opinions which I have expressed and that attention has been drawn to any matter which would affect the validity of those opinions.
2. I confirm that in preparing this report I have assumed the same duty which would apply to me when giving my expert opinions in a court of law under oath or affirmation. I confirm that this duty overrides any duty to those instructing or paying me, that I have understood this duty and complied with it in giving my opinions impartially and objectively, and that I will continue to comply with that duty as required.
3. I confirm that I am not instructed under any conditional fee arrangement.
4. I confirm that I have no conflicts of interest of any kind other than those already disclosed in my report.
5. I confirm that my report complies with the requirements of the Royal Institution of Chartered Surveyors (RICS), as set down in *Surveyors acting as expert witnesses: RICS practice statement*.

Robert Burt

XX September 2009