



Infrastructure Services

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Ref: AMIS/tie/letter/KAG/Projects/333

03rd August 2007

Mr. Graeme Barclay
tie MUDFA Utilities Construction Director
tie Limited.
Verity House,
19 Haymarket Yards,
Edinburgh.
EH12 5BH

Dear Graeme,

Subject: MUDFA Alfred McAlpine Infrastructure Services (AMIS) – Contract A150
Construction Services – Schedule 4; Rates and Prices

I refer to our previous correspondence in connection with the above, specifically letters Ref: AMIS/tie/letter/KAG/Projects/155, 186, 250 (item i) and 266 dated 3rd April, 2nd May, 15th and 25th June 2007 respectively.

The attention of **tie** Limited is also drawn to letter Ref; AMIS/tie/letter/KAG/312 dated 26th July 2007 where AMIS MUDFA stated, under items (ii) and (iii) that a consensus on the outstanding Commercial Agreement is subject to:-

*"A robust and sustainable Programme (i.e. Revision 06 of the **tie** Limited and Stakeholder Constrained Programme), consistent with the modus operandi of the Schedule 8 Programme within the executed MUDFA Contract"; and confirmation that:*

*"The quality and precision of the IFC drawings, conflict registers and HAZID Logs issued to date continue to cause concern. For AMIS MUDFA to proceed on the basis of Clause 4 (vii) and (viii) of the draft Commercial Agreement sufficient evidence must be provided by **tie** Limited that the basis of our Schedule Four rates and prices will be replicated."*

This is a consistent message where AMIS MUDFA have sought, from **tie** Limited, design and design related information, to support the consistent and cohesive delivery of Construction Services.

These items of correspondence sought to provide **tie** Limited with an early warning on the integrity of the Schedule 4 Rates and Prices. This early warning was necessitated as a consequence of ongoing and continuous delay, disruption and dislocation to the Construction Services Programme (See Appendix 1) and the potential for change in the Rates and Prices given the disparity between the Tender drawings and, at this time, the emerging IFC drawings / Work Order Information.

At the Commercial Meeting held on 15th May 2007 it was stated by **tie** Limited there was "no requirement for a detailed response" to letters Ref; 155 and 186 as Clause 46 sets out the process under which Change should be measured and valued.





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AMIS MUDFA, while not convinced this was a viable approach or appropriate response, has sought, in the spirit of partnership and collaboration, to administer Construction Services in accordance with the MUDFA terms and conditions, and with our obligations and professional responsibilities.

This commitment is evidenced by the decision to measure and value the Works at Work Sites 1AWS1003/001, 1AWS1003/002, and 1AWS1004/001 under the Schedule 4 rates and prices, despite the significant concerns set out in letter Ref; AMIS/tie/letter/KAG/Projects/266 dated 25th June 2007.

This decision was without prejudice to the rights of AMIS MUDFA under the terms and conditions of the MUDFA agreement.

AMIS MUDFA believes the Schedule 4 rates and prices have been fundamentally compromised, to a degree that could not reasonably have been foreseen by AMIS MUDFA during the Tender / CARP process, culminating in execution of the MUDFA Contract on 4th October 2006. Furthermore the high level of confidence in the SDS Provider designs throughout Pre-Construction Services period is not shared by AMIS MUDFA. Accordingly AMIS MUDFA formally seeks the co-operation and assistance of the Limited in order to address this infringement and seek an appropriate remedy going forward.

The following factors have all contributed to the ongoing delay, disruption and dislocation, together with the disproportionate magnitude of change, rendering the valuation provisions of 46 untenable, i.e.; "by measurement and valuation at the rates and prices"; be they at the Schedule 4 provisions, "deduced therefrom", "at fair rates and prices" or alternatively at "the value of the resources and labour employed thereon, as appropriate, in accordance with the basis of rates set out for provisional work".

1. The breakdown of Pre-Construction Services and the inability of AMIS MUDFA, despite their best endeavours, to fully satisfy the stated and contractually binding objectives; see Section A below.
2. Significant deficiencies and ongoing delays associated with the provision of IFC drawings and associated information; this issue has been the subject of extensive and detailed correspondence by AMIS MUDFA from the outset of the project.
3. The absence of site specific technical specifications; this issue has been the subject of extensive and detailed correspondence by AMIS MUDFA and has not been forthcoming to date.
4. The generic nature of the HAZID Logs; again this issue has been the subject of extensive and detailed correspondence by AMIS MUDFA and is being addressed some nine months after the request.
5. The accelerated and fragmented nature of the Work Order process; please refer to AMIS MUDFA letter Ref; AMIS/tie/letter/KAG/Projects/313 dated 26th July 2007, titled "Leith Walk Opening Notice" is also applicable to the full programme of MUDFA Works.





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The Work Ordering process, as currently functioning does not comply with agreed timescales or the provision of appropriate documentation to ensure appropriate compliance with Clause 8.

Furthermore the Limited Project Management Team is being significantly constrained by the SDS Provider in terms of meeting the agreed Contract obligations between the respective parties.

Please refer to Part 5-D37, Page 1 of the Tender Submission which states AMIS MUDFA, in the preparation of the Schedule 4 rates and prices, contemplated "Full design details and all documentation approvals are available for each Work Site at least 6 weeks prior to construction commencing at that Work Site", in recognition of the Pre-Construction Services input.

Emphasis within the quoted text has been added by the under-signed; please see Appendix 1.

6. The 'stand alone' nature of the work site (in terms of a Schedule 8 Programme); see Section B below.
7. The loss of productivity and efficiencies; see Section C below.
8. The disproportionate level of risk and change from the quantities and Statutory Utility Companies affected by the LoD from that contemplated in Schedule 4 for this area; see Section D below.
9. The absence of complete and correctly specified Bill of Materials. This issue has been the subject of extensive and detailed correspondence by AMIS MUDFA, to support Work Ordering and Construction Services.
10. The protracted and disjointed response to Technical Queries; again this issue has been the subject of extensive and detailed correspondence by AMIS MUDFA.
11. The lack of technical support from either the Limited technical co-ordinators or SDS Provider design representatives to resolve issues and support AMIS MUDFA Construction efforts. Again, this issue has been the subject of extensive and detailed correspondence by AMIS MUDFA.
12. The impact of the foregoing on the AMIS MUDFA Supply Chain Arrangements; as evidenced by the ongoing issues with our Telecommunications Partner, Doocey North East Limited.

In terms of allocating the twelve items to delay, disruption and dislocation or disproportionate level of Change an overview, in tabular form, would be as follows:-

ID	Issues	Event		Impact		Comments
		Delay, Disruption & Dislocation	Change +++++	Cost	Time	
1	PCS breakdown	✓	✓	✓	✓	Section A below and AMIS/tie/letter/AM/Projects/101 dated 20 th February 2007.
2	Design - late and inadequate	✓	✓	✓	✓	AMIS/tie/letter/AM/Projects/274 dated 28 th June 2007



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ID	Issues	Event		Impact		Comments
		Delay, Disruption & Dislocation	Change +++++	Cost	Time	
3	Technical Specifications	✓		✓	✓	AMIS/tie/letter/AM/Projects/259 dated 19 th June 2007.
4	HAZID Logs	✓		✓	✓	AMIS/tie/letter/AM/Projects/259 dated 19 th June 2007.
5	Work Ordering	✓	✓	✓	✓	AMIS/tie/letter/AM/Projects/313 dated 26 th July 2007.
6	Schedule Programme 8	✓	✓	✓	✓	Section B below
7	Lost Productivity	✓	✓	✓	✓	Section C below
8	Tender Drawings		✓	✓	✓	Section D below
9	Bill of Materials	✓		✓	✓	AMIS/tie/letter/AM/Projects/259 dated 19 th June 2007.
10	Technical Queries	✓	✓	✓	✓	AMIS/tie/letter/AM/Projects/331 dated 03 rd August 2007.
11	Technical Support	✓	✓	✓	✓	AMIS/tie/letter/AM/Projects/331 dated 03 rd August 2007.
12	Doocey North East	✓		✓	✓	AMIS/tie/letter/AM/Projects/311 dated 26 th July 2007.

Please note the above detailed issues, events or impacts are not intended to be exhaustive; the intent of AMIS MUDFA is to highlight, in overview, the principal factors that have led to the preparation of this submission and form one element of our future entitlement request presently under preparation.

Where correspondence is detailed it is assessed as either the most current or pertinent item in relation to the issue or event.

These factors, with the exception of items 6, 7 and 8, have all been the subject of detailed and substantive correspondence from AMIS MUDFA to tie Limited, with little or no responses forthcoming; consequently the detailed notifications in respect of these issues are detailed below.

The impact of items 6, 7 and 8, while previously identified in generic terms only, have now manifested themselves following the approval of the Edinburgh Tram Project by the legislature, (i.e. a four month delay) and the subsequent drive by tie Limited to commence Construction Services, irrespective of;

- The AMIS MUDFA state of readiness, in terms of available resources following the four month delay in commencement of Construction Services and the seven months delay in receipt of IFC designs and associated information;
- The obligations and timescales incumbent on the parties under the MUDFA terms and conditions;





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- The integrity of the tie Limited and Stakeholder Constrained (formerly Imposed) Programme at Revision 05.

For the avoidance of doubt your attention is drawn to AMIS MUDFA letter Ref; AMIS/tie/letter/KAG/Projects/250, item i, following the Commercial Meeting held on 15th May 2007 and in response to tie Limited letter Ref; DEL.MUDFA.789.JC.GB dated 30th May 2007 where it is confirmed that;

"AMIS MUDFA rates and prices are based on the Tender Drawings, Schedule 8 Programme and the addendum to the Preambles scheduling the MUDFA Contractor's CARP submission, i.e. qualifications and assumptions".

Our detailed substantiation in respect of the above noted statement follows below, under Sections A to D inclusive.

Section A Pre-Construction Services (PCS) Breakdown

Whilst addressed in previous correspondence, Monthly Reports, bespoke Reports and the like, the impact of PCS on the Schedule 4 rates and prices cannot be underestimated or devalued by conjecture.

In the context of this submission it is considered an imperative to set out, once again, the intent contemplated by the parties from the outset and in respect of our current situations.

The AMIS MUDFA concerns are consolidated in their submission entitled "Report and Recommendation to Manage the "Gateway" from Pre-Construction Services to Construction Services", provided under cover of letter Ref; AMIS/tie/letter/AM/Projects/101 dated 20th February 2007. A considered response is still awaited from tie Limited after four and a half months.

This submission identifies, beyond all reasonable doubt, that the successful delivery of AMIS MUDFA PCS was an integral element contemplated during compilation of the Schedule 4 rate and prices.

Consequently when considering the integrity of the Schedule 4 rates and prices the process and objectives set out in the MUDFA terms and conditions must be actively considered and measured against what was not possible to achieve, as a direct and irrevocable consequence of factors totally outside the control of the MUDFA Contractor, i.e. event 2 above.

Please refer to the following obligations incumbent on the parties and shared objectives in delivering the MUDFA Works; Clause 2.6 places an obligation on the MUDFA Contractor, under Sub-Clauses 2.6.1 to 2.6.5 to;

- Maximise construction productivity
- Minimise disruption
- Minimise diversion works in relation to the apparatus
- Maintain safety
- Minimise out-turn cost



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Clause 2.9 places an obligation on the MUDFA Contractor to;

".....have satisfied itself that it fully understands the scope and extent of the MUDFA Works and that it has sufficient information or will at the relevant information have sufficient information, to enable it to carry out the MUDFA Works".

Clause 2.14 contemplates;

"The MUDFA Contractor shall collaborate and liaise with tie and the SDS Provider throughout carrying out the MUDFA Works, inter alia, to ensure due consideration is given to the type of materials, optimum and cost effective construction methods, construction programme and temporary works, as appropriate".

Clause 2.15 states;

".....the MUDFA Contractor shall use all reasonable endeavours.....to ensure that the MUDFA Works and those related works are carried out together with the greatest economy and in accordance with the Programme".

Clause 6.2, under Sub-Clauses 6.2.1 and 6.2.2 states the MUDFA Contractor shall have:

"Based its tender on its own inspection and examination.....on all information whether obtainable by it or made available by tie and satisfied itself....as to the correctness and sufficiency of the rates and prices stated by it in the Bill of Quantities...".

Clause 48, "Value Engineering Incentive" states, under Sub-Clauses 48.1.1 to 48.1.8, together with Clause 48.2 that the parties shall jointly work together "during the Pre-Construction Phase" to "....reduce the Tender Total and the costs associated with the MUDFA Works by:

- *"proposing and agreeing design solutions involving value engineering" (highly dependent on design detail and maturity);*
- *"proposing and agreeing methods for maximising construction productivity";*
- *"proposing and agreeing the manner in which any disruption caused during the MUDFA Works to the City of Edinburgh is minimised";*
- *"achieving savings in the preliminary costs and setting up costs";*
- *"refinement of the sequence of work shown in the Construction Programme [Schedule 8] submitted as part of the MUDFA Contractor's tender";*
- *"proposing alternative materials and components which meet the requirements of the Agreement (subject to the approval of tie);*
- *"achieving savings in respect of the required Temporary Works"; and*





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- "achieving savings associated with risk mitigation".

Furthermore it was agreed this process would be complete "no later than 10 Business Days before the anticipated completion of the Pre-Construction Phase", i.e. 2nd March 2007 as reflected in the agreed PCS Programme.

Schedule One, Section 2 (Pre-Construction Services) under Clause 2.10 to 2.12 contemplates;

"The SDS Provider and the MUDFA Contractor shall work together, proactively, to achieve economically efficient design and buildability with regard to the MUDFA Works".

"The MUDFA Contractor shall review the design work carried out by the SDS Provider, and the MUDFA Contractor shall produce an Initial Buildability Report which shall be finalised by the MUDFA Contractor in accordance with the Review Procedure within eight weeks of the Effective Date [29th November 2006, i.e. 4th October 2006 plus eight weeks], or such other date as the Parties agree. The Initial Buildability Report shall include proposals from the MUDFA Contractor in relation to buildability, Temporary Works, access to premises or properties and phasing of all Work Sectors and Work Sections and the staging of Work Sites within the Work Sections. The MUDFA Contractor shall propose cost and time saving initiatives where possible and explore mitigation measures which are reasonably predicted to be required....."

"The MUDFA Contractor shall liaise with tie, the SDS Provider, the Utilities and other affected third parties throughout the Pre-Construction Phase, to optimise progress and ensure that all issues relevant to the MUDFA Works are addressed timeously. This liaison shall include working together to achieve the objectives expressed in Clause 48 (Value Engineering Incentive)."

The Final Buildability Report, contemplated in Clause 48 "Value Engineering Incentive" is defined under Schedule One, Section 2 (Pre-Construction Services) under Clause 2.27 to 2.33 which contemplates;

- *"Following the preparation of the Initial Buildability Report, the MUDFA Contractor shall continue to provide advice to the SDS Provider and such advice shall include the practical implications relative to the buildability of the design. The MUDFA Contractor shall also carry out a detailed review of the proposed drawings and specifications. In particular the MUDFA Contractor shall confirm how the extent of the necessary works can be minimised, diversions avoided, works re-planned, unidentified apparatus dealt with and abandoned apparatus treated."*
- *"The MUDFA Contractor may propose suitable alternative materials or components..."*
- *"The MUDFA Contractor shall propose and agree with tie the construction methods which shall be utilised in respect of the MUDFA Works. The MUDFA Contractor shall also advise tie on the time and cost implications of alternative solutions, and shall initiate the requirements for Temporary Works and their execution..."*





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- *"The MUDFA Contractor shall advise tie on the potential impact of the MUDFA Works upon neighbouring occupiers and users on nearby highways, and the MUDFA Contractor shall plan the execution of the MUDFA Works in such a way as to minimise disruption and prevent nuisance".*
- *"No later than four weeks before the end of the Pre-Construction Phase, the MUDFA Contractor shall provide a Final Buildability Report for approval..."*

The above noted inputs and deliverables are design and technically specific; however a significant number of other inputs and deliverables were not completed during Pre-Construction Services as a consequence of factors that AMIS MUDFA were unable to manage, control or influence.

These are, in overview only:-

- Development of a cohesive and sustainable Construction Programme, as contemplated in Clauses 2.7 to 2.9 inclusive of Schedule One.
- Availability of Schedule 13 Third Party Agreements.
- Interaction with the SDS Provider with the objective of proactively delivering an economically efficient design, as detailed under Clauses 2.10 to 2.24 inclusive of Schedule One.
- Development of the Anticipated Final Account on the basis of *"the developed designs"*, as contemplated in Clauses 2.34 to 2.38 of Schedule One.
- Provide input and/or support to the Project Risk Management Plan, the Projects Assumptions Register, and the Project Risk Register as required under Clause 5 of Schedule One.
- Liaise with the SDS Provider, INFRACO and tie Limited on risk management and mitigation.
- Prepare a Construction Hazard Report based on a review of the developed and mature designs.

Section B Schedule 8 Programme

As stated in item 6 above (Page 4 of 17) the Works vary from that contemplated in MUDFA terms and conditions, specifically Schedule 8, i.e. sequence of operations, working, access etc all in accordance with the MUDFA terms and conditions; specifically Schedule 2, Clause 8.5.

Please refer to Section One, paragraphs 5 and 6 of letter Ref: AMIS/tie/letter/AM/Projects/155 dated 3rd April 2007 for the initial notification of our concern in this respect.

To date AMIS MUDFA have steadfastly declined to measure Programme Change against the Schedule 8 Programme on the basis of the stated intention of tie Limited to work collaboratively in an integrated partnership.





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This situation is currently under review given the late submission of Schedule 13 Third Party Agreements and the reluctance of tie Limited to provide visibility of the INFRACO dependencies.

However the commencement of Construction Services, on a delayed, disrupted and dislocated version of the tie Limited and Stakeholder Imposed Programme at Revision 05, necessitates a review of this objective.

Such a review can only be on an overview basis, until clarity and stability at Revision 06 of the tie Limited and Stakeholder Constrained (formerly Imposed) Programme is secured and maintained, subject to the satisfactory resolution of all outstanding issues.

Therefore, on the basis of an overview review only, the Schedule 8 Programme contemplates the following sequence and modus operandi, with the Schedule 4 rates and prices predicated thereon, as follows:-

- Haymarket to Picardy Place (Rolling Work Area 1); April 2007 to February 2008.
- Picardy Place to South Leith Parish Church (Rolling Work Area 2); between April 2007 and December 2007.
- South Leith Parish Church to Ocean Terminal (Rolling Work Area 3); December 2007 to May 2008.
- Haymarket to Roseburn (Rolling Work Area 4); September 2007 to January 2008.
- Granton Square to Ferry Road (Rolling Work Area 5); July 2007 to November 2007.
- Roseburn to Ferry Road (Rolling Work Area 6); October 2007 to December 2007.
- Roseburn to Gogar Depot (Rolling Work Area 7); October 2007 to February 2008.

Consequently at the date of this submission (July 2007) AMIS MUDFA should be operating in the following Rolling Work Areas 1, 2 and 5, where in actual fact we are operating in Rolling Work Area 3.

This activity would have necessitated the following fully functional teams, with associated support services, i.e. grab wagons, reinstatement teams and shared plant consistent with the phased and sequential activities contemplated in the Schedule 8 Programme, fully deployed on Construction Services;

- Power Teams – Five (5) number
- Gas Teams – Four (4) number
- Water Teams – Eight (8) number
- Telecommunications Teams – Seven (7) number

The total number of teams contemplated in the Schedule 8 Programme is therefore twenty four full time equivalents.

The number of teams presently deployed, in a dedicated basis, is three full time equivalents. Please note this profiled requirement was based on the Design drawings provided at Tender stage, subsequently defined in Schedule 4 and reflected in the Bill of Quantities.

No allowance is made for any Works, in programme terms, necessitated by;





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- Works instructed under the tie Limited Prime Cost Sums.
- Works instructed under the tie Limited Provisional Sums.
- Works instructed as a consequence of the agreed Schedule 4 Additional Rate Preambles.
- Works instructed as a consequence of the Schedule 13 (Thirteen) requirements; and
- Unknown Services; the AMIS MUDFA CARP submission, under Part 5A.4, page 1 stated *"The Programme deals with the known services contained within the Bill of Quantities and does not contain any allowances for unknown services"*

This is further supported by Part 5D 37 Page 1, second paragraph, which states

"We have had to make the.....assumption.....in the preparation of our rates and prices that all existing Utility Company's apparatus has been verified for line and level by trial holing prior to Work Site construction commencing"

This exclusion is evidenced by inclusion of Clause 10.4 within the MUDFA terms and conditions, during the CARP negotiations which states;

"Notwithstanding the provisions of Clause 6 (Provision and Interpretation of Information), the risk of encountering adverse physical conditions and artificial obstructions during the course of the execution of the MUDFA works shall not be borne by the MUDFA Contractor, and the MUDFA Contractor shall be able to make a claim for an extension of time under Clause 38.1 and additional payment for any reasonable, demonstrable and direct additional costs incurred in relation to such adverse physical conditions and artificial obstructions..."

The subsequent Sub-Clauses, where *"the reasonable satisfaction of tie's representative"* is required, in terms of the basis of entitlement, must therefore be predicated on the Schedule 4 Drawings and Bills of Quantities and the AMIS MUDFA Tender submission, incorporated in the Contract under recital D and tie Limited letter of Appointment, dated 4th October 2006.

Section C Tender Drawings

The Schedule 4 rates and prices are based on the drawings scheduled in the Bill of Quantities and the configuration of the associated services; note Schedule 4 awaits re-execution following the agreement by tie Limited, on 16th March 2007 that key elements were omitted from the documentation executed on 4th October 2006; i.e. Tender Drawings, Bill of Quantity Pages and Rate Preamble clarifications.

Please refer to Sections One and Two of letter Ref: AMIS/tie/letter/AM/Projects/155 dated 3rd April 2007 confirming the basis of the Schedule 4 rates and prices.

Notwithstanding the provisions of Clause 51.2 the *"...actual quantities carried out on in respect of item"* is not the issue causing AMIS MUDFA concern.

The concern relates to the integrity of the Tender drawings in that they do not reflect the in-situ infrastructure or the works required under the MUDFA Agreement, nor do they fully comprehend the complexity and inter relationship of utilities.





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Please find detailed below in tabular form, an analysis of the work included in Schedule 4 for Work Sites 1AWS1003/001, 1AWS1003/002, and 1AWS1004/001 and 1BWS1001/001, 1BWS1001/002, and 1BWS1001/003, and part 1BWS1001/004 against the equivalent tie Limited Work Orders, on a comparative basis.

These are the first Work Sites where the SDS Provider IFC drawings and schedules are available that facilitate a reasonable comparison between Schedule 4 and the emerging nature of the MUDFA Works.

In respect of the Works Sites prefixed 1BWS, this is based on the SDS Provider IFA drawing schedules for Gas, and IFC drawing schedules for all the other utilities.

Statutory Utility Company	Schedule 4 (LM)	Work Order (LM)	Delta (LM)	Delta (%)
BT	722	1,847	1,125	156%
Cable & Wireless	152	203	51	34%
Telewest / Virgin Media	32	431	399	1,247%
Thus	126	81	-45	-36%
Scottish Power	500	451	-49	-10%
Power – Forth Ports	0	314	314	100%
Gas	202	750	548	271%
Sewers	55	0	-55	-100%
Water	521	2,717	2,196	421%
Totals:	2,310	6,794	4,484	194%

In financial terms this delta in the Schedule 4 workscope, against the Work Site Value is expressed as follows:-

Statutory Utility Company	Schedule 4 (£)	Work Order (£)	Delta (£)	Delta (%)
BT	362,519	447,811	85,292	24%
Cable & Wireless	24,744	18,067	-6,677	-27%
Telewest / Virgin Media	13,536	76,393	62,857	464%
Thus	13,291	12,187	-1,104	-8%
Scottish Power	149,797	196,831	47,034	31%
Power – Forth Ports	0	38,946	38,946	100%
Gas	85,228	492,794	407,566	478%
Sewers	34,772	0	-34,772	-100%
Water	188,655	1,044,636	855,981	454%
Totals:	872,542	2,327,665	1,455,123	167%

The corresponding provisions under the Provisional and Prime Cost Sums, within the MUDFA agreement, is £375,000, i.e. 3% of the measured works total. This will, if a genuine trend, indicate a circa £20M growth in measured works, a value consistent with our Anticipated Final Account with no





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consideration given to the ongoing magnitude of change driven by deficiencies in the SDS Provider designs.

Furthermore from our review of the measurement and evaluation of these Works to date AMIS MUDFA assess that of the total value of work items earned to date, excluding Work Sector Preliminaries totals £81,964.00.

Circa 37% of this value is derived by Change Control items arising as a direct consequence of items 1 to 11 above.

No comparison has been made against the drawings used to compile the current Anticipated Final Account; although this can be completed if required and will be addressed as an element of our entitlement substantiation.

Section D Loss of Productivity and Efficiencies

The basis of the Schedule 4 prices is derived from the Schedule 8 Programme, the scope of works detailed in the Bill of Quantities and the MUDFA terms and conditions, including Schedule One, Pre-Construction Services.

Key to the rates and prices is the efficient and cost effective allocation of resources across the MUDFA programme of Works.

AMIS MUDFA never contemplated a "Call-Off" or Schedule of Rates scenario, under a significantly increased level of tie Limited and Stakeholder imposed constraints.

By way of illustration please refer to Part 5 – C35 of the Tender submission, where it states;

"Alfred McAlpine is able to maximise efficiency between worksites principally because we employ our own direct labour, which is a multi-skilled workforce. This benefits our company with the ability and complete flexibility to carry out each and every diversion, while minimising the unnecessary movement of resources."

Furthermore the AMIS MUDFA strategy to 'flex' this internal resource, based on the visibility of developed designs during Pre-Construction Services is set out under part 5 – C35 as;

"Our approach to maximising productivity and efficiency is based on:

- Accurate planning of construction activity in the pre-construction phase*
- Careful programming of the individual elements of the supply chain to ensure resources are available as and when required*
- Setting objectives and targets against programme milestones*
- Co-ordination of site activity, eliminating down time and driving the prompt completion of works."*

Furthermore under the sub heading of "Multi-use of plant and equipment" the basis of the Schedule 4 rates and prices contemplates the most efficient and cost effective utilisation achievable in recognition





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of the previously stated strategy "accurate planning of construction activity in the pre-construction phase" and "careful programming of the individual elements of the supply chain to ensure resources are available as and when required", i.e.:-

"In consideration of productivity and efficiency, the first strategy that we adopt is the utilisation of plant and machinery that reduces the duration of completing an activity. These items will be employed across the various work sites, thereby gaining an economy of scale."

Under the sub heading "Shared deliveries of material with collection and delivery service" the benefits of advance planning and visibility of developed designs further cost benefits are reflected in the modus operandi behind the Schedule 4 Rates and Prices;

"... economies of scale in our material supplies. For example deliveries of stone and modular reinstatement materials will be shared out between sites so that we always take full loads. Full loads are cheaper because; there are no repeat haulage charges; they reduce the number of deliveries and they avoid piecemeal collections by our own workforce."

In addition, under the sub heading "Shared access and traffic management" the holistic approach to the compilation of the Schedule 4 rates and prices is established as follows:-

"... we will adopt our standard practice of working that includes:

- Larger items of work equipment such as excavators will be shared between sites so as to maximise utilisation and optimise efficiency through effective co-ordination*
- Traffic management and signage will be combined and simplified where possible for site in close proximity*
- Areas for reinstatement will be batched and completed in one process, allowing bulk material to be ordered and laid in a succinct operation*
- By setting individual objectives for the Operatives and target completion dates for specific work sectors, it will ensure there is focus on achieving objectives"*

During the Tender / CARP process a great deal of emphasis was placed by the tie Limited assessment team on how any peaks or troughs would be managed.

In the presentation given by the AMIS team on 22nd June 2006 a number of strategies were set out, however the key elements where the issues detailed under points 1 to 12 inclusive (Page 4 of 17) have frustrated the ability of AMIS MUDFA to manage the Works efficiently and effectively are as follows;

- Resource smoothing in the programming of the Work Sites within Work Sectors
- Standby Work sites to minimise troughs offsetting costs, by way of mitigation. The term adopted by both parties on the 22nd June 2006 was the requirement for "hospital jobs" which we fully developed and work ordered to be instructed by tie Limited at short notice, if required.





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Conclusion

Given the ongoing delays in the production of SDS Provider IFC designs and the concerns AMIS MUDFA have extensively and consistently expressed on the quality and integrity of the design related documentation provided by tie Limited under the MUDFA terms and conditions it is apparent, in the context of the analogous Schedule 4 rates and prices, that:-

1. The breakdown of Pre-Construction Services (PCS) to fulfil its stated and contractually binding objectives has compromised the productivity and resource assumptions, as contemplated by AMIS MUDFA.
2. The breakdown in Pre-Construction Services has led to the Value Engineering Incentive, contemplated in Clause 48 of the MUDFA Agreement being frustrated.
3. The applicable Schedule 4 drawings do not reflect in content or configuration the SDS Provider IFC drawings issued to date, rendering the basis of the AMIS MUDFA rates and prices subject to a substantial level of Change under Clause 46.
4. The ongoing delays and fundamental deficiencies in SDS Provider IFC drawings have introduced a disproportionate level of risk, while also compromising the productivity and resource provisions within the rates and prices.
5. The absence of site specific technical specifications frustrates on site operations, reducing productivity and introducing increased risk and unacceptable commercial liabilities.
6. The generic nature of the HAZID Logs introduces unforeseen risk and impacts on the productivity and resource levels, resulting in our operational health, safety, environmental and compliance management being frustrated to a significant degree.
7. The accelerated nature of the Work Order process introduces an inappropriate level of risk and commercial liability which necessitates additional management resource to manage the peaks and troughs, all while diminishing the opportunity to secure economies of scale.
8. The 'stand alone' nature of the work site, in terms of a Schedule 8 Programme, fundamentally compromises the contemporaneous nature of the multiple site operations and negates the economies of scale and resource sharing contemplated in the Schedule 4 rates and prices.
9. The disproportionate level of change from the quantities and Statutory Utility Companies affected by the LoD from that contemplated in Schedule 4 for this area necessitates increased management resource to capture measure and substantiate the planned and actual events.
10. The absence of accurate Bill of Materials and technical specifications necessitates additional management resource, while introducing additional risk and limiting economies of scale through a structured and well planned procurement strategy.
11. The protracted and disjointed response to Technical Queries; necessitates additional management resource, while introducing additional risk and reducing productivity on site.





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12. The absence of technical definition and detail has frustrated the effective implementation of the co-ordination and supply chain requirements contemplated under the 'Demarcation Schedule' and to date a considered response is still awaited from tie Limited; i.e. approaching six months following submission by AMIS MUDFA to tie Limited.

It is apparent that the Works cannot fairly or reasonably be measured under Clause 46.6.1 as the work is not being carried out "in similar conditions" to that contemplated in the compilation of the AMIS MUDFA rates and prices incorporated under Schedule 4 of the Contract.

Equally Clause 46.6.2, where rates would be determined "...deduced therefrom [Clause 46.6.1] insofar as it is practical to do so" will not apply given the magnitude of change, together with the ongoing delay, disruption and dislocation.

Given the fundamental departure and resultant frustration at all levels associated with the safe, successful and economical delivery of Constructions, as contemplated in the MUDFA terms and conditions, AMIS MUDFA believe, at this point in time, that only Clauses 46.6.3 or 46.6.4 could reasonably or practically be applied.

For the purposes of Work Sites 1AWS1003/001, 1AWS1003/002, and 1AWS1004/001 and all subsequent sites AMIS MUDFA intends to seek recovery of their costs on a cost plus 15% basis, until such time that programme stability is achieved, or alternative rates and applications are mutually agreed.

Until the issues identified above are addressed, to a satisfactory and sustainable level of performance, that facilitates the application of Clause 46 as intended, AMIS MUDFA will be providing the commercial aspects of all future Work Order Proposals under Clause 8.8 on a 'Without Prejudice' basis, derived from a provisional assessment of resources, productivity levels and durations.

These assumptions will be re-measured on an 'As Built' basis, supported by actual cost, plus 15% profit and overhead.

Whilst tie Limited have accepted this proposal for the trial site and subsequently challenged this approach, there has been no significant 'step-change' to correct, or remedy the situation.

Way Forward

Notwithstanding the concluding paragraph of the above noted conclusions AMIS MUDFA remains to be convinced that strict adherence to the current drafting of the MUDFA terms and conditions will best serve the needs and aspirations of tie Limited, the Edinburgh Tram Project and the project Stakeholders.

The current drafting of the MUDFA Contract will not satisfactorily address the fundamental breakdown and of Pre-Construction Services and the ongoing inadequacies in the performance and output of the SDS Provider.





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For the avoidance of doubt the MUDFA terms and conditions are predicated on the full availability of developed designs during PCS, with 25% being made available in January 2007 to commence outline Work Ordering.

The MUDFA Contract apportions risk and responsibility in a manner that drives behaviour and correspondence that AMIS MUDFA understands **tie** Limited view as potentially "negative" and "counter productive"; this assertion by senior **tie** Limited staff is *not* the case, as AMIS MUDFA have consistently demonstrated throughout the Contract, a total commitment to resolution.

In the context of the current contractual framework unless the matter is recorded in concise and detailed terms, the level of risk and overall financial exposure and liability to AMIS MUDFA would be considerable and unacceptable.

The corporate governance and level of intervention applied by the AMIS Board to the MUDFA management team would *not* allow an alternative approach to the administration of the current Contract and as a result matters must be pursued to explore and resolve frustrated issues.

The substantial and ongoing delay, disruption and dislocation to Construction Services continues, exacerbated by the fundamental repudiation of the **tie** Limited and Stakeholder Constrained (formerly Imposed) Programme at Revision 05.

At this juncture it is pertinent to remind **tie** Limited that Revision 05 of the **tie** Limited and Stakeholder Constrained (formerly Imposed) Programme is predicated by the Notes and Assumptions enclosed with letter Ref; AMIS/tie/letter/AM/Projects/176 dated 18th April 2007.

A delta of 138%, as evidenced under Section C, applied across the full MUDFA Programme of Works, given the derivation of Revision 05 of the Programme, in consideration of the ongoing constraints, will have a significant impact on the cost and schedule adherence of the MUDFA Contract.

Unless a sustainable solution is found to address the root cause of these issues all future Programme amendments will have no credibility in the eyes of AMIS MUDFA and the Edinburgh Tram Stakeholders.

Confidence must be restored in the base information, with robust dates for the provision of sustainable SDS Provider IFC designs and associated information that serve Construction in a safe and economical manner secured on an ongoing basis until completion of the MUDFA works.

A number of proposals have been provided in the past by AMIS MUDFA that sought to provide a 'road map' for success; these have never been satisfactorily addressed by **tie** Limited who continue to seek adherence to what is effectively an extraneous and discredited delivery model. The AMIS MUDFA proposals have promoted "*Revolution*" as opposed to the imperceptible "*Evolution*" and lack of acknowledgement or response, which in turn has again led to frustration.

The key to success is a reinvigorated design process, through an integrated team comprising **tie** Limited, AMIS MUDFA and SDS staff, comprising the requisite skill set and a "can do" attitude".





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A revised contractual framework will be required to incentivise a proactive approach, driving solutions focussed behaviour, by way of an improved integration of roles and responsibilities, with direct accountability for success, including a realignment of project management skills to deliver best practice.

AMIS MUDFA will invigorate senior management discussions on this particular subject to safeguard the respective parties, obligations and outcome.

AMIS MUDFA suggest an Extraordinary Board Meeting be convened week commencing Monday 6th August 2007 to discuss the factors that have led to the delay, disruption and dislocation and agree a Way Forward that meets the objectives of the Contract.

Yours sincerely,
For and on behalf of **Alfred McAlpine Infrastructure Services Ltd**



PP. Andrew Malkin
MUDFA AMIS Project Director

Copies:-
tie Project Team
John Casserly

MUDFA Project Team
Keith Gourlay
Taryne Lowe
Steve Hudson

Attached/... Appendix 1 – Chart 1 – Overall (All Sections) – IFC Design Release & Construction Site Start Interface Rev 01
Work Items Comparisons (Quantity)
Work Items Comparisons (Value)



WORK ITEMS COMPARISONS (VALUE)

TENDER vs ACTUAL
 Work Site 1A-03-01 (Ocean Drive) vs Tender Dwg 0637

	Telecomms				Power		Gas	Sewers	Water	TOTAL
	BT	C&W	Telewest / Virgin Media	Thus	Scottish Power	Forth Ports				
Tender	278,183.58	24,743.77	2,238.65	-	19,167.49	-	20,965.28	10,813.76	19,301.11	375,413.64
Actual	102,175.78	18,067.43	34,695.23	-	52,377.99	38,945.86	3,344.48	-	214,131.24	463,738.01
Delta (£)	-176,007.80	-6,676.34	32,456.58	0.00	33,210.50	38,945.86	-17,620.80	-10,813.76	194,830.13	
Delta (%)	-63%	-27%	1450%	#DIV/0!	173%	#DIV/0!	-84%	-100%	1009%	
Delta (£)		-150,227.66			72,156.36		-17,620.80	-10,813.76	194,830.13	88,324.37
Delta (%)		-49%			376%		-84%		1009%	24%

TENDER vs ACTUAL
 Work Site 1B-01-01 (Leith Walk - bottom end) vs Tender Dwg 0630(50%), 631, 632(50%)

	Telecomms				Power		Gas	Sewers	Water	TOTAL
	BT	C&W	Telewest / Virgin Media	Thus	Scottish Power	Forth Ports				
Tender	84,335.00	-	11,297.37	13,291.00	130,629.97	-	64,263.03	23,958.08	169,353.57	497,128.00
Actual	345,635.17	-	41,698.14	12,187.33	144,453.43	-	489,449.89	-	830,504.33	1,863,928.29
Delta (£)	261,300.18	0.00	30,400.77	-1,103.67	13,823.46	0.00	425,186.86	-23,958.08	661,150.77	
Delta (%)	310%	#DIV/0!	269%	-8%	11%	#DIV/0!	662%	-100%	390%	
Delta (£)		290,597.28			13,823.46		425,186.86	-23,958.08	661,150.77	1,366,800.29
Delta (%)		267%			11%		662%		390%	275%

TENDER vs ACTUAL
 All Current

	Telecomms				Power		Gas	Sewers	Water	TOTAL
	BT	C&W	Telewest / Virgin Media	Thus	Scottish Power	Forth Ports				
Tender	362,518.58	24,743.77	13,536.02	13,291.00	149,797.46	-	85,228.31	34,771.84	188,654.68	872,541.64
Actual	447,810.95	18,067.43	76,393.37	12,187.33	196,831.42	38,945.86	492,794.37	-	1,044,635.57	2,327,666.30
Delta (£)	85,292.37	-6,676.34	62,857.35	-1,103.67	47,033.96	38,945.86	407,566.06	-34,771.84	855,980.90	
Delta (%)	24%	-27%	464%	-8%	31%	#DIV/0!	478%	-100%	454%	
Delta (£)		140,369.72			85,979.82		407,566.06	-34,771.84	855,980.90	1,445,124.86
Delta (%)		34%			57%		478%		454%	167%

Notes:
 Excludes Provisional Sum & Prime Cost Items in **Tender**
 Excludes **Actual** Exclusions (i.e. Exclusions made in Work Site Estimate)
 Excludes Work Site Variations (incl CVI's) in **Actual**

WORK ITEMS COMPARISONS (QUANTITY)

TENDER vs ACTUAL
 Work Site 1A-03-01 (Ocean Drive) vs Tender Dwg 0637

	Telecomms				Power		Gas	Sewers	Water	TOTAL
	BT	C&W	Telewest / Virgin Media	Thus	Scottish Power	Forth Ports				
Tender	400	152	9	-	94	-	67	20	28	770
Actual	458	203	199	-	98	314	16	-	545	1,833
Delta (m)	58	51	190	-	4	314	51	20	517	
Delta (%)	15%	34%	2111%	#DIV/0!	4%	#DIV/0!	-76%	-100%	1846%	
Delta (m)		299.00			318.00		-51.00	20.00	517.00	1,083.00
Delta (%)		53%			338%		-76%		1846%	138%

TENDER vs ACTUAL
 Work Site 1B-01-01 (Leith Walk - bottom end) vs Tender Dwg 0630(50%), 631, 632(50%)

	Telecomms				Power		Gas	Sewers	Water	TOTAL
	BT	C&W	Telewest / Virgin Media	Thus	Scottish Power	Forth Ports				
Tender	322	-	23	126	406	-	135	35	493	1,540
Actual	1,389	-	232	81	353	-	734	-	2,172	4,961
Delta (m)	1,067	-	209	-45	53	-	599	35	1,679	
Delta (%)	331%	#DIV/0!	909%	-36%	-13%	#DIV/0!	444%	-100%	341%	
Delta (m)		1,231.00			-53.00		599.00	35.00	1,679.00	3,421.00
Delta (%)		261%			-13%		444%		341%	222%

TENDER vs ACTUAL
 All Current

	Telecomms				Power		Gas	Sewers	Water	TOTAL
	BT	C&W	Telewest / Virgin Media	Thus	Scottish Power	Forth Ports				
Tender	722.00	152.00	32.00	126.00	500.00	-	202.00	55.00	521.00	2,310.00
Actual	1,847.00	203.00	431.00	81.00	451.00	314.00	750.00	-	2,717.00	6,794.00
Delta £	1,125.00	51.00	399.00	-45.00	-49.00	314.00	548.00	-55.00	2,196.00	
Delta (%)	156%	34%	1247%	-36%	-10%	#DIV/0!	271%	-100%	421%	
Delta (£)		1,530.00			265.00		548.00	-55.00	2,196.00	4,484.00
Delta (%)		148%			53%		271%		421%	194%

Notes:

- Excludes Provisional Sum & Prime Cost Items in Tender
- Excludes Actual Exclusions (i.e. Exclusions made in Work Site Estimate)
- Excludes Work Site Variations (incl CVI's) in Actual

**CHART 1 - OVERALL (ALL SECTIONS) - IFC DESIGN RELEASE & CONSTRUCTION SITE START
INTERFACE REV 01 (MUDFA Construction Services Project Plan REV 05)**

